

KROY

**K2500 Industrial Labeling System
Owner's Manual**

**Order Number 2505100
Rev. C 2002**

KROY Limited Warranty

Kroy LLC warrants its labeling system equipment against defects in material and workmanship for a period of six (6) months from the date of original purchase. At no charge to the customer, except for inbound freight to Kroy's service center, Kroy will, at Kroy's option, repair or replace any product determined to be defective. Kroy will pay return UPS ground charges. A purchase receipt or other evidence of purchase will be required before warranty service is rendered. This warranty does not cover cosmetic damage or any damage caused by accident, misuse, abuse, negligence or modification or attempted repair by anyone other than Kroy or a Kroy authorized repair agent. THERE ARE NO EXPRESS WARRANTIES EXCEPT AS SET FORTH IN THIS PARAGRAPH.

KROY SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state. If a problem develops with your Kroy labeling system during or after this warranty period, you may contact your Kroy dealer or Kroy's service center.

Your Guarantee

Every Kroy product is backed by the **KROY** name, our innovative leadership and our long-standing commitment to quality.

FCC Notice

This equipment generates and uses radio frequency energy and, if not installed and used in strict accordance with these instructions, may cause interference to radio and television reception. It has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference to radio or television reception, which can be determined by turning the equipment off and on, will not occur. The user is encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a branch circuit different than the branch the receiver is connected to.
- Consult the dealer or an experienced radio/television technician for help.

Note: To comply with FCC regulations, use only Kroy's recommended serial cable when connecting the printer to a host computer (Kroy Part Number 2506600). When installing the cable, the EMI filter should be located 2-3" from the printer.

CDC Notice

This digital apparatus does not exceed Class B limits for radio noise for digital devices as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

System Specifications

Input Device:	57 Key - Alpha-numeric elastomer keypad
Character Size:	6 point to 72 point, 1 inch supply 6 point to 55 point, .8 inch supply scalable in 1 point increments
Print Tape:	.5 inch (13 mm) .8 inch (19 mm) 1 inch (24.5 mm)
LCD Display:	2 lines, 16 characters 5x7 dot matrix
Power Requirements:	7.5 - 9 VDC, 4A (Universal Power Adapter or 6 - C-size nickel-cadmium batteries)
Weight:	4 lbs 2 oz with batteries 3 lbs 2 oz without batteries
Memory:	450,000 characters
Communications:	RS232/RS422 9600 Baud
Environment:	Operating temperature 45 to 105°F (7 to 40°C) Up to 90% non-condensing humidity Storage temperature: Machine: -20 to 150°F (-30 to 65°C) Cartridge: 60 to 105°F (15 to 40°C)

Important Safety Precautions

When using your printer, always follow these important safety precautions:

1. Read all instructions carefully.
2. Do not immerse the printer or battery charger in water or other liquids, you could receive an electrical shock.
3. Do not apply adhesive labels to your skin.
4. Do not put objects onto or into the printer or battery charger.
5. Do not expose to high temperatures or high humidity. Never leave on the dashboard or in the trunk of your car.
6. Do not use in dusty places and avoid direct exposure to sunlight and rain.
7. Do not pull on the tape, you could damage the tape cartridge.
8. Use only the batteries designated for the printer.
9. Do not attempt internal repairs to the printer or battery charger. If service or repair is needed, contact a qualified Kroy service representative.
10. Remove the batteries if you do not intend to use the printer for a long time.
11. Do not touch the printhead ceramic or rollers with your fingers.
12. Do not attempt to charge batteries other than rechargeable nickel-cadmium type.
13. Do not substitute other batteries or chargers.

Table of Contents

Warranty	i
Your Guarantee	i
FCC Notice	ii
CDC Notice	ii
System Specifications	iii
Important Safety Precautions	iv
Introduction	1
Setting Up Your Printer	2
Connecting the Optional AC Adapter	3
Installing the Batteries	3
Removing the yellow elastomer jacket	3
Installing the Nickel-Cadmium Batteries	4
Replacing the Lithium Battery	5
Installing the Tape Cartridge	5
Loading a PCMCIA (PC) Card	6
Turning the Printer On and Off	7
Using Your Printer	8
Understanding the Printer Display Screen	8
Using the Printer Keys	8
Default and Current Attribute Settings	10
Using Function Keys	10
Working with Pages and Documents	11
About Bar Code Labels	12
Making Labels	13
Using F1	14
F1	14
New	14
Open	14
Save	14
Delete	15

Formatting Text	16
Using F2	17
F2	17
Font	17
Size	17
Justification	18
Bold	18
Italics	18
Mirror	18
Vertical	18
Frame	18
Underline	19
Changing Existing Text	19
Setting Print Attributes	20
Using F3	21
F3	21
Density	21
Auto-off	21
Width	22
Margin	22
Feed	23
Units	23
Sequence	23
Language	26
Copies	26
Rotation	26
Baudrate	27
Remote	28
Time/Date	29
Stamp	29
Set Clock	29
24 Hour Mode	30
Printing Labels	31
PRINT	31
FEED	31
Setting Up Bar Codes	32
Using F4	33
F4	33
Code	33
Text	33

Resolution	34
Checksum	34
Print Checksum	34
Security Level	34
Columns	34
Using Die Cut Labels	35
Communication Protocol	36
Serial Port Connection	36
Printer Set Up	37
Basic Operation	37
Conventions	37
Appendix A: System Messages	A-1
Appendix B: Maintaining Your Printer	B-1
Cleaning Exterior Surfaces	B-1
Cleaning the Cutting Mechanism	B-1
Cleaning the Print Head and Rollers	B-3
Appendix C: Troubleshooting	C-1
Self-Laminating Wire Wrap Label Set-Up	C-2
Saving Files in the K2500	C-2
Appendix D: Code 128 Character Set	D-1
Appendix E: ASCII Character Set	E-1

List of Figures and Tables

Figure 1: Top View of Printer	2
Figure 2: AC Adapter Connection	3
Figure 3: Removing the Battery Cover	4
Figure 4: Battery Location	4
Figure 5: Installing the Tape Cartridge	6
Figure 6: Loading PC Card	6
Figure 7: Removing the Cut Mechanism	B-2
Figure 8: Holding the Cut Mechanism	B-2
Figure 9: Cleaning the Cut Blade	B-3
Table 1: Suggested Point Sizes	13
Table 2: Text Attributes	16

Table of Contents

Table 3: Print Attributes	20
Table 4: Printing Sequential Labels	23
Table 5: Set Clock Parameters	30
Table 6: Bar Code Information	32
Table 7: Special Function Keys Hex Codes	38
Table 8: Menu Hex Codes	39
Table 9: File Menu	39
Table 10: Font Menu	40
Table 11: Utilities Menu	41
Table 12: Bar Code Menu	43

Introduction

Thank you for choosing the Kroy K2500 printer. Your new printer was designed with your needs in mind, and offers many features to make your work easier.

The printer provides features that are usually available only in larger printers, yet it is small enough to hold comfortably in one hand. You can use standard nickel-cadmium batteries for portability or an optional AC power supply. Memory backup is provided by a lithium battery.

You can enter text easily using the keypad, and the special function keys let you perform standard procedures quickly and easily. In just seconds you can produce labels that include bolded, italicized, underlined, mirrored and even framed text.

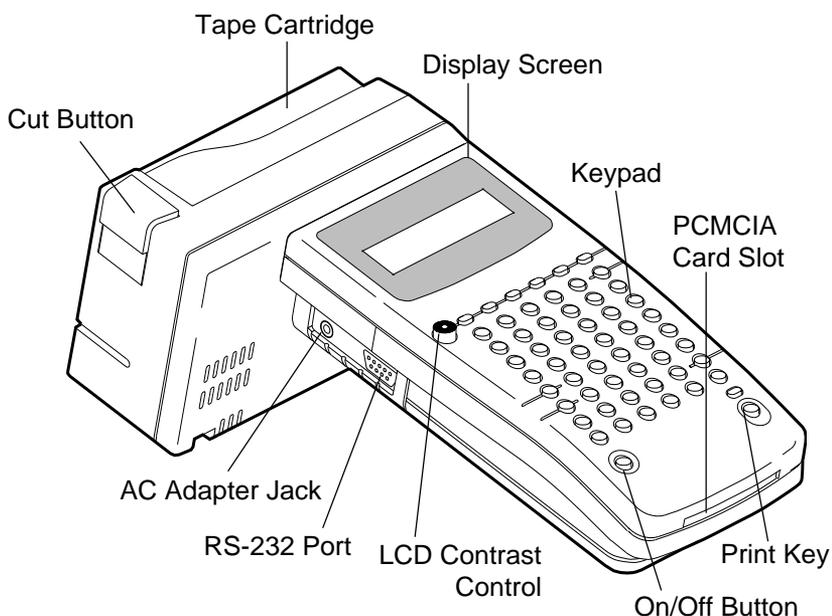
The K2500 lets you print labels in different widths and in either horizontal or vertical orientations. The printer also contains a real-time clock and ten of the most commonly used sets of bar codes.

You can also externally create labels and print them via an RS-232 connection. For more information about this feature, see **Communication Protocol** or contact your authorized Kroy distributor.

