



**ST/SV 3210 & ST/SV 3306  
Operator's Manual**



Replacement or "Master Keys" are not available. It is the responsibility of the user to safeguard the supplied keys.



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Part Number: 88-2240-01

Revision: E

## DECLARATION OF CONFORMITY

(In accordance with EN 45014)

We, **Datamax Corporation**  
4501 Parkway Commerce Boulevard  
Orlando, Florida 32808

*declare under our sole responsibility that the product,*

Type of Equipment: Thermal Transfer Printer  
Model Number: DMX-ST-3XXX  
DMX-SV-3XXX

*to which this declaration relates is in conformity with the following standards or other normative documents:*

Safety: The product complies with the requirements  
of the Low Voltage Directive 73/23/EEC,  
EN 60950 (1992), A1 (1993), A2 (1993) & A3 (1995)

---

EMC: EN 55022 (1993) Class B  
EN 50082-1 (1992)  
ENV 50204 (1995)  
EN 61000-3-2 (1995)  
EN 61000-3-3 (1995)  
IEC 801-2 (1991), 4kV CD; 8kV AD  
IEC 801-3 (1984), 3 V/m, CW  
IEC 801-4 (1988), 500V Signal Lines,  
1kV AC Power Lines

*following the provision of EMC directive 89/336/EEC.*

---

*I, the undersigned, hereby declare that the equipment specified above  
conforms to the directives and standards as specified.*

  
\_\_\_\_\_  
Signature and Date

Marvin Davis  
Chief Executive Officer

\_\_\_\_\_  
Typed Name and Title

European  
Contact: Datamax International  
Herbert House, 12 Elizabeth Way  
Pinnacles, Harlow  
Essex, CM19 5FE, U.K.

## Agency Compliance and Approvals:



UL1950 Information Technology Equipment  
C22.2 No. 950-M93



### EN60950

For 230 Volt Operation (Europe): Use a cord set, marked "HAR," consisting of a min H05VV-F cord which has a minimum 0.75 square mm diameter conductors, provided with an IEC 320 receptacle and a male plug for the country of installation rated 6A, 250V

Für 230 Volt (Europa): Benützen Sie ein Kabel, das mit "HAR" markiert ist, bestehend mindestens aus einem H05VV-F Kabel, das mindestens 0,75 Quadratmillimeter Drahtdurchmesser hat; sowie eine IEC320 Steckdose und einen für das Land geeigneten Stecker, 6A, 250 Volt.



As an Energy Star Partner, the manufacturer has determined that this product meets the Energy Star guidelines for energy efficiency.



The manufacturer declares under sole responsibility that this product conforms to the following standards or other normative documents:

EMC: EN55022 (1993) Class B  
EN50082-1 (1992)  
EN61000-3-2 (1995)  
EN61000-3-3 (1995)  
IEC 801-2 (1991), 8kV CD; 15kV AD  
IEC 801-3 (1984), 3 V/m  
IEC 801-4 (1988), 500V Signal Lines  
1kV AC Power Lines  
EN 55024 (1998) SV Model Only

Safety: This product complies with the requirements of EN 60950/A11:1997



Gost-R

FCC:

This device complies with FCC CFR 47 Part 15 Class A.

**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 instructions in this manual, it 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 his own expense.

## **Important Safety Instructions:**

This printer has been carefully designed to give many years of safe and reliable performance; however, as with all types of electronic equipment, there are some basic precautions that should be taken to avoid personal injury or damage to the printer:

- Carefully read the installation and operating instructions provided with this printer.
- Read and follow all warning instruction labels on the printer.
- Place ST Model printers on a flat, firm surface; mount SV Model printers in a flat, rigid enclosure.
- To protect the printer from overheating, make sure no openings on the printer are blocked.
- Do not place the printer on or near a heat source.
- Do not use the printer near water and never spill liquid into it.
- Ensure that the power source meets the ratings listed on the printer; if uncertain, check with your dealer, electrician, or utility company.
- Do not place the power cord where it may be walked on. Should the power cord become damaged or frayed, replace it immediately.
- Only qualified, trained service technicians should attempt to repair this printer.



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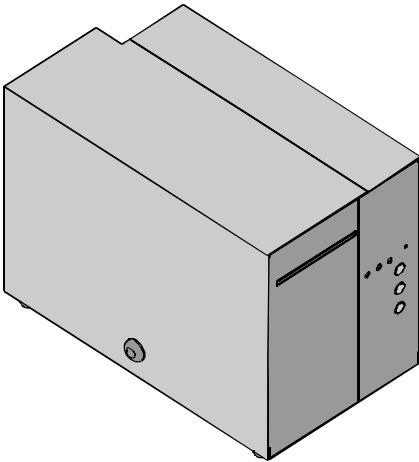




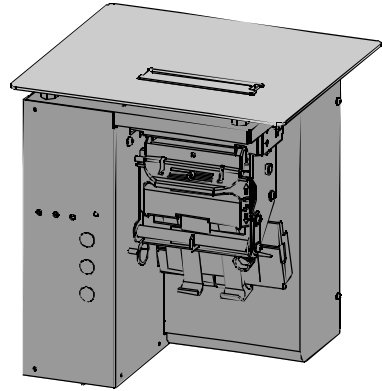
# Printer Overview

## 1.0 About the Printer

---



**ST (Table) Model**



**SV (Vertical) Model**

The ST-3210, SV-3210, ST-3306 and SV-3306 printers, hereafter referred to as ‘the printer’, blend rugged design with state-of-the-art electronics and user-friendly features to redefine industry printer standards.

This printer is equipped with a 32-bit microprocessor and four megabytes of standard memory to process complicated formats quickly and easily. Auto-detecting communication ports ensure that interfacing to the host system is a simple task. In addition, the versatile front panel functions and automatic loading system will speed you through all setup changes.

This manual provides all the information necessary for the daily operation of the printer. To begin printing tickets, refer to the instructions included with the software package you have chosen. If you wish to write a custom program, visit our website at [www.datamaxcorp.com](http://www.datamaxcorp.com) for a copy of the *DPL Programmer’s Manual* (part number 88-2051-01) and the *DTPL Programmer’s Manual* (part number 88-2246-01).

## 1.0.1 Standard Features

This printer offers these standard features.

### Printing:

- Direct Thermal printing
- On-Demand and Batch printing modes
- Automatic ticket loading and top of form positioning
- 3.375" x 11.375" Interior Fan-Fold Ticket Stock Platform (*ST Models only*)
- Integral Tearbar
- Lockable Side Cover (*ST Models only*)
- DPL and DTPL programming language support

### Memory:

- 1 MB EPROM Program Memory
- 4 MB DRAM Memory

### Communication Interfaces:

- One RS-232 or RS-422 serial interface port.
- One Centronics® type parallel interface port.

### Real-Time Clock:

- A clock and counter circuit to keep the current time, date, and amount of inches printed for jobs requiring a time/date stamp as part of their format.

### Scaleable Fonts:

- Downloadable point sizes from 4 to 999. (Varieties of typefaces are available for use from third party vendors.)

## 1.0.2 Optional Features

This printer offers these optional features.

### Cutter and Tray (*ST Models only*):

- A factory-installed device that will cut stock with a maximum thickness of .008 inch (.2 mm) and a minimum thickness of .0025 inch (.06 mm). The tray attaches to the front of the printer to collect cut tickets, and is capable of stacking a minimum of 100, 3.5-inch (88.9 mm) wide tickets, ranging in lengths from 2.0 inches (50.8 mm) to 5.63 inches (142.9 mm).

### Flash Memory Modules:

- Removable, permanent storage devices for use with graphics, fonts, and ticket formats, available in different sizes. Order according to module size needed:

Memory Module Size	Part Number	
	ST Printer	SV Printer*
256 Kbytes	78-2166-01	DPO78-2443-01
512 Kbytes	78-2166-02	DPO78-2443-02
1 Mbytes	78-2166-03	DPO78-2443-03
2 Mbytes	78-2166-04	DPO78-2443-04

\*A Qualified Installer is required for the installation of this option.

### Roll Hanger (*ST Models only*):

- An interior mounting option allowing the printer to use 7-inch outer diameter (177.8 mm) rolled stock wound on 2-inch (50.8 mm) diameter cores. Order part number 12-2978-01.

### External Keyboard Support:

- Connection for the DMX Passport™ external keyboard system. Order part number 61-2159-xx

### LAN Interface:

- An interface that connects the printer to most LAN networks. Order part number 78-2278-01.





# Getting Started

## 2.0 Unpacking the Printer

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Inspect the shipping container(s) for damage; if evident, notify the shipping carrier to report the nature and extent of the damage before proceeding.

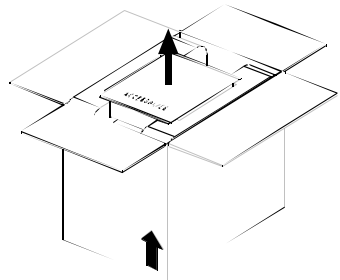
The printer is carefully packaged to avoid any damage during transit. In order to operate the printer, you will need to remove the packaging materials placed there for shipment. Complete the following steps prior to connecting power or attempting to load ticket stock.

- 1 Carefully open the shipping container and remove the printer.



Never rest the SV model printer “end-down” on any surface. Damage to the connectors on the bottom of the printer can occur.

- 2 Remove the printer from the plastic shipping bag.
- 3 Carefully remove the tape that extends over the Printhead Latch. (On SV Model printers also remove the tape that covers the interface connectors.)

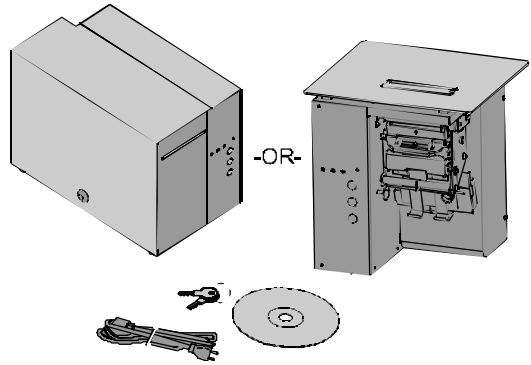


**Note:** Save all packaging materials in the event that shipping the printer is ever required.

## 2.0.1 Inspection

After removing and inspecting the printer, check the remaining contents of the container. In addition to this manual, the following items should be included:

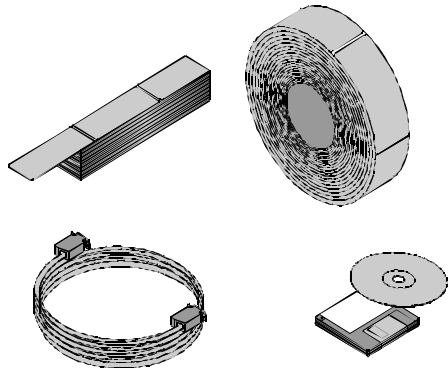
- Ticket Printer
- Power cord
- Keys (*ST Models only*)
- Accessories CD
- Special or additionally purchased items.



## 2.0.2 Additional Requirements

The following items are necessary for generating printed tickets using the printer. For advice on which stock and software is best suited for your needs, contact your customer representative.

- Serial or parallel interface cable
- Applicable ticket stock
- Applicable software








# Setting up the Printer

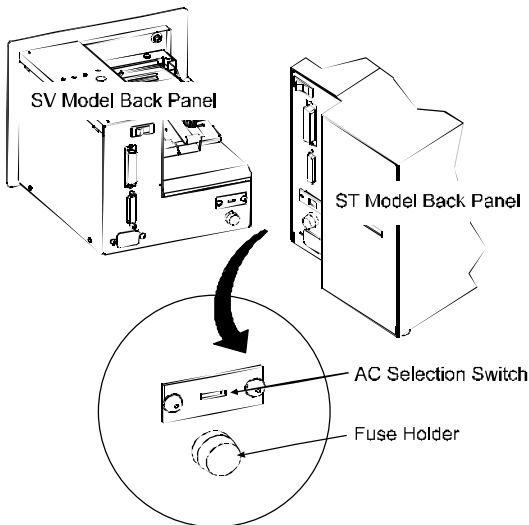
This section details the connections, loading methods, memory module installation, and resident ticket formats of the printer.

## 3.0 AC Voltage Configuration

Depending upon the configuration of the AC Selection Switch and fuse, the printer is capable of either 115 or 230 VAC single-phase operation.

Before connecting power, check the voltage configuration: (1) locate the AC Selection Switch and Fuse Holder (containing the fuse) on the Back Panel, then (2) referencing the table below, ensure that the AC Selection Switch setting and fuse rating correspond to your AC Source Voltage.

 **CAUTION** Failure to verify the AC Selection Switch setting and fuse rating can result in personal injury and/or printer damage.



AC Source Voltage	AC Selection Switch	Required Fuse Rating
105 – 125 VAC	115 VAC	1.6 amp / 250V slow-blow
210 – 250 VAC	230 VAC	0.8 amp / 250V slow-blow

## 3.1 Interfacing the Printer

---

Interfacing the printer to the host computer can be made through either a parallel or a serial cable (see Appendix C for cable requirements). Communication port selection is automatic: the first port to receive data is set 'active' by the printer. To change an active port, cycle the power 'Off' and 'On' or perform a Warm Reset (see Section 3.6.1).

Parallel Interface Port:

The parallel interface supports Centronics® parallel communications.

Serial Interface Port:

The serial interface supports either RS-232 or RS-422 communications. The following menu-selectable serial port settings must be configured to match those of the host computer; see Section 4.3.

