# DOT MATRIX PRINTER

# DP8340 SERIES

# [PARALLEL INTERFACE]

## *USERS MANUAL*

**Federal Communications Commission**
**Radio Frequency Interference**
**Statement**

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

For compliance with the Federal Noise Interference Standard, this equipment requires a shielded cable.
*This statement will be applied only for the printers marketed in U.S.A.*

**Statement of**
**The Canadian Department of Communications**
**Radio Interference Regulations**

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectiques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.
*The above statement applies only to printers marketed in Canada.*

**CE**
**Manufacturer's Declaration of Conformity**

### *EC Council Directive 89/336/EEC of 3 May 1989*

This product, has been designed and manufactured in accordance with the International Standards EN 50081-1/01.92 and EN 50082-1/01.92, following the provisions of the Electro Magnetic Compatibility Directive of the European Communities as of May 1989.

### *EC Council Directive 73/23/EEC and 93/68/EEC of 22 July 1993*

This product, has been designed and manufactured in accordance with the International Standards EN 60950, following the provisions of the Low Voltage Directive of the European Communities as of July 1993.

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### *Trademark acknowledgments*

**DP8340:** Star Micronics Co. Ltd.

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- The above notwithstanding, STAR can assume no responsibility for any errors in this manual.

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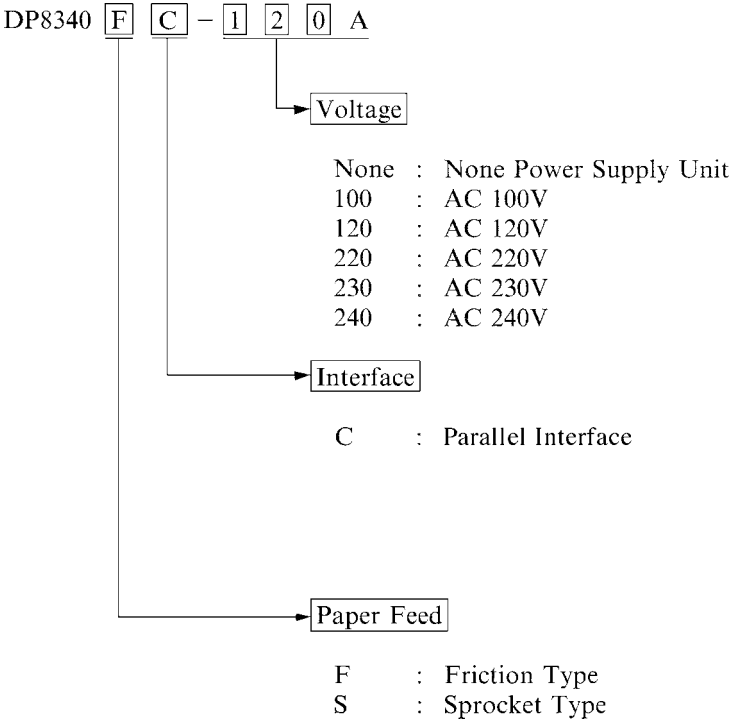
# 1. OUTLINE

The DP8340 series of serial dot matrix printers is for use in ECR, POS, electronic instruments, banking machines and computer peripheral equipment.
The DP8340 series include the following features;

1) 2 color printing (Red and Black)
2) High-speed bidirectional printing (2 line/sec, 40 columns per line)
3) 9-pin print head
4) Parallel interface (Centronics compatible)
5) Commands for expanded characters, inverted characters, emphasized characters, and red and black printing are provided, which makes the printer very versatile.
6) Simultaneous Data Communication and Printing
7) 2 Peripheral Drivers

