028028

Operating Instructions

**Monarch® 939i™ Intelligent Keyboard
for use with 9416® XL®, 9906™, ADTP1,
and ADTP2**

WARNING

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CANADIAN D.O.C. WARNING

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.Le présent appareil numérique német pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Réglement sur le brouillage radioélectrique édicte par le ministére des Communications du Canada.

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GETTING STARTED

The Monarch® 939i™ keyboard allows you to easily configure the printer and enter batch data.

The keyboard works with the Monarch® 9416®, 9416® XL®, 9906, ADTP1, and ADTP2 printers. This keyboard also works with non-Monarch printers. You may need an auxiliary power supply for the keyboard depending on your printer model. See Appendix A, "Specifications and Accessories" for the part number.

Overview

The 939i keyboard is an "intelligent" keyboard that is programmed to show user prompts and collect data. Custom applications, or scripts, are written to program the keyboard. The script is the program that runs on the keyboard to perform a specific task, such as scanning or collecting data. We offer custom script writing; contact your Sales Representative for information and pricing.

With a script, you can

♦ Create prompts for the user to enter data manually or using a scanner. See Appendix C, "Configuring the System," for more information.

♦ Use look-up tables, or files, to store data that will be printed on labels.

♦ Perform additional data tracking, conversion, and manipulation.

About Scripts

This manual does not cover any specific information about what may be in your script, because each script is different. Your script is written based on jobs you need to perform. A script should contain several basics features:

♦ A way to enter and exit the script.

♦ The prompts for entering the date and time each time you turn on the printer if required by your script. The date and time are not saved when the printer/keyboard are turned off.

♦ The scanner's configuration and setup (if you are using a scanner).

Contact your System Administrator for more information about these items.

Unpacking the Keyboard

After unpacking the keyboard, look through all packaging material for parts. Keep the box and packaging material in case the keyboard ever needs repair.

1. Pull the long, coiled cable out from the bottom of the base.

2. Slide the first loop in the cable slot as shown.
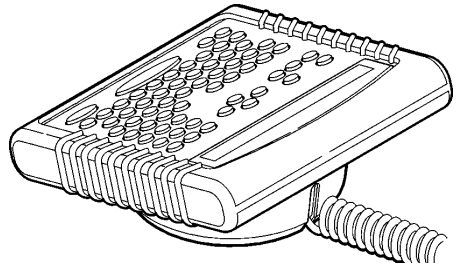
Connecting the 939I to a 9416 Printer

When using the keyboard with a 9416 printer, the keyboard requires an auxiliary power supply with the 9-pin to 9-pin adaptor cable.

1. Turn **OFF** the printer before you connect the keyboard's cable.

Optional Scanner Cable

Adaptor Cable

Power Connector

Keyboard Power Supply (5V)
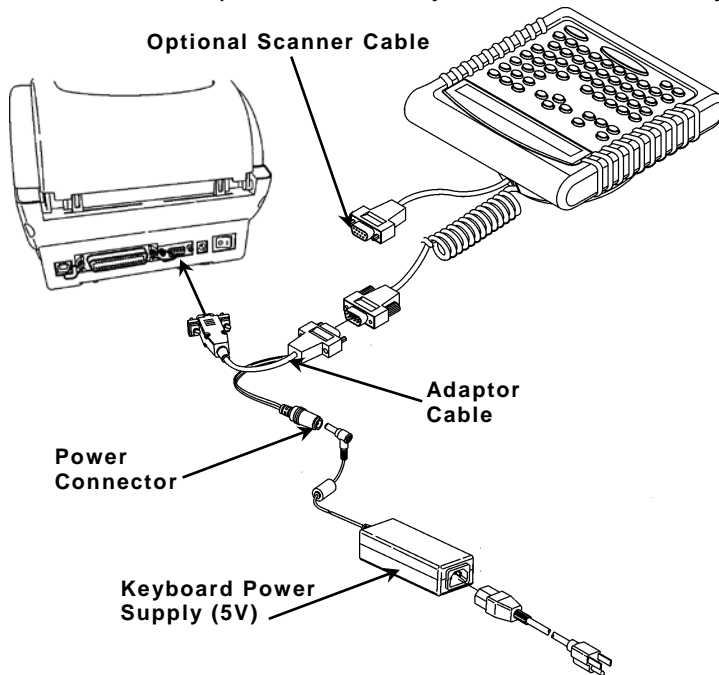
2. Plug the 9-pin coiled keyboard cable into the end of the adaptor cable.
3. Secure the other end of the adaptor cable to the 9-pin port on the printer. Tighten the screws on the cables.