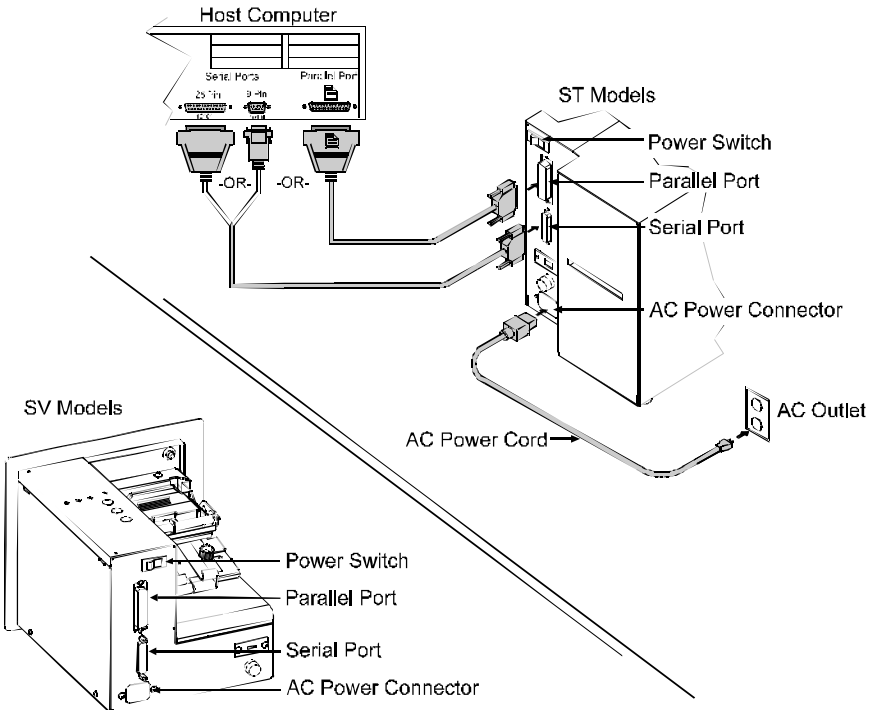
- Baud Rate
- Word Length (including Parity, which defaults to either of the following):
  - 8-bit word with no parity
  - 7-bit word with even parity

<input checked="" type="checkbox"/> <b>Note:</b> If unable to establish communications, see Section 5 for help.
---

## Printer power and interface connections:

Follow these instructions to connect the printer.

- 1 Turn 'Off' the power to the Host Computer.
- 2 Verify that the Printer's AC Configuration has been set; see Section 3.0.
- 3 Connect the interface cable securely between the Printer and Host communication ports.
- 4 Verify that the Power Switch is in the 'Off' position and connect the AC Power Cord to the AC Power Connector, then to the AC Outlet.
- 5 Turn 'On' the Printer and then the Host Computer.



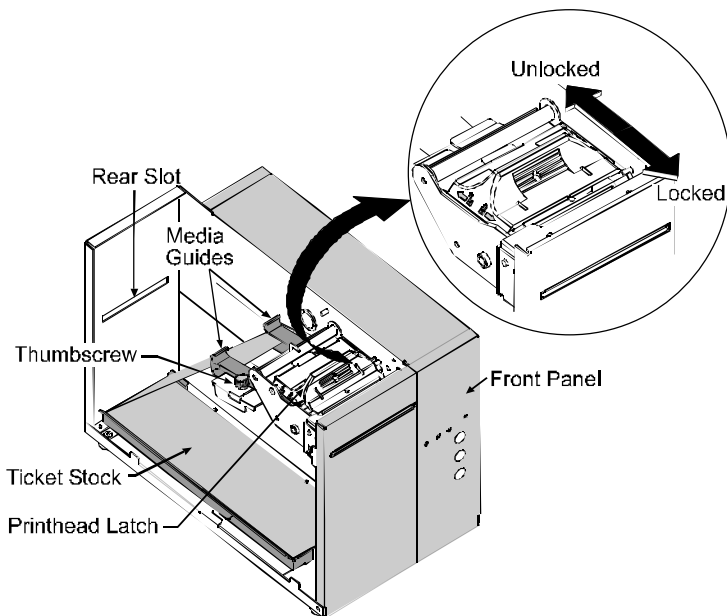
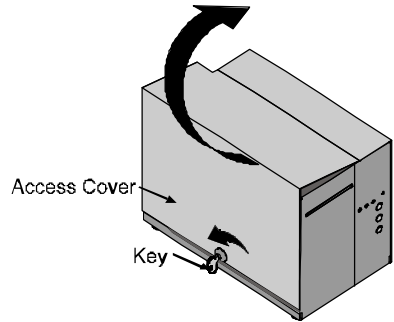
**Note:** Ensure the printer's Power Switch is 'Off' before connecting the AC Power Cord or the interface cable; also, turn 'Off' the power to the host system before connecting the interface cable.

## 3.2 Loading Ticket Stock

Both printers feature an automatic ticket loading and positioning mechanism, although the initial loading instructions differ slightly according to model and options.

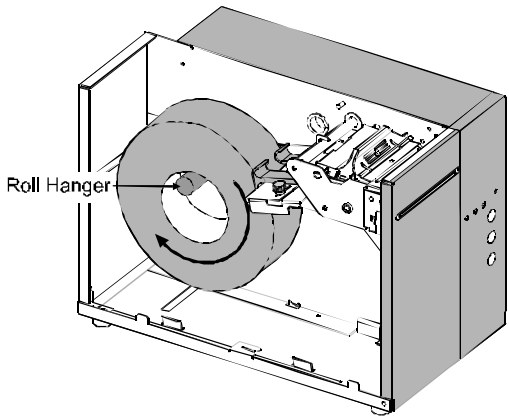
### 3.2.1 ST Models

- 1 Plug in and turn 'On' the printer.
- 2 Insert the Key and unlock the Access Cover.
- 3 Raise the Access Cover (for convenience the cover may be removed by sliding it forward and then up).
- 4 Place fanfold ticket stock (with the TOF Mark facing down; see Section 4.0) in the bottom of the printer or if using an external supply, route the stock through either the Bottom or Rear Slots.



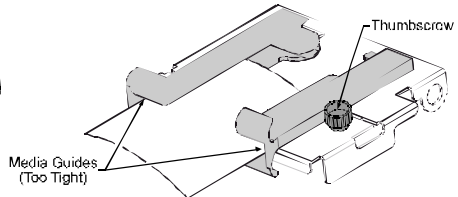
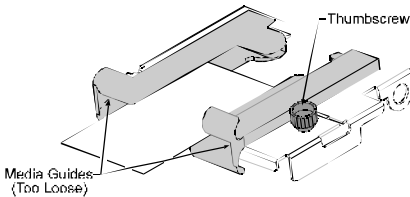
*(Continued next page)*

To use roll ticket stock, the stock must be mounted on the optional Roll Hanger, as shown. (See Section 6 for stock requirements.)



**Note:** To use an internal fanfold ticket source on a printer equipped with the Roll Hanger option, first remove the Roll Hanger by unscrewing it from the printer. Store the hanger in a safe place for future use.

- 5 Loosen the Thumbscrew and adjust the Media Guides to fit the width of the ticket stock: the guides should be positioned close enough to stop side-to-side ticket movement, but not so tight to cause friction or bowing of the ticket stock (see below). Tighten the Thumbscrew to secure the guides in place.



- 6 Slide the ticket stock through the Media Guides. The motor will start; continue sliding the tickets. The printer will grab the leading edge of the stock and complete the positioning process. Close the Access Cover.

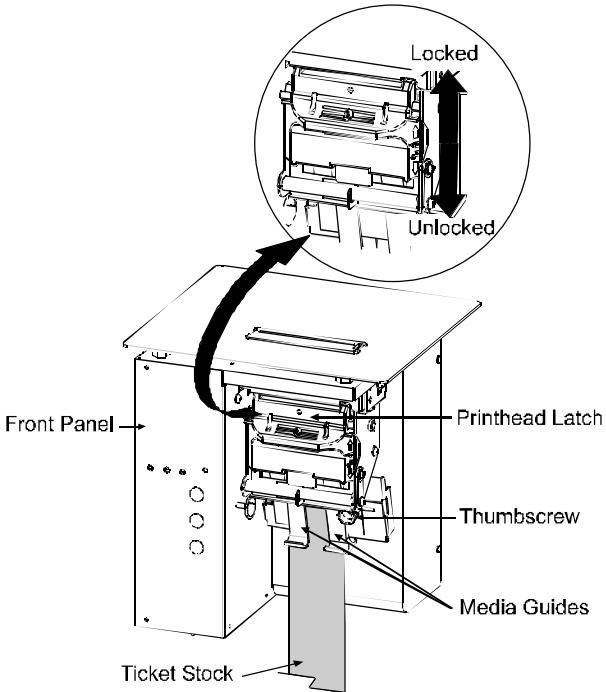
**Notes:** If automatic loading doesn't occur:

- 1) Ensure that the Printhead Latch is locked.
- 2) Press the PAUSE button (the On-Line Indicator should be 'Off' now).
- 3) Repeatedly press the F2 button while gently pushing the stock forward until the printer grabs the ticket.
- 4) Press the PAUSE button (to return to the on-line mode).

If the ticket was not fed to a proper position, the TOF Sensor may need adjustment; see Section 4 for details.

### 3.2.2 SV Models

- 1 Plug in and turn 'On' the printer.
- 2 Place fanfold ticket stock in the bottom of the enclosure, bring the stock up to the Media Guides. (The TOF Mark should be facing away from the Printhead Latch; see Section 4.) Ensure that the Printhead Latch is locked.



- 3 Loosen the Thumbscrew and adjust the Media Guides to fit the width of the ticket stock as described in Step 5 of Section 3.2.1.
- 4 Slide the ticket stock through the Media Guides. The motor will start; continue feeding the tickets. The printer will grab the leading edge of the stock and complete the positioning process. If this process fails, see the note below.

**Notes:** If automatic loading fails to occur, see the note at the end of Section 3.2.1.

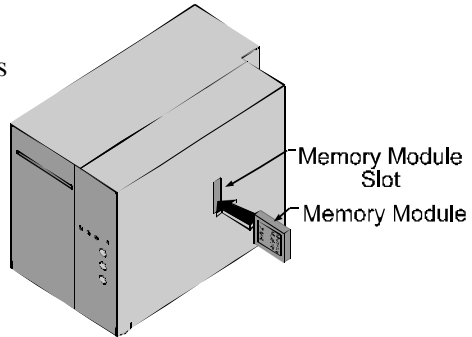
If the ticket did not feed to a proper position, the TOF Sensor may need adjustment; see Section 4 for details.

## 3.3 Installing a Memory Module

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Optional Flash Memory Modules offer convenient, non-volatile storage of formats, fonts and graphics. Refer to the *DPL Programmer's Manual* (part number 88-2051-01) for programming and use details. To install a module:

- 1 Turn 'Off' the printer.
- 2 Place the Memory Module's 'write protect' switch into the desired position (in the 'On' position the module cannot be written to).
- 3 Carefully insert the Memory Module into the Memory Module Slot.
- 4 Turn the printer 'On'.

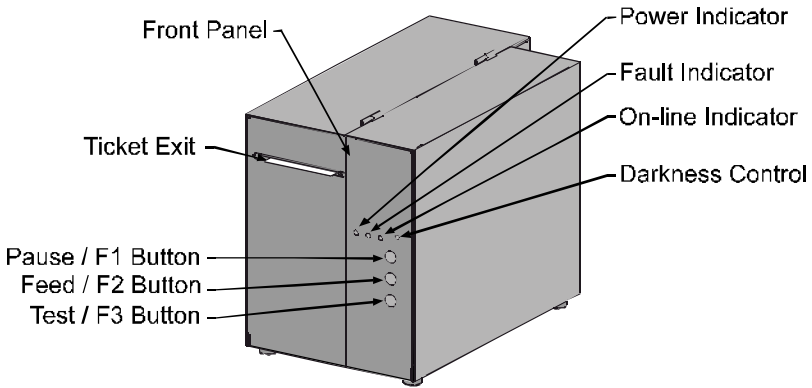


To avoid damage to the Memory Module or the printer, only use modules designed for this printer and always turn the printer 'Off' before inserting or removing the module.

### 3.4 Using the Front Panel

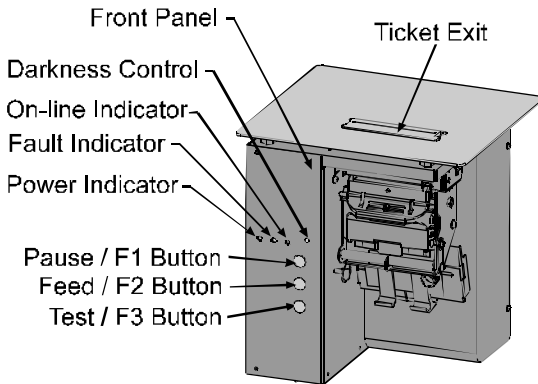
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The Front Panel on both models is comprised of a ticket exit, darkness control, three indicator lights, and three dual-purpose buttons.



**ST Models**

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**SV Models**

*(Continued next page)*



## **Ticket Exit**

The printed tickets are expelled from this opening.

## **Darkness Control**

The Darkness Control will adjust the darkness of the printing on the tickets: turning the control clockwise darkens the print and turning the control counterclockwise lightens the print. This darkness function can also be controlled through software commands.