**Model Name Notation**

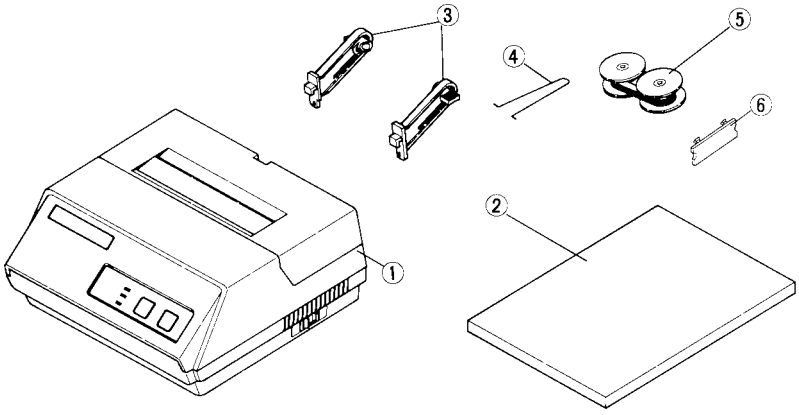


# 2. UNPACKING AND INSTALLATION

## 2-1. Unpacking

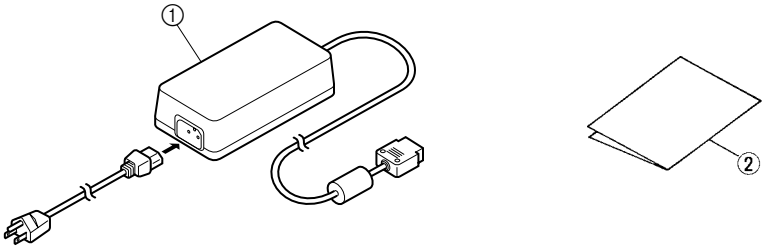
After opening the box, check if all necessary accessories are included.

(A) Printer




① Printer
② User's Manual
③ Paper Holders
④ Re-Roll Prevention Guard
⑤ Ink Ribbon
⑥ DIP Switch Cover

(B) Power Supply Unit




① Power Supply Unit
② User's Manual

**Figure 2-1. Unpacking**

## 2-2. Installation of Paper Holders and Re-Roll Prevention Guard (Only Model DP8340FC)

Install the Paper Holders in the outermost holes in the rear of the printer.

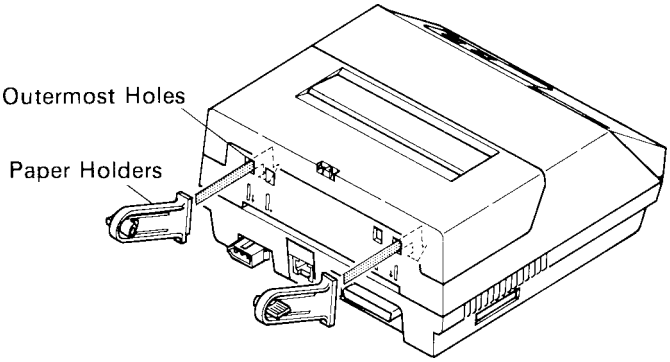



**Figure 2-2. Installation of Paper Holders**

Install the Re-Roll Prevention Wire in the holes of the printer cover. Twisting the Wire as shown in the figure below, will make the installation easier.

