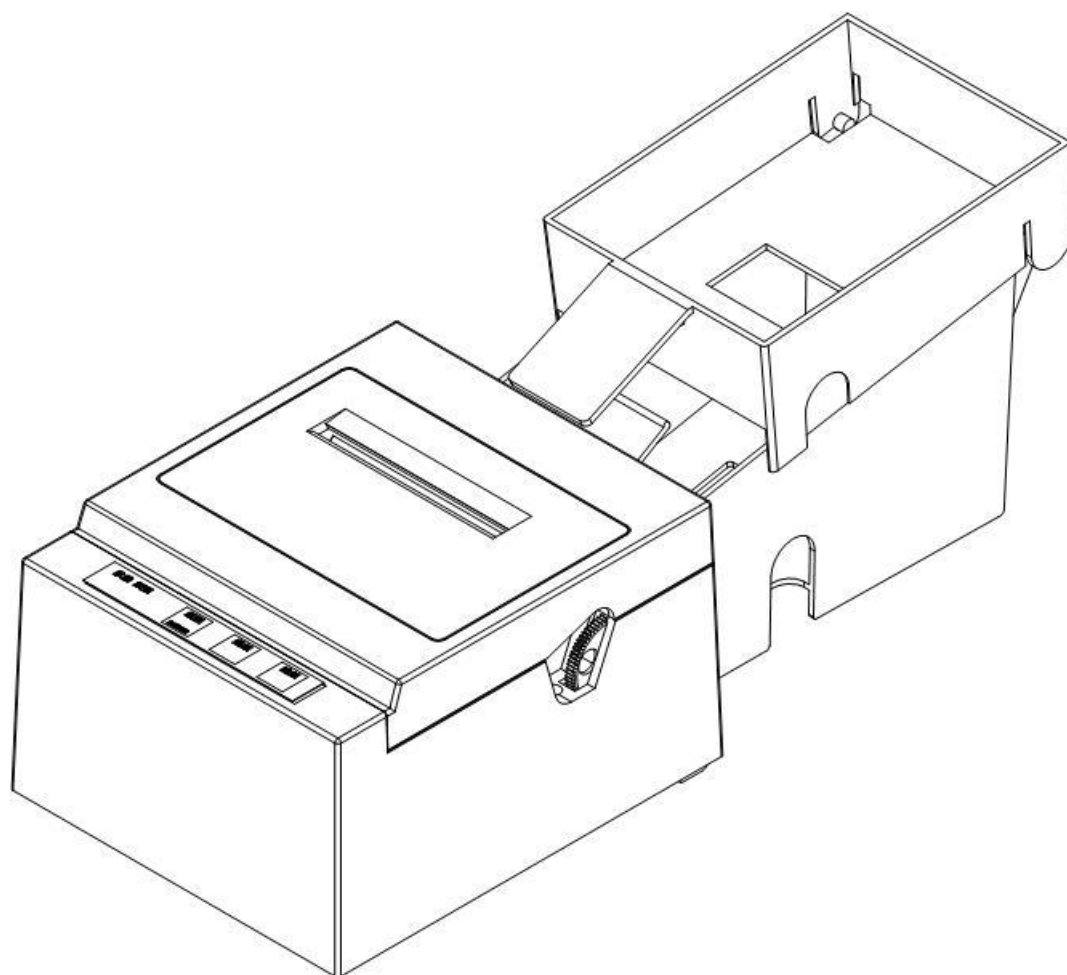




使用說明書

三聯式發票印表機

型號：WP-103s2



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1. 產品概述

1.1 產品敘述

WP-103s2 是一款為台灣三聯式發票設計的高速撞針型印表機，此款印表機內建傳輸介面 RS-232C，有抽換式介面卡槽可選配 USB 介面卡，能輕易與電腦或系統主機連接。配合專為三聯式發票設計存放空白發票 250 份之儲存槽及已列印之存根聯儲存槽，大大改善了其他機種功能之不足，且紙張儲存槽、機體上蓋為透明處理，對於紙張之動態行徑一覽無遺，便於監視紙張於列印中之情況。

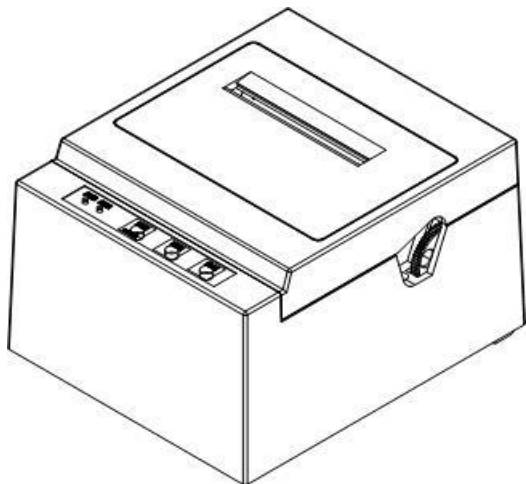
1.2 產品特色

1. 雙向高速列印，大約 3.6 行/秒。
2. 印表機內建 RS-232C 傳輸介面，有抽換式介面卡槽可選配 USB 介面卡。
3. 內在緩衝儲存器擁有 4K bytes 記憶容量(約 20 張發票)，既使列印中也可接收資料。
4. 內含中文 13951 字，BIG-5 碼 (特殊的 16x9 點狀中文字型或 16x16 點狀中文字型)。
5. 有可控制錢櫃的連接器接口。
6. 具『自動進紙及對位』功能。
7. 可偵測卡紙及發票用罄，並以燈號及聲響警示。
8. 可以用指撥開關調整依循 Star 或是 EPSON Esc/pos 指令模式。
9. 具有分別存放空白發票 250 份之儲存槽及已列印之存根聯儲存槽。

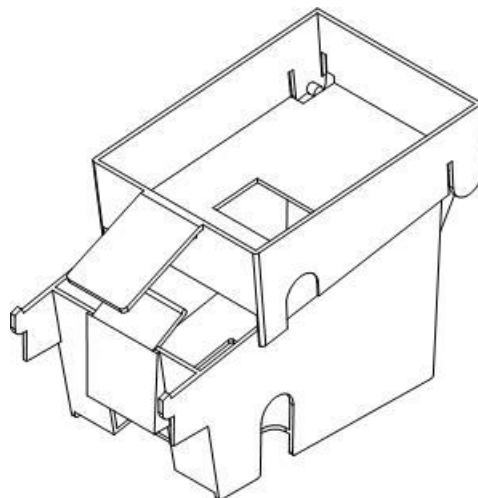
WP-103s2 三聯式發票印表機

1.3 開箱及配件

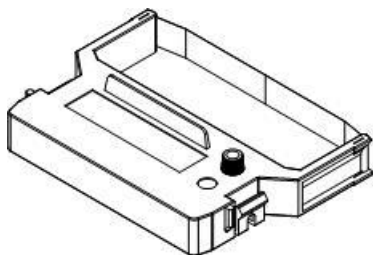
WP-103s2 三聯式發票印表機



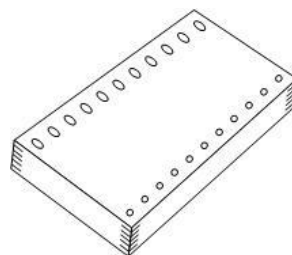
發票儲存槽



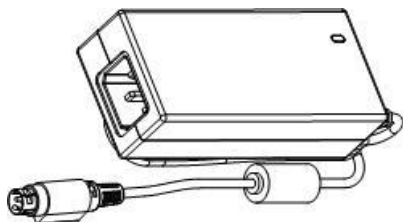
IR-61 色帶



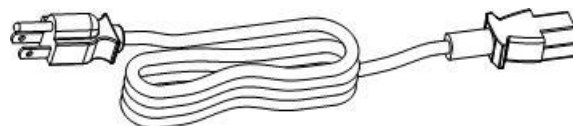
測試紙



24 VDC 電源供應器



電源線



選配

RS-232 傳輸線 (選用 RS-232 內建介面的版本)



USB 傳輸線 (選用增加 USB 介面卡的版本)



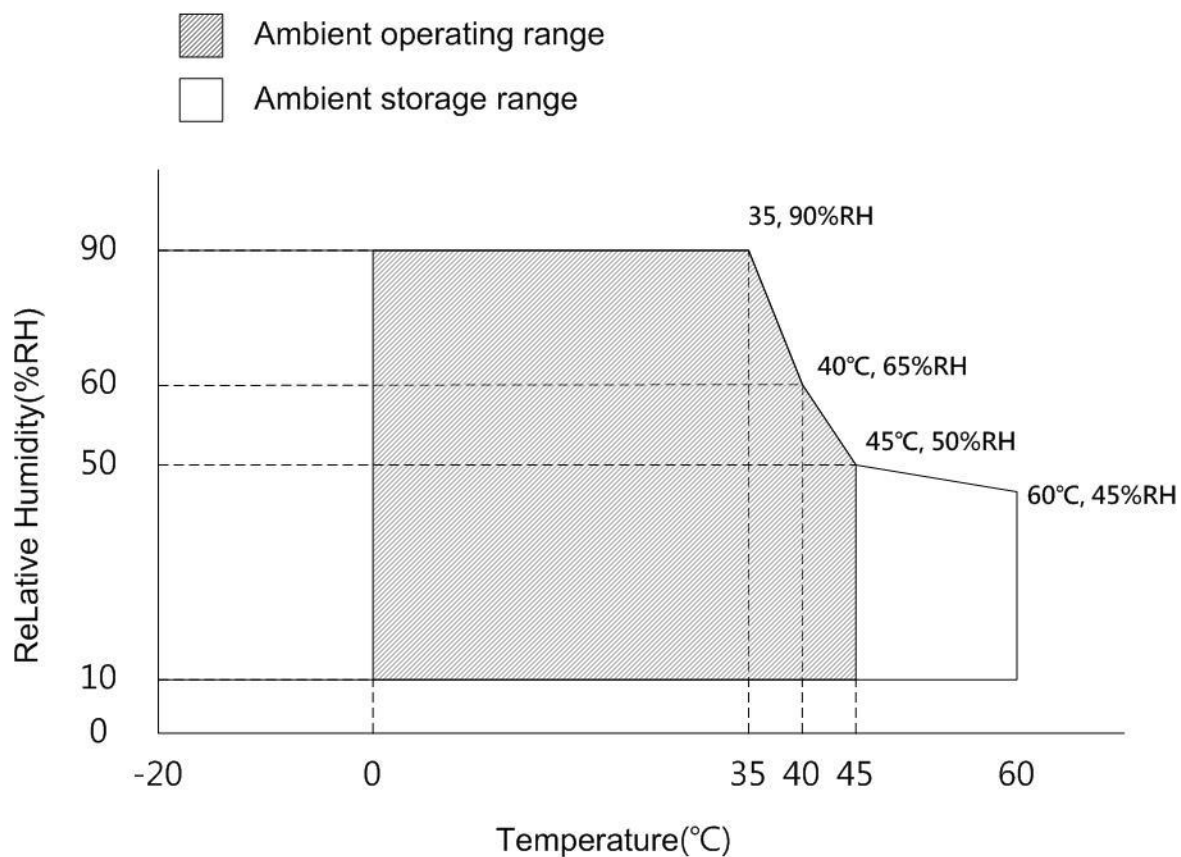
2. 規格

2.1 主要規格

項目			敘述		
1	列印方式		串列式點矩陣撞擊		
2	針頭型式		9 針		
3	列印方向		橫式雙向		
4	列印速度		大約 3.6 行/秒		
5	字型數目		96 ASCII 字型和 13951 個中文字型以上		
6	字元結構		英數字字型	中文字型	中文圖形字
			7 x 9 dots	16 x 9 dots	16 x 16 dots
7	每行字數		英數字 40 字/行，中文字 20 字/行		
8	進紙方式		連續報表紙帶孔進紙		
9	紙張規格		形式：連續報表紙形式 寬度：76 mm (3 inch) 厚度：0.06 ~ 0.09 mm 複寫：三聯式 (複寫二聯)		
10	送紙間距		前進 4.23 mm(1/6 inch)・後退 0.705mm (4/144 inch)		
11	進紙速度		20 行/秒		
12	狀態感應器		進紙就位感應器、錢櫃打開檢測		
13	信賴度 及壽命	印字頭	120 million character (approx. 200 million dot / pin)		
		機械	MCBF 8 million lines		
14	電源輸入		+24.0 VDC / 2.5 A		
15	錢箱控制數		1 drawer kick-out		
16	傳輸介面		內建 RS-232C 介面，有抽換式介面卡槽可選配 USB 介面		
17	淨重		印表機：1.71 kg；發票儲存槽：287g		
18	機器外觀尺寸		165.0 (W) x 195.0 (D) x 112.0 (H) mm		
19	容許溫度		Operating: 0 ~ 45°C		Storage: -20 ~ 60°C
20	容許濕度		Operating: 10 ~ 90 %RH		Storage: 10 ~ 90 %RH

