DECIDING WHICH OPTIONS TO CHANGE

The previous page shows a printout of the printer's factory default settings. In this printout, options are listed by functional group:

- Menu 1 settings (MENU1 function)
- Menu 2 settings (MENU2 function)
- Hardware settings (HARDWRE function)
- Print position adjustment settings (ADJUST function)
- Configuration settings (CONFIG function)
- Print head gap adjustment settings (GAP-ADJ function)

Most selectable options only alter print features, such as the typestyle, and page format. However, some options must be selected correctly for the printer to work properly with your hardware and software.

For each function, Table 5.2 lists items whose options must be selected correctly for system and printer accessory compatibility.

Table 5.2 Required Options

Function	Item	Option
MENU1	EMULATE	The emulation selected on the printer must be the same as the emulation selected in your software. If you selected an emulation when you set up the printer (Chapter 2), you do not need to change the EMULATE option unless you want to change to a different emulation. The emulation assigned to MENU1 is the default when you turn the printer on. See the section **MENU1 and MENU2 Items and Options** later in this chapter.
MENU2	None	If you use MENU2, the emulation selected for MENU 2 must be the same as the emulation selected in your software. See the section **MENU1 and MENU2 Items and Options** later in this chapter.

Table 5.2 Required Options (Cont.)

Function	Item	Option
HARDWRE	FORMAT BAUD-RT PROTOCL DSR DUPLEX CTS CD	If you have a serial interface, the serial interface options selected on the printer must be the same as the settings you selected using your software or your computer operating system. If the settings are not the same, the printer will not print or will print garbage. See the section **Hardware Items and Options** later in this chapter.
ADJUST	None	If you are not using software to specify the top margin of the page, use the printer's default top-of-form setting, 1 inch (25.4 mm) from the top of the paper. If you are using software to specify the top margin of the page, change the default setting to 1/6 inch (4.2 mm). See the section **Print Position Adjustment Items and Options** later in this chapter.
CONFIG	None	You can change the printer's primary configuration. See the section **Configuration Items and Options** later in this chapter.
GAP-ADJ	None	If you adjust the gap manually or fix the gap, change the setting. See the section **Print Head Gap Adjustment Items and Options**.

MENU1 AND MENU2 ITEMS AND OPTIONS

The MENU1 and MENU2 functions allow you to change the print options assigned to MENU1 and MENU2 on the printer control panel. In normal (nonsetup) mode, you can easily switch between the menus for printing, as described in Chapter 4.

MENU1 is invoked when you first turn the printer on.

Select the same emulation on the printer as is selected in your software. If the emulations are not the same, the printer will not work correctly with your software. If you plan to use two different emulations on a regular basis, assign the most frequently used emulation to MENU1. Assign the second emulation to MENU2. All of the other settings available for MENU1 and MENU2 are optional. Some of the items and options will vary with the emulation.

To determine which features your software supports, refer to your software documentation.

Table 5.3 describes the MENU1 and MENU2 items and options. Both functions offer the same items and options. The items in Table 5.3 are listed in the order in which they are printed. Not all items are defined for all emulations and some options vary with the emulation.

The procedure for changing the options is referred to in the section **Setup Mode Example**.

Table 5.3 MENU1 and MENU2 Items and Options

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<EMULATE>		Select the same emulation as is selected in your software. See the section **Selecting an Emulation in** Chapter 2 for information on selecting an emulation.
	DPL24C+	Fujitsu DL-series printers (DPL24C PLUS command set)
	XL24E ESC/P2	IBM Proprinter XL24E printers Epson printers using the ESC/P2 command set
		NOTE: When you change the emulation, all MENU1 or MENU2 options are reset to the factory defaults for that emulation.
<FONT>		For each of the following fonts, the recommended pitch settings are given after the font name. When you change the font, be sure to also change the pitch, if required.
	COUR 10	Courier, 10cpi
	PRSTG12	Prestige Elite, 12cpi
	COMPRSD	Compressed font, 15,17,and 18cpi
	BOLDFCE	Boldface, Proportional
	PICA 10	Pica, 10cpi
	CORRESP	Correspondence,10cpi
	OCR-B	OCR-B, 10cpi
	OCR-A	OCR-A, 10cpi
	COUR-N	Courier Normal, 10cpi
	COUR-B	**Courier Bold, 10cpi**
	COUR-I	*Courier Italic, 10cpi*
	N.SAN-N	Nimbus Sans Normal, Prop.
	N.SAN-B	**Nimbus Sans Bold, Prop.**
	N.SAN-I	*Nimbus Sans Italic, Prop.*

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<FONT> (continued)	TIMLS-N TIMLS-B TIMLS-I	**Timeless Normal, Prop.** **Timeless Bold, Prop.** *Timeless Italic, Prop.*
	DOWNLD#	Font 0 or font 1 in the printer's download RAM See Appendix F for font examples.
<QUALITY>		Select the print quality that most often meets your needs.
	LETTER	Letter print quality. This option provides the highest resolution but the slowest print speed. It cannot be used with the compressed font.
	REPORT	Report print quality. This option provides lower resolution than letter quality, but at twice the speed. If you want only the double speed, regardless of fonts, use the correspondence font. The quality of the correspondence font is higher than that of report.
	DRAFT	Regular draft print quality. This option provides lower resolution than report quality, but at 3.2 times letter speed.
	HI-DRFT	High-speed draft print quality. This option provides lower resolution than draft quality, but at 3.5 times letter speed.
<PITCH>	## CPI	2.5, 3, 5, 6, 10, 12, 15, 17, 18, or 20 cpi (characters per horizontal inch)
	PROP SP	Proportional spacing (1/12 inch per character space)

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<LINE SP>	## LPI	1, 2, 3, 4, 5, 6, 7, or 8 lpi (lines per vertical inch) **6 lpi** **3 lpi (double spacing)** ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD ABCD
<CHAR-W>		Change also the pitch 2 TIMES or 4 TIMES is selected.
	NORMAL	Standard character width ABCD
	2 TIMES	Double character width ABCD
	4 TIMES (*1)	Quadruple character width ABCD
<CHAR-H>		Change also the line spacing if 2 TIMES or 4 TIMES is selected.
	NORMAL	Standard character height ABCD abcd
	2 TIMES	Double character height ABCD abcd
	4 TIMES (*1)	Quadruple character height ABCD abcd

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<ATTRIB>		Selects an attribute to add emphasis to your documents. Only one attribute may be selected at a time.
	NONE	Standard characters (no attributes)
	ITALICS	*Italic printing*
	CONDNSD (*1)	Condensed printing
	SHADOW	Double printing with a slight horizontal offset
	BOLD	Double printing at the same position
<PAGE LG>		Specifies the length of the page in inches.
	## IN	For DPL24C PLUS and IBM XL24E emulations: 3.0, 3.5, 4.0, 5.0, 5.5, 6.0, 7.0, 8.0, 8.5, 11.0 (letter size), 11.6 (A4 size), 12.0, 14.0, 18.0 inches, or LINE For Epson ESC/P2 emulation: 4.0, 4.5, 5.0, ..., 11.0, 11.5, ..., 22.0 inches
	LINE	Selecting the page length by specifying number of lines per page (default: 66 lines per page) Selecting this option displays the <PG LX10> and <PG LX1>. Use in combination the <PG LX10> to set the tens value of the lines-per-page setting, and the <PG LX1> to set the ones value of the lines-per-page setting.

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

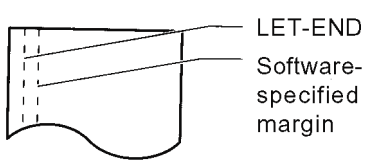
MENU1 and MENU2 Items	Options	Description
<PG LX10>	Tens value setting for setting number of lines per page	0 LINE, 10 LINE, 20 LINE, 30 LINE 40 LINE, 50 LINE, 60 LINE, 70 LINE 80 LINE, 90 LINE • The LINE setting depends on the line spacing setting 'LINE SP'. • When 0 LINE is set, the line spacing value is 11.0 IN (only when both 'PG LX10' = '0 LINE' and 'PG LX1' = '0 LINE' are set).
<PG LX1>	Ones value setting for setting number of lines per page	0 LINE, 1 LINE, 2 LINE, 3 LINE 4 LINE, 5 LINE, 6 LINE, 7 LINE 8 LINE, 9 LINE • The LINE setting depends on the line spacing setting 'LINE SP'. • When 0 LINE is set, the line spacing value is 11.0 IN (only when both 'PG LX10' = '0 LINE' and 'PG LX1' = '0 LINE' are set).
<LFT-END>	## COLM	Specifies the print start column for changing the left margin. Printing starts at the position given by this column plus your software-specified left margin. Column 1, 2, 3, ..., 41 

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

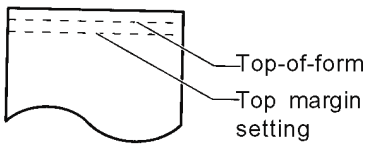
MENU1 and MENU2 Items	Options	Description
<TOP-MRG>		Specifies the number of space lines for the top margin. The resultant blank space is the <TOP-MRG> setting minus 1 line. The total size of your top margin is the above resultant value plus the following two settings: top-of-form (default = 1 inch) and the software-specified top margin. If you are using software to specify the top margin, use the default (1 line) for <TOP-MRG>.
	## LINE	1, 2, 3,4, 5, 6, 7, 8, 9, or 10 lines 

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<LANGUGE>		Selects a language. Appendix E shows the character sets for each language. Two-pass means that diacritical marks are printed separately from their letters and that letters are printed without any reduction. The first listing is common to all emulations. Options specific to each emulation are skipped. See the subsequent listings (*2) and(*3).
	USA	American English (Same as code page 437)
	UK	British English
	GERMAN	German
	SWEDISH	Swedish
	PAGE437	Code page 437
	PAGE850	Code page 850
	PAGE860	Code page 860
	PAGE863	Code page 863
	PAGE865	Code page 865
	ECMA94	ECMA 94
	ISO8859	ISO 8859-1
	PG852	Code page 852
	PG852-T	Code page 852 two-pass
	PG855	Code page 855
	PG866	Code page 866
	HUNGARY	Hungarian
	HUNG-T	Hungarian two-pass

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<LANGUGE> (continued)	SLOV	Slovenian
	SLOV-T	Slovenian two-pass
	POLISH	Polish
	POLSH-T	Polish two-pass
	MAZOWIA	Mazowian
	MAZOW-T	Mazowian two-pass
	LATIN2	Latin 2
	LATIN2-T	Latin 2 two-pass
	KAMENIC	Kamenicky
	KAMEN-T	Kamenicky two-pass
	TURKY	Turkish
	TURKY-T	Turkish two-pass
	CYRILIC	Cyrillic
	IBM437	IBM 437
	IBM851	IBM 851
	ELOT928	ELOT 928
	PG-DHN	Code page DHN
	LATIN-P	Latin Polish
	ISO-LTN	ISO Latin
	LITHUA1	Lithuanian1
	LITHUA2	Lithuanian2
	MIK	
	MACEDON	Macedonian
	PG-MAC	
	ELOT927	

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<LANGUGE> (continued)	ABG	
	ABY	
	DEC GR	
	HBR-OLD	
	PG862	
	HBR-DEC	
	GREEK 11	
	ISO-TUK	ISO Turkish
	RUSCII	
	LATIN-9	
	WCP1250	Windows-1250
	WCP1251	Windows-1251
	WCP1252	Windows-1252
	(*2)	
	FRENCH	French
	ITALIAN	Italian
	SPANISH	Spanish
	DANISH1	Danish I
	DANISH2	Danish II
	FINNISH	Finnish
	NORWEGN	Norwegian

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<LANGUGE> (continued)	(*3)	
	DANISH1	Danish I
	ITALIAN	Italian
	SPANSH1	Spanish I
	SPANSH2	Spanish II
	JAPAN	Japanese
	NORWEGN	Norwegian
	LATIN A	Latin American
	FRENCH	French
	DANISH2	Danish II
	KOREA	Korea
	LEGAL	Legal
<CHR-SET>	SET 1	IBM character set 1
	SET 2	IBM character set 2
		If a downloaded (soft) font is used, the character set for that font overrides the <CHR-SET> setting.
	(*3)	
	ITALIC	Italic characters are available.
	GRAPHIC	Graphics characters (ruled lines) are available.

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<PRF-SKP>		For continuous forms, this option specifies whether an inch is skipped around the perforation. If you are not using software to specify a bottom margin, select SKIP when using thicker, multipart forms.
	SKIP	One inch is skipped around the perforation.
	NO-SKIP	The perforation is not skipped. Printing continues in the bottom margin of the page.
<WIDTH>	13.6 IN	13.6-inch page width
	11.4 IN	11.4-inch page width
	11.0 IN	11-inch page width
	8.0 IN	8-inch page width
<ZEROFNT> (*2)		Specifies whether to print the number zero with a slash. This is useful to distinguish the capital letter “O” from the number “0”. Invalid for some soft fonts.
	NO-SLSH	0
	SLASH	ø

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

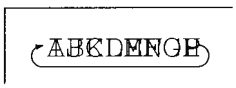
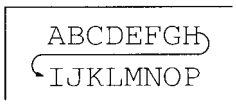
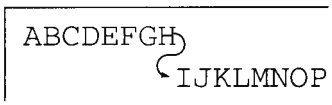
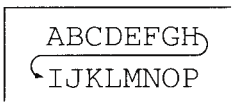
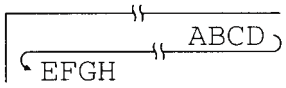
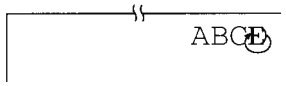
MENU1 and MENU2 Items	Options	Description
<DC3-CDE> (*4)	ENABLE	Enables the DC1 and DC3 codes. Any data received between DC3 and the next DC1 is ignored.
	DISABLE	Disables the DC1 and DC3 codes. These codes are then ignored.
<CR-CODE>	CR ONLY	No line feed is added to a carriage return. 
	CR & LF	A line feed is added to each carriage return. 
<LF-CODE> (*3)	LF ONLY	No carriage return is added to a line feed. 
	LF & CR	A carriage return is added to each line feed. 

Table 5.3 MENU1 and MENU2 Items and Options (Cont.)

NOTES:

- Underlined options are the factory defaults.
- Asterisks identify items and options that differ for the IBM XL24E and Epson ESC/P2 emulations. The notes are defined at the end of the table.

MENU1 and MENU2 Items	Options	Description
<RGHTEND>	<u>WRAP</u>	End-of-line wrap. Causes a carriage return plus a line feed. 
	OVR-PRT	Characters are overprinted at the end of a line. 
<==END==>		Indicates the end of MENU1 items. Press the ▼ button to print the first item, <EMULATE>. Press the ▲ button to print the previous item, <RGHTEND>. Press the ONLINE button to reprint the <<FUNCTION>> menu.

*1 Unavailable in the IBM XL24E emulation

*2 Unavailable in the Epson ESC/P2 emulations

*3 Available only in the Epson ESC/P2 emulations

*4 Available only in the DPL24C+ emulation

Resetting MENU1 and MENU2

To reset the factory defaults for both MENU1 and MENU2, select the DEFAULT/INITIAL function. For more information, see the section Resetting Defaults later in this chapter. The DEFAULT function cannot reset those options which are handled by the HARDWRE, ADJUST, CONFIG, and GAP-ADJ functions. The INITIAL function can reset those options which are handled by the HARDWRE, ADJUST, CONFIG, and GAP-ADJ functions.

CHANGING HARDWARE OPTIONS

The HARDWRE function defines the printer's hardware operating conditions. If you are using the optional RS-232C serial interface, the serial interface options must be set properly for the printer to function correctly with your system hardware.

Table 5.4 describes the HARDWRE items and options . Items are listed in the order in which they are printed. The procedure for changing the hardware options is described after Table 5.4.

Table 5.4 HARDWRE Items and Options

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description
<PPR-OUT>		Specifies how the printer responds when you run out of paper.
	CNTONLY	The printer detects paper-out only for continuous forms. Printing stops and the PAPER OUT indicator lights red.
	<u>DETECT</u>	The printer detects paper-out for both continuous forms and single sheets. Printing stops and the PAPER OUT indicator lights red.
	IGNORE	The printer ignores paper-out for both continuous forms and single sheets. Printing continues until no more data remains. No PAPER OUT warning is displayed.