Setting Up Your Printer

This section explains how to set up your printer, connect the AC adapter, install batteries, install a tape cartridge, load PCMCIA (PC) cards, and turn the printer on and off.

Figure 1: Top View of Printer

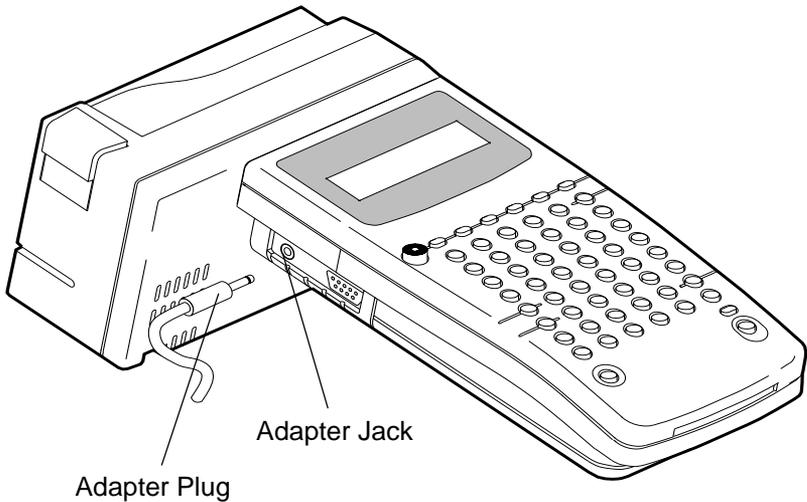


NOTE: The printer contains an RS-232 port that you can use to connect the printer to other equipment. For specific instructions on using this feature, see **Communication Protocol** or contact your Kroy distributor.

Connecting the AC Adapter (optional)

Plug one end of the adapter into the printer (see Figure 2) and the other end into an appropriate electrical wall outlet. Available from your Kroy distributor.

Figure 2: AC Adapter Connection



Installing the Batteries

Your K2500 printer includes six 2.2 Ampere-hour "C" size nickel-cadmium batteries for primary power, and one CR2032 lithium battery for memory backup. **Do not replace with other batteries.** A suitable battery charger is also included for recharging the nickel-cadmium batteries.

WARNING: Do not dispose of nickel-cadmium batteries in fire, mutilate, short-circuit, mix with other battery types, or charge in battery chargers other than the charger supplied with this product - batteries may explode, release toxic material, or get hot and cause personal injury.

Removing the yellow elastomer jacket.

1. Pull the jacket down from the top of the printer until clear of the top portion of the printer.
2. While holding the printer from the bottom, grab the top portion of the printer and lift it out of the jacket.
3. To replace the jacket reverse steps 1 and 2.

Note: The jacket must be removed to install/replace batteries.

Installing the Nickel-Cadmium Batteries

1. Remove the battery cover by pushing down on the arrow and sliding it off the base in the direction of the arrow (see Figure 3).
2. Insert the batteries (see Figure 4) according to the diagram imprinted on the printer case*.
3. Replace the battery cover.

NOTE: The size and style of type you use for labels determine how long the nickel-cadmium batteries will last between charges. Large, bold characters require more power than small ones and will drain the batteries faster. When the batteries run low, the printer will display a message telling you so. Remove and recharge them following the instructions provided with the charger.

Figure 3: Removing the Battery Cover

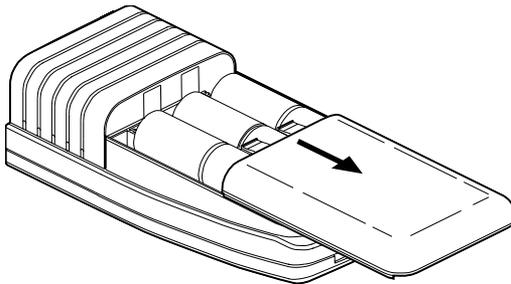
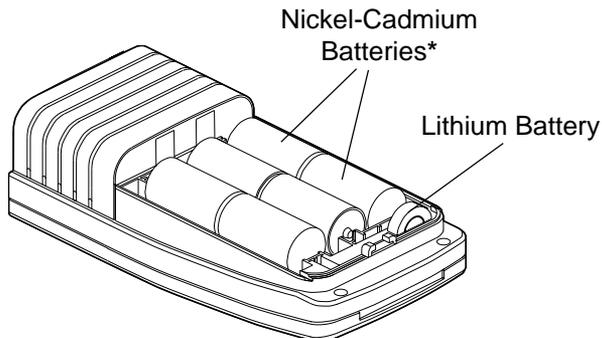


Figure 4: Battery Location



* Diagram imprinted on printer case under batteries.

Replacing the Lithium Battery

1. Turn the printer off and remove the battery cover by sliding it off the base of the unit (see Figure 3).
2. Remove the lithium battery by prying and/or pulling it up and out of its recess (see Figure 4).
3. Install the replacement making sure that its polarity is correct (the same as the battery removed and in accordance with the plus and minus signs molded into the battery compartment next to the battery recess).
4. Replace the battery cover and re-enter any files that were lost.

NOTE: The lithium battery normally lasts for several years and requires replacement only after it will no longer retain files when the unit is turned off.

CAUTION: Danger of explosion if lithium battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

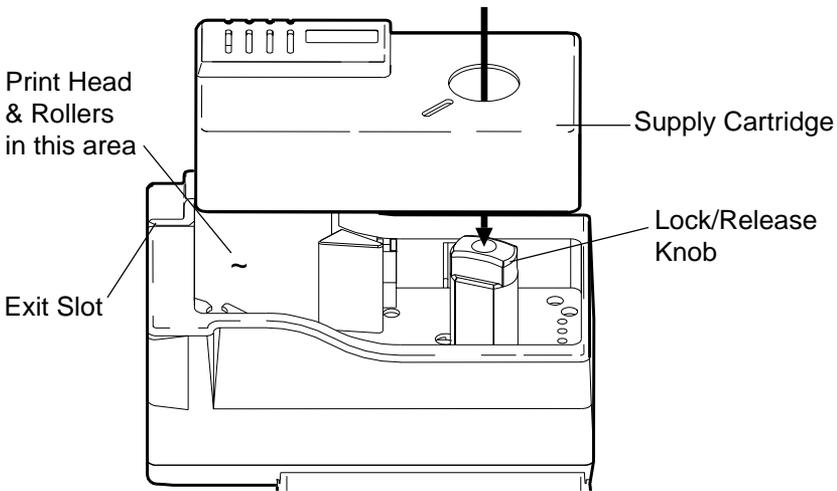
ATTENTION: "Danger d'explosion si les piles au Lithium sont incorrectement réinstallées. Remplacer uniquement avec des piles identiques ou d'un modèle équivalent préconisé par le constructeur. Suivre les instructions du constructeur pour retirer les piles usées."

Return spent batteries to the dealer/manufacturer for appropriate environmental disposal.

Installing the Tape Cartridge

1. Wind the ribbon spool on the bottom of the supply cartridge counter-clockwise two full turns in the direction of the arrow with your finger.
2. Place the hole in the tape cartridge over the lock/release knob on the printer while guiding the tape leader into the exit slot (see Figure 5). Press down on the cartridge gently but firmly and make sure that it lies flat against the base.
3. Turn the lock/release knob on the printer clockwise and align with the closed lock graphic on the cartridge.
4. Press the **FEED** key once to advance the tape.

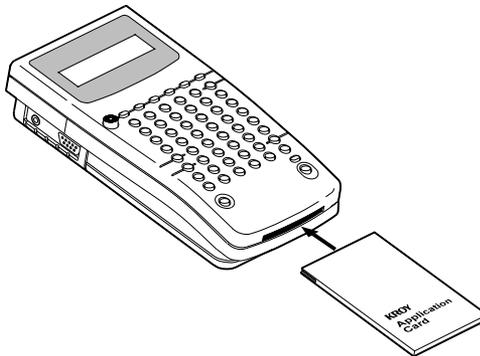
Figure 5: Installing the Tape Cartridge



Loading a PCMCIA (PC) Card

1. Turn off the printer. **Warning: Do not remove or insert a card with the printer on.**
2. Insert the card into the card slot (see Figure 6) with the label side up. Press gently but firmly to seat the card in the slot.
3. Turn on the printer.

Figure 6: Loading a PC Card (optional)



NOTE: The card must be loaded before you can select an option, fonts or files from it, and should not be removed until you have printed the label that uses the card.

Turning the Printer On and Off

Press the **ON/OFF** key located on the lower left hand corner of the keypad to turn the printer on. The following prompt will appear:

Kroy K2500
Any Key

Press any key, except **ON/OFF**, **SHIFT**, **CAPS** or **ALT**, to begin. Press the **ON/OFF** key again to turn the printer off.

Using Your Printer

Understanding the Printer Display Screen

The printer display screen shows system prompts and messages, lists of file names, menu options, and label text. Although you can enter six lines of text on a label, the screen displays only two lines (16 characters each) at a time and shows line numbers. Each time you press **ENTER** the line number is displayed on the left followed by a colon. Use the left and right arrow keys to view characters off the edge of the display screen.