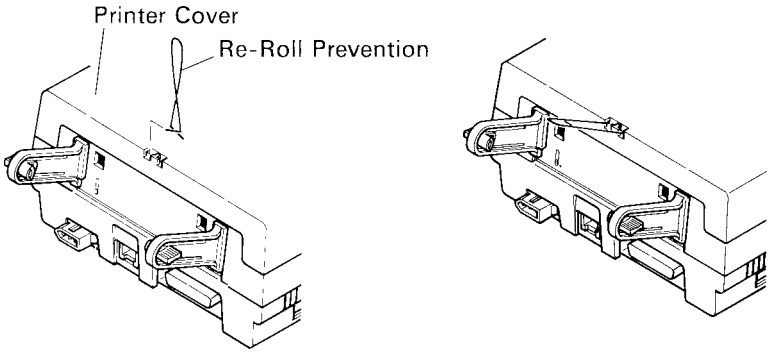


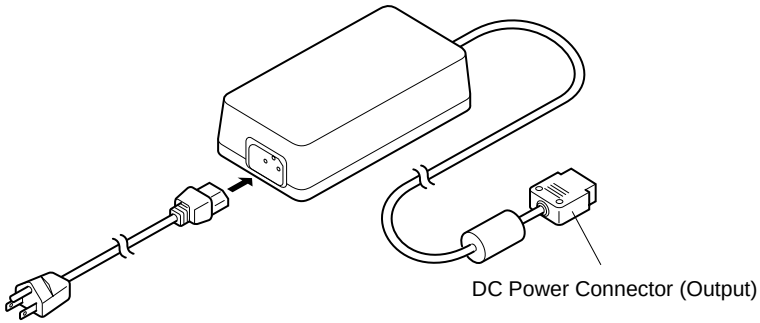

**Figure 2-3. Installation of Re-Roll Prevention**

## 2-3. Handling Notes

(1) Install the printer near an easily accessible socket-outlet.
(2) Place the unit on a flat and stable surface for operation.
(3) Do not connect the AC Power Plug to the same outlet used for other noise generating devices (large motors, etc.).
(4) Be careful not to drop paper clips, pins and other foreign objects into the unit.
(5) Wipe off dirt with a soft cloth soaked in alcohol or benzine. Do not use Lacquer thinner, Trichlorethelene or Ketone solvents because they may damage plastic parts.
(6) Use a soft brush, etc. for cleaning the printer mechanism and PCB.
(7) Keep hands out of printer while power is on.
(8) Do not attempt to print when there is no ink ribbon or paper in the unit. The print head life could be severly reduced.
(9) If the paper is fastened tightly to the roll, the paper may not detach from the roll when the end is reached.
If this happens, the no paper detection function and paper feed will not operate.
(10) Always keep the printer cover attached when printing to prevent paper jams, noise, and other problems.
(11) Always turn the power off before opening the printer cover. (e.g. When renewing a ink ribbon)

# 3. PART IDENTIFICATION AND NOMENCLATURE

## 3-1. Power Supply Unit




Shape of AC Power plug will
vary according to destinations.

