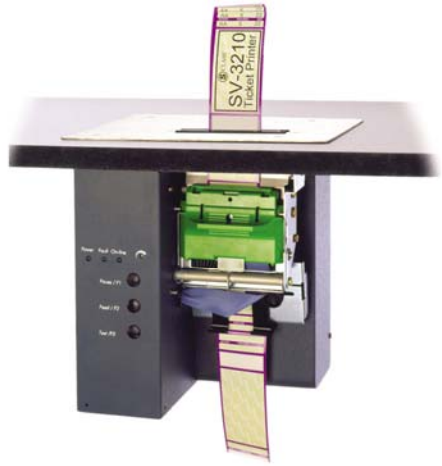


S-Class™

Operator's Manual ■■■



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Part Number 88-2337-01, Revision D



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

Agency Compliance and Approvals



UL60950-1: 2nd Edition
CSA C22.2 No. 60950-1-07 2nd Edition



Gost-R



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

EMC: EN 55022 (2006, A1:2007) Class B
EN 55024 (1998, A1:2001, A2:2003)

Safety: This product complies with the requirements of IEC 60950-1 2nd Edition, 2005-12

ROHS: 2002/95/EC

LVD: 2006/95/EC

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 Models on a flat, firm surface; mount SV Models in 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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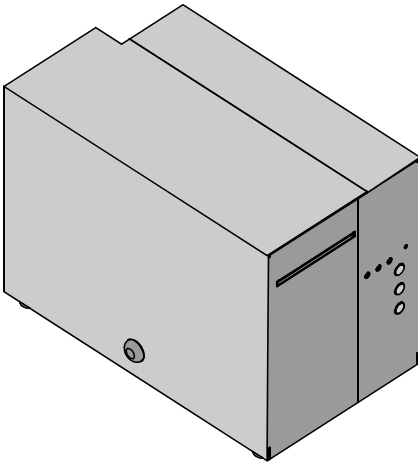
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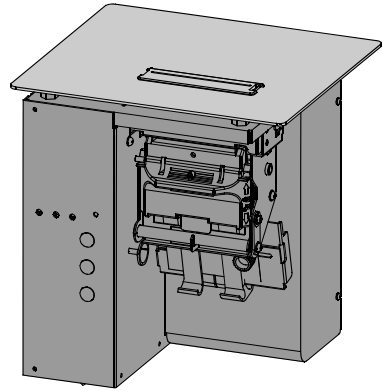


Overview

1.0 About the Printer



ST (Table) Model



SV (Vertical) Model

The S-Class printer family, hereafter referred to by model name, blends rugged design, state-of-the-art electronics, and user-friendly features to redefine ticketing hardware.

To process complicated formats quickly, the printer is equipped with a 32-bit microprocessor and four megabytes of memory. Auto-detecting communication ports ensure that interfacing to the host system is a simple task, while versatile front panel functions will speed you through setups.

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.datamax-oneil.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 comes equipped with many standard features:

Communication Interfaces

- USB interface
- DB-9 RS-232 serial interface
- IEEE 1284 Centronics parallel interface

Memory

- 2 MB FLASH Memory (*256K available to user, designated as Module B*)
- 4 MB DRAM Memory

Printing

- Direct Thermal
- On-demand and batch modes
- Automatic ticket loading and positioning
- Integrated tear bar
- Multiple programming language support
- Lockable cover (*ST Models only*)
- Interior ticket platform (*ST Models only*)

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 typeface varieties in point sizes ranging from 4 to 999.

1.0.2 Optional Features

Many optional features are available for this printer:

➤ **Cutter and Tray** (*ST Models only*)

This device automatically cuts ticket stock. Stock thickness can range from .0025 inch (.06 mm) up to .008 inch (.2 mm). A tray, capable of stacking a minimum of 100, 3.5-inch (88.9 mm) wide tickets, collects the cut tickets. Order this feature when placing your printer order.

➤ **External Ethernet Connectivity (uses printer's parallel port)**

A print server (the DMX100) that is an external Network Interface Controller (NIC) to provide Ethernet connectivity.

➤ **Print Side Media Sensor** (*ST Models only*)

This option allows the printer to sense TOF marks that are present on the same side of the media in which printing will occur.

➤ **Roll Hanger** (*ST Models only*)

This mounting option allows the printer to use rolled ticket stock with a maximum 7-inch outer diameter (177.8 mm) on 2-inch (50.8 mm) diameter core. Order part number 12-2978-01.



Getting Started

2.0 Unpacking

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

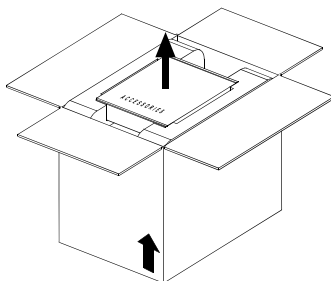
The printer is carefully packaged to avoid any damage during transit. In order to operate the printer, you will need to remove the packaging materials placed there for shipment. Complete the following steps prior to connecting power or attempting to load ticket stock.

Carefully open the shipping container, remove the printer, and place it on a level, stable surface.

 CAUTION	Do not rest SV models “end-down” on any surface. Damage to the printer’s connectors may occur.
--------------------	--

- 2 Remove the printer from the plastic shipping bag.
- 3 Carefully remove the tape that extends over the Printhead Latch.

(On SV Models also remove the tape that covers the interface connectors.)

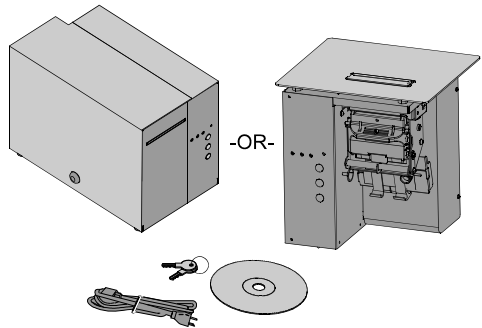


Note: Save all packaging in the event that shipment is ever required.

2.0.1 Inspection

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

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



Important Notice:



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

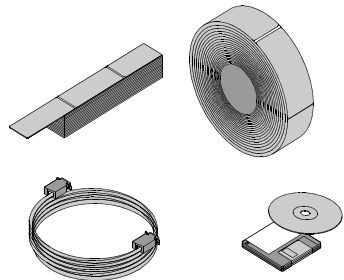
2.0.2 Additional Requirements

In addition to the above-mentioned items, the following items are necessary for ticket printing.

A USB, serial, or parallel interface cable

Applicable ticket stock

Applicable software



For advice on which stock and software is best suited for your needs, contact your customer service representative.



Setting-Up the Printer

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

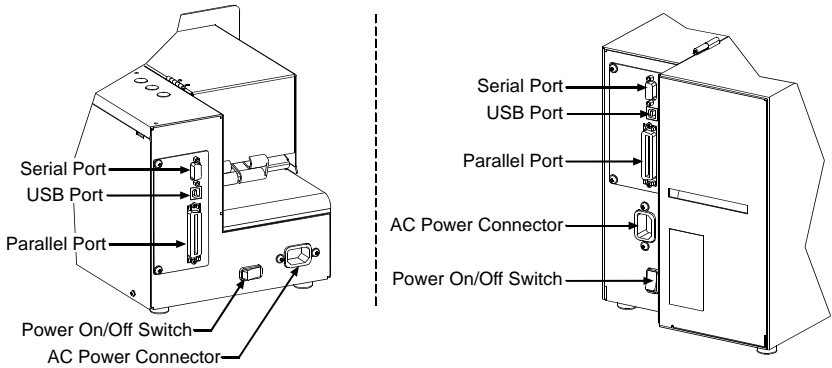
3.0 Power Connection

Note: Before connecting the AC Power Cord or interface cables to the printer, ensure the Power On/Off Switch is in the 'Off' position.

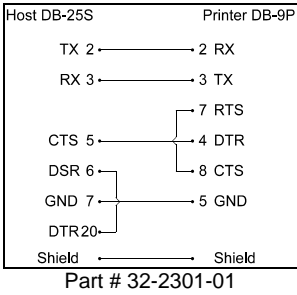
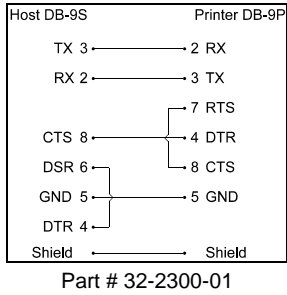
- ❶ Place the printer on a firm, level surface.
- ❷ Ensure that the Power Switch on the Printer is in the 'Off' position.
- ❸ Connect the AC Power Cord to the receptacle on the back of the Printer, and then plug the AC Power Cord into a properly grounded outlet. (The power supply automatically detects and then adjusts to the applied line voltage; see Section 6.0 for the acceptable voltage ranges.)

3.1 Interfacing

The printer can be connected to the host via the parallel, USB, or serial. The printer will automatically connect to the first port that delivers valid data. Once established, the printer's power must be cycled 'Off' and 'On' to change an interface connection.



- The **Parallel Connection** needs a Centronics IEEE 1284 cable with a 36-pin male connector for unidirectional (forward channel) communications, or an IEEE 1284 Compliant cable for bi-directional communications (forward and reverse channels). Also, for bi-directional communications your host must have supporting software. See Section 5 for more information.
- The **USB Connection** needs a USB cable and is supported in Windows 95 and greater operating systems. Depending upon the operating system of your host computer, installation requirements may differ slightly.
- The **Serial Connection** needs a serial interface cable with specific pin-outs for proper communications (part numbers and pin-outs are given, below; contact your reseller to order). The interface supports RS-232C communications via a DB-9 connector. Serial port settings are menu-selectable and must match your host's serial port settings; see Section 4.



3.1.1 Automatic Parser Mode Detection

From the factory, the printer will automatically interpret the data received from the host to set the Parser Mode.

☑ Note: When set to 'Auto,' the printer assumes its parser mode according to the first character received. If the first character is a < (ASCII control character 3C, as transmitted by most ticketing software packages), the printer will assume the desired DTPL parser mode. However, in certain cases (for example, if a font download is executed following power-up), a received character may cause an unexpected parser mode which can falsely appear to be a communications problem.

If you want to force the parser mode, see Section 4.3.

More information on identifying the parser mode setting is available in Section 5, under 'no communications / not printing via software.' If you have any questions or are unable to establish communications, contact Datamax-O'Neil Technical Support for help.

3.2 Loading Ticket Stock

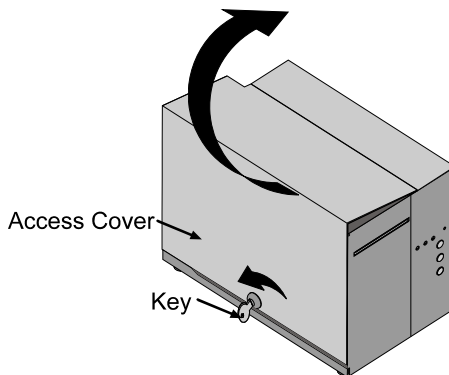
The procedure to load the printer differs depending upon the model, options, and stock type being used. These differences are detailed below.

3.2.1 ST Models

☑ Note: If your printer is equipped with the Roll Hanger option but you want to use an internal fan-fold ticket source instead, the Roll Hanger must be removed. Remove the Roll Hanger by turning it counter-clockwise to unscrew it from the centerplate of the printer.

To load fanfold ticket stock into a table-top printer proceed as follows:

- ❶ Plug in and turn 'On' the printer.
- ❷ Insert the Key into the lock and turn it, as shown, to unlock the Access Cover.
- ❸ Raise the Access Cover (or, for convenience, the cover may be removed by sliding it forward and then raising it up and off the hinges).

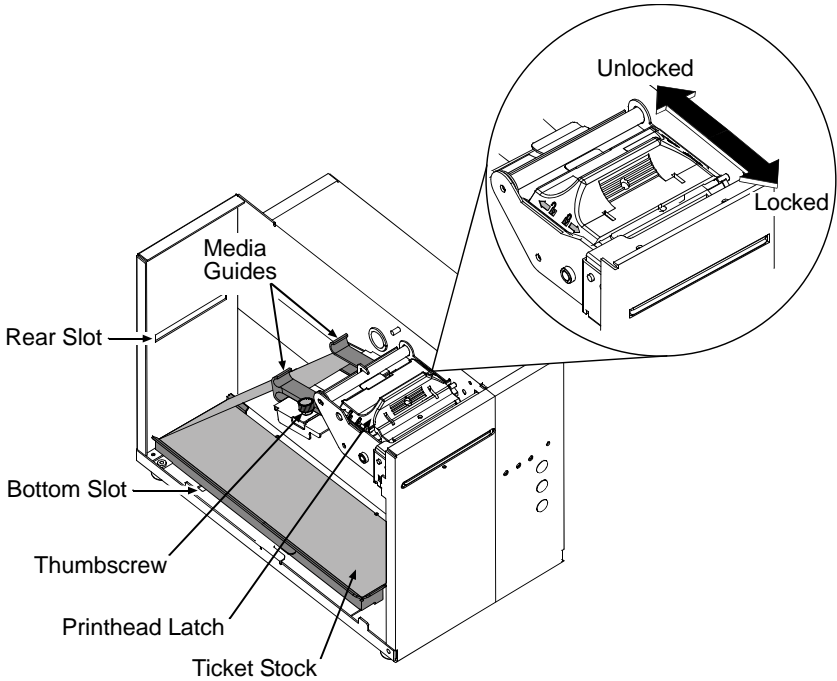


- ❹ Perform this step according to the printer's Media Sensor option and the type of ticket stock being used:

► *“Standard Media Sensor” using Fan-Fold Stock –*

With the ticket TOF Marks facing ‘down’ (away from you), place the ticket stock in the bottom of the printer. (If using an external supply, route the ticket stock into the printer through the Rear or Bottom Slots.)

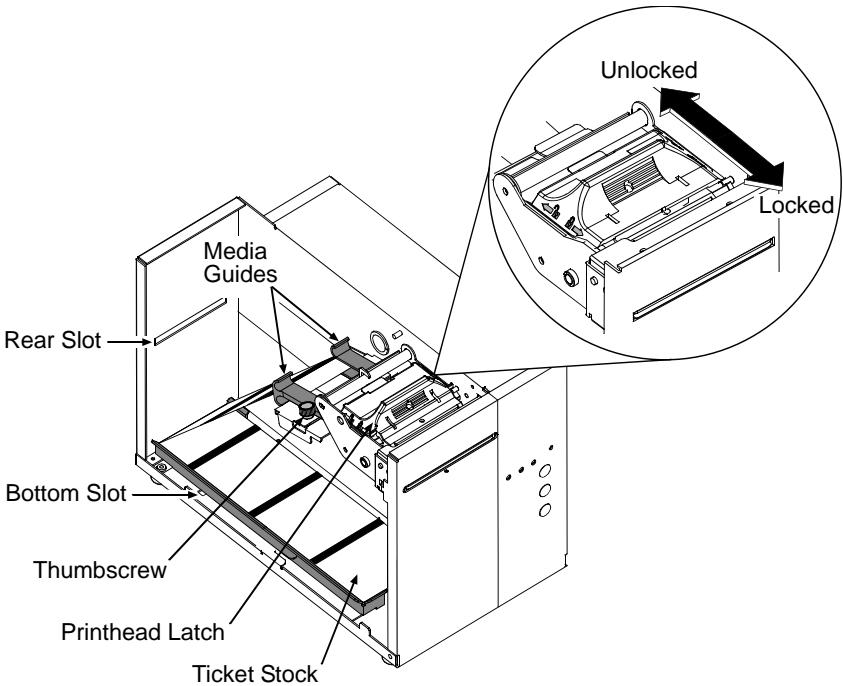
Ensure that the Printhead Latch is in the ‘Locked’ position.



► *“Print Side Media Sensor” using Fan-Fold Stock –*

With the ticket TOF Marks facing ‘up’ (toward you), place the stock in the bottom of the printer. (If using an external supply, route the ticket stock into the printer through the Rear or Bottom Slots.)

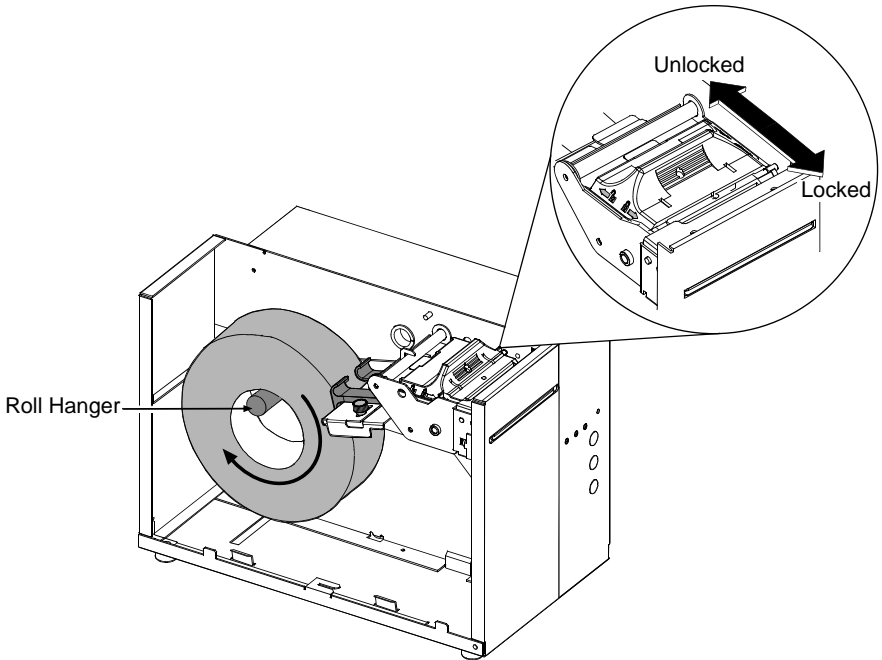
Ensure that the Printhead Latch is in the ‘Locked’ position.



► “Standard Media Sensor” using Roll Stock –

Mount the roll of ticket stock on the Roll Hanger so that it unwinds in the direction shown by the arrow in the drawing below. (The TOF Marks must be wound inward on the roll; see Section 6 for ticket stock specifications).

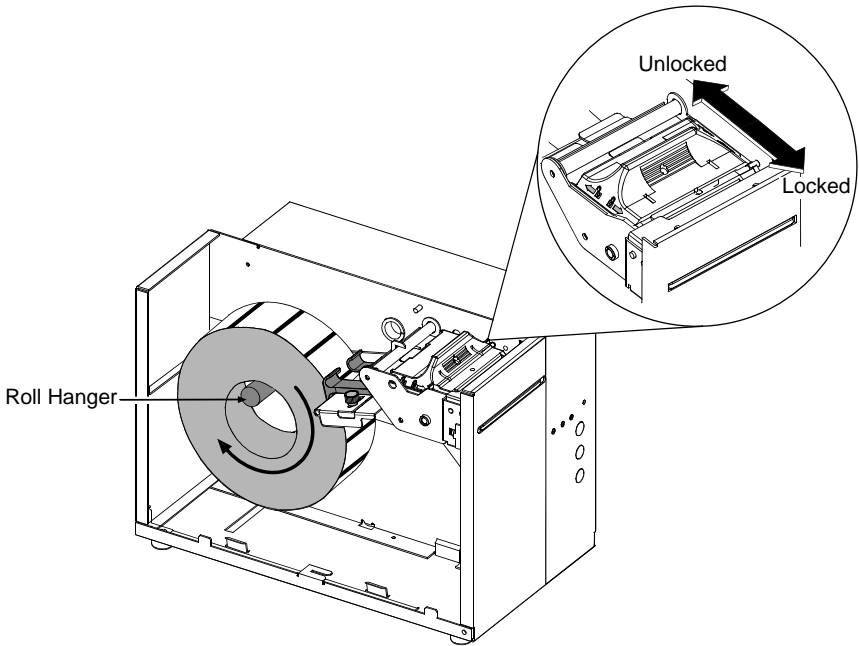
Ensure that the Printhead Latch is in the ‘Locked’ position.



► *“Print Side Media Sensor” using Roll Stock –*

Mount the roll of ticket stock on the Roll Hanger so that it unwinds in the direction shown by the arrow in the drawing below. (The TOF Marks must be wound outward on the roll; see Section 6 for ticket stock specifications).

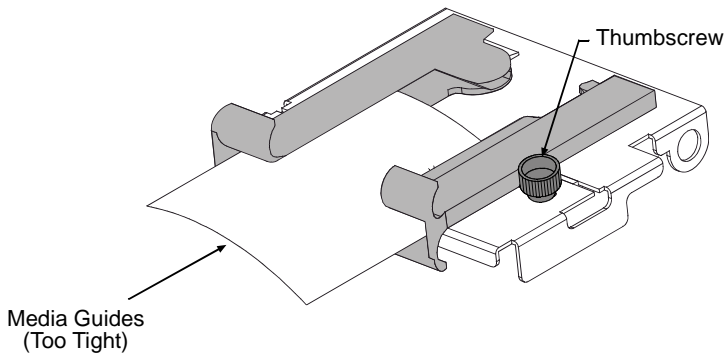
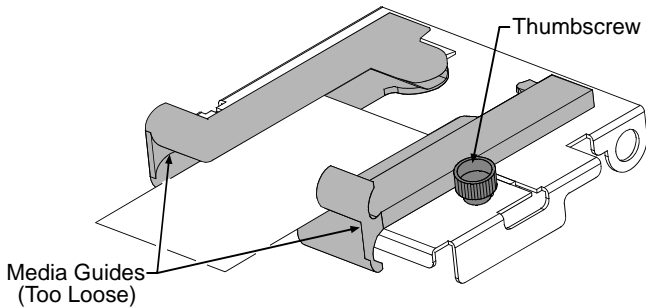
Ensure that the Printhead Latch is in the ‘Locked’ position.



- 5 Loosen the Thumbscrew and adjust the Media Guides to fit the width of the ticket stock.

The guides should be positioned so that there is no side-to-side ticket movement (too loose), but not so close as to cause friction or bowing of the ticket (too tight); see the illustration below for examples.

Once properly positioned, tighten the Thumbscrew to secure the Media Guides in place.



- ⑥ Slide the ticket stock farther into the Media Guides until it is grabbed by the loading mechanism, and then allow the printer to complete the positioning process. Close the Access Cover.

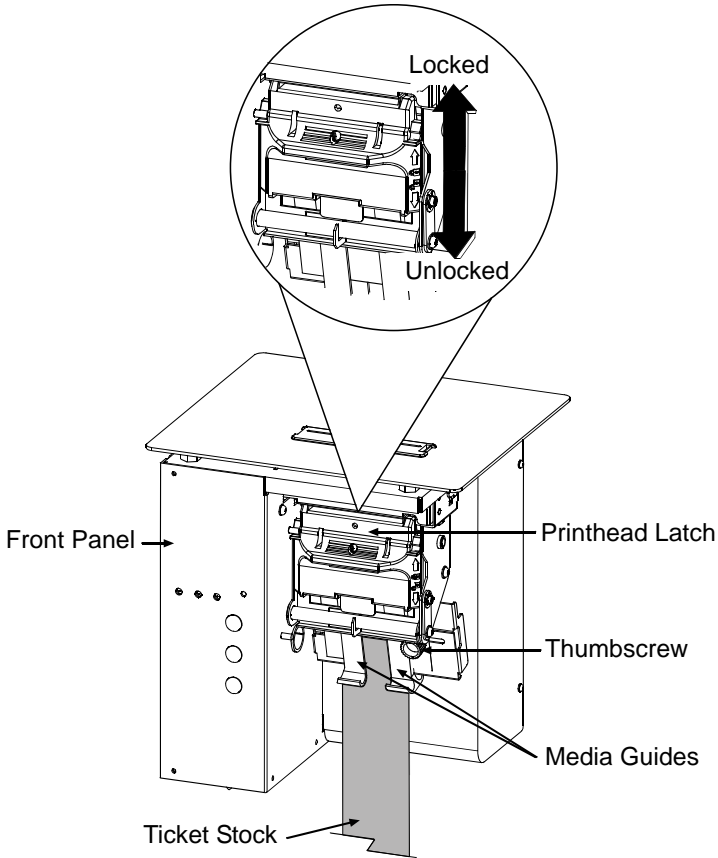
☑ Note: If automatic loading doesn't occur, try the following:

- 1) Ensure that the Printhead Latch is locked.
- 2) Press the PAUSE button (the On-Line Indicator will go 'Off') and then repeatedly press the F2 button while gently pushing the stock forward until the printer grabs the ticket.
- 3) Press the PAUSE button (to return to the on-line mode).

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

3.2.2 SV Models

- 1 Plug in and turn 'On' the printer.
- 2 Bring the stock up to the Media Guides (the TOF Marks on the tickets 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 on the next page.

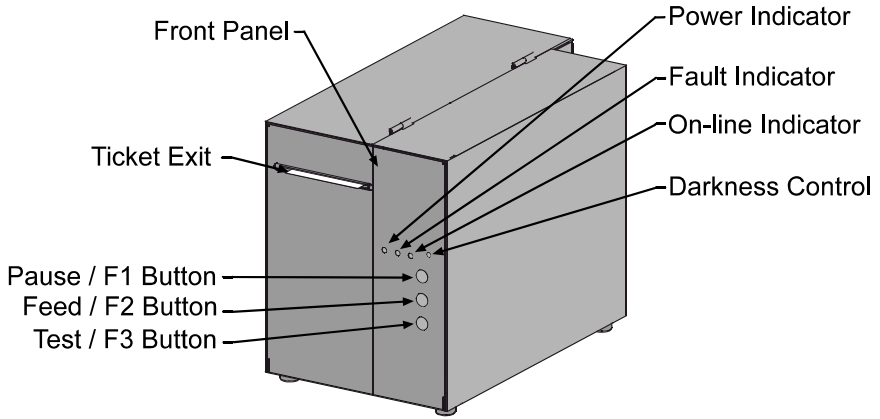
☑ Note: If automatic loading doesn't occur, try the following:

- 1) Ensure that the Printhead Latch is locked.
- 2) Press the PAUSE button (the On-Line Indicator will go 'Off') and then repeatedly press the F2 button while gently pushing the stock forward until the printer grabs the ticket.
- 3) Press the PAUSE button (to return to the on-line mode).

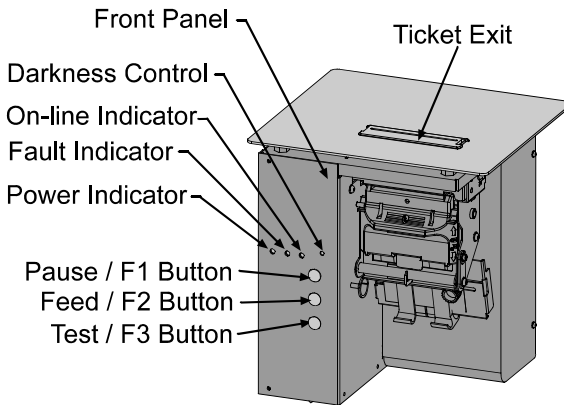
If the ticket was not fed to a proper position, the Media Sensor may need adjustment; see Section 4 for details.

3.3 Using the Front Panel

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



ST Models



SV Models

Ticket Exit

The printed tickets are expelled from this opening.

Darkness Control

The Darkness Control adjusts the contrast of the printing on the tickets: turning the control clockwise darkens the print, while turning the control counterclockwise lightens it. Darkness can also be controlled through software.

Indicators

For a brief period after power-up (about 20 seconds), 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

(On-Line, as denoted by the On-Line Indicator being '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

(Off-Line, as denoted by the On-Line Indicator being '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 3.4.3.

- 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 3.4.2.

- F2 + F3: Press these simultaneously to print a Configuration Ticket; see Section 3.4.1.

- F1 + F2 + F3: Press and hold these during power-up to reset the printer to the default settings; see Section 3.5.2.

3.4 Resident Formats

Several formats are stored in memory for useful setup, operational, and diagnosis information. Load stock that is at least 2 inches (51 mm) wide to capture all the data and patterns on these resident formats.

3.4.1 Configuration Ticket

The Configuration Ticket provides firmware, memory, and options information (depending upon the model, equipment, and firmware 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.

Configuration includes detected communications (baud rate, the selected communications port, detected parser mode, etc.) as well as the speed settings, Stock ID, and the start of print and cut/tear positions.

Counter/Memory sections include time of operation and lengths printed, as well as the printer's memory configuration. (Resettable Values can be useful in tracking job data; see the DPL Programmer's Manual for details.)

Input Values indicates the selected parser mode and the printer's internal sensor values.

```
VER: S3210 - 01.00C 04/25/06
BOOT ES-2562-01A
CODE ES-2564-01C
FPGA ES-2563-01A
FONT 83-2565-06A
256K FLASH MODULE B
SYSTEM FLASH SIZE___ 2 MBYTES
SYSTEM RAM CHECKS___ GOOD
SYSTEM RAM SIZE___ 4096 KBYTES
SYSTEM RAM AVAIL___ 3146 KBYTES

CONFIGURATION
DTPL SERIAL PORT DETECTED
9600,8,N
REFL, CUTTER
PRINT SPEED           8.0 IPS
SLEW SPEED            8.0 IPS
BACK SPEED            3.0 IPS
STOCK ID              5
START OF PRINT        4.28 in
CUT/TEAR POSITION      4.26 in
ROW ADJUST            0.00 in
COLUMN ADJUST        0.00 in
VERTICAL ADJUST      11 dpi
PRESENT DELAY

COUNTER INFORMATION
ABSOLUTE VALUES     4-26-2006
LENGTH___            350 INCHES
TIME___              4 HOURS
RESETTABLE VALUES   6- 5-2002
LENGTH___            221 INCHES
TIME___              2 HOURS

MEMORY CONFIGURATION
INTERNAL MODULE A___ 128
SCALABLE FONTS___   64
LABEL SIZE           0189:23806 IN

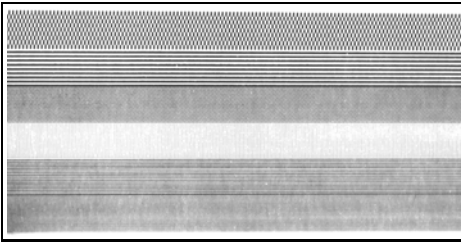
INPUT VALUES
POT___               195
REFL___              73
TEMP___              67
VOLT___              226
STOCK___             40

PARSER MODE___       DTPL
TOF LOW___           0
TOF DELTA___         10
TOF GAIN___          6
NO REPRINT___        NO
```

3.4.2 Test Pattern Ticket

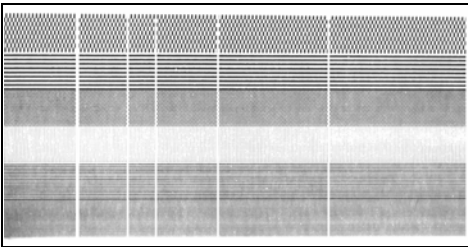
The Test Pattern Ticket is a resident format that can be used to determine general print quality and the condition of the printhead; see the examples below.

- 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 patterns across the width of the ticket indicate that the printhead is operating normally.



A “Faulty” Test Pattern Ticket:

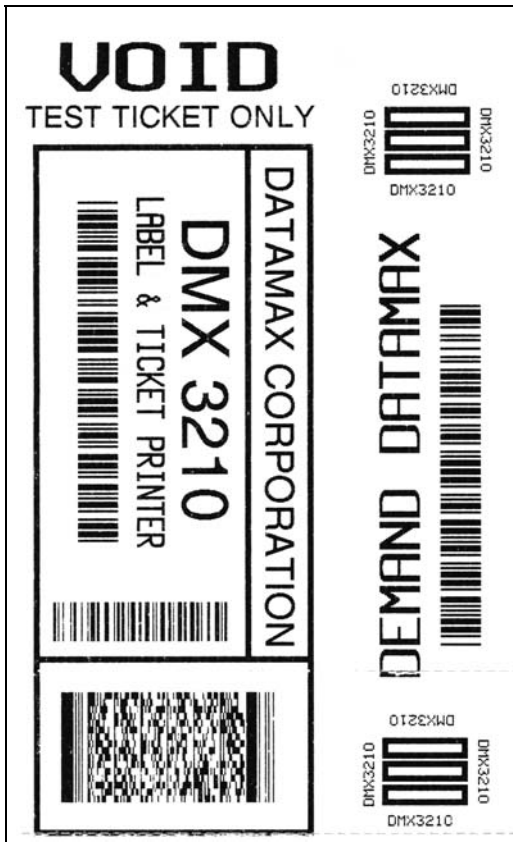
Streaks (vertical lines of missing print) indicate a dirty or faulty printhead. See Section 4.4.1 for cleaning instructions.

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

3.4.3 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:

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



3.5 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.

- 1 Turn the printer 'Off'.
- 2 Press and hold the PAUSE/F1, FEED/F2 and TEST/F3 Buttons while turning 'On' the printer.
- 3 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: ¹		
Internal Module	128	128
Scalable Fonts	64	64
Character Set (parser mode dependent):	See Appendix B	See Appendix B
Cutter	Auto Detect	Auto Detect
Parser Mode: ²	DTPL	DTPL
Print Speed: ³	8	4
Slew Speed: ³	8	6
Backup Speed: ³	3	3
Stock ID	5	5
Print Width	1.89 inches (48 mm)	1.92 inches (49 mm)

¹Allocations are in 4KB units each and configurable only in DPL Parser Mode.

²This setting may arrive pre-configured, to change the setting see Section 4.3.1.

³Values given are in Inches Per Second.

3.6 Keypad Lockout

The Keypad Lockout Function stops the operator's ability to enter the offline functions in the printer's menu.

To enable the lockout feature:

Press and hold the PAUSE/F1 and FEED/F2 buttons while turning 'On' the printer.

To disable the lockout feature:

Press and hold the FEED/F2 and TEST/F3 buttons while turning 'On' the printer.

4

Adjustments and Maintenance

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

4.0 Media Sensor Adjustment

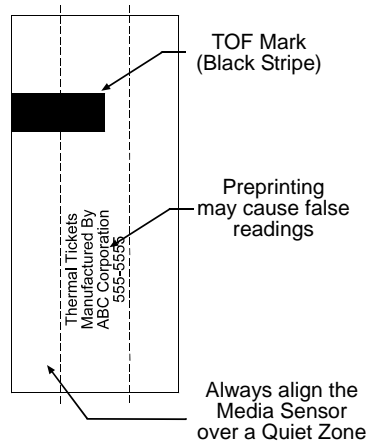
The Media Sensor in the printer has two functions:

- (1) To sense the presence of ticket stock; and,
- (2) To detect the Top of Form (TOF) Mark (a black stripe, rectangle, or square, as shown in the illustration below).

The Media Sensor must be adjusted so that it can “see” the TOF Marks on the ticket.

When adjusting the sensor make sure that it is positioned within a Quiet Zone (and not over preprinted text or graphics, since that can cause false TOF sensing).

Section 6 details other specific requirements for ticket stocks.



Note: If the ticket stock you are using does not contain TOF Marks, 'TOF Sense' must be set to 'Continuous.' (When using this setting, the length of the ticket is set via software commands.) See Section 4.3. In this case, the Media Sensor can be adjusted to any location over the ticket stock.

Depending upon the printer model and options, the adjustment of the Media Sensor differs slightly, as detailed in the following subsections.

4.0.1 ST Model Media Sensor Adjustment

The ST Model can be equipped with either a Standard or a Print Side Media Sensor. Follow the appropriate procedure for the Media Sensor in your printer:

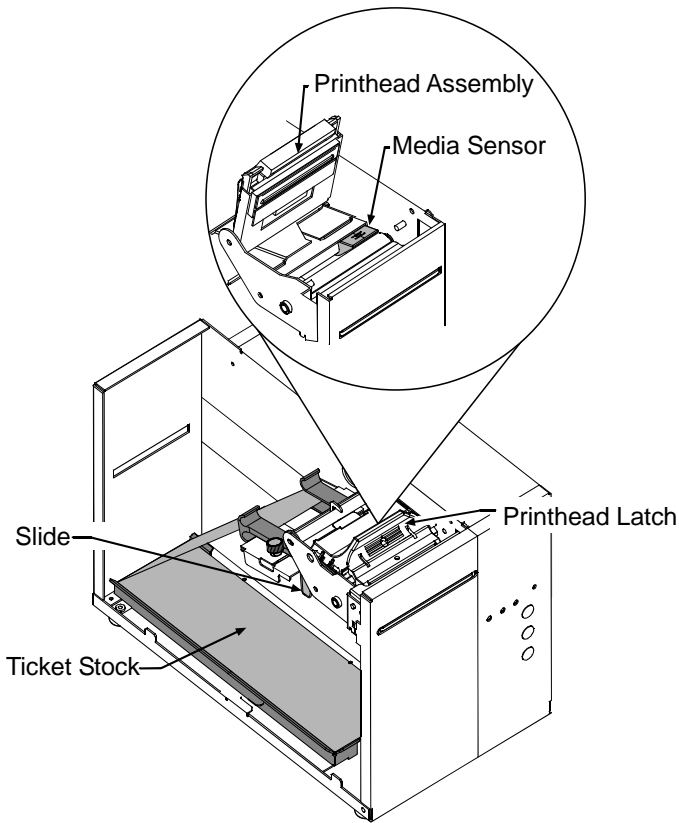
Adjusting the Standard Media Sensor –

- ❶ Turn ‘Off’ the Power Switch. Open the Access Cover.
- ❷ Loosen the Thumbscrew and adjust the Media Guides to fit the width of the ticket stock:

The guides should be positioned so that there is no side-to-side ticket movement (too loose), but not so close as to cause friction or bowing of the ticket (too tight). (See Step 5 in Section 3.2.1 for an illustration).

Once properly positioned, tighten the Thumbscrew to secure the Media Guides in place.

- ❸ Unlock the Printhead Latch and raise the Printhead Assembly.
- ❹ Grasp the Slide to move the Media Sensor. Position the sensor so that it can see the Quiet Zone and the TOF Marks on the ticket stock, as described in Section 4.0.



- 5 Lower the Printhead Assembly and lock the Printhead Latch.
- 6 Turn 'On' the printer and load ticket stock; see Section 3.2.
- 7 Lower and lock the Access Cover.
- 8 To verify the alignment, press the FEED button several times – the stopping point should be the same for each ticket that is output. Note that if the Fault Indicator illuminates, the sensor needs to be repositioned (see Section 5 for a complete listing of possible causes).

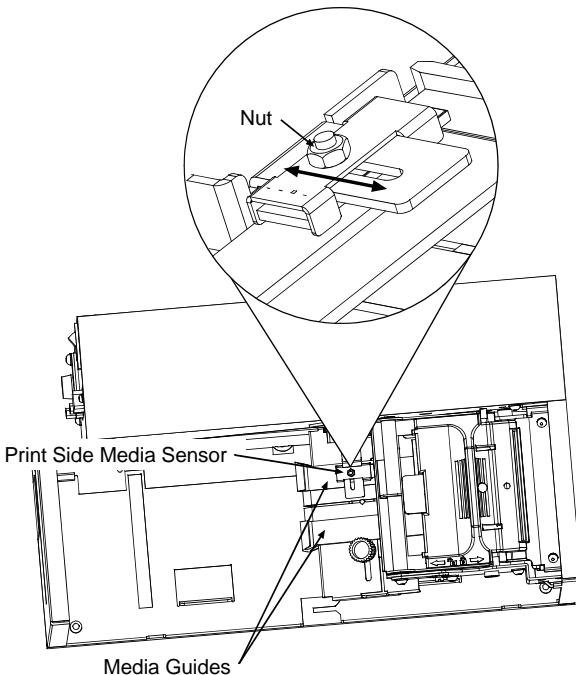
Adjusting the Print Side Media Sensor –

- ❶ Turn ‘Off’ the Power Switch. Open the Access Cover.
- ❷ Loosen the Thumbscrew and adjust the Media Guides to fit the width of the ticket stock:

The guides should be positioned so that there is no side-to-side ticket movement (too loose), but not so close as to cause friction or bowing of the ticket (too tight). (See Step 5 in Section 3.2.1 for an illustration).

Once properly positioned, tighten the Thumbscrew to secure the Media Guides in place.

- ❸ Using a small wrench or nut driver (M3), slightly loosen the Nut that secures the Media Sensor.



- ④ Grasp the Nut to move the Media Sensor. Position the sensor so that it can see the Quiet Zone and the TOF Marks on the ticket stock, as described in Section 4.0.
- ⑤ Tighten the Nut securely.
- ⑥ Turn ‘On’ the printer and load ticket stock; see Section 3.2.
- ⑦ To verify the alignment, press the FEED button several times – the stopping point should be the same for each ticket that is output. Note that if the Fault Indicator illuminates, the sensor needs to be repositioned (see Section 5 for a complete listing of possible causes).

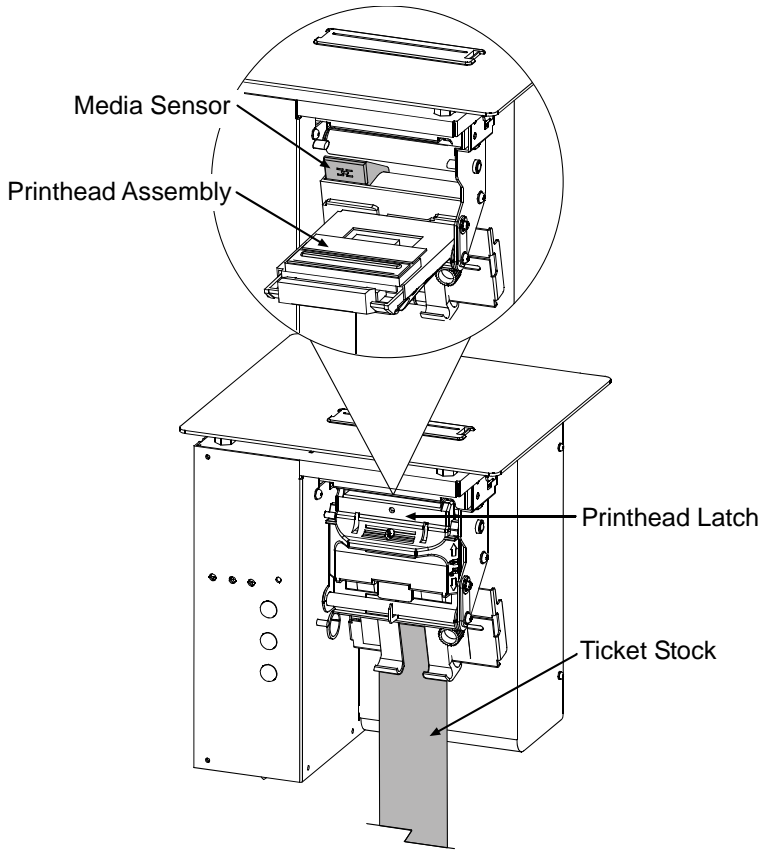
4.0.2 SV Model Media Sensor Adjustment

- ① Loosen the Thumbscrew and adjust the Media Guides to fit the width of the ticket stock:

The guides should be positioned so that there is no side-to-side ticket movement (too loose), but not so close as to cause friction or bowing of the ticket (too tight). (See Step 5 in Section 3.2.1 for an illustration).

Once properly positioned, tighten the Thumbscrew to secure the Media Guides in place.

- ② Unlock and lower the Printhead Assembly.
- ③ Grasp the Media Sensor to move it. Position the Media Sensor so that it can see the Quiet Zone and the TOF Marks on the ticket stock, as described in Section 4.0.



- ④ Raise the Printhead Assembly and lock the Printhead Latch.
- ⑤ Turn 'On' the printer and load ticket stock; see Section 3.2.
- ⑥ To verify the alignment, press the FEED button several times – the stopping point (TOF) should be the same for each ticket output.

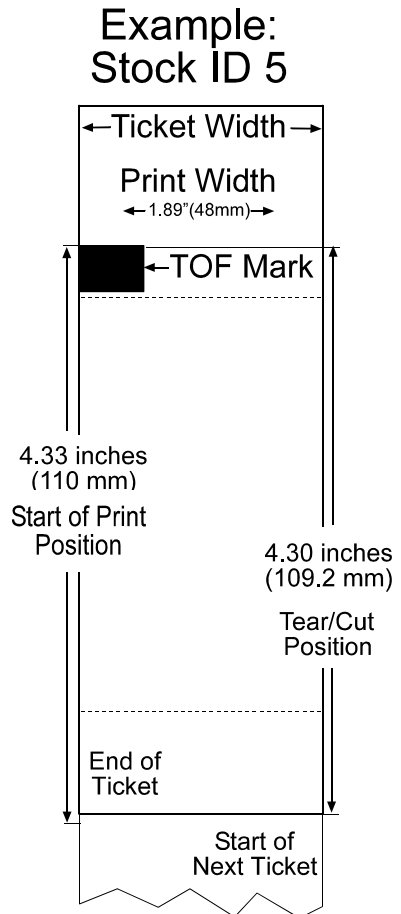
4.1 Stock ID Selections

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 Media Sensor to printhead burnline.
- The Cut/Tear Position is the distance, measured in inches, from the Media 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.

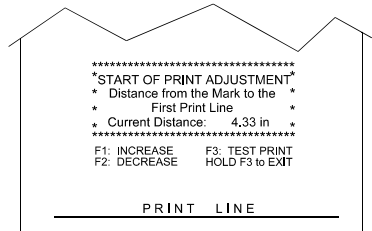
Stock ID Default Settings				
Stock ID	Print Width		Start of Print Position	Cut/Tear Position*
	3210 Models	3306 Models		
0	3.15" (80.0 mm)	3.20" (81.3 mm)	.07" (1.8 mm)	.05" (1.3 mm)
1	3.15" (80.0 mm)	3.20" (81.3 mm)	4.28" (108.7 mm)	4.26" (108.2 mm)
2	3.15" (80.0 mm)	3.20" (81.3 mm)	1.67" (42.4 mm)	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

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

4.2 Start of Print & Cut/Tear Adjustment

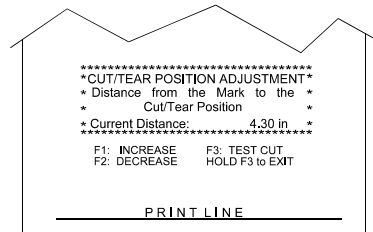
If none of the preset Stock ID parameters meet the needs of your application, then the Start of Print (SOP) and Cut/Tear (C/T) Adjustments can be used to visually set the required positions. To begin:

- 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 using the optional cutter, the cut position on the ticket should occur just behind the perforation, never in front of the perforation.

4.3 Operational Database Modification

The operational configuration of the printer, including the Parser Mode and other parameters, can be changed via the front panel, as follows:

- 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 the button. The printer is ready for database changes:
 - 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 listings of the settings and values that are accessible and modifiable through this method. Section 4.3.1 contains a step-by-step example of a parameter modification.

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	Auto, 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 or No
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)
Vert Adjust**	Adjusts the number of formatted dots in the vertical direction	0 – 20 Dots Per Inch
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)
TOF Sense	Selects the method for sensing the ticket Top Of Form	Reflective, Continuous
Present DLY	Delay - to stop the printer from backing up the tickets when printing multiple tickets.	0 – 75 sec in 5sec increments <i>Delays the presentation of the last ticket printed for the specified time period.</i>
No Reprint	When a fault condition is detected, printing stops and the FAULT light turns on. After the problem is corrected, the FEED Key must be pressed to clear the fault. The label in process is <i>not</i> reprinted.	Yes or No

*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	Auto, 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) 8-bit word (no parity)
Cutter Equip	Presence of the optional cutter will be sensed automatically.	Auto, No, Yes
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)
Vert Adjust**	Adjusts the number of formatted dots in the vertical direction	0 – 20 Dots Per Inch
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)
TOF Sense	Selects the method for sensing the ticket Top Of Form	Reflective, Continuous
Present DLY	Delay - to stop the printer from backing up the tickets when printing multiple tickets.	0 – 75 sec in 5sec increments <i>Delays the presentation of the last ticket printed for the specified time period.</i>
No Reprint	When a fault condition is detected, printing stops and the FAULT light turns on. After the problem is corrected, the FEED Key must be pressed to clear the fault. The label in process is <i>not</i> reprinted.	Yes or No

*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.

- 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.

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

STOCK ID	=	5
----------	---	---

- ❸ 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:

PRINT SPEED	=	6 IPS
PARSER MODE	=	AUTO
TICKET WIDTH	=	189 (48 MM)
STOCK ID	=	5

- ❹ 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:

PRINT SPEED	=	8 IPS
PRINT SPEED	=	7 IPS
PRINT SPEED	=	6 IPS
PARSER MODE	=	AUTO
TICKET WIDTH	=	189 (48 MM)
STOCK ID	=	5

- ❺ 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

Soft-bristled brush

Cotton swabs

Soapy water/mild detergent

A clean, lint-free cloth

Compressed air



For your continued safety and to avoid damaging the unit, always turn 'Off' and unplug the printer before servicing.

Isopropyl alcohol is a flammable liquid; always take the proper precautions when using this solvent.

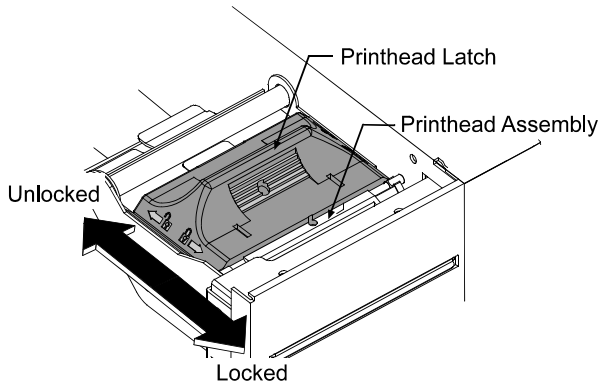
Recommended Cleaning Schedule

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.
Media 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 Printhead Cleaning

Declining print quality (for example, streaking or smudging) is usually caused by a surface build-up of dirt on the printhead; see Section 3.5.2. If left unattended, this build-up can lead to permanent printhead damage. Clean the Printhead as follows:

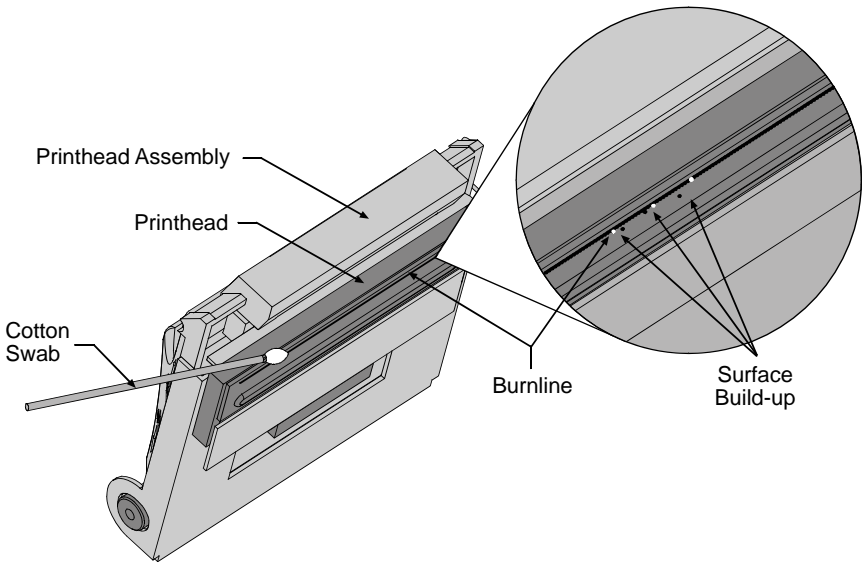
- 1 Turn 'Off' and unplug the printer. (*ST Models:* Raise the access cover; see Section 3.2.)
- 2 Slide the Printhead Latch to the 'Unlocked' position and then raise (or, in the case of SV Models, lower) the Printhead Assembly.



- 3 Using a cotton swab dampened with isopropyl alcohol gently wipe the Printhead surface, paying close attention to the Burnline, cleaning until all build-up is removed.



NEVER use a sharp object to clean the Printhead. Damage can result.

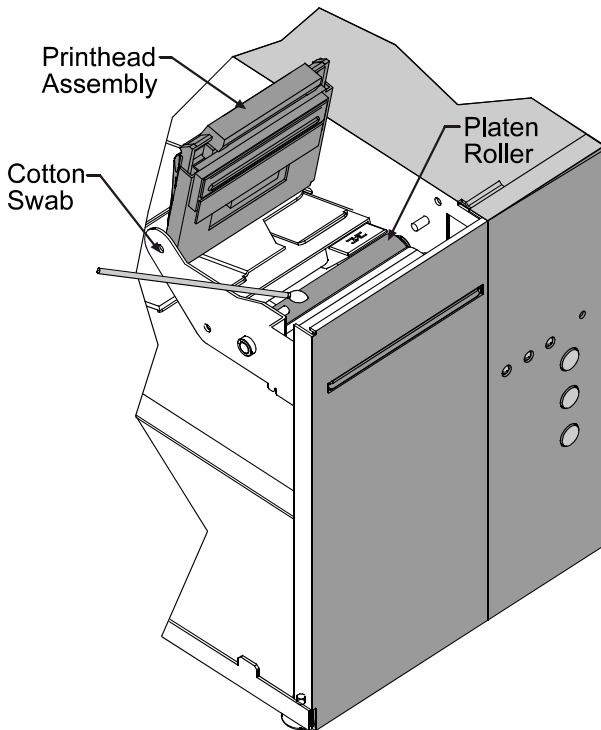


- ④ Allow the Printhead to dry.
- ⑤ Lower (or raise) the Printhead Assembly and slide the Printhead Latch forward to the 'Locked' position.
- ⑥ Plug in and turn 'On' the printer. Load ticket stock; see Section 3.2. (*ST Models*: Close the access cover.) This completes the procedure.

4.4.2 Platen Roller Cleaning

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. Clean the Platen Roller as follows:

- ❶ Turn 'Off' and unplug the printer. (*ST Models:* Raise the access cover; see Section 3.2.)
- ❷ Slide the printhead latch to the 'unlocked' position and then raise (or, in the case of *SV Models*, lower) the printhead assembly; see Section 4.4.1. Remove any ticket stock.
- ❸ Using a cotton swab or lint-free cloth dampened with isopropyl alcohol, remove all debris on the Platen Roller. Manually rotate the roller and repeat until the entire surface has been cleaned.



NEVER use a sharp object to clean the Platen Roller. Damage can result.

- ④ Allow the Platen Roller to dry.
- ⑤ Lower (or raise) the printhead assembly and slide the printhead latch into the 'locked' position.
- ⑥ Plug in and turn 'On' the printer. Load ticket stock; see Section 3.2. *ST Models*: Close the access cover. This completes the procedure.

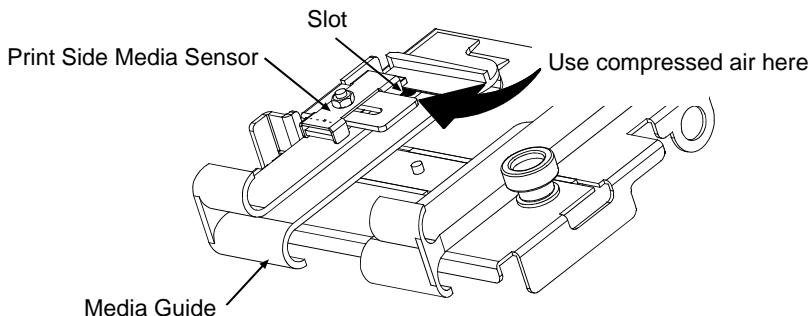
4.4.3 Media Sensor Cleaning

If the Media Sensor becomes blocked with paper particles, TOF detection may become inconsistent and result in fault conditions. Clean the sensor as follows:

- ① Turn 'Off' and unplug the printer. (*ST Models*: Raise the access cover; see Section 3.2.)
- ② Slide the printhead latch to the 'unlocked' position and raise (or, in the case of *SV Models*, lower) the printhead assembly (see Section 4.4.1).
- ③ Remove any ticket stock.
- ④ Perform this step according to the printer's Media Sensor option:

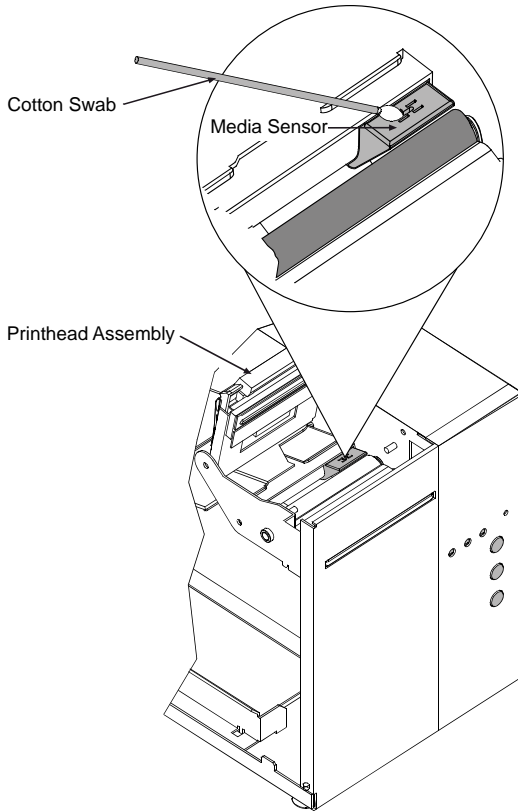
Print Side Media Sensor option –

Using compressed air, direct an air stream under the Print Side Media Sensor to remove any debris.



Standard Media Sensor option –

Using a soft-bristled brush or compressed air, sweep or direct an air stream into the Media Sensor to remove any debris. (In cases of extreme build-up, a cotton swab dampened isopropyl alcohol can be used to wipe off the sensor; however, if this method is used, allow the sensor to dry before proceeding.)

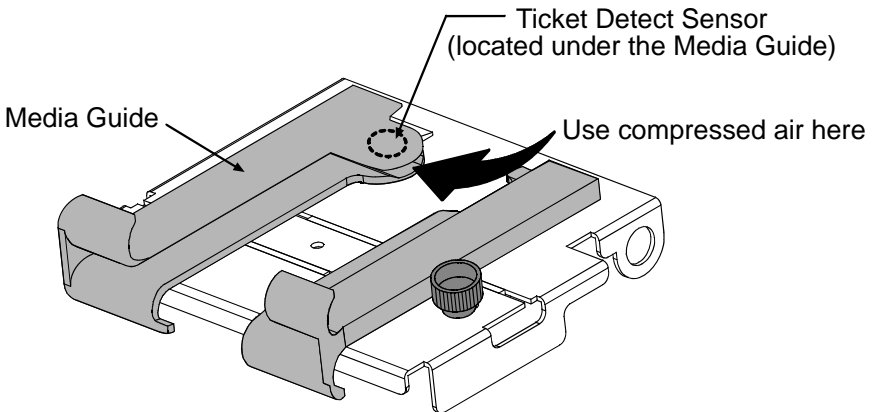


- ⑤ Lower the printhead assembly and slide the printhead latch into the 'locked' position.
- ⑥ Plug in and turn 'On' the printer. Load ticket stock; see Section 3.2. *ST Models:* Close the access cover. This completes the procedure.

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. Clean the sensor as follows:

- ❶ Turn 'Off' and unplug the printer. (*ST Models*: Raise the access cover; see Section 3.2.)
- ❷ Slide the printhead latch to the 'unlocked' position and raise (or, in the case of *SV Models*, lower) the printhead assembly (see Section 4.4.1).
- ❸ Remove any ticket stock.
- ❹ Lower (or raise) the printhead assembly and slide the printhead latch into the 'locked' position.
- ❺ Using compressed air, direct an air stream under the area indicated by dotted line in the drawing below to clean the sensor.



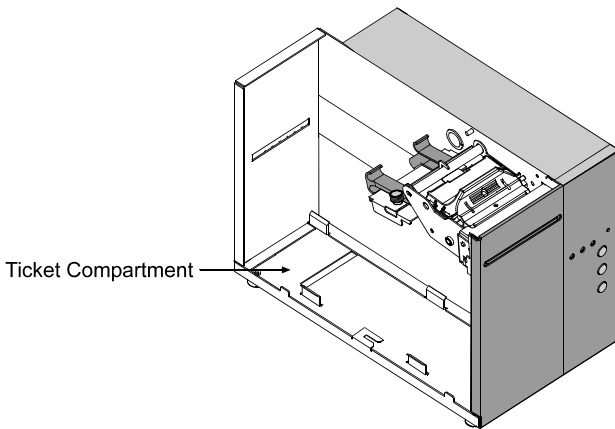
- ❻ Plug in and turn 'On' the printer. Load ticket stock; see Section 3.2. *ST Models*: Close the access cover. This completes the procedure.

4.4.5 Interior Cleaning

Required for ST Models only

Over time particles of ticket stock accumulate inside the printer. These particles can stick to the ticket and cause voids in the print. Clean the interior of the printer as follows:

- ❶ Turn 'Off' and unplug the printer. Raise the access cover; see Section 3.2.
- ❷ Slide the printhead latch to the 'unlocked' position, raise the printhead assembly (see Section 4.4.1), and remove the ticket stock.
- ❸ Using a soft brush or compressed air, remove all debris from inside the ticket compartment.



- ❹ Lower the printhead assembly and slide the printhead latch into the 'locked' position.
- ❺ Plug in and turn 'On' the printer. Load ticket stock (see Section 3.2) and close the access cover. This completes the procedure.

4.4.6 Exterior Cleaning

When necessary, the exterior surface can be cleaned using a general purpose cleanser and a soft cloth or sponge. Clean printers exterior covers as follows:

- 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.



NEVER use abrasive cleansers or solvents. NEVER spray cleansers into the printer or allow over-spray to get on internal components, such as the printhead. Damage can result.

4.4.7 Downloading Firmware and Fonts

The operating programs and fonts for the printer are stored in Flash memory on the Main PCB. When program updates and/or new features are added, they can be downloaded to the printer as follows:

1. Identify the new version for your model of printer from the Datamax-O'Neil Web site at www.datamax-oneil.com and download it onto your computer's hard drive or a floppy disk.
2. Ensure that the printer is connected to the host, (via parallel port only) and that the power is 'On.' Using the DOS copy command enter:

```
copy filename.dlf lpt1/b    (non-display printer firmware is .dlf extension)
```

```
copy filename.zs lpt1/b    (display printer firmware is .zs extension)
```

Note: Other programs (e.g., hyper-terminal and certain Windows Driver programs) may also be used to download this file.

3. The ON-LINE light will flash during the download.

4. **Following a successful download**, the printer will perform a ‘cold reset.’ The previous printer setup will not be affected unless substantial firmware data structure changes have occurred. Print a Database Configuration Label to verify your new firmware version.
 - **Following an unsuccessful download**, the FAULT Light will illuminate then the printer will perform a ‘warm reset’ The original firmware will remain operational. If the printer fails to reset, toggle the power ‘Off’ and ‘On.’

Try re-sending the file to the printer. If the failure continues, check the following possible causes:

An invalid or corrupted file is being downloaded - Ensure the file being downloaded is correct and applicable for your printer model.

Possible communications error - Check the cable connection between the host and printer and ensure that a quality, shielded cable is used.

Possible Flash memory problem - Call for service.



Troubleshooting

5.0 Help Guide

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-O'Neil Technical Support or a qualified service technician.

☑ Note: If the Fault Indicator is lit, the FEED button must be pressed after completing the corrective action to clear the alarm and return the printer to normal operation.

If experiencing this problem...	Try this Corrective Action...
The printer fails to power-up:	<ul style="list-style-type: none">• The AC power cord may be faulty; try another cord.• The AC outlet may be faulty; try moving the printer to another wall outlet.
All three indicator lights are 'On':	<ul style="list-style-type: none">• The printer is online but is out of stock, see section 3.2.• The printer has failed to initialize; call for service.

If experiencing this problem...	Try this Corrective Action...
<p>No communications / not printing via software:</p>	<ul style="list-style-type: none"> • The parser mode may not match the software (language) being used. Print a Configuration Label to check the detected parser mode setting (see Section 3.4.1) or see Section 5.1 for more information. See Section 4.3 to reconfigure the parser mode setting, depending upon your software program, for DTPL or DPL. • The communication parameters between the printer and host may not match; Print a Configuration Label to check the current port settings (see Section 3.4.1) See Section 4.3 to reconfigure the printer to match the host computer's settings. • The interface connection may be faulty or the cable may be incorrect or faulty; check the connections and see Appendix C for cable requirements.
<p>Poor print quality / not printing (including resident formats):</p>	<ul style="list-style-type: none"> • The printhead latch may be unlocked; lock the latch. See Section 3.2. • The printhead may be dirty; clean per Section 4.4.1. • The heat setting may be incorrect. 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. • The type of ticket stock may be incorrect (i.e., thermal transfer).

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

If experiencing this problem...	Try this Corrective Action...
<p>The printer does not print formats sent from the host, but the Fault Indicator remains off:</p>	<p>The parser mode may not match the software (language) being used. Print a Configuration Label to check the detected parser mode setting (see Section 3.4.1) or see Section 5.1 for more information. See Section 4.3 to reconfigure the setting.</p> <p>The communication parameters between the printer and host may not match; reconfigure, see Section 4.3.1.</p> <p>The interface connection may be faulty or the cable may be incorrect or faulty; check the connections and see Appendix C for cable requirements.</p> <p>The printer may be in 'hex dump mode' (see Section 5.1); cycle the printer power 'Off' and 'On'.</p>
<p>Erratic print (strange characters instead of ticket formats are printed):</p>	<p>The printer may be in 'hex dump mode'; see Section 5.1.</p> <p>If using the serial interface port, check the host and printer communications settings; see Section 3.4.1.</p>
<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. If the cutter has not been detected, call for service; otherwise, verify that the cut function has been selected in the software program.</p>

5.1 Hex Dump Mode

The hex dump mode is a useful tool for diagnosing problems including communication and programming syntax errors. 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 tickets feed forward. After a brief hesitation, Configuration and Test Pattern. Now the printer is in hex dump mode; until power is cycled 'Off and On,' all data reaching the printer will be output in hex/ASCII code.

The following hex dump examples illustrate the different parser mode languages that can be interpreted by the printer:

3C in this location denotes that a DTPL label format was sent to the printer.

```
0000 3C 0E 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 .....
```

02 in this location denotes that a DPL label format was sent to the printer.

```
0000 02 4C 0D 44 31 31 0D 31 ^L D11.1
0008 30 31 31 30 30 30 30 33 61100003
0010 32 30 30 30 31 30 46 4F 200010FO
0018 4E 54 20 36 3A 20 41 4C NT 6: AL
0020 4C 20 56 41 4C 49 44 20 L VALID
0028 20 20 20 20 20 20 20 20
0030 20 20 20 0D 31 36 31 31 1611
0038 30 30 30 30 32 38 30 30 00002800
0040 30 31 30 20 20 20 20 20 010
0048 20 20 20 43 48 41 52 41 CHARA
0050 43 54 45 52 53 3A 0D 31 CTERS: 1
0058 36 31 31 30 30 30 32 61100002
0060 34 30 30 30 31 30 23 24 400010#$
0068 25 26 28 29 2A 2B 2E 2D %&()*+,-
```

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-O'Neil Technical Support Representative with any questions.

Note: To exit hex dump mode, turn the Power Switch 'Off' and 'On'.



Specifications

6.0 Specifications

Barcodes/Fonts (See Appendix B for examples)

Barcode Symbolologies
(mode dependent):

DPL Parser 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 Parser Mode: Code 39, Code 128 (subsets A, B, and C), Interleaved 2 of 5, UPC-A, EAN-8, EAN-13, and Codabar.

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°.

Resident Fonts
(mode dependent):

DPL Parser 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, 48, 72 point size fonts (point sizes 4 and 5 are available for ST/SV 3306 models only).

DTPL Parser Mode: 13 different typefaces and sizes.

Optional Fonts:

AGFA Scalable Font Engine supporting downloads of Intellifont and True Type Font formats.

Communications

Interface	USB, RS-232 (DB-9), and IEEE 1284 Compliant Centronics Parallel
Baud Speed	600 to 38,400 bits per second (BPS)
Handshaking	Xon/Xoff, CTS, DTR
Parity	Even, Odd, or None
Stop Bits	1 or 2
Data Bits	7 or 8

Control (Front) Panel

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

Electrical

Grounding:	Unit must be connected to a properly grounded receptacle.
AC Input Voltage	90 – 132 or 180 – 264 VAC @ 47–63 Hz, auto-ranging.

Environmental

Dust:	Non-conducting, non-corrosive
Electromagnetic Radiation:	Moderate RF fields can be tolerated
Operating Temperature	40 F to 100 F (4 C to 38 C)
Humidity	10% 95% non-condensing

Mechanical

Depth:

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

Height:

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

Width:

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

Ticket Compartment (ST Models only): Fanfold Ticket Height – 4.5 inches (114.3 mm); Fanfold Ticket Length – 11.375 inches (289 mm).

Roll Ticket Size (with Roll Hanger option) – 7-inch (178 mm) maximum outer diameter roll on a 2-inch (51 mm) minimum inner diameter core.

Print Engine

DRAM Memory:	4 MB
FLASH Memory:	2 MB
Maximum Fields and Characters Per Ticket:	600 fields with 16,000 characters per ticket
Media Sensing:	Reflective
Printhead Dot Size (nominal):	
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)
Print Length Range:	1 – 12 inches (25.4mm – 304.8 mm) at default settings.
Print Resolution:	
ST/SV-3210 –	203 DPI (8 dots/mm)
ST/SV-3306 –	300 DPI (11.8 dots/mm)
Print Width, Maximum:	
ST/SV-3210 –	3.15 inches (80 mm)
ST/SV-3306 –	3.20 inches (81.2 mm)
Print Speed Range:	
ST/SV-3210 –	4.0 – 10 IPS (102 – 254 mmpps)
ST/SV-3306 –	2.0 – 6 IPS (51 – 152 mmpps)
Speed, Reverse:	3.0 5.0 IPS (76 127 mmpps)
Speed, Slew:	
ST/SV-3210 –	4.0 10.0 IPS (72 254 mmpps)
ST/SV-3306 –	2.0 – 6.0 IPS (51 – 152 mmpps)
Printing Type:	Direct Thermal

Ticket Stock Requirements

Type^[1]: Fan-fold (and roll, if option equipped) reflective^[2] or continuous direct thermal stock.

Roll Stock^[1] (media sensor dependant):

Print Side Media Sensor – TOF Marks wound facing ‘out.’

Standard Media Sensor – TOF Marks wound facing ‘in.’

Thickness Range:

Standard Model – .005-inch minimum to a .010-inch maximum.

Cutter-Equipped Model – .005-inch minimum to a .008-inch maximum.

¹ The ST Model has space restrictions when ticket stock is stored internally, see ‘Mechanical / Ticket Compartment,’ above.

² The mark must be black carbon-based ink, with a reflectance that is less than 10% at wavelengths of 950 and 640 nm.

Ticket Stock Requirements (continued)

Dimension	Description ^[3]	Minimum	Maximum	Layout
A	Ticket Width	2.0	3.25	<p>The diagram illustrates the layout of a ticket stock with two reflective marks. Dimension A represents the total width of the ticket. Dimension B represents the width of the quiet zone, which is the area free of reflective printing. Dimension C is the height of the reflective mark. Dimension D is the distance between the centers of the two reflective marks. Dimension E is the total length of the ticket. Dimension F is the length of the reflective mark.</p>
B	Reflective Mark Width ^[6]	.50	3.25	
C	Reflective Mark Length ^[4]	.125	–	
D	Distance between Reflective Marks ^[4]	1.0	–	
E	Ticket Length ^[4]	1.0	–	
F	Quiet Zone Width ^[5]	.40	3.25	

³ Units of measure are given in inches, and all dimensions are referenced in the direction of ticket travel through the printer.

⁴ The maximum allowable length of the combined ticket and mark measurement cannot exceed 99.99 inches.

⁵ This is an area free of reflective printing (excluding the reflective marks) that runs the entire length of the ticket.

⁶ *Standard Media Sensor:* The center of this mark must fall between .235 and 3.03 inches from the ticket edge, while allowing an adequate Quiet Zone within that area.

Print Side Media Sensor: The center of the mark must fall between .250 and .750 of an inch from the ticket edge, while allowing an adequate Quiet Zone within that area.

6.1 Approved Ticket Stocks

For optimum print quality, maximum printhead life, and warranty compliance Datamax-O'Neil recommends the following ticket stocks. Contact a Datamax-O'Neil 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.



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	Ò	227	E3
ä	132	84	ñ	164	A4		196	C4	õ	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	Û	233	E9
ë	138	8A		170	AA		202	CA	Ü	234	EA
ï	139	8B	1/2	171	AB		203	CB	Û	235	EB
î	140	8C	1/4	172	AC		204	CC	ÿ	236	EC
ì	141	8D	¡	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	Ɔ	209	D1	±	241	F1
Ɔ	146	92	2	178	B2	Ë	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	˚	247	F7
ÿ	152	98	©	184	B8	Ï	216	D8	°	248	F8
Ö	153	99	1	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	Ï	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 according to the Parser Mode. Depending upon the mode, 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, 255
1	32-168, 171, 172, 225, 255
2	32-168, 171, 172, 225, 255
3	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225, 255
4	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225, 255
5	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225, 255
6	32, 35-38, 40-58, 65-90, 128, 142-144, 146, 153, 154, 156, 157, 165, 168, 225, 255
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, 255

The table below lists font sizes, 0 – 8, in 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:;<=>?@
ABCDEFGHIJKLMN0P
QRSTUVWXYZ[\]^_`
abcdefghijklmnopqrstuvwxyz
0123456789:;<=>?@
```

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

```
Font 1:
!"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMN0PQRSTUVWXYZ[\]^_`
abcdefghijklmnopqrstuvwxyz{ }~
ÇüéáàåäçèéëïïïÏÄÊ#fëöó
üÿ0Üø£Ø×fa iouñN²³¼½
```

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

```
Font 2:
!"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMN0PQRSTUVWXYZ[\]^_`
abcdefghijklmnopqrstuvwxyz{ }~
ÇüéáàåäçèéëïïïÏÄÊ#fëöó
üÿ0Üø£Ø×fa iouñN²³¼½
```

Font 3: 62 characters, alphanumeric, uppercase.

```
Font 3:
!"#$%&'()*+,-./0123456789:;<=>?@
ABCDEFGHIJKLMN0PQRSTUVWXYZ
ÇÄÊÖÜø£ØÑ¿ß
```

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.

6 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789
 8 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz
 10 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstu
 12 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqr
 14 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopq
 18 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop
 24 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop
 30 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop
 36 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop
 48 pt ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnop

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

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.

Barcode ID	Type	Length	Check-sum	Valid ASCII Characters, decimal value representation
A / a	Code 39	Varies	No	32, 36, 37, 42, 43, 45-57, 65-90
B / b	UPC-A (regular)	11	Yes	48-57 Numeric only Option V used in the 6th & 7th position
C / c	UPC-E (zero suppression)	6	Yes	48-57 Numeric only
D / d	Interleaved 2 of 5 (I 2 of 5)	Varies	No	48-57 Numeric only
E / e	Code 128	Varies	M-103	32-127
F / f	EAN-13	12	Yes	48-57 Numeric only. Option V used in the 7th & 8th position
G / g	EAN-8	7	Yes	48-57 Numeric only
H / h	Health Industry Bar Code (Code 39 Mod and 43 checksum)	Varies	M-43	32, 36-39, 42, 43, 45-57, 65-90
I / i	Codabar	Varies	No	36, 43, 45-58, 65-68
J / j	I 2 of 5 with modulo 10 checksum	Varies	M-10	48-57 Numeric only
K / k	Plessey	Up to 14	M-10	48-57 Numeric only. Option + is Last Character for Second M-11 checksum
L / l	ITF SCC-14/ I 2 of 5 Shipping Container Code	13	M-10	48-57 Numeric only
M / m	2 digit UPC addendum	2	Yes	48-57 Numeric only
N / n	5 digit UPC addendum	5	Yes	48-57 Numeric only
O / o	Code 93	Varies	No	35-38, 42-58, 65-90, 97-122
p	Postnet	Varies	Yes	48-57 Numeric only
Q / q	SSCC-18/Serial Shipping Container Code	19	Yes	48-57 Numeric only
R / r	UCC/EAN Code 128 K-Mart NON EDI bar code	18	Yes	48-57 Numeric only
S / s	UCC/EAN 128 Random Weight	34 +	Yes	48-57 Numeric only
T / t	Telepen	Varies	Yes	Alphanumeric
U	UPS MaxiCode	84	Yes	Alphanumeric
u	UPS MaxiCode with Byte Count	Specified	Yes	Alphanumeric
v	FIM	1	No	A, B, C, D
z	PDF417	Varies	Yes	All
Z	PDF417 with Byte Count	Specified	Yes	All
W1c	DataMatrix	Varies	Yes	All 8-bit values
W1C	DataMatrix with Byte Count	Specified	Yes	All 8-bit values
W1d	QR Code – Auto format	Varies	Yes	Alphanumeric
W1D	QR Code – Manual format	Varies	Yes	Single-byte or Kanji double-byte
W1f	Aztec	Varies	Yes	All 8-bit values
W1F	Aztec with Byte Count	Specified	Yes	All 8-bit values
W1T	TCIF Linked Barcode 3 of 9 (TLC39)	Varies	No	Alphanumeric
W1z	MicroPDF417	Varies	Yes	All 8-bit values
W1Z	MicroPDF417 with Byte Count	Specified	Yes	All 8-bit values

Barcode A Code 39



Barcode B UPC-A (regular)



Barcode C UPC-E (zero suppression)



Barcode D Interleaved 2 of 5



Barcode E Code 128



Barcode F EAN-13



Barcode G EAN-8



Barcode H Health Industry Bar Code (Code 39 Mod and 43 checksum)



Barcode I Codabar



Barcode J Interleaved 2 of 5 w/module 10 checksum



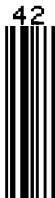
Barcode K Plessey



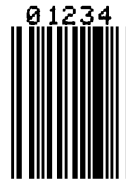
Barcode L ITF SCC-14/ 12 of 5 Shipping Container Code



Barcode M 2 Digit UPC addendum



Barcode N 5 Digit UPC addendum



Barcode O Code 93



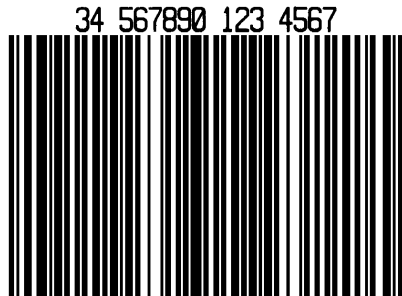
Barcode p Postnet



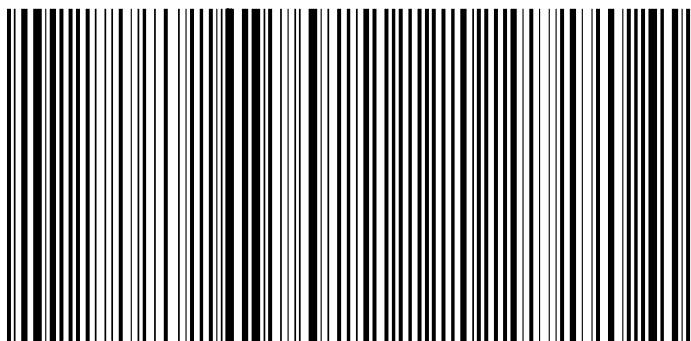
Barcode Q SSCC-18/Serial Shipping Container Code



Barcode R UCC/EAN Code 128 KMART NON EDI



Barcode S UCC/EAN 128 Random Weight



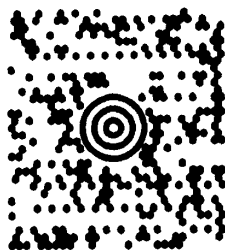
01 10073675029260 11 930420 3202 001800 21 10123456

Barcode T Telepen

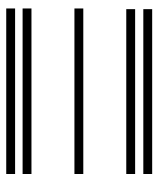


ABCDEF

Barcode u UPS MaxiCode



Barcode v FIM



Barcode z PDF417



Bar Code W1c: DataMatrix



Bar Code W1d: QR Code



Bar Code W1f: Aztec



Bar Code W1z: MicroPDF417



Bar Code W1T: TCIF Linked
Barcode 3 of 9 (TLC39)



DTPL Barcodes

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

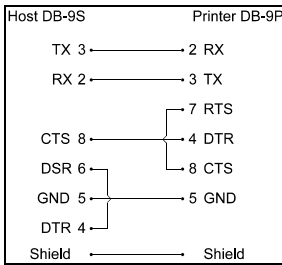


Appendix C

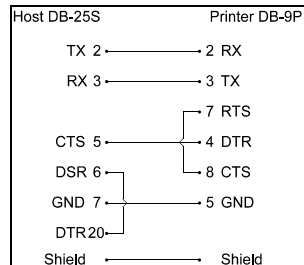
Cable Listings

Parallel Cable: Connect a Centronics 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).



Part # 32-2300-01



Part # 32-2301-01

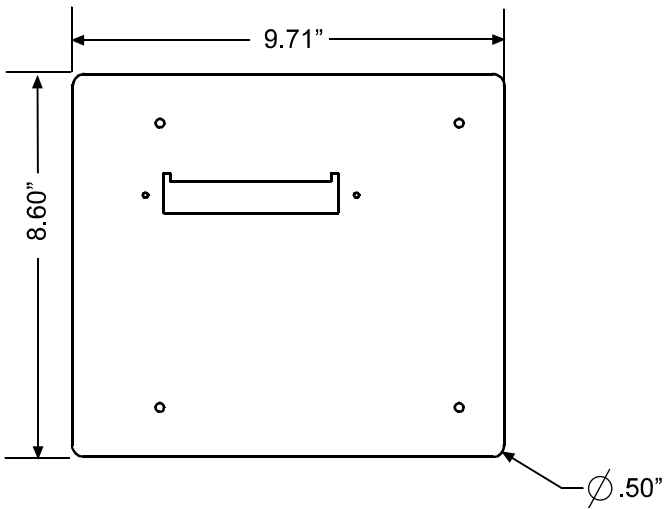


Appendix D

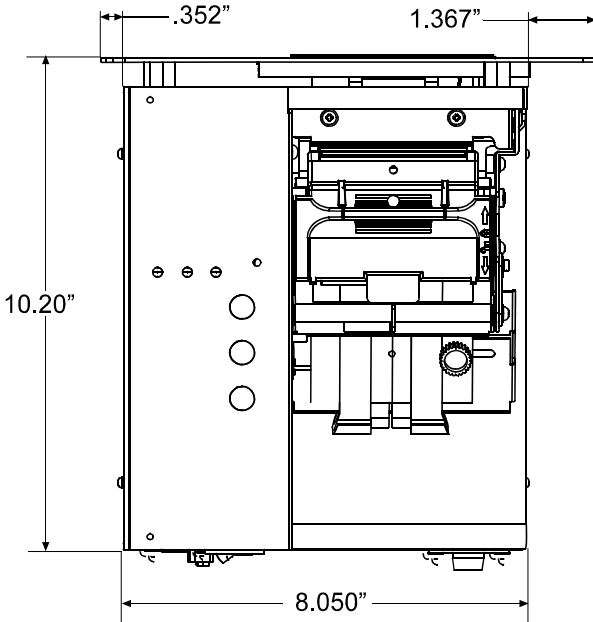
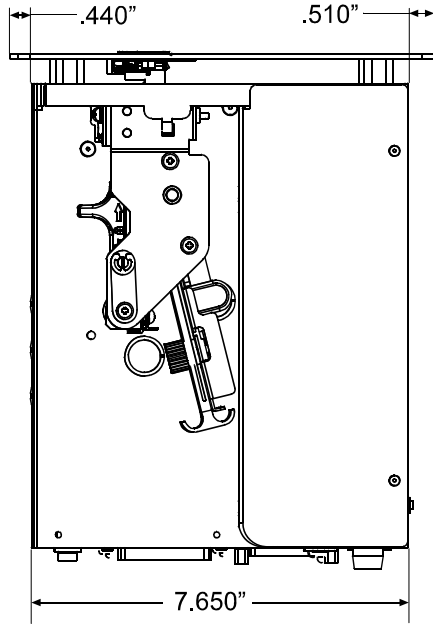
SV Model Mounting Dimensions

Top Plate Dimensions:

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



Side Dimensions:





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-O'Neil Programming Language) Programming commands used specifically for label formatting and generation with barcode printers.

DTPL (Datamax-O'Neil Ticket Programming Language) Programming commands used specifically for ticket formatting and generation in the admissions/ticketing 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.

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

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 Media Sensor .

void An undesirable blank space in a printed image.