## **Indicators**

For a brief period (approximately 20 seconds) after power-up, all three indicators will remain on while the printer performs internal diagnostics.

**POWER:** Turning 'On' the power switch lights this indicator.

**FAULT:** During normal operation, this indicator will flash briefly as the printer receives data from the host system; however, if a fault is detected this indicator stays on. A fault can have several different causes; see Section 5 for details.

**ON-LINE:** In the on-line mode, this indicator lights to denote that the printer is ready to accept data. Pressing the PAUSE button while tickets remain to print causes the indicator to flash repeatedly. This indicator remains off in the off-line mode.

## **Dual-Purpose Buttons**

Depending upon the printer's mode, the buttons function as follows:

### **On-Line Mode Button Functions (the On-Line Indicator is 'On')**

**PAUSE:** Press this to temporarily stop printing (pause mode) or to enter the off-line mode.

Press this button in pause mode to resume printing from the point stopped; or, if in off-line mode press to return to the on-line mode.

**FEED:** Press this button to advance the ticket stock to the next print position.

**TEST:** This button is inactive in the on-line mode.

## **Power-Up and Off-Line Mode Button Functions (the On-Line Indicator is 'Off')**

- **F2:** Three functions:
  - (a) Press momentarily to advance ticket stock, or to manually load ticket stock.
  - (b) Press and hold during power-up to print a Configuration and Test Pattern Ticket, and enter Character Dump mode.
  - (c) Press and hold to enter the Operational Database Modification mode; see Section 4.3 for details.
  
- **F3:** Two functions:
  - (a) Press and hold to enter the Start of Print and Cut/Tear Adjustments; see Section 4.2 for details.
  - (b) Press momentarily to print an Internal Test Ticket; see Section 3.5.3.
  
- **F1 + F3:** Press these simultaneously to perform a Warm Reset and return to the on-line mode.
  
- **F1 + F2:** Press these simultaneously to print a Test Pattern Ticket; see Section 3.5.2.
  
- **F2 + F3:** Press these simultaneously to print a Configuration Ticket; see Section 3.5.1.
  
- **F1 + F2 + F3:** Press and hold these during power-up to reset the printer to the default settings; see Section 3.6.2.

## 3.5 Resident Formats

Stored within the memory are several ticket formats that provide useful setup, operational, and problem diagnosis information. Load stock that is at least 2 inches (51 mm) wide to capture all the data on these resident formats.

### 3.5.1 Configuration Ticket

The Configuration Ticket provides memory, firmware, and installed options information (depending upon the printer model, options, and age this information will vary). To print a Configuration Ticket:

- 1 With stock loaded, turn the printer 'On'.
- 2 Press the PAUSE button to enter the off-line mode.
- 3 Simultaneously press the F2 and F3 buttons.

Operational data is also provided: Basic setup including speed settings, Stock ID, and the start of print and cut/tear positions.

Counter Information provides time of operation and amount printed. (The Resettable Values counter can be used for tracking job data; see the *DPL Programmer's Manual* for details.)

The Input Values section indicates the Parser Mode setting; also included here are the sensor A-D values, which are used for internal system control functions.

```
SUN FEBRUARY 06, 2000 04:07 037
VER: S3210 2.10 08/02/00
ROM CHECKS.MS
U01 47-2457-02K
U02
U03
U04
SYSTEM RAM CHECKS_ _ _ _ GOOD
SYSTEM RAM SIZE_ _ _ _ 4096 KBYTES
SYSTEM RAM AVAIL_ _ _ _ 3349 KBYTES

CONFIGURATION
DTPL SERIAL PORT SELECTED
9600, 8, N
CUTTER EQUIP AUTO
PRINT SPEED 8.0 IPS
SLEW SPEED 8.0 IPS
BACK SPEED 3.0 IPS
STOCK ID C
START OF PRINT 4.33 in
CUT/TEAR POSITION 4.30 in
ROW ADJUST 0.00 in
COLUMN ADJUST 0.00 in

COUNTER INFORMATION
ABSOLUTE VALUES 1-21-2000
LENGTH_ _ _ _ 31092 INCHES
TIME_ _ _ _ 106 HOURS
RESETTABLE VALUES 1-21-2000
LENGTH_ _ _ _ 31092 INCHES
TIME_ _ _ _ 106 HOURS

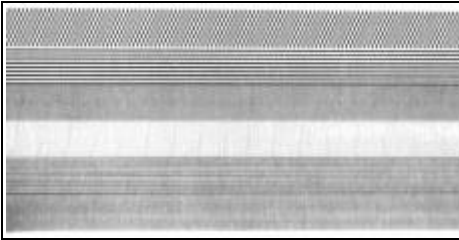
MEMORY CONFIGURATION
INTERVAL MODULE_ _ _ _ 128
SCALABLE FONTS_ _ _ _ 64
LABEL SIZE 0315:10013 IN

INPUT VALUES
POT_ _ _ _ 129
REF_ _ _ _ 82
TEMP_ _ _ _ 62
VOLT_ _ _ _ 5
STOCK_ _ _ _ 125
PARSER MODE_ _ _ _ DTP
TOP LOW_ _ _ _ 0
TOP DELTA_ _ _ _ 10
```

### 3.5.2 Test Pattern Ticket

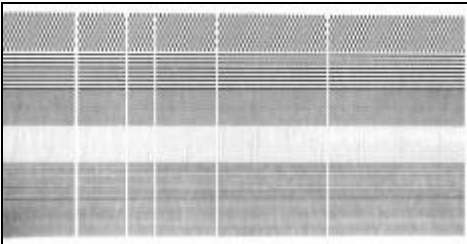
The Test Pattern Ticket is a resident format that can be used to determine general print quality and the condition of the printhead.

- ❶ With stock loaded, turn the printer 'On'.
- ❷ Press the PAUSE button to put the printer in the off-line mode.
- ❸ Simultaneously press the F1 and F2 buttons.



A "Good" Test Pattern Ticket:

*Consistent print patterns across the width of the ticket indicate that the printhead is operating normally.*



A "Faulty" Test Pattern Ticket:

*Streaks (vertical lines of missing print) indicate a dirty or faulty printhead. See Section 4.4.1 for cleaning instructions.*

**Note:** The Test Pattern Ticket is generated at the preset Darkness and Speed settings. Adjust these accordingly or use a ticket format generated from the host for final print quality assessments.

### 3.5.3 Internal Test Ticket

The Internal Test Ticket is another resident format that is another useful indicator of print quality. This ticket features various font sizes and barcodes (the sample below was printed using the ST-3210). To print an Internal Test Ticket:

- ❶ With stock loaded, turn the printer 'On'.
- ❷ Press the PAUSE button to enter the off-line mode.
- ❸ Press the F3 button.



## 3.6 Resetting the Printer

There are two different reset levels possible for the printer:

### 3.6.1 Warm Reset

To reset the printer and return to the on-line mode: Press the PAUSE button to go off-line and then press the F1 + F3 buttons simultaneously.

### 3.6.2 Factory Default Reset

To return the printer to default database settings (see the table below), perform the following procedure.

- ❶ Turn the printer 'Off'.
- ❷ Press and hold the PAUSE/F1, FEED/F2 and TEST/F3 buttons while turning 'On' the printer.
- ❸ After the Fault Indicator flashes (approximately 20 seconds), release all three buttons.

For verification, a Configuration Ticket can be printed. The printout will reflect default settings until new configuration data is sent to the printer.

Default Database Settings		
Function	ST/SV 3210 Values	ST/SV 3306 Values
Memory Configuration: <sup>[1]</sup> Internal Module Scalable Fonts	128 64	128 64
Character Set: (DPL parser mode only)	Standard	Standard
Cutter	Auto Detect	Auto Detect
Parser Mode: <sup>[2]</sup>	DTPL	DTPL
Print Speed: <sup>[3]</sup>	8	4
Slew Speed: <sup>[3]</sup>	8	4
Backup Speed: <sup>[3]</sup>	3	3
Stock ID	5	5
Print Width	1.89 inches (48 mm)	1.92 inches (49 mm)

<sup>[1]</sup>Memory allocations are represented in 4KB units each and modifiable only when in the DPL parser mode.

<sup>[2]</sup>The parser mode setting may arrive factory-configured to meet your application; otherwise see Section 4.3.1.

<sup>[3]</sup>All speed values given in Inches Per Second.

# 4

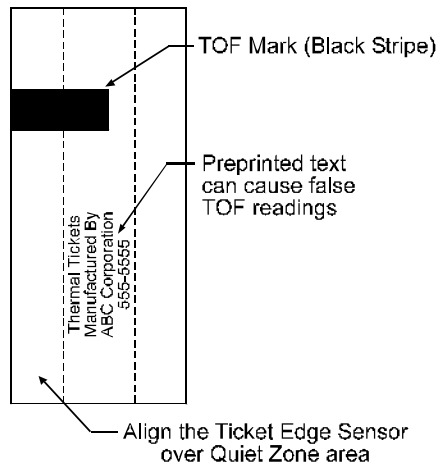
## Adjusting and Maintaining the Printer

This section details important adjustments, settings and periodic maintenance requirements that will ensure optimum printer performance.

### 4.0 TOF Sensor Adjustment

The TOF Sensor in the printer has two functions: (1) sensing the presence of ticket stock and (2) when using reflective stock, sensing the Top of Form (TOF) Mark on each ticket. If the ticket stock does not contain TOF Marks, DPL programming must be used to set the ticket size.

To advance tickets correctly, the sensor must be positioned under the TOF Mark and within in a Quiet Zone (an area free of preprinted text or logos); see Section 6 for stock requirements.

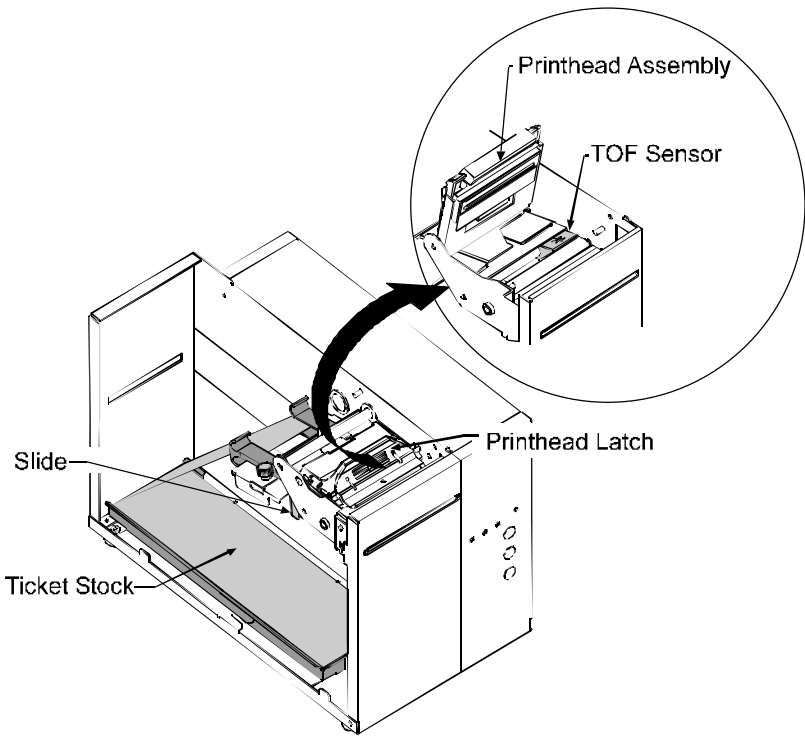


**Note:** Preprinted text and logos can cause false TOF readings.

Depending upon the printer model, the adjustment of the TOF Sensor differs slightly.

## 4.0.1 ST Model TOF Sensor Adjustment

- ➊ Insert the Key and unlock the Access Cover.
- ➋ Raise the Access Cover. (For convenience, the cover may also be removed by sliding it forward and then off.)
- ➌ Unlock the Printhead Latch and raise the Printhead Assembly.
- ➍ Grasp the Slide and move it 'in' or 'out' accordingly, so the position of TOF Sensor is underneath the TOF Mark and within a quiet zone area of the ticket stock.

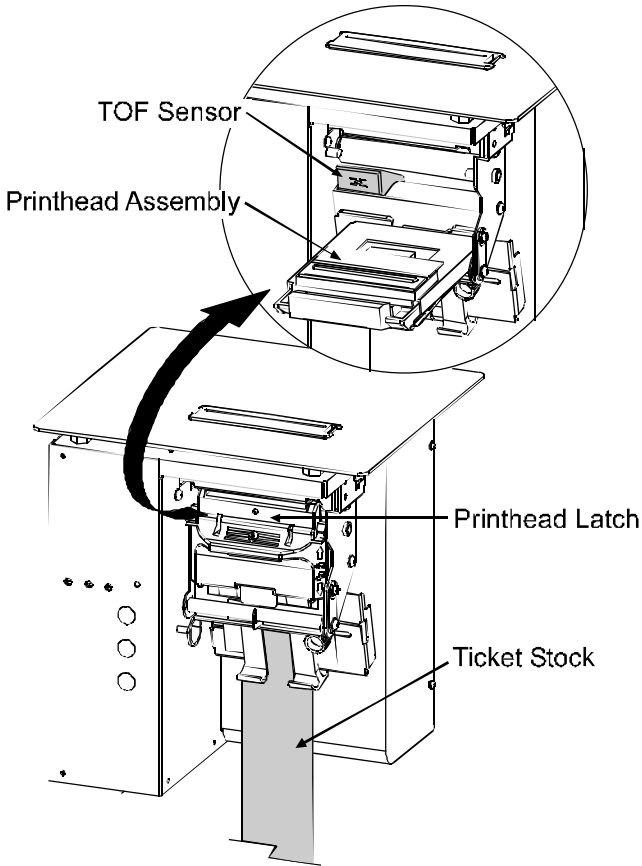


- ➎ Lower the Printhead Assembly and lock the Printhead Latch.
- ➏ Re-feed the ticket stock; see Section 3.2.
- ➐ Lower and lock the Access Cover.