4. Connect the adaptor cable's power connector to the keyboard power supply (5V).

5. Connect the keyboard power supply (5V) to the power cord.

6. Plug the power cord in to an electrical outlet.

Note: Be sure that the printer's power supply is also attached to the printer and plugged in to an electrical outlet.

7. Turn **ON** the printer. The keyboard receives power from the auxiliary power supply (5V).

Connecting the 939I to 9906, ADTP1, ADTP2 Printer

When using the keyboard with a 9906, ADTP1, or ADTP2 printer, the keyboard receives power from the printer.

1. Turn **OFF** the printer before you connect the keyboard's cable.

2. Plug the 9-pin coiled keyboard cable into the back of the printer.

9906   **ADTP1/ADTP2**
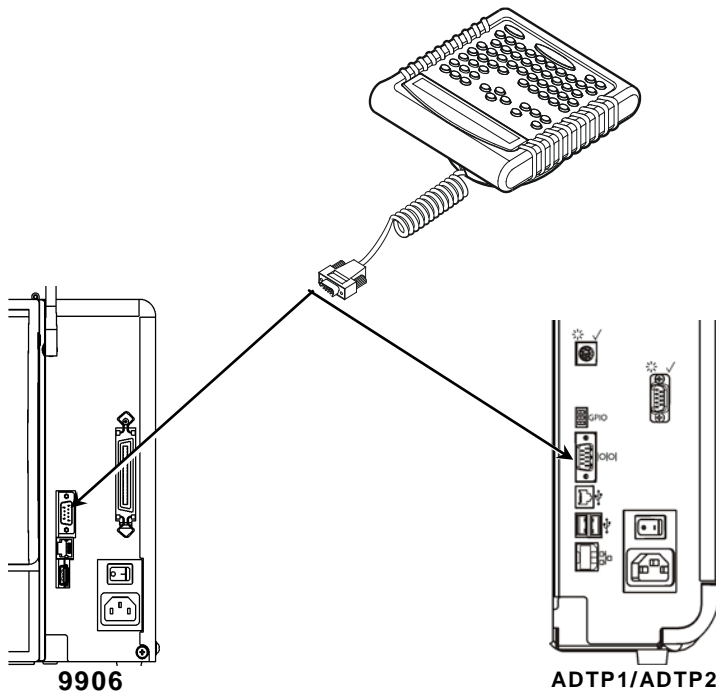
3. Tighten the screws on the cables.

4. Turn **ON** the printer.

Setting the Baud Rate

To print, the baud rate of the keyboard and printer must be the same. The default printer baud rate is 9600; the default keyboard baud rate is 19200. Refer to the *Operator's Handbook* or *System Administrator's Guide* for your printer to change the printer baud rate to 19200.
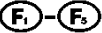
Using the Keyboard

The keyboard has full alphabetic keys with 10 numeric keys, 5 function keys, 4 arrow keys, and several special keys.