Table 5.4 HARDWRE Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description
<PRT-DIR>	BI-DIR	Bidirectional printing. The printer prints in either direction while seeking the next print direction for a shorter print time.
	UNI-DIR	Unidirectional printing. Unidirectional printing is used for printing vertical lines in tables even if vertical alignment is not adjusted. Unidirectional printing is slower than bidirectional printing.
<BUZZER>		Enables or disables the printer status buzzer.
	ON	Buzzer on (recommended). The printer beeps to indicate paperout or other conditions.
	OFF	Buzzer off under any conditions.
<WORD-LG>		To determine the required word length, refer to your computer documentation. Select 8-BIT to print bit image graphics.
	8 BIT	8-bit word length (used by most computers)
	7 BIT	7-bit word length (MSB = 0)
<BUFFER>		Assigns buffer memory to input data and downloaded font data.
		Print buffer / **Download buffer**
	NONE	0 byte / 128K bytes
	256BYTE	256 bytes / 127.75K bytes
	2KBYTE	2K bytes / 126K bytes
	8KBYTE	8K bytes / 120K bytes
	24KBYTE	24K bytes / 104K bytes
	32KBYTE	32K bytes / 96K bytes
	96KBYTE	96K bytes / 32K bytes
	128KBYT	128K bytes / 0K bytes

Table 5.4 HARDWRE Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description
<BUFFER> (continued)		**NOTE:** • **0BYTE option is recommended only for graphics application.** • **With 128KB selected, the printer cannot accept any download font data.**
<INTRFCE>		Selects the type of the interface to the computer.
	PARALEL	Centronics parallel interface
	SERIAL	RS-232C serial interface
	USB	USB interface
	AUTO-2S	Auto interface selection mode
	AUTO-4S AUTO-6S	• Both interfaces are ready for communication.
	AUTO10S AUTO15S	• Specify the timing regarding the selected interface as being inactive.
	AUTO20S	To switch the interface to the optional LAN interface, mount the LAN card with the setup mode set to “AUTO-XS” or “AUTOXXS” under “INTERFCE,” which in turn is under “HARDWRE” The interface will automatically switch to the optional LAN interface. To switch the interface to something other than the optional LAN interface, do either of the following: • To return the setup mode to “INTERFCE” under “HARDWRE,” remove the LAN card. • To switch the interface to a fixed interface, set PARALEL,USB with the LAN card mounted, and the setup mode set to “INTERFCE” under “HARDWRE.”

Table 5.4 HARDWRE Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description		
Serial Interface or USB interface Items. The following <FORMAT> to <DUPLEX> items are not printed when you select the PARALEL option for the <INTRFCE> item. Be sure that the options selected on the printer are the same as the options selected using your computer operating system or your software. Refer to the documentation provided for your computer and software.				
<FORMAT>		**Number of data bits**	**Parity bit**	**Number of stop bits**
	8NONE 1	8	None	1
	8NONE 2	8	None	2
	8EVEN 1	8	Even	1
	8ODD 1	8	Odd	1
	7EVEN 1	7	Even	1
	7ODD 1	7	Odd	1
	7MARK 1	7	Mark	1
	7SPACE 1	7	Space	1
	7EVEN 2	7	Even	2
	7ODD 2	7	Odd	2
		The data format also includes a start bit. The mark is logical 1. The space is logical 0.		
<BAUD-RT>	150 300 600 1200 2400 4800 9600 19200	The baud rate is in bps (bits per second). Select the same baud rate as 600 used by your computer or modem.		

Table 5.4 HARDWRE Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description
<PROTOCL>		Indicates data transmission protocol.
	XON/XOF	The DC1 and DC3 codes are used.
	DTR	The Data Terminal Ready signal is used.
	REV-CHL	The Reverse Channel signal is used.
<DSR>	IGNORE	DSR is ignored by the printer.
	DETECT	DSR is detected by the printer.
<DUPLEX>	FULL	Simultaneous data transmission occurs in opposite directions.
	HALF	Data transmission occurs in either direction, but not simultaneously.
<CTS>	IGNORE	CTS is ignored by the printer.
	DETECT	CTS is detected by the printer.
<CD>	IGNORE	CD is ignored by the printer.
	DETECT	CD is detected by the printer.
<==END==>		Indicates the end of the HARDWRE item list. Press the ▼ button to print the first item, which is <PPR-OUT>. Press the ▲ button to print the previous item. Press the ONLINE button to reprint the <<FUNCTION>> menu.

CHANGING PRINT POSITION ADJUSTMENT OPTIONS

When you print using ruled paper, you often want to adjust the print position so that the print sits properly on the ruled lines. The ADJUST function allows you to:

- Set top-of-form position
- Fine-tune top-of-form position
- Fine-tune left print start column (left margin)
- Adjust for accumlative line spacing error in a page

The top edge of your paper is the physical top of the page. The logical top of the page, as "understood" by the printer when loading paper, is called the top-of-form. Printing starts at this position. Note that printing actually starts at the position obtained by adding the following:

- Top-of-form, default = 1.8/6 inch (7.6mm)
- Top margin specified by your software
- Printer TOP-MRG (top margin setting), default = 1 line

Table 5.5 describes the ADJUST items and options. Items are listed in the order they are printed. The procedure for changing top-of-form is described after Table 5.5.

Table 5.5 ADJUST Items and Options

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description
<FCNTORG>	1/6 IN 1.8/6 IN : 6/6 IN : 66/6 IN	Sets the top-of-form for front continuous forms in increments of 1/6 inch (4.2 mm) from the physical top of the page. The default is recommended if your top margin is not software-specified. A setting of 1/6 inch is preferable when your top margin is software-specified.
<FCNTFIN>	0/180, ..., 29/180	Fine-tunes the top-of-form position for front continuous forms. Increases top-of-form in increments of 1/180 inch (0.14 mm).
<RCNTORG>	1/6 IN 1.8/6 IN : 6/6 IN : 66/6 IN	Sets the top-of-form for rear continuous forms in increments of 1/6 inch (4.2 mm) from the physical top of the page. The default is recommended if your top margin is not software-specified. A setting of 1/6 inch is preferable when your top margin is software-specified.
<RCNTFIN>	0/180, ..., 29/180	Fine-tunes the top-of-form position for rear continuous forms. Increases top-of-form in increments of 1/180 inch (0.14 mm).

Table 5.5 ADJUST Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description
<FCUTORG>	1/6 IN 1.8/6 IN : 6/6 IN : 66/6 IN	Sets the top-of-form for front single sheets in increments of 1/6 inch (4.2 mm) from the physical top of the page. The default is recommended if your top margin is not software-specified. A setting of 1/6 inch is preferable when your top margin is software-specified.
<FCUTFIN>	0/180, ..., 29/180	Fine-tunes the top-of-form position for front single sheets. Increases top-of-form in increments of 1/180 inch (0.14 mm).
<RCUTORG>	1/6 IN 1.8/6 IN : 6/6 IN : 66/6 IN	Sets the top-of-form for rear single sheets in increments of 1/6 inch (4.2 mm) from the physical top of the page. The default is recommended if your top margin is not software-specified. A setting of 1/6 inch is preferable when your top margin is software-specified.
<RCUTFIN>	0/180, ..., 29/180	Fine-tunes the top-of-form position for rear single sheets. Increases top-of-form in increments of 1/180 inch (0.14 mm).
<CNT-LFT>	10/90, ..., 0/90, ..., 10/90	Fine-tunes the left print start position for continuous forms. Moves the position left or right in increments of 1/90 inch (0.28 mm).
<CUT-LFT>	10/90, ..., 0/90, ..., 10/90	Fine-tunes the left print start position for single sheets. Moves the position left or right in increments of 1/90 inch (0.28 mm).

Table 5.5 ADJUST Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description
<FCNTADJ>	-14/360, -9/360, -4/360, 0/360 4/360, 9/360, 14/360, GRAPHIC(*1)	Compensates for the forms feed error accumulated through feeding of front continuous forms.
<RCNTADJ>	-14/360, -9/360, -4/360, 0/360 4/360, 9/360, 14/360, GRAPHIC(*1)	Compensates for the forms feed error accumulated through feeding of rear continuous forms.
<FCNTAJL>	-14/360, -9/360, -4/360, 0/360 4/360, 9/360, 14/360, GRAPHIC(*1)	Compensates for the forms feed error accumulated through feeding of front continuous forms. (Last page)
<RCNTAJL>	-14/360, -9/360, -4/360, 0/360 4/360, 9/360, 14/360, GRAPHIC(*1)	Compensates for the forms feed error accumulated through feeding of rear continuous forms. (Last page)
<CUT-ADJ>	-14/360, -9/360, -4/360, 0/360 4/360, 9/360, 14/360, GRAPHIC(*1)	Compensates the line spacing pitch on the basis of the spacing error accumulated for feeding single sheets by10 inches. Decreases or increases in increments of 1/360 inch in total.
<FCSFADJ>	-14/360, -9/360, -4/360, 0/360 4/360, 9/360, 14/360, GRAPHIC(*1)	Compensates the line spacing pitch on the basis of the spacing error accumulated for feeding single sheets by10 inches. Decreases or increases in increments of 1/360 inch in total. This option is available only when paper is being loaded in the front cut sheet feeder.

Table 5.5 ADJUST Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

HARDWRE Items	Options	Description
<RCSFADJ>	-14/360, -9/360, -4/360, 0/360 4/360, 9/360, 14/360, GRAPHIC(*1)	Compensates the line spacing pitch on the basis of the spacing error accumulated for feeding single sheets by10 inches. Decreases or increases in increments of 1/360 inch in total. This option is available only when paper is being loaded in the rear cut sheet feeder.
<==END==>		Indicates the end of MENU1 items. Press the ▼ button to print the first item, <FCNTORG>. Press the ▲ button to print the previous item, <RCSFADJ>. Press the ONLINE button to reprint the <<FUNCTION>> menu.

*1: When printing graphics, selecting “GRAPHIC” may result in the printing of clearer graphics.

CHANGING CONFIGURATION OPTIONS

The CONFIG function defines the printer's primary configuration. You can set the following options to ensure that the printer meets your requirements:

- Tear off for continuous forms
- Autoloading of single sheets
- Direct decoding of certain commands
- Enabling of the AREA OVER indicator

Table 5.6 describes the CONFIG items and options. Items are listed in the order they are printed. The procedure for changing the configuration options is described after Table 5.6.

Table 5.6 CONFIG Items and Options

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
<TEAROFF>		Auto or manual tearoff feed.
	MANUAL	Automatic tearoff feed is invalid, and tearoff feed must be done using the TEAR OFF button.
	AUTO	Automatic tearoff feed is valid but only for continuous forms. Tearoff feed can also be done using the TEAR OFF button.

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
<TEARPOS>		Tearoff position.
	VISIBLE	Select this option when your software positions forms to the next top-offform after printing the last data. The printer performs tearoff feed without adding a form feed when data transfer has stopped.
	ALWAYS	Select this option when your software stops after printing the last data. The printer performs tearoff feed after adding a form feed when data transfer has stopped. **Note: For both settings, tearoff positioning will fail if the page length setting does not match the actual perforation spacing.**
The following <TEAR-EN> item is printed when TEAROFF:AUTO is specified for the <TEAROFF> item.		
<TEAR-EN>		Tearoff enabled time (offset time).
	0 SEC 1 SEC 2 SEC 4 SEC 6 SEC	The offset time is from when data transfer stops to when the printer performs automatic tearoff feed. If the printer receives data again within the offset time, the printer does not perform automatic tearoff feed.

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
<TEAR-EN> (continued)		In some application programs, data transfer may stop temporarily due to internal processing. This setting can avoid an undesired tearoff feed by waiting for up to six seconds each time data transfer stops.
<CUTLOAD>		Single sheet autoloading.
	AUTO	Single sheet paper is automatically loaded a certain time after you set the paper.
	BUTTON	Single sheet paper can be loaded by pressing the LOAD button.
The following <LOADTIM> item is printed when CUTLOAD:AUTO is specified for the <CUTLOAD> item.		
<LOADTIM>		Autoload start time.
	0.5, 1.0, 1.5, 2.0 2.5, 3.0SEC	Autoloading starts when this amount of time passes after you set single sheet paper.
<DECODE>		Command decode timing.
	DIRECT	The printer decodes certain commands immediately after receiving data. Example: ESC SUB I, ESC CR P (DPL24C+) ESC Q # (IBM XL24E)
	QUEUED	The printer decodes commands after storing all data (including commands) in the input buffer. This speeds data reception because the printer does not require decoding time during data reception.

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
<AREACNT>		Area-over detection control.
	ENABLE	Detects the left and right edges of paper when loading the paper. The printer does not print data beyond the edges, but turns on the AREA OVER indicator.
	DISABLE	Does not detect the edges. Select this option when you are using colored or preprinted paper.
<CUT-ONL>		Printer status after loading paper in offline mode for single sheets.
	OFFLINE	Remains offline after paper loading.
	ONLINE	Goes into online after paper loading.
<CNT-ONL>		Printer status after loading paper in offline mode for continuous forms.
	OFFLINE	Remains offline after paper loading.
	ONLINE	Goes into online after paper loading.
<LOCK>		Lock function of setup mode.
	NONE	Enables all buttons on the control panel.
	SETUP	Disables the setup-related buttons to keep the printer from entering setup mode during the offline state.
	ALL	Disables the setup-related buttons and the MENU button. Once this setting has been selected, setup mode cannot be entered from the control panel. To cancel this setting, turn the power on while simultaneously pressing the HI IMPACT, TEAR OFF, and LF/FF buttons.

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
<//S//>		Effectiveness of the Cut Sheet Selection command (//S//).
	DISABLE	Makes the command ineffective.
	ENABLE	Makes the command effective. Note: The Cut Sheet Selection command (//S//) changes the paper source to the paper table and waits for manual insertion of a cut sheet.
<FCNT-PE>		Detection of end of front continuous forms.
	TRACTOR	Paper end is detected by the sensor on the tractor unit. Paper-end unprinted area: Continuous forms: About 101 mm
	EDGE	Regardless of paper end, printing continues near to the edge of paper. Paper-end unprinted area: About 4 mm for both continuous forms
<RCNT-PE>		Detection of end of rear continuous forms.
	TRACTOR	Paper end is detected by the sensor on the tractor unit. Paper-end unprinted area: Continuous forms: About 157 mm
	EDGE	Regardless of paper end, printing continues near to the edge of paper. Paper-end unprinted area: About 4 mm for both continuous forms

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
GATHER		Setting of ribbon protective control at a line feed on continuous forms
	ENABLE	The protective control is executed.
	DISABLE	The protective control is not executed.
CUT-CTL		Setting of retracting control at canceling TEAR OFF of continuous forms.
	PRCISIN	The precision-prioritized retracting control is executed. It retracts a certain amount of paper (the top part of the paper which hangs out from the TOFS), and then moves back to the position before TEAR OFF. If TOFS detects paper end when a certain amount of paper is retracted, it executes the continuous forms save operation and then executes the paper loading operation.
	SPEED	The speed-prioritized retracting control is executed. It retracts the paper by the amount the paper was advanced.

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
SKIP-PR		Setting of printing speed change processing (skip)
	ENABLE	The skip processing is executed. When a certain amount of blank spaces are found in a line, it changes the printing speed for the blank spaces.
	DISABLE	The skip processing is not executed. It does not change the printing speed for the blank spaces. - If the printing speed of the printing data varies before and after the blank spaces (such as LQ characters + blank space + CQ characters), it changes printing speeds regardless of this setting.
STATUS		Setting of the asynchronous status function
	ENABLE	The status information is stored in the send buffer by a nibble mode request.
	DISABLE	The status information is not stored in the send buffer by a nibble mode request.
BANDCTL		Setting of reducing backward line feeds as much as possible. Backward line feeds occur when printing vertical enlargement characters or multi-path characters which involve several printing paths for a print activation.
	ENABLE	Reduce control is performed.
	DISABLE	Reduce control is not performed.

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
TOF-CTL		Setting of priority on TOF control to a printer driver specification or a setup specification. TOF control determines the amout of the top margin when paper is fed to the home position.
	DRIVER	Driver specification is given priority.
	SETUP	Setup specification is given priority.
<CUTEDIR>		Selection of the eject direction of cut sheets with manually feeding of cut sheets
	FRONT	Ejected to the front.
	REAR	Ejected to the rear.
<CSFEDIR>		Selection of the eject direction of cut sheets with use of a CSF
	FRONT	Ejected to the front.
	REAR	Ejected to the rear.
<CUTEJCT>		Selection for automatic ejection of cut sheets
	AUTO	Automatic ejection of cut sheets when no cut sheet is detected
	MANUAL	No automatic ejection of cut sheets when no cut sheet is detected
<FL-CENT>		Selection of the print carrier position when paper is fed via a front path (with feeding of continuous forms paper from the front, use of a front CSF, and manual feeding of cut sheets)
	POSN1	Position 1: Column 31
	POSN2	Position 2: Column 42

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
<RL-CENT>		Selection of the print carrier position when paper is fed via a front path (with feeding of continuous forms paper from the rear and use of a rear CSF)
	POSN1	Position 1: Column 31
	POSN2	Position 2: Column 42
<SKEWCNT>		Detection of paper feed skew
	ENABLE	Enables paper feed skew detection.
	DISABLE	Disables paper feed skew detection.
<FF-CODE>		Selection of the method of processing for the FF code is received in cut sheet mode or for the "LF/FF" switch
	EJECT	Ejects cut sheets.
	FORM-FD	Uses a page break.
<PRT-CUT>		Selection of the cut amount (margin) on both sides of continuous forms paper when AREACNT, the cut amount in continuous printing, is set to ENABLE
	71/180	Sets the cut amount for printing to 71/180 inches (about 10.0 mm).
	99/180	Sets the cut amount for printing to 99/180 inches (about 14.0 mm).
<CSFBIN1>		Selection of the CSF for pin 1 if both a front CSF and rear CSF are mounted
	FRONT	Front CSF
	REAR	Rear CSF

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
<CNT-LD>		Selection for the paper feeding of continuous forms paper
	PRCISIN	Gives a higher priority to precision.
	SPEED	Gives a higher priority to speed.
<CSF-LD>		Selection of the method of feeding from the CSF
	NORMAL	Feeds paper directly from the CSF hopper.
	SWBACK	Feeds paper from the CSF hopper to either the cut sheet table used with a front CSF or the stacker used with a rear CSF. Then, that paper is fed again.
<CSFAPTC>		Paper thickness detection with use of a CSF
	ALWAYS	Every sheet of paper that is fed
	NORMAL	Sheet of paper that is fed immediately after the feed pin is switched
<LF-CTL>		Selection for page return
	PRCISIN	Gives a higher priority to precision.
	SPEED	Gives a higher priority to speed.
<PR-MODE>		Selection for print mode (standard/low noise)
	NORMAL	Prints in standard mode.
	QUIET	Prints in low-noise mode.
<HI-IMPT>		Selection for high printing pressure mode
	DISABLE	Prints in standard pressure mode.
	ENABLE	Prints in high printing pressure mode.