2.2 環境條件

Item		Description
溫/濕度	操作條件	0 to 45°C (32 to 113°F), 10 to 90% RH 不允許冷凝，參閱下圖中的環境工作範圍。
	儲存條件(運輸狀態)	-20 to +60°C (-4 to 140°F), 10 to 90% RH (不包含紙張)

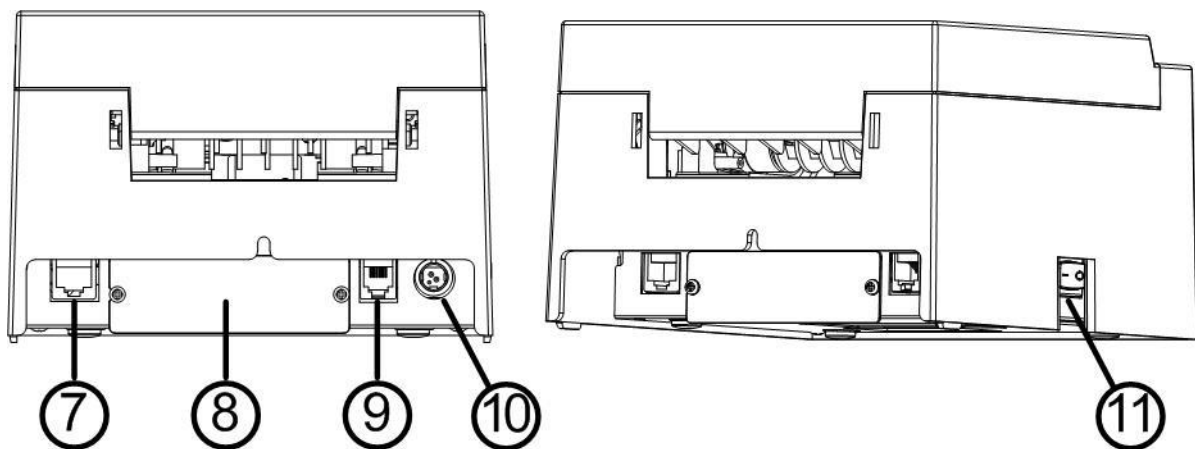
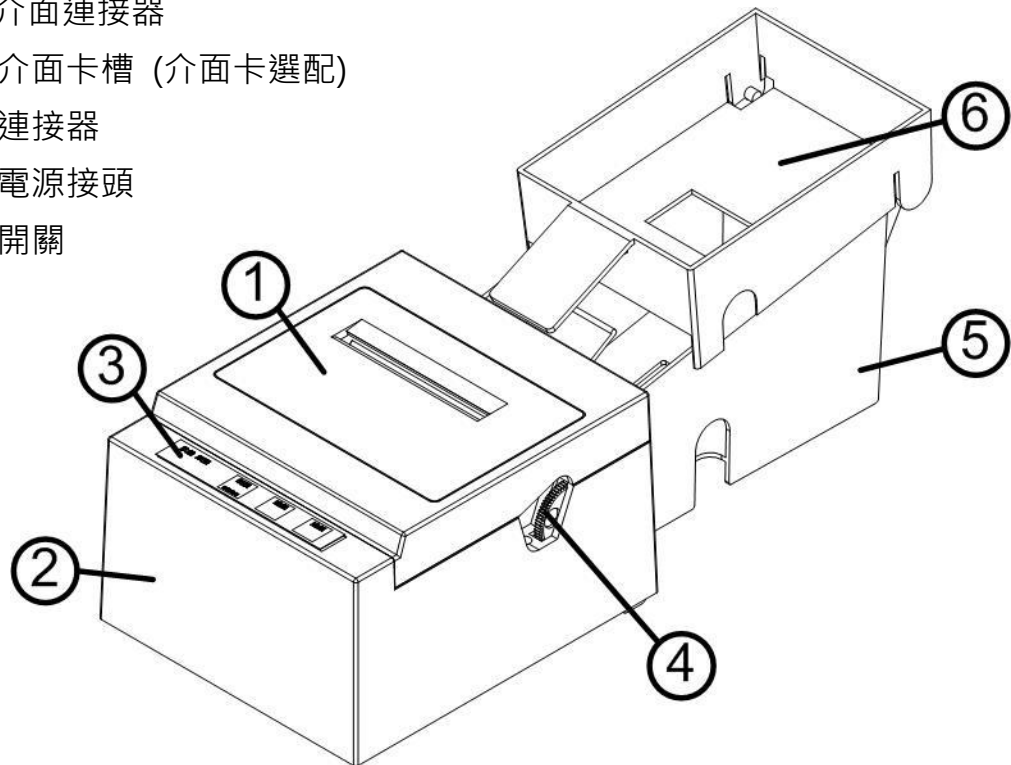


2.3 選擇使用位置

- 避免放置於直接日曬或溫度過高處(靠近熱源)。
- 避免於溫度過高處或容易受潮處使用或放置該印表機。
- 不可在多粉塵或骯髒的場所使用或放置該印表機。
- 選擇平穩處放置該印表機，劇烈的搖擺或振動可能會損害印表機。
- 確保該印表機有足夠的空間容易使用。

3. 外觀敘述

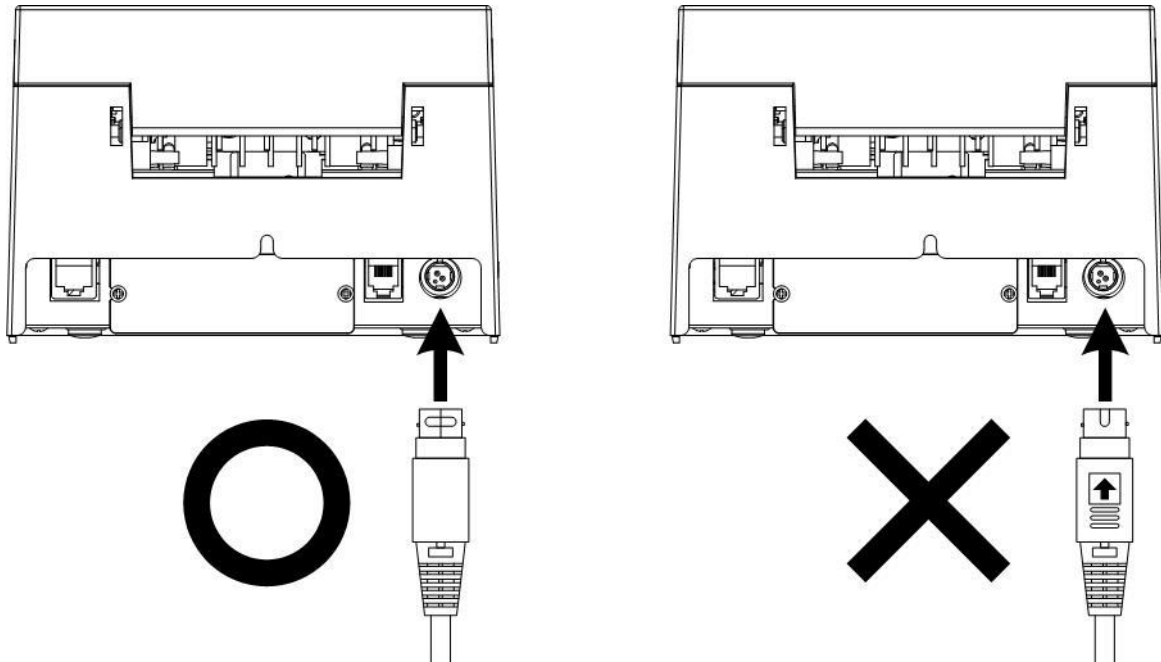
1. 上蓋
2. 底座
3. 操作鍵盤
4. 手動進紙齒輪
5. 空白發票儲存槽
6. 發票存根聯儲存槽
7. RS-232 介面連接器
8. 可抽換式介面卡槽 (介面卡選配)
9. 錢櫃介面連接器
10. 24V DC 電源接頭
11. 電源 I/O 開關



4. 安裝說明

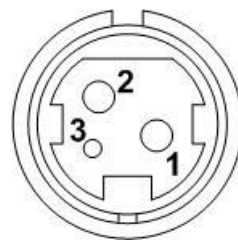
4.1 電源供應器接頭接到印表機

1. 確認電源開關已關閉。
2. 將電源供應器接頭插入打印機的電源連接器，請先確認電源供應器接頭上之箭頭符號朝下，如下圖示。
3. 將電源線插入插座，然後打開電源。



4. 連接器規格如下所示

腳位編號	腳位名稱
1	+24VDC
2	GND
3	NC
Shell	Frame GND



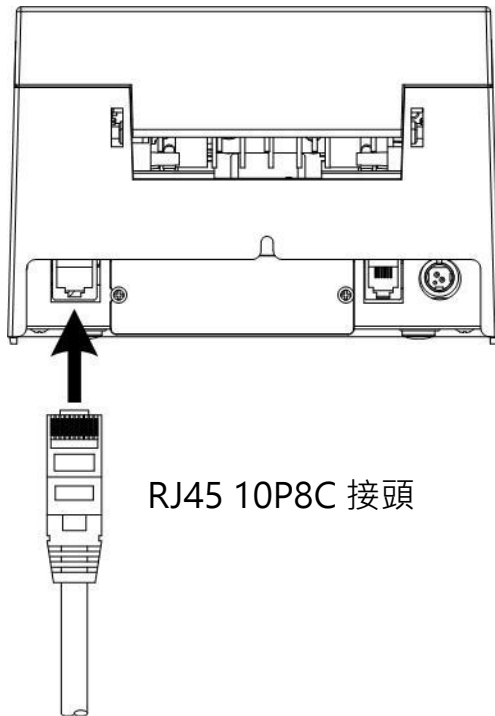
注意:

- 在連接到電源供應器之前，請確認電壓符合印表機的用電要求。
- 使用不正確的電源供應器會導致印表機嚴重的傷害。

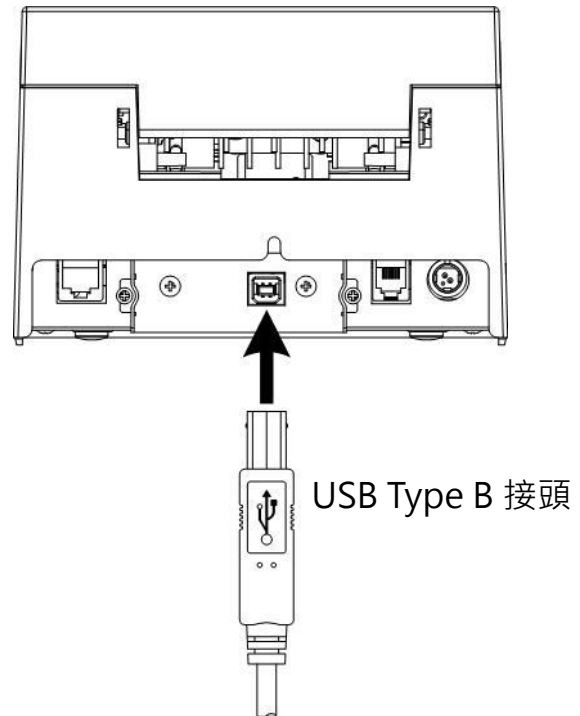
4.2 傳輸線接到印表機

1. 確認電源開關已關閉
2. 將傳輸線接頭接到印表機的連接器

1). 內建 RS-232C 介面

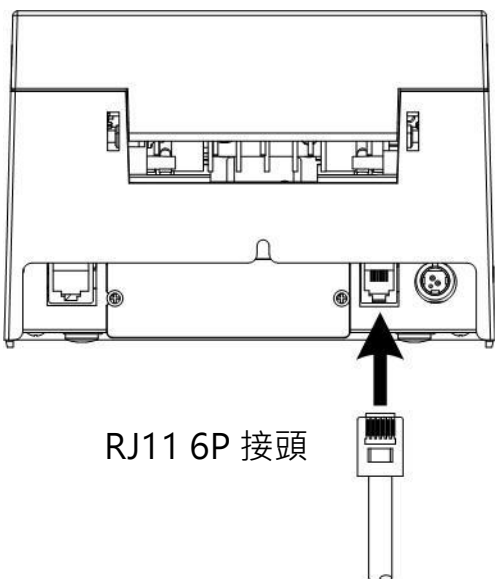


2). 增加選配 USB 介面卡



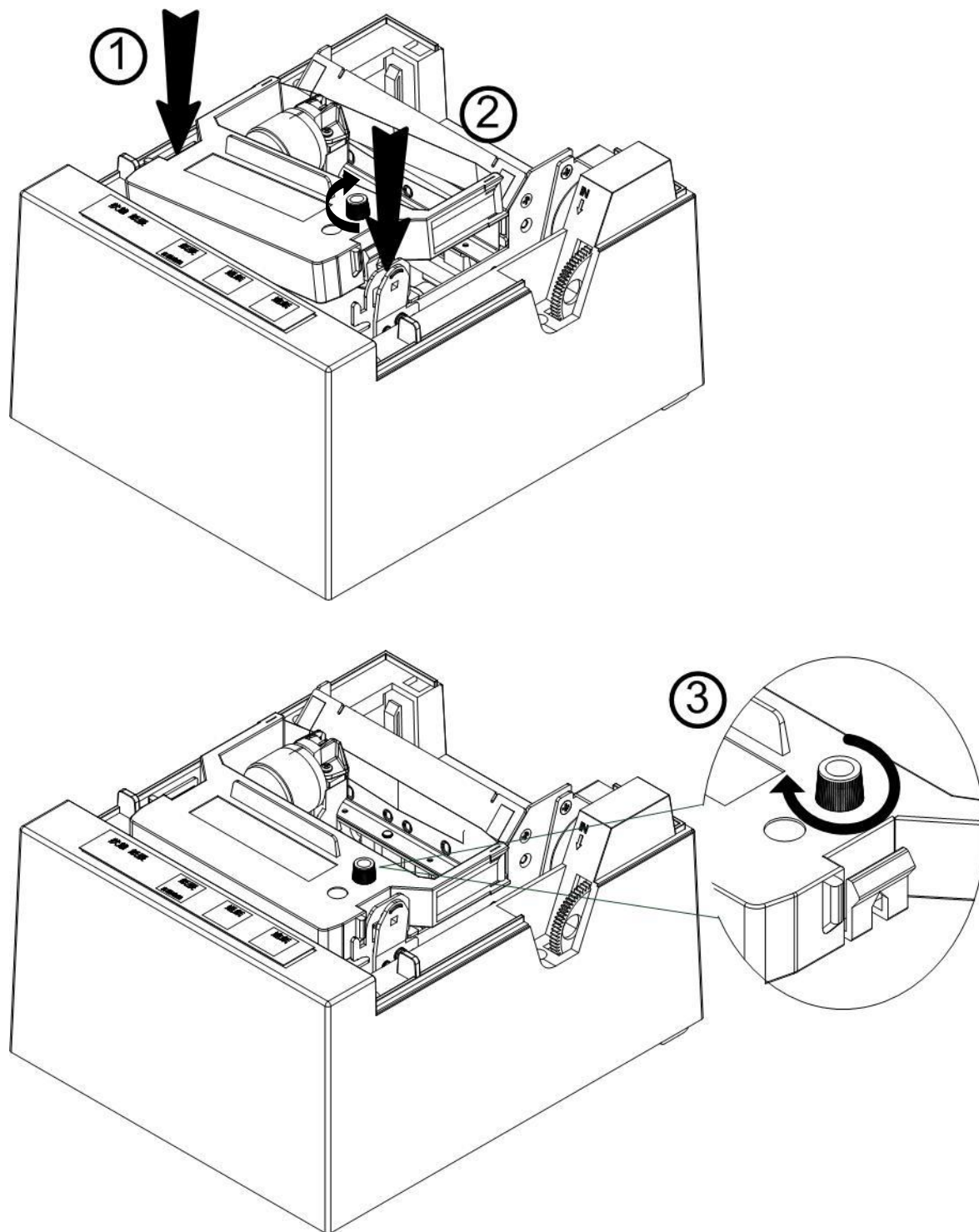
4.3 連接錢櫃到印表機

1. 確認電源開關已關閉。
2. 將錢櫃連接線牢固地插入印表機連接器。

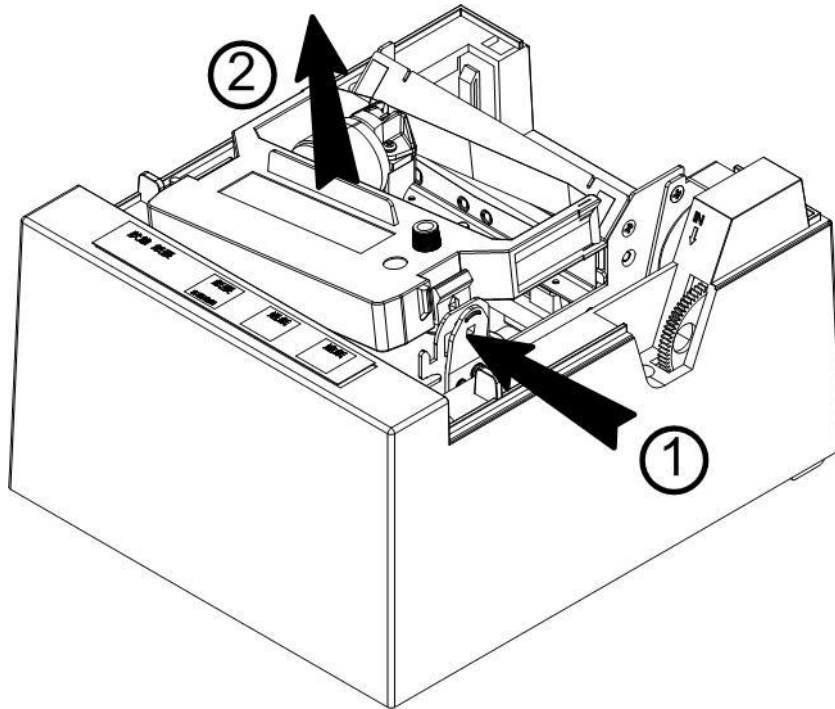


4.4 印表機 IR-61 色帶匣安裝

1. 使色帶介於印字頭前縫隙，左側卡榫往左下傾斜卡住印表機金屬卡鉤。
2. 稍微旋轉色帶旋鈕對準傳動軸，右側卡榫往下卡住印表機金屬卡鉤。
3. 順時針方向旋轉色帶旋鈕 3 圈使色帶平整緊繃，不要讓色帶鬆鬆垮垮的。