Control Keys

⊚, ⊕, and ⊕ operate as described in terminal mode. Depending on your script, those buttons may function differently.
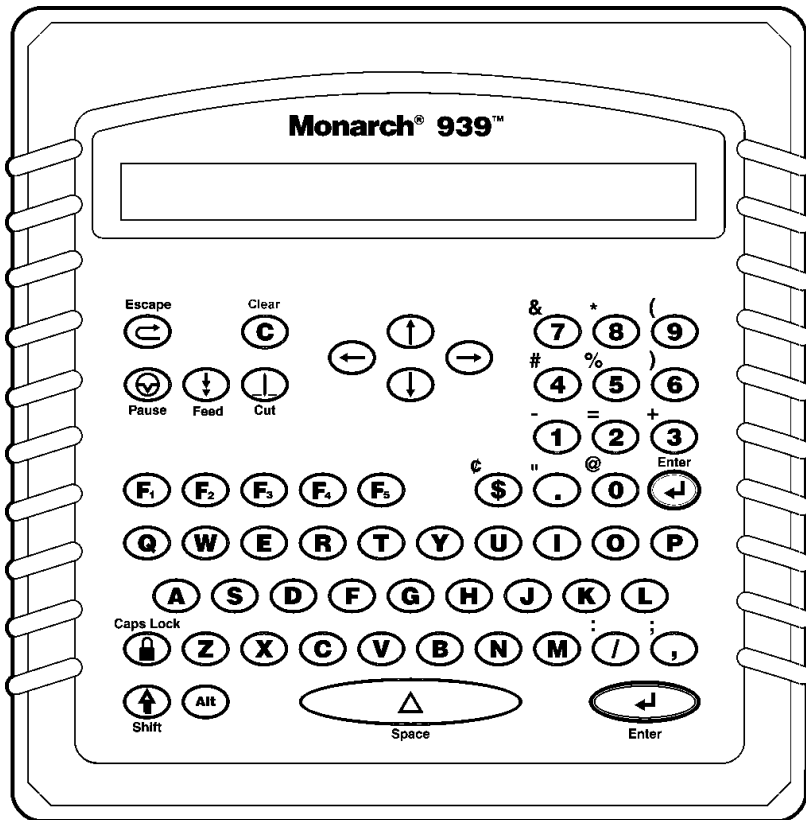
Button	Description
⊖	Escape. Returns the display to the previous menu or clears an error.
ⓒ	Clear. Clears the entire field.
◎	Pause. Interrupts printing. Press Pause again to resume printing.
↧	Feed. Feeds a blank label if there is no print job. Prints a label in on-demand mode.
⫟	Cut. Cuts the supply.
⊖⊖	Displays menu items and allows you to move the cursor.
⬆⬇	Moves between fields in Batch Entry.
⏎	Enter. Selects the displayed menu item.
⬆	Shift. Toggles between upper and lower-case. Use with other keys to display ¢, ", @, :, ;, -, =, +, #, %, (,), &, *.
F₁–F₅	Functions keys are reserved for script use. Depending on your script, **F1** may print a set of test labels or exit the application.
🔒	Caps Lock. Allows you to type all upper-case characters (a padlock symbol is displayed in the corner).
Aᴬˡᵗ	Enters an international character for printing when pressed and held along with a character code. See Appendix B, "Character Sets" for the character codes.
△	Space. Inserts a blank space between characters.

TROUBLESHOOTING

This chapter provides solutions to keyboard problems and explains common status code messages you may receive when using the keyboard.

Problem	Action
The keyboard display is blank.	Make sure the printer is ON. Make sure the keyboard cable is securely attached to the printer. If the keyboard was attached while the printer was on, turn OFF the printer and then back ON.
The data you entered is not accepted.	Refer to your format for acceptable characters for this field. Some fields accept only letters, some accept only numbers, and some accept only specific ranges of letters or numbers.
Your data was not accepted and blanks are still showing.	This field requires data for all underscores shown. Enter the correct data and press **Enter**.
You entered an incorrect check digit.	The data and check digit must be the correct combination. Enter the correct data and press **Enter**.
You tried to skip a required field.	This field requires data before continuing to the next field. Enter data and press the **Enter**.
Letters are not in the expected case.	Make sure the Caps Lock (🔒) is not on.

Problem	Action
Monetary symbols do not print as expected.	Make sure your font supports the selected code page (Bold, ANSI, etc.). For more information, see Appendix B, "Character Sets."
Script is not running.	Turn the printer off and then back on. If this does not solve the problem, contact Technical Support for more information.
Scanner does not work.	Make sure the scanner is connected and configured. See Appendix C, "Configuring the System," for more information.

SPECIFICATIONS & ACCESSORIES

Height:	4.0 inches (102 mm)
Width:	8.25 inches (210 mm)
Depth:	8.75 inches (222 mm)
Weight:	2.33 lbs. (1.06 kg)
Shipping Weight:	3.4 lbs. (1.5 kg)
Power Source:	Supplied by printer or auxiliary power supply (5V)
Memory:	Flash; 128K maximum for scripts; 256K maximum for data collection and lookup files. There is no battery-backed RAM.
Operating Limits:	40° to 104°F (4° to 40°C) See your printer's documentation for the printer's operating range.