## 4.0.2 SV Model TOF Sensor Adjustment

- 1 Unlock and raise the Printhead Assembly.
- 2 Grasp the TOF Sensor and move it 'in' or 'out' accordingly, to position the sensor underneath the TOF Mark and within a quiet zone area of the ticket stock.



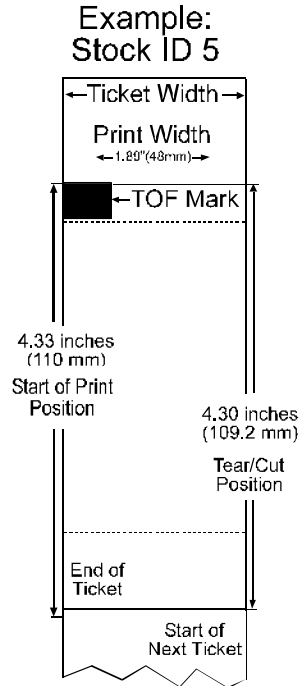
- 3 Lower the Printhead Assembly and lock the Printhead Latch.
- 4 Re-feed the ticket stock; see Section 3.2.

## 4.1 Stock ID Selections

The printer maintains a selection of 10 user modifiable stock setups. Each setup defaults to a specific print width, start print position and cut/tear position, where:

- The Print Width is the print distance across the ticket.
- The Start of Print Position is the distance, measured in inches, from the TOF Sensor to printhead burnline.
- The Cut/Tear Position is the distance, measured in inches, from the TOF Sensor to the cut (if equipped) or tear position of the printed ticket.

The Stock ID can be set using the Operational Database Modification procedure (see Section 4.3.1). As defined on the following page, Stock ID numbers 0 through 8 are not changeable through host commands; however, Stock ID 9 will allow host commands to override the default settings.



If none of the listed Stock ID selections fit your media, select the Stock ID that is closest to the physical dimensions of your stock and then modify the Start of Print and Cut/Tear positions (see Section 4.2). All changes can be saved to the Stock ID, allowing commonly used formats to be recalled. To revert to the default values, reset the printer (see Section 3.6).

The table below lists the default settings, according to the printer model, for each Stock ID number.

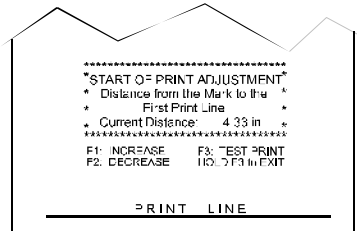
<b>Stock ID Default Settings</b>				
<b>Stock ID</b>	<b>Print Width</b>		<b>Start of Print Position</b>	<b>Cut/Tear Position*</b>
	<b>3210 Models</b>	<b>3306 Models</b>		
0	3.15" (80.0 mm)	3.20" (81.3 mm)	.07" (1.8 mm)	.05" (1.3 mm)
1	3.15" (80.0 mm)	3.20" (81.3 mm)	4.28" (108.7 mm)	4.26" (108.2 mm)
2	3.15" (80.0 mm)	3.20" (81.3 mm)	1.67" (42.4 mm)	1.65" (41.9 mm)
3	3.15" (80.0 mm)	3.20" (81.3 mm)	.02" (.5 mm)	0
4	1.89" (48.0 mm)	1.81" (46.0 mm)	.02" (.5 mm)	0
5	1.89" (48.0 mm)	1.92" (48.8 mm)	4.33" (110.0 mm)	4.30" (109.2 mm)
6	1.89" (48.0 mm)	1.92" (48.8 mm)	1.70" (43.2 mm)	1.67" (42.4 mm)
7	1.89" (48.0 mm)	1.92" (48.8 mm)	1.45" (36.8 mm)	1.42" (36.1 mm)
8	2.20" (55.9 mm)	2.24" (56.9 mm)	.07" (1.8 mm)	.05" (1.3 mm)
9	3.15" (80.0 mm)	3.20" (81.3 mm)	0	0

\*For SV Model printers using the Tear Bar: Add .07 inch (1.8mm) to these distances for Top Plate clearance of the ticket.

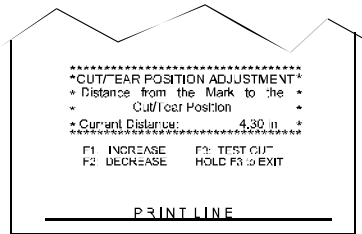
## 4.2 Start of Print & Cut/Tear Adjustment

If none of the preset Stock ID parameters meet the needs of your application, then the Start of Print (SOP) and Cut/Tear (C/T) Adjustments can be used to visually set the required positions. To begin:

- 1 If on-line, press the PAUSE button to place the printer off-line.
- 2 Press and hold (approximately 6 seconds) the F3 button until the On-Line Indicator is lit then release. The SOP setup is first, to adjust:



- Press the F1 button to increase the current distance (pressing and holding will rapidly move the ticket).
  - Press the F2 button to decrease the current distance (pressing and holding will rapidly move the ticket).
  - Press the F3 button to print a ticket showing the new setting.
- 3 After completing the SOP adjustment, press and hold (approximately 6 seconds) the F3 button until the On-Line Indicator is lit then release.
  - 4 Next, adjust the Cut/Tear position using the F1, F2 and F3 buttons as described above.
  - 5 After completing the Cut/Tear adjustment, return the printer to the off-line mode by pressing and holding the F3 button until the On-Line Indicator is lit then release.
  - 6 Press the PAUSE button to return to the on-line mode.



**Notes:** This procedure must be performed in its entirety, even when no change is desired for one of the settings.

After completing the adjustments, always confirm the new settings by printing several test tickets.

**If cutting, the cut position on the ticket should occur just behind the perforation, never in front of the perforation.**

## 4.3 Operational Database Modification

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The operational database for the printer, which contains the parser mode setting and other important printer parameters, can be changed using the front panel. To change the Operational Database settings:

- ❶ If on-line, press the PAUSE button to place the printer off-line.
- ❷ Press and hold the F2 button until the On-Line Indicator is lit (approximately six seconds) then release. To adjust:
  - Press the F1 button to advance to the next setting of the current item, print the selection, and present it for acceptance.
  - Press the F2 button to accept the presented item and value for use then print and present the next item, or press and hold the F2 button (until the On-Line Indicator is lit) to cause a Warm Reset, apply the new settings, and place the printer on-line.
  - Press the F3 button to return to the previous setting for the current item, print the selection, and present it for acceptance.

The following pages contain tables listing the settings and values that are accessible and modifiable through this method, while next subsection is included to provide a systematic example of the database modification procedure.

### Operational Database: ST/SV-3210 Models

Parameter	Description	Settings
Stock ID	Stock ID number	0-9 (see Section 4.1)
Label (Ticket) Width	Width of the ticket stock used for printing.	1.89 inches (48.0 mm) 2.04 inches (51.8 mm) 2.20 inches (55.9 mm) 2.36 inches (59.9 mm) 2.52 inches (64.0 mm) 2.67 inches (67.8 mm) 2.83 inches (71.9 mm) 2.99 inches (75.9 mm) 3.15 inches (80.0 mm)
Parser Mode	Sets the emulation of the printer	DTPL or DPL
Print Speed*	Speed during printing	4-10 IPS
Slew Speed*	Speed during feeding	4-10 IPS
Backup Speed*	Speed during backup	3-5 IPS
Baud Rate	Serial communication speed	600, 1200, 2400, 4800, 9600, 19.2K, 38.4K
Word Length	Communicated word length	7-bit word (even parity) 8-bit word (no parity)
Cutter Equip	Presence of the optional cutter will be sensed automatically.	AUTO
Row Adjust**	Horizontal adjustment of the point where printing begins.	-2.55 – 2.55 inches (-64.8 mm – 64.8 mm)
Col Adjust**	Vertical adjustment of the point where printing begins.	-2.55 – 2.55 inches (-64.8 mm – 64.8 mm)
SOP Adjust	Start of Print Position Adjustment (see Section 4.2)	0 – 10.00 inches (0 – 254 mm)
C/T Adjust	Cut/Tear Position Adjustment (see Section 4.2)	0 – 10.00 inches (0 – 254 mm)

\*Rates given in Inches Per Second.

\*\* Valid in the DTPL Parser Mode only.

## Operational Database: ST/SV-3306 Models

Parameter	Description	Settings
Stock ID	Stock ID number	0-9 (see Section 4.1)
Label Width	Width of the ticket stock used for printing.	1.81 inches (46.0 mm) 1.92 inches (48.8 mm) 2.03 inches (51.6 mm) 2.14 inches (54.4 mm) 2.24 inches (56.9 mm) 2.35 inches (59.7 mm) 2.46 inches (62.5 mm) 2.56 inches (65.0 mm) 2.67 inches (67.8 mm) 2.88 inches (73.2 mm) 2.99 inches (75.9 mm) 3.10 inches (78.7 mm) 3.20 inches (81.3 mm)
Parser Mode	Sets the emulation of the printer	DTPL or DPL
Print Speed*	Speed during printing	2-6 IPS
Slew Speed*	Speed during feeding	2-6 IPS
Backup Speed*	Speed during backup	3-5 IPS
Baud Rate	Serial communication speed	600, 1200, 2400, 4800, 9600, 19.2K, 38.4K
Word Length	Communicated word length	7-bit word (even parity) <b>8-bit word (no parit y)</b>
Cutter Equip	Presence of the optional cutter will be sensed automatically.	AUTO
Row Adjust**	Horizontal adjustment of the point where printing begins.	-2.55 – 2.55 inches (-64.8 mm – 64.8 mm)
Col Adjust**	Vertical adjustment of the point where printing begins.	-2.55 – 2.55 inches (-64.8 mm – 64.8 mm)
SOP Adjust	Start of Print Position Adjustment (see Section 4.2)	0 – 10.00 inches (0 – 254 mm)
C/T Adjust	Cut/Tear Position Adjustment (see Section 4.2)	0 – 10.00 inches (0 – 254 mm)

\*Rates given in Inches Per Second.

\*\* Valid in the DTPL Parser Mode only.

### 4.3.1 Database Modification Example

This section details the modification of an Operational Database parameter. The following example increases the printing speed parameter from 6 to 8 IPS on the ST-3210; however, using the same basic procedure, any of the parameters can be changed regardless of the printer model.

- 1 If on-line, press the PAUSE button to place the printer off-line.
- 2 Press and hold the F2 button until the On-Line Indicator is lit (approximately six seconds) then release.

*The printer will turn off the On-Line Indicator and print:*

<b>STOCK ID</b>	=	<b>5</b>
-----------------	---	----------

- 3 Press the F2 button three times (allow time for printing following each button press), to arrive at the Print Speed parameter.

*The printer will print:*

<b>PRINT SPEED</b>	=	<b>6 IPS</b>
<b>PARSER MODE</b>	=	<b>DTPL</b>
<b>TICKET WIDTH</b>	=	<b>189 (48 MM)</b>
<b>STOCK ID</b>	=	<b>5</b>

- 4 Press the F1 button two times (again, allow time for printing following each button press), to arrive at the 8 IPS setting.

*The printer will print:*

<b>PRINT SPEED</b>	=	<b>8 IPS</b>
<b>PRINT SPEED</b>	=	<b>7 IPS</b>
<b>PRINT SPEED</b>	=	<b>6 IPS</b>
<b>PARSER MODE</b>	=	<b>DTPL</b>
<b>TICKET WIDTH</b>	=	<b>189 (48 MM)</b>
<b>STOCK ID</b>	=	<b>5</b>

- 5 To save the changes and exit the mode, press and hold the F2 button until the On-Line Indicator is lit (approximately six seconds) then release.


The parameter changes can be confirmed by printing a Configuration Ticket; see Section 3.5.1.



