EPSON

Daisy Wheel Printer

DX-100

Instruction Manual

P 8394019-0
W 003990001

Thank you for buying a EPSON daisy wheel printer.

To get the best service from the printer and understand the right way of operation, be sure the instruction manual is read through.

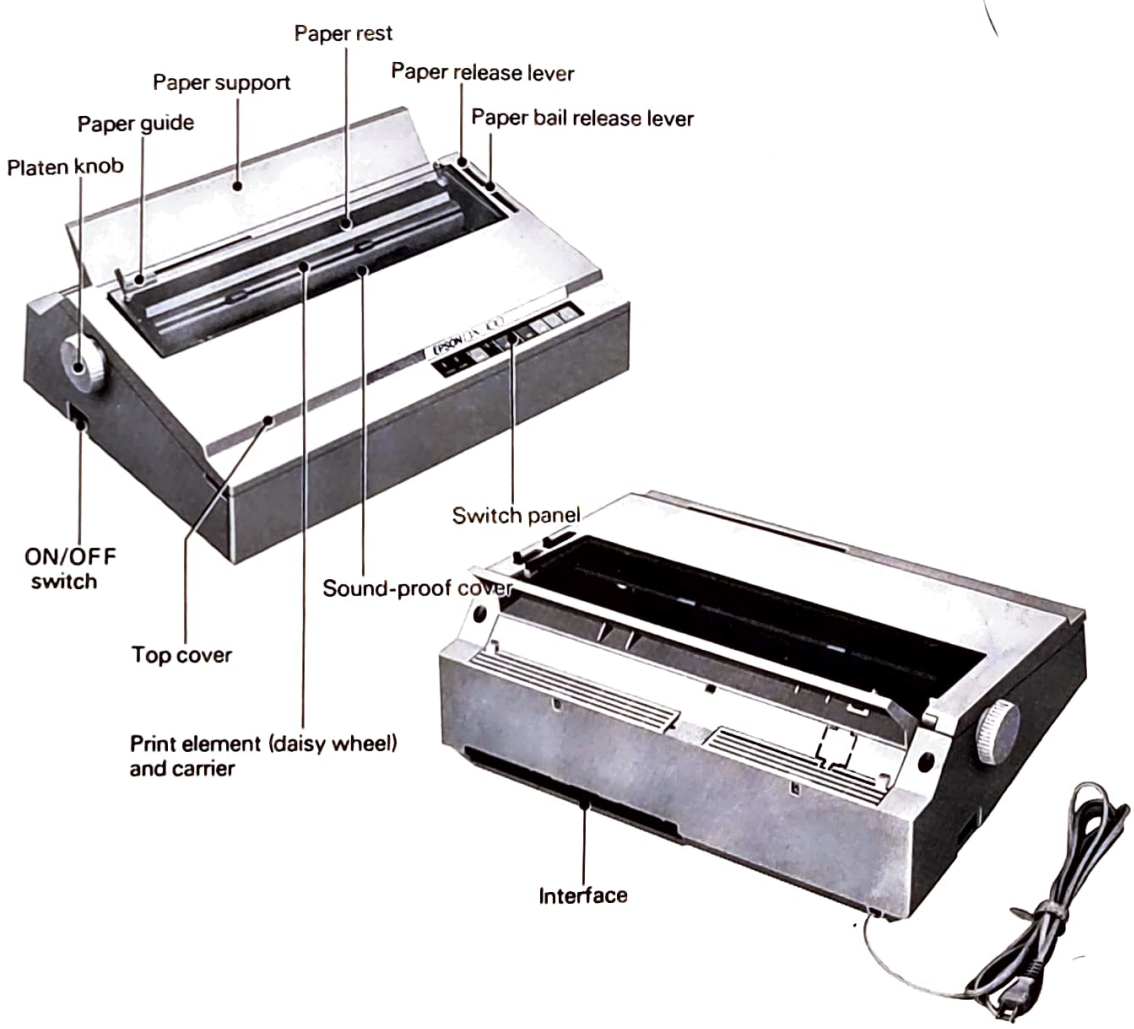
Keep the instruction manual in a handy place for ready reference.

This equipment generates, uses, and can radiate radio frequency and if not installed and used in accordance with the instruction manual, may cause interference to radio communications.

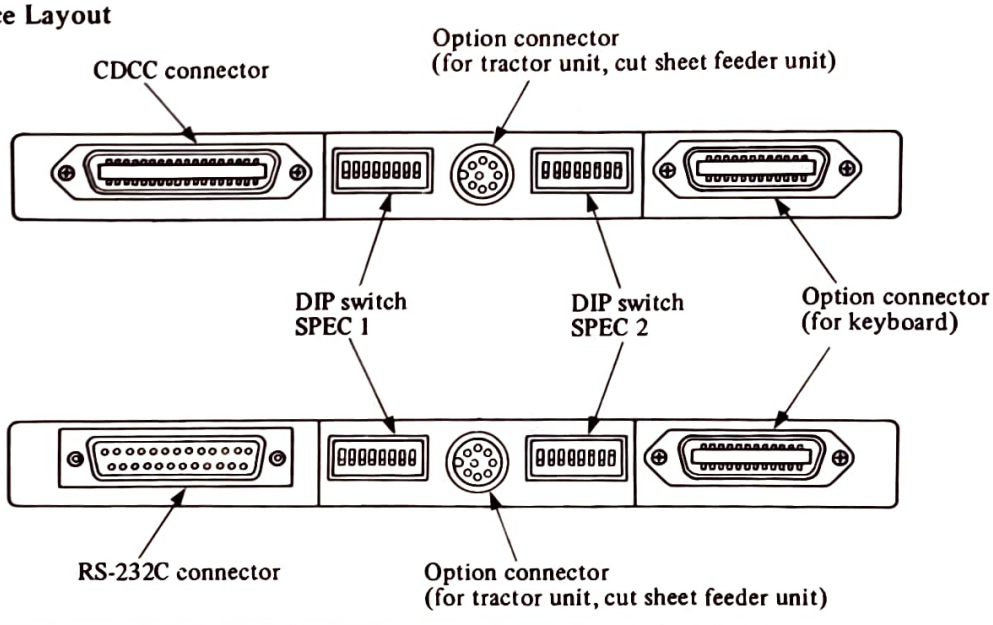
As temporarily permitted by regulation it has not been tested for compliance with the limits for class A computing devices pursuant to subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

CONTENTS

Name of Each Part



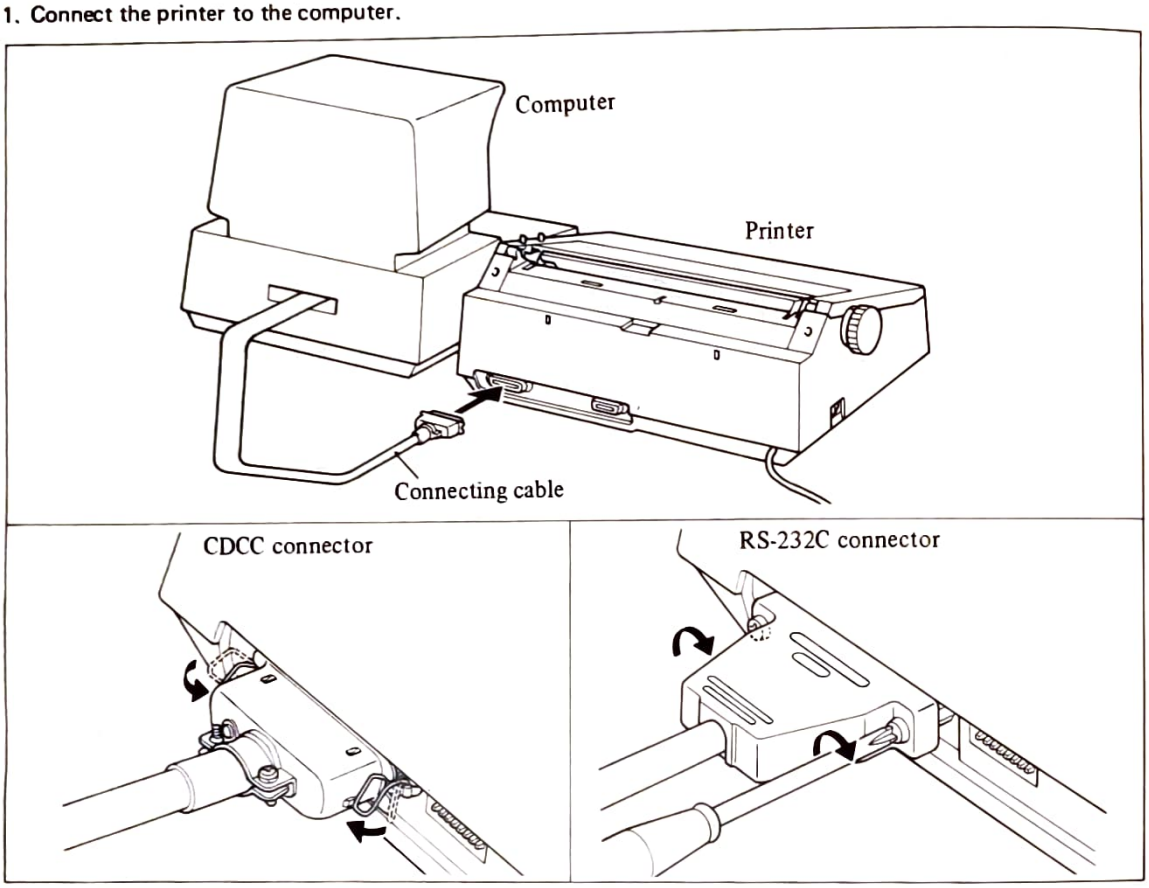
Interface Layout



Preparation for Printing

1. Setup Procedure

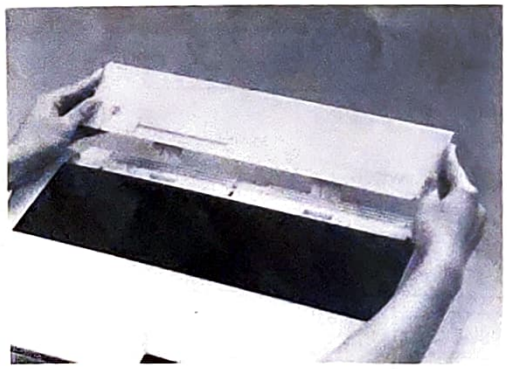
1. Connect the printer to the computer.



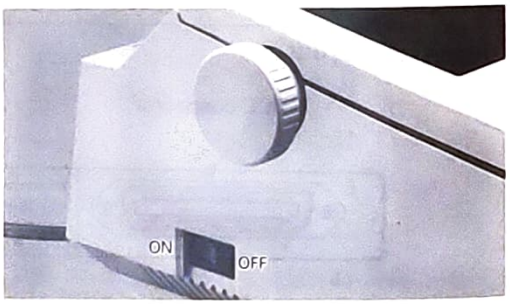
* Be sure to place the ON/OFF switch in the OFF position before making the connection.

2. Insert the power plug into a power outlet.

3. Fit the paper support into the two holes on the top of the cover.



4. Set the ON/OFF switch to ON. The printer will enter the Select (Online) state in which it can receive data.



* Check to see that the POWER lamp and Select indication lamp on the switch panel are ON.

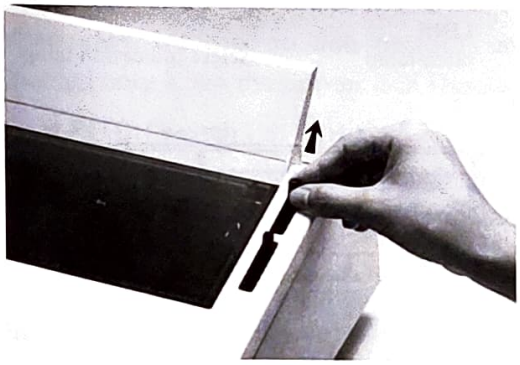
Notes:

(1) If the Select indication lamp is OFF, the top cover may be slightly open.
Close the top cover and depress the Select switch (SEL) to see if the Select indication lamp lights.

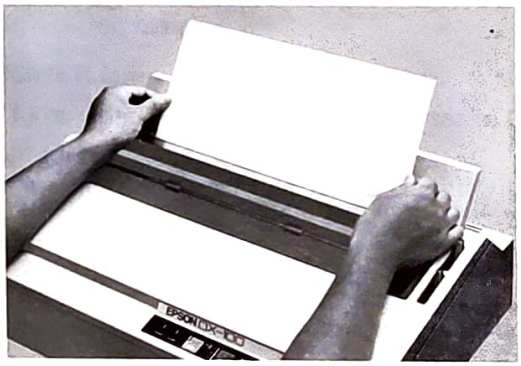
(2) Check to see that the ribbon and daisy wheel cassette have been correctly set in the printer.
(Refer to pages 12 to 13.)

2. Automatic Paper Loading

1. Push the paper release lever rearward.

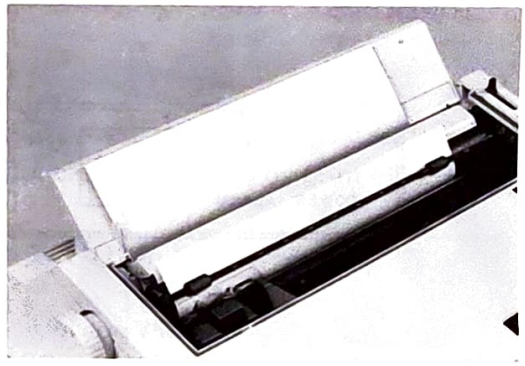


2. Set paper.
   Insert it until it is blocked.



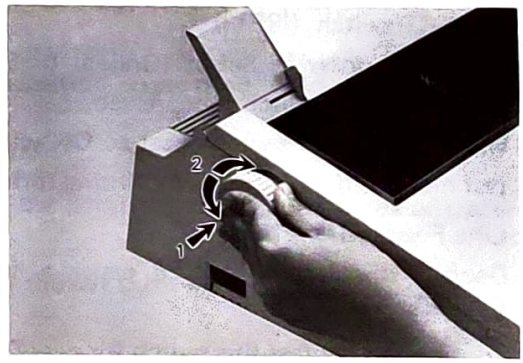
3. Push the Select switch ([SEL]) to put the printer in Deselect (Offline) state.