**Figure 3-1. Power Supply Unit**

## 3-2. Printer

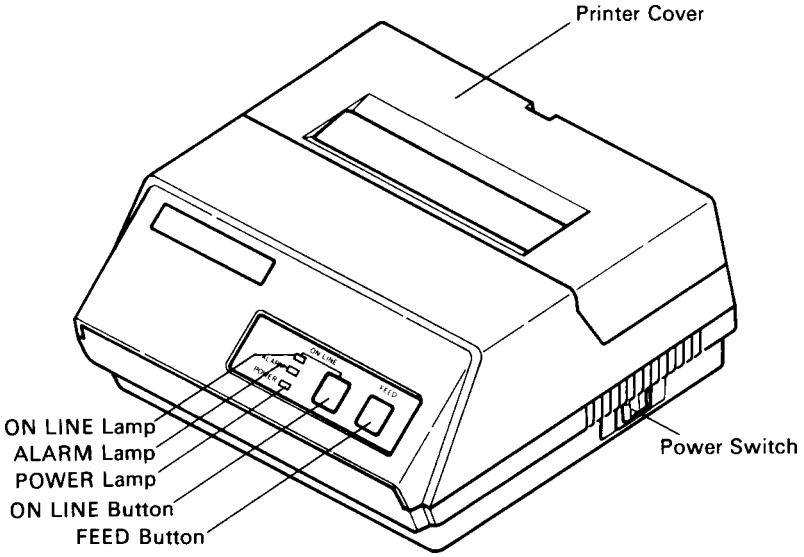



**Figure 3-2. Printer: Front View**

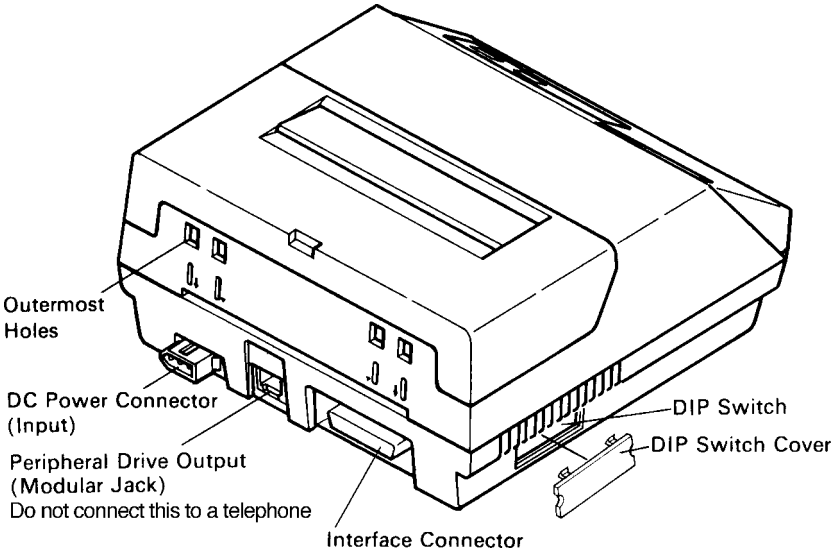



**Figure 3-3. Printer: Rear View**

## 3-3. Part Functional Description

| | | |
|---|---|---|
| (1) | AC Power Plug | Connect to an outlet of the specified voltage. |
| (2) | DC Power Outlet | Supplies DC 12V power to the printer. |
| (3) | Printer Cover | Protects the printer against dust and reduces noise. |
| (4) | POWER Lamp | Lights up (green LED) when power is on. |
| (5) | ON LINE Lamp | Lights up (green LED) when the unit is in the online mode. |
| (6) | ALARM Lamp | Lights up (red LED) when printer operation is not normal, or the printer is out of paper. It is necessary to install paper into the printer and press the ON LINE Button to recover from paper empty status. Turn off the printer power in order to recover from abnormal operation. |
| (7) | ON LINE Button | Toggles between the on-line and off-line modes. The printer will go on-line after turning power on. |
| (8) | FEED Button | Momentary operation of this button provides one line feed. Pressing this button continuously will cause continuous paper feed. If power is turned on while pressing this button, self printing*1 will be performed. |
| (9) | Interface Connector | Connects the printer to host computers. Check that both computer and printer are off before connecting. |
| (10) | DIP Switches | Allows for setting of various functions according to user requirements. |
| (11) | Peripheral Drive Output | Connects the printer to the peripheral devices such as Cash Drawer, Paper Cutter and Paper Take-Up Device etc. to drive them. |

| | | |
|---|---|---|
| *1 | Self Printing | This printer has another convenient function, the Automatic Test Printing. With the ink ribbon and paper properly installed in the printer, turn the power ON while holding down the Feed switch. Test printing will start and stop again automatically. |

# 4. INSTALLATION OF INK RIBBON AND PAPER

## 4-1. Installation of Ink Ribbon

(1) Turn power off, lift the Printer Cover up and remove it.

**Note:** Be careful not to touch the print head immediately after printing, because it can get very hot.

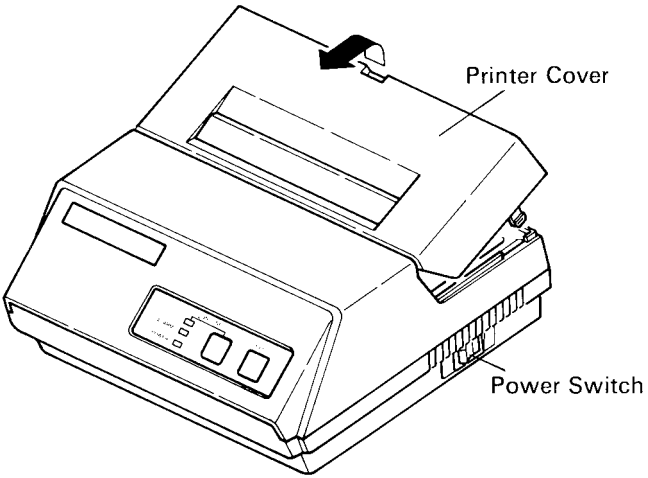



**Figure 4-1. Printer Cover Removal**

(2) Unwind ribbon so that the spools are separated as shown in Figure 4-3. Hold the ribbon taut as shown with the drive pins facing down and slide the ribbon between the print head and the platen. While keeping the ribbon taut, wrap one side around the black ribbon guide on the end of the platen and drop one spool on the spool shaft. As you move the spool downwards, move the detecting lever aside to allow the spool to drop into place. Make sure the spool drive pins engage with the spool drive holes. As the spool drops into place there will be a click.