## 4.4 Maintenance

Routine maintenance will ensure the optimum performance of the printer. The following table outlines the recommended cleaning intervals, while the items listed below will help do the job safely and effectively:

- Isopropyl alcohol
- Cotton swabs
- A clean, lint-free cloth
- Soft-bristle brush
- Soapy water/mild detergent
- Compressed air

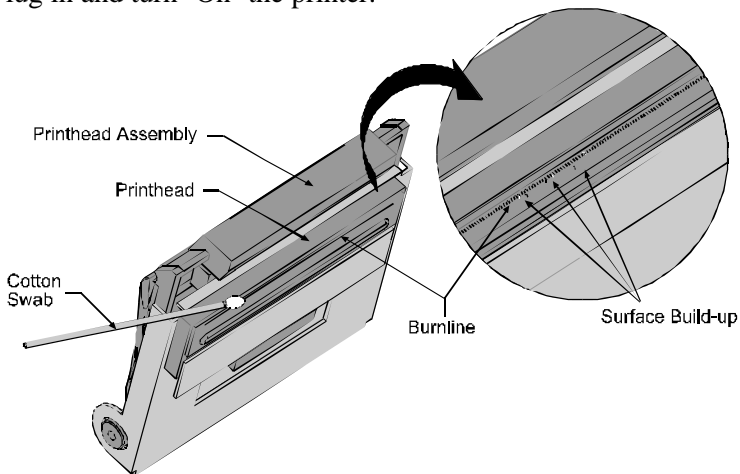
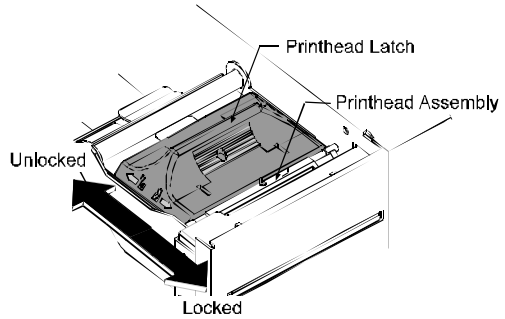
 <b>CAUTION</b>	<p>For your continued safety and to avoid damage to the unit, always turn 'Off' and unplug the printer before servicing.</p> <p>Isopropyl alcohol is a flammable liquid, always take the proper precautions when using this solvent.</p>
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Recommended Cleaning Schedule		
Area	Method	Interval
Printhead	A cotton swab dampened with isopropyl alcohol, wiped across the printhead until all build-up is removed. See Section 4.4.1.	After each roll or box of tickets.
Platen Roller	A cotton swab dampened with isopropyl alcohol wiped across the platen roller. Rotate the roller by hand and repeat to clean entire surface. See Section 4.4.2.	After each roll or box of tickets.
TOF Sensor	A brush or compressed air (and isopropyl alcohol, if necessary) to remove all dust build-up. See Section 4.4.3.	Monthly or as needed.
Ticket Detect Sensor	Compressed air to remove all dust build-up. See Section 4.4.4.	As needed.
Ticket Path	A brush or compressed air to remove all build-up along the paper path.	As needed.
Interior <i>(ST Models only)</i>	A brush or compressed air to remove all build-up in the ticket compartment. See Section 4.4.5.	As needed.
Exterior	A soft cloth dampened with a mild detergent to remove all build-up. See Section 4.4.6.	As needed.
Cutter <i>(optional equipment)</i>	A brush or compressed air to remove all build-up.	As needed.

## 4.4.1 Cleaning the Printhead

Declining print quality (i.e., dropouts, streaking, or smudging) is usually caused by a surface build-up of dirt on the printhead; see Section 3.5.2 for an example. Left unattended, this build-up can lead to permanent printhead damage. To clean:

- 1 Turn 'Off' and unplug the printer.
- 2 *ST Models:* Raise the access cover; see Section 3.2.
- 3 Slide the Printhead Latch to the Unlocked position then raise the Printhead Assembly.
- 4 Gently clean the Printhead, including the Burnline, using a cotton swab moistened with isopropyl alcohol to remove all build-up.
- 5 Allow to dry; then lower the Printhead Assembly and slide the Printhead Latch forward to the Locked position.
- 6 *ST Models:* Close the access cover.
- 7 Plug in and turn 'On' the printer.

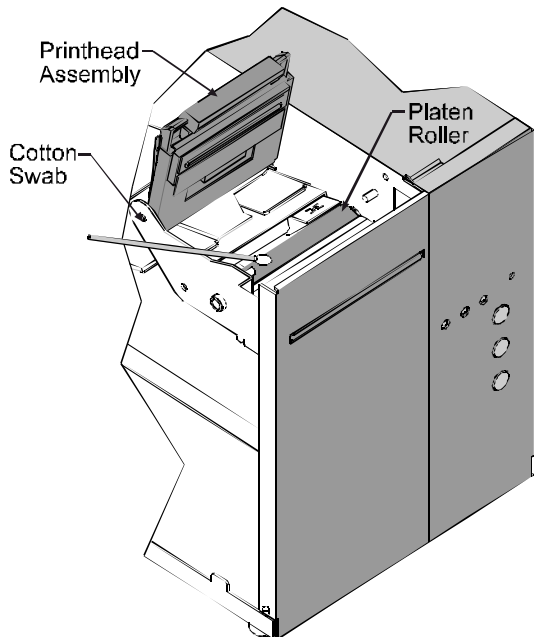


**Note:** NEVER use a sharp object to clean the Printhead.

## 4.4.2 Cleaning the Platen Roller

Print quality can decline if the platen roller becomes contaminated with paper dust, grit or adhesive. When this build-up is not removed, it can cause abrasive damage to the printhead. To clean the Platen Roller:

- ❶ Turn 'Off' and unplug the printer.
- ❷ *ST Models:* Raise the access cover; see Section 3.2.
- ❸ Slide the printhead latch to the unlocked position, raise the Printhead Assembly (see Section 4.4.1) and remove the ticket stock.
- ❹ Using a cotton swab or lint-free cloth moistened with isopropyl alcohol, remove all debris from the Platen Roller. Manually rotate the roller and repeat to clean the entire surface.
- ❺ Allow the Platen Roller to dry, then lower the Printhead Assembly and slide the printhead latch into the locked position.
- ❻ Plug in and turn 'On' the printer.
- ❼ Load ticket stock; see Section 3.2.
- ❽ *ST Models:* Close the access cover.

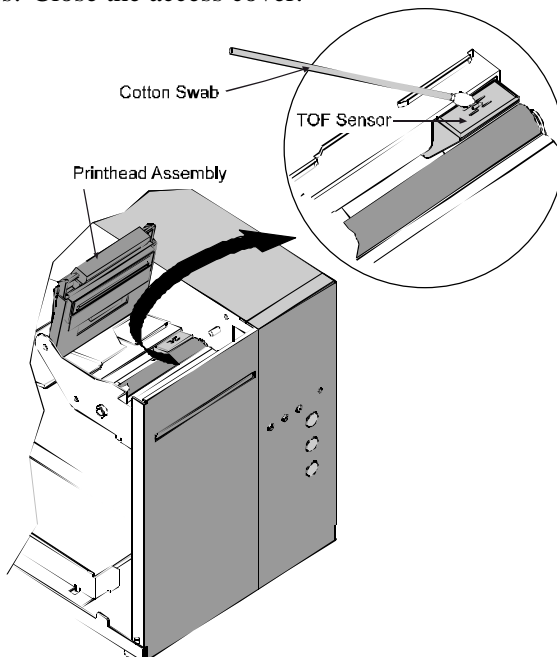


**Note:** NEVER use a sharp object to clean the Platen Roller.

### 4.4.3 TOF Sensor Cleaning

If the TOF Sensor becomes blocked with paper particles, Top of Form detection can be inconsistent or fail completely. To clean the sensor:

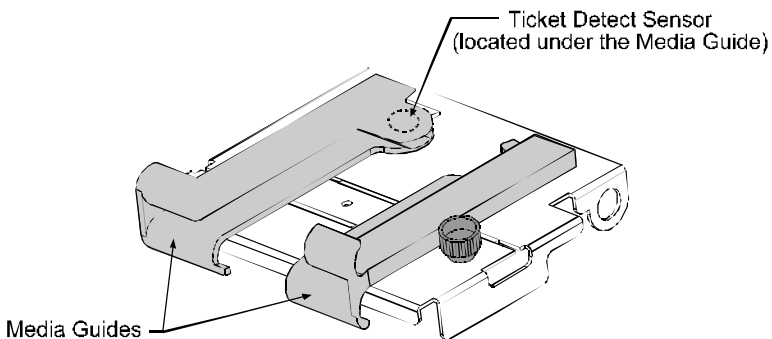
- ❶ Turn 'Off' and unplug the printer.
- ❷ *ST Models:* Raise the access cover; see Section 3.2.
- ❸ Slide the printhead latch to the unlocked position, raise the Printhead Assembly (see Section 4.4.1) and remove the ticket stock.
- ❹ Using a soft brush or compressed air, remove any debris accumulated on the TOF Sensor. (If necessary, an isopropyl alcohol dampened cotton swab can be used to remove build-up.)
- ❺ If necessary allow the sensor to dry, then lower the Printhead Assembly and slide the printhead latch into the locked position.
- ❻ Plug in and turn 'On' the printer.
- ❼ Load ticket stock (see Section 3.2).
- ❽ *ST Models:* Close the access cover.



## 4.4.4 Ticket Detect Sensor Cleaning

The Ticket Detect Sensor initiates the auto-loading process by signaling the presence of ticket stock within the Media Guides. If the sensor becomes blocked with paper particles, ticket feeding problems can occur. To clean the sensor:

- ❶ Turn 'Off' and unplug the printer.
- ❷ *ST Models:* Raise the access cover; see Section 3.2.
- ❸ Slide the printhead latch to the unlocked position, raise the printhead assembly (see Section 4.4.1) and remove the ticket stock.
- ❹ Using compressed air, direct the airflow between the Media Guide and under the area indicated by the dotted line in the drawing below. (The sensor resides in a small aperture within the Media Guide.)
- ❺ Lower the Printhead Assembly and slide the printhead latch into the locked position.
- ❻ Plug in and turn 'On' the printer.
- ❼ Load ticket stock (see Section 3.2).
- ❽ *ST Models:* Close the access cover.

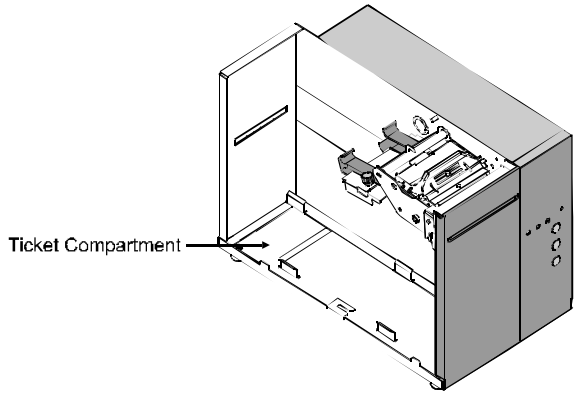


## 4.4.5 Interior Cleaning

*ST Models only:* Ticket Compartment Cleaning

During normal operation, paper particles from the ticket stock accumulate inside the printer. These particles can stick to the ticket and cause voids in the print, reducing print quality. To clean the interior of the printer:

- ❶ Turn 'Off' and unplug the printer.
- ❷ Raise the access cover; see Section 3.2.
- ❸ Slide the printhead latch to the unlocked position, raise the Printhead Assembly (see Section 4.4.1) and remove the ticket stock.
- ❹ Using a soft brush or compressed air, remove all debris accumulated inside the ticket compartment.
- ❺ Plug in and turn 'On' the printer.
- ❻ Load ticket stock (see Section 3.2).
- ❼ Close the access cover.



## 4.4.6 Exterior Surface Cleaning

The exterior surface can be cleaned using a general purpose cleaner and a soft cloth or sponge. Never use abrasive cleansers or solvents. To clean:

- ❶ Turn 'Off' and unplug the printer.
- ❷ Gently wipe the exterior surfaces until clean and then allow time to dry.
- ❸ Plug in and turn 'On' the printer.



# Troubleshooting

## 5.0 Troubleshooting Tips

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This section addresses common problems and suggests solutions. While not all situations can be addressed, many suggestions may prove helpful; however, if a problem persists or is not covered in this text, contact Datamax Technical Support or a qualified service technician.

**Note:** If the Fault Indicator is lit, the FEED button must be pressed to clear the alarm after completing the corrective action.

If experiencing this problem...	Try this solution...
The printer fails to power-up:	<ul style="list-style-type: none"><li>• The AC voltage configuration for the printer may be incorrect; see Section 3.0. (If connected while incorrectly configured, the line fuse may be blown as a result; call for service.)</li><li>• The AC power cord may be faulty; try another cord.</li><li>• The AC outlet may be faulty; try moving the printer to another wall outlet.</li></ul>
All three indicator lights are 'On':	<ul style="list-style-type: none"><li>• Ensure that the printer has been configured to match the AC line voltage; see Section 3.0.</li><li>• The printer has failed to initialize; call for service.</li></ul>

<b>If experiencing this problem...</b>	<b>Try this solution...</b>
No Communications:	<ul style="list-style-type: none"> <li>• The parser mode setting between the printer and host may not match; reconfigure, see Section 4.3.</li> <li>• The communication parameters between the printer and host may not match; reconfigure to match, see Section 4.3.</li> <li>• The interface connection may be faulty or the cable may be incorrect or faulty; check the connections and see Appendix C for cable requirements.</li> </ul>
Poor print quality or no printing:	<ul style="list-style-type: none"> <li>• The printhead latch may not be locked; lock the latch. See Section 3.2.</li> <li>• The printhead may be dirty; clean per Section 4.4.1.</li> <li>• The heat setting may be incorrect for the stock. Use the Darkness Control (see Section 3.4), or adjust the heat setting through the software program (software will override the Front Panel setting). In addition, print speed can also be used to darken or lighten print.</li> <li>• The type of ticket stock may be incorrect (i.e., thermal transfer).</li> <li>• The parser mode setting between the printer and the host may not match; reconfigure for the same emulation, see Section 4.3.</li> <li>• The printhead latch may not be locked; lock the latch. See Section 3.2.</li> <li>• The printhead may be dirty; clean per Section 4.4.1.</li> </ul>