Table 5.6 CONFIG Items and Options (Cont.)

NOTE: Underlined options are the factory defaults.

CONFIG Items	Options	Description
<DQ-MODE >		Selection for draft quality printing mode
	MODE1	Prints in 505CPS printing mode.
	MODE2	Prints in 360CPS printing mode.
<==END==>		Indicates the end of the CONFIG item list. Press the ▼ button to print the first item, which is <TEAROFF>. Press the ▲ button to print the previous item. Press the ONLINE button to reprint the <<FUNCTION>> menu.

HEAD GAP ADJUSTMENT ITEMS AND OPTIONS

The GAP-ADJ function adjusts the gap between the print head and the paper. The automatic paper thickness control (APTC) feature is built in this printer. If you adjust the gap manually or fix the gap, change the option of GAP-ADJ function.

For the procedure how to change the options refer to the section **Setup Mode Example** earlier in this chapter.

Table 5.7 GAP-ADJ Items and Options

NOTE: Underlined options are the factory defaults.

GAP-ADJ Items	Options	Description
<AMOUNT>		Specifies the print head gap.
	AUTO	The print head gap is set automatically.
	MANUAL	Turn the paper thickness dial (indicator) manually.
<==END==>		Indicates the end of the GAP-ADJ item list. Press the ▼ button to print the first item, which is <AMOUNT>. Press the ▲ button to print the previous item. Press the ONLINE button to reprint the <<FUNCTION>> menu.

EXITING AND SAVING

This section describes how to exit setup mode and save any changes you made:

To exit setup mode immediately, select the SAVE & END function.

Any settings changed while in setup mode are saved as the new power-on defaults for the printer. The new defaults remain active until you change them again.

NOTE

The only way to exit setup mode without saving your changes is to turn off the printer. When you turn the printer back on, the previous default settings are used.

Procedure

To exit setup mode and save your changes using SAVE/END, proceed as follows:

1. **Print the <<FUNCTION>> menu.**

   The <<FUNCTION>> menu should be the last printed line on the page. If the menu is not printed, press the ONLINE button to print the menu. The <<FUNCTION>> menu is shown below:

```
<< FUNCTION >>
SAVE&END MENU1    MENU2    HARDWRE  ADJUST   CONFIG   GAP-ADJ  DEFAULT  LIST     SELF-TST
HEX-DUMP V-ALMNT  INITIAL
```

2. **Select the SAVE/END function.**

   Make sure that the cursor on the left edge of the aluminum print guide is positioned under SAVE & END. Press the ▲ button or the ▼ button to select SAVE & END. The printer exits setup mode and returns online (the ONLINE indicator lights green). Any changes you made while in setup mode are saved.

RESETTING DEFAULTS

This section describes how to reset the printer's power-on defaults, all of the factory defaults, or the factory defaults only for MENU1 and MENU2.

Resetting Power-On Defaults

Power-on defaults are the settings saved in the printer's permanent memory. The defaults are enabled whenever you turn the printer on.

The easiest way to reset the power-on defaults is to turn the printer off and then on again. This method is useful if you have made changes in setup mode that you do not want to save.

Resetting Factory Defaults

Factory defaults are those settings preselected at the factory. For a list of the printer's factory defaults, see the section Printing a List of Selected Options earlier in this chapter. To reset the factory defaults for all functions, proceed as follows:

1. Turn off the printer.
2. While pressing the LOAD and, TEAR OFF buttons, turn on the printer. Continue to press the two buttons until the printer beeps.

   The factory defaults are now reset.

   Another available method is to select INITIAL in SETUP mode. The method of making settings is the same as the method for selecting DEFAULT on the next page, except that INITIAL must be selected instead of DEFAULT.

Resetting Factory Defaults in MENU1 and MENU2

This method resets factory defaults for MENU1 and MENU2 options, listed in Table 5.3, but does not reset the printer hardware, print position adjustment, and configuration options. To reset the factory defaults in MENU1 and MENU2, proceed as follows:

1. **Enter setup mode.**

   Press the ▲MICRO button and the ▼MICRO button simultaneously until the printer beeps. Wait for the printer to stop printing and check that the following <<FUNCTION>> menu is printed:

```
<< FUNCTION >>
SAVE&END MENU1    MENU2    HARDWRE  ADJUST   CONFIG   GAP-ADJ  DEFAULT  LIST     SELF-TST
HEX-DUMP V-ALMNT  INITIAL
```

2. **Select the DEFAULT function.**

   Repeatedly press the "TEAR OFF" or "LOAD" button to position the cursor on the left edge of the aluminum print guide on DEFAULT. Press the ▲ button or the ▼ button to select the DEFAULT function. The printer reprints the <<FUNCTION>> menu. The default values in MENU1 and MENU2 are now reset.

3. **Do either of the following:**

   - Select new options for MENU1 or MENU2.
   - Exit setup mode, saving the factory defaults.

   See the section **MENU1 and MENU2 Items and Options**. To exit setup mode and save the new defaults, make sure that the cursor on the left edge of the aluminum print guide are positioned on SAVE & END, then press the ▲ MICRO button or the ▼ MICRO button.

USING THE DIAGNOSTIC FUNCTIONS

This section describes how to use the following diagnostic functions:

- SELF-TST
- HEX-DUMP
- V-ALMNT

These functions are used for checking print quality and diagnosing printer problems. HEX-DUMP also provides useful information for programmers.

Printing the Self-Test

The SELF-TST function prints test pages to check how the printer operates independently of your computer. The self-test does not check the interface between the computer and the printer.

The self-test prints the printer's firmware version, its resident emulations, and all of the characters available in the currently selected character set.

If the DPL24C PLUS emulation is selected for MENU1, the self-test is printed using the settings currently assigned to MENU1.

Procedure

This procedure assumes that you are in setup mode. To print the selftest, make sure that continuous forms paper is loaded into the printer.

Then proceed as follows:

1. **Print the <<FUNCTION>> menu.**

   The <<FUNCTION>> menu should be the last printed line on the page. If the menu is not printed, press the ONLINE button to print the menu. If you are using the HEX-DUMP function, press the "TEAR OFF" or "LOAD" button instead of the ONLINE button to print the menu. The following <<FUNCTION>> menu is printed: The following <<FUNCTION>> menu is printed:

```
<< FUNCTION >>
SAVE&END MENU1    MENU2    HARDWRE  ADJUST   CONFIG   GAP-ADJ  DEFAULT  LIST     SELF-TST
HEX-DUMP V-ALMNT  INITIAL
```

2. **Select the SELF-TST function.**

   Repeatedly press the "TEAR OFF" or "LOAD" button to position the cursor on the left edge of the aluminum print guide on SELF-TST, and then press the "▲" button or the "▼" button. The printer selects SELF-TST and starts printing. A short help menu is printed at the top of the page, followed by the selftest. Note that the printer is not online during self-test printing.

3. **Examine the self-test page.**

   A sample self-test page is shown in Chapter 2. To pause during self-test printing, press the "▲" button or the "▼" button. To resume self-test printing, press the "▲" button or the "▼" button again.

4. **Exit the SELF-TST function.**

   Exit the SELF-TST function in either of the following ways:

   - To exit SELF-TST and remain in setup mode, press the LF/FF button. The <<FUNCTION>> menu is then reprinted.
   - To exit SELF-TST and return online, press the ONLINE button. The printer permanently saves any changes made while in setup mode and returns online.

The self-test can also be started by turning off the printer, and then pressing the LF/FF button while turning the printer back on. As described in Chapter 2, this method is useful when you first set up the printer.

Printing Hex Dumps

The HEX-DUMP function prints data and commands in hexadecimal characters and abbreviated control codes. The IBM character set 2 is used for printing (see Appendix E). The HEX-DUMP function is useful for checking whether your computer is sending the correct commands to the printer and whether the printer is executing the commands correctly. It is also useful for debugging software programs.

Procedure

To print hex dumps, make sure that continuous forms paper is loaded into the printer. Then proceed as follows:

1. **Enter setup mode.**

   Press the ▲ MICRO button and the ▼ MICRO button simultaneously until the printer beeps. Wait for the printer to stop printing and check that the following <<FUNCTION>> menu is printed:

2. **Select the HEX-DUMP function.**

```
<< FUNCTION >>
SAVE&END MENU1    MENU2    HARDWRE  ADJUST   CONFIG   GAP-ADJ  DEFAULT  LIST     SELF-TST
HEX-DUMP V-ALMNT  INITIAL
```

   Repeatedly press the “TEAR OFF” or “LOAD” button to position the cursor on the left edge of the aluminum print guide on HEX-DUMP, then press the ▲ button or the ▼ button to select the HEX-DUMP function. The printer goes online and prints a header and a short help menu.

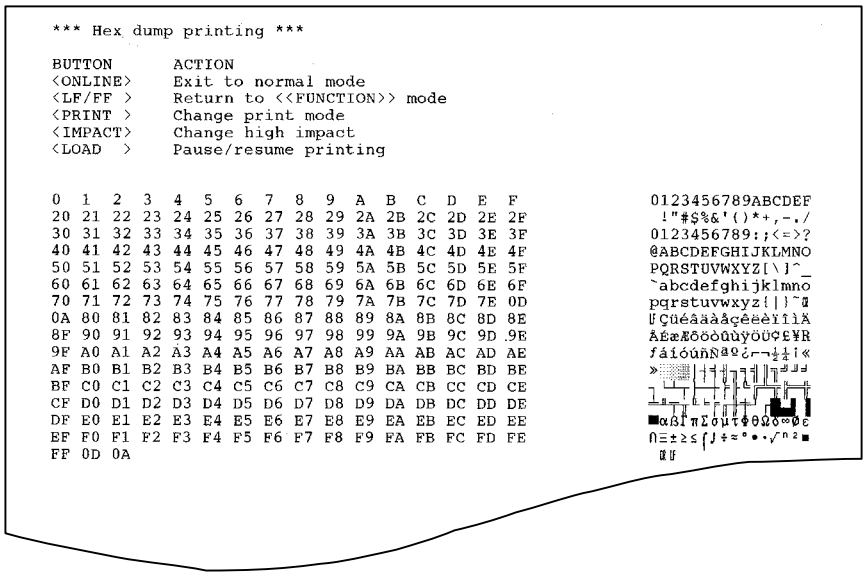
3. **Print the hex dump.**

   To start hex dump printing, send your file or program to the printer. The printer goes online and prints the hex dump.

   Press the ▲ MICRO button or the ▼ MICRO button to pause during hex dump printing. To resume hex dump printing, press the button again.

NOTE

When hex dump printing stops, the printer remains online in setup mode (the ONLINE indicator is green). To print another hex dump, send another file to the printer.



```
*** Hex dump printing ***

BUTTON      ACTION
<ONLINE>    Exit to normal mode
<LF/FF >    Return to <<FUNCTION>> mode
<PRINT >    Change print mode
<IMPACT>    Change high impact
<LOAD  >    Pause/resume printing


0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F          0123456789ABCDEF
20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F          !"#$%&'()*+,-./
30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F          0123456789:;<=>?
40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F          @ABCDEFGHIJKLMNO
50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F          PQRSTUVWXYZ[\]^_
60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F          `abcdefghijklmno
70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 0D          pqrstuvwxyz{|}~
0A 80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E          ÇüéâäàåçêëèïîìÄ
8F 90 91 92 93 94 95 96 97 98 99 9A 9B 9C 9D 9E          ÄÉæÆôöòûùÿÖÜ¢£¥R
9F A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE          ƒáíóúñÑªº¿⌐¬½¼¡«
AF B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE          »
BF C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE
CF D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE
DF E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE          ■αßΓπΣσµτΦΘΩδ∞Øε
EF F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE          ∩≡±≥≤⌠⌡÷≈°∙·√ⁿ²■
FF 0D 0A                                                 ■
```

Sample hex dump

4. Exit the HEX-DUMP function.

Exit the HEX-DUMP function in either of the following ways:

- To remain in setup mode, press the LF/FF button. The <<FUNCTION>> menu is then reprinted. For details on other functions, see other sections in this chapter.
- To return to online normal mode, press the ONLINE button.
  If you press the ONLINE button while the hex dump is printing, the printer immediately switches to normal online mode, but data that was sent to the printer is printed.

You can also enter hex dump mode, by turning off the printer, and then turning the printer back on while simultaneously pressing the ONLINE button and the LF/FF button until the printer beeps.

Checking Vertical Print Alignment (V-ALMNT)

The V-ALMNT function corrects the vertical character displacement that sometimes occurs with bidirectional printing. Characters printed from left to right are not aligned with characters printed from right to left as shown below:

```
This example shows how printing looks
when characters are vertically
misaligned. Note that the left
margin is not straight.
```

If you notice misaligned printing, use the following procedure to check and correct the vertical print alignment.

Procedure

Make sure that continuous forms paper is loaded in the printer. If possible, use forms at least 356 mm (14 inches) wide to avoid printing on the platen. However, you can also use letter or A4 size forms if you set the WIDTH option in MENU1 to 8 inches. See the section Changing MENU1 and MENU2 Items and Options for details. Then proceed as follows to check and correct vertical print alignment:

1. **Enter setup mode.**

   Press the ▲ MICRO button and the ▼ MICRO button simultaneously until the printer beeps. Wait for the printer to stop printing and check that the following <<FUNCTION>> menu is printed:

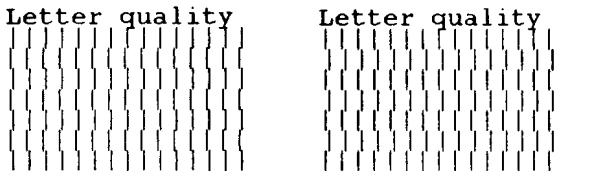
```
<< FUNCTION >>
SAVE&END MENU1    MENU2    HARDWRE  ADJUST   CONFIG   GAP-ADJ  DEFAULT  LIST     SELF-TST
HEX-DUMP V-ALMNT  INITIAL
```

2. **Select the V-ALMNT function.**

   Repeatedly press the “TEAR OFF” or “LOAD” button to position the cursor at V-ALMNT, then press the “▲” button or the “▼” button to select the V-ALMNT function. The printer prints the help menu then starts printing rows of parallel bars using letter quality speed.

3. Adjust the vertical print alignment at letter quality speed.

Examine the parallel bars. If the bars are aligned (not jagged), go to step 4. If the bars are offset to the left, repeatedly press the "LOAD" button until the bars are aligned. If the bars are offset to the right, repeatedly press the "TEAR OFF" button until the bars are aligned. (In the following figure, the first line is assumed to be printed from left to right.)



Bars offset to the left Bars offset to the right

4. Adjust the vertical print alignment at correspondence speed.

Press the "TEAR OFF" button to switch from letter speed to correspondence speed.

Examine the parallel bars and adjust the vertical print alignment as described in step 3.

Press the HI IMPACT button to enter Hi Impact mode. Make similar adjustments.

5. Adjust the vertical print alignment at draft speed.

Press the "TEAR OFF" button to switch from correspondence speed to draft speed.

Examine the parallel bars and adjust the vertical print alignment as described in step 3.

Press the HI IMPACT button to enter Hi Impact mode. Make similar adjustments.

6. Adjust the vertical print alignment at high draft speed.

Press the "TEAR OFF" button to switch from draft speed to high draft speed.

Examine the parallel bars and adjust the vertical print alignment as desoribed in step 3.