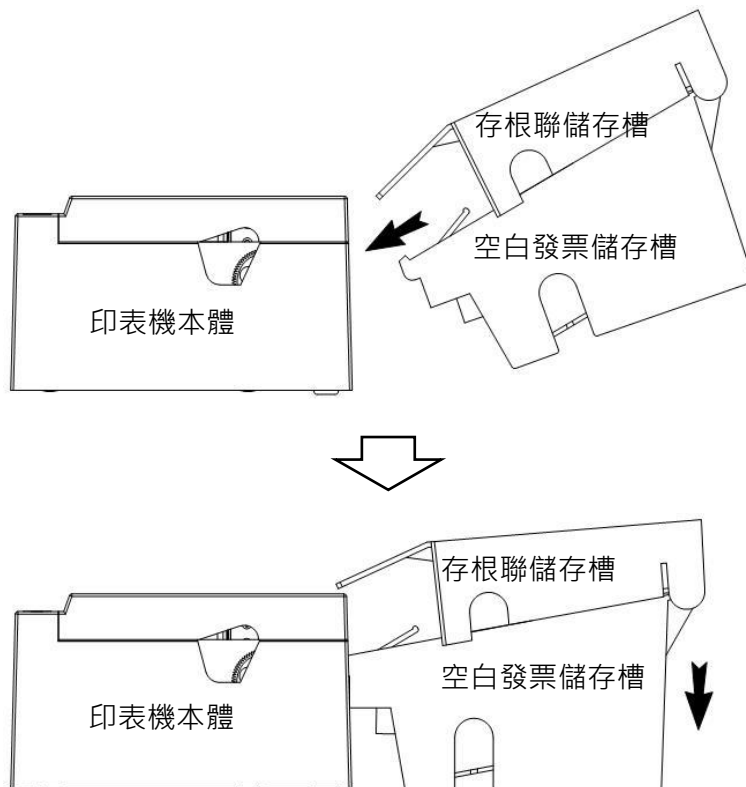


- 欲卸下色帶時，如下步驟，先將右側黑色彈性壓桿往內壓，用手拿住色帶提把往上使色帶脫離右、左側卡鉤，即可卸下色帶。



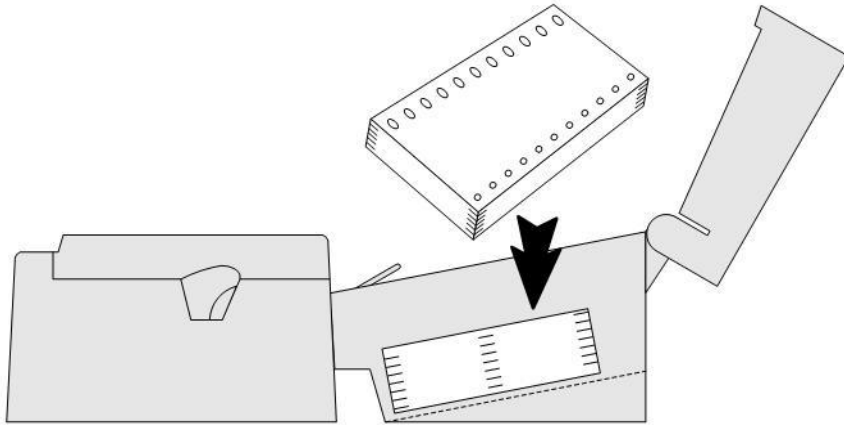
4.5 安裝發票儲存槽

- 傾斜發票儲存槽使卡鉤對準印表機本體後方的卡槽。
- 卡鉤對到印表機卡槽後，將發票儲存槽平放。



4.6 安裝發票紙

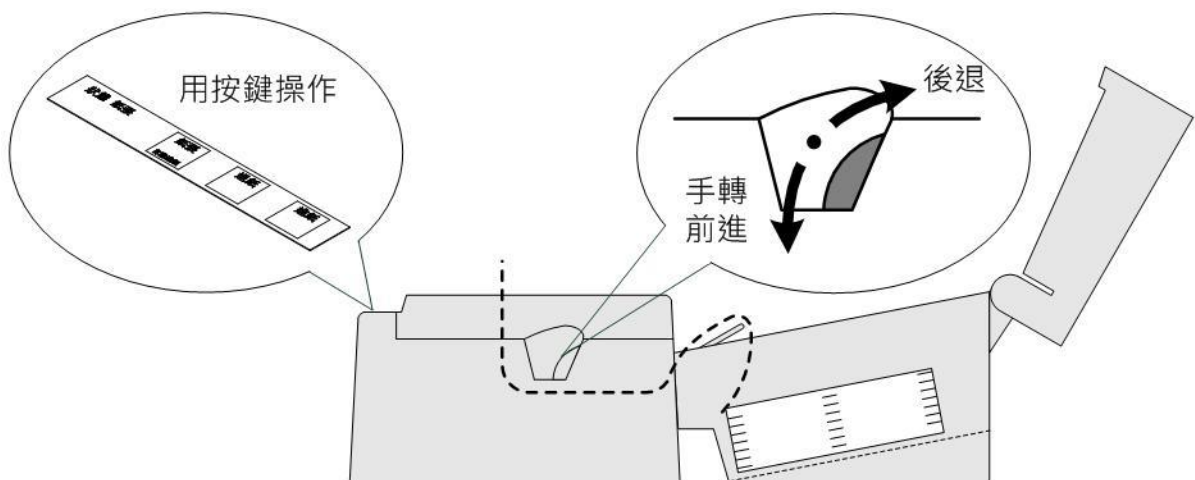
1. 打開印表機的電源開關。
2. 打開上方發票存根聯儲存槽，確認三聯式空白發票紙的邊緣是平直的而且整齊的被置放在下方的空白發票儲存槽。



3. 將發票紙放入印表機之進紙導槽，並對準好左、右兩側的孔位，用自動裝紙或手動方式將發票紙定位。
4. 自動裝紙(操作印表機上的鍵盤)
 - 1) 將紙張裝入機心同時按下鍵盤上的『進紙鍵』，直到印表機送紙凸輪確實帶動發票紙即可，但此時紙張指示燈仍必須保持恆亮的狀態。
 - 2) 再按『自動進紙鍵』印表機將自動帶紙到出口定位。

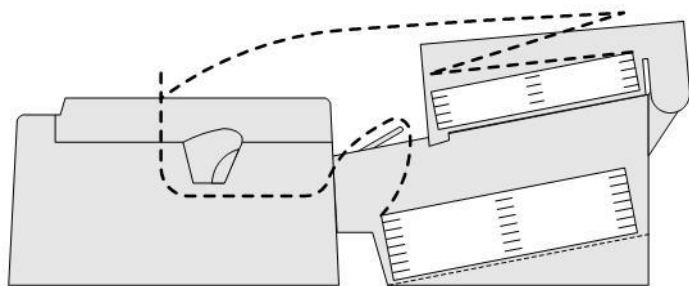
5. 手動裝紙

旋轉印表機右側缺口之齒輪，以目視配合手指旋轉齒輪，將發票前進或後退到定位，旋轉方向如下圖所示。



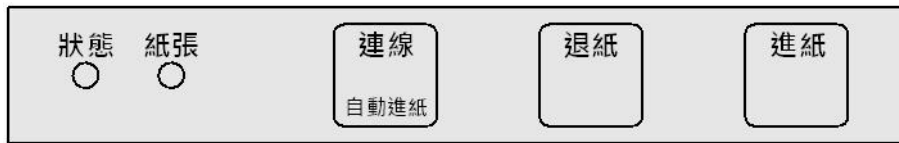
WP-103s2 三聯式發票印表機

6. 蓋上發票存根聯儲存槽，再將已列印之發票存根聯回收至發票儲存槽上槽。



5. 控制面板鍵盤操作

5.1 配置及功能說明



1. 連線/自動進紙鍵 (On Line/Auto Feed)

- 1) 當發票紙沒紙或機械發生故障，印表機自動進入離線狀態，當問題被解決後，按此鍵恢復連線。
- 2) 當紙張已經用完的錯誤發生時，換裝發票紙按此鍵可輔助將發票紙自動調整至出口定位。

2. 退紙鍵 (Reverse Feed)

- 1) 按此鍵一次後退紙張 4/144 吋，若持續按著此鍵則連續後退。
- 2) 按此鍵可微調紙張出口之位置。

3. 進紙鍵 (Forward Feed)

- 1) 按此鍵一次送一行 1/6 吋，若持續按著此鍵則連續送行。
- 2) 按此鍵可微調紙張出口之位置。

4. 狀態指示燈 (Status/綠色 LED)

- 1) 恆亮：印表機連線訊息。
- 2) 閃爍：故障或測試狀態中。

5. 紙張指示燈 (Paper/紅色 LED)

- 1) 恆亮：紙張已經用完的訊息。
- 2) 燈滅：印表機尚有紙張。

6. 蜂鳴器提示音

當印表機機械發生故障或發票紙張用罄時，除指示燈顯示狀況外印表機會產生『嗶』聲警示，警示方式如下：

印表機狀態	訊號源	蜂鳴器嗶聲
印字頭橫向傳動異常	DP	急促『嗶』5 聲後，連續短『嗶』3 聲循環
卡紙或異物阻擋印字頭移動		
直流馬達卡住		
未裝紙或紙張未定位	Paper sensor	連續短『嗶』3 聲循環
紙張已經用完		
印字頭運轉不會停	RP	無

5.2 印表機自我測試

1. 一般規格測試 (開機+進紙鍵)

- 1) 按住進紙按鍵同時重新開啟電源，印表機會產生一個短『嗶』聲，此時印表機進入『一般規格』測試狀態，會列印出含機器型號、程式版本、指撥開關設定、介面規格及字形等內容。
- 2) 列印完畢後印表機將自動停止，若欲再列印一張，請再按一次進紙按鍵。
- 3) 若欲結束上述之測試，請關機再重新開啟電源，可回復正常待機狀態。

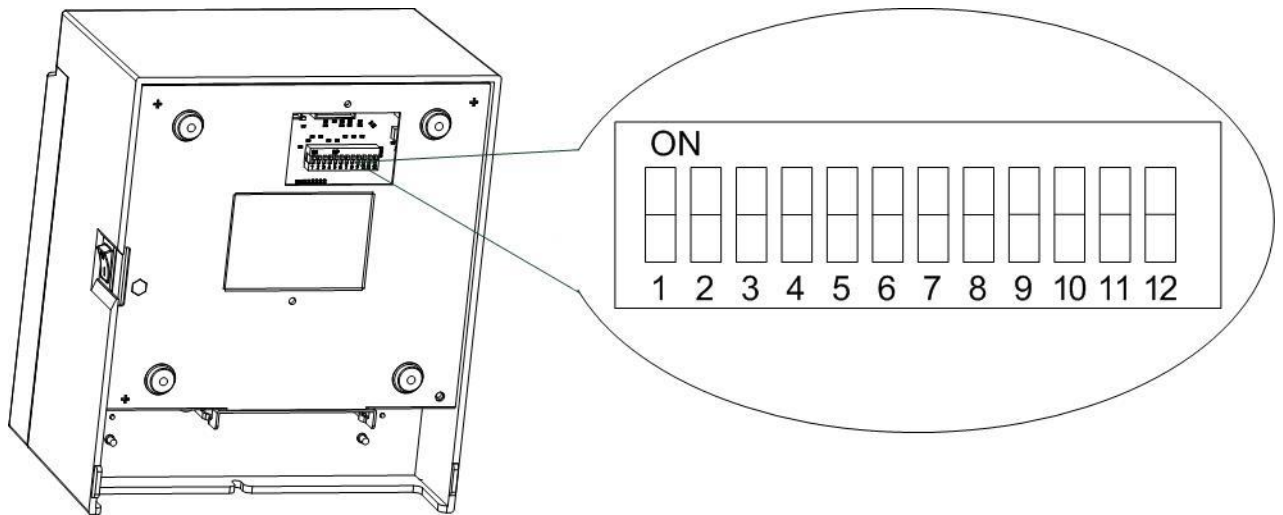
2. 介面通訊資料測試 Hexadecimal dump (開機+連線鍵)

- 1) 按住連線按鍵同時重新開啟電源，印表機會產生一個短『嗶』聲，此時印表機進入『介面通訊資料』測試狀態，會列印出 Hexadecimal dump 並待命。
- 2) 由電腦主機送至印表機之資料或命令將以 16 進制對應 ASCII 碼的方式列印出，電腦主機每送滿 8 Bytes 之資料或命令，印表機將自動列印出一行。
- 3) 若欲列印出未滿 8 Bytes 之資料或命令，請再按連線鍵一次，印表機會立即將資料或命令列印出。
- 4) 若欲結束上述之測試，請關機再重新開啟電源，可回復正常待機狀態。

6. 指撥開關的設定

6.1 指撥開關調整

1. 在變更設定任何指撥開關前，請確定印表機開關已關閉電源。
2. 用十字起子卸下底部鐵板和螺絲，可看見控制板上之指撥開關，再依需求調整設定。
3. 調整後請用一般規格自我測試頁檢視，確認指撥開關已經調到確實位置。



6.2 設定傳輸速率

DIP1-1	DIP1-2	傳輸速率
OFF	OFF	4800 bps
ON	OFF	9600 bps
OFF	ON	19200 bps
ON	ON	38400 bps

6.2 設定使用 Star Windows 驅動程式

使用 Star Windows 驅動程式時，除了調整此指撥開關外，另外仍須將 DIP 1-9 調整至 ON 模擬 Star 指令。

DIP1-4	Star 驅動程式相容
OFF	不使用 Star 驅動程式
ON	使用 Star 驅動程式

6.3 設定使用 EPSON FX-80 Windows 驅動程式

使用 FX-80 Windows 驅動程式時，使用者可自行在 Windows 內含印表機驅動程式庫內新增，但須自訂紙張規格如下：寬 8cm，高 14cm，上 0.51cm，下 3cm，左 0.8cm，右 0.48cm，其餘 0cm。