Accessories & Options

- ♦ Keyboard stand. Can be used on a flat surface or mounted on a wall. When ordering, ask for the "keyboard stand" option.
- ♦ Scanner (126743).
- ♦ Auxiliary 5V Power Supply (129435) Used with a 9416 or 9825 printer or Non-Monarch printer.
- ♦ 9 to 9-pin Programming Cable (126660)
- ♦ 9 to 9-pin Cable (126701) used with a 9416 printer

Flat Surface Mount

Make sure all surfaces you apply the dual lock fasteners to are free from dirt and oil. If necessary, clean with isopropyl alcohol.

1. Pull the cord through the large hole in the stand.

2. Set the keyboard into the stand.

3. Attach either the rubber pads or dual lock fasteners to the base of the keyboard stand. If using the dual lock fasteners, attach the other side of the fastener to the tabletop.

Keyboard

Keyboard
Support

Cord

Lift Here
to Remove

Table Top

Dual Lock
Fasteners
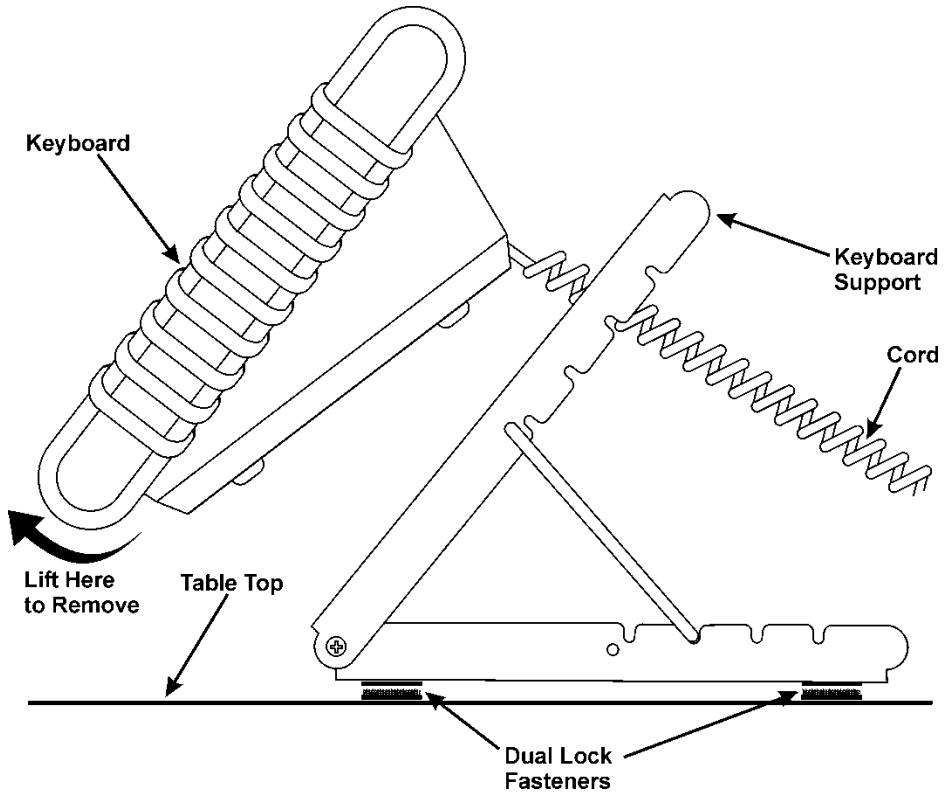
To remove the keyboard from the stand, lift the keyboard from the bottom.