(3) While continuing to hold the ribbon taut, install the remaining ribbon spool in a similar fashion.

(4) Turn the spool that rotates freely to take up the ribbon slack.

Ribbon Life

| Description | Ribbon life | |
|---|---|---|
| | Black | Red |
| SF-03BR (Fuji Kagakushi Kogyo Co., Ltd.) | Approx. 0.8 million characters | Approx. 0.4 million characters |

Ribbon Life

| Description | Ribbon life |
|---|---|
| | Black |
| SF-03B<br>(Fuji Kagakushi<br>Kogyo Co., Ltd.) | Approx.<br>0.8 million<br>characters |

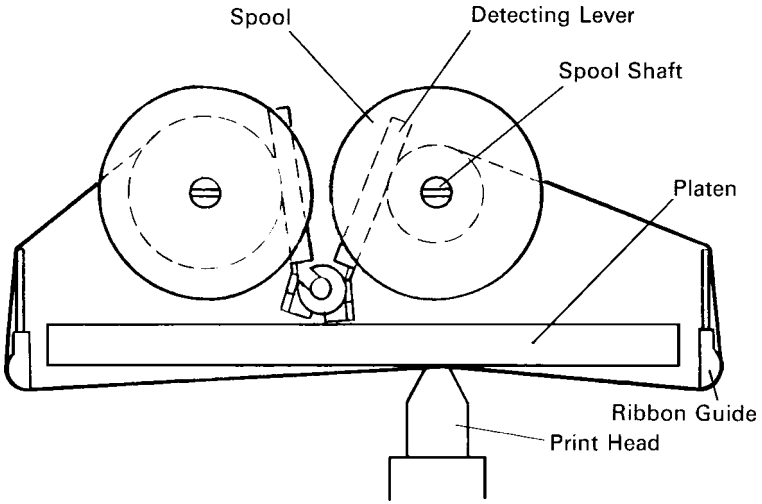



**Figure 4-2. Installation of Ink Ribbon**

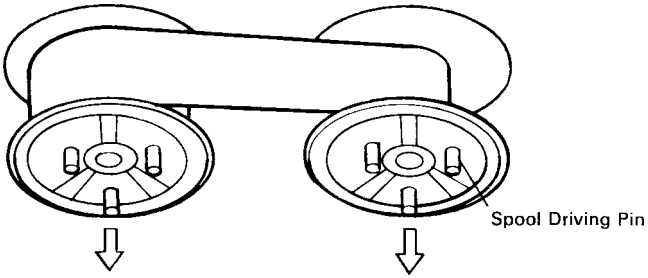



**Figure 4-3. Ribbon Spools**

## 4-2. Removal of Ink Ribbon

Hold the spool and lift gently, rotating it until the ribbon sags. Push the ribbon detecting lever out, lift the spool until it comes off the shaft. Remove the second spool in a similar manner.
(Do not apply excessive force when lifting spools.)

## 4-3. Paper Insertion

### 4-3-1. Model DP8340FC

(1) Cut the Roll Paper end straight and square. Hold the roll so that the paper comes from the bottom.
(2) Attach the Roll Paper to the Holders Paper by slipping one side of the roll onto the Hub and pulling the other Hub out to allow the roll to slip in place.
(3) Insert the paper evenly into the Paper Insertion Slot.
(4) Turn the Power Switch "ON", and press the FEED Button. The paper will be fed into the unit.