4. Push the Top Of Form switch ([TOF]), and the paper will automatically be advanced to the predetermined position [approx. 30 mm (1.2 in.) from the end of paper].



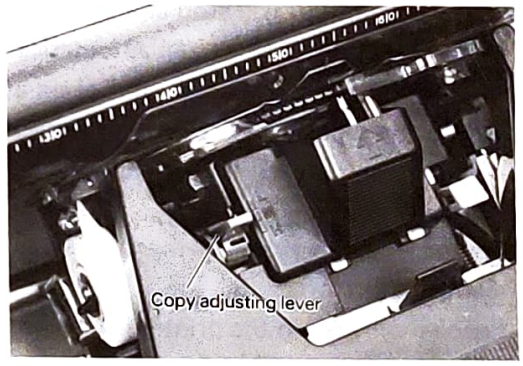
Manual paper feed operation by use of the platen knob may be performed for fine adjustment at paper setting.

*Be sure to turn the platen knob while depressing it.



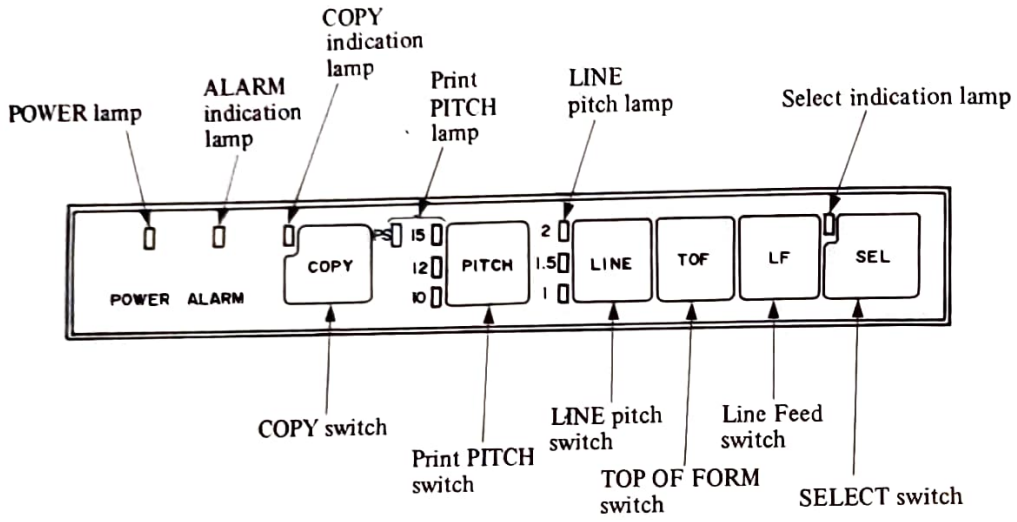
3. Impression Control

Use this lever to adjust print impression, depending on paper quality, paper thickness or the number of copies. Set the lever to H to increase the impression pressure or L to reduce it.



Operation

Switch Panel



1. Control Switches

1. SELECT switch (SEL)

- Puts the printer in Select (Online) or Deselect (Offline). Select and Deselect alternate each time when this switch is depressed.
- When the ON/OFF switch is set to ON with Select switch (SEL) depressed, the printer enters test mode and performs test printing (prints of its own accord).

2. Line Feed switch (LF)

- Depress this switch to feed paper a line at the pitch specified by the LINE pitch switch (LINE).
- Continue to depress this switch for over 0.5 sec. to advance paper continuously.
- Enabled only when the printer is in Deselect state.

3. TOP OF FORM switch (TOF)

This section has been changed. See "CORRECTIONS" at end of this manual.

- Can be used in two ways, depending on paper to be used.
  1) Cut sheet (Standard and cut sheet feeder unit specifications)
     a. When this switch is pushed, the paper bail will automatically open, paper will go into the printer and will stop at a position about 30 mm (1.2 inches) from the top edge of paper, and the paper bail will automatically close.
     b. When this switch is pushed again after printing, paper will be discharged.
  2) Continuous paper (Tractor unit specifications)
     When this switch is pushed, paper will be advanced to the top of form position of the next page.
- The page length is set by the DIP switch (refer to page 6) and by code from external equipment.
- Enabled only when the printer is in Deselect state.

4. LINE pitch switch (LINE)

- Specifies line spacing. Each time this switch is depressed, line spacing changes to 1 (1/6 in.), 1.5 (1/4 in.) and 2 (1/3 in.) in that order. (Indicated by LINE pitch indication lamp.)
- When power is turned on, line spacing is set to 1 (1/6 in.).
- Enabled only when the printer is in Deselect state.

5. Print PITCH switch (PITCH)

- Specifies character spacing. Each time this switch is depressed, character spacing switches to 10 (1/10 in.), 12 (1/12 in.), 15 (1/15 in.) and PS in that order. (Indicated by print PITCH indication lamp.)
- When power is turned on, character spacing is set to 10 (1/10 in.).
- Enabled only when the printer is in Deselect state.

6. COPY switch (COPY)

Reprints the data in the buffer or clears the data in the buffer.

2. Indication lamps

1. POWER lamp

Lights when power supply switch is set to ON.

2. ALARM indication lamp

- Illuminates when printer is abnormal (character selection error, paper feed error, or carriage motion error).
- Illuminates when ribbon is at its end.
- Illuminates when the tractor unit is installed on the printer and no paper is set or paper is short.
- Illuminates when there is no cut sheet during use of the cut sheet feeder unit.

3. Select indication lamp

- Illuminates when printer is in selected condition.

4. LINE pitch lamp

Displays line spacing. Green LED's 1, 1.5 and 2 light when the LINE pitch switch (LINE) is depressed.

* Green lamp 1 lights when power supply is turned on.

5. Print PITCH lamp

Displays character spacing. Green LED's 10, 12, 15 and PS light as the print PITCH switch (PITCH) is depressed.

* Green lamp 10 lights when power supply is turned on.

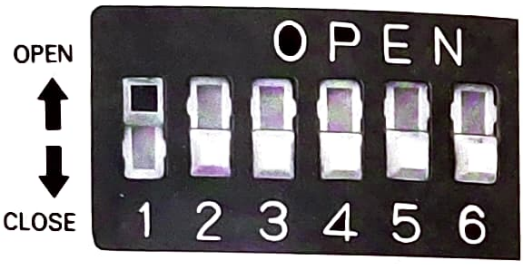
6. COPY indication lamp

- Lights when the data in the buffer is left or when the data left in the buffer is printed in the Deselect state.
- Flashes when printing of data left in the buffer is temporarily suspended.

Setting of DIP Switch

DIP switch
SPEC 1

DIP switch
SPEC 2



DIP switch SPEC 1

1. Switches # 1 through # 4 (language group selection)

   The printing pressure on the daisy wheel is controlled according to each character. Select the language group corresponding to the character wheel corresponding to the character code.

SPECIFICATIONS		# 1	# 2	# 3	# 4
Language group selection	US ASCII	CLOSE	CLOSE	CLOSE	CLOSE
	GERMAN	CLOSE	CLOSE	CLOSE	OPEN
	UK ENGLISH	CLOSE	CLOSE	OPEN	CLOSE
	FRENCH	CLOSE	CLOSE	OPEN	OPEN
	DUTCH	CLOSE	OPEN	CLOSE	CLOSE
	ITALIAN	CLOSE	OPEN	CLOSE	OPEN
	S. SPANISH	CLOSE	OPEN	OPEN	CLOSE
	ENGLISH WP	CLOSE	OPEN	OPEN	OPEN
	SYMBOL	OPEN	CLOSE	CLOSE	CLOSE
	INTERNATIONAL	OPEN	CLOSE	CLOSE	OPEN
	UK ASCII	OPEN	CLOSE	OPEN	CLOSE
	SWISS GERMAN	OPEN	CLOSE	OPEN	OPEN
	NORWEGIAN/DANISH	OPEN	OPEN	CLOSE	CLOSE
	FINNISH/SWEDISH	OPEN	OPEN	CLOSE	OPEN

Note: The above settings are effective only when ON/OFF switch is set to ON and top cover is closed.

2. Switches #5 through #8 (page length setting)

Set the switches to match the page length of cut sheets, continuous paper, etc.

Specifications		#5	#6	#7	#8	
Page length setting	11 inches	CLOSE	CLOSE	CLOSE	CLOSE	*
	3 inches	CLOSE	CLOSE	CLOSE	OPEN	
	3.5 inches	CLOSE	CLOSE	OPEN	CLOSE	
	4 inches	CLOSE	CLOSE	OPEN	OPEN	
	5 inches	CLOSE	OPEN	CLOSE	CLOSE	
	5.5 inches	CLOSE	OPEN	CLOSE	OPEN	
	6 inches	CLOSE	OPEN	OPEN	CLOSE	
	7 inches	CLOSE	OPEN	OPEN	OPEN	
	8 inches	OPEN	CLOSE	CLOSE	CLOSE	
	8.5 inches	OPEN	CLOSE	CLOSE	OPEN	
	9 inches	OPEN	CLOSE	OPEN	CLOSE	
	10 inches	OPEN	CLOSE	OPEN	OPEN	
	11 2/3 inches	OPEN	OPEN	CLOSE	CLOSE	
	12 inches	OPEN	OPEN	CLOSE	OPEN	
	14 inches	OPEN	OPEN	OPEN	CLOSE	
	17 inches	OPEN	OPEN	OPEN	OPEN	

Note: The above settings are effective only when ON/OFF switch is set to ON.

DIP switch SPEC 2

1. Switch #1 (Auto Line Feed)

Selects carrier return operation plus line feed or carrier return operation only by receiving CR code.

Specifications		#1	
AUTO LINE FEED	YES	OPEN	
	NO	CLOSE	*

OPEN — Gives automatic line feed (single or double) on every carrier return.
CLOSE— No line feed on carrier return. Line feed occurs only on separate line feed common.

Note: The above settings are effective only when ON/OFF switch is set to ON.

2. Switch #2 (Auto Skip Perforation)

When paper is advanced to the bottom margin set by the code from external equipment, paper will be fed to the top margin of the next page. (When there is no setting code from an external equipment, the top margin will be set to 1" from the top end of page, whereas the bottom margin will be set to 1" from the bottom end of paper.)

Specifications		#2	
Auto skip perforation	YES	OPEN	
	NO	CLOSE	*

To be loaded when ON/OFF switch is set to ON.

3. Switch #3 (Selection of data length) ..... RS-232C serial type only

Specifications		#3	
Selection of data length	7 bits	CLOSE	*
	8 bits (NO PARITY)	OPEN	

To be loaded when ON/OFF switch is set to ON.

4. Switch #4 (Selection of parity) .....RS-232C serial type only

Specifications		#4	
Selection of parity	Odd	CLOSE	*
	Even	OPEN	

To be loaded when ON/OFF switch is set to ON.

5. Switches #5 through #7 (Selection of baud rate) ..... RS-232C serial type only

Specifications		SW#5	#6	#7	
Selection of baud rate	9600 bauds	CLOSE	CLOSE	CLOSE	
	4800 bauds	CLOSE	CLOSE	OPEN	
	2400 bauds	CLOSE	OPEN	CLOSE	
	1200 bauds	CLOSE	OPEN	OPEN	
	600 bauds	OPEN	CLOSE	CLOSE	
	300 bauds	OPEN	CLOSE	OPEN	*
	150 bauds	OPEN	OPEN	CLOSE	
	110 bauds	OPEN	OPEN	OPEN	

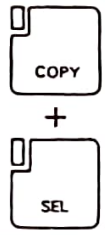
6. Switch #8 ..... Not used

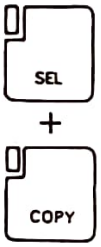
Copy Function

By storing the data from an external equipment in the buffer, the COPY function enables the printer to print by itself the same document in multiple copies.

Operating Procedures

□ : ON
▩ : Flashing
■ : OFF

	Switch operation	Indication lamp	
		SEL	COPY
(To store data from external equipment into memory) ① Push the Select switch to put the printer in Deselect state. (The Select indication lamp will go out.)		■	■
② While pushing the COPY switch, push the Select switch. (The COPY indication lamp will light, and the internal buffer will be cleared.)		■	□
③ Set paper in the printer and push the Select switch to put the printer in Select state. (The COPY lamp will light.) In this state, send data from an external equipment, and the printer, while storing the data in the internal buffer, will print the data.		□	□
④ After data inputting has been finished, push the Select switch to put the printer in Deselect state. (To suspend printing temporarily during inputting as when RE is detected and then resume data inputting, make ribbon change, etc. and then go back to Step ③ and proceed.)		■	□
(To print data from internal buffer) ⑤ Push the COPY switch. (The COPY indication lamp will flash.) Set paper in the printer.		■	▩
⑥ When the COPY switch is pushed, the data in the buffer will be printed. (The COPY indication lamp will light.)		■	□

⑦ When all data are printed, the COPY will be temporarily halted. (COPY indication lamp will flash.) After paper has been set in the printer, go back to Step ⑥. (To suspend buffer printing temporarily as at RE and then resume buffer printing, push the COPY switch to put the printer in the state of ⑦, make ribbon change, etc., and go back to Step ⑥.) If optional tractor unit and cut sheet feeder are provided, automatic return to the state of ⑥ will occur after about five seconds' break, and the printer will resume printing the next page (without pushing COPY switch).			
(The printer will return from the mode of printing data from the internal buffer to the mode of receiving data from an external equipment.) ⑧ While pushing the Select switch, push the COPY switch. (The COPY indication lamp will go out.) The printer will enter a Deselect state.			
⑨ After paper has been set, push the Select switch to put the printer in Select state and let an external equipment send data. (The Select indication lamp will light.)			
(To clear internal buffer) ⑩ To clear the buffer in the printer intermediately perform Steps ①, ②, ⑤, ⑧ and ⑨, and buffer will be cleared.			