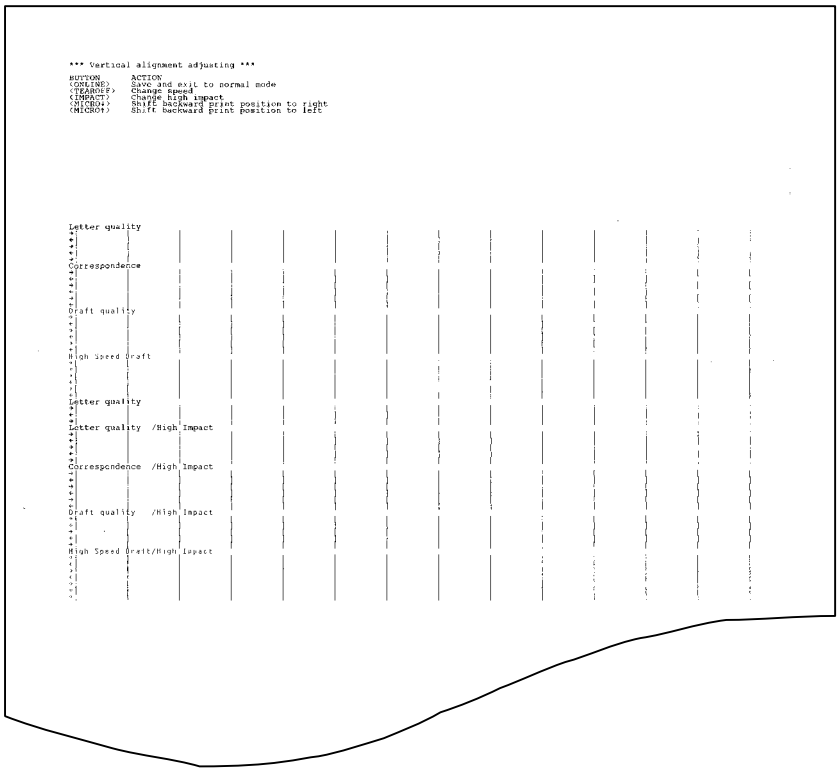
Press the HI IMPACT button to enter Hi Impact mode. Make similar adjustments.

7. Exit the V-ALMNT function.

Press the ONLINE button to exit the V-ALMNT function and save the new vertical alignment settings. The printer exits setup mode and returns online.

NOTE

To exit the V-ALMNT function, you must exit setup mode.

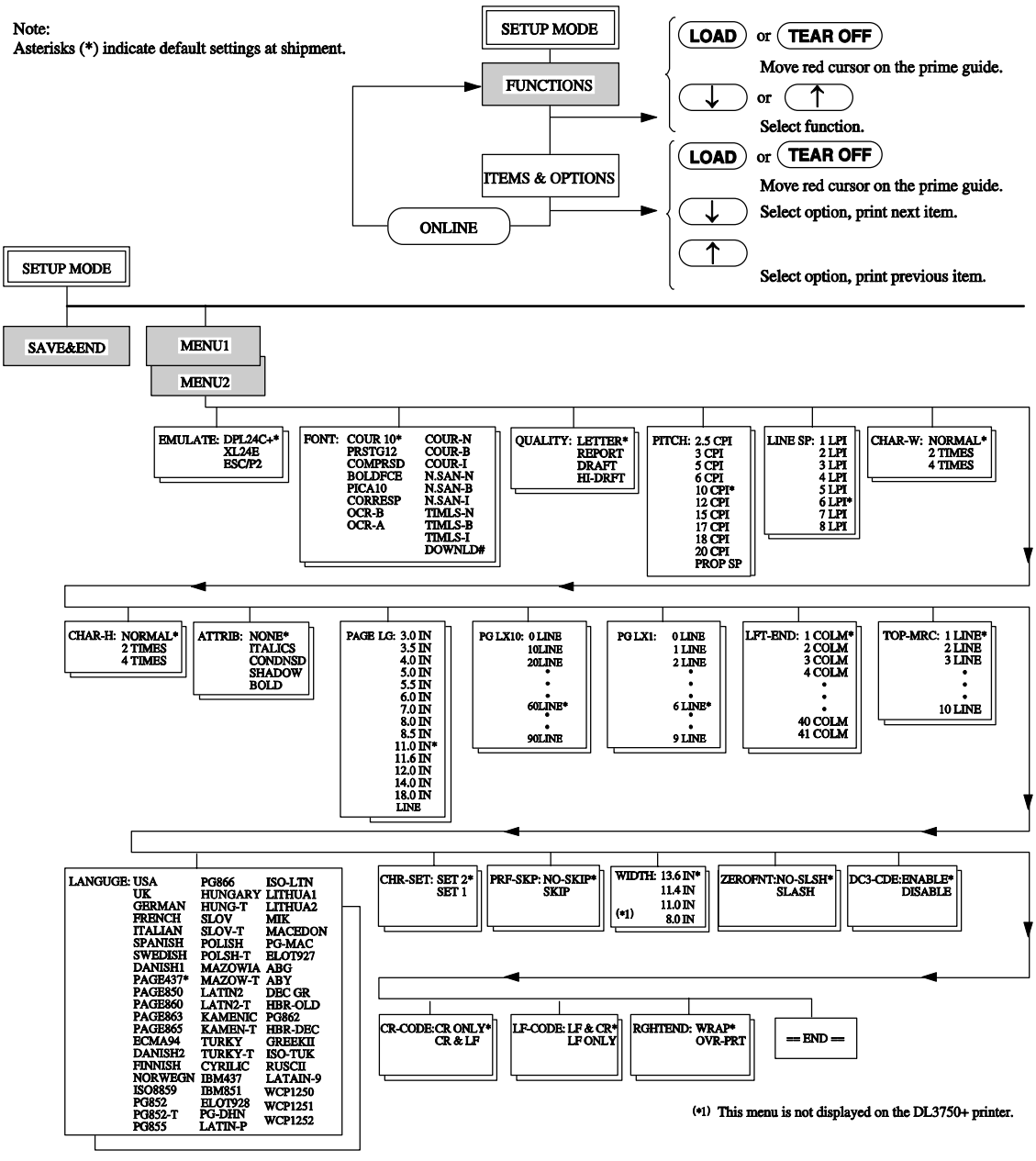


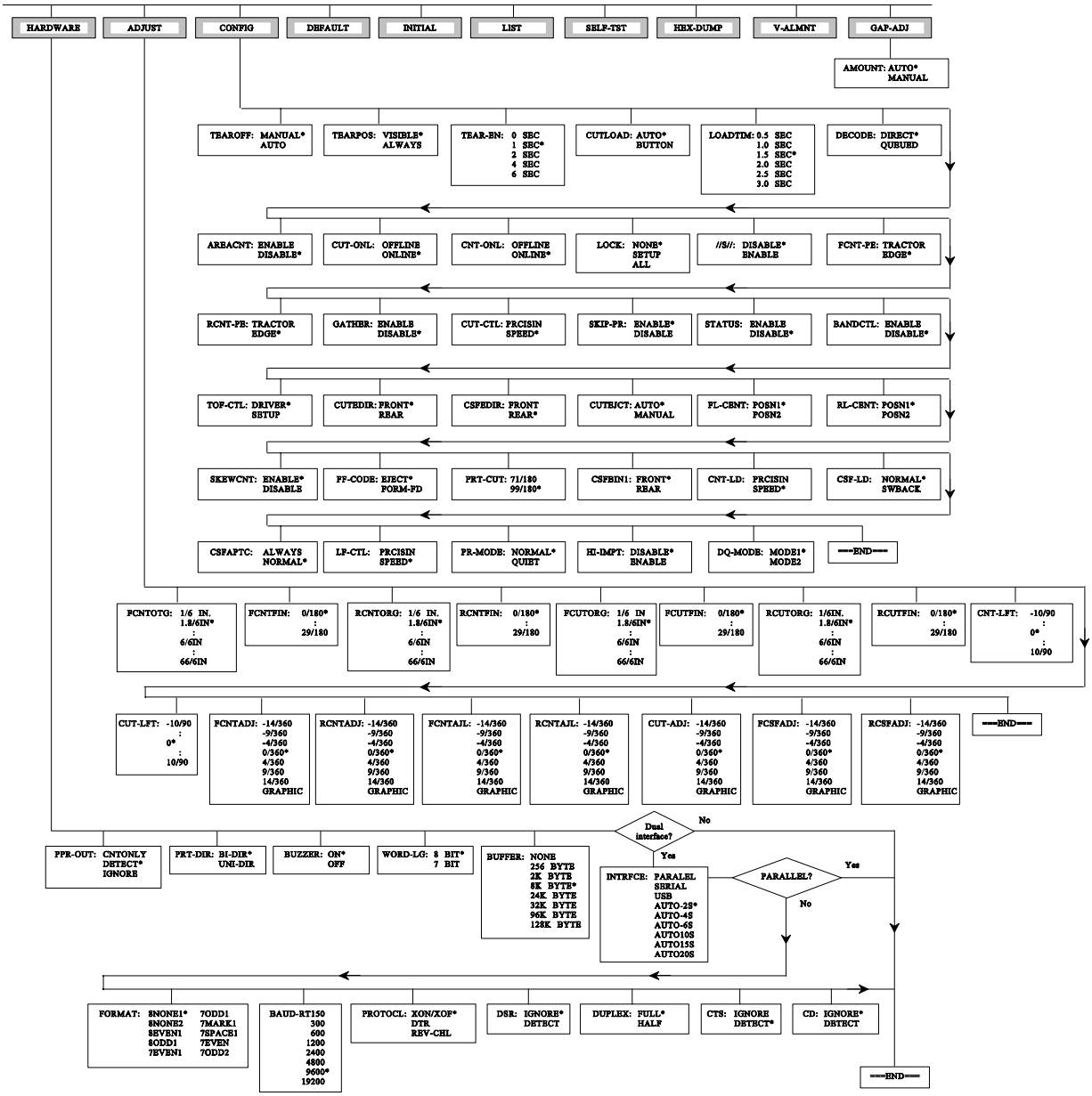
Correct vertical print alignment

SETUP MODE REFERENCE

The following flowchart shows how setup mode is organized for the Fujitsu DPL24C PLUS emulation. Differences in the IBM Proprinter XL24E and Epson ESC/P2 emulations are summarized after the flowchart.

DPL24C PLUS ORGANIZATION

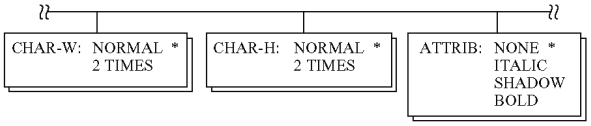



HARDWARE
ADJUST
CONFIG
DEFAULT
INITIAL
LIST
SELF-TST
HEX-DUMP
V-ALMNT
GAP-ADJ
AMOUNT: AUTO* MANUAL
TEAROFF: MANUAL* AUTO
TEARPOS: VISIBLE* ALWAYS
TEAR-BN: 0 SEC 1 SEC* 2 SEC 4 SEC 6 SEC
CUTLOAD: AUTO* BUTTON
LOADTIM: 0.5 SEC 1.0 SEC 1.5 SEC* 2.0 SEC 2.5 SEC 3.0 SEC
DECODE: DIRECT* QUBUED
AREACNT: ENABLE DISABLE*
CUT-ONL: OFFLINE ONLINE*
CNT-ONL: OFFLINE ONLINE*
LOCK: NONE* SETUP ALL
//S//: DISABLE* ENABLE
FCNT-PE: TRACTOR EDGE*
RCNT-PE: TRACTOR EDGE*
GATHER: ENABLE DISABLE*
CUT-CTL: FRCISIN SPEED*
SKIP-PR: ENABLE* DISABLE
STATUS: ENABLE DISABLE*
BANDCTL: ENABLE DISABLE*
TOF-CTL: DRIVER* SETUP
CUTEDIR: FRONT* RBAR
CSFEDIR: FRONT REAR*
CUTEJCT: AUTO* MANUAL
FL-CENT: POSN1* POSN2
RL-CENT: POSN1* POSN2
SKEWCNT: ENABLE* DISABLE
FF-CODE: EJECT* FORM-FD
PRT-CUT: 71/180 99/180*
CSFBIN1: FRONT* RBAR
CNT-LD: FRCISIN SPEED*
CSF-LD: NORMAL* SWBACK
CSFAPTC: ALWAYS NORMAL*
LF-CTL: FRCISIN SPEED*
PR-MODE: NORMAL* QUIET
HI-IMPT: DISABLE* ENABLE
DQ-MODE: MODE1* MODE2
===END===
FCNTOTG: 1/6 IN. 1.8/6IN* : 6/6IN : 66/6IN
FCNTFIN: 0/180* : 29/180
RCNTORG: 1/6 IN. 1.8/6IN* : 6/6IN : 66/6IN
RCNTFIN: 0/180* : 29/180
FCUTORG: 1/6 IN 1.8/6IN* : 6/6IN : 66/6IN
FCUTFIN: 0/180* : 29/180
RCUTORG: 1/6IN. 1.8/6IN* : 6/6IN : 66/6IN
RCUTFIN: 0/180* : 29/180
CNT-LFT: -10/90 : 0* : 10/90
CUT-LFT: -10/90 : 0* : 10/90
FCNTADJ: -14/360 -9/360 -4/360 0/360* 4/360 9/360 14/360 GRAPHIC
RCNTADJ: -14/360 -9/360 -4/360 0/360* 4/360 9/360 14/360 GRAPHIC
FCNTAJL: -14/360 -9/360 -4/360 0/360* 4/360 9/360 14/360 GRAPHIC
RCNTAJL: -14/360 -9/360 -4/360 0/360* 4/360 9/360 14/360 GRAPHIC
CUT-ADJ: -14/360 -9/360 -4/360 0/360* 4/360 9/360 14/360 GRAPHIC
FCSFADJ: -14/360 -9/360 -4/360 0/360* 4/360 9/360 14/360 GRAPHIC
RCSFADJ: -14/360 -9/360 -4/360 0/360* 4/360 9/360 14/360 GRAPHIC
===END===
Dual interface?
No
Yes
PPR-OUT: CNTONLY DETECT* IGNORE
PRT-DIR: BI-DIR* UNI-DIR
BUZZER: ON* OFF
WORD-LG: 8 BIT* 7 BIT
BUFFER: NONE 256 BYTE 2K BYTE 8K BYTE* 24K BYTE 32K BYTE 96K BYTE 128K BYTE
INTRFCE: PARALEL SHRIAL USB AUTO-2S* AUTO-4S AUTO-6S AUTO10S AUTO15S AUTO20S
PARALLEL?
Yes
No
FORMAT: 8NONE1* 8NONE2 8EVEN1 8ODD1 7EVEN1 7ODD1 7MARK1 7SPACE1 7EVEN 7ODD2
BAUD-RT150 300 600 1200 2400 4800 9600* 19200
PROTOCL: XON/XOF* DTR REV-CHL
DSR: IGNORE* DTRCT
DUPLEX: FULL* HALF
CTS: IGNORE DTRCT*
CD: IGNORE* DTRCT
===END===

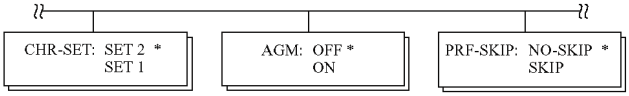
Differences in IBM Proprinter XL24E Emulation

In the IBM Proprinter XL24E emulation, MENU1 and MENU2 differ from the DPL24C PLUS emulation in the following ways:

- The following options are different:



- The AGM item is provided:



Differences in Epson ESC/P2 Emulation

In the Epson ESC/P2 emulation, MENU1 and MENU2 differ from the DPL24C PLUS emulation in the following ways:

- The ZEROFNT and LF-CODE items are not defined.
- The following options are different:

ONLINE SETUP MODE

The preceding sections describe offline setup mode. This section introduces online setup mode. The tedious task of setting up printer features one-by-one from the control panel and printing and checking the desired options on paper can be avoided by using online setup mode. In online setup mode, printer features are set via the computer rather than the printer control panel.

Put the printer in online setup mode, in either of the following two ways:

- Turn the printer off and then turn the printer back on while pressing the TEAR OFF button. Hold down the button until the printer beeps.
- Issue the printer command ESC e ONLINE. This command is valid in any emulation.

Send setup data from the computer in any of the following three ways:

- Enter setup data directly from the computer keyboard before starting your job. With MS-DOS, hold down the Ctrl key and type P. Data entered from the keyboard is sent directly to the printer. When data entry is complete, hold down the Ctrl key again and type P. This method is useful when just a few settings need to be changed.
- Use an editor program to prepare a setup data file and then send the file to the printer using a command before starting your job. With MS-DOS, use the COPY command. This method is useful when settings are used repeatedly.
- Write a program that enables interactive entry of setup data on the CRT screen. This method is the most useful of the three. This printer is provided with a floppy disk which contains this program called DLMENU. For DLMENU, see the last section of chapter 2.

To exit from online setup mode, send EXIT as the last setup data.

For details of setup data and its format, refer to the programmer’s manual for each emulation.

6

MAINTENANCE

Your printer requires very little care. Occasional cleaning and replacement of the ribbon cartridge are all that is required.

Lubrication of the printer is usually not necessary.

If the print head carriage does not move smoothly back and forth, clean the printer as described in this chapter. If the problem continues, contact your dealer to determine whether lubrication might be needed.