DIP1-5	FX-80 驅動程式相容
OFF	不使用 FX-80 驅動程式
ON	使用 FX-80 驅動程式

6.4 選擇印字頭出針力道

DIP1-7	DIP1-8	出針力道
OFF	OFF	特輕
ON	OFF	輕
OFF	ON	重
ON	ON	特重

6.5 設定指令

DIP1-9	指令
OFF	EPSON 相容指令
ON	Star 相容指令

6.6 設定雙向列印偏移修正

DIP1-10	雙向列印偏移修正
OFF	無修正
ON	偏移 1 點

6.7 設定每行列印字數

DIP1-11	設定每行列印字數
OFF	英數字 40 字，中文 20 字
ON	英數字 36 字，中文 18 字

6.8 設定中文列印模式

DIP1-12	中文列印模式
OFF	單向列印
ON	雙向列印

7. 傳輸介面說明

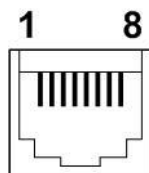
7.1 RS-232C 串列傳輸介面

1. 一般規格

- 1)資料轉換系統： 非同步序列資料
- 2)傳輸速率： 4800, 9600,19200, 38400 (由指撥開關設定)
- 3)字元長度：
 - Start bit : 1 bit
 - Data bit : 8 bits (Fixed)
 - Parity bit : No parity (Fixed)
 - Stop bit : 1 bit or more
- 4)訊號屬性：
 - Mark = Logic "1" (-3V to -12V)
 - Space = Logic "0" (+3V to +12V)
- 5)接收資料：
 - Mark = "1"
 - Space = "0"
- 6)資料接收 DTR 控制線：
 - Mark = Data transfer not possible
 - Space = Data transfer possible

2. 腳位定義

No.	訊號名稱	輸出/入	功能敘述
1	VPP	輸出	+24VDC 電源輸出
2	VPP	輸出	+24VDC 電源輸出
3	GND	-	邏輯地
4	GND	-	邏輯地
5	DTR	輸出	印表機忙碌信訊號
6	DSR	輸入	資料備妥
7	TXD	輸出	傳送資料線
8	RXD	輸入	接收資料線



3. 輸入/輸出訊號

1) RXD

這是接收串列資料的訊號。

2) DTR

當這個訊號出現時表示終端準備接受資料或指令。

假設資料在印表機忙碌時輸入，則資料將被接收到緩衝器直到緩衝器已滿。

“BUSY”訊號也同時發生在開啟電源、測試列印、沒紙、緩衝器欲滿或是印表機機械錯誤。

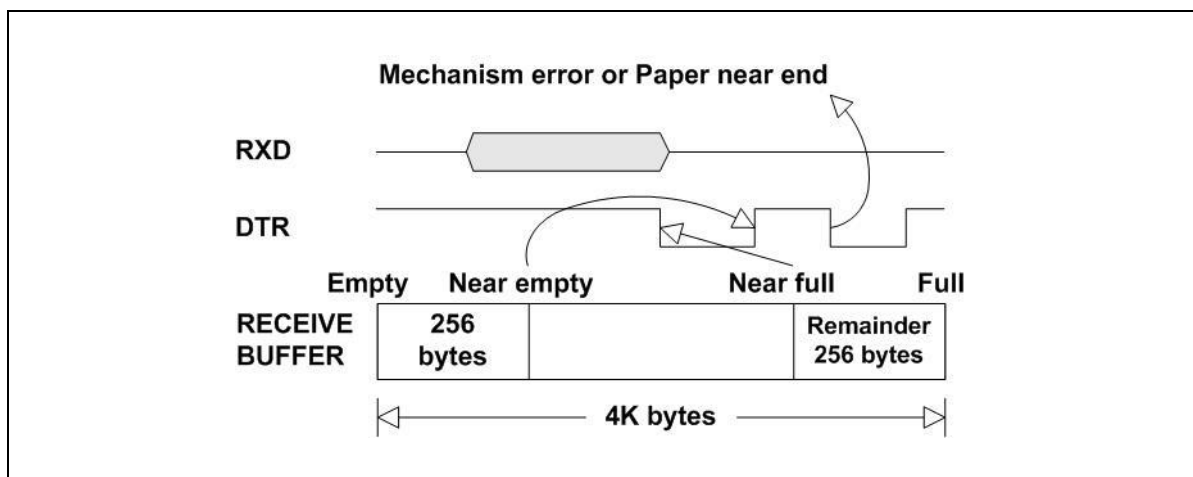
3) TXD

當傳送印表機的狀況訊息時，這些資料將傳送而不理會“DSR”。

4) GND

邏輯地。

4. 通訊時序圖



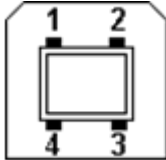
7.2 USB 介面

1. 規格

- USB B type/母座。
- 相容於 USB 2.0 規範, 全速傳輸模式(12 Mbps)。

2. 腳位定義

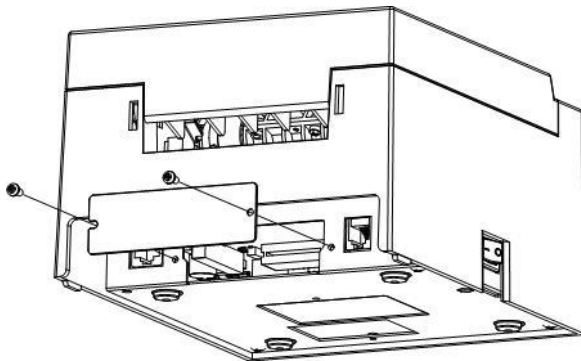
No.	訊號名稱	功能敘述
1	5VDC	Power input
2	USBD-	USB data signal -
3	USBD+	USB data signal +
4	GND	Signal ground



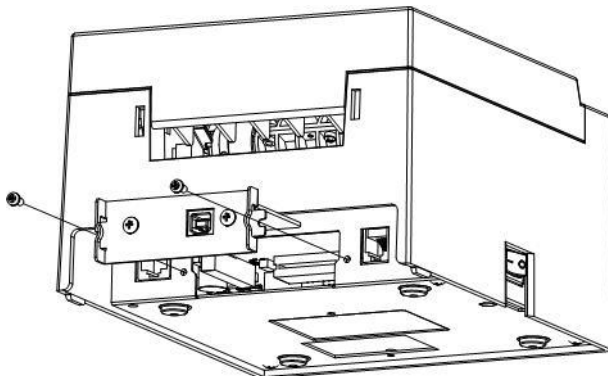
3. USB 介面卡安裝說明

USB 介面卡安裝於可抽換試介面卡槽，一般出貨無配備，請依需求增加此選配。

1) 先卸兩顆螺絲，拆下下介面卡槽遮蓋。



2) 將 USB 介面卡裝進插槽中，將左、右兩側用螺絲固定好。



8. 錢櫃之連結

8.1 一般規格

1. 資料轉換系統

訊號之輸出是由指令控制，主機可由指令返回之訊號得知錢櫃開或關的狀況。

2. 電氣特性

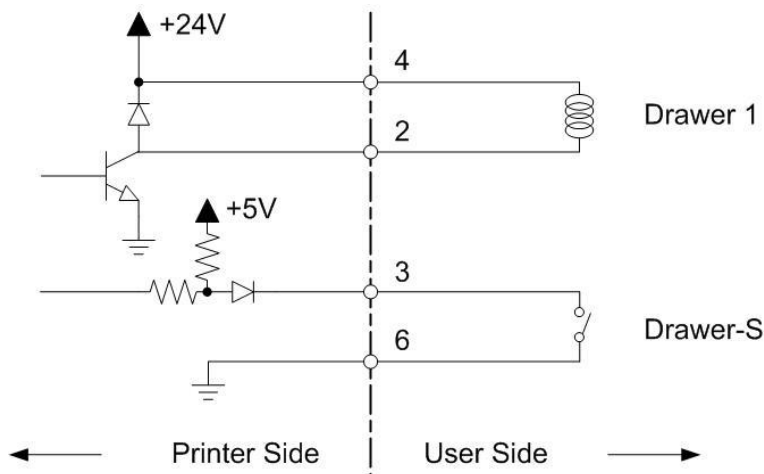
- 輸出電壓：DC 24V。
- 輸出電流：最大 0.8A (應在 510 ms 以內)。
- 開關訊號：“L” = 0 to 0.5V；“H” = 3 to 5V。

3. 腳位定義

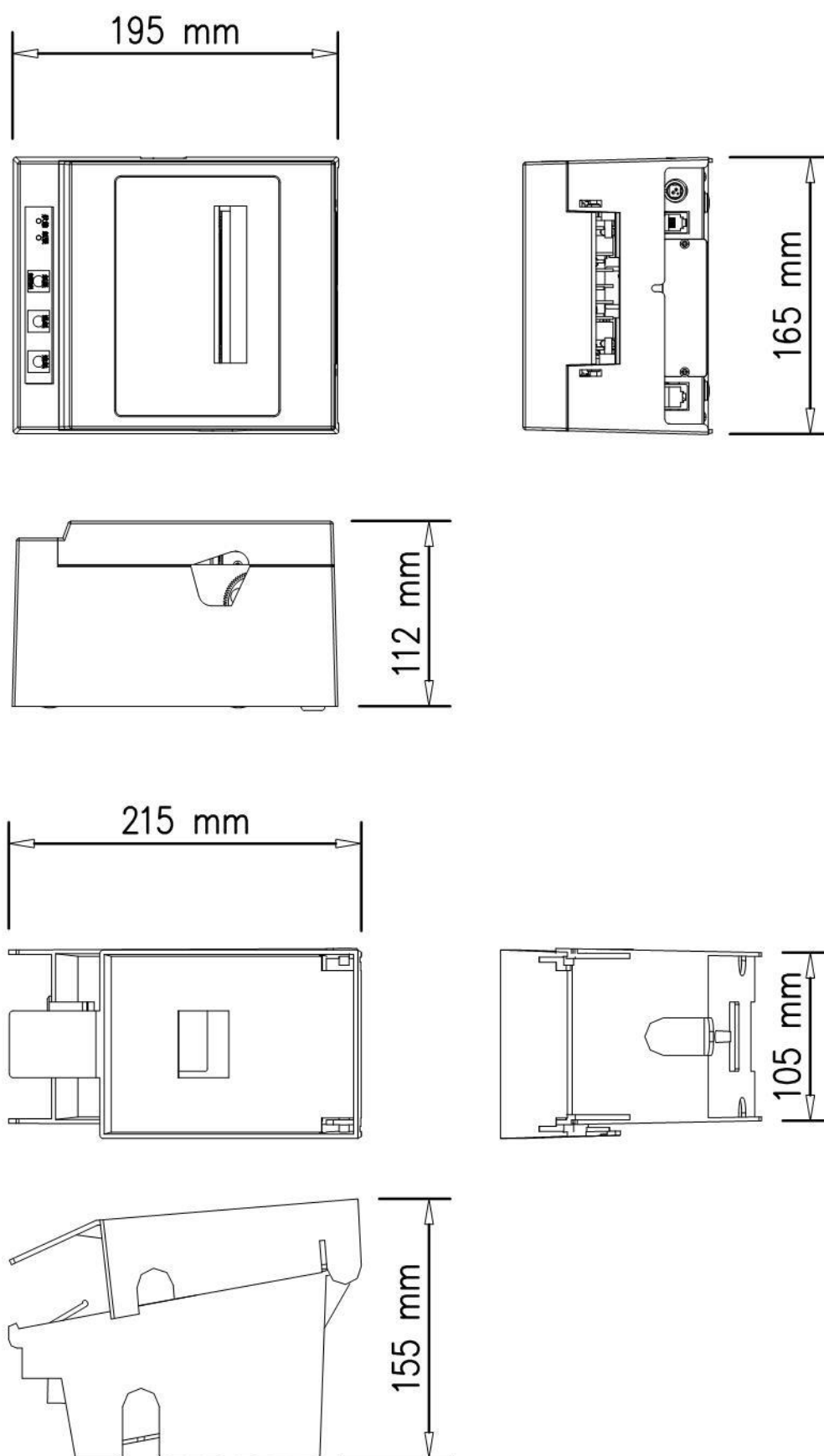
No.	訊號名稱	輸入/輸出
1	外殼地 (Frame GND)	--
2	錢櫃線圈	輸出 (Drawer 1)
3	錢櫃開關輸入訊號	輸入 (Drawer-S)
4	錢櫃線圈 (電源+24V)	輸出 (Drawer 1)
5	未連接 (NC)	--
6	錢櫃開關輸入訊號 (邏輯地 GND)	輸入 (Drawer-S)



4. 錢櫃驅動線路



9. 外部尺寸



Unit: mm

附錄 A. 印表機控制指令

附錄 A.1 指令格式說明

COMMAND

[Name]	Command name.
[Format]	<>H indicates hexadecimal, <> indicates decimal, []k indicates k times repeat to control code and frequency.
[Range]	Gives the allowable range for set argument and data.
[Description]	Complement particular.
[Note]	Gives important information on the setting and used of printer command, if necessary.