Direct Printing Function

The direct printing function enables you to use the printer just like a typewriter by keying in data from the keyboard of a personal computer.

If no data are transmitted in about 0.1 sec. from an external device, the data stored in the buffer will be automatically printed.

An example of BASIC program for direct printing:

```
10    A$ = INKEY$
20    LPRINT A$;
30    GO TO 10
40    END
```

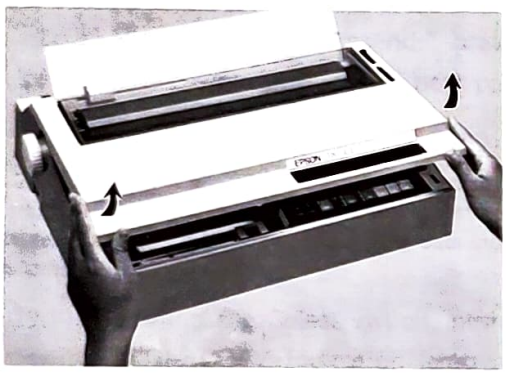
Daisy Wheel Change

The daisy wheel is an easily replaceable cassette type. Type styles can be easily changed to match your job simply by changing cassette type daisy wheels.

A daisy wheel cassette shows the following items.

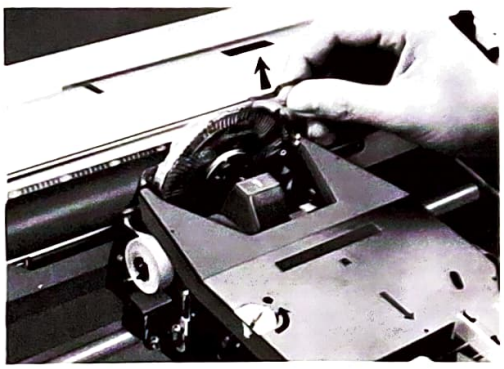
* Type pitch..... 10, 12, 15
* Type style .... PRESTIGE, QUADRO, etc.

1. Open the top cover.

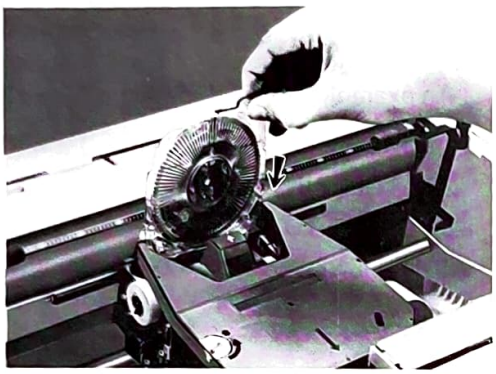


2. Pull the motor lock knob toward you.

3. Lift the daisy wheel cassette by holding the right corner.



4. Push a new cassette all the way in the guide by reversing the procedure of Step 3. (The cassette will slip in smoothly if pressed slightly toward you while inserting.)



5. Push the sloping portion of the hammer cover toward the platen until it locks into place with a clicking sound.

* If the cassette does not lock into place, incorrect printing will result. Reinsert.
* Use care to make sure that the cassette is not inserted inside out.

6. Check to be sure that the ribbon has been set in position before closing the top cover.

* The cassette ribbon need not be removed when changing daisy wheels.

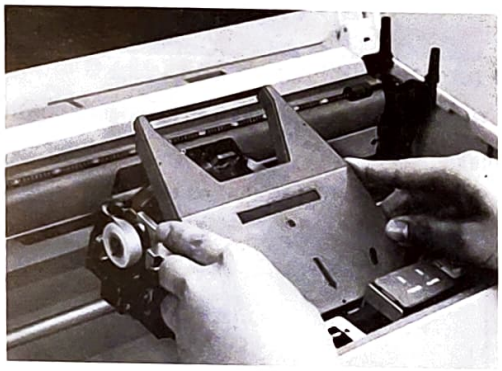
Cassette Ribbon Change

The following four kinds of cassette ribbons are available.

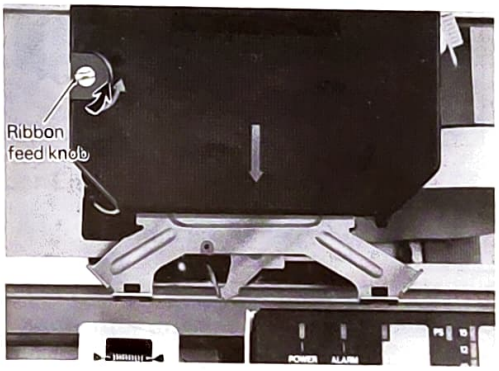
* One-time carbon ribbon
* Multi-use carbon ribbon
* Correctable carbon ribbon
* Fabric ribbon

1. Open the top cover.

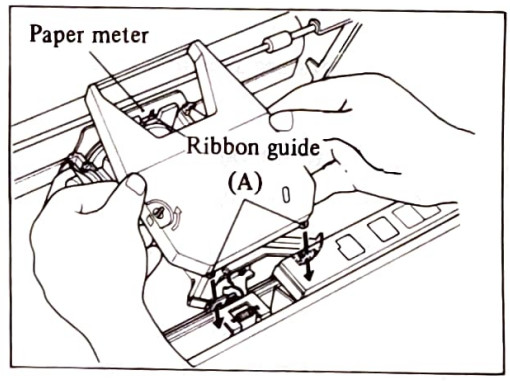
2. Hold the cassette ribbon with both hands, lift the ribbon side first, and remove.



3. Turn the ribbon feed knob on a new cassette to make sure that the ribbon is not slack.

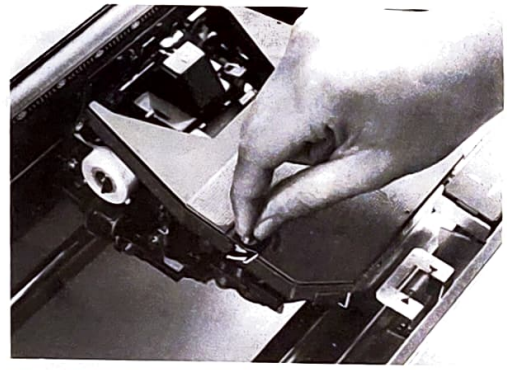


4. First fit the bars (A). Then set the ribbon to thread it between the ribbon guide and the paper meter.



5. Lightly press down from above until a click is heard.

6. Turn the ribbon feed knob to eliminate slackness of the ribbon.



7. Close the top cover.
   (The carrier will move to the left end and will return to its original position.)

Note:

The cassette ribbon has a slit through which you can see the remaining amount of ribbon.

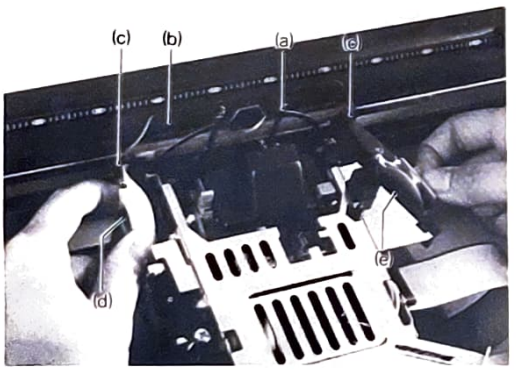
Change of Red Ribbon or Correction Tape

- Use a red ribbon (optional) for printing in red.
- Corrections can be made at the keyboard (optional).
  Correction tapes are available in the following two types.

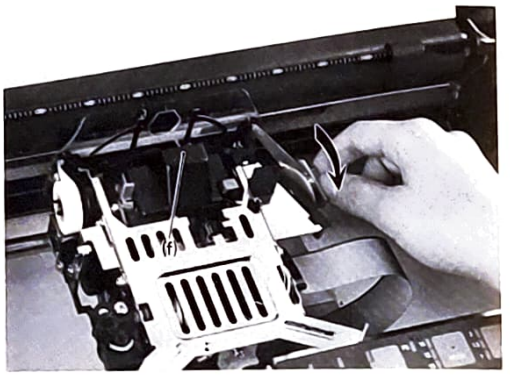
  Lift-off correction tape
  Use this tape when typing with a correctable carbon ribbon.

  Cover-up correction tape
  Use this tape when typing with a multi-use carbon or fabric ribbon tape.

1. Open the top cover.
2. Move the carrier to the center.
3. Remove the cassette ribbon.
4. Thread a new red ribbon (or correction tape) between the paper meter (a) and ribbon guide (b) and fasten to the right and left correction tape guides (c).
5. Fit the tape loaded spool onto the left pin (d) and the other spool onto the right pin (e).

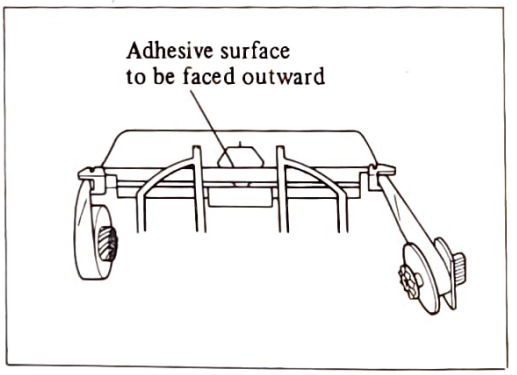


6. Turn the right spool until the red ribbon (or correction tape) comes to the position of the typing indicator (f).



7. Replace the cassette ribbon in its original position.

Note:
Set the red ribbon so that its red coated side will face the platen.



Detections

COVER-OPEN detection function (See Fig. 1)

The printer has a switch which senses whether the top cover is opened or closed. If the ON/OFF switch is set to ON and the top cover open, the printer will stop operation. Closing of the cover causes the carrier to return automatically to left and printing is restarted once. Select state is re-established by pushing the SELECT switch (SEL).

Ribbon End (RE) detection function (See Fig. 2)

1. If the ribbon end is detected, the printer will be put in Deselect state and the ALARM indication lamp light to sound buzzer.
2. When the ribbon cassette is unloaded, the ALARM indication lamp will go out and the buzzer cease to sound.
3. Set a new ribbon cassette. (Refer to page 13.)
4. Push the SELECT switch (SEL) to put the printer back into Select state, and the printer will resume printing.

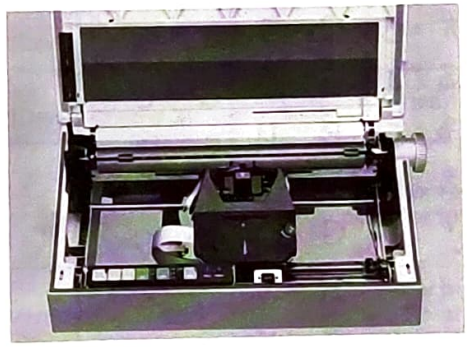


Fig. 1

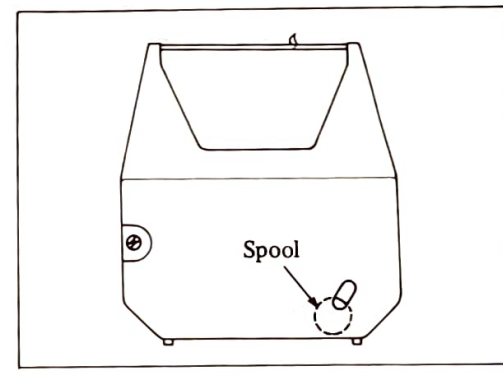


Fig. 2

Paper End (PE) detection function

This section has been changed. See "CORRECTIONS" at end of this manual.

This function is enabled when an optional tractor unit and cut sheet feeder unit are used.

1. When PE is detected intermediately during printing of a line, the printer will enter a Deselect state after printing the line and the ALARM indication lamp will light to sound the buzzer.

   * This state will last until a new sheet of paper is set.

2. Set a new sheet of paper. (Refer to page 2.)
3. The ALARM indication lamp will go out when the new sheet of paper is set.
4. Push the SELECT switch (SEL) to put the printer back into a Select state, and the printer will resume printing.

Note:

If the SELECT switch (SEL) is pushed while the ALARM indication lamp is ON, another line can be printed in the remaining portion of paper after detection of paper end (PE). This makes it possible to use the available space of paper fully.

Function Codes

This section describes the various function codes which enable you to get the best service from the printer.

These codes are described on the basis of the ASCII code.

ASCII Code Table

b_8 – – →		0	0	0	0	0	0	0	0
b_7 – – →		0	0	0	0	1	1	1	1
b_6 – – →		0	0	1	1	0	0	1	1
b_5 – – →		0	1	0	1	0	1	0	1
b_4 b_3 b_2 b_1		0	1	2	3	4	5	6	7
0 0 0 0	0	NUL		SP	0	@	P	`	p
0 0 0 1	1		DC1	!	1	A	Q	a	q
0 0 1 0	2			"	2	B	R	b	r
0 0 1 1	3		DC3	#	3	C	S	c	s
0 1 0 0	4			$	4	D	T	d	t
0 1 0 1	5			%	5	E	U	e	u
0 1 1 0	6			&	6	F	V	f	v
0 1 1 1	7	BEL		'	7	G	W	g	w
1 0 0 0	8	BS	CAN	(	8	H	X	h	x
1 0 0 1	9	H T		)	9	I	Y	i	y
1 0 1 0	A	L F		*	:	J	Z	j	z
1 0 1 1	B	V T	ESC	+	;	K	[	k	{
1 1 0 0	C	F F		,	<	L	\	l	|
1 1 0 1	D	C R		-	=	M	]	m	}
1 1 1 0	E		RS	.	>	N	^	n	~
1 1 1 1	F		US	/	?	O	_	o	DEL

*Characters ¢(20H) and ' (7FH) can be printed by commanding ESC + Y and ESC + Z, respectively.