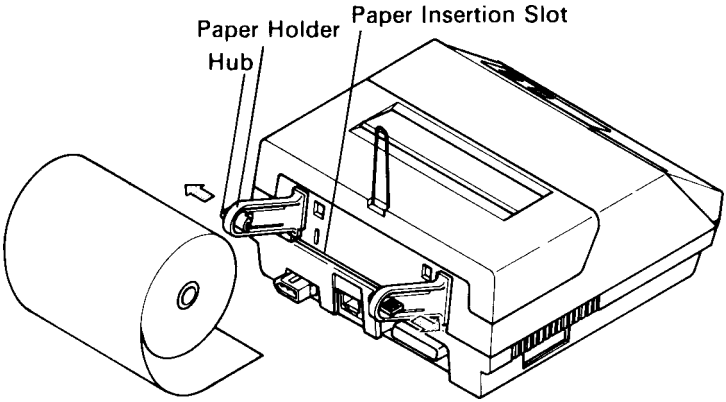



**Figure 4-4. Paper Insertion (1) [Model DP8340FC]**

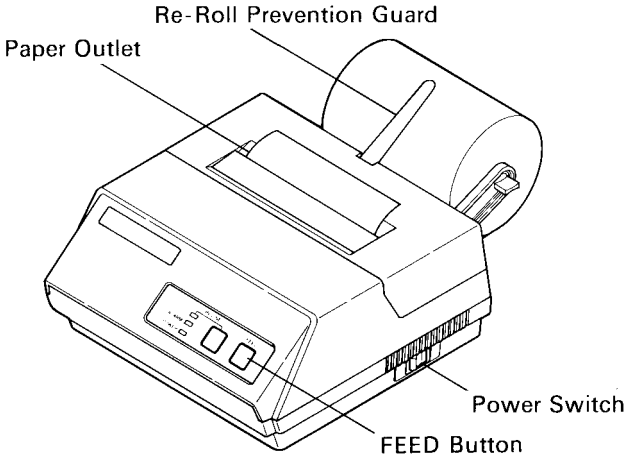



**Figure 4-5. Paper Insertion (2) [Model DP8340FC]**

### 4-3-2. Model DP8340SC

1. Make a straight cut along the top of the paper, about 1/4 inch away from the sprocket holes, (as shown in the figure). If there is perforation, cut the paper on the perforation.
2. Insert the paper squarely into the paper insertion slot until the ALARM lamp goes out. Then, hold down the FEED switch to advance the paper 8 lines, and release the switch when 8-line feeding is completed.
   If the paper is not fed straight during 8-line feeding, straighten the paper by pulling it back slowly as you hold the paper release lever down. If a sprocket hole is torn or enlarged, recut the paper and reinsert it as before.
3. After confirming that the paper has been fed in straight, feed the paper continuously by holding the feed switch down.
4. Release the feed switch when the paper emerges through the paper outlet.