Wall Mount

1. Hold the bottom of the stand against the wall (hinge side up). Mark the mounting holes with a pencil.

2. Screw the stand onto the wall (screws not included).

3. Pull the cord through the large hole in the stand.

4. Set the keyboard into the stand.
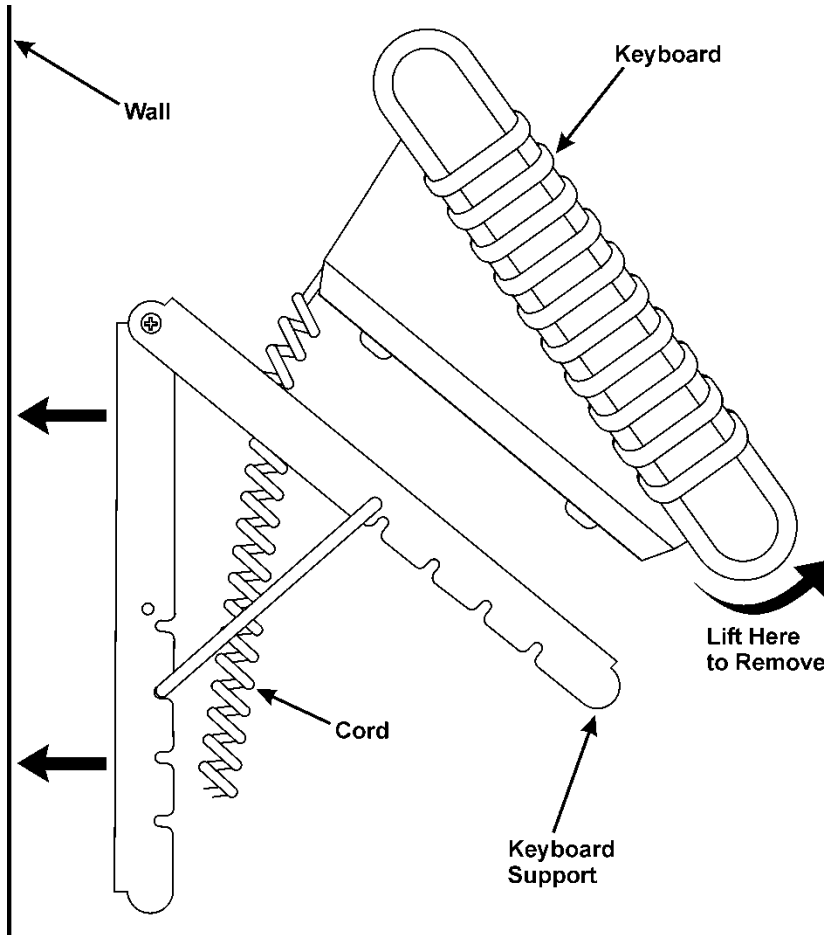
To remove the keyboard from the stand, lift the keyboard from the bottom.

Connecting the Scanner's Cables

A scanner is optional for the keyboard. You need to connect the cable to the scanner and keyboard before you can use it. The scanner receives power through the keyboard. For more information about the scanner or other peripheral devices, refer to their *User Manuals*.

1. Turn OFF the printer before you connect the scanner's cable.

Cable Slot

Auxiliary Serial Port

Keyboard Cable to Printer
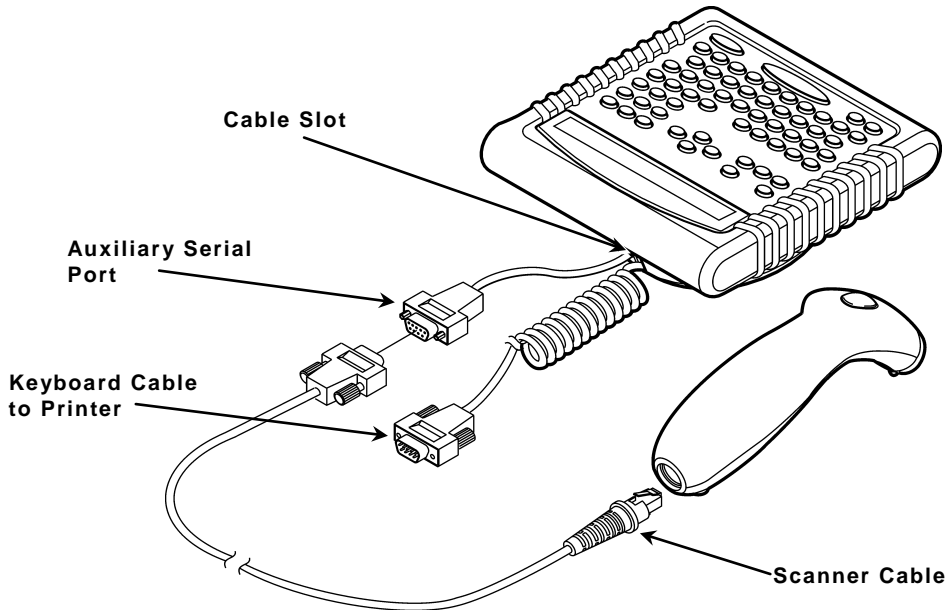
Scanner Cable

2. Reach into the bottom of the keyboard's base and locate the keyboard's auxiliary serial port, which is on a short, straight cable as shown.