*Undefined code ignored

1. Control Codes (corresponding to ASCII codes) and Their Functions

Standard Control Codes

This section has been changed. See "CORRECTIONS" at end of this manual.

Symbol	Code	Function
BEL (Bell)	07 H	Acoustic alarm sounds about 2 sec.
BS (Back Space)	08 H	Moves carrier back by one character.
LF (Line Feed)	0A H	Prints one line of data in data buffer and then feeds paper. The next print data is printed following the printing before line feed. (Does not return to left margin.)
FF (Form Feed)	0C H	Prints one line of data in data buffer and then feeds paper DIP switch specified lines less executed paper feed lines.
CR (Carrier Return)	0D H	1) Prints one line of data in data buffer. 2) After printing, carrier returns and one line is fed by instruction of automatic carrier return switch (OPEN) or ESC +". 3) Printer operates even if there is no printing data prior to this code.
DC1 (Device Control 1)	11 H	Puts printer in Select state.
DC3 (Device Control 3)	13 H	Puts printer in Deselect state.
CAN (Cancel) DEL (Delete)	18 H 7F H	Clears print data in data buffer up to CR, or LF, or VT, or FF code prior to this code.
VT (Vertical Tabulation)	0B H	After printing data up to VT, this command feeds paper to the next VT position. Does not operate if the next VT position is not set.
HT (Horizontal Tabulation)	09 H	Carrier moves to the next HT position. Does not operate if the next HT position is not set.
ESC (Escape)	1B H	Extension code which, combined with the following code, makes control code.

ESC (escape) Codes

Symbol	Function
ESC+BS	1/120" BS
ESC+HT+n	Absolute HT movement
ESC+LF	Reverse paper feed Note: When tractor unit is installed, this code is not available.
ESC+VT+n	Absolute VT movement
ESC+FF+n	Page length set: Reset to DIP switch by ESC+S
ESC+CR+P	Printer reset
ESC+RS+n	VMI set: Reset to switch panel by ESC+S
ESC+US+n	HMI set: Reset to switch panel by ESC+S

This section has been changed. See "CORRECTIONS" at end of this manual.

Symbol	Function
ESC+"	Auto LF "ON"
ESC+#	Auto LF "OFF"
ESC+&	Shadow, double print clear
ESC+–	VT set at current position
ESC+/	Auto backward print set
ESC+0	Right margin set at current position
ESC+1	HT set at current position
ESC+2	All HT, VT clear
ESC+5	Forward print set
ESC+6	Backward print set
ESC+8	Current position HT clear
ESC+9	Left margin set at current position
ESC+A	Red print set
ESC+B	Black print set
ESC+C	Top margin, bottom margin clear
ESC+D	Paper fed backward 1/2 of VMI Note: When tractor unit is installed, this code is not available.
ESC+E	Auto underline set
ESC+F	Double print set
ESC+H	Auto strike-out set
ESC+I	Auto strike-out clear
ESC+L	Bottom margin set at current position
ESC+P	PS mode set
ESC+Q	PS mode clear
ESC+R	Auto underline clear
ESC+S	Reset to switch panel, DIP switch
ESC+T	Top margin set at current position
ESC+U	Paper fed 1/2 of VMI
ESC+W	Shadow print set
ESC+X	WP clear
ESC+Y	Prints 20H of print code table
ESC+Z	Prints 7FH of print code table
ESC+\	Auto backward print clear

2. ESC Sequence Functions

Print Format

(1) Setting Character Pitch (HMI)

ESC + US + n sets character pitch.

ESC + S causes HMI to return to Panel SW.

HMI = (n – 1) x 1/120

The n specifies 1–126 excepting NUL and DEL codes and HMI can be set in 1/120-inch increments.

After HMI is set, carrier moves in the amount of HMI in each print or space.

Under PS mode, the setting can not be made.

ESC + S causes HMI to return to Panel SW.

(2) Setting Line Pitch (VMI)

ESC + RS + n sets line pitch.

ESC + S causes VMI to return to Panel SW.

VMI = (n – 1) x 1/48

The n specifies 1–126 excepting NUL and DEL codes and VMI can be set in 1/48-inch increments.

After VMI is set, paper is fed in the amount of VMI in LF and reverse LF or in the amount of VMI/2 in SUPER/SUB SCRIPT.

ESC + S causes VMI to return to Panel SW.

(3) Setting Page Length

ESC + FF + n sets page length.

ESC + S causes page length to return to DIP SW.

Page length = n x VMI/48

The n specifies 1–126 excepting NUL and DEL codes and the printer interprets the existing VMI as one line. Since the absolute position from page top is stored as page length, if VMI is changed from the preset value, the number of lines in page length changes.

ESC + S causes page length to return to DIP SW.

(4) Setting Left Margin

ESC + 9 sets left margin.

The code sets left margin at present position.

Absolute HT movement or BS enables carrier to move further in the left than the left margin position. (New left margin can be set)

In case the setting position is larger than right margin, the new margin can not be set.

(5) Setting Right Margin

ESC + 0 sets right margin.

The code sets right margin at present position.

Absolute HT movement enables carrier to move further in the right than the right margin position. (New right margin can be set)

In case the setting position is smaller than left margin, the new margin can not be set.

(6) Setting HT

ESC + 1 sets HT position.

ESC + 8 clears present position.

ESC + 2 clears whole HT positions.

HT position is set at present position and can be set up to 20 places.

To clear present HT position only, input ESC + 8; to clear whole HT positions, input ESC + 2, which also clears whole VT positions.

(7) Setting VT

ESC + — sets VT position.

ESC + 2 clears whole VT positions.

VT position is set at present position and can be set in 10 places.

Present VT position alone cannot be cleared.

ESC + 2 clears not only whole VT positions but also all HT positions.

(8) Setting Top Margin

ESC + T sets top margin.

ESC + C, Page Length Setting, or Remote Resetting clears top margin.

Top margin is set at present position.

Paper is automatically fed in the amount of top margin, when it reaches page top by LF. VT, absolute VT movement, or reverse LF enables paper feed within top margin. (New top margin can be set)

Top margin can be cleared by changing page length, or by remote resetting or ESC + C; however, when skip perforation is set, top margin returns to 1-inch margin.

In case the position falls within bottom margin, the new margin can not be set.

(9) Setting Bottom Margin

ESC + L sets bottom margin.

ESC + C, Page Length Setting, or Remote Resetting clears bottom margin.

Bottom margin is set at present position.

Paper is automatically fed to the following page top, when it reaches bottom margin by LF, Auto LF or Half LF.

VT or absolute VT movement enables paper feed within bottom margin.

Bottom margin can be cleared by changing page length, or by remote resetting or ESC + C; however, when skip perforation is set, bottom margin returns to 1-inch margin.

In case the setting position falls within top margin, the new margin can not be set.

(10) Absolute HT Movement

ESC + HT + n sets absolute HT movement.

Movement range = (n — 1) x HMI

The n specifies 1—126 excepting NUL and DEL codes and the range can be set in present HMI/120-inch increments.

This function makes carrier move directly from left end of platen to set position, but is not stored as HT. (Margins are ignored.)

Does not operate when set position goes beyond right end of platen.

(11) Absolute VT Movement

ESC + VT + n sets absolute VT movement.

Movement range = (n — 1) x VMI

The n specifies 1—126 excepting NUL and DEL codes and the range can be set in present VMI/48-inch increments.

This function feeds paper directly from page top to set position, but is not stored as VT. This can move beyond page length (page length is ignored) and within top and bottom margins (margins are ignored).

(12) Reverse LF

ESC + LF sets reverse LF.

Feeds paper in reverse direction in the amount of present VMI.

Note: When tractor unit is installed, this code is not available.

(13) Half LF

ESC + U sets half LF.

Feeds paper in the amount of present VMI/2. When VMI is an aliquant part of 2, fractions are to be discarded.

(14) Reverse Half LF

ESC + D sets reverse half LF

The paper is fed reversely by VMI/2.

When VMI is an aliquant part of 2, fractions are to be discarded.

Note: When tractor unit is installed, this code is not available.

(15) Auto Backward Print

ESC + / sets auto backward print.

ESC + \ clears auto backward print.

When this mode is set, the printer executes logic seeking; however, if the following ESC sequences are input, carrier moves to left margin by CR code and the printer starts forward print.

When ON/OFF switch is set to ON, auto backward print is automatically in set position.

(16) Forward Print

ESC + 5 sets forward print.

Specifies printing to right.

When reaching right margin, carrier automatically returns with one line fed, and printout starts from left margin.

(17) Backward Print

ESC + 6 sets backward print.

Specifies printing to left.

(18) Auto LF

ESC + " sets auto LF.

ESC + # clears auto LF.

When CR code is input with auto LF in set, the printer automatically engages LF.

(19) 1/120-inch BS

ESC + BS sets 1/120-inch BS.

Moves the carrier back by 1/120 inch.

This section has been changed. See "CORRECTIONS" at end of this manual.

WP Functions

(1) Proportional Spacing

ESC + P sets proportional spacing.

ESC + Q clears proportional spacing.

ESC + S causes proportional spacing to return to Panel SW.

After PS is set, the printer prints at PS.

When ON/OFF switch is set to ON with Panel SW set at PS, the HMI value equals 12. When PS has been set intermediately, the HMI value at that particular point is stored. Accordingly, when PS is cleared by ESC + Q, character pitch is in the HMI value then effective.

During PS mode, HT, spacing and BS are only effective for HMI. (HMI cannot be set in PS mode.) PS can be set at any point of operation.

(2) Auto Underline

ESC + E sets auto underline.

ESC + R, ESC + X clear auto underline.

After ESC + E is set, the printer prints and underlines, but does not underline spaces.

(3) Auto Strike-out

ESC + H sets auto strike-out.

ESC + I, ESC + X clear auto strike-out.

After ESC + H is input, the printer prints and hyphenates, but does not hyphenate spaces.

(4) Shadow Print

ESC + W sets shadow print.

ESC + &, ESC + X, CR, VT, FF clear shadow print.

This code moves carrier in about 1/120 inch to make double strikes.

When double print is set during this mode, double print is set.

When shadow print is set, the printer prints to right.

Note: Because of shadow prints mechanism, back spacing in shadow printing sometimes differs in amount and makes gaps in printed character.

(5) Double Print

ESC + F sets double print.

ESC + &, ESC + X, CR, VT, FF clear double print.

This code makes double strikes without moving carrier.

When shadow print is set during this mode, shadow print is set.

When double print is set, the printer prints to right.

(6) Setting Red Print

ESC + A sets red print.

After this code, the printer selects red ribbon to print in red.

ESC + B clears this mode to select black ribbon.

(7) Setting Black Print

ESC + B sets black print.

After this code, the printer selects black ribbon to print in black.

ESC + A clears this mode to select red ribbon.

(8) Wheel 20H Print

ESC + Y sets wheel 20H print.

Prints wheel spoke No. 20H.

(9) Wheel 7FH Print

ESC + Z sets wheel 7FH print.

Prints wheel spoke No. 7FH.

Printer Reset

Printer Reset

ESC + CR + P sets printer reset.

Initializes printer (when ON/OFF switch is set to ON.)

Settings to Make When ON/OFF Switch is Set to ON

1. Print pitch . . . . . 10 (1/10 inch)
2. Line pitch . . . . . 1 (1/6 inch)
3. Red, black print . . . . . Black
4. Print system . . . . . Auto backward print
5. Page length . . . . . by DIP switch
   - Top margin: 1 inch from top end of paper
   - Bottom margin: 1 inch from bottom end of paper
6. CR function . . . . . by DIP switch
7. Skip perforation . . . . . by DIP switch

WP Functions

This section has been changed. See "CORRECTIONS" at end of this manual.

(1) Proportional Spacing

ESC + P sets proportional spacing.

ESC + Q clears proportional spacing.

ESC + S causes proportional spacing to return to Panel SW.

After PS is set, the printer prints at PS.

When ON/OFF switch is set to ON with Panel SW set at PS, the HMI value equals 12. When PS has been set intermediately, the HMI value at that particular point is stored. Accordingly, when PS is cleared by ESC + Q, character pitch is in the HMI value then effective.

During PS mode, HT, spacing and BS are only effective for HMI. (HMI cannot be set in PS mode.) PS can be set at any point of operation.

(2) Auto Underline

ESC + E sets auto underline.

ESC + R, ESC + X clear auto underline.

After ESC + E is set, the printer prints and underlines, but does not underline spaces.

(3) Auto Strike-out

ESC + H sets auto strike-out.

ESC + I, ESC + X clear auto strike-out.

After ESC + H is input, the printer prints and hyphenates, but does not hyphenate spaces.

(4) Shadow Print

ESC + W sets shadow print.

ESC + &, ESC + X, CR, VT, FF clear shadow print.

This code moves carrier in about 1/120 inch to make double strikes.

When double print is set during this mode, double print is set.

When shadow print is set, the printer prints to right.

Note: Because of shadow prints mechanism, back spacing in shadow printing sometimes differs in amount and makes gaps in printed character.

(5) Double Print

ESC + F sets double print.

ESC + &, ESC + X, CR, VT, FF clear double print.

This code makes double strikes without moving carrier.

When shadow print is set during this mode, shadow print is set.

When double print is set, the printer prints to right.

(6) Setting Red Print

ESC + A sets red print.

After this code, the printer selects red ribbon to print in red.

ESC + B clears this mode to select black ribbon.

(7) Setting Black Print

ESC + B sets black print.

After this code, the printer selects black ribbon to print in black.

ESC + A clears this mode to select red ribbon.

(8) Wheel 20H Print

ESC + Y sets wheel 20H print.

Prints wheel spoke No. 20H.

(9) Wheel 7FH Print

ESC + Z sets wheel 7FH print.

Prints wheel spoke No. 7FH.

Printer Reset

Printer Reset

ESC + CR + P sets printer reset.

Initializes printer (when ON/OFF switch is set to ON.)