CLEANING

The front cover, the rear stacker, and the paper table of the printer help protect against dust, dirt, and other contaminants. However, paper produces small particles that accumulate inside the printer.
This section explains how to clean and vacuum the printer and how to clean the platen.

It is easier to clean the printer when the front cover and the rear stacker are removed.

Cleaning and Vacuuming the Printer

WARNING

To avoid any possibility of injury, before cleaning the printer, turn off the power to both the printer and the computer, and unplug the printer.

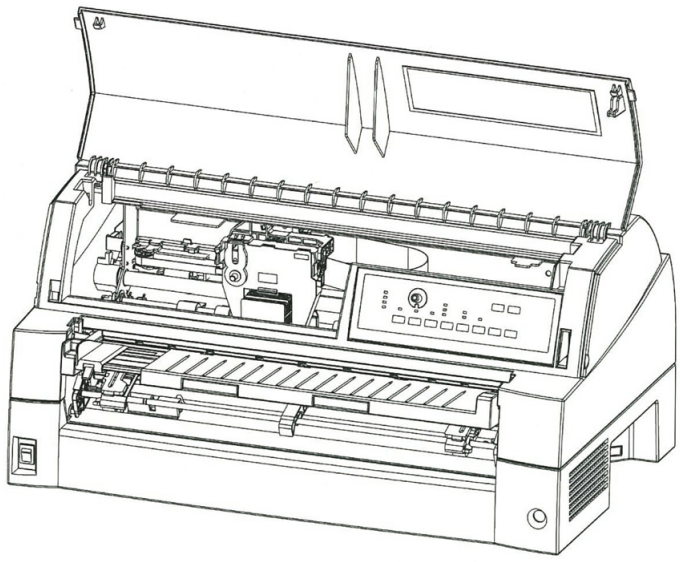
Use the following procedure to clean and vacuum the printer as required:

1. Remove any paper from the printer. Make sure that the power is off, and then disconnect the printer power cord.
2. Using a soft vacuum brush, vacuum the exterior of the printer. Be sure to vacuum the air vents at the front, left sides, and bottom of the printer. Also vacuum the paper table, rear stacker, and the cut sheet feeder.
3. Use a soft, damp cloth to wipe the exterior of the printer, including the cover, paper table, and rear stacker. A mild detergent may be used.

   CAUTION

   Do not use solvents, kerosene, or abrasive cleaning materials that may damage the printer.

4. Open the front cover of the printer and remove the ribbon cartridge. Using a soft vacuum brush, gently vacuum the platen, print head carriage, and surrounding areas. You can easily slide the print head to the left or right when the power is off. Be careful not to press too hard on the flat ribbon cable that extends from the print head carriage.



Printer interior

5. Re-install the ribbon cartridge. Close the front cover.
6. Raise the paper table and rear stacker. Vacuum the forms tractors and surrounding areas.

Cleaning the Platen

Clean the platen about once a month to remove excess ink. Use the platen cleaner recommended by your supplier and proceed as follows:

1. Apply a small amount of platen cleaner to a soft cloth. Avoid spilling platen cleaner inside the printer.

   CAUTION

   Do not use alcohol to clean the platen. Alcohol may cause the rubber to harden.

2. Place the cloth against the platen.
3. To dry the platen, place a dry cloth against the platen.

REPLACING THE RIBBON

There are two ways of replacing the ribbon. You can install a new ribbon cartridge in the printer or refill the old ribbon cartridge with new ribbon from a ribbon subcassette. Appendix A lists order numbers for ribbon cartridges and ribbon subcassettes. The following procedure is for ribbon cartridges. For ribbon subcassettes, refer to the instructions shipped with the subcassette.

To replace the ribbon cartridge:

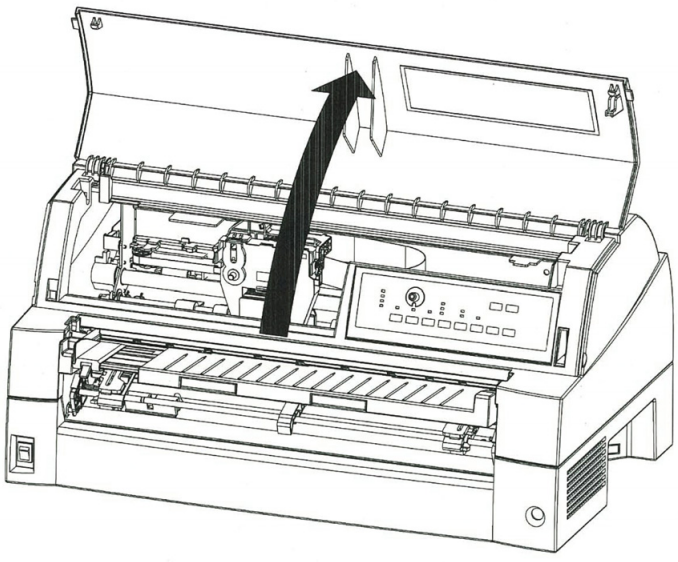
1. Turn off the printer.

   Note:

   If the power is turned off during or immediately after printing, turn on the power again. Verify that the print head has moved to the ribbon replacement position, and then turn off the power again.

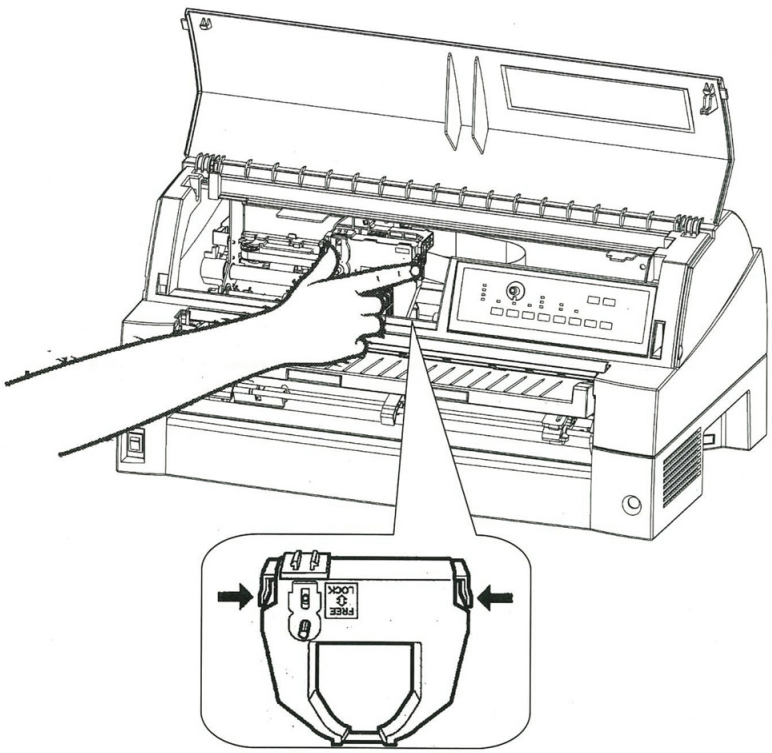
2. Open the front cover of the printer. For easy installation, slide the print head carriage to a position for replacing the ribbon cartridge (indicated by the triangle marking on the front of the upper cover).

 (HOT)	**CAUTION <HOT>** **The print head and metal frame is hot during printing or immediately after printing. Do not touch them until it cools down.**



Paper thickness indicator

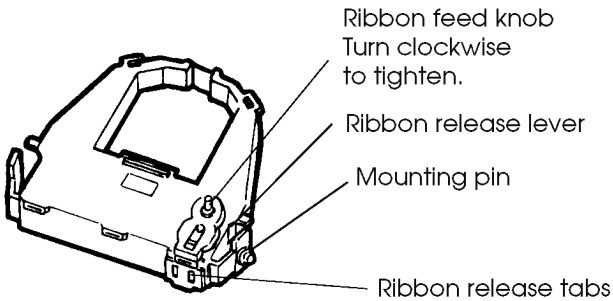
3. To remove the ribbon cartridge, press the ribbon release levers located on either side of the cartridge and carefully lift the cartridge out of the printer.



Removing the ribbon cartridge

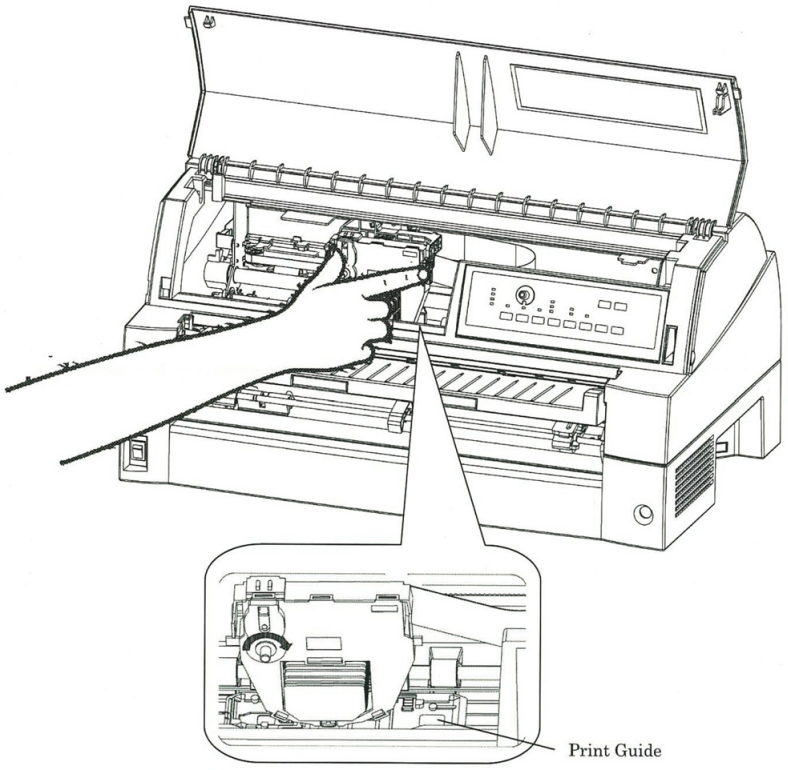
4. Remove the new ribbon cartridge from its package. Push in the sides of the two ribbon release tabs. The tabs will snap into the cartridge and the ribbon feed mechanism will engage.

   Turn the ribbon feed knob clockwise to be sure that it feeds properly.



Preparing the new ribbon cartridge

5. Place the two mounting pins on the ribbon support brackets of the head cartridge. (The two mounting pins are located on the sides of the ribbon release levers.) Insert the ribbon so that the ribbon falls between the nose of the print head and the plastic print guide.



Installing the new ribbon cartridge

6. Press the ribbon release levers until the mounting pins snap into the holes on the ribbon support brackets. Gently pull on the cartridge to verify that the pins are securely positioned in the holes.
7. Turn the ribbon feed knob clockwise to tighten the ribbon.
8. Close the front cover of the printer.

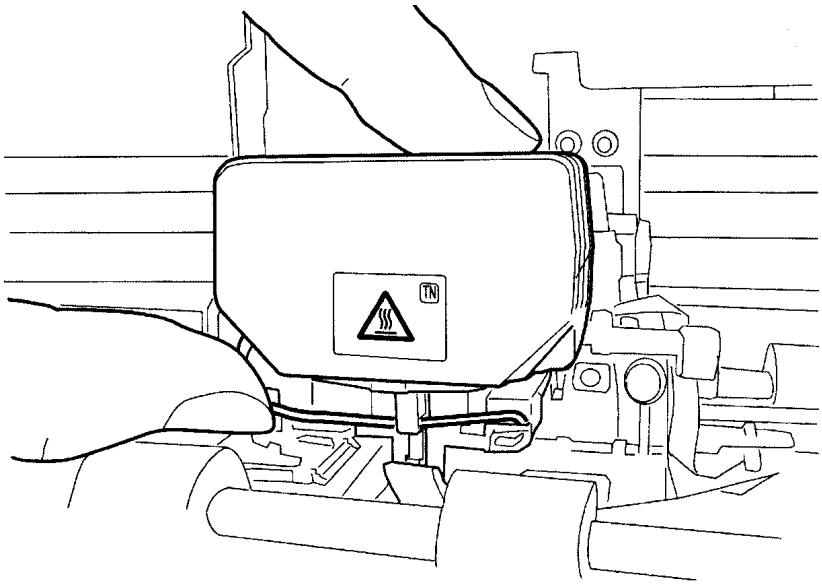
REPLACING THE PRINT HEAD

The print head is easy to replace.

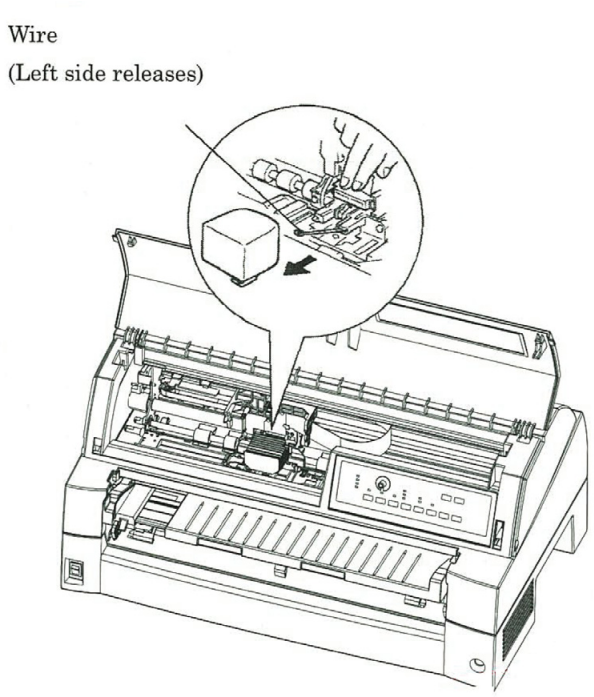
 (HOT)	**CAUTION <HOT>** **The print head and metal frame is hot during printing or immediately after printing. Do not touch them until it cools down.**

To remove the print head:

1. Turn off the printer.
2. Open the front cover of the printer and remove the ribbon cartridge.
3. Pull the left end of the head lock wire forward to release it from the hook at the left of the print head carriage. Then release the wire from the center hook.
4. Release the wire (under the head) on the left side.



5. Remove the print head from the connector on the carriage, as shown in the figure below.



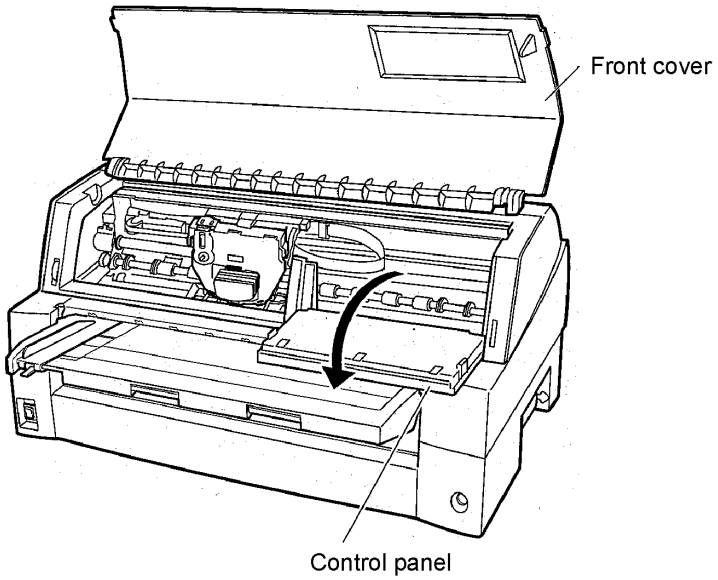
Replacing the print head

To install the print head:

1. Carefully fit the mounting guide grooves of the print head on the locating studs on the carriage.
2. Push the print head into the connector and hook the wire into place in the reverse order of removal.

Opening and closing the control panel

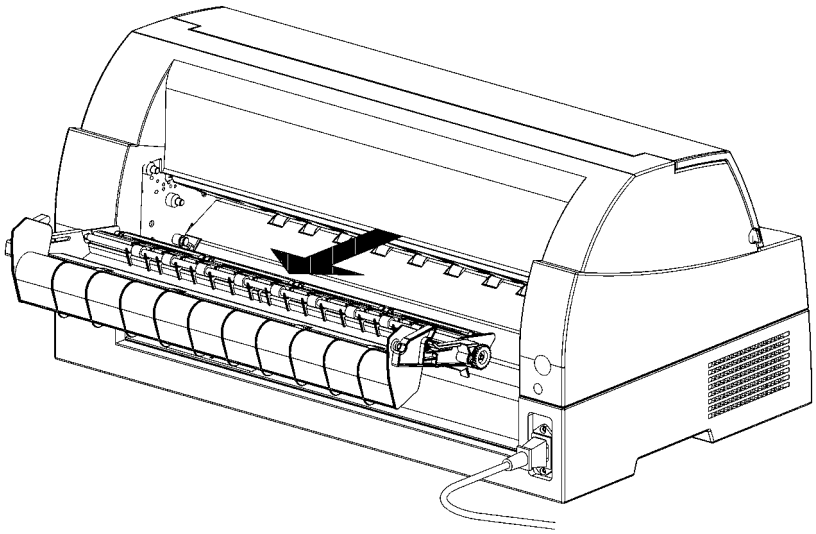
The control panel of this printer can be pulled down toward the front as necessary, such as when jammed paper must be removed.