3. Slide the cable into the slot on the keyboard's base.

4. On the scanner, connect the RJ45 male connector end of the cable into the scanner. You hear it click into place.

5. Connect the other end (9-pin male) of the cable to the keyboard's auxiliary serial port (9-pin female).

6. Tighten the screws on the cable to secure the scanner cable to the auxiliary serial port.

7. Tuck the connectors into the keyboard's base if necessary.

8. Turn ON the printer. Press (I) to turn on and (O) to turn off the printer.

CHARACTER SETS

This appendix contains a listing of the symbol sets and code pages the printer supports.

Supported Symbol Sets and Code Pages

The CG Triumvirate™ typefaces support only the ANSI and DOS Code Page 437 and 850 Symbol Sets. These fonts print a slashed zero when using the ANSI symbol set. However, the scalable font does not print a slashed zero or support Code Page 1256 (Arabic).

Internal	Use this set to print international monetary symbols, the trademark (™) symbol, and for formats that may be used on other MPCLII printers.
ANSI	Use this set with proportionally spaced fonts.
DOS Code Pages 437 or 850	Use this set for extended and international characters with proportionally spaced fonts.

To enter a character code:

Press and hold **Alt**. Use the numeric keys to enter a three-digit character code. For example, press **Alt 179** for ¥.

The keyboard's display may not match the character printed.

If you selected monetary signs from the Setup, Defaults menu and use the Standard, Reduced or Bold font, the monetary symbols from the selected country will be printed. However, if using the CG Triumvirate™ typefaces, the monetary symbols may not print as expected. Make sure your font requirements are supported by the selected code page.

For additional code pages that your printer may support, refer to the *Packet Reference Manual* available on our Web site.

Internal (Standard and Reduced Font)

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
240																™
224	α	ß														
208				Ø						ø						
192	€								_							
176	$	£	¥	Pₘ	F	P	L.	K/R	Mᵣ	ğ	Rₛ	Pₛ	W	Đ	¥	
160	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	»
144	É	æ	Æ	ô	ö	ò	û	ù	ÿ	ö	Ü	¢	£	¥	Ρ	ƒ
128	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
112	p	q	r	s	t	u	v	w	x	y	z	{	¦	}	~	
96	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
80	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
64	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
48	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
32		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
16																
0																

Bold

ANSI

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
240	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ
224	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
208	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
192	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
176	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
160		¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	-	®	¯
144		'	'													
128																
112	p	q	r	s	t	u	v	w	x	y	z	{	¦	}	~	▓
96	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
80	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
64	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
48	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
32		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
16																
0																

Code Page 437

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
240	≡	±	≥	≤	⌠	⌡	÷	≈	°	·	·	√	ⁿ	²	■	
224	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
208	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	█	▄	▌	▐	▀
192	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
176	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
160	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	»
144	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	¢	£	¥	₧	ƒ
128	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
112	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
96	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
80	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
64	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
48	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
32		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
16																
0																

Code Page 850

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
240	-	±	_	¾	¶	§	÷	¸	°	¨	·	¹	³	²	■	
224	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	¯	´
208	ð	Đ	Ê	Ë	È	ı	Í	Î	Ï	┘	┌	█	▄	¦	Ì	■
192	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
176	░	▒	▓	│	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
160	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
144	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
128	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
112	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	
96	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
80	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
64	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
48	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
32		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
16																
0																

CONFIGURING THE SYSTEM

This chapter contains information useful for your System Administrator:

♦ Accessing the Keyboard's Main Menu.

♦ Operating in Script Mode.

♦ Configuring the Scanner.

Accessing the Keyboard's Main Menu

The Keyboard's Main Menu allows you to load scripts, setup communication parameters, and select a display language for the Keyboard's Main Menu. Changing a display language does not change the language of any script messages.

To access the Keyboard's Main Menu, press **X** on the keyboard within the first two seconds when the printer/keyboard are turned on to see the Keyboard's Main Menu.

Operating in Script Mode

This manual does not cover any specific information about what may be in your script, because every script is different. Your script is written based on jobs you need to perform. Your script automatically runs when you turn on the printer and keyboard. The prompts you see and what you do are controlled by the script.

About the Scanner

A scanner is optional for the keyboard. For more information about the scanner or other peripheral devices, refer to their *User Manuals*.

Use this section to

♦ operate the scanner.

♦ troubleshoot the scanner.

♦ clean the scanner's window.