Settings to Make When ON/OFF Switch is Set to ON

1. Print pitch . . . . . 10 (1/10 inch)
2. Line pitch . . . . . 1 (1/6 inch)
3. Red, black print . . . . . Black
4. Print system . . . . . Auto backward print
5. Page length . . . . . by DIP switch
   - Top margin: 1 inch from top end of paper
   - Bottom margin: 1 inch from bottom end of paper
6. CR function . . . . . by DIP switch
7. Skip perforation . . . . . by DIP switch

This section has been changed. See "CORRECTIONS" at end of this manual.

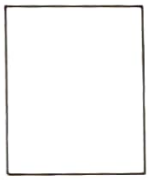
ESC sequence function table

Classification	Code Sequence	HEX Code	Function
Print pitch	ESC+P	1B, 50	PS mode set
	ESC+Q	1B, 51	PS mode clear
	ESC+US+n	1B, 1F, n	HMI set {(n−1) x 1/120}
	ESC+S	1B, 53	Reset to panel SW
LF pitch	ESC+RS+n	1B, 1E, n	VMI set {(n−1) x 1/120}
	ESC+S	1B, 53	Reset to panel SW
LF direction	ESC+U	1B, 55	Paper advanced 1/2 of VMI
	ESC+D	1B, 44	Paper fed backward 1/2 of VMI
	ESC+LF	1B, 0A	Paper fed backward
	ESC+S	1B, 53	Reset to panel SW
Margin	ESC+0	1B, 30	Right margin set at current position
	ESC+9	1B, 39	Left margin set at current position
Horizontal tab	ESC+HT+n	1B, 09, n	Absolute HT movement {HMI x (n−1)} +1
	ESC+1	1B, 31	HT set at current position
	ESC+8	1B, 38	Current position HT clear
	ESC+2	1B, 32	All HT, VT clear
Vertical tab	ESC+VT + n	1B, 0B, n	Absolute VT movement {VMI x (n−1)}+1
	ESC+–	1B, 2D	VT set at current position
	ESC+2	1B, 32	All HT, VT clear
Page	ESC+FF+n	1B, 0C, n	Page length set (n x VMI/48)
	ESC+T	1B, 54	Top margin set at current position
	ESC+L	1B, 4C	Bottom margin set at current position
	ESC+C	1B, 43	Top margin, bottom margin clear
	ESC+S	1B, 53	Reset to panel SW
Print system	ESC+/	1B, 2F	Auto backward print set
	ESC+\	1B, 5C	Auto backward print clear
	ESC+5	1B, 35	Forward print set
	ESC+6	1B, 36	Backward print set
Back space	ESC+BS	1B, 08	1/120" back space
CR function	ESC+"	1B, 22	Auto LF ON (CR+LF)
	ESC+#	1B, 23	Auto LF OFF (CR)
Red, black print	ESC+A	1B, 41	Red print set
	ESC+B	1B, 42	Black print set
Extra code table print	ESC+Y	1B, 59	Prints 20H of print code table
	ESC+Z	1B, 5A	Prints 7FH of print code table
Stress characters	ESC+F	1B, 46	Double print set
	ESC+W	1B, 57	Shadow print set
	ESC+&	1B, 26	Double, shadow print clear
	ESC+E	1B, 45	Auto underline set
	ESC+R	1B, 52	Auto underline clear
	ESC+H	1B, 48	Auto strike-out set
	ESC+I	1B, 49	Auto strike-out clear
	ESC+X	1B, 58	WP clear
Printer reset	ESC+CR+P	1B, 0D, 50	Printer reset

Notes: (1) Switching of print pitch and line pitch by code does not change switch panel display.
(2) (n) is a value included between HEX (01) and HEX (7E).

3. Page length, top margin and bottom margin set method

Example: To set page length to 66 lines, top margin at 7th line, and bottom margin at 60th line



1st line
7th line Top margin

60th line Bottom margin
66th line

(1)

Code sequence	ESC, FF, (66D),	LF, ... LF,	ESC, T,	LF, ... LF,	ESC, L
HEX code	1B, 0C, 42,	0A, ...0A,	1B, 54,	0A, ... 0A,	1B, 4C
Explanation	Page length set	6 data	Top margin set	53 data	Bottom margin set

(2)

Code sequence	ESC, FF, (66D),	ESC, RS, (7D),	ESC, T,	ESC,RS, (60D),	ESC, L
HEX code	1B, 0C, 42,	1B, 1E, 01,	1B, 54,	1B, 1E, 3C,	1B, 4C
Explanation	Page length set	Moves to 7th line	Top margin set	Moves to 60th line	Bottom margin set

4. Vertical tab set method

Example: To set vertical tab at 11th line, 21st line and 31st line

(1)

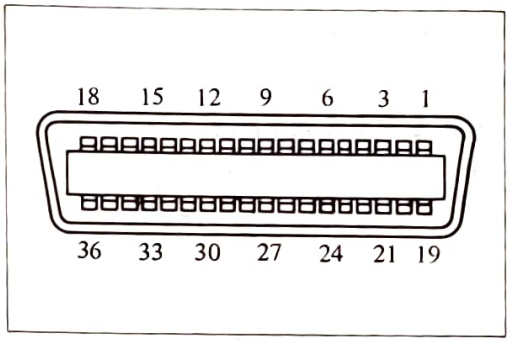
Code sequence	LF, ... LF,	ESC, –,	LF, ... LF,	ESC, –.	LF, ... LF,	ESC, –
HEX code	0A, ... 0A,	1B, 2D,	0A, ... 0A,	1B, 2D,	0A, ...0A,	1B, 2D
Explanation	10 data	Tab set	10 data	Tab set	10 data	Tab set

(2)

Code sequence	ESC, VT, (11D),	ESC, –,	ESC, VT, (21D),	ESC, –,	ESC, VT, (31D),	ESC, –
HEX code	1B, 0B, 0B,	1B, 2D,	1B, 0B, 15,	1B, 2D	1B, 0B, 1F	1B, 2D
Explanation	Moves to 11th line	Tab set	Moves to 21st line	Tab set	Moves to 31st line	Tab set

Interface

1. Centronics Parallel Interface



(1) Connector Signal Code

Pin No.	Signal	Pin No.	Signal
1	$\overline{\text{DATA STROBE}}$	19	TWISTED PAIR GND
2	DATA 1	20	TWISTED PAIR GND
3	DATA 2	21	TWISTED PAIR GND
4	DATA 3	22	TWISTED PAIR GND
5	DATA 4	23	TWISTED PAIR GND
6	DATA 5	24	TWISTED PAIR GND
7	DATA 6	25	TWISTED PAIR GND
8	DATA 7	26	TWISTED PAIR GND
9	DATA 8	27	TWISTED PAIR GND
10	$\overline{\text{ACKNLG}}$	28	TWISTED PAIR GND
11	BUSY	29	TWISTED PAIR GND
12	PE	30	$\overline{\text{INPUT PRIME RET}}$
13	SLCT	31	$\overline{\text{INPUT PRIME}}$
14		32	$\overline{\text{FAULT}}$
15		33	
16	0V	34	
17	0V	35	
18	5V	36	

Note:
Printer side: Amphenole (DDK) 57-40360-12
Cable side: Amphenole (DDK) 57-30360-12

(2) Name of Signals and Functions

1) $\overline{\text{DATA STROBE}}$ (input)

Indicates that DATA 1 to DATA 8 are effective.
Pulse width requires 1 μ sec. MIN.

HIGH ..... normal condition
LOW ..... readout of data
Option: Readout of data on return from LOW to HIGH

2) DATA 1 to DATA 8 (input)

Indicates information from 1 bit to 8 bits.
(8th bit is ignored.)

DATA 1 .....HIGH
DATA 0 .....LOW

3) $\overline{\text{ACKNLG}}$ (output)

Indicates acknowledgement of data input.

Pulse width is 5 ± 1 μsec.
HIGH . . . . . normal condition

4) BUSY (output)

DC level signal, indicating whether printer is ready for operation.

Inputting can be made only when this signal is "LOW".
Only the DC1 code can be input even when the signal is "HIGH".

5) PE (output)

DC level signal which becomes "HIGH" when paper is short.

6) SLCT (output)

DC level signal which is "HIGH" when printer is selected.

7) $\overline{\text{INPUT PRIME}}$ (input)

Puts printer to initial condition when this signal is input.

8) $\overline{\text{FAULT}}$ (output)

DC level signal which becomes "LOW" when printer is in the following condition.

① at PE
② at RE
③ when top cover is opened.
④ character selection error, carrier error, PF error
⑤ Select Off

9) 5V

Power supply line

10) 0V

Frame ground, signal ground

11) TWISTED PAIR GND

Return ground of signal line

12) $\overline{\text{INPUT PRIME RET}}$

Return ground

13) Set/reset conditions of SLCT, BUSY, FAULT, ALARM lamps.

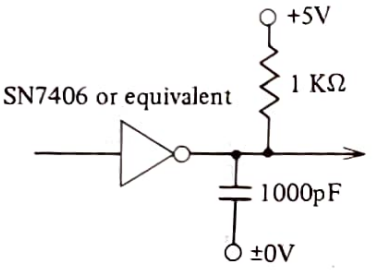
	Set Condition	Reset Condition
SLCT	1. DC 1 code input 2. SELECT switch ON	1. Cover open 2. DC 3 code input 3. PE 4. RE 5. Character selection error 6. Carrier error 7. Paper feed error 8. SELECT switch OFF
BUSY	1. SLCT reset condition 2. 0 byte in buffer	1. SLCT ON 2. 1 byte in buffer
FAULT	1. Character selection error 2. Carrier error 3. Paper feed error 4. SLCT OFF 5. PE 6. RE 7. Cover open 8. DC 3 code input	1. SLCT ON
ALARM	1. Character selection error 2. Carrier error 3. Paper feed error 4. PE 5. RE	1. SLCT ON

(Note) No data accepted during BUSY.

(3) Interface Circuit

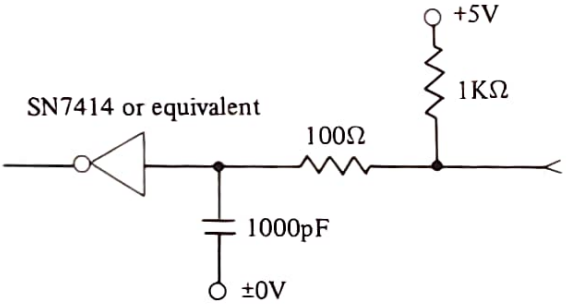
1) Driver circuit

$\overline{\text{ACKNLG}}$, BUSY, SELECT, $\overline{\text{FAULT}}$, PE

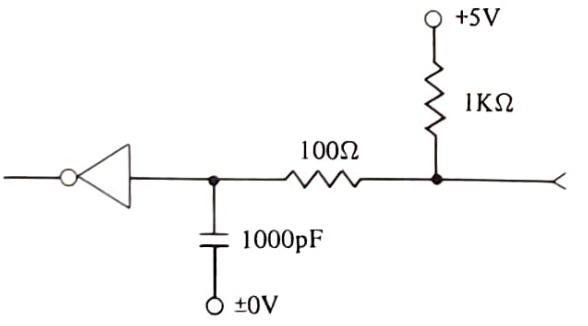


2) Receiver circuit

① D1 through D8



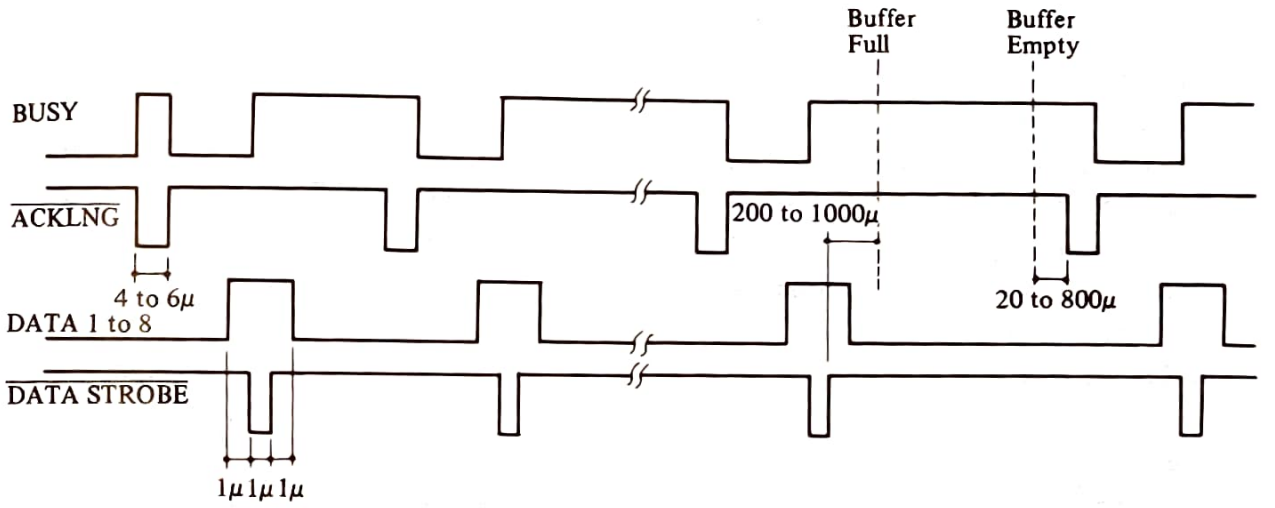
② $\overline{\text{STROBE}}$, $\overline{\text{INPUT PRIME}}$