附錄 A.2 Esc/pos 相容指令集

※ 選用下表指令集，請再度確認指撥開關之設定是否正確。

Command	Code	Name and description
FF	<0C>H	Print and eject this sheet inch
LF	<0A>H	Print and line feed
ESC SP	<1B>H<20>H	Set character right-side spacing
ESC @	<1B>H<40>H	Initialize printer
ESC !	<1B>H<21>H	Set print mode
ESC *	<1B>H<2A>H	Set bit image mode
ESC 2	<1B>H<32>H	Set 1/6 inch line spacing
ESC 3	<1B>H<33>H	Set spacing using minimum units
ESC J	<1B>H<4A>H	Print and feed paper using minimum units
ESC R	<1B>H<52>H	Select international character set
ESC U	<1B>H<55>H	Enable/disable unidirectional print
ESC d	<1B>H<64>H	Print and feed paper n lines
ESC p	<1B>H<70>H	Generate pulse for output drawer
ESC u	<1B>H<74>H	Transmit peripheral device status
ESC v	<1B>H<74>H	Transmit paper status
ESC C	<1B>H<43>H	Set paper length with n lines
ESC C <0>	<1B>H<43>H<0>	Set paper length with n inches
ESC K	<1B>H<4B>H	Print and reverse feed paper by n /144 inch
ESC e	<1B>H<65>H	Print and reverse feed paper n line
ESC x	<1B>H<78>H	Set print mode for Chinese character
ESC ~	<1B>H<7E>H	Set print mode for Chinese character
ESC i	<1B>H<69>H	Execute full cut
ESC m	<1B>H<6D>H	Execute partial cut

FF

[Name]	Printing and eject this sheet .
[Format]	<0C>H
[Description]	Printing the last data and feed paper to beginning of next page.
[Reference]	Esc C

LF

[Name]	Print and line feed
[Format]	<0A>H
[Description]	Prints the data of in the buffer and feeds one line based on the current line spacing. ■ Set the print staring position to the beginning of the line.
[Reference]	Esc 2, Esc 3

ESC SP n

[Name]	Setting of character right-side spacing.
[Format]	<1B>H<20>H< n >
[Range]	$0 \leq n \leq 31$
[Description]	Set character right spacing with half dot unit. n indicates number of dots, add up spacing amount of n dots share to right of character. Therefore the character width become to following table.
[Default]	$n = 0$

Table: The width (dot) is that character right spacing is set to n dots

Font	Normal	Double width
7x9	9+n	(9+n) x 2
9x9	11+n	(11+n) x 2
16x9	18+n	(18+n) x 2
Unit: dot		

ESC @

[Name]	Initialize printer
[Format]	<1B>H<40>H
[Description]	Clears the data in the printer buffer and resets the print mode (Default state).

ESC ! *n*

[Name] Set print mode

[Format] <1B>H<21>H<*n*>

[Range] $0 \leq n \leq 255$

[Description] Set print mode.
Each bit of *n* is used as follows.

Bit	Function	Value	
		0	1
0	Character font	9 x 9 font	7 x 9 font
1	Undefined		
2	Undefined		
3	Undefined		
4	Double-height mode	Canceled	Set
5	Double-width mode	Canceled	Set
6	Undefined		
7	Undefined	Canceled	Set

[Note] ■ Underlines can be printed for all characters, but not for the space skipped an **HT** and Chinese characters.
■ When both double-height mode and double-width mode are set, quadruple-size characters are printed.

[Default] *n* = 1

ESC * *m n1 n2*[*d*] *n1* + 256 x *n2*

[Name] Set bit image mode

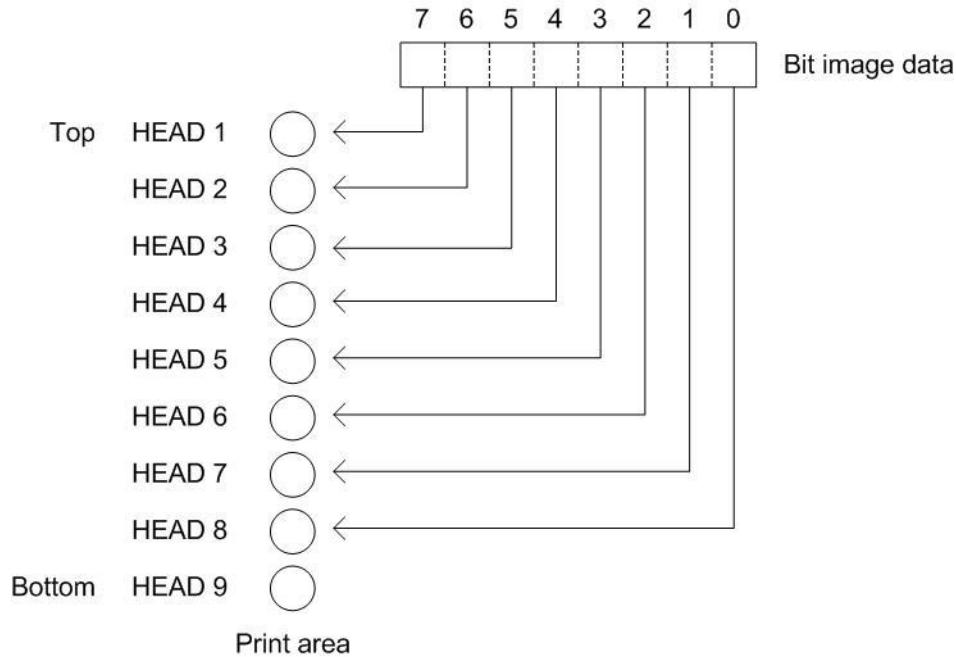
[Format] <1B>H<2A>H<*m*><*n1*><*n2*>[<*d*>]*n1* + 256 x *n2*

[Range] *m* = 0, 1
 $0 \leq n2 \leq 1$
 $0 \leq n1 \leq 255$
 $0 \leq d \leq 255$

[Description] Sets the bit image mode using *m* and the number of dots using *n1* and *n2*.
■ Divide the number of dots to be printed by 256. The integer answer is *n2* and the remainder is *n1*. Therefore, the number of dots in the horizontal direction is calculated as : *n1* + 256 x *n2*.
■ If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
■ "*d*" indicates the bit image data. Set a corresponding bit to 1 to print a dot, otherwise set it to 0.

■ The bit image modes selectable by *m* are as follows:

<i>m</i>	Vertical Direction	Horizontal Direction		
	Number of Vertical dots	Dot density	Horizontal Adjacent Dots	Total Number of Dots
0	8	Single density	Printable	180
1	8	Double density	Unprintable	360



- [Note]
- If *m* is out of range, the data following *n1* (and the data including *n1*) is processed as normal data.
 - After printing a bit image, the printer returns to normal data processing.
 - The relationship between the image data and the dots to be printed is as follow:

ESC 2

- [Name] Set 1/6 inch line spacing
- [Format] <1B>H<32>H
- [Description] Set the line spacing to 1/6 of an inch.

ESC 3 *n*

- [Name] Set spacing using minimum units
- [Format] <1B>H<33>H<*n*>
- [Description] Set the line spacing to *n*/144 inches.
- [Default] *n* = 24 (1/6 of an inch)

ESC J *n*

[Name]	Print and feed paper using minimum units
[Format]	<1B>H<4A>H< <i>n</i> >
[Range]	0≤ <i>n</i> ≤255
[Description]	Prints one line of data from the print buffer and feeds the paper <i>n</i> /144 inches. ■ Set the print starting position to the beginning of the line. ■ The predetermined line spacing remains unchanged.

ESC R *n*

[Name]	Selection of international character set.
[Format]	<1B>H<52>H< <i>n</i> >
[Range]	0≤ <i>n</i> ≤10
[Description]	Select following country character by value of <i>n</i> .
[Default]	<i>n</i> = 0

Each bit of *n* is used as follows.

<i>n</i>	字型設定
0	美國
1	法國
2	德國
3	英國

<i>n</i>	字型設定
4	丹麥 I
5	瑞典
6	義大利
7	西班牙

<i>n</i>	字型設定
8	日本
9	挪威
10	丹麥 II

ESC U *n*

[Name]	Enable / disable unidirectional print
[Format]	<1B>H<55>H< <i>n</i> >
[Range]	0≤ <i>n</i> ≤255
[Description]	Enable or disable unidirectional print, <i>n</i> is valid lowest-order bit. <i>n</i> as follows: When Bit 0 = 1, Enable unidirectional print. When Bit 0 = 0, Disable unidirectional print.
[Default]	<i>n</i> = 0

ESC d *n*

[Name]	Print and feed paper <i>n</i> line
[Format]	<1B>H<64>H< <i>n</i> >
[Range]	0≤ <i>n</i> ≤255
[Description]	Prints data in the print buffer and feed the paper <i>n</i> line.

ESC p m n1 n2

[Name]	Generate drawer kick-out drive pulse
[Format]	<1B>H<70>H<m> <n1> <n2>
[Range]	$m = 0$ $0 \leq n1 \leq 255$ $0 \leq n2 \leq 255$
[Description]	The defined pulse, On time is $n1 \times 2$ ms, Off time is $n2 \times 2$ ms.
[Note]	Please don't execute "generate pulse" successively because of it is possible to causes over heat of drawer solenoid. Please use designated standard solenoid.
[Reference]	Chapter 9

ESC u n

[Name]	Transmit peripheral device status
[Format]	<1B>H<75>H<n>
[Range]	$n = 0, <30>H$
[Description]	Transmit the current status of connector pin n .
[Note]	Transmitted status as following table.

Bit	Function	Value	
		0	1
0	Pin 3 level	"LOW"	"HIGH"
1	Undefined		
2	Undefined		
3	Not used	FIXED TO "1"	-
4	Not used	FIXED TO "1"	-
5	Undefined		
6	Undefined		
7	Undefined		

- When the connector is not used, the value of bit 0 is always "1".
- The printer transmits only 1 byte without confirming that the host is ready to receive data (DSR).
- There may be a time lag between receiving this command and transmitting the status, so the user should be aware of this.