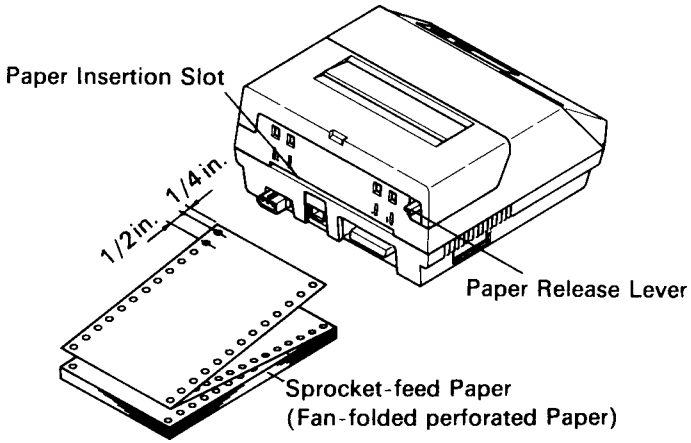



**Figure 4-6. Paper Insertion (1) [Model DP8340SC]**

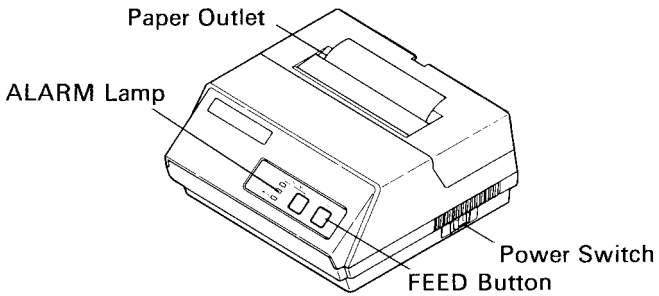



**Figure 4-7. Paper Insertion (2) [Model DP8340SC]**

## 4-4. Paper Removal

Cut the paper close to the slot and use the feed button until paper has passed completely through the printer.

**Note:** Do not try to remove the paper by hand as it could become crooked and get jammed inside the printer.

# 5. CONTROL CODES

| | |
|---|---|
| **CODE** | LF<br>$(0A)_H$ |
| **FUNCTION** | Print and line feed instruction |
| OUTLINE | The LF code causes the data in the line buffer to be printed, followed by a single line feed. When the line buffer is empty, only the feed takes place. |

| | |
|---|---|
| **CODE** | CR<br>$(0D)_H$ |
| **FUNCTION** | Print and line feed instruction |
| OUTLINE | Same function as of LF code.<br>However, when the DIP switch 3 is ON, the CR code becomes invalid. |

| | |
|---|---|
| **CODE** | SO<br>$(0E)_H$ |
| **FUNCTION** | Expanded character instruction |
| OUTLINE | This code causes the printer to print expanded characters twice as wide as the regular ones. This remains in effect until a DC4 code is received. |

| | |
|---|---|
| **CODE** | DC4<br>$(14)_H$ |
| **FUNCTION** | Release from expanded characters |
| OUTLINE | The expanded character instruction is released by the DC4 code, and the succeeding data is printed as regular width characters. |

| | |
|---|---|
| **CODE** | ESC-1<br>$(1B)_H$ $(2D)_H$ $(01)_H$ or $(1B)_H$ $(2D)_H$ $(31)_H$ |
| **FUNCTION** | Underline mode selection |
| OUTLINE | All data received after this code is underlined until a ESC-0 is received. |

| | |
|---|---|
| **CODE** | ESC-0<br>$(1B)_H$ $(2D)_H$ $(00)_H$ or $(1B)_H$ $(2D)_H$ $(30)_H$ |
| **FUNCTION** | Release from underline mode |
| OUTLINE | The underline mode selection is released by this code. |

| | |
|---|---|
| **CODE** | SI<br>$(0F)_H$ |
| **FUNCTION** | Inverted print instruction |
| OUTLINE | This function causes the printing to be inverted. This code must be received at the beginning of a line. If this code is received anywhere other than at the beginning of a line, it is disregarded. Accordingly, normal characters and inverted characters, can not be mixed on the same line. |

| | |
|---|---|
| **CODE** | DC2<br>$(12)_H$ |
| **FUNCTION** | Release from inverted print instruction |
| OUTLINE | The inverted print instruction is released by this code. This code must be received at the beginning of a line. |

| | |
|---|---|
| **CODE** | ESC E<br>$(1B)_H$ $(45)_H$ |
| **FUNCTION** | Emphasized print mode instruction |
| OUTLINE | Data following this command is printed with emphasized characters.<br>In this mode, characters are printed in a single direction. |

| | |
|---|---|
| **CODE** | ESC F<br>$(1B)_H$ $(46)_H$ |
| **FUNCTION** | Release from emphasized print instruction |
| OUTLINE | Emphasized print is released. |

| | |
|---|---|
| **CODE** | ESC 4<br>$(1B)_H$ $(34)_H$ |
| **FUNCTION** | Red character print instruction |
| OUTLINE | This command causes subsequent data to be printed with red characters.<br>The instruction is released by the code, ESC 5.<br>Red and black characters may be intermixed.<br>This command is ignored when DIP switch 5 is OFF. |