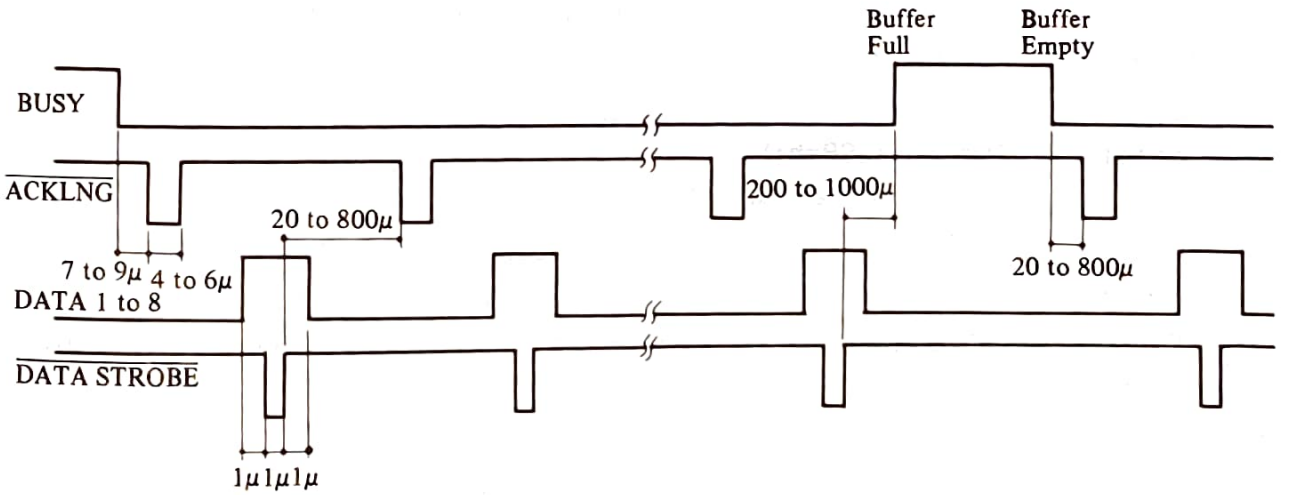
(4) Timing Chart

* Standard specification (One Character Busy)
* Option (One Line Busy)

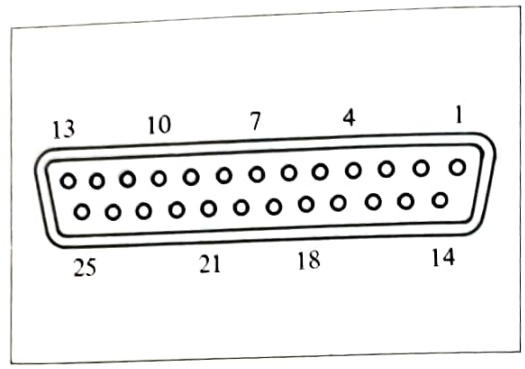
1) BUSY Signal (One character level)



2) BUSY Signal (One line level)



2. RS-232C Serial Interface



(1) Standard Specification

1) Communication speed

110, 150, 300, 600, 1200, 2400, 4800, 9600 bauds

2) Synchronization

Start-stop

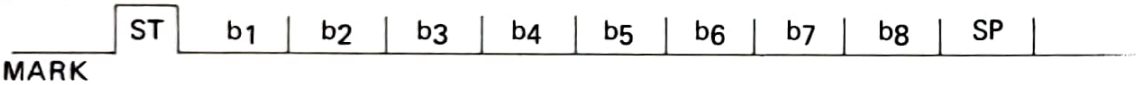
3) Communication control procedure

No procedure

4) Data format

10 bits/character

SPACE



MARK

Beginning of character is the first movement (start bit) from MARK to SPACE. When there is no line data, MARK state is created.

ST : Start bit

b_1 to b_7 : Data bits (LSB=b_1)

b_8 : Parity bit (8 data bit is MSB data.)

SP : Stop bit

5) Error print

Prints ASCII code 40H symbol when vertical parity error, framing error or over-run error occurs.

(2) Signal Level

Logic	Normal voltage	Receiving-end voltage
MARK (OFF)	−12V	Less than −3V
SPACE (ON)	+12V	More than +3V

(3) Connector and Pin Configuration

Printer side: Amphenole (DDK) 17DB25S

Cable side: Amphenole (DDK) 17DB25P

Pin No.	Signal	Symbol	Controller, Printer	Remarks
1	Protective GND	FG	⟷ (–)	
2	Transmitted Data	SD	← (output)	
3	Received Data	RD	→ (input)	
4	Request to Send	RS	← (output)	
5	Clear to Send	CS	→ (input)	
6	Data Set Ready	DR	→ (input)	
7	Signal GND	SG	⟷ (–)	
8	Received Line Signal Detector	CD	→ (input)	
11	Secondary Request to Send	SCA	← (output)	
20	Data Terminal Ready	ER	← (output)	

Note: Protective GND is common to Signal GND.

(4) Explanation of Signals

1) Received Data (RD)

Data line transmitted from controller

2) Transmitted Data (SD)

Data line transmitted from printer to controller

3) Request to Send (RS)

Continuously "HIGH"

4) Clear to Send (CS)

When this line is "HIGH", DC1 and DC3 codes are output.

This line should always be kept "HIGH".

5) Data Set Ready (DR)

When this line is "HIGH", data are accepted.

6) Received Line Signal Detector (CD)

When this line is "HIGH", data are accepted.

7) Data Terminal Ready (ER)

Becomes "LOW" when printer is in busy condition.

8) Secondary Request to Send (SCA)

Becomes "HIGH" when printer is in busy condition.

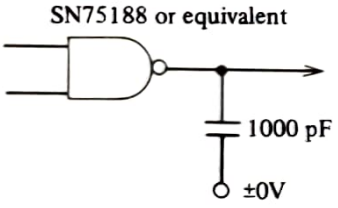
(5) Set/reset Conditions of SELECT, BUSY, and ALARM Status

Status	Set Condition	Reset Condition
SLCT	1. DC 1 code input 2. SELECT switch ON	1. Cover open 2. DC 3 code input 3. PE, RE 4. Character selection error 5. Carrier error 6. Paper feed error 7. SELECT switch OFF
BUSY	1. SLCT OFF 2. PE, RE 3. 128 bytes in buffer	1. SLCT ON 2. Remainder of buffer becomes 256 bytes 3. Cancellation of PE, RE
ALARM	1. Character selection error 2. Carrier error 3. Paper feed error 4. PE, RE	1. SLCT ON 2. Cancellation of PE, RE

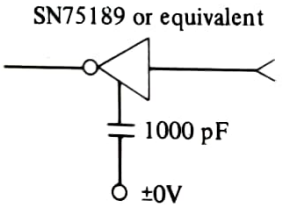
Note: Data is accepted even during BUSY. But after buffer is full, acceptance of data is not guaranteed.

(6) Driver/receiver Circuit

1) Driver circuit

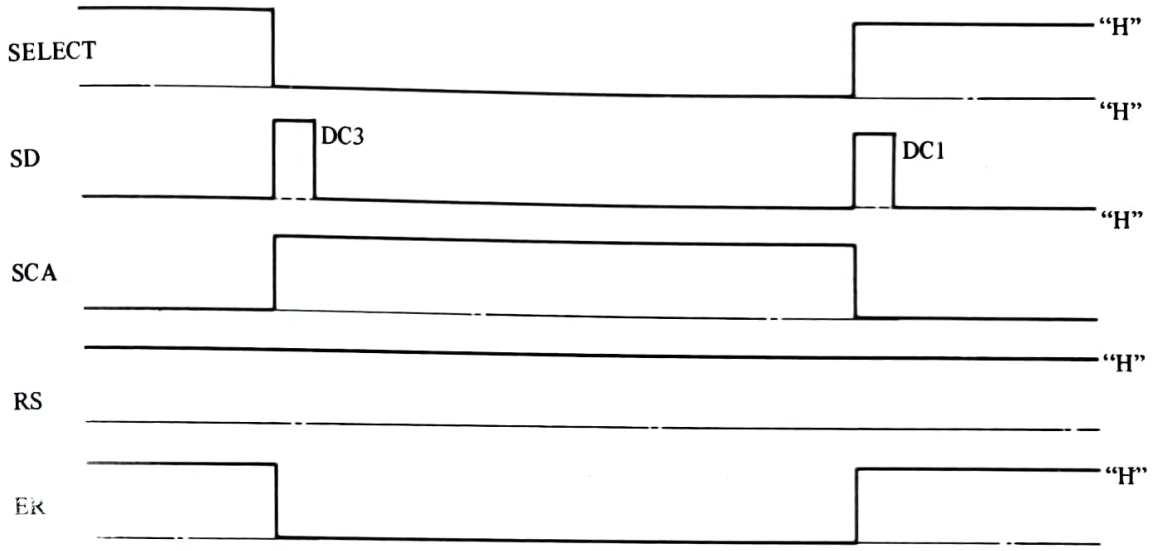


2) Receiver circuit



(7) Timing Chart

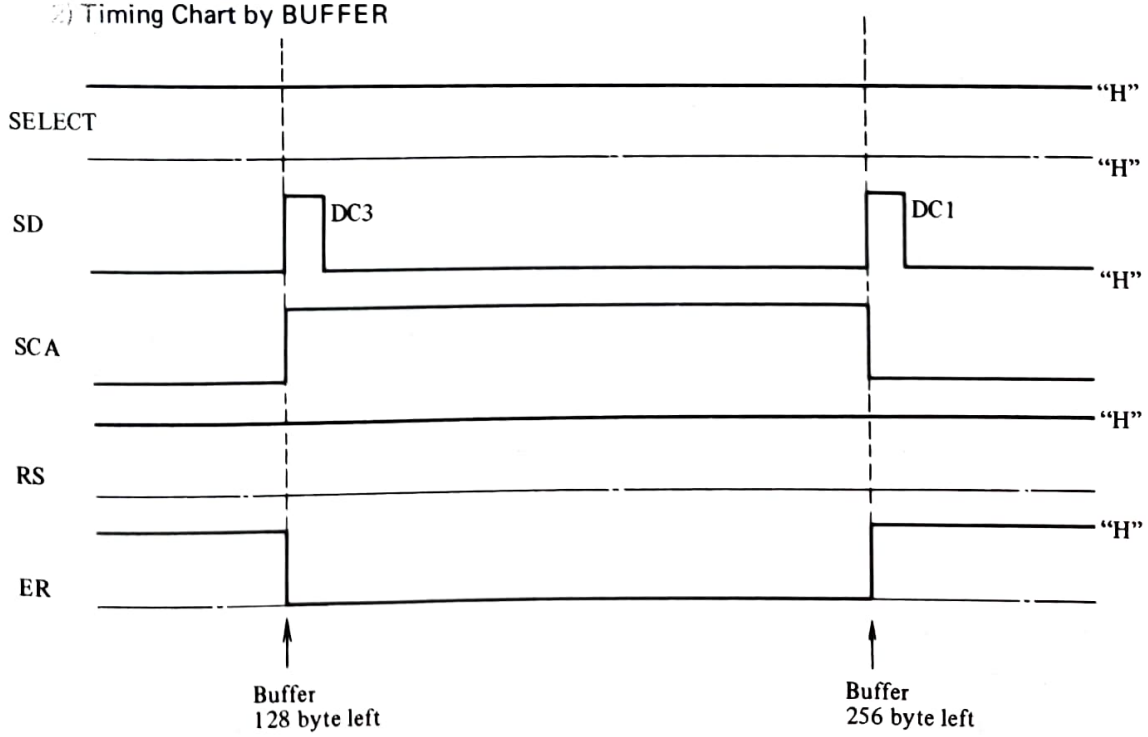
1) Timing Chart by SELECT



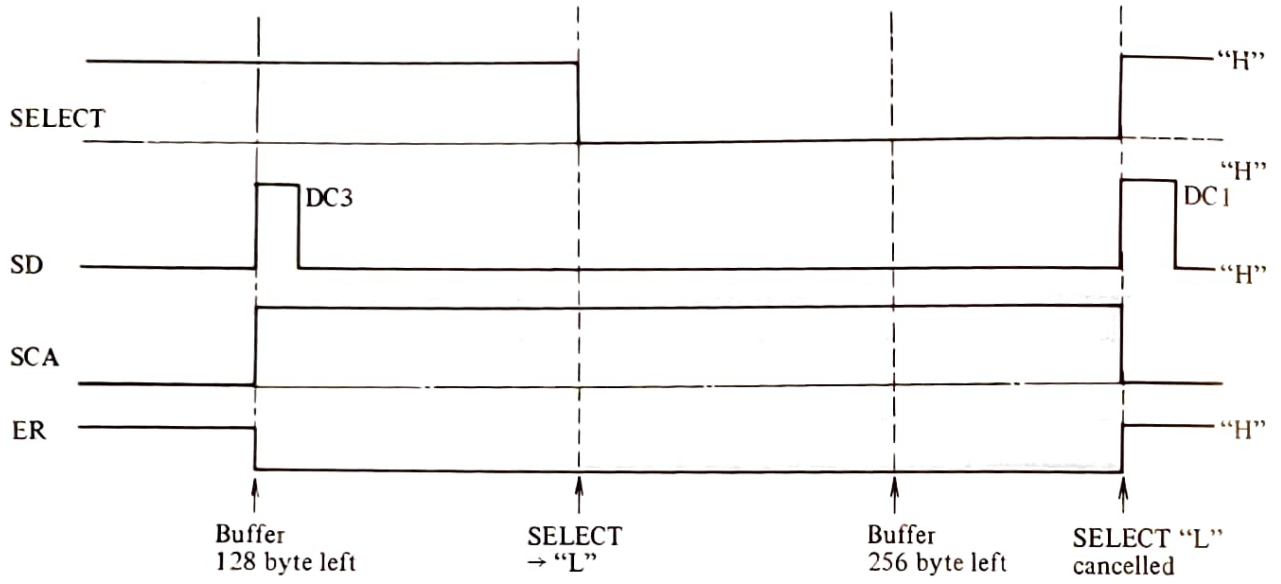
① SELECT → "L" . . . . . In case of: PRINTER ERROR
COVER OPEN
PANEL SELECT SW. "OFF"
DC3 code input

② SELECT → "H" . . . . When above conditions are cancelled.

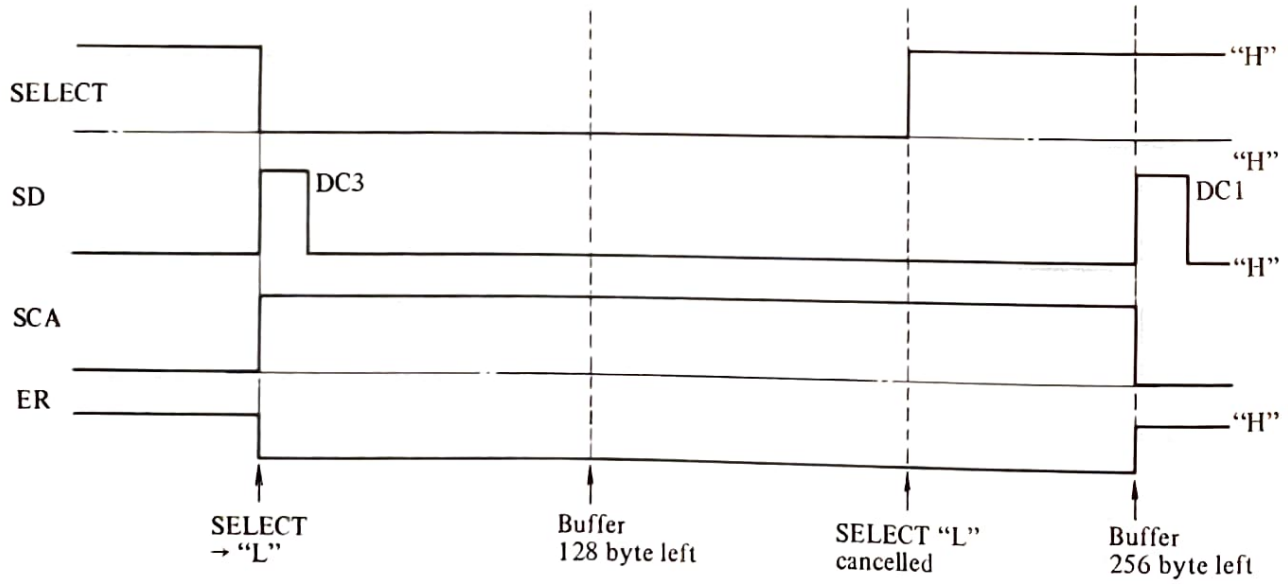
2) Timing Chart by BUFFER



3) Timing Chart by SELECT, BUFFER (PART 1)



4) Timing Chart by SELECT, BUFFER (PART 2)



Codes DC3 and DC1 alternately generate power under SELECT condition or BUFFER condition.

Troubleshooting

If the printer is malfunctioning, check the following points.

Trouble	Probable Cause	Corrective Step
Ribbon does not move smoothly.	• Ribbon twisted or not set correctly.	• Set ribbon correctly. (Refer to page 13.)
Printer does not operate at all.	• Power cord not connected.	• Connect power cord to power outlet.
	• Paper caught.	• Set ON/OFF switch to OFF and carefully remove caught paper. Before ON/OFF switch is set to ON, check condition of ribbon.
	• Fuse blown.	• Check to see that when ON/OFF switch is at ON, display lamp is ON. If lamp is OFF, replace fuse.
Power is ON and data are transmitted, but printer does not print.	• Cable between input device and printer not connected.	• Check to see that connectors at both ends of data input cable have been properly connected.
	• Printer in Deselect state.	• Push SELECT switch.
	• Daisy wheel not in position.	• Set daisy wheel.

If, after the above checks, the printer is still malfunctioning, call your dealer.

Test Printing (self printing)

Test printing function enables you to test the printing function of the printer very easily without connecting with CPU.

1) Set the ON/OFF switch to ON.
2) Set paper.
3) Set the ON/OFF switch to OFF.
4) While pushing the SELECT switch ([SEL]), set the ON/OFF switch to ON. The printer will start test printing.
5) Set the ON/OFF switch to OFF to stop test printing.

Notes:

(1) The [COPY], [PITCH], [LINE], [SEL], [LF] and [TOF] switches are disabled during test printing.

(2) If ribbon end (RE) or paper end (PE) is detected during test printing, the printing will stop. In this case, set the ON/OFF switch to OFF and replace the ribbon cassette with a new one or set a new sheet of paper. (Refer to page 13.)

Daisy Printer Supplies

Daisy Wheel

Daisy wheels currently available are defined in Daisy Wheel List by marking "○" symbol.

Daisy Wheel List

Destination \ Type	QUADRO 1012	PRESTIGE 1012	QUADRO 15	SCRIPT 1012	PRESTIGE ITALIC 1012
American English	○	○	○	○	○
Germany	○	○	○	○	○
King's English	○	○	○	○	○
French	○	○	○	○	○
American Spanish	○	○	○	○	○
Swiss Germany	○	○	○	○	○
Dutch	○	○	○	○	○
English (WP)					
Norwegian, Danish	○	○	○	○	○
Canadian (Bilingual)	○	○	○	○	○
Italian	○	○	○	○	○
Spanish	○	○	○	○	○
Swedish, Finnish	○	○	○	○	○
Portuguese	○	○	○	○	○
ASCII					

PICA 10	GRANDE 10	ELITE 12	BROGHAM 10	BROGHAM 12	SYMBOL 10	OCR-B 10
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	
○		○			○	○
			○			
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
	○		○		○	
○	○	○	○	○	○	
					○	
			○			

Printer Maintenance and Precautions

To assure trouble-free operation for an extended period, please observe the following precautions.

- Cleaning operations should be limited to brushing away dust from externally visible areas. Avoid using water, alcohol, thinner and other organic solvents.
- Clean the ribbon groove by wiping away deposited ink at regular intervals. Remove paper dust from inside.
- Do not place anything on the printer.
- Do not allow anything to fall in the machine.
  Metallic objects such as pins and clips, if allowed to fall in the machine, could cause trouble.
- Do not install the printer in a place exposed to the direct sun, or near an object generating high temperatures, or in a place subject to vibration.
- Place the printer in a level position.
- Do not touch the surface of the printing portion by hand.
- A blown fuse should be replaced with a fuse of the same rating.

Specifications

Print speed	13 cps. max. 11 cps. (Shannon text, pica pitch)
Daisy wheel characters	96 Cassette type easy to change
Daisy wheel life	10 million characters
Characters/line	110 characters (1/10") 132 characters (1/12") 165 characters (1/15")
Forms width	13.5" max. (Cut sheets)
Copy function	1 original (45 kg) + 4 copies (15 kg)
Carrier movement	Bidirectional shortest printing logic seeking
Carrier return speed	1250 ms max. (11" return)
Paper feed speed	2 ips
Line spacing	6, 4, 3 lines/inch
Ribbon	Cassette type
Interface	Centronics parallel, RS-232C serial
Switch panel	Lamps: POWER, SELECT, ALARM, LINE SELECT, PITCH SELECT, COPY Switches: SEL, LF, TOF, LINE, PITCH, COPY
Noise	65 dB (A-scale 1m) or less
Temperature	10° to 40°C (during operation)
Humidity	20 to 80% (during operation) No dew condensation to be tolerated
Buffer memory	5K
Frequency	50 & 60 Hz
Power consumption	42 W
Overall dimensions	464 mm wide, 339 mm deep, 165 mm high
Weight	8.9 kg

The styling and specifications are subject to change without notice, as changes may be made to improve performance.

Options

The following options are available.

1. Tractor unit
2. Cut sheet feeder unit
3. Keyboard unit

Optional items

1. Red ribbon
2. Correction tape
3. Daisy wheel

This section has been changed. See "CORRECTIONS" at end of this manual.

- Functional Comparison between Standard Specification and Tractor Unit and Cut Sheet Feeder Unit Specifications

	Standard Specification	Cut Sheet Feeder Unit Specification	Tractor Unit Specification
Function of TOP OF FORM switch	1. When this switch is pushed, the paper bail will automatically open, paper will be fed to the pre-determined position [about 30 mm (1.2 in.) from the top end of paper] , and the paper bail will automatically close. 2. When this switch is pushed again after the end of printing, paper will be discharged.	Same as left	When this switch is pushed, paper will be fed to the TOP OF FORM position of the next page.
FF (OC) code	1. When this code is received, the paper bail will automatically open, paper will be fed to the predetermined position [about 30 mm (1.2 in.) from the top end of paper] , and the paper bail will automatically close. 2. When this code is received again after the end of printing, paper will be discharged.	Same as left	When this code is received, paper will be advanced to the TOP OF FORM position of the next page.
Paper end (PE) detection		Detected when there is no sheet left in cut sheet feeder.	Detected when there is only small amount of paper left.

Options

The following options are available.

1. Tractor unit
2. Cut sheet feeder unit
3. Keyboard unit

Optional items

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FF (OC) code	1. When this code is received, the paper bail will automatically open, paper will be fed to the predetermined position [about 30 mm (1.2 in.) from the top end of paper], and the paper bail will automatically close. 2. When this code is received again after the end of printing, paper will be discharged.	Same as left	When this code is received, paper will be advanced to the TOP OF FORM position of the next page.
Paper end (PE) detection		Detected when there is no sheet left in cut sheet feeder.	Detected when there is only small amount of paper left.

Code Table by Language Group

b8 — — →		0	0	0	0	0	0	0
b7 — — →		0	0	0	0	1	1	1
b6 — — →		0	0	1	1	0	0	1
b5 — — →		0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		¢	0	@	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	#	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	[	k	{
1	1	0	0	C	FF		,	<	L	\	l	|
1	1	0	1	D	CR		-	=	M	]	m	}
1	1	1	0	E		RS	.	>	N	^	n	~
1	1	1	1	F		US	/	?	O	_	o	´

US ASCII

b8 — — →		0	0	0	0	0	0	0
b7 — — →		0	0	0	0	1	1	1
b6 — — →		0	0	1	1	0	0	1
b5 — — →		0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		µ	0	§	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	#	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	Ä	k	ä
1	1	0	0	C	FF		,	'	L	Ö	l	ö
1	1	0	1	D	CR		-	=	M	Ü	m	ü
1	1	1	0	E		RS	.	'	N	°	n	ß
1	1	1	1	F		US	/	?	O	_	o	´

GERMAN

b8 — — →		0	0	0	0	0	0	0
b7 — — →		0	0	0	0	1	1	1
b6 — — →		0	0	1	1	0	0	1
b5 — — →		0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		¢	0	@	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	£	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	[	k	¼
1	1	0	0	C	FF		,	½	L	±	l	½
1	1	0	1	D	CR		-	=	M	]	m	·
1	1	1	0	E		RS	.	÷	N	¾	n	'
1	1	1	1	F		US	/	?	O	_	o	'

UK ENGLISH

b8 — — →		0	0	0	0	0	0	0
b7 — — →		0	0	0	0	1	1	1
b6 — — →		0	0	1	1	0	0	1
b5 — — →		0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		¼	0	à	P	±	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	fr	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	°	k	é
1	1	0	0	C	FF		,	'	L	ç	l	ù
1	1	0	1	D	CR		-	=	M	§	m	è
1	1	1	0	E		RS	.	'	N	^	n	¨
1	1	1	1	F		US	/	?	O	_	o	½

FRENCH

Table 1

Code Table by Language Group

b8 — — →				0	0	0	0	0	0	0	0
b7 — — →				0	0	0	0	1	1	1	1
b6 — — →				0	0	1	1	0	0	1	1
b5 — — →				0	1	0	1	0	1	0	1
b4	b3	b2	b1	0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		¢	0	@	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	#	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	[	k	{
1	1	0	0	C	FF		,	<	L	\	l	|
1	1	0	1	D	CR		-	=	M	]	m	}
1	1	1	0	E		RS	.	>	N	^	n	~
1	1	1	1	F		US	/	?	O	_	o	´

US ASCII

b8 — — →				0	0	0	0	0	0	0	0
b7 — — →				0	0	0	0	1	1	1	1
b6 — — →				0	0	1	1	0	0	1	1
b5 — — →				0	1	0	1	0	1	0	1
b4	b3	b2	b1	0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		µ	0	§	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	#	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	Ä	k	ä
1	1	0	0	C	FF		,	'	L	Ö	l	ö
1	1	0	1	D	CR		-	=	M	Ü	m	ü
1	1	1	0	E		RS	.	'	N	°	n	ß
1	1	1	1	F		US	/	?	O	_	o	´

GERMAN

b8 — — →				0	0	0	0	0	0	0	0
b7 — — →				0	0	0	0	1	1	1	1
b6 — — →				0	0	1	1	0	0	1	1
b5 — — →				0	1	0	1	0	1	0	1
b4	b3	b2	b1	0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		¢	0	@	P	`	p
0	0	0	1	1		DC1	°	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	£	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	[	k	¼
1	1	0	0	C	FF		,	¾	L	±	l	½
1	1	0	1	D	CR		-	=	M	]	m	·
1	1	1	0	E		RS	.	÷	N	¾	n	¸
1	1	1	1	F		US	/	?	O	_	o	¸

UK ENGLISH

b8 — — →				0	0	0	0	0	0	0	0
b7 — — →				0	0	0	0	1	1	1	1
b6 — — →				0	0	1	1	0	0	1	1
b5 — — →				0	1	0	1	0	1	0	1
b4	b3	b2	b1	0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		¼	0	à	P	±	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	Fr	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	°	k	é
1	1	0	0	C	FF		,	'	L	ç	l	ù
1	1	0	1	D	CR		-	=	M	§	m	è
1	1	1	0	E		RS	.	'	N	^	n	¨
1	1	1	1	F		US	/	?	O	_	o	½

FRENCH

Table 1

b8	—	—	→		0	0	0	0	0	0	0
b7	—	—	→		0	0	0	0	1	1	1
b6	—	—	→		0	0	1	1	0	0	1
b5	—	—	→		0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		¾	0	ħ	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	£	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	°	k	¼
1	1	0	0	C	FF		,	³	L	±	l	ij
1	1	0	1	D	CR		-	=	M	ƒ	m	½
1	1	1	0	E		RS	.	³	N	^	n	¨
1	1	1	1	F		US	/	?	O	_	o	´

DUTCH

b8	—	—	→		0	0	0	0	0	0	0
b7	—	—	→		0	0	0	0	1	1	1
b6	—	—	→		0	0	1	1	0	0	1
b5	—	—	→		0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		³	0	§	P	ù	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3			£	3	C	S	c	s
0	1	0	0	4		DC3	$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	°	k	à
1	1	0	0	C	FF		,	[	L	ç	l	ò
1	1	0	1	D	CR		-	=	M	é	m	è
1	1	1	0	E		RS	.	]	N	^	n	ì
1	1	1	1	F		US	/	?	O	_	o	³

ITALIAN

b8	—	—	→		0	0	0	0	0	0	0
b7	—	—	→		0	0	0	0	1	1	1
b6	—	—	→		0	0	1	1	0	0	1
b5	—	—	→		0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		³	0	´	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	ħ	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		×	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	½	k	°
1	1	0	0	C	FF		,	º	L	Ñ	l	ñ
1	1	0	1	D	CR		-	=	M	¿	m	ç
1	1	1	0	E		RS	.	ª	N	^	n	¨
1	1	1	1	F		US	/	?	O	_	o	³

S.SPANISH

b8	—	—	→		0	0	0	0	0	0	0
b7	—	—	→		0	0	0	0	1	1	1
b6	—	—	→		0	0	1	1	0	0	1
b5	—	—	→		0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		³	0	@	P	°	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	#	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	[	k	§
1	1	0	0	C	FF		,	<	L	ñ	l	¶
1	1	0	1	D	CR		-	=	M	]	m	†
1	1	1	0	E		RS	.	>	N	©	n	™
1	1	1	1	F		US	/	?	O	_	o	_

ENGLISH WP

Table 2

b8 — — →				0	0	0	0	0	0	0	0
b7 — — →				0	0	0	0	1	1	1	1
b6 — — →				0	0	1	1	0	0	1	1
b5 — — →				0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		⌘	0	^	ℓ	ſ	ρ
0	0	0	1	1		DC1	⊛	1	∇	Γ	α	γ
0	0	1	0	2			↿	2	∞	Θ	β	θ
0	0	1	1	3		DC3	⋯	3	Ψ	Σ	ψ	σ
0	1	0	0	4			±	4	Φ	→	φ	τ
0	1	0	1	5			∫	5	←	Ξ	ε	ξ
0	1	1	0	6			÷	6	<	∝	>	×
0	1	1	1	7	BEL		⌋	7	Λ	Δ	λ	δ
1	0	0	0	8	BS	CAN	✓	8	¶	≡	η	χ
1	0	0	1	9	HT		|	9	↑	Τ	ι	υ
1	0	1	0	A	LF		•	⌜	Π	≃	π	ζ
1	0	1	1	B	VT	ESC	⌜	⌊	§	†	κ	{
1	1	0	0	C	FF		`	⁑	Ω	⌊	ω	}
1	1	0	1	D	CR			⌋	∂	~	μ	≤
1	1	1	0	E		RS	⁼	⌀	∿	–	ν	≥
1	1	1	1	F		US	⌟	⌜	+	_	ο	●

SYMBOL

b8 — — →				0	0	0	0	0	0	0	0
b7 — — →				0	0	0	0	1	1	1	1
b6 — — →				0	0	1	1	0	0	1	1
b5 — — →				0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		¨	0	ß	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	£	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	_	k	#
1	1	0	0	C	FF		,	|	L	Ñ	l	ñ
1	1	0	1	D	CR		–	=	M	¿	m	ç
1	1	1	0	E		RS	.	¡	N	^	n	´
1	1	1	1	F		US	/	?	O	_	o	¥

INTERNATIONAL

b8 — — →				0	0	0	0	0	0	0	0
b7 — — →				0	0	0	0	1	1	1	1
b6 — — →				0	0	1	1	0	0	1	1
b5 — — →				0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		#	0	@	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	£	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	[	k	{
1	1	0	0	C	FF		,	<	L	\	l	|
1	1	0	1	D	CR		–	=	M	]	m	}
1	1	1	0	E		RS	.	>	N	^	n	~
1	1	1	1	F		US	/	?	O	_	o	´

UK ASCII

b8 — — →				0	0	0	0	0	0	0	0
b7 — — →				0	0	0	0	1	1	1	1
b6 — — →				0	0	1	1	0	0	1	1
b5 — — →				0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		°	0	§	P	`	p
0	0	0	1	1		DC1	¨	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	£	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	[	k	ä
1	1	0	0	C	FF		,	é	L	è	l	ö
1	1	0	1	D	CR		–	=	M	]	m	ü
1	1	1	0	E		RS	.	ç	N	^	n	à
1	1	1	1	F		US	/	?	O	_	o	´

SWISS GERMAN

Table 3

b8	—	—	→	0	0	0	0	0	0	0	0
b7	—	—	→	0	0	0	0	1	1	1	1
b6	—	—	→	0	0	1	1	0	0	1	1
b5	—	—	→	0	1	0	1	0	1	0	1
b4	b3	b2	b1	0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		½	0	§	P	`	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	£	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	Æ	k	æ
1	1	0	0	C	FF		,	<	L	Ø	l	ø
1	1	0	1	D	CR		-	=	M	Å	m	å
1	1	1	0	E		RS	.	>	N	^	n	¨
1	1	1	1	F		US	/	?	O	_	o	´

NORWEGIAN/DANISH

b8	—	—	→	0	0	0	0	0	0	0	0
b7	—	—	→	0	0	0	0	1	1	1	1
b6	—	—	→	0	0	1	1	0	0	1	1
b5	—	—	→	0	1	0	1	0	1	0	1
b4	b3	b2	b1	0	1	2	3	4	5	6	7
0	0	0	0	0	NUL		½	0	§	P	´	p
0	0	0	1	1		DC1	!	1	A	Q	a	q
0	0	1	0	2			"	2	B	R	b	r
0	0	1	1	3		DC3	#	3	C	S	c	s
0	1	0	0	4			$	4	D	T	d	t
0	1	0	1	5			%	5	E	U	e	u
0	1	1	0	6			&	6	F	V	f	v
0	1	1	1	7	BEL		'	7	G	W	g	w
1	0	0	0	8	BS	CAN	(	8	H	X	h	x
1	0	0	1	9	HT		)	9	I	Y	i	y
1	0	1	0	A	LF		*	:	J	Z	j	z
1	0	1	1	B	VT	ESC	+	;	K	Ä	k	ä
1	1	0	0	C	FF		,	<	L	Ö	l	ö
1	1	0	1	D	CR		-	=	M	Å	m	å
1	1	1	0	E		RS	.	>	N	^	n	ü
1	1	1	1	F		US	/	?	O	_	o	`

FINNISH/SWEDISH

Table 4

—CORRECTIONS—

This addendum lists corrections to the DX-100 Daisy Wheel Printer manual.

Page 4 , 15	After Modification

3. TOP OF FORM switch (TOF)
   1) Cut sheet (Standard specification)
      a. When this switch is pushed, the paper bail will automatically open, paper will go into the printer, and the paper bail will automatically close.
      b. When this switch is pushed again after printing, paper will be discharged.
   2) Cut sheet (Cut sheet feeder unit specification)
      When this switch is pushed, the existing sheet of paper will be discharged, the paper bail will automatically open, a new sheet of paper will be fed to the predetermined position, and the paper bail will automatically close.
   3) Continuous paper (Tractor unit specification)
      When this switch is pushed, paper will be advanced to the top of form position of the next page.

Paper End (PE) detection function

This function is enabled when an optional tractor unit or cut sheet feeder unit is used.

1. Tractor unit specification

1. When PE is detected intermediately during printing of a line, the printer will enter a Deselect state after printing the line and the ALARM indication lamp will light to sound the buzzer.
   * This state will last until a new sheet of paper is set.
2. Set a new sheet of paper. (Refer to page 2.)
3. The ALARM indication lamp will go out when the new sheet of paper is set.
4. Push the SELECT switch (SEL) to put the printer back into a Select state, and the printer will resume printing.

2. Cut sheet feeder unit specification

1. If a sheet of paper is inserted without setting it correctly, the printer will become in Deselect state and the ALARM indication lamp will light to sound the buzzer.
   * This state will last until a new sheet of paper is set or the printer is put into an Interrupt state.
2. Set a new sheet of paper.
3. Push the TOP OF FORM switch (TOF) and insert the sheet of paper.
4. Push SELECT switch (SEL) to put the printer back into a Select state, then the printer will resume printing.

FF (Form Feed)	0C H	Prints one line of data in data buffer and then feeds paper DIP switch specified lines less executed paper feed lines. Does not return to left margin.

VT (Vertical Tabulation)	0B H	After printing data up to VT, this command feeds paper to the next VT position. Does not operate if the next VT position is not set. Does not return to left margin.

Symbol	Function
ESC+"	Auto LF "ON"
ESC+#	Auto LF "OFF"
ESC+&	Shadow, double print clear
ESC+–	VT set at current position
ESC+/	Auto backward print set
ESC+0	Right margin set at current position
ESC+1	HT set at current position
ESC+2	All HT, VT clear
ESC+5	Forward print set
ESC+6	Backward print set
ESC+8	Current position HT clear
ESC+9	Left margin set at current position
ESC+A	Red print set
ESC+B	Black print set
ESC+C	Top margin, bottom margin clear
ESC+D	Paper fed backward 1/2 of VMI Note: When tractor unit is installed, this code is not available.
ESC+E	Auto underline set
ESC+F	Double print set
ESC+H	Auto strike-out set
ESC+I	Auto strike-out clear
ESC+L	Bottom margin set at current position
ESC+O	Double print set
ESC+P	PS mode set
ESC+Q	PS mode clear
ESC+R	Auto underline clear
ESC+S	Reset to switch panel, DIP switch
ESC+T	Top margin set at current position
ESC+U	Paper fed 1/2 of VMI
ESC+W	Shadow print set
ESC+X	WP clear
ESC+Y	Prints 20H of print code table
ESC+Z	Prints 7FH of print code table
ESC+\	Auto backward print clear

Page 22 , 24 **After Modification**

(4) Shadow Print

ESC + W sets shadow print.

ESC + &, ESC + X, CR clear shadow print.

This code moves carrier in 1/120 inch to make double strikes.

When double print is set during this mode, double print is set.

When shadow print is set, the printer prints to right.

Note: Because of shadow prints mechanism, back spacing in shadow printing sometimes differs in amount and makes gaps in printed character.

(5) Double Print

ESC + F, ESC + O set double print.

ESC + &, ESC + X, CR clear double print.

This code makes double strikes without moving carrier.

When shadow print is set during this mode, shadow print is set.

When double print is set, the printer prints to right.

Stress characters	ESC+F	1B, 46	Double print set
	ESC+O	1B, 4F	Double print set
	ESC+W	1B, 57	Shadow print set
	ESC+&	1B, 26	Double, shadow print clear
	ESC+E	1B, 45	Auto underline set
	ESC+R	1B, 52	Auto underline clear
	ESC+H	1B, 48	Auto strike-out set
	ESC+I	1B, 49	Auto strike-out clear
	ESC+X	1B, 58	WP clear

- Functional Comparison between Standard Specification and Tractor Unit and Cut Sheet Feeder Unit Specifications

	Standard Specification	Cut Sheet Feeder Unit Specification	Tractor Unit Specification
Function of TOP OF FORM switch	1. When this switch is pushed, the paper bail will automatically open, paper will be fed to the predetermined position [about 30 mm (1.2 in.) from the top end of paper] , and the paper bail will automatically close. 2. When this switch is pushed again after the end of printing, paper will be discharged.	When this switch is pushed, the existing sheet of paper will be discharged, the paper bail will automatically open, a new sheet of paper will be fed to the predetermined position, and the paper bail will automatically close.	When this switch is pushed, paper will be fed to the TOP OF FORM position of the next page.
FF (OC) code	1. When this code is received, the paper bail will automatically open, paper will be fed to the predetermined position [about 30 mm (1.2 in.) from the top end of paper] , and the paper bail will automatically close. 2. When this code is received again after the end of printing, paper will be discharged.	On reception of this code, the existing sheet of paper will be discharged, the paper bail will automatically open, a new sheet of paper will be fed to the predetermined position, and the paper bail will automatically close.	When this code is received, paper will be advanced to the TOP OF FORM position of the next page.
Paper end (PE) detection		The paper end detection takes place if there is no sheet left in cut sheet feeder when a sheet of paper is inserted in printer.	Detected when there is only small amount of paper left.

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EPSON OVERSEAS MARKETING LOCATIONS

EPSON AMERICA, INC.
3415 Kashiwa Street
Torrance, CA 90505 U.S.A.
Phone: (213) 539-9140
Telex: 182412

EPSON UK LTD 0442 61144
Dorland House
388 High Road,
Wembley, Middlesex, HA9 6UH, U.K.
~~Phone: (01) 902 8892~~
Telex: 8814169

EPSON DEUTSCHLAND GmbH
Am Seestern 24
4000 Düsseldorf 11
F.R. Germany
Phone: (0211) 5952-0
Telex: 8584786

EPSON ELECTRONICS (SINGAPORE) PTE. LTD.
No. 1 Maritime Square, #02-19
World Trade Centre, Singapore 0409
Phone: 2786071/2
Telex: RS; 39536

EPSON ELECTRONICS TRADING LTD.
Room 411, Tsimshatsui Centre,
East Wing 6, Ching Yee Road
Tsimshatsui Kowloon, Hong Kong
Phone: 3-694343/4
3-7213427
3-7214331/3
Telex: 64714

EPSON ELECTRONICS TRADING LTD. TAIWAN BRANCH
1, 81F K.Y. Wealthy Bldg. 206, Nanking
E. Road, Sec, 2, Taipei, Taiwan, R.O.C.
Phone: 536-4339
536-3567