<b>If experiencing this problem...</b>	<b>Try this solution...</b>
<p>After printing the ticket, the Fault Indicator lights:</p>	<ul style="list-style-type: none"> <li>• If cutter equipped, this may indicate a cutter fault; call for service.</li> <li>• If not cutter equipped:               <ul style="list-style-type: none"> <li>a) Possible programming problem.</li> <li>b) Possible mechanical problem – try pressing the FEED button to clear the fault: if no response, call for service. Otherwise, the positioning of the TOF Sensor may need an adjustment (see Section 4.0).</li> </ul> </li> </ul>
<p>The printer feeds when no ticket stock is present or :</p>	<ul style="list-style-type: none"> <li>• The Ticket Detect Sensor may be obstructed; clean the sensor per Section 4.4.4.</li> </ul>
<p>The printer feeds approximately 20 inches (51 cm) of ticket stock then the Fault Indicator lights:</p>	<ul style="list-style-type: none"> <li>• The position of the TOF Sensor may adjusting; see Section 4.0.</li> <li>• The TOF Sensor may be obstructed; clean the sensor, see Section 4.4.3.</li> <li>• The TOF Mark on the ticket stock may not meet specifications; see Section 6.</li> <li>• Ticket stock may be mounted upside down; reinstall correctly, see Section 3.2.</li> </ul>
<p>Tickets sometimes jam and/or the printing is not square to the ticket borders:</p>	<ul style="list-style-type: none"> <li>• The printhead may not be latched; see Section 4.4.1.</li> <li>• The Media Guides may be incorrectly positioned; see Section 3.2.</li> <li>• If cutter equipped, the cutter may be malfunctioning; call for service.</li> </ul>

<b>If experiencing this problem...</b>	<b>Try this solution...</b>
<p>The printer does not print formats sent from the host, but the Fault Indicator remains off:</p>	<ul style="list-style-type: none"> <li>• The parser mode setting between the printer and host may not match; reconfigure, see Section 4.3.1.</li> <li>• The communication parameters between the printer and host may not match; reconfigure, see Section 4.3.1.</li> <li>• The interface connection may be faulty or the cable may be incorrect or faulty; check the connections and see Appendix C for cable requirements.</li> <li>• The printer may be in ‘character dump mode’ (see Section 5.1); cycle the printer power ‘Off’ and ‘On’.</li> </ul>
<p>Erratic print (strange characters instead of ticket formats are printed):</p>	<ul style="list-style-type: none"> <li>• The printer may be in ‘hex dump mode’; see Section 5.1.</li> <li>• If using the serial interface port, check the host and printer communications settings; see Section 3.5.1.</li> </ul>
<p>The cutter fails to cut, but the Fault Indicator remains off:</p>	<p>First verify the cutter has been detected by printing a Configuration Ticket; see Section 3.5.1:</p> <ul style="list-style-type: none"> <li>• If the cutter has not been detected, call for service; otherwise, verify that the cut function has been selected in the software program.</li> </ul>

## 5.1 Hex Dump Mode

---

The hex dump mode is a useful tool for diagnosing problems, including communication and programming syntax errors. This mode allows a comparison of input strings to output data. Repeatedly sending a format can uncover handshaking problems (identified by sections of missing data in the output string). To decode this hexadecimal code and its printable ASCII equivalents, the *DPL Programmer's Manual* or the *DTPL Programmer's Manual* is an essential reference. As a final note, many software programs use bit mapping to construct the ticket, making diagnosis difficult. Contact a Datamax Technical Support Representative with any questions.

To enter the Hex Dump Mode:

- 1 With ticket stock loaded, turn 'Off' the printer.
- 2 Press and hold the FEED button while turning 'On' the printer. Continue to hold the button until the tickets feed forward.

After a brief hesitation, Configuration and Test Pattern Tickets will be printed. After this, any data reaching the printer's input buffer will be output in hex/ASCII data, as follows:

```
0000 3C 6E 3E 3C 50 31 3E 3C <n><P1><
0008 4E 52 3E 3C 52 43 36 30 NR><RC60
0010 30 2C 31 36 30 35 3E 1B 0.1605>.
0018 63 3C 54 46 3E 1B 3C 70 c<TF>.<P
0020 63 78 3E 3C 47 32 36 33 cx><G263
0028 35 3E 0A 05 01 01 00 00 5>.....
0030 00 00 99 00 B9 00 2C 01 .....
0038 2C 01 0F 0F 0F 0E 0E 0E .....
```

**Note:** To exit the hex dump mode, cycle the printer power 'Off' and 'On'.





# Specifications

## 6.0 Specifications

---

### Communications

Character Set:	ANSI ASCII
Parallel Interface Port:	Centronics® type 36-pin
Serial Interface Port:	RS-232c and RS-422; DB25
Baud Rates:	600, 1200, 2400, 4800, 9600, 19.2K and 38.4K
Word Length and Parity:	Selectable data format: 7-bit word with even parity, or 8-bit word with no parity
Handshaking:	Xon/Xoff and CTS & DTR.
Input Buffer:	Serial: Approximately 6 Kbytes. XOFF is transmitted and DTR goes low with 750 bytes available in the buffer. XON is transmitted and DTR goes high when 1000 bytes remain in the buffer. Characters are transmitted without parity from the printer. Parallel: 1KBytes.

### Control (Front) Panel

Indicators:	Power, Fault and On-Line.
Buttons:	Dual Purpose: Pause/F1; Feed/F2; and Test/F3
Potentiometer:	0-20 darkness settings

### Electrical

Input Voltage, Configurable:	105 – 125 VAC, or 210 – 250 VAC; 47-63 Hz.
Circuit Protection:	115 VAC: 1.6A Time Delay Fuse. 230 VAC: 0.8A Time Delay Fuse.
Grounding:	Unit must be connected to a properly grounded receptacle.

## Environmental

Operating Temperature:	40°F to 100°F (4°C to 38°C)
Storage Temperature:	32°F to 120°F (0°C to 49°C)
Humidity:	10% to 95% non-condensing
Ventilation:	Free air movement
Dust:	Non-conducting, non-corrosive
Electromagnetic Radiation:	Moderate RF fields can be tolerated

## Fonts/Barcodes (See Appendix B for examples)

Resident Fonts (parser mode setting dependent):	DPL mode: Nine alphanumeric fonts from 0.035"H (0.89mm) to 0.64"H (16mm), including OCR-A and OCR-B; CG Triumvirate Bitmap Font - DPL 9 in 4, 5, 6, 8, 10, 12, 14, 18, 24, 30, 36 point size fonts (point sizes 4 and 5 are available for ST/SV 3306 models only).  DTPL mode: 13 different typefaces and sizes.
Optional Fonts:	AGFA Scalable Font Engine supporting downloads of Intellifont™ and True Type Font formats.
Font Expansion and Rotations:	All fonts expandable vertically and horizontally up to 8x; fonts and graphics can be printed in four directions: 0°, 90°, 180° and 270°.
Barcode Symbologies (parser mode setting dependent):	DPL mode: Code 39, Interleaved 2 of 5, Code 128 (subsets A, B, and C), Codabar, LOGMARS, UPC-A, UPC-E, UPC 2 & 5 digit addendum's, EAN-8, EAN-13, EAN 2 & 5 digit addendum's, UPC random weight, Code 93, MSI Plessey, Universal Shipping Container Symbology, Code 128 MOD 43, Postnet, USS/EAN-128 random weight, Telepen, UPS MaxiCode modes 2 & 3 (AIM specification, June 18,1996) and PDF417.  DTPL mode: Code 39, Code 128 (subsets A, B, and C), Interleaved 2 of 5, UPC-A, EAN-8, EAN-13, and Codabar.

## Mechanical

### Width:

ST/SV-3210	8.14 inches (20.7 cm)
ST/SV-3306	8.05 inches (20.4 cm)

### Depth:

ST/SV-3210	14 inches (35.6 cm)
ST/SV-3306	7.65 inches (19.4 cm)

### Height:

ST/SV-3210	10.5 inches (26.7 cm)
ST/SV-3306	10.5 inches (26.7 cm)

### Weight:

ST Models	22 pounds (10 kg)
SV Models	18.8 pounds (8.46 kg)

### Top Plate:

SV Models only	9.71 inches (24.7 cm) W X 8.60 inches (21.8 cm) DP X .09 inch (2.27 mm) THK
----------------	---

### Operating Temperature:

40° F to 100° F (4° C to 38° C)

## Print Engine

### Print Type:

Direct Thermal

### Print Resolution:\*

ST/SV-3210	203 DPI (8 dots/mm)
ST/SV-3306	300 DPI (11.8 dots/mm)

### Nominal Printhead Dot Size:

ST/SV-3210	.0043 inch X .0052 inch (.108 mm X .132 mm)
ST/SV-3306	.0027 inch X .0043 inch (.069 mm X .110 mm)

### Maximum Print Width:

ST/SV-3210	3.15 inches (80 mm)
ST/SV-3306	3.20 inches (81.3 mm)

### Print Speed:\*\*

ST/SV-3210	3.5 – 10 IPS (89 – 254 mm per second)
ST/SV-3306	3.5 – 6 IPS (89 – 152 mmpps)

### Slew Speed:\*\*

ST/SV-3210	2.0 – 10.0 IPS (51 – 254 mmpps)
ST/SV-3306	2.0 – 6.0 IPS (51 – 152 mmpps)

### Back Speed:\*\*

2.0 – 5.0 IPS (51 – 127 mmpps)

### Print Length Range:

12 inches (304.8 mm) at default settings.

### Ticket Sensing:

Moveable sensor

\* Given in Dots Per Inch

\*\* Given in Inches Per Second

## Print Engine (continued)

Maximum Fields and Characters Per Ticket:	600 fields with 16,000 characters per ticket
Tear Bar:	Tear up/down
DRAM Memory:	4 MB
Internal Module Size:	512 KB (default)
Scalable Module Size:	256 KB (default)
EPROM Memory:	1 MB

## Ticket Stock Requirements

Type:	Fan-fold and roll (if option equipped) reflective <sup>[1]</sup> direct thermal stock.
Maximum Ticket Width:	3.25 inches (82.55 mm)
Minimum Ticket Width:	1.9 inches (48.2 mm)
Ticket Thickness Range: (if Cutter option equipped):	.005 inch – .010 inch (.13 mm – .25 mm) .025 inch – .008 inch (.06 mm – .2 mm)
Fanfold Ticket Length (ST models only):	11.375 inches (289 mm) maximum for interior placement of the stock.
Fanfold Ticket Height (ST models only):	4.5 inches (114.3 mm) maximum for interior placement of the stock.
Roll Capacity (if Roll Hanger option equipped):	7.0-inch (177.8 mm) maximum outer diameter rolls of ticket stock wound with the TOF Marks facing inward, on 2.0-inch (50.8 mm) diameter cores.

<sup>[1]</sup>The reflective TOF Mark must be black, carbon based, and placed on the backside of the stock with a minimum size of .125 inch (3.175 mm) long (direction of travel) by .5 inch (12.7 mm) wide, with the center falling between .235 inch (6 mm) and 3.03 inches (77 mm) from the edge while allowing adequate Quiet Zone space (see the diagram in Section 6.1). The reflectance of the mark shall be less than 10% at wavelengths of 950 and 640 nm.



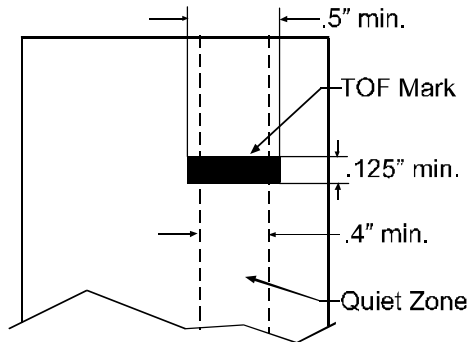
## 6.1 Approved Ticket Stocks

For optimum print quality and maximum printhead life, Datamax recommends using a ticket stock from the following table. Contact a Datamax Media Representative at (407) 523-5650 with any questions regarding your specific application.

Manufacturer	Material	Comment
Ricoh	150 TLA 190	Best quality for high-speed printing, 10 inches per second (IPS), and high quality applications. Recommended for use with the ST/SV-3306.
Ricoh	120 TLA 1901	Mid range. Best with print speeds up to 8 IPS.
Kanzaki	KT-370	Mid range. Best with print speeds up to 5 IPS.

If you choose to use another stock, ensure it meets the requirements listed in the Section 6.0, in addition to the following:

- The ticket stock should have a minimum .4 inch (10.2 mm) wide Quiet Zone running the entire length of the ticket.
- The TOF Mark should be centrally located over the Quiet Zone and measure a minimum of .5 inch (12.7 mm) wide and .125 inch (3.175 mm) long.







# Appendix A

## ASCII Control Code Chart

	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
Ctrl @	NUL	0	00		32	20	@	64	40	`	96	60
Ctrl A	SOH	1	01	!	33	21	A	65	41	a	97	61
Ctrl B	STX	2	02	“	34	22	B	66	42	b	98	62
Ctrl C	EXT	3	03	#	35	23	C	67	43	c	99	63
Ctrl D	EOT	4	04	\$	36	24	D	68	44	d	100	64
Ctrl E	ENQ	5	05	%	37	25	E	69	45	e	101	65
Ctrl F	ACK	6	06	&	38	26	F	70	46	f	102	66
Ctrl G	BEL	7	07	‘	39	27	G	71	47	g	103	67
Ctrl H	BS	8	08	(	40	28	H	72	48	h	104	68
Ctrl I	HT	9	09	)	41	29	I	73	49	i	105	69
Ctrl J	LF	10	0A	*	42	2A	J	74	4A	j	106	6A
Ctrl K	VT	11	0B	+	43	2B	K	75	4B	k	107	6B
Ctrl L	FF	12	0C	,	44	2C	L	76	4C	l	108	6C
Ctrl M	CR	13	0D	-	45	2D	M	77	4D	m	109	6D
Ctrl N	SO	14	0E	.	46	2E	N	78	4E	n	110	6E
Ctrl O	SI	15	0F	/	47	2F	O	79	4F	o	111	6F
Ctrl P	DLE	16	10	0	48	30	P	80	50	p	112	70
Ctrl Q	DC1	17	11	1	49	31	Q	81	51	q	113	71
Ctrl R	DC2	18	12	2	50	32	R	82	52	r	114	72
Ctrl S	DC3	19	13	3	51	33	S	83	53	s	115	73
Ctrl T	DC4	20	14	4	52	34	T	84	54	t	116	74
Ctrl U	NAK	21	15	5	53	35	U	85	55	u	117	75
Ctrl V	SYN	22	16	6	54	36	V	86	56	v	118	76
Ctrl W	ETB	23	17	7	55	37	W	87	57	w	119	77
Ctrl X	CAN	24	18	8	56	38	X	88	58	x	120	78
Ctrl Y	EM	25	19	9	57	39	Y	89	59	y	121	79
Ctrl Z	SUB	26	1A	:	58	3A	Z	90	5A	z	122	7A
Ctrl [	Esc	27	1B	;	59	3B	[	91	5B	{	123	7B
Ctrl \	FS	28	1C	<	60	3C	\	92	5C		124	7C
Ctrl ]	GS	29	1D	=	61	3D	]	93	5D	}	125	7D
Ctrl ^	RS	30	1E	>	62	3E	^	94	5E	~	126	7E
Ctrl _	US	31	1F	?	63	3F	_	95	5F		127	7F

# ASCII Control Code Chart (continued)

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
Ç	128	80	á	160	A0		192	C0	Ó	224	E0
ü	129	81	í	161	A1		193	C1	ß	225	E1
é	130	82	ó	162	A2		194	C2	Ô	226	E2
â	131	83	ú	163	A3		195	C3	Ö	227	E3
ä	132	84	ñ	164	A4		196	C4	ö	228	E4
à	133	85	Ñ	165	A5		197	C5	Õ	229	E5
ã	134	86	a	166	A6	ã	198	C6	μ	230	E6
ç	135	87	°	167	A7	Ã	199	C7	ρ	231	E7
ê	136	88	¿	168	A8		200	C8	ρ	232	E8
è	137	89	®	169	A9		201	C9	Ú	233	E9
ë	138	8A		170	AA		202	CA	Û	234	EA
ï	139	8B	1/2	171	AB		203	CB	Ü	235	EB
î	140	8C	1/4	172	AC		204	CC	ý	236	EC
ì	141	8D	ı	173	AD		205	CD	ÿ	237	ED
Ā	142	8E		174	AE		206	CE		238	EE
Ă	143	8F	–	175	AF		207	CF		239	EF
É	144	90		176	B0	Ò	208	D0		240	F0
Æ	145	91		177	B1	D	209	D1	±	241	F1
Ē	146	92	2	178	B2	Ē	210	D2		242	F2
ô	147	93	3	179	B3	Ë	211	D3	3/4	243	F3
ö	148	94	´	180	B4	Ë	212	D4		244	F4
ò	149	95	Á	181	B5		213	D5		245	F5
û	150	96	Â	182	B6	Í	214	D6	÷	246	F6
ù	151	97	À	183	B7	Î	215	D7	ˆ	247	F7
ÿ	152	98	©	184	B8	Ï	216	D8	°	248	F8
Ö	153	99	ı	185	B9		217	D9	¨	249	F9
Û	154	9A		186	BA		218	DA	·	250	FA
Ø	155	9B	»	187	BB		219	DB		251	FB
£	156	9C		188	BC		220	DC		252	FC
∅	157	9D	¢	189	BD		221	DD		253	FD
x	158	9E	¥	190	BE	İ	222	DE		254	FE
f	159	9F		191	BF		223	DF	€	255	FF



# Appendix B

## Available Fonts and Barcodes

---

All available character fonts and barcodes are listed below. The selections will differ depending upon the parser mode setting. Accordingly, use either the *DPL Programmer's Manual* or the *DTPL Programmer's Manual* for detailed information.

### DPL Fonts

Fonts 0 through 8 use the slash zero (Ø) convention for distinguishing between the zero and the alphabetic O (the slash can be removed with the Z ticket-formatting command). These fonts are non-proportional (monospaced): each character will take up the same amount of space when printed.

Font 9 (Triumvirate) is a proportional font: each character will take up a different amount of space when printed.

Font	Valid ASCII Characters
0	32-127
1	32-168, 171, 172, 225
2	32-168, 171, 172, 225
3	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225
4	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225
5	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225
6	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225
7	32-126
8	32, 48-57, 60, 62, 67, 69, 78, 83, 84, 88, 90
9	32-126, 128-169, 171-173, 181-184, 189, 190, 198, 199, 208-216, 222, 224-237, 241, 243, 246-250

The table below lists font sizes 0 – 8; the numbers indicate the number of dots.

Font Number	Height	Width	Spacing
Font 0	7	5	1
Font 1	13	7	2
Font 2	18	10	2
Font 3	27	14	2
Font 4	36	18	3
Font 5	52	18	3
Font 6	64	32	4
Font 7	32	15	5
Font 8	28	15	5

## DPL Font Samples

**Font 0:** 96 characters, alphanumeric, upper and lower case.

```
Font 0
!*"#$%&'()*+,-./
0123456789:;<=>?@
ABCDEFGHIJKLMNPO
QRSTUVWXYZ[\]^_`
abcdefghijklmnopqrstuvwxyz
!*"#$%&'()*+,-./
0123456789:;<=>?@
```

**Font 1:** 145 characters, upper and lower case alphanumeric with descenders and ascenders.

```
Font 1:
!*"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNPOQRSTUVWXYZ[\]^_`
abcdefghijklmnopqrstuvwxyz
!*"#$%&'()*+,-./0123456789:;<=>?@
```

**Font 2:** 138 characters, alphanumeric, upper and lower case.

```
Font 2:
!*"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNPOQRSTUVWXYZ[\]^_`
abcdefghijklmnopqrstuvwxyz
!*"#$%&'()*+,-./0123456789:;<=>?@
```

**Font 3:** 62 characters, alphanumeric, uppercase.

```
Font 3:
!*"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMNPOQRSTUVWXYZ
!*"#$%&'()*+,-./0123456789:;<=>?@
```

**Font 4:** 62 characters, alphanumeric, uppercase.

**Font 5:** 62 characters, alphanumeric, uppercase.

FONT 4:  
# \$ % & ( ) \* + . - / 0 1 2 3 4 5 6 7 8 9 :  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
Ç Å Ä É Ö Ù £ Ø Ñ ¿ ß

FONT 5:  
# \$ % & ( ) \* + . - / 0 1 2 3 4 5 6 7 6 9 :  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z  
Ç Å Ä É Ö Ù £ Ø Ñ ¿ ß

**Font 6:** 62 characters, alphanumeric, uppercase.

FONT 6:  
# \$ % & ( ) \* + . - . /  
0 1 2 3 4 5 6 7 8 9 :  
A B C D E F G H I J K L  
M N O P Q R S T U V W X Y Z  
Ç Å Ä É Ö Ù £ Ø Ñ ¿ ß

**Font 7:** OCR-A, size I.

**Font 8:** OCR-B, size III.

Font 7:  
! " # \$ % & ' ( ) \* + , - . /  
0 1 2 3 4 5 6 7 8 9 : ; < = > ? @  
A B C D E F G H I J K L M N O  
P Q R S T U V W X Y Z [ \ ] ^ \_ `   
a b c d e f g h i j k l m n o  
p q r s t u v w x y z { | } ¡ ¢

Font 8:  
0 1 2 3 4 5 6 7 8 9  
< > C E N S T X Z I

**Font 9:** Internal CG Triumvirate™ font. The point sizes are selected by the number in the bar code height. Larger point sizes can be obtained by increasing the height and width multipliers.

**Note:** Point sizes 4 and 5 are only available on the ST/SV-3306.

4 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 5 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 6 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 8 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 10 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 12 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 14 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 18 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 24 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 30 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789  
 36 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789

**DTPL Fonts**

Font Number	Font ID	Font Size	Box Size
FONT 1	F1	5x7	7x8
FONT 2	F2	8x16	10x18
FONT 3	F3	17x31	20x33
FONT 4	F4	5x9	7x11
FONT 5	F5	5x11	7x13
FONT 6	F6	30x52	34x56
FONT 7	F7	15x29	20x31
FONT 8	F8	20x40	20x33
FONT 9	F9	13x20	14x22
FONT 10	F10	25x41	28x41
FONT 11	F11	25x49	34x49
FONT 12	F12	46x91	47x91
FONT 13	F13	20x40	20x42



# DTPL Font Samples

All fonts contain ASCII characters (32-127); they are listed below by Font ID.

F1 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!@#%&'()\*-+=

F2 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!@#%&'()\*-+=

F3 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!\$#%^&\*()-=+

F4 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!@#%&'()\*-+=

F5 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!@#%&'()\*-+=

F6 ABCDEFGHIJKLMNOPQRSTUVWXYZ012

F7 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!@#%&'()\*-+=

F8 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!@#%&'()\*-+=

F9 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!\$#%^&'()\*-+=

F10 ABCDEFGHIJKLMNOPQRSTUVWXYZ012345678

F11 ABCDEFGHIJKLMNOPQRSTUVWXYZ01

F12 ABCDEFGHIJKLMNOPQRS

F13 ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789!@#%&'()\*-+=

## DPL Barcodes

Uppercase alpha names will print barcodes with human readable interpretations; lowercase alpha names will print barcodes only.

Font	Barcode Type	Length	Checksum	Valid Characters
A	3 of 9	Varies	No	0-9, A-Z, -, *\$/% and space char.
B	UPC-A	11 digits	Yes	0-9
C	UPC-E	6 digits	Yes	0-9
D	Interleaved 2 of 5	Varies	No	0-9
E	Code 128 (A,B, and C)	Varies	M-103	The entire 128 ASCII character set.
F	EAN-13	12 digits	Yes	0-9
G	EAN-8	7 digits	Yes	0-9
H	Health Industry Bar Code (HIBC)	Varies	M-43	0-9, A-Z, -\$:/ . The Host must supply leading + 's
I	Codabar	Varies: min 3	No	0-9, -, ., \$, :, /, +, and the start/stop codes: a, b, c, and d.
J	Interleaved 2 of 5 without Bars	Varies	M-10	0-9
K	MSI Plessey	Varies	M-10	0-9. If + is last character, additional MSI checksum will be added to the bar code in place of the + character.
L	Interleaved 2 of 5 (UPC CASE)	13	M-10	0-9
M	UPC 2 digit add.	2 digits	Yes	0-9
N	UPC 5 digit add.	5 digits	Yes	0-9
O	Code 93	Varies	No	All 128 ASCII characters
p	Postnet	Varies	Yes	0-9
Q	UCC/EAN Code 128	19 digits	Yes	0-9
R	UCC/EAN Code 128 K-MART NON EDI	18 digits	Yes	0-9
S	UCC/EAN Code 128 Random Weight	Varies: At least 34 digits	Yes	0-9
T	Telepen	Varies	Yes	All 128 ASCII characters
u	UPS MaxiCode	84	Yes	0-9, A-Z
v	FIM	1 char.	No	A, B, C, or D
z	PDF-417	Varies	Yes	All ASCII characters

# DPL Bar Code Samples



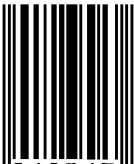
0123456789

**Bar Code A:** Code 3 of 9



0 12345 67890 5

**Bar Code B:** UPC-A



0 012345 7

**Bar Code C:** UPC-E



0123456790

**Bar Code D:** Interleaved 2 of 5



01234567890

**Bar Code E:** Code 128



0 123456 7890 12

**Bar Code F:** EAN-13



0 123 4565

**Bar Code G:** EAN-8



+012345678900

**Bar Code H:** Health Industry Bar Code (HBIC)



**Bar Code I:** Codabar



**Bar Code J:** Interleaved 2 of 5  
w/module 10 checksum



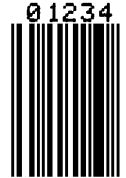
**Bar Code K:** Plessey



**Bar Code L:** Interleaved 2 of 5  
w/module 10 checksum and  
shipping bearer bars



**Bar Code M:** 2 Digit UPC addendum



**Bar Code N:** 5 Digit UPC addendum

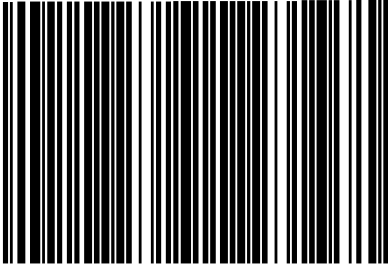


**Bar Code O:** Code 93



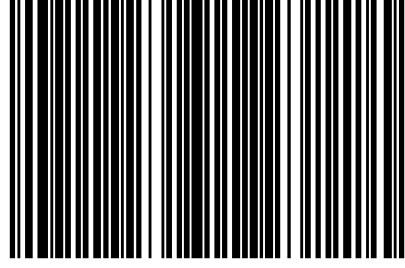
**Bar Code p:** Postnet

(01) 2 3456789 012345678 9

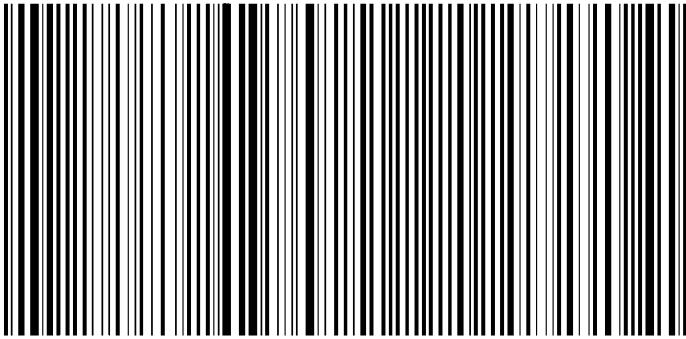


**Bar Code Q:** UCC/EAN Code 128

34 567890 123 4567

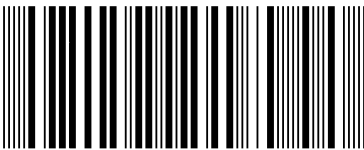


**Bar Code R:** UCC/EAN Code 128  
KMART NON EDI

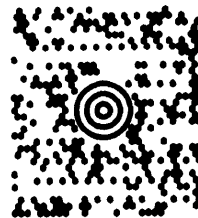


01 10073675029260 11 930420 3202 001800 21 10123456

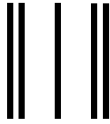
**Bar Code S:** UCC/EAN Code 128 Random Weight



**Barcode T:** Telepen



**Barcode u:** UPS MaxiCode



**Barcode v: FIM**



**Barcode z: PDF-417**

## **DTPL Barcodes**

Code 39; Code 128 A, B, and C; Codabar, Interleaved 2 of 5; UPC-A; EAN-8; and EAN-13.



# Appendix C

## Cable Listings

**Parallel Cable:** Connect a Centronics<sup>®</sup> type 36-pin cable.

**Serial Cable:** Connect a cable that complies with one of the configurations listed in the table below (**the serial interface cable must have specific connections [pin-outs] for proper data exchange**). The cable part numbers and suggested applications are included (contact a reseller for ordering information).

Serial Interface Cable Listing	
<p><b>RS-232 Null Modem (MXM)</b></p> <p>HOST                      PRINTER</p> <p>1 ← SHIELD → 1</p> <p>TXD 2 → 3 RXD</p> <p>RXD 3 → 2 TXD</p> <p>7 ← GROUND → 7</p> <p>4 ↔ 4 RTS</p> <p>5 ↔ 5 CTS</p> <p>DB25P                      DB25P</p> <p><b>Part Number 556000</b></p> <p>For connections to other DCE equipment. Flow control: XON/XOFF only.</p>	<p><b>RS-232 "PC" (DB9P) to Printer</b></p> <p>"PC"                      PRINTER</p> <p>1 ← SHIELD → 1</p> <p>TXD 3 → 3 RXD</p> <p>RXD 2 → 2 TXD</p> <p>CTS 8 → 20 BUSY</p> <p>5 ← GROUND → 7</p> <p>6 ↔ 4 RTS</p> <p>4 ↔ 5 CTS</p> <p>DB9S                      DB25P</p> <p><b>Part Number 556001</b></p> <p>For connection to a PC compatible with a DB9P communication port. Flow control: XON/XOFF or CTS/DTR.</p>
<p><b>RS-232 "PC" (DB25P) to Printer</b></p> <p>"PC"                      PRINTER</p> <p>1 ← SHIELD → 1</p> <p>TXD 2 → 3 RXD</p> <p>RXD 3 → 2 TXD</p> <p>CTS 5 → 20 BUSY</p> <p>7 ← GROUND → 7</p> <p>6 ↔ 4 RTS</p> <p>8 ↔ 5 CTS</p> <p>DB25S                      DB25P</p> <p><b>Part Number 556002</b></p> <p>For connection to a PC compatible with a DB25 communication port. Flow control: XON/XOFF or CTS/DTR.</p>	<p><b>RS-422 Connection</b></p> <p>HOST                      PRINTER</p> <p>RXD+ → 9 TXD+</p> <p>RXD- → 10 TXD-</p> <p>TXD+ → 18 RXD+</p> <p>TXD- → 19 RXD-</p> <p>4 ↔ 4</p> <p>5 ↔ 5</p> <p>DB25P</p> <p><b>Part Number N/A</b></p> <p>The diagram above is provided only as a schematic reference.</p>







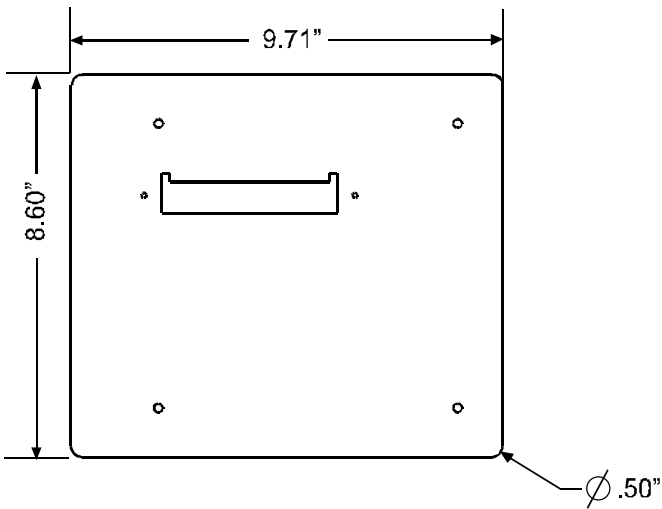
# Appendix D

## SV Model Mounting Dimensions

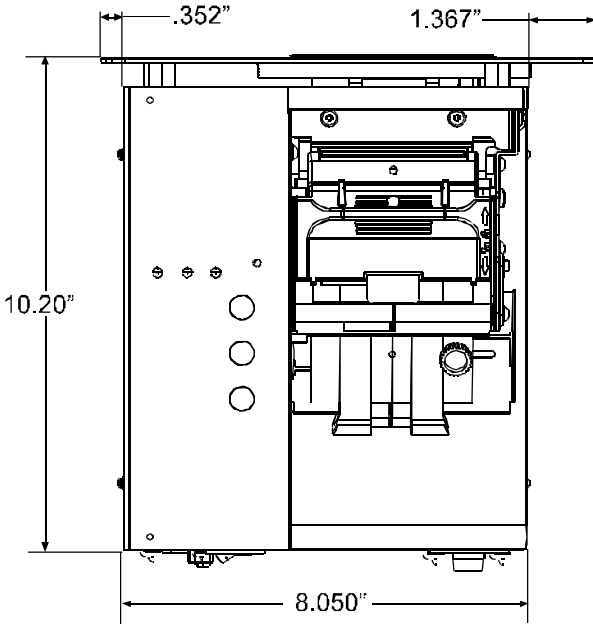
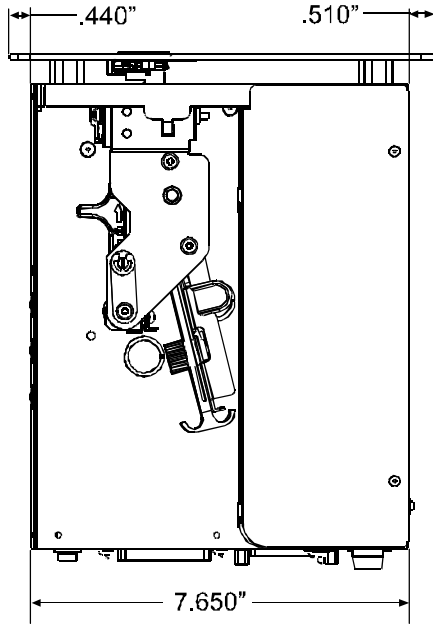
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### Top Plate Dimensions:

Material: 304 Stainless Steel, 13GA (.0897")



**Side Dimensions:**





# Warranty Information

## ST-3210, SV-3210, ST-3306, and SV-3306 Datamax Barcode Products Limited Warranty Statement

### Printer

---

Datamax warrants\* to Purchaser that under normal use and service, the S-Class Ticket Printers, (with the exception of the thermal printhead, belts and platen roller) purchased hereunder shall be free from defects in material and workmanship for a period of 3 years (1095 days) or 3 million (3,000,000) linear inches from the date of shipment by Datamax.

Expendable and/or consumable items or parts such as lamps, fuses, tickets 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 Printhead, Belts, and Platen Roller

---

This warranty\* is limited to a period of one year (365 days), or 1,000,000 linear inches of use, whichever comes first, for the S-Class Ticket Printer's thermal printhead, belts and platen roller. This one year (365 days) warranty is valid only if a Datamax - approved ticket stock is used, as defined in the then current Datamax list of approved ticket stocks, a copy of which is available from Datamax. Failure to use Datamax-approved ticket stock is justification for invalidation of this warranty. This warranty does not cover printheads, belts, or platens which have been misused, altered, neglected, handled carelessly, or damaged due to improper cleaning or unauthorized repairs.

\*The printer must be returned to the factory for service.

# 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 one of the following locations:

Datamax Corporate Headquarters 4501 Parkway Commerce Boulevard Orlando, Florida 32808 USA	Datamax International Herbert House, Elizabeth Way, Pinnacles Harlow, Essex CM19 5FE United Kingdom
--	--

A Return Material Authorization (RMA) number must be issued before the product can be returned. To open an RMA, please call the Datamax Customer Service Department at (407) 523-5550. Include your RMA 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 ticket examples when possible with the defective unit. Datamax shall not be responsible for any loss or damages incurred in shipping. Any warranty work to be performed by Datamax shall be subject to Datamax's confirmation that such product meets Datamax warranty. In the event of a defect covered by its warranty, Datamax will return the repaired or replaced product to the Purchaser at Datamax'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

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Datamax 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 Datamax's products.

## Limitation of Liability

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

In no event shall Datamax be liable to the purchaser for any damages resulting from or related to any failure or delay of Datamax 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 here give you specific legal rights, and you may have other legal rights which vary from state to state.





# Glossary

**alphanumeric** Consisting of alphabetic, numeric, punctuation and other symbols.

**backup speed** The speed at which the ticket stock is moved backward under the printhead following tear-off or cutting to position the next ticket at the start of print position.

**barcode** A representation of alphanumeric information in a pattern of machine-readable marks. The basic categories are divided into one-dimensional (UPC, Code 39, Postnet, etc.) and two-dimensional barcodes (MaxiCode, PDF417, etc.).

**character set** The entire complement of alphanumeric symbols contained in a given font.

**checksum** An alphanumeric error detection method used in many bar code symbologies for informational security.

**core diameter** The inside diameter measurement of the cardboard core at the center of a ticket roll.

**cutter** A mechanical device (e.g., rotary or guillotine) used to cut tickets following printing.

**defaults** Preset database settings returned following a reset of the printer.

**diagnostics** Resident (internal) programs used to locate and diagnose hardware problems in the printer.

**direct thermal** A printing method that uses a heat sensitive (direct thermal) material and only the heat of the printhead to create the image on that material.

**direct thermal ticket stock** Printing material coated with special chemicals that react by darkening with the application of heat.

**DPI (dots per inch)** A measurement of resolution, rated in the number of thermal elements contained in one inch of the printhead. Also referred to as print density.

**DPL™ (Datamax Programming Language)** Programming commands used specifically for formatting and production in Datamax printers.

**DTPL (Datamax Ticket Programming Language)** Programming commands used for ticket formatting and production in the admissions industry.

**emulation** a set of commands that allow this printer to imitate another.

**fan-fold** Ticket stock that is folded and stacked.

**Flash memory module** A removable, non-volatile memory cartridge that can be erased and reprogrammed for graphics, fonts, and ticket formats.

**font** A set of alphanumeric characters that share a particular typeface.

**IPS (inches per second)** Imperial measurement of printer speeds.

**MMPS (millimeters per second)** Metric measurement of printer speeds.

**non-volatile** a type of storage where the contents (graphics, fonts, and ticket formats) are preserved when power is removed.

**parser** a computer routine that reads and interprets received data for further processing.

**perforation** A series of small cuts extending through the ticket material to facilitate separation. Also referred to as “perf”.

**print speed** The speed at which the ticket stock moves under the printhead during the printing process.



**reflective (TOF) mark** A black strip on the underside of the ticket stock used to signal the top of form.

**roll hanger** A device in the printer used to support rolled tickets.

**rolled tickets** Ticket stock that is wound upon cardboard cores.

**slew speed** The speed at which the ticket stock is moved under the printhead in non-printed areas and between tickets during a print job.

**start of print** The offset position on the ticket, relative to the TOF position, where printing actually begins.

**stock** Generalized term for bulk roll and fan-fold ticket types.

**ticket detect sensor** An Electro-optical device used to detect the presence of ticket stock within the media guides for auto-loading.

**ticket length** The top to bottom distance of the ticket as it exits the printer.

**ticket repeat** The distance from the top of one ticket to the top of the next ticket.

**ticket tracking** An undesirable lateral (side to side) movement of the ticket stock as it travels through the media guides and under the printhead.

**ticket width** The left to right measurement of the ticket as it exits the printer.

**TOF (top of form)** The point where the leading edge of the ticket is detected by the TOF Sensor.

**TOF Sensor** An Electro-optical device used to detect the presence and the top of form of the ticket stock.

**void** An undesirable blank space in a printed image.





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