[Reference]	Chapter 9
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ESC v

[Name] Transmit printer status
 [Format] <1B>H<76>H
 [Description] Transmit the current printer status.
 [Note] Transmitted status as following table.

Bit	Function	Value	
		0	1
0	Paper end	Paper present	Paper end
1	Undefined		
2	Undefined		
3	Not used	Fixed to "1"	-
4	Not used	Fixed to "1"	-
5	Undefined		
6	Undefined		
7	Undefined		

- The printer transmits only 1 byte without confirming that the host is ready to receive data (DSR).
- There may be a time lag between receiving this command and transmitting the status, so the user should be aware of this.

ESC C n

[Name] Set page length at n lines
 [Format] <1B>H<43>H<n>
 [Range] $0 \leq n \leq 255$
 [Description] Set page length at n lines based on the current line spacing.
 [Reference] **Esc 2, Esc 3**
 [Default] $n = 33$

ESC C <0> n

[Name] Set page length at n inches
 [Format] <1B>H<43>H<0>H<n>
 [Range] $0 \leq n \leq 127$
 [Description] Set page length at n inches
 [Default] $n = 5.5$ inches

ESC K *n*

[Name]	Print and reverse feed paper by <i>n</i> /144 inch.
[Format]	<1B>H<4B>H< <i>n</i> >
[Range]	0 ≤ <i>n</i> ≤ 255
[Description]	Prints the data in the print buffer and feeds the paper by <i>n</i> /144 inch in the reverse direction. ■ Set the print starting position to the beginning of the line. ■ The predetermined line spacing remains unchanged.

ESC e *n*

[Name]	Print and reverse feed paper <i>n</i> line
[Format]	<1B>H<65>H< <i>n</i> >
[Range]	0 ≤ <i>n</i> ≤ 255
[Description]	Prints data in the print buffer and feed the paper <i>n</i> lines in reverse direction.

ESC c 5 *n*

[Name]	Enable/disable panel switch
[Format]	<1B>H<63>H<35>H< <i>n</i> >
[Range]	0 ≤ <i>n</i> ≤ 255
[Description]	Enable or disable panel switch. ■ Only the lowest bit of <i>n</i> is valid. When Bit 0 = 1, Disable panel switch. When Bit 0 = 0, Enable panel switch. ■ If the panel switch is disabled by this command, the panel switch is unusable. Therefore, paper feeding using the FEED switch cannot be executed (except when the error of printer is occurring).
[Default]	<i>n</i> = 0

ESC x *n*

[Name]	Set print mode for Chinese character
[Format]	<1B>H<78>H< <i>n</i> >
[Range]	<i>n</i> = <30>H, <31>H
[Description]	Set print mode for Chinese character
[Note]	Each byte of <i>n</i> is used as follows.

Byte	Function
<30>H	Double-height Chinese character
<31>H	Normal Chinese character

ESC ~ n

[Name] Set print mode for Chinese character

[Format] <1B>H<7E>H<n>

[Range] $0 \leq n \leq 255$

[Description] Set print mode for Chinese character
Each bit of *n* is used as follows.

Bit	Function	Value	
		0	1
0	Double-height	Canceled	Set
1	Double-width	Canceled	Set
2	Single density	Canceled	Set
3	Bi-directional print	Canceled	Set
4	Undefined		
5	Undefined		
6	Undefined		
7	Undefined		

[Note] ■ When both double-height mode and double-width mode are set, quadruple-size characters are printed.

[Default] *n* = <5>H

ESC i

[Name] Execute full cut

[Format] <1B>H<69>H

[Description] Execute a full-cut of the paper

[Note] ■ Valid only when input at the beginning of line.
■ This command is valid only when attaching mechanism with paper-cutter.

ESC m

[Name] Execute partial cut

[Format] <1B>H<6D>H

[Description] Execute a partial-cut of the paper

[Note] ■ Valid only when input at the beginning of line.
■ This command is valid only when attaching mechanism with paper-cutter.

附錄 A.3 Star 相容指令集

※ 選用下表指令集，請再度確認指撥開關之設定是否正確。

Command	Code	Name and description
FF	<0C>H	Print and eject this sheet
LF	<0A>H	Print and line feed
CAN	<18>H	Clear data buffer and line buffer
Esc @	<1B>H<40>H	Initialize printer
ESC M	<1B>H<4D>H	Select font matrix 7x9
ESC P	<1B>H<50>H	Select font matrix 9x9
ESC :	<1B>H<3A>H	Select font matrix 9x9
SO	<0E>H	Set double-width character mode
DC4	<14>H	Cancel double-width character mode
ESC W	<1B>H<57>H	Set/cancel double-width character mode
ESC -	<1B>H<2D>H	Set/cancel underline mode
ESC z	<1B>H<7A>	Set 1/6 or 1/12 inch line spacing
ESC 0	<1B>H<30>H	Set 1/8 inch line spacing
ESC 3	<1B>H<33>H	Set line spacing by n / 144 inch
ESC a	<1B>H<61>H	Print and feed paper n lines
ESC C	<1B>H<43>H	Set paper length with n lines
ESC C <0>	<1B>H<43>H<0>	Set paper length with n inches
ESC K	<1B>H<4B>H	Set 8 dot single density bit image mode
ESC L	<1B>H<4C>H	Set 8 dot double density bit image mode
ESC J	<1B>H<4A>H	Print and feed paper by n / 72 inch
ESC h	<1B>H<68>H	Set/cancel double-height character mode
ESC BEL	<1B>H<07>H	Generate pulse for output drawer
BEL	<07>H	Output drawer 1
FS	<1C>H	Output drawer 1
SUB	<1A>H	Output drawer 1
EM	<19>H	Output drawer 1
ESC U	<1B>H<55>H	Enable/disable singleness direction print
RS	<1E>H	Generates a shot alarm
ESC d	<1B>H<64>H	Drive auto-cutter
ESC R	<1B>H<52>H	Select international character set
ESC e	<1B>H<65>H	Enable/disable panel switch
ESC x	<1B>H<78>H	Set print mode for Chinese character
ESC ~	<1B>H<7E>H	Set print mode for Chinese character

FF

[Name]	Printing and eject this sheet .
[Format]	<0C>H
[Description]	Printing the last data and feed paper to beginning of next page.
[Reference]	Esc C

LF

[Name]	Print and line feed
[Format]	<0A>H
[Description]	Prints the data of in the buffer and feeds one line based on the current line spacing. ■ Set the print starting position to the beginning of the line.
[Reference]	Esc 2, Esc 3

CAN

[Name]	Clear data buffer and line buffer
[Format]	<18>H
[Description]	Clears the data in the printer buffer and resets the print mode (Default state).

ESC @

[Name]	Initialize printer
[Format]	<1B>H<40>H
[Description]	Clears the data in the printer buffer and resets the print mode (Default state).

ESC M

[Name]	Select font matrix 7x9
[Format]	<1B>H<4D>H
[Description]	Select font matrix 7x9

ESC P

[Name]	Select font matrix 9x9
[Format]	<1B>H<50>H
[Description]	Select font matrix 9x9

ESC :

[Name]	Select font matrix 9x9
[Format]	<1B>H<50>H
[Description]	Select font matrix 9x9

S0

[Name]	Set double-width character mode
[Format]	<0E>H
[Description]	Set double-width character mode
[Reference]	Esc W

DC4

[Name]	Cancel double-width character mode
[Format]	<14>H
[Description]	Cancel double-width character mode
[Reference]	Esc W

ESC W *n*

[Name]	Enable/disable double-width character mode
[Format]	<1B>H<57>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	Enable or disable double-width character mode. ■ Only the lowest bit of <i>n</i> is valid. When Bit 0 = 1, Enable double-width character mode. When Bit 0 = 0, Disable double-width character mode.
[Default]	<i>n</i> = 0
[Reference]	SO, DC4

ESC - *n*

[Name]	Enable/disable underline character mode
[Format]	<1B>H<7E>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	Enable or disable underline character mode. ■ Only the lowest bit of <i>n</i> is valid. When Bit 0 = 1, Enable underline character mode. When Bit 0 = 0, Disable underline character mode.
[Default]	<i>n</i> = 0
[Reference]	SO, DC4

ESC z *n*

[Name]	Set 1/6 or 1/12 inch line spacing
[Format]	<1B>H<7A>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	Set the line spacing to 1/6 or 1/12 of an inch. ■ Only the lowest bit of <i>n</i> is valid. When Bit 0 = 1, Set 1/6 inch line spacing. When Bit 0 = 0, Set 1/12 inch line spacing.
[Default]	<i>n</i> = 1

ESC 0

[Name]	Set 1/8 inch line spacing
[Format]	<1B>H<30>H
[Description]	Set the line spacing to 1/8 of an inch.

ESC y *n*

[Name]	Set line spacing by <i>n</i> / 144 inches.
[Format]	<1B>H<79>H< <i>n</i> >
[Description]	Set the line spacing to <i>n</i> / 144 inches.
[Default]	<i>n</i> = 24 (1/6 of an inch)

ESC a *n*

[Name]	Print and feed paper <i>n</i> line
[Format]	<1B>H<61>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	Prints data in the print buffer and feeds the paper <i>n</i> line.

ESC C *n*

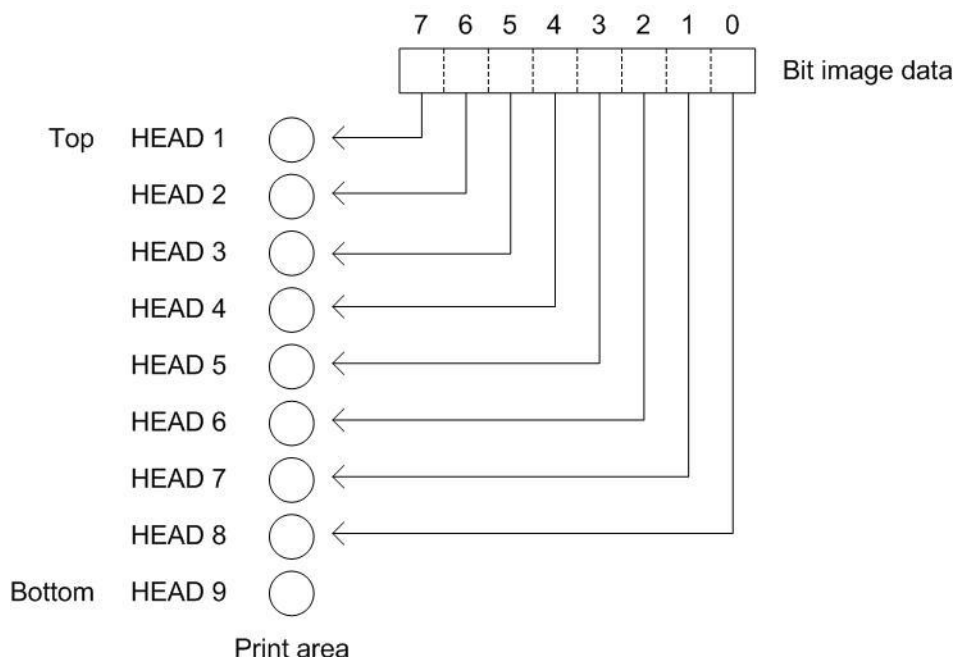
[Name]	Set page length at <i>n</i> lines
[Format]	<1B>H<43>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	Set page length at <i>n</i> lines based on the current line spacing.
[Reference]	ESC z , ESC 0 , ESC y
[Default]	<i>n</i> = 33