Removing the stacker unit

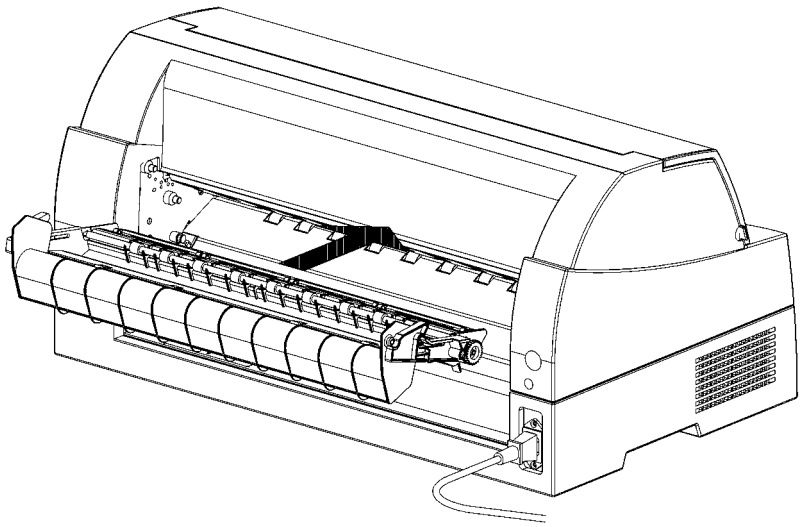
The stacker unit of this printer can be removed in the event that paper is jammed in it unit.

While pushing down the lock levers of the stacker guide, pull out the stacker unit from the rear.



Mounting the stacker unit

Position groove 1 over guide pin 1 on the right and left sides of the stacker unit. Then, push in the stacker unit until guide pin 2 is hooked onto slot 2.



OPTIONS

Options	Order Number	Description
RS-232C serial interface board.	CA02374-C992	
LAN card	KA02012-C103	Installable only on a printer model with the parallel an USB interface.
Cut sheet feeder	SF940 (KA02027-D750)	
Tractor Unit	KA02038-E650	
Large Stacker	KA02038-D160	
Large paper table	KA02038-D150	

7

TROUBLE-SHOOTING

Your printer is extremely reliable, but occasional problems may occur. You can solve many of these problems yourself, using this chapter.

If you encounter problems that you cannot resolve, contact your dealer for assistance.

This chapter is organized as follows:

- Solving problems
- Diagnostic functions
- Getting help

SOLVING PROBLEMS

The tables in this section describe common printer problems and their solutions. The following types of problems are considered:

- Print quality problems
- Paper handling problems
- Operating problems
- Printer failures

Print Quality Problems

Poor print quality or other printing problems are often caused by incorrect printer setup or incorrect software settings. A gradual decrease in print quality usually indicates a worn ribbon. Table 7.1 identifies common print quality problems and suggests solutions.

Table 7.1 Print Quality Problems and Solutions

Problem	Solution
Printing is too light or too dark.	Make sure that the ribbon cartridge is properly installed and that the ribbon feeds smoothly. Check ribbon wear. Replace the ribbon if necessary.
Stains or smudges appear on the page.	Check ribbon wear. Replace the ribbon if necessary. Check whether the tip of the print head is dirty. Clean the head with a soft cloth if necessary.
The page is blank.	Make sure that the ribbon cartridge is properly installed.
Printing is erratic or the wrong characters are printed. One or more "?" characters are printed.	Make sure that the interface cable is securely connected to both the printer and computer. Make sure that the printer emulation selected in your software is the same as the emulation selected on the printer. See the section **Selecting an Emulation** in Chapter 2. If you are using an RS-232C serial interface, make sure that the serial settings required by your software or computer are the same as the settings on the printer. See the section **Hardware Items and Options** in Chapter 5.
Characters are lost at the left or right end.	If you are using the area-over print prevention function (option), make sure that paper size, paper position, and left and right margins are properly set. See the section **Configuration Items and Options** in Chapter 5. Note that printing with paper skewed causes characters even in the printable area to be lost.

Table 7.1 Print Quality Problems and Solutions (Cont.)

Problem	Solution
Printing is vertically misaligned (jagged).	Use the printer's V-ALMNT function to check the vertical print alignment. If necessary, adjust the print alignment. See the section **Using the Diagnostic Functions** in Chapter 5.
The top margin is wrong.	The top margin is the sum of the top-of-form setting, the software-specified top margin, and the printer's TOP-MRG setting. Proceed as follows: • Make sure that the top-of-form setting is correct. The factory default is 25.4 mm (1 inch). See the section **Changing Top-of Form** in Chapter 5. • Check the software-specified top margin. Refer to your software documentation. • Check the printer's TOP-MRG setting. See the section **MENU1 and MENU2 Items and Options** in Chapter 5.
Lines are double spaced instead of single spaced.	Check the line spacing setting in your software. Change the CR-CODE setting in the printer setup mode to CR ONLY. See the section **MENU1 and MENU2 Items and Options** in Chapter 5.
The printer overprints on the same line.	Change the CR-CODE setting in the printer setup mode to CR & LF. See the section **MENU1 and MENU2 Items and Options** in Chapter 5.
The next print line starts where the previous line ended instead of at the left margin.	Change the LF-CODE setting in the printer setup mode to LF & CR. See the section **MENU1 and MENU2 Items and Options** in Chapter 5.

Paper Handling Problems

Table 7.2 describes common paper handling problems and suggests solutions. See Chapter 3 for detailed procedures on loading and using paper.

Table 7.2 Paper Handling Problems and Solutions

Problem	Solution
Paper cannot be loaded or fed.	Make sure that the paper path indicator (FRONT TRACTOR, REAR TRACTOR, CUT SHEET) lights correctly. Press the PAPER PATH button to select the paper path. Make sure that the paper covers the paper-out sensor, i.e., the left paper edge is within 52 mm for single sheets or 41 mm for continuous forms from the left edge of the platen. (This problem cannot occur if you use the forms tractor unit or insert a single sheet with its left edge in contact with the left paper guide.) Make sure that the tractor unit is correctly installed and that the tractor shaft gear engages the platen shaft gear. If you are using a cut sheet feeder, make sure that the bin lever is set to the "CLOSED" position. (The bin lever is on the left side of the feeder.) If you are using a cut sheet feeder, make sure that the feeder is firmly mounted on the printer and the cable is correctly connected.
Paper manually loaded is ejected without printing	If you are using the paper skew detection (option), adjust the paper guide on the paper table for the print start position and correctly slide the sheet along the guide.

Table 7.2 Paper Handling Problems and Solutions (Cont.)

Problem	Solution
Paper jams while loading.	Turn off the printer and remove the jammed paper. Remove any obstructions from the paper path. If you are using a cut sheet feeder, make sure that the bin lever is set to the "CLOSED" position. (The bin lever is on the left side of the feeder.) Make sure that the paper is not folded, creased, or torn. Reload the paper. Make sure that the paper table is in normal mode. Set the paper table to normal mode.
Paper jams while printing.	Turn off the printer and remove the jammed paper. Remove any obstructions from the paper path. For continuous forms, make sure that the incoming and outgoing paper stacks are correctly placed. Paper should feed straight. Make sure that the paper table is in normal mode. Set the paper table to normal mode. If you are using a cut sheet feeder, make sure that the bin lever is set to the "CLOSED" position. (The bin lever is on the left side of the feeder.) Reload the paper.
Paper slips off the forms tractors or the perforated holes of the paper tear during printing.	Make sure that the forms tractors are positioned correctly for the width of your paper and that the perforated holes of the paper fit directly over the tractor sprockets.

Operating Problems

Table 7.3 identifies common operating problems and suggests solutions. If you cannot resolve a problem, contact your dealer.

Table 7.3 Operating Problems and Solutions

Problem	Solution
The power does not turn on.	Make sure that the "I" on the printer power switch is depressed. Make sure that the power cord is securely connected to both the printer and the outlet. Make sure that the power outlet is functional. Turn the power off. Wait 100 seconds and then turn the printer on again. If the printer still has no power, contact your dealer.
The printer is on but it will not print.	Make sure that the printer is online. Make sure that the interface cable is securely connected to both the printer and the computer. If the red PAPER OUT indicator is lit, load paper. Run the printer self-test (see Chapter 5). If the self-test executes normally, the problem is caused by the interface, the computer, incorrect printer settings, or incorrect software settings. Make sure that the printer emulation selected in your software is the same as the emulation selected on the printer. See the section **Selecting an Emulation** in Chapter 2. Make sure that the front cover is completely closed.
The printer is on but it will not print (continued).	If you are using an RS-232C serial interface, make sure that the serial settings required by your software or computer are the same as the settings on the printer. See the section **Hardware Items and Options** in Chapter 5.
The cut sheet feeder does not operate.	Make sure that the cut sheet feeder is firmly mounted on the printer. Make sure that the cable is correctly connected.
The FRONT DIR indicator blinks.	Remove the printed sheet of paper from the paper table.

Printer Failures

A user cannot generally resolve a problem involving defective printer hardware. On detecting a fatal error, the printer will:

- Stop printing
- Beep four times
- Turn the ONLINE indicator off

The control panel displays alarms. The meanings of alarms can be checked in the following table.

Alarm display function

This printer has a function for distinguishing between alarms by using the blinking of individual lamps on the control panel.

From the combination of blinking lamps in an alarm state, the meaning of the alarm can be determined as shown in the following table.

Lamp / Alarm name	PAPER OUT	REMOVE PAPER	FRONT DIR	QUIET	AUTO GAP	HI IMPACT	TRACTOR F	TRACTOR R	CUT SHEET	MENU1	MENU2	ONLINE	Condition of occurrence
LES alarm	◎	◎					◎						LES could not be detected during the space initial operation.
Space problem alarm	◎	◎						◎					The shield board could not be detected normally by the LRES sensor.
Fan alarm	◎	◎							◎				The cooling fan for the space motor was stopped.
HCPP (cut sheet or continuous forms paper switching) alarm	◎		◎					◎					Switching between cut sheet paper and continuous forms paper was not possible.
Overload alarm	◎			◎			◎						An overload occurred during printing, and tripartite printing was performed. However, the power source voltage was not restored.
Low voltage alarm	◎			◎				◎					The power source voltage dropped below the specified level when no printing was in progress.
APTC gap alarm	◎				◎		◎						During the APTC operation, paper was detected immediately after the start of approach motion, or no paper was detected.
APTC hop position sensor alarm	◎				◎			◎					During the APTC operation, no reference position was detected.
ROM/RAM alarm	◎					◎	◎						A sum-check error or read/write error occurred, or no CG-ROM is mounted.
Sector protect alarm	◎					◎		◎					A sector protect check of flash ROM was performed, but no sector protect information was found.

◎: Blinking

Blank: Off

Responses to alarm occurrences

Your first response to each alarm should be as described in the following table.

Problem	Solution
LES alarm	Remove any paper dust, which may cause problems in carriage operation.
APTC gap alarm	Check the paper thickness (0.04 to 0.65 mm). Check whether the paper has different thicknesses or whether the paper has filing holes.

For problems other than the above, request your printer dealer to make repairs.

The following errors cause the printer to turn off the power:

- Print head error
- Space motor error
- Line feed motor error
- +34 V overvoltage error

No error condition is displayed if any of these errors occurs.

Turn the printer off and back on, then rerun the same job to check if the error was transient. If the error recurs, contact your dealer.

DIAGNOSTIC FUNCTIONS

The printer diagnostic functions are SELF-TST, HEX-DUMP, and V-ALMNT.

- SELF-TST tells you whether the printer hardware is functioning correctly. If the printer hardware is functional, any problems you are having are probably caused by incorrect printer settings, incorrect software settings, the interface, or the computer.
- HEX-DUMP allows you to determine whether the computer is sending the correct commands to the printer, and whether the printer is executing the commands correctly. This function is useful to programmers or others who understand how to interpret hex dumps.
- V-ALMNT allows you to check and, if necessary, correct the printer's vertical print alignment.

For details on using these functions, all of which are available in the printer setup mode, see the section **Using the Diagnostic Functions** in Chapter 5.

GETTING HELP

If you are not able to correct a problem using this chapter, contact your dealer for assistance. Be prepared to provide the following information:

- Your printer model number, serial number, and date of manufacture. Look for this information on the rating label at the back of the printer.
- Description of the problem
- Type of interface you are using
- Names of your software packages
- List of the printer default settings. To print the default settings, see the section **Printing a List of Selected Options** in Chapter 5.

8

INSTALLING OPTIONS

The installaion of options allows you to expand the capabilities of your printer. Options available for the printer include:

- LAN card
- Cut sheet feeder
- Tractor unit
- Large stacker
- Large Paper Table

The LAN card is a user installable option, but can be installed only on a printer model with the parallel and USB interfaces. For information on the installation procedure, refer to the manual that comes with the LAN card.

Options can be purchased from your dealer. Order numbers for options are given in Appendix A.

INSTALLING THE CUT SHEET FEEDER

This chapter describes what to do after installing cut sheet feeder.

A cut sheet feeder (SF940) allows you to automatically feed single sheets. It can be mounted on the front or the rear of the printer.

When attaching the cut sheet feeder to the front of the printer, remove the tractor

For both front and rear, the cut sheet feeder can handle a max. of 5-ply multipart media.

When installing the front and rear cut sheet feeders, the printer assigns the first bin to the front feeder. You can change the assignment using set up mode.

⚠ WARNING		
	Electric shock	**Before mounting or removing the cut sheet feeder, turn off the power switches of the personal computer and the printer and remove the power plug from the outlet. Otherwise, you may receive electric shock.**

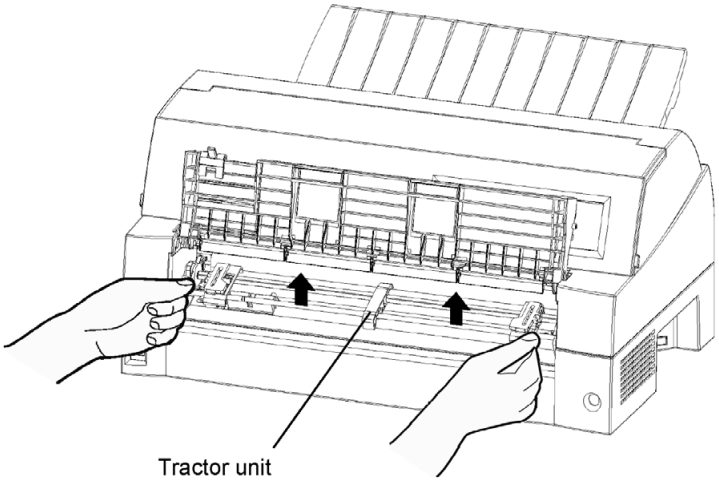
Installing on the front side of the printer

1. **Turn off the printer power.**

   Confirm that the printer power is turned to the O side.

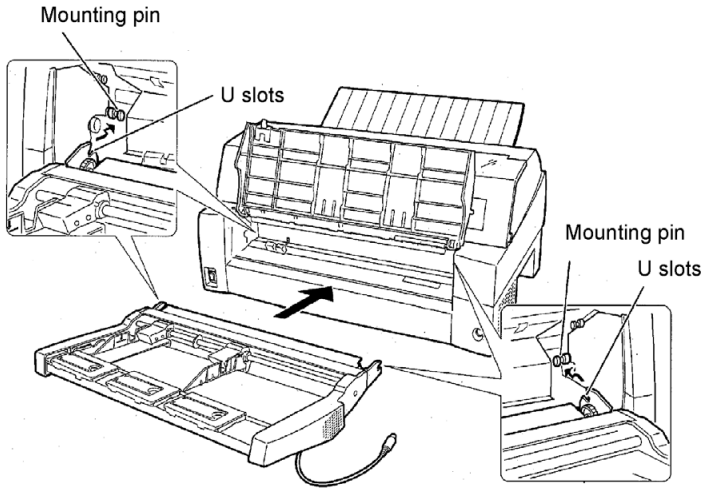
2. **Removing the tractor unit**

   Raise the paper table and remove the tractor unit. (For details on mounting and removing the tractor unit, see "Selecting the Tractor Unit Position" on page 2-10.)

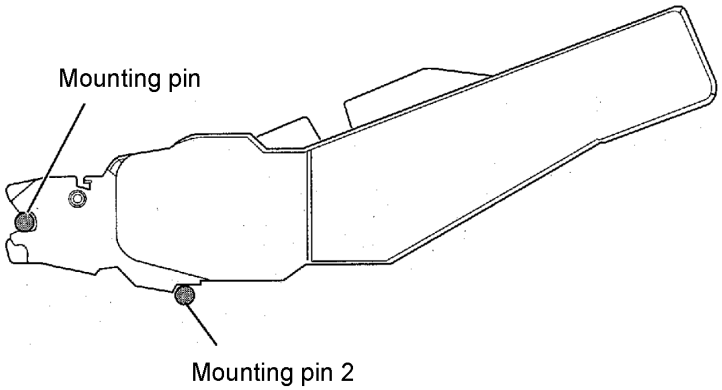


3. **Installing the cut sheet feeder**

   Adjust the U slots made on both sides of the cut sheet feeder to the mounting pins inside the printer and lower the cut sheet feeder slowly.



   Check that the cut sheet feeder frame is correctly mounted on mounting pin 2.



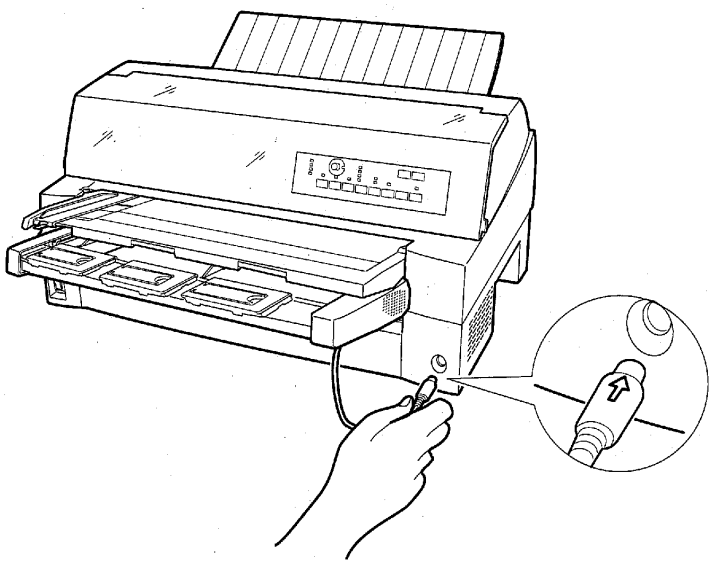
4. Replacing the paper table

Be sure to replace the paper table. (See "Setting the paper table" on page 13.)

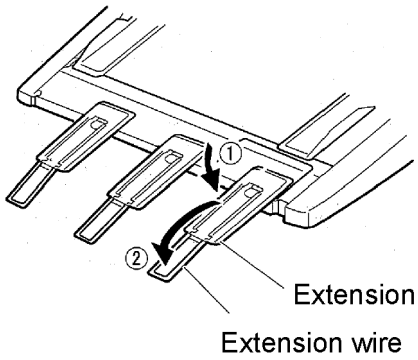
If the paper table is incorrectly set, a paper jam may occur.

5. Connecting the cable

Connect the cut sheet feeder cable to the connector on the front right of the printer. Insert the cable with the connector arrow mark up.



6. **Extend the extension and extension wire in the order from (1) to (2) according to the size of the paper to be used.**



Installing on the rear side of the printer

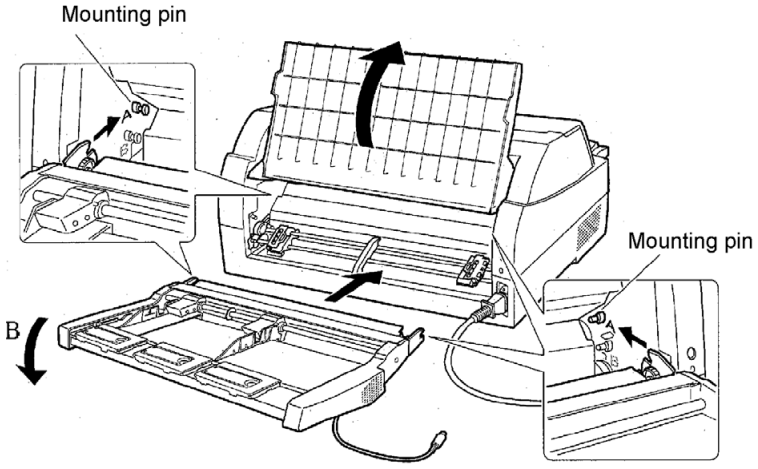
Before mounting the cut sheet feeder, turn off the printer power.

1. **Turn off the printer power.**

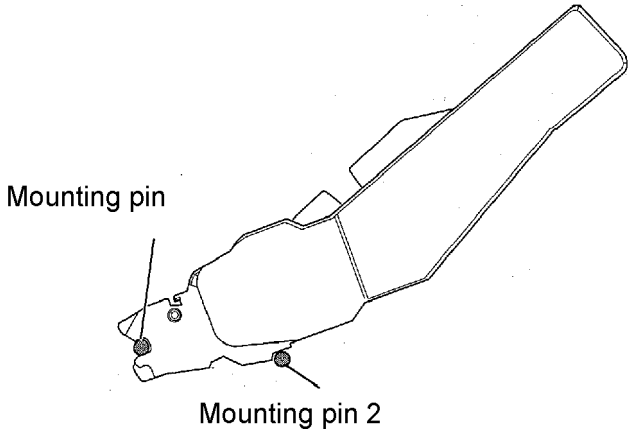
   Confirm that the printer power is turned to the O side.

2. **Installing the cut sheet feeder**

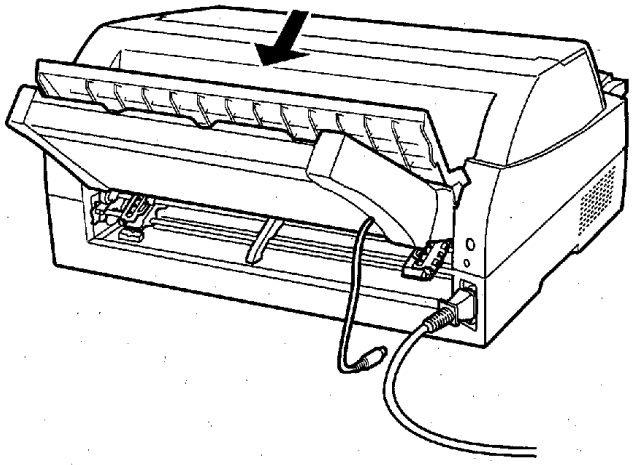
   Open the rear stacker. Hold both sides of the cut sheet feeder and adjust the U slots made on both side of the cut sheet feeder to the mounting pins inside the printer. (Attach the slots with the letter A of the cut sheet feeder adjusted to that on the printer side.) Then, lower the cut sheet feeder like it turns in the direction of arrow B, using the mounting pins as supporting points.



Check that the cut sheet feeder frame is correctly mounted on mounting pin 2.

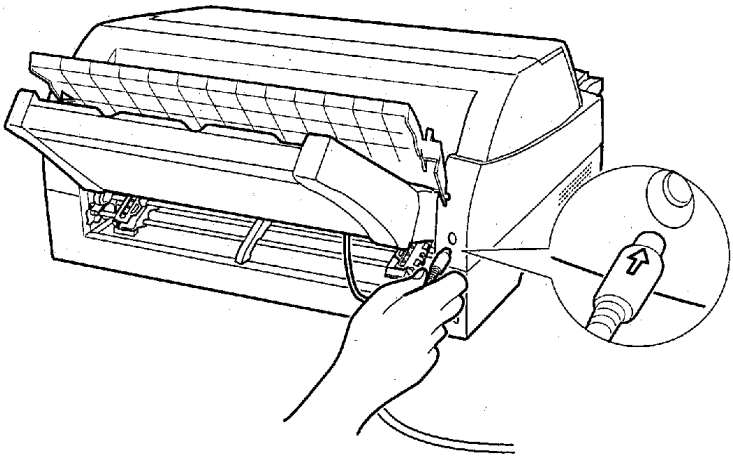


3. Close the rear stacker.

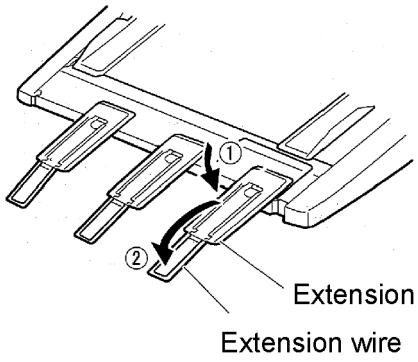


4. Connecting the cable

Connect the cut sheet feeder cable to the connector on the rear right of the printer. Insert the cable with the connector arrow mark up.



5. Extend the extension and extension wire in the order from (1) to (2) according to the size of the paper to be used

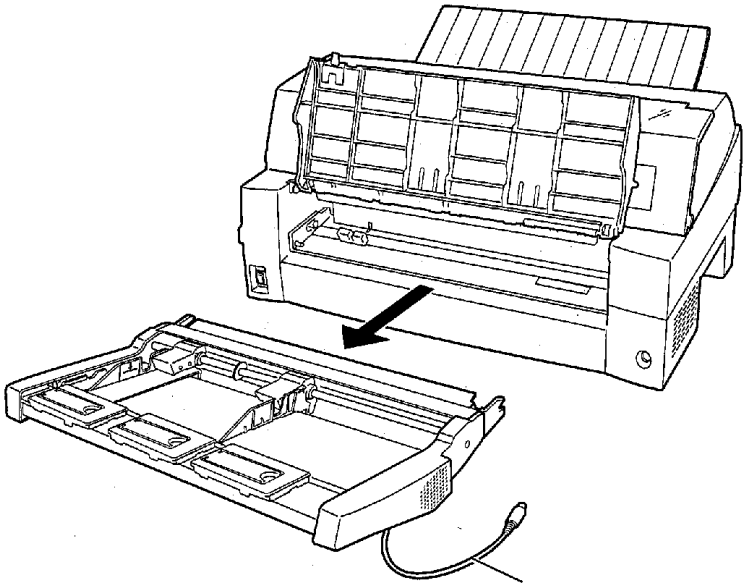


Removing the Cut Sheet Feeder

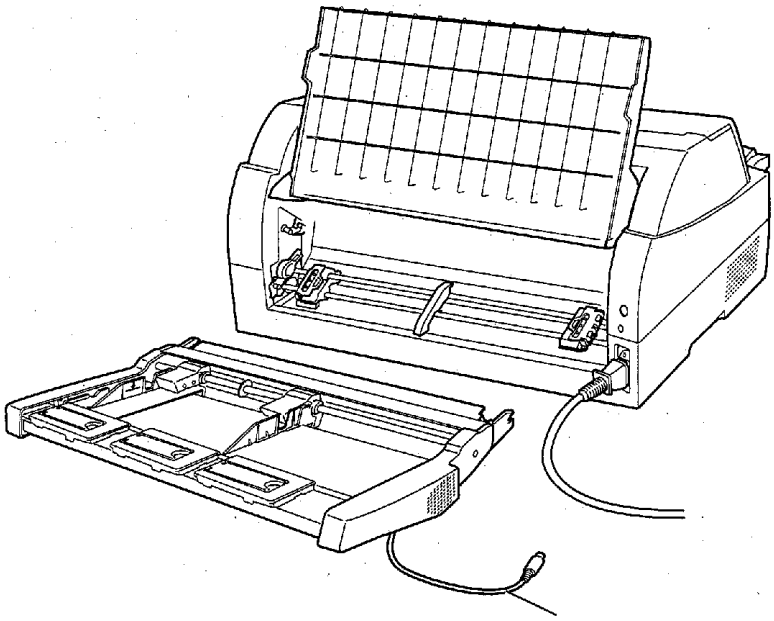
Before removing the cut sheet feeder, disconnect the cable.

⚠ WARNING		
	Electric shock	**Before mounting or removing the cut sheet feeder, turn off the power switches of the personal computer and the printer and remove the power plug from the outlet. Otherwise, you may receive electric shock.**

When mounted on the front side of the printer



When mounted on the rear side of the printer



INSTALLING THE TRACTOR UNIT

A tractor unit is supplied as standard equipment attached to the front of the printer.

This unit may also be attached to the rear of the printer for rear feeding of continuous forms.

For details on removing and mounting the tractor unit, see “Selecting the Tractor Unit Position” on page 2-10.

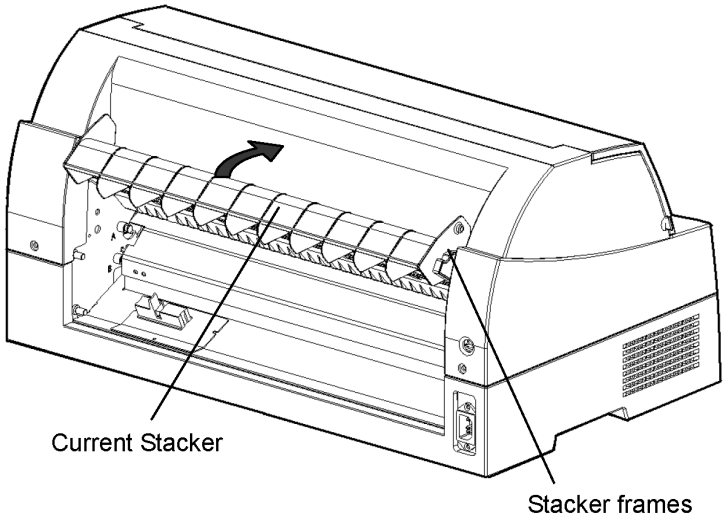
INSTALLING THE Large stacker

To continuously stack cut sheets or eject long cut sheets to the rear, mount the large stacker.

Also, if a cut sheet feeder is mounted at the rear, the stacker must be replaced with the large stacker even if cut sheets need not be continuously stacked.

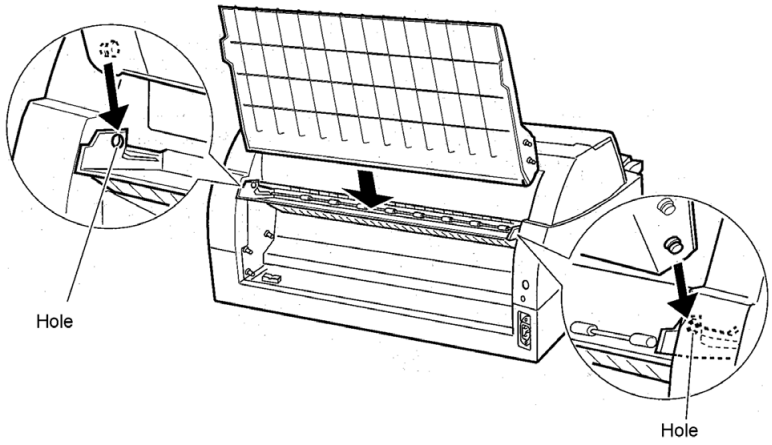
1 Removing the current stacker

1. Lift up the current stacker in the direction indicated by the arrow.
2. With the stacker in the condition described in step 1, push out the right and left stacker frames to separate them from the protrusions on the stacker plate.



2 Mounting the rear stacker

At the rear of the printer, push the protrusions on both sides of the rear stacker into the holes inside the rear stacker guide as shown in the following figure.

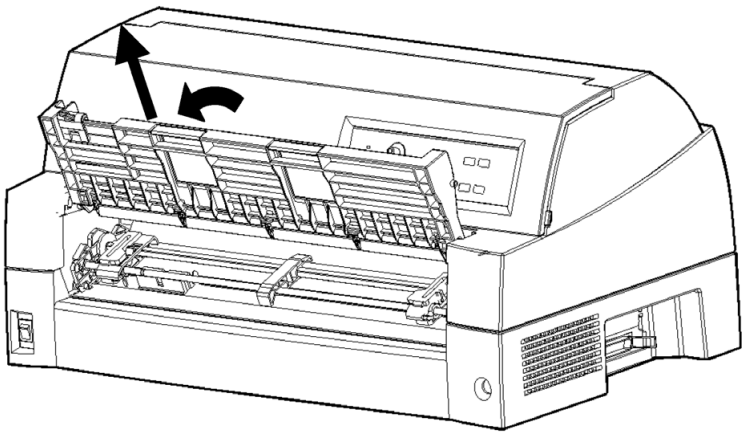


INSTALLING THE Large Paper Table

To use long cut sheets, mount the large cut sheet table.

1 Removing the current paper table

After opening the paper table and adjusting it to a slanted position, remove the paper table by lifting it to separate the left and right protrusions on the paper table ends from the grooves on the cover.



1. Installing the Large Paper Table

Push the left and right protrusions on the paper table ends into the grooves on the cover as shown in the following figure. Leave the paper table in the open position.

The new large paper table can be opened or closed in the same way as the removed paper table.

A

SUPPLIES AND OPTIONS

This appendix lists the supplies and options available for the printer.

Contact your dealer for information on ordering any of these items.

SUPPLIES

Supplies	Order Number
Ribbon cartridges	
Black ribbon	CA02374-C104
Ribbon subcassette	
Black ribbon	CA02374-C204
Print head	CA02281-E718

OPTIONS

Options	Order Number	Description
RS-232C serial interface board.	CA02374-C992	
LAN card	KA02004-C103	Installable only on a printer model with the parallel and USB interfaces.
Cut sheet feeder	SF940 (KA02027-D750)	
Tractor Unit	KA02038-E650	
Large Stacker	KA02038-D160	
Large paper table	KA02038-D150	

B

PRINTER AND PAPER SPECIFICATIONS

This appendix gives the physical, functional, and performance specifications for the printer.

It also gives detailed paper specifications.

PHYSICAL SPECIFICATIONS

Dimensions

Height: 290 mm (11.4 in)

Width: 600 mm (23.6 in)

Depth: 350 mm (13.8 in)

Weight: 17 kg (37.4 lb)

AC power requirements

M33324A: 100 to 120 VAC ±10%; 50/60 Hz
M33324B: 220 to 240 VAC -10%, +6%; 50/60 Hz

Power consumption	Average 210 VA Maximum 360 VA
Heat generation	Average 115 kcal/h
Interface	- Centronics parallel - Centronics parallel and RS-232C serial - Centronics parallel and USB and LAN (option).
Data buffer size	0, 256, 2K, 8K, 24K, 32K, 96K, or 128K bytes
Download buffer	Maximum 128K bytes (128K minus data buffer size)
Operating environment	5 to 38°C (41 to 100°F) 30% to 80% RH (no condensation) Wetbulb temperature, less than 29°C (84°F)
Storage environment	-15 to 60°C (-4 to 140°F) 10% to 95% RH (no condensation)
Acoustic noise	Average 59 dB (A) ISO 7779 (Bystander Position-Front)

FUNCTIONAL SPECIFICATIONS

Print method		Impact dot matrix with a 0.2 mm, 24-wire head
Print direction		Bidirectional logic-seeking or unidirectional seeking
Character cell		Horizontal × vertical
	Letter (10 cpi):	36 × 24 dots
	Letter (12 cpi):	30 × 24 dots
	Report:	18 × 24 dots
	Draft:	9 × 24 dots
Paper handling		
	Standard:	Friction-feed platen (cut sheets)
		Convertible bi-directional tractor on front or rear
		Paper loading by LOAD button Advancing perforations to tear-off edge by TEAR OFF button
		Parking continuous forms when using cut sheets
	Optional:	Cut sheet feeder
		Tractor unit
Paper type		1 to 5-copies for cut sheet feeder
		1 to 8-copies for tractor and paper table
Paper size		
Continuous	Width:	102-420 mm (4-16.5 in)
	Length:	102 mm (4 in) or greater
Cut sheets (Paper table)	Width:	55-420 mm (2.16-16.5 in)
	Length:	70-420 mm (2.76-16.5 in)
(Cut sheet feeder)		
	Width:	100-420 mm (4-16.5 in)
	Length:	70-420 mm for front cut sheet feeder (2.76-16.5 in)
		100-420 mm for front cut sheet feeder (4-16.5 in)

Note:

To use cut sheets exceeding 297 mm in length, the optional large cut sheet table and large stacker are required.

Paper thickness	Up to 0.65 mm (0.025 inch)
Paper length	
By software	Programmable in one line or inch increments in all emulations
By control panel	Depends upon emulations. Default is 11 inches for all emulations.
DPL24C+/XL24E:	3, 3.5, 4, 5, 5.5, 6, 7, 8, 8.5, 11, 11.6, 12, 14, or 18 inches
ESC/P2:	4, 4.5, 5, 5.5, ..., 11, 11.5, ..., 22 inches
Number of copies	Up to 5, including the original (normal mode) Up to 8, including the original (HI IMPACT mode)
Paper stack	
Cut sheet	100 sheets (A4 size, 1p, 55 kg/m2) (The stack of cut sheets may decrease, depending upon the various paper conditions such as quality, the extent of curl, and storage environment.)
Command sets (emulations)	
Resident	Fujitsu DPL24C PLUS IBM Proprinter XL24E Epson ESC/P2
Character sets	
DPL24C+/XL24E:	• IBM PC character sets 1 and 2 (code pages 437) • IBM PS/2 character sets (code pages and other national character sets (57 + 2 languages in total) • Fujitsu character sets (691 characters)
ESC/P2:	• Italic character set Graphics character sets 1 and 2 • IBM PS/2 character sets (code pages) and other national character sets (61 + 2 languages in total)

Fonts

Resident	Nineteen fonts available
Bit map:	Courier 10, Pica 10, OCR-B 10, OCR-A 10 , Prestige Elite 12, Boldface PS, Correspondence, Compressed, Draft, and High-speed Draft.
Scalable:	Courier, Timeless, and Nimbus Sans ®; each in normal, bold, and italic styles
Downloaded	Available from independent vendors
Line spacing	1, 2, 3, 4, 5, 6, 7, or 8 lines per inch. Programmable in 1/360 inch or various increments for image graphics.
Character pitch	2.5, 3, 5, 6, 10, 12, 15, 17.1, 18, or 20 cpi, or proportional spacing. Programmable in 1/360 inch or various increments for image graphics.

Characters per line

10 cpi:	136 cpl
12 cpi:	163 cpl
15 cpi:	204 cpl
17.1 cpi:	232 cpl
18 cpi:	244 cpl
20 cpi:	272 cpl
	cpi: characters per inch
	cpl: characters per line

PERFORMANCE SPECIFICATIONS

Print speed

	10 cpi 12 cpi
Letter:	120 cps 144 cps
Report:	240 cps 288 cps
Correspondence:	240 cps 288 cps
Draft:	505 cps 606 cps

cpi: characters per inch
cps: characters per second

Line feed speed 60 ms per line at 6 lines per inch

Form feed speed 6 inches per second

Ribbon life Up to 5 million characters

Certification

Safety:

Model	Regulation	Country
M33324A	UL 1950 United States (for 100 to 120 VAC)	United States
	CSA C22.2/950 (for 100 to 120 VAC)	Canada
M33324B	TÜV EN 60 950 (for 220 to 240 VAC)	Germany

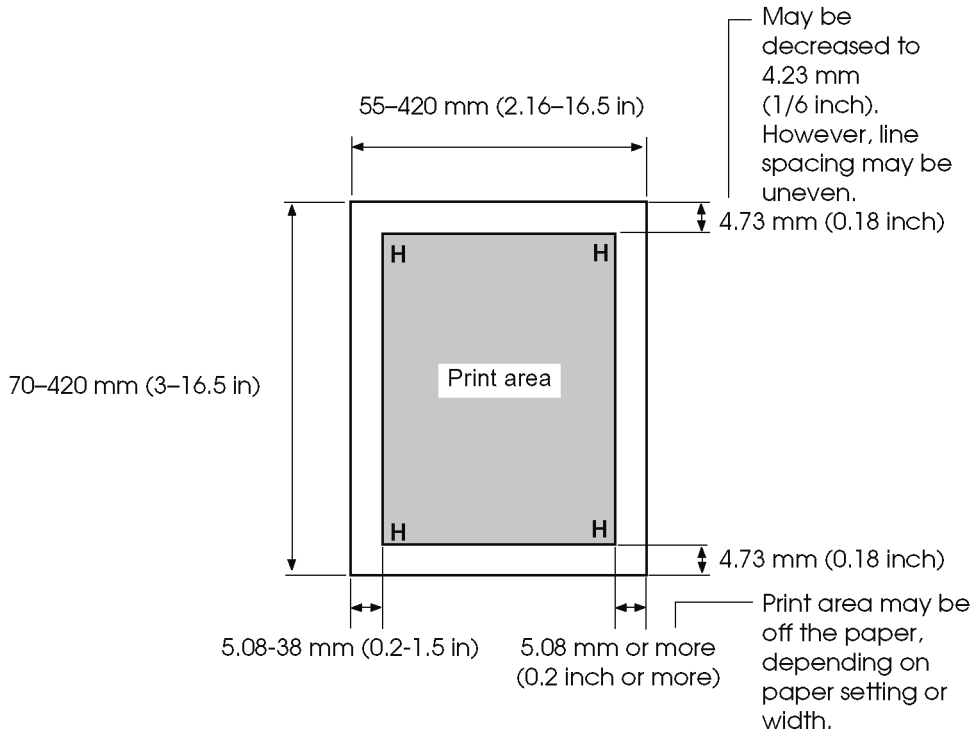
RFI regulation:

Model	Regulation	Country
M33324A	Class B of FCC Part 15B (for 100 to 120 VAC)	United States

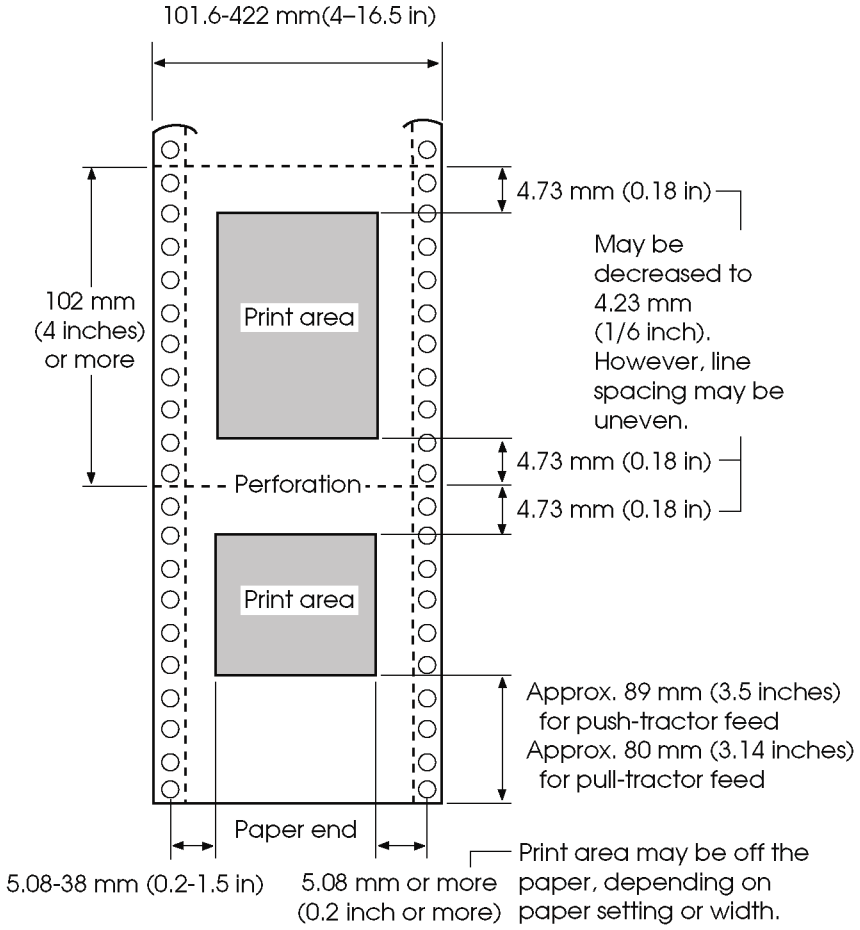
PAPER SPECIFICATIONS

Print Area

This section illustrates the recommended print area for single sheets and continuous forms.



Print area for single sheets

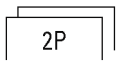
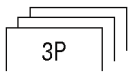
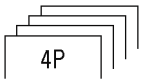
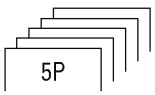
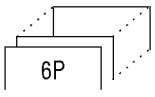


Print area for continuous forms

Paper Thickness

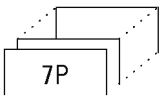
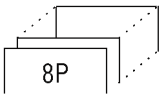
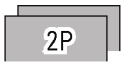
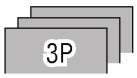
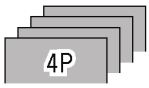
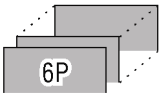
Paper thickness is given by the weight of the paper in either grams per square meter (g/m^2) or in pounds per bond (lbs/bond). The following table shows the allowable paper thickness for one-part paper or for each sheet of multipart paper. The total thickness must not exceed 0.65 mm (0.025 inch).

The weight of carbonless or carbon-backed paper may vary, depending upon the paper manufacturer. When using paper of borderline thickness, test the paper before running a job.

Type of Paper	Number of Parts	Thickness
One-part	Single	47-81 g/m^2 (40-70 kg or 12-22 lb)
Carbonless		
	Top	40-64 g/m^2 (34-55 kg or 11-17 lb)
	Bottom	40-81 g/m^2 (34-70 kg or 11-22 lb)
	Top	40-50 g/m^2 (34-43 kg or 11-13 lb)
	Middle	40-50 g/m^2 (34-43 kg or 11-13 lb)
	Bottom	40-81 g/m^2 (34-70 kg or 11-22 lb)
	Top	40 g/m^2 (34 kg or 11 lb)
	Middle (2-3p)	40 g/m^2 (34 kg or 11 lb)
	Bottom	40-81 g/m^2 (34-70 kg or 11-22 lb)
	Top	40 g/m^2 (34 kg or 11 lb)
	Middle (2-4p)	40 g/m^2 (34 kg or 11 lb)
	Bottom	40-64 g/m^2 (34-55 kg or 11-17 lb)
	Top	40 g/m^2 (34 kg or 11 lb)
	Middle (2-5p)	40 g/m^2 (34 kg or 11 lb)
	Bottom	40-64 g/m^2 (34-55 kg or 11-17 lb)

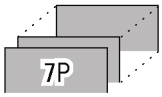
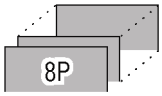
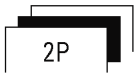
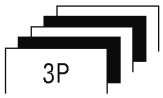
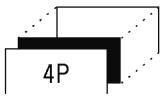
kg: Weight in kilograms of 1000 sheets of 788 × 1091 mm paper (1.16 g/m^2)

lb: Weight in pounds of 500 sheets of 17 × 22 inch paper (3.76 g/m^2)

Type of Paper	Number of Parts	Thickness
Carbonless		
	Top Middle (2-6p) Bottom	40 g/m^2 (34 kg or 11 lb) 40 g/m^2 (34 kg or 11 lb) 40-64 g/m^2 (34-55 kg or 11-17 lb)
	Top Middle (2-7p) Bottom	40 g/m^2 (34 kg or 11 lb) 40 g/m^2 (34 kg or 11 lb) 40-64 g/m^2 (34-55 kg or 11-17 lb)
Carbon-backed	*Do not use in high humidity environments.*	
	Top Bottom	40-64 g/m^2 (34-55 kg or 11-17 lb) 40-81 g/m^2 (34-70 kg or 11-22 lb)
	Top Middle Bottom	40-52 g/m^2 (34-45 kg or 11-14 lb) 40-52 g/m^2 (34-45 kg or 11-14 lb) 40-81 g/m^2 (34-70 kg or 11-22 lb)
	Top Middle (2-3p) Bottom	40 g/m^2 (34 kg or 11 lb) 40 g/m^2 (34 kg or 11 lb) 40-81 g/m^2 (34-70 kg or 11-22 lb)
	Top Middle (2-4p) Bottom	40 g/m^2 (34 kg or 11 lb) 40 g/m^2 (34 kg or 11 lb) 40-64 g/m^2 (34-55 kg or 11-17 lb)
	Top Middle (2-5p) Bottom	40 g/m^2 (34 kg or 11 lb) 40 g/m^2 (34 kg or 11 lb) 40-64 g/m^2 (34-55 kg or 11-17 lb)

kg: Weight in kilograms of 1000 sheets of 788 × 1091 mm paper (1.16 g/m^2)

lb: Weight in pounds of 500 sheets of 17 × 22 inch paper (3.76 g/m^2)

Type of Paper	Number of Parts	Thickness
Carbon-backed	*Do not use in high humidity environments.*	
	Top Middle (2-6p) Bottom	40 g/m^2 (34 kg or 11 lb) 40 g/m^2 (34 kg or 11 lb) 40-64 g/m^2 (34-55 kg or 11-17 lb)
	Top Middle (2-7p) Bottom	40 g/m^2 (34 kg or 11 lb) 40 g/m^2 (34 kg or 11 lb) 40-64 g/m^2 (34-55 kg or 11-17 lb)
Carbon-interleaved	*Avoid using carbon-interleaved single sheets.*	
	Top Carbon Bottom	35-52 g/m^2 (30-45 kg or 9-14 lb) Counted as one sheet 35-81 g/m^2 (30-70 kg or 9-22 lb)
	Top Carbon Middle Carbon Bottom	35-46 g/m^2 (30-40 kg or 9-12 lb) Counted as one sheet 35-46 g/m^2 (30-40 kg or 9-12 lb) Counted as one sheet 35-64 g/m^2 (30-55 kg or 9-17 lb)
	Top Carbon Middle (3,5P) Carbon (4,6P) Bottom	35-46 g/m^2 (30-40 kg or 9-12 lb) Counted as one sheet 35-46 g/m^2 (30-40 kg or 9-12 lb) Counted as one sheet 35-64 g/m^2 (30-55 kg or 9-17 lb)

kg: Weight in kilograms of 1000 sheets of 788 × 1091 mm paper (1.16 g/m^2)

lb: Weight in pounds of 500 sheets of 17 × 22 inch paper (3.76 g/m^2)