When the display screen is blank (except for the cursor and line number) or shows your label text, you are in “edit” mode. You use edit mode to enter or change label text. When you press one of the special function keys, the menu of options will be displayed on the second line of the display. After you finish selecting an attribute, the printer redisplay your text and returns you to edit mode (except for **Font** menu (F2)).

Using the Printer Keys

The keyboard is used to enter label text and access menus. You will hear an audible click whenever a key is depressed (except modifier keys). The special keys on the keyboard are described below.

ALT (1) Enters special characters and accent symbols shown in yellow on the keyboard bezel and (2) activates the **DELETE** function on the **<** key (see **<** below). To enter a special character shown in yellow, hold down **ALT** and press the key below and to the right of the character you want. Accented characters require an extra step to enter. To enter an accented character:

- hold down **ALT** and type the key below and to the right of the accent character,
- release both keys, and,
- type the character to be accented (holding down the **SHIFT** key will enter it in upper case).

Arrow Keys Move the cursor through text without changing it and through options without selecting any. The left and right arrow keys move left and right, one option or one character at a time; the up and

down arrow keys move up and down through lines of text, one line at a time. When used with **SHIFT**, the up and down arrow keys act as **PAGE UP** (previous label) and **PAGE DOWN** (next label) keys and the left and right arrow keys move the cursor one word at a time.

CAPS Locks **SHIFT** on so that you can type all capital letters.

< (DELETE) Deletes the character to the left of the cursor. To delete the character above the cursor, hold down **ALT** and press **<**. To delete an entire line hold down **SHIFT** and press **<**, and to delete just one word hold down **ALT-SHIFT** and press **<**.

ENTER (1) In edit mode, moves to the next line on a label when you are entering label text, and (2) in function mode, selects menu options, file names, and default attribute settings.

ESC Returns you to edit mode without selecting a list option or changing an attribute and aborts printing. Note: When using **F2**, press **ESC** twice (if you are in a submenu) to return to edit mode without selecting a list option.

F1 Lets you create a label and save it in a file, modify labels you have already saved, and delete labels that you no longer need.

F2 Lets you choose text attributes for your label text and remains on the display until you press **ESC**. You can choose a font, font size, justification, bold, italics, mirror, vertical, frame, and underlined text.

F3 Lets you specify the language you want to use, label width, margins, unit of measure (inch or millimeters) for specifying label width and margins, a sequence to print automatically, number of copies to print, whether to automatically shut off after 5 minutes, variable feed length, baud rate, remote mode, time and date functions, print density, and rotation.

F4 Lets you set up the printer to print bar codes. You can select the type of bar code you want to print, add text to print with the code, select print resolution, and specify the type of error checking you want to use.

FEED Advances approximately one inch of tape from the printer.

PRINT Prints the current label and advances the tape far enough to clear the cut mechanism. To abort printing, press **ESC**.

SHIFT (1) Capitalizes letters and, used with **ALT**, special language characters (such as Æ) and accented characters (such as Ö) shown in yellow on the keyboard bezel, (2) accesses characters (such as % and ;) at the tops of number and punctuation keys, and (3) causes the up and down arrow keys to function as **PAGE UP** (previous label) and **PAGE DOWN** (next label) keys, (4) causes the left and right arrow keys to move the cursor one word at a time.

Default and Current Attribute Settings

When the printer is shipped from the factory, some attributes are already set; for example, the number of copies is set to one. Although you can change these default settings when you make labels, they are automatically reinstated when you turn off the printer or select **NEW** from the file menu. The default settings for your printer are shown in the Formatting Text and Setting Print Attributes sections of this manual.

"Current" settings are the attributes active right now, and can include (1) factory defaults that you have not changed, (2) your changes to factory defaults, and (3) your settings for attributes that are not preset at the factory (i.e., width, margin). When you save a label, its current attributes are automatically assigned to the next label you create (and all subsequent labels) until you change attributes again or select **New** from the file menu. Label text and text attribute settings are saved when you shut off the printer. Factory settings are restored when the lithium battery is replaced.

In some cases, the cursor displays to the left of the current settings when you select a menu option; other times, current settings are marked by an asterisk (*).

Using Function Keys

When you press one of the special function keys (**F1**, **F2**, **F3** and **F4**), the printer displays a menu of options. When you select an option, the printer will display a list of more options, or prompt you for information. These function keys also act as "toggles" which allow you to turn an option on or off.

Submenu: A submenu is a subsequent menu of options that displays when you press one of the special function keys. For example, when you press **F2** and then select the **Justification** option from the font menu, a submenu of options displays the types of justification available: **Left**, **Center**, or **Right**.

There are three ways to select options on menus and submenus: (1) press **ESC** to retain the displayed default, (2) use the left or right arrow keys to move the cursor to the left of the option you want and then press **ENTER**, or (3) type the first capitalized letter in the option you want (such as, **R** for **Right** justification in the preceding example).

Prompts: A prompt is the printer's request for information. For example, when you select the **Save** option on the file menu, the printer prompts you to enter the name of the file you want to save. In response to a prompt, simply type the requested information and press **ENTER**.

Toggles: Toggled options are like light switches — either on or off. When you select an option (turn it on), an asterisk displays to the left of it to show you that the option is on. When you select the option again (turn it off), the asterisk is removed to show that the option is off.

At any menu, submenu, or toggle option, simply press **ESC** to return to edit mode without changing the option setting. For example, if you press **F2** to display the font menu, type **J** for **Justification**, and then press **ESC**, you return to edit mode without changing the current setting for justification.

Working with Pages and Documents

You can enter multiple labels in a file by using **PAGE UP** and **PAGE DOWN** to access additional pages (labels). In this case, you can think of a file as a single document containing one or more pages (labels). (Each label can be up to six lines.) To start a new page while you are in a file, use the **SHIFT** and down arrow key to move to the next page; to move back to the preceding page, use **SHIFT** and the up arrow key. When you press the **PRINT** key, all pages in the file will be printed.

Note: **PAGE UP** and **PAGE DOWN** operate differently when using die cut label supply. (See Using Die Cut Labels)

About Bar Code Labels

Although this manual explains how to set up your printer to print bar code labels, it does not explain the technical details of bar coding, suggest which type of bar code you should use, or explain how to use a bar code most effectively. Before you can properly print bar code labels you should answer the following questions:

- Which type of bar code fits your application?
- Do you want to print the bar code with or without text?
- How many lines must your bar code be to carry all the information you need?
- What is the minimum X width and bar height your scanner can scan?
- Does your bar code require error checking during bar code scanning, and, if so, which type of error checking should you use?

Many books introduce and survey the topic of bar code requirements. We suggest [The Bar Code Book: Reading, Printing, and Specification of Bar Code Symbols, Second Edition](#), by Roger C. Palmer (Helmets Publishing, Inc., Peterborough, New Hampshire, 1991).

Making Labels

This section explains how to use the **F1 (File)** key to create new labels, modify existing labels, save labels, and delete labels you no longer need.

The **Save** option lets you store labels with attributes, on either the A drive (internal) or B drive (PC card), that you want to print in the future so that you do not have to reenter them. This is useful when you want to print the same label repeatedly, but must print different labels between copies. You can also use **Save** while you are creating labels to ensure that you have a backup in case you accidentally lose the label. Label text and text attributes are automatically saved when the printer is shut off and remain saved until the lithium battery is replaced.

When you first turn on the printer (after you press any key) and the blank screen is displayed, you can begin entering text for a new label. Afterwards, you create new labels using the **New** option (explained in this section). The printer will continue to work with the last label you saved until you create a new label or open an existing label.

Remember that the number of lines you can enter on a label depends on the font size you are using (see the Table 1 for suggested point sizes). When you are typing label text, simply press **ENTER** to begin a new line.

Table 1: Suggested Point Sizes

Tape Size	1 Line	2 Line	3 Line	4 Line	5 Line	6 Line
0.5"	30 pt	14 pt	8 pt	6 pt	N/A	N/A
0.8"	55 pt	24 pt	16 pt	12 pt	9 pt	7 pt
1"	72 pt	33 pt	21 pt	16 pt	12 pt	10 pt

72 pt = 1 inch, 54 pt = .75 inch, 36 pt = .5 inch, 18 pt = .25 inch

Use this table for reference only. For example, if you wanted three lines of text on 1" tape, evenly spaced, and all text the same point size, you would select a maximum point size of 21. The printer will calculate the maximum point size and display an error message "Text too tall" if you have selected a combination of size, style, and attributes that are too large for the number of lines to print.

Using F1

F1 Press **F1** to display the file menu options:

New Open Save Del

New Select **New** to create a new document. The printer clears any text displayed on the screen, returns all attributes to factory defaults, and displays a blank edit screen so you can enter new text.

Open Select **Open** to access an existing document you want to edit or print. The printer displays a list of file names you have saved (see the following example) and waits for you to select the file you want to work with. Use the left and right arrow keys to scroll to the left of the file you want to open and press **ENTER** to select it.

a:Exit a:Exit a:Fire

Save Select **Save** to save the current document. You must save the label you are working on before you select either **New** or **Open**. If you do not save first, it will be lost.

When you select this option, the printer prompts you to enter a file name and will save on the A drive unless you specify the B drive (example B:*filename*). If you have never before saved the file, the printer will suggest a file name (as shown in the following example). If you have already saved the file, the printer will display its file name. Press **ENTER** to accept the displayed file name and return to edit mode, or type a different name and press **ENTER**. (File names can be any combination of letters and numbers, seven characters maximum, with no punctuation or file name extensions.)

label1

Important Note: If you try to save to the B drive and there is no PC card inserted, you will get a "**Bad File Name**" error. If you try to save to a PC card in the B drive that is write protected, you will get a "**Out of Memory**" error.

If you enter a file name for an already existing file, you will see the following message:

Over Write?
OK? (Y,N)

Press **Y** to overwrite or **N** to enter a different file name. If you decide not to save the file, simply press **ESC**.

Delete

Select **Delete** to delete files that you no longer need. The printer displays a list of files you have saved (see the following example) and waits for you to select the file you want to delete. Use the left and right arrow keys to move the cursor to the left of the file you want to delete and press **ENTER** to select it. If you decide not to delete a file, simply press **ESC**.

a:Exit a:Exit a:Fire

NOTE: When you delete a file, it is gone and will no longer appear in the list of file names. If you need to free up memory, you could modify labels with lengthy text or complicated formats instead of deleting files.

Formatting Text

This section explains how to use the **F2 (Font)** key to assign text formatting attributes to your label text. There are three types of text attributes: character, line, and page. These attributes, as well as their defaults and options, are shown in the following table.

Table 2: Text Attributes

Attribute	Defaults	Options
Font	Block (Corresp. to Helvetica)	Via font application cards
Size	0.5" tape: 18 points 0.8" tape: 24 points 1" tape: 36 points	6 - 30 points 6 - 55 points 6 - 72 points
Justification†	Left	Left, Center, Right
*Bold	Off	On, Off
*Italics	Off	On, Off
*Mirror‡	Off	On, Off
*Vertical‡	Off	On, Off
*Frame	Off	Page: On, Off
	Off	Line: On, Off
*Underline	Off	On, Off

* Attributes marked with an asterisk are toggles. † These are line attributes. They affect the line where the cursor is currently positioned. ‡ These are page attributes. They affect the entire page (label). All other attributes (except **Frame**) are character attributes.

The position of the cursor when you select a character attribute determines where the attribute takes effect: all text following the cursor is affected until you change the attribute again. In the first example that follows, the cursor was to the left of the word EMERGENCY when bold was turned on, and to the right of the word EXIT when bold was turned off.

<Bold>**EMERGENCY EXIT**<Bold off>
DO NOT LOCK DOORS

In the following example, the cursor was to the left of the word DO when bold was turned on, and to the right of the word NOT when bold was turned off.

EMERGENCY EXIT
<Bold>**DO NOT**<Bold off> LOCK DOORS

Note: The brackets and bracketed words do not appear on the screen.

Using F2

F2 Press **F2** to display the Font options:

Font Size Just Bold Ital Mirror Vert fRame Underline

Font Select **Font** to choose a different font. When you select this option, the printer displays a list of available fonts (shown below). Press **ESC** to accept the current font or use the left and right arrow keys to move the cursor to the left of the font you want and press **ENTER** to select it. Additional fonts are only available with font application cards. See your Kroy distributor for more information.

Block

Size Select **Size** to specify the font size for your text. The printer displays the default size (see the following example) and waits for your entry. Press **ESC** to accept the displayed size, or type a different size and press **ENTER**. Valid sizes of 6 - 72 (for 1" tape) can be entered.

Size 36

Justification

Select **Justification** to justify your text. The printer displays the following prompt and waits for you to make a selection. Use the left and right arrow keys to move the cursor to the left of the option you want and press **ENTER** to select it, or simply type the capitalized letter in the option name.

Left Center Right

Bold

Select **Bold** to bold text to the right of the cursor. If an asterisk is displayed beside the option, selecting it turns off bold.

Italics

Select **Italics** to italicize text to the right of the cursor. If an asterisk is displayed beside the option, selecting it turns off italics.

Mirror

Select **Mirror** to print a mirror image of all the label text. If an asterisk is displayed beside the option, selecting it turns off mirroring.

Vertical

Select **Vertical** to print your label text vertically instead of horizontally on the label tape. If an asterisk is displayed beside the option, selecting it turns off vertical printing.

Frame

Select **Frame** to draw a frame (box) around your label text. The printer displays the following prompt and waits for you to select the type of frame you want.

Page Line

Select **Page** to frame all text on the label, or select **Line** to frame just the text on the line where the cursor is currently positioned. If an asterisk is displayed beside either option, selecting it turns off framing.

Underline

Select **Underline** to underline label text to the right of the cursor. If an asterisk is displayed beside the option, selecting it turns off underlining.

Changing Existing Text

You can change attributes of text previously entered by using the left and right arrow keys to position the cursor under the beginning letter. Press **F2**, enter your change. Then position your cursor under the letter to end the attribute you are changing, press **F2** and select the attribute to turn it off. For instance, in the previous example (on page 17), if you decided later that you only wanted the word "NOT" to be bolded. Move the cursor under the letter "D" in the word "DO". Press **F2**, select **Bold** and press **ESC**. That will turn off the **Bold** attribute. Next move the cursor under the space between the words "DO" and "NOT". Press **F2**, select **Bold** and press **ESC**. This will turn the **Bold** attribute back on so that the word "Not" would still be bolded. You would now have the following example entered just as if you had entered it this way from the beginning.

EMERGENCY EXIT
DO <Bold on> **NOT** <Bold off> LOCK DOORS

If you wish to insert text you may have forgotten, simply move the cursor by using the arrow keys to the position where you wish to insert text. Existing text will then be moved to the right. To delete existing text, see the section **Using Printer Keys** earlier in this manual.

Setting Print Attributes

This section explains how to use the **F3 (Utilities)** key to specify print attributes for a label. These attributes, as well as their defaults and options, are shown in the following table.

Table 3: Print Attributes

Attribute	Default	Options
Density	0	-7 to +7
Auto-off	On	On, Off
Width	0	Size to fit* Length of Cartridge (Single Line) 0 to 12" (0 to 305mm) (Multiline)
Margin	1	0 to .5" (0 — 13mm)
Feed	13	0 to 13 (inches) 0 to 34 (mm)
Unit of measure	Inch	Inch, millimeter
Sequence	Off	Alphabetic, numeric
Language	English	Various
Copies	1	1 — 999
Rotation	Off	On, Off
Baud rate	9600	9600, 19200, 38400, 57600
Remote	Off	On, Off
Time	current	hh:mm AM/PM (12 hour mode) hh:mm (24 hour mode)
Date	current	mm/dd/yy (US) dd/mm/yy (International)
Stamp	Off	On, Off
Set Clock	current	enter yy/mm/dd/hh/mm/ss
24 hour Mode	Off	On, Off

* See **Width** for explanation of difference between "size to fit" and entering a value other than 0.

Using F3

F3 Press **F3** to display the Utilities options:

Density	Auto-off	Width	Margin	Feed	Units	Sequence
---------	----------	-------	--------	------	-------	----------

Language	Copies	rotation	Baudrate	Remote	Time	date	stamp
----------	--------	----------	----------	--------	------	------	-------

setClock	24Hourmode
----------	------------

Density Select **Density** to specify the density (-7 to +7) for printing the current label. The printer displays the current density setting and waits for your entry. Press **ESC** to accept the value shown, or enter a different value and press **ENTER**.

Density 0

If the characters are smeared on a label or are not completely filled in, you can attempt to fix the problem by adjusting the print density. If the characters are smeared, specify a lower number in this field; if the characters are not completely filled in, specify a higher number.

NOTE: You may need to adjust the density after installing a new tape cartridge.

Auto-off Select **Auto-off** to disable auto shut-off. The factory default is to shut off the printer after 5 minutes of non-use. When the printer is turned off, all current label text and text attribute settings are saved. All files in memory are still saved. If an asterisk is displayed to the left of the option, selecting it turns auto shut-off back on. Press **ESC** if you decide you do not wish to change the current setting.

Width

Select **Width** to specify the width of the label. The printer displays the current width and waits for your entry. Inches are entered in tenths of an inch. For example, if you enter the number 25, that will give you a label of 2.5 inches, entering the number 10 will give you a 1 inch label, entering the number 5 will give you a half inch label, and entering the number 115 will give you a label of 11 and a half inches. Decimal points cannot be entered and are not displayed on the screen. Press **ESC** to accept the displayed width, or type a different width and press **ENTER**. When creating a label with more than one line, width is limited to 12 inches.

Width 0

When **Width** is selected and set to non-zero, cut marks will be printed to show the edges of the label.

Note: When 0 (the default setting) is entered, the label will be the size of the amount of text you have entered.

Margin

Use the option to define the distance between each label. This option is useful if you have several labels (pages) in one document (file). Select **Margin** to specify the left and right margins for the label. The printer displays the current margin setting and waits for your entry. Valid margins are between 0 and .5 inch (0-13 mm) and are entered in tenths of an inch (i.e., entering the number 5 would give you a margin of a half inch). Decimal points cannot be entered and are not displayed on the screen. Press **ESC** to accept the displayed margins, or type a different value and press **ENTER**.

Margin 1

Feed Select **Feed** to vary the amount of tape feed that occurs at the end of a label. The maximum and minimum feed lengths are 1.3 inches (34mm) and 0 (0mm), respectively. (Inches are entered in tenths of an inch.)

Feed 13

Press **ESC** to accept the current feed length or enter a different length and press **ENTER**. To return to the default feed length, enter a value of -1. Any other number outside the above range will produce either a "too low" or "too high" error message.

Units Select **Units** to choose the unit of measure you want to use for setting label width and margins. The options are tenths of an inch and millimeters. Use the arrow keys to move to the left of the option you want and press **ENTER** to select it, or simply type the first letter.

Inches MM

Sequence You can automatically generate and print labels containing a sequence of one letter or one to three numbers (101 102 103, A B C..., etc.) without having to type the text of each label yourself. You simply tell the printer what characters to print on the first and last labels and how much to increment between labels (see the following table).

Table 4: Printing Sequential Labels

Start	Stop	Increment	Individual Labels Printed
1	10	1	1 2 3 4 5 6 7 8 9 10
2	12	2	2 4 6 8 10 12
A	J	1	A B C D E F G H I J
a	z	4	a e i m q u y

Sequencing is obtained by defining the sequence and inserting the sequence character (an omega) in the position where the progression should begin. To place the sequence character in the text, press **F3** and select **Sequence** from the menu. Next select **Insert** and the omega symbol (Ω) will be inserted above the cursor. The sequence character takes on the current character attributes previously defined. Optionally, you can redefine the sequence character's attributes like any other character.

Note: You can only define one sequence type (numeric or alpha) per document/file, but you can place the sequence character in your document/file once on each line.

You can also add label text before or after a sequence. For example, you could enter the word Lab and a space before a numeric sequence to print labels that read "Lab 1 Lab 2 Lab 3...". Or, you could enter the number 10 after an alphabetic sequence to print labels that read "a10 b10 c10...".

To add text before the sequence, simply type the text (including trailing spaces, if needed) before you insert the sequence character. To add text after the sequence, insert the sequence character and then type the text (including a leading space, if needed), and then press **PRINT**. To define your sequence:

1. Select **Sequence**. The printer displays the following options:

Insert Alpha Num

2. Use the left and right arrow keys to move to the left of the option you want and press **ENTER** to select it, or simply type the capitalized letter in the option name.

If you choose **Alphabetic**, the printer next prompts you to enter the first letter you want printed (if you choose **Numeric**, this prompt reads **Start #**, you will then need to enter the beginning number):

Start Char: A

3. Type the letter or number (for **Numeric**) you want printed first and press **ENTER**. If you chose **Alphabetic**, the printer next prompts you to enter the last letter you want printed (if you chose **Numeric**, this prompt will read **End #**):

End Char: Z

4. Type the last letter or number (for **Numeric**) you want printed in the sequence and press **ENTER**. The printer next prompts you to enter the increment amount:

Increment: 1

5. Type the amount to increment between letters or numbers and press **ENTER**. For example, you would enter a 2 to generate a sequence of every other letter or even numbers (provided you start at an even number).
6. Press **PRINT** to start printing the labels. If the sequence is not correct, press **PRINT** again to stop printing and redefine your sequence.

Language

Select **Language** to specify the language you want to work in as well as the date format (i.e., dd/mm/yy for US or mm/dd/yy for international). The printer displays the languages available (see the following example) and waits for you to select one. Use the left and right arrow keys to move to the left of the option you want and press **ENTER** to select it, or simply type the capitalized letter in the option name.

dAnsk Deutsch English espanoL Francai Italian nedeR Norsk

Portuga sUomi Svenska uK

Copies

Select **Copies** to specify the number of copies you want to print (1-999). The printer displays the current setting for this option (see the following example) and waits for your entry. Press **ESC** to accept the number of copies shown, or type a different number and press **ENTER**.

Copies 1

Rotation

Select **Rotation** to rotate all lines of the **first** page of any document/file. All other pages in a document/file are ignored. **Rotation** is a toggle and page attribute option. If an asterisk is displayed beside the option, selecting it turns off rotation. This option will allow up to six lines of text printed in a vertical format as shown in the following example.

Line 1
Line 2
Line 3
Line 4
Line 5
Line 6

Note: Rotation and **Vertical** are not the same. For more information on the **Vertical** option see **Formatting Text: Vertical**.

The following text attributes are ignored when rotation is selected: **Mirror**, **Vertical**, **Frame**, **Underline**, **Italics**. Bar codes will also not print. All other formatting attributes operate normally except for **Size**.

Size: Because the width of the supply is no greater than one inch, there is a restriction on the largest point size that can be printed. Point sizes should be between 6 and 18. Any point size entered larger than 18 will automatically be printed at 18 point. Original point size is restored when rotation is turned off.

Text strings (lines) that are longer than the width of the supply will cause an error message of "Text too long". Text **will not** wrap around to the next line. If you wish to reduce the point size, move the cursor to the beginning of the line, press **F2 (Font)** and **S for Size**, enter the new point size, and press **Enter**.

Note: If you manually change the point size, when rotation is turned off the original point size will not be restored. Any other current attribute settings that are changed will also not be restored.

Baudrate

9600 19200 38400 57600

Select **Baudrate** to set the speed of data transmission when communicating with the computer. **Important:** This rate must match the baud rate of the computer - if not this error message appears and an error tone will sound:

Serial Error
Any Key

To correct, change baud rate to match between computer and printer. You should halt your computer from sending data while you make this change. Also verify that the computer's serial

communications settings are 8 data bits, 1 stop bit and parity = none. Flow control can be set to either hardware or software flow control.

Serial error messages seen at computer power up/power down can be eliminated by having the printer turned on only when the computer is also turned on.

Microsoft Windows users should use the Kroy print driver for Windows to print in the remote mode. Contact your dealer to obtain the print driver.

Remote

Select **Remote** to toggle between native mode (normal operation) and emulation mode. In this mode the printer emulates a 24 pin dot matrix Epson-compatible printer, allowing files created on a computer to be printed. When emulation mode is active, "Remote" in the Utilities menu (**F3**) is flagged with an asterisk (*). The selection of emulation on/off is stored in the printer's memory until changed and becomes the default mode for system power up. With emulation mode on, the Utilities menu is simplified to only four necessary items.

Density Language Baudrate Remote

When data is being sent to the printer, the display message is:

Receiving

Once all data for a complete label have been received, the printer will process the information for an instant before printing starts. Once printing is complete the display shows the waiting message until more data is sent to it.

Waiting

You may cancel printing at any time by pressing the **ESC** key. Press **FEED** to advance out any label. It may be necessary to cancel sending data at your computer also. An error tone will sound and the message below appears whenever printing is halted.

**Aborted
Any Key**

Time/Date

Select **Time** and/or **Date** to enter the current time and/or date into your label. The date will be entered in dd/mm/yy or mm/dd/yy depending on the prompt language you select. Once entered, they can be formatted or deleted just as if you had physically typed them in. (See also SetClock and 24HourMode)

Note: Do not confuse the Time and Date menu options with the Stamp option. Time/Date enters the current time/date into your text at the insertion point, once entered they are now considered text by the printer (as if you typed them by hand).

Stamp

Select **Stamp** to have the current date and time printed vertically on the very edge of your label. Every time you press print a stamp with the current date and time will be printed vertically on the edge of every label in ddhhmmMMMyy format. When **Stamp** is active, "stamP" in the Utilities menu (**F3**) is flagged with an asterisk (*).

Note: Using Stamp on supply sizes .5" and smaller is not recommended.

Set Clock

Select **Set Clock** to enter the current time and date in the printer. The information will be entered in the order shown in Table 5.

Table 5: Set Clock Parameters

Prompt	Parameters
Year	Last two digits of the year
Month	Number from 1 to 12
Day	Number from 1 to 31
Hour*	Number from 0 to 23
Minute	Number from 0 to 59
Second	Number from 0 to 59

*Hour is entered in 24 hour mode, i.e., 1 PM would be entered as 13.

24 Hour Mode

Select **24Hourmode** to toggle between 24 hour clock and 12 hour clock. When selected, causes time entered in the text of a label via the TIME option to be in 24 hour mode (i.e., 1PM as 13). When **24 Hour Mode** is active, "24Hourmode" in the Utilities menu (**F3**) is flagged with an asterisk (*).

Printing Labels

PRINT When you have finished entering label text and setting the text and print attributes, press **PRINT** to start printing labels. The label will then advance just enough to clear the cut mechanism. Push on the cut button to detach the label.

NOTE: You can stop the print procedure by pressing the **ESC** key.

FEED When you have finished printing labels or just need extra tape, press **FEED** to advance the tape approximately one inch. Push on the cut button to detach the label.

Setting Up Bar Codes

This section explains how to use the **F4 (Bar Code)** key to specify the type of bar code you want to print, whether you want to print text with the bar code symbol, how you want bar code accuracy checked during scanning, and the amount of resolution to use when printing bar codes.

The K2500 has ten bar codes built in. The following table summarizes information on these bar codes.

Table 6: Bar Code Information

Bar Code Type	Valid Characters	Checksum Options Available	Fixed Length	Special Restrictions and Other Information
Codabar	0—9 A—D . - \$ / + %	None, mod 10, mod 16	< 32 characters	First and last characters must always be either A, B, C, or D. Letters not allowed in body of bar code.
Code 39	0—9 A—Z . - \$ / + % space	None, mod 43	< 32 characters	Lowercase letters not allowed
EAN-8	0 — 9	EAN-8	7, 9, or 12 digits	Length varies because of optional 2 or 5 digit supplemental
EAN-13	0 — 9	EAN-13	12, 14, or 17 digits	Length varies because of optional 2 or 5 digit supplemental
Interleaved 2 of 5	0 — 9	None, mod 10	Even number of digits	Printer adds leading zero, if needed, to make the length even.
UPC -A	0 — 9	None	11, 13, or 16 digits	Length varies because of optional 2 or 5 digit supplemental
UPC-E	0 — 9	None	6, 8, or 11 digits	Length varies because of optional 2 or 5 digit supplemental
Code 128	128 ASCII Character Set	None	< 32 characters	See Appendix D
MSI Plessey	0 - 9	None, mod 10, mod 11	<16 digits	Mod 11 checksum cannot equal 10
PDF 417	All ASCII characters	0 to 400 levels of security	<700 characters	None

Using F4

F4 Press **F4** to display the Bar Code menu options:

*None codaBar Code39 Ean8 eAn13 l2of5 Upca uPce

coDe128 Msiplessey pdF417

Depending on the bar code you have selected, the following submenu options (or variations) will appear. Some bar codes allow you to choose whether to include a checksum and change the resolution at which the bar code is printed as well as whether to print text or the checksum.

Code Text Resolution checkSum Prtcksum SecLevl cOlumns

Code Select **Code** to change the type of bar code you want to print. The printer displays the types of bar codes available. Use the left and right arrow keys to move to the left of the option you want and press **ENTER** to select it, or simply type the capitalized letter in the option name.

Text Select **Text** to print text as part of the bar code. If an asterisk displays to the left of the option, selecting it turns text printing off. Text is printed in the following manner:

- Code 39, Code 128, Interleaved 2 of 5 and MSI Plessey: text is printed immediately beneath the symbol
- EAN8, EAN13, and UPC: text for the number system is printed at the left of the symbol; text for the product and manufacturer code is printed beneath the symbol; text for the supplemental is drawn above the symbol.

- PDF 417 has no text option.

Resolution

Select **Resolution** to specify whether you want to print the bar code at normal or high resolution. Use the left and right arrow keys to move to the left of the option you want and press **ENTER** to select it, or simply type the capitalized letter in the option name.

***Medium High**

Checksum

Select **checksum** to specify the type of error checking you want to use. The type of bar code you selected at **Code** determines the prompt that displays next. For example, if you selected **I2of5**, the following prompt displays:

None Mod10

Use the left and right arrow keys to move to the left of the option you want and press **ENTER** to select it.

Print Checksum

Some bar codes symbologies allow you to print the checksum value as part of the bar code. Select **Prtcksum** to print the checksum. If an asterisk is displayed to the left of the option, selecting it turns printing of the checksum off.

Security Level

Select **SecLevl** to enter a number in this field, you set the error correction level as a percentage of data codewords. Valid inputs for ECC level are 0 to 400. (PDF417 only)

Columns

Select **cOLumns** to tell the printer the maximum number of columns you wish to have in your PDF417 data file. If a number is entered such that more rows are needed than will fit the height of the tape, an error will be generated. Entering a 0 will cause the printer to calculate its own value for the number of columns. (PDF417 only)

Die Cut Label Supply

Using Die Cut Labels

The section will describe changes in operation that occur when using die cut label supply. The printer has a sensing device that will automatically inform the system if a die cut label supply cartridge has been loaded. The following printer keys' operations are effected.

Without the die cut supply, **Page Up** and **Page Down** allow you to move between the previous label and the next label by holding the **Shift** key and pressing the up and down arrow keys. Die cut labels, however, can have several pages on one label. The following short tutorial will familiarize you with how you can place several pages on one die cut label. This example uses the die cut label supply of 3.44 x .56.

1. Load a die cut label supply cartridge into the printer.
2. Press **F1** (File) and then the letter **N** (New) for new document.
3. Press **F2** (Font) and then the letter **S** (Size). Enter a new size of **40**, press **ENTER**, press **ESC**, and then type **One**.
4. Hold **SHIFT** and press **DOWN ARROW**. This will take you to the next page.
5. Press **F2** and then the letter **S**. Enter a new size of **10** and press **ENTER**, then press **ESC**.
6. Type **Line1** and press **ENTER**, type **Line2** and press **ENTER**, and type **Line3**. You have just entered 3 lines of text on page 2 of the die cut label.
7. Hold **SHIFT** and press **DOWN ARROW**. This will take you to the next page.
8. Press **F2** and then the letter **S**. Enter a new size of **40** and press **ENTER**, then press **ESC**.
9. Type **79¢**. You have just entered three different pages that will print on one die cut label.
10. Press the **PRINT** key. The label will be printed and the supply will be automatically advanced to the beginning of the next label.

You can place as many pages as there is room on the label. If you try to place too many pages on a label the system will give you the message "Text too long". Bar codes can easily be mixed with text when you are using die cut label supply. See your Kroy distributor for available sizes.

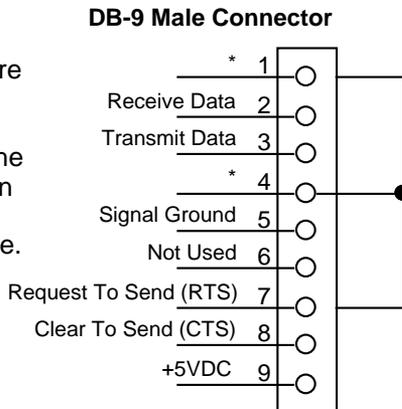
Communication Protocol

The K2500 has been designed to be simple to use while still giving the user sufficient control over how text will be printed. The printer may be operated in a standalone, keyboard driven manner or as an RS-232 serially driven computer printer via a terminal program or an application you write. This section describes only the printer-to-host driver interconnect protocol.

Serial Port Connection

The serial port connector is located on the left side of the printer next to the AC adapter jack. Connection is established via a DB-9 adapter, with the following pin assignments inside the printer.

* Pins 1, 4, and 7 are tied together to provide proper handshaking with the host computer when using our recommended cable.



At the present time, RTS and CTS are not used - the printer does not recognize these signals as flow control data. Normal flow control between the K2500 and the driver is accomplished with XON and XOFF characters, and the receive buffer on the printer is currently 256 bytes, with the XOFF threshold occurring at 128 bytes.

Printer Set Up

In order for the printer to communicate with an external driver, the correct communication parameters must be selected. The settings for the printer are:

- 9600 bits per second
- Eight data bits
- No parity
- One stop bit
- Xon/Xoff enabled

Basic Operation

The printer's serial software is designed for ease of use. It interprets data coming over the serial line as if the transmitting terminal were an extension of the keyboard. For the most part, text attributes are changed by simulating menu commands via the serial line.

- Menu keys are accessed by sending out IBM special key codes
- Special key codes are preceded by a 0 byte. The next byte is the special key code.

Conventions

All numbers are written as hexadecimal numbers (base 16). When a byte should be sent that represents an ASCII character, it will be enclosed in single quotes (i.e., 'X'). When the machine expects a numeric input, as in setting text size, it expects the ASCII characters.

Once the menu key code has been sent, you must send the correct sequence of codes to complete the command.

For example, to start a new label you would send the following:

- 00 send notification of special key codes
- 3B access file menu
- 'N' ASCII value for New option

To print a label you would send the following:

- 00 send notification of special key codes
- 44 print function hex code

Consult the following tables of hex codes and ASCII values for special function keys, menus, menu options and submenu options. Submenu options marked with ‡ are followed by the carriage return hex code.

Table 7: Special Function Keys Hex Codes

Function	Hex Codes (one or two bytes)
Delete	08
Feed	0C
Escape	1B
Alt Delete	0053
Carriage Return	0D
Up Arrow	0048
Down Arrow	0050
Right Arrow	004D
Left Arrow	004B
Page Up (Shift Up Arrow)	0049
Page Down (Shift Down Arrow)	0051
Print	0044

Table 8: Menu Hex Codes

Menu	Hex Code
File	3B
Font*	3C
Utilities	3D
Bar Code	3E

*Used only when a font application card is installed.

Table 9: File Menu (3B)

Menu Option Codes	Submenu Option Codes
New - 'N'	
Open - 'O'	Filename in ASCII ‡
Save - 'S'	Filename in ASCII ‡
Del - 'D'	Filename in ASCII ‡

Table 10: Font Menu (3C)

Menu Option Codes	Submenu Option Codes
Font - 'F'	Block - 'B'
Size - 'S'	Numeric ASCII value between 6 and 72 (1" tape) ‡ 6 and 55 (.8" tape) ‡ 6 and 30 (.5" tape) ‡
Justification - 'J'	Left - 'L' Center - 'C' Right - 'R'
Bold - 'B'	Toggle
Italics - 'I'	Toggle
Mirror - 'M'	Toggle
Vertical - 'V'	Toggle
Frame - 'R'	Page - 'P' Line - 'L'
Underline - 'U'	Toggle

Table 11: Utilities Menu (3D)

Menu Option Codes	Submenu Option Codes
Density - 'D'	Numeric ASCII values between -7 and +7 ‡
Auto-off - 'A'	Toggle
Width - 'W'	Numeric ASCII values between: 0 and 120 (inches/10) ‡ 0 and 305 (mm) ‡
Margin - 'M'	Numeric ASCII value between: 0 and 5 (inches/10) ‡ 0 and 13 (mm) ‡
Feed - 'F'	Numeric ASCII value between: 0 and 13 (inches/10) ‡ 0 and 34 (mm) ‡
Units - 'U'	Inches - 'I' MM - 'M'
Sequence - 'S'	Insert - 'I' Alpha - 'A' *‡ Num - 'N' *‡

Menu continued on next page

* Valid ASCII characters for start, stop, and increment are covered in **Sequence** beginning on page 23. Remember to follow each ASCII value with the carriage return hex code.

Table 11: Utilities Menu (continued)

Menu Option Codes	Submenu Option Codes
Language - 'L'	ASCII value for the capital letter of available languages
Copies - 'C'	Numeric ASCII value between 1 and 999 ‡
Rotation - 'I'	Toggle
Time - 'T'	None
Date - 'E'	None
Stamp - 'P'	Toggle
Set Clock - 'O'	Numeric ASCII values between: Year: 00 and 99 ‡ Month: 1 and 12 ‡ Day: 1 and 31 ‡ Hour: 0 and 23 ‡ Minute: 0 and 59 ‡ Second: 0 and 59 ‡
24HourMode - 'H'	Toggle

Table 12: Bar Code Menu (3E)

Menu Option Codes	Submenu Option Codes
Code - 'C'	None - 'N' Codabar - 'B' Code 39 - 'C' EAN-8 - 'E' EAN-13 - 'A' I 2 of 5 - 'I' UPC-A - 'U' UPC-E - 'P' Code 128 - 'D' MSI Plessey - 'M' PDF417 - 'F'
Text - 'T'	Toggle
Resolution - 'R'	Medium - 'M' High - 'H'
Checksum - 'S'	ASCII value for the capital letter
Print Checksum - 'P'	Toggle
Security Level - 'S'	Numeric ASCII value between 0 and 400 ‡
Columns - 'O'	Numeric ASCII value of 0 and 30 ‡

Appendix A: System Messages

If a system message displays while you are using the printer (an error tone will be audible), first read the message and then press any key to clear it from the screen. When appropriate, the printer will display the text that caused the message so that you can correct it.

Aborted You stopped the printer while it was printing a label. Press **FEED** to eject the rest of the label from the printer.

Any Key The printer is in a standby mode. Press any key except **On/Off**, **Shift**, **Caps**, or **Alt** to continue.

Bad File Name (1)The file name you tried to save is too long or contains invalid characters. Reenter the file name (maximum seven characters) using only the letters a to z and numbers 0 through 9. (2) You tried to save a file on the **B** drive when no PCMCIA card is installed. Resave file on the **A** drive.

Bad Checksum The Plessey Mod11 bar code checksum equals 10. You must use a numbering system which does not generate a 10 as a checksum.

Cart Code The cartridge you inserted requires special settings. Type in the code provided with the cartridge and press **ENTER**.

Cut During Print You cut the label before the printer finished printing it. Press **FEED** to eject the rest of the label text from the printer, then reprint the label. Cut the label only after the printer has stopped printing.

Invalid Cart The cartridge you inserted may not be properly locked in place, cannot be used with this printer, or you entered a **Cart Code** incorrectly. Remove the cartridge and press **ESC** to continue.

Invalid Character The sequence or bar code character you entered is not allowed or can be used only as a start/stop character. Enter a valid character.

Invalid Key The key you pressed cannot be used in the current task. Press a valid key.

Invalid Length You entered the wrong number of characters for the bar code. Check the length requirements for the type of bar code you are using and enter the correct number of characters.

Invalid Start The sequence or bar code character you entered as a start character is not allowed. Enter a valid start character.

Invalid Stop The sequence or bar code character you entered as a stop character is not allowed. Enter a valid stop character.

Low Battery The printer's nickel-cadmium batteries are discharged. Recharge the batteries.

No Files You selected **Open** or **Delete** but have no files saved in memory. You must save files before you can open or delete them.

Out Of Memory (1) There is not enough memory to save your file. Either delete unneeded files or simplify labels by reducing the amount of text or the number of formatting options they contain. (2) You tried to save a file to drive **B** when it is write protected.

Out of Tape You have run out of label tape. Press any key to continue. Install a new tape cartridge.

Printer Too Hot The printer is too hot to print labels. Wait about five minutes and then resume printing. This message may also appear when the printer is used in an ambient temperature below its minimum rated operating temperature.

Printing The printer is printing labels. No action required.

Thinking The printer is performing a function other than printing. No action required.

Text too tall The point size is too large for the number of lines you have entered. Reduce the point size or select fewer lines.

Text too long You have entered too many characters for the label width you have specified. Enter fewer characters or enter a longer width.

Too complex You have defined too many attributes and/or widths and margins for the printer to process. Select fewer and try printing again.

Too High The number you entered is too high. Enter a lower number.

Too Low The number you entered is too low. Enter a higher number.

Appendix B: Maintaining Your Printer

The printer requires no lubrication and only minimal maintenance. Occasional cleaning of the exterior surfaces and regular cleaning of the print head, rollers, and cut mechanism are all that is required. This appendix explains how to clean these parts of your printer.

Cleaning Exterior Surfaces

Exterior surfaces can be cleaned with a damp cloth moistened in a mild detergent and water solution. Commercial cleaners designed for electronic equipment may also be used.

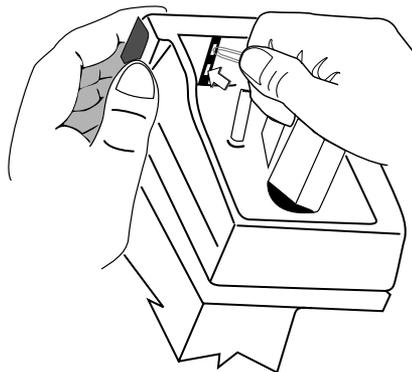
Cleaning the Cutting Mechanism

Your printer comes with a cut blade housed in a removable cut mechanism. Clean the cut blade whenever operation of the mechanism or quality of the cut indicates that the blade may be dirty.

To clean the cut blade:

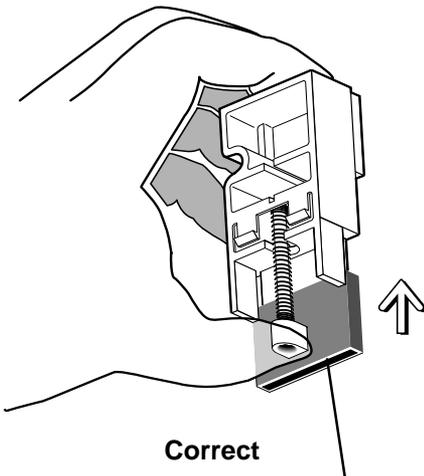
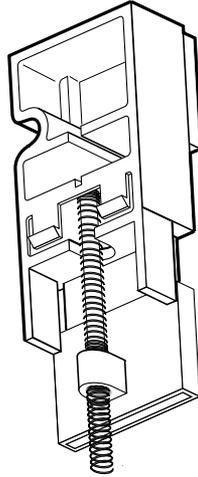
1. Remove the supply cartridge.
2. Gently push both tabs in (using a large paper clip or similar item) while pulling the mechanism toward the front of the printer to release the cut mechanism as shown in Figure 7. Once the mechanism is released, gently slide it toward the front of the printer and remove it.

Figure 7: Removing the Cut Mechanism



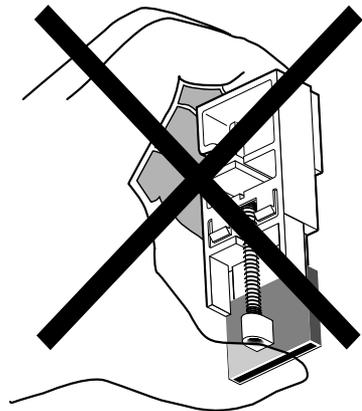
3. Hold the cut mechanism by placing your thumb on the spring and knob as shown in Figure 8 and gently squeeze in the direction of the arrow. The cut blade will then be exposed.

Figure 8: Holding the Cut Mechanism



Correct

**CAUTION: Sharp edge
inside this shroud.**

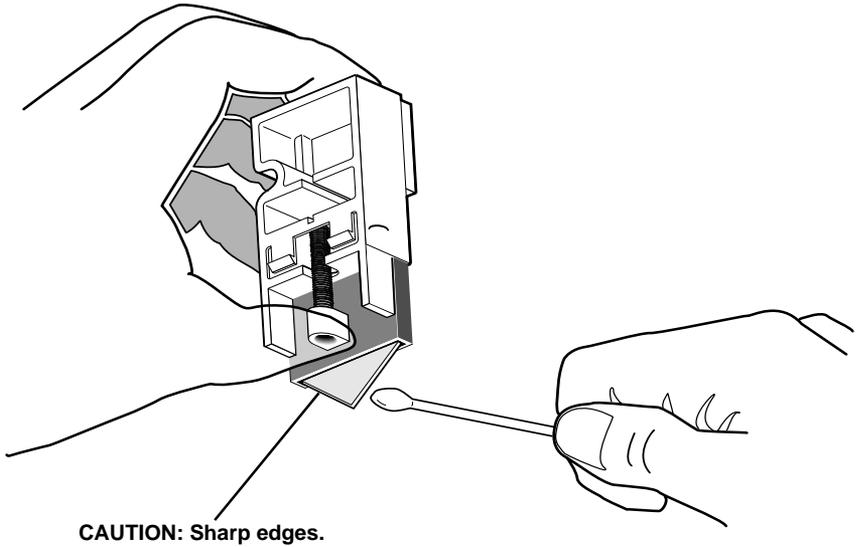


Incorrect

**WARNING: DO NOT HOLD THE
CUT MECHANISM AS SHOWN.**

4. Clean the cut blade with a soft cotton swab and isopropyl alcohol as shown in Figure 9.

Figure 9: Cleaning the Cut Blade



5. Gently push the cut mechanism back into its place in the printer until you hear or feel the locking tabs catch. See your Kroy distributor for replacement cut mechanisms.

Cleaning the Print Head and Rollers

The print head and rollers should be cleaned after every cartridge (see Figure 5 for location). Use isopropyl alcohol on a soft cotton swab to remove adhesive buildup and tape and ribbon residue. Make sure the alcohol has evaporated before loading a supply cartridge.

Note: Avoid touching the surface of the print head with your finger. Acids and oils on your skin will damage the print head.

Appendix C: Troubleshooting

This appendix explains how to solve some common problems that may arise when you are using the printer. If you are unable to correct the problem contact your dealer or Kroy Technical Service. In the United States, call (216)426-5536 or (800)347-5769; in Europe, call +44(0)118-986-5200.

1. Display stays black/blank after printer is turned on.

- Rotate the LCD Contrast Knob.
- Make sure the AC adapter is firmly seated in the jack.
- Make sure the batteries are charged and/or properly installed and that the batteries and their contacts are clean.

2. The printer does not print.

- Ensure lock/release knob is in locked position.
- Check supply cartridge and its position.

3. Printed characters are blurred.

- Decrease the print density level.

4. Printed characters are not formed properly.

- Increase the print density level.
- Batteries are possibly weak. Check printing with charged batteries or AC power adapter.

5. Printed characters have voids and scratches.

- Clean print head and rollers with:
 - a. **Kroy Cleaning Kit** Part# 255900
 - b. 90% or better Isopropyl alcohol on a cotten swab

For FAQ's (frequently asked questions) on the K2500
Go to www.kroy.com

Addendum: Troubleshooting

Self-Laminating Wire Wrap Label Set-Up

1. Turn on the machine and load cartridge.
2. If prompted to enter cart code, enter the code that is on the cartridge label (*you do not need to enter the dashes in between the sets of numbers*) and then press **Enter**.
3. Press the **F2** key and you will see **_Font Size Just** .
4. Press the **"S"** key on the keypad and select the font size.
5. Once you select your font size press **Enter**. You will then be back at the **_Font Size Just** menu. Press the **Escape (ESC)** key.
6. Press the **F3** key to enter the Utilities menu. Scroll through the menu with the left or right arrow keys until you see the **Rotation** option. Put the cursor in front of **Rotation**, press **Enter**.
7. Type the text onto the screen and press **Print**.

Saving Files in the K2500

1. Set up your label (i.e. font size, rotation, font style etc.) and type the text into the display.
2. Press the F1 key and the menu options **_New Open Save** will appear.
3. Press the **"S"** key on the keypad and you will see **Label 1**.
4. Name the file up to 8 characters in length and press **Enter**.
5. To recall the saved file(s) press the F1 key, the **_New Open Save** menu will appear.
6. Press the **"O"** key on the keypad and you will see **_a:** followed by your file name. Select the file you want to open and press **Enter** and **Print**.

Appendix D: Code 128 Character Set

Code 128 encodes the full 128 character ASCII character set using three alternate character sets, A, B, and C. Each set includes shift codes and start codes to control which set is to be used. Thus a given character pattern can have several meanings, depending on the character set currently in use.

Below is a list of the character set for each code.

Code A	Code B	Code C	Value		Code A	Code B	Code C	Value
Space	Space	00	0		;	;	27	27
!	!	01	1		<	<	28	28
"	"	02	2		=	=	29	29
#	#	03	3		>	>	30	30
\$	\$	04	4		?	?	31	31
%	%	05	5		@	@	32	32
&	&	06	6		A	A	33	33
'	'	07	7		B	B	34	34
(	(	08	8		C	C	35	35
)	)	09	9		D	D	36	36
*	*	10	10		E	E	37	37
+	+	11	11		F	F	38	38
,	,	12	12		G	G	39	39
-	-	13	13		H	H	40	40
.	.	14	14		I	I	41	41
/	/	15	15		J	J	42	42
0	0	16	16		K	K	43	43
1	1	17	17		L	L	44	44
2	2	18	18		M	M	45	45
3	3	19	19		N	N	46	46
4	4	20	20		O	O	47	47
5	5	21	21		P	P	48	48
6	6	22	22		Q	Q	49	49
7	7	23	23		R	R	50	50
8	8	24	24		S	S	51	51
9	9	25	25		T	T	52	52
:	:	26	26		U	U	53	53

Code 128 Character Set

Code A	Code B	Code C	Value	Code A	Code B	Code C	Value
V	V	54	54	SI	o	79	79
W	W	55	55	DLE	p	80	80
X	X	56	56	DC1	q	81	81
Y	Y	57	57	DC2	r	82	82
Z	Z	58	58	DC3	s	83	83
[	[	59	59	DC4	t	84	84
\	\	60	60	NAK	u	85	85
]	]	61	61	SYN	v	86	86
		62	62	ETB	w	87	87
_	_	63	63	CAN	x	88	88
NUL	'	64	64	EM	y	89	89
SOH	a	65	65	SUB	z	90	90
STX	b	66	66	ESC	{	91	91
ETX	c	67	67	FS	|	92	92
EOT	d	68	68	GS	}	93	93
ENQ	e	69	69	RS	~	94	94
ACK	f	70	70	US	DEL	95	95
BEL	g	71	71	FNC3	FNC3	96	96
BS	h	72	72	FNC2	FNC2	97	97
HT	i	73	73	Shift	Shift	98	98
LF	j	74	74	CodeC	CodeC	99	99
VT	k	75	75	CodeB	FNC4	CodeB	100
FF	l	76	76	FNC4	CodeA	CodeA	101
CR	m	77	77	FNC1	FNC1	FNC1	102
SO	n	78	78	START	(CODE A)		103
				START	(CODE B)		104
				START	(CODE C)		105
				STOP	STOP	STOP	

Appendix E: ASCII Character Set

Below is a list of the ASCII character set. See **Communication Protocol** for further information.

ASCII Code	Character	ASCII Code	Character	ASCII Code	Character	ASCII Code	Character
22	<u> </u>	72	H	114	r	156	ú
32	Space	73	I	115	s	157	û
33	!	74	J	116	t	158	ü
34	"	75	K	117	u	159	ü
35	#	76	L	118	v	161	°
36	\$	77	M	119	w	162	¢
37	%	78	N	120	x	163	£
38	&	79	O	121	y	167	ß
39	'	80	P	122	z	174	Æ
40	(	81	Q	123	{	175	Ø
41	)	82	R	124	|	180	¥
42	*	83	S	125	}	187	ª
43	+	84	T	126	~	188	º
44	,	85	U	128	À	190	æ
45	-	86	V	129	Á	191	ø
46	.	87	W	130	Ç	192	ı
47	/	88	X	131	É	193	ı
48	0	89	Y	132	Ñ	196	f
49	1	90	Z	133	Ö	203	À
50	2	91	[	134	Û	204	Ã
51	3	92	\	135	á	205	Õ
52	4	93	]	136	à	216	ÿ
53	5	94	^	137	â	217	ÿ
54	6	95	_	138	ä	229	Ä
55	7	97	a	139	ã	230	Ê
56	8	98	b	140	ä	231	Á
57	9	99	c	141	ç	232	Ë
58	:	100	d	142	é	233	È
59	;	101	e	143	è	238	Ó
60	<	102	f	144	ê	239	Ô
61	=	103	g	145	ë	241	Ò
62	>	104	h	146	í	242	Ú
63	?	105	i	147	ì	243	Û
64	@	106	j	148	î	244	Ü
65	A	107	k	149	ï		
66	B	108	l	150	ñ		
67	C	109	m	151	ó		
68	D	110	n	152	ò		
69	E	111	o	153	ô		
70	F	112	p	154	ö		
71	G	113	q	155	õ		