♦ configure the scanner. Your ADK script should already be written to enable and configure the scanner for you.

The scanner must be connected before you can use it. See "Connecting the Scanner's Cables" in Chapter 1 for more information.

Operating the Scanner

CAUTION

Do not stare into the beam.

To scan a bar code:

1. Point the scanner at a slight angle to, and approximately four to eight inches from the bar code symbol.

2. Press the button on the scanner. When the scanner is in the stand, it automatically scans any bar codes held in front of the scanner's window. Make sure you do not scan data twice or accidentally scan the wrong data.

Troubleshooting the Scanner

If the bar code does not scan:

♦ Change the scanner's angle slightly and try again.

♦ Move the scanner four to eight inches away from the bar code. Adjust this distance as needed to find the correct distance.

♦ Try scanning another bar code that you have scanned successfully. If that scan is successful, the scanning problem may be with the bar code.

♦ Move to a more dimly lit area.

♦ Ensure there are no voids (streaks) in the bar code symbol.

♦ Clean the scanner window. See "Cleaning" for more information.

♦ If the scanner stays in the same place without scanning anything for awhile, the scanner may appear to "time out." If this happens move the scanner slightly and then towards the bar code you want to scan. The scanner should scan the bar code. Make sure you do not scan data twice or accidentally scan the wrong data.

♦ Before you call Service, print a set of test labels. The test labels contain information to help Service diagnose mechanical and setup problems. To print a set of test labels, press **F1** when you see "Print Mode Ready."

Cleaning

Clean the scanner window whenever it appears to be dirty or smeared.

To clean it:

1. Moisten a soft cloth with water.

2. Wipe the window until it is completely clean.

Configuring the Scanner

The scanner may already be configured to work with your ADK script.

If not, use these bar codes to configure the scanner:

♦ Reset to default values.

♦ Set the communication port to match the keyboard's settings.

♦ Set the minimum bar code width (if necessary).

For additional bar codes to program your scanner, refer to your scanner's *Installation and User's Guide* for more information.

Reset to Default Values

To reset the scanner to default settings, scan this bar code:

`Reset to defaults`

Set the Communications Port Defaults

To set the communications port to the same defaults as the keyboard, scan the following series of bar codes, one at a time, from top to bottom.

```
Enter/exit config. mode
```

```
9600 baud
```

```
8 data bits
```

```
No parity
```

```
2 stop bits
```

```
Enter/exit config. mode
```

You can also set the communication values by using the Keyboard's Main Menu. The keyboard defaults are 9600 Baud, 8-bit Word Length, 2 Stop Bits, No Parity, and No Flow Control.

1. Press **X** on the keyboard within the first two seconds when the printer/keyboard are turned on to see the Keyboard's Main Menu.

2. Select Setup. Press ⊖ or ⊕ until you see

   ```
   SETUP
   ←   COM2 (Scanner)      →
   ```

3. Press **Enter**. You see a list of communication options to change (Baud Rate, Word Length, Stop Bits, Parity, and Flow Control).

   ```
   COM2 (Scanner)
        Baud Rate      →
   ```

4. Press **Enter** to change the Baud Rate. Use ⊖ or ⊕ to scroll through the choices. Press **Enter** when the Baud Rate you need appears. Continue through the list for the other communication settings and make changes if necessary.

Set the Minimum Bar Code Width

To scan single-digit bar codes, scan the following series of bar codes, one at a time, from top to bottom.

Enter/exit config. mode

Min. symbol length

0

0

1

Enter/exit config. mode

CABLE PINOUTS

Cable Pinouts

The following tables show the connector pins for the Keypad Auxiliary Cable (12662).

Printer D-Sub 9 pin (female)	To	FCI 90312-010
RTS 8	————————————	6 RTS
CTS 7	————————————	4 CTS
RXD 3	————————————	5 RXD
GND 5	————————————	9 SG
TXD 2	————————————	3 TXD
DSR 4	————————————	7 DSR
DTR 6	————————————	2 DTR
1 NC		NC1
+5V 9	————————————	8 +5V

The following tables show the connector pins for the Scanner Connection Cable (126870).

Printer P3 (female)	To	FCI 90312-010
RXD 2	————————————	3 TXD
TXD 3	————————————	2 RXD
TSV 9	————————	6 +5V
		9 + 5V
GND 5 2	————————	1 GND
		10 GND/Shield

028028

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