ESC C <0> *n*

[Name]	Set page length at <i>n</i> inches
[Format]	<1B>H<43>H<0>H< <i>n</i> >
[Range]	$0 \leq n \leq 127$
[Description]	Set page length at <i>n</i> inches.
[Default]	<i>n</i> = 5.5 inches

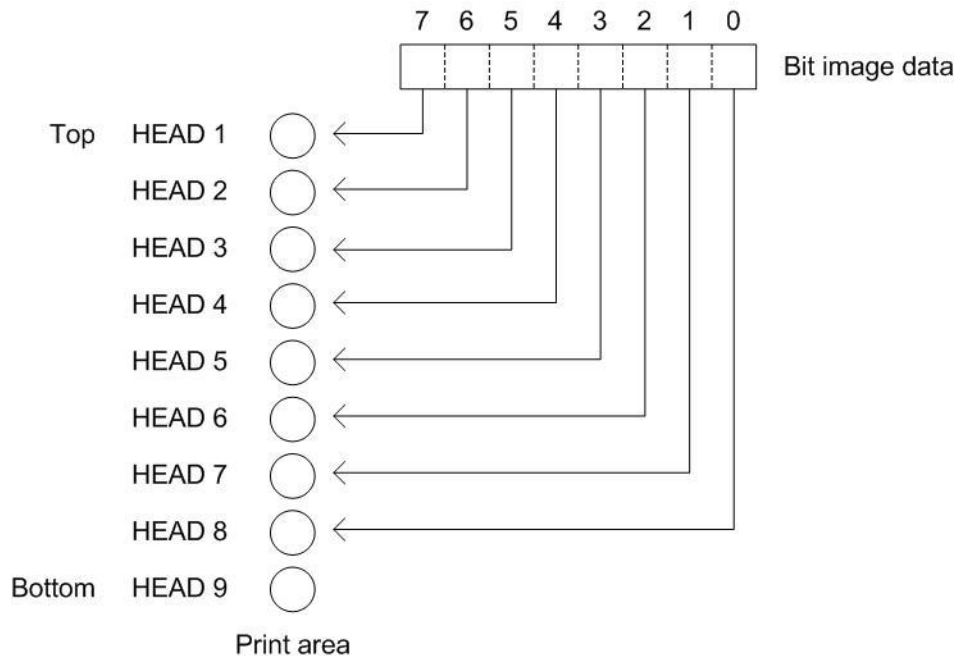
ESC K *n1 n2*[*d*] *n1*

[Name]	Set 8 dot single density bit image mode
[Format]	<1B>H<4B>H< <i>n1</i> >< <i>n2</i> >[< <i>d</i> >] <i>n1</i>
[Range]	<i>n2</i> = 0 $0 \leq n2 \leq 200$ $0 \leq d \leq 255$
[Description]	■ Executes 8 dot single density bit image print determined by "<i>n1</i>". The total number of bit image data bytes in one line is equal to <i>n1</i> (max. 180 dots). ■ If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored. ■ "<i>d</i>" indicates the bit image data. Set a corresponding bit to 1 to print a dot, otherwise set it to 0.
[Note]	■ If <i>n1</i> is out of range, the data following <i>n1</i> (and the data including <i>n1</i>) is processed as normal data. ■ After printing a bit image, the printer returns to normal data processing. ■ The relationship between the image data and the dots to be printed is as follow:



ESC L $n1\ n2[d]\ n1 + 256 \times n2$

- [Name] Set 8 dot double density bit image mode
- [Format] $\langle 1B \rangle H \langle 4C \rangle H \langle n1 \rangle \langle n2 \rangle [\langle d \rangle] n1 + 256 \times n2$
- [Range] $0 \leq n2 \leq 1$
 $0 \leq n1 \leq 255$
 $0 \leq d \leq 255$
- [Description] ■ Executes 8 dot double density bit image printing(half-dot printing) determined by " $n1$ " and " $n2$ ". The total number of bit image data bytes in one line is equal to $n1 + n2 \times 256$ (Max. 360 dots).
- If the bit image data input exceeds the number of dots to be printed on a line, the excess data is ignored.
 - " d " indicates the bit image data. Set a corresponding bit to 1 to print a dot, otherwise set it to 0.
- [Note] ■ If $n1 + 256 \times n2$ is out of range, the data following $n1$ (and the data including $n1$) is processed as normal data.
- After printing a bit image, the printer returns to normal data processing.
 - The relationship between the image data and the dots to be printed is as follow:



ESC J *n*

[Name]	Print and feed paper by <i>n</i> / 72 inch
[Format]	<1B>H<4A>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	Prints one line of data from the print buffer and feeds the paper <i>n</i> / 72 inches. ■ Set the print starting position to the beginning of the line. ■ The predetermined line spacing remains unchanged.

ESC h *n*

[Name]	Enable/disable double-height character mode
[Format]	<1B>H<68>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	Enable or disable double-height character mode. ■ Only the lowest bit of <i>n</i> is valid. When Bit 0 = 1, Enable double-height character mode. When Bit 0 = 0, Disable double-height character mode.
[Default]	<i>n</i> = 0

ESC BEL *n1 n2*

[Name]	Generate drawer kick-out drive pulse
[Format]	<1B>H<07>H< <i>n1</i> > < <i>n2</i> >
[Range]	$0 \leq n1 \leq 127$ $0 \leq n2 \leq 127$
[Description]	The defined pulse, On time is <i>n1</i> X 10 ms, Off time is <i>n2</i> X 10 ms.
[Note]	Please don't execute "generate pulse" successively because of it is possible to causes over heat of drawer solenoid. Please use designated standard solenoid.
[Reference]	Chapter 9

BLE

[Name]	Output drawer at fixed pulse
[Format]	<07>H
[Description]	The defined pulse, On time is 200 ms, Off time is 200 ms.
[Note]	Please don't execute "generate pulse" successively because of it is possible to causes over heat of drawer solenoid. Please use designated standard solenoid.

FS

[Name]	Output drawer at fixed pulse
[Format]	<1C>H
[Description]	The defined pulse, On time is 200 ms, Off time is 200 ms.
[Note]	Please don't execute "generate pulse" successively because of it is possible to causes over heat of drawer solenoid. Please use designated standard solenoid.

SUB

[Name]	Output drawer at fixed pulse
[Format]	<1A>H
[Description]	The defined pulse, On time is 200 ms, Off time is 200 ms.
[Note]	Please don't execute "generate pulse" successively because of it is possible to causes over heat of drawer solenoid. Please use designated standard solenoid.

EM

[Name]	Output drawer at fixed pulse
[Format]	<19>H
[Description]	The defined pulse, On time is 200 ms, Off time is 200 ms.
[Note]	Please don't execute "generate pulse" successively because of it is possible to causes over heat of drawer solenoid. Please use designated standard solenoid.

ESC U *n*

[Name]	Enable / disable unidirectional print
[Format]	<1B>H<55>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	Enable or disable unidirectional print, <i>n</i> is valid lowest-order bit. <i>n</i> as follows: Bit 0 = 1, Enable unidirectional print Bit 0 = 0, Disable unidirectional print
[Default]	<i>n</i> = 0

RS

[Name]	Sound buzzer
[Format]	<1E>H
[Description]	Generates a short alarm.

ESC d *n*

[Name]	Drive auto-cutter
[Format]	<1B>H<64>H< <i>n</i> >
[Range]	$0 \leq n \leq 255$
[Description]	<i>n</i> is valid lowest-order bit. <i>n</i> as follows: Bit 0 = 1, Drive the auto-cutter for partial cut. Bit 0 = 0, Drive the auto-cutter for full cut.
[Note]	This command is valid only when attaching mechanism with paper-cutter

ESC R *n*

[Name]	Selection of international character set.
[Format]	<1B>H<52>H< <i>n</i> >
[Range]	$0 \leq n \leq 10$
[Description]	Select following country character by value of <i>n</i> .
[Default]	<i>n</i> = 0

Each bit of *n* is used as follows.

<i>n</i>	字型設定
0	美國
1	法國
2	德國
3	英國

<i>n</i>	字型設定
4	丹麥 I
5	瑞典
6	義大利
7	西班牙

<i>n</i>	字型設定
8	日本
9	挪威
10	丹麥 II

ESC x *n*

[Name]	Set print mode for Chinese character
[Format]	<1B>H<78>H< <i>n</i> >
[Range]	<i>n</i> = <30>H, <31>H
[Description]	Set print mode for Chinese character
[Note]	Each byte of <i>n</i> is used as follows.

Byte	Function
<30>H	Double-height Chinese character
<31>H	Normal Chinese character

ESC ~ n

[Name] Set print mode for Chinese character

[Format] <1B>H<7E>H<n>

[Range] $0 \leq n \leq 255$

[Description] Set print mode for Chinese character
Each bit of n is used as follows.

Bit	Function	Value	
		0	1
0	Double-height	Canceled	Set
1	Double-width	Canceled	Set
2	Single density	Canceled	Set
3	Bi-directional print	Canceled	Set
4	Undefined		
5	Undefined		
6	Undefined		
7	Undefined		

[Note] ■ When both double-height mode and double-width mode are set, quadruple-size characters are printed.

[Default] $n = <5>H$

ESC e n

[Name] ENABLE/DISABLE PANEL SWITCH

[Format] <1B>H<65>H<n>

[Range] $0 \leq n \leq 255$

[Description] Enable or disable panel switch.

- Only the lowest bit of n is valid.
When Bit 0 = 1, Disable panel switch.
When Bit 0 = 0, Enable panel switch.
- If the panel switch is disabled by this command, the panel switch is unusable. Therefore, paper feeding using the FEED switch cannot be executed (except when the error of printer is occurring).

[Default] $n = 0$

附錄 B：字元表

附錄 B.1 中文字型碼

	0_	1_	2_	3_	4_	5_	6_	7_	8_	9_	A_	B_	C_	D_	E_	F_
_0	NUL	DLE	SP	0	@	P	`	p								
_1			!	1	A	Q	a	q								
_2			"	2	B	R	b	r								
_3			#	3	C	S	c	s								
_4	EOT		\$	4	D	T	d	t								
_5	ENQ		%	5	E	U	e	u								
_6			&	6	F	V	f	v								
_7			'	7	G	W	g	w								
_8			(	8	H	X	h	x								
_9	HT		)	9	I	Y	i	y								
_A	LF		*	:	J	Z	j	z								
_B		ESC	+	;	K	[	k	{								
_C			,	<	L	\	l									
_D	CR	GS	-	=	M	]	m	}								
_E			.	>	N	^	n	~								
_F		US	/	?	O	_	o	SP								

中
文
字
元
碼
區
域

附錄 B.2 國際字型

國家	ASCII code												
	Hex	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
	Dec	35	36	64	91	92	93	94	96	123	124	125	126
美國		#	\$	@	[	\	]	^	`	{		}	~
法國		#	\$	à	°	ç	§	^	`	é	ù	è	¨
德國		#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
英國		£	\$	@	[	\	]	^	`	{		}	~
丹麥 I		#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
瑞典		#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
義大利		#	\$	@	°	\	é	^	ù	à	ò	è	ì
西班牙		Pt	\$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
日本		#	\$	@	[	¥	]	^	`	{		}	~
挪威		#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
丹麥 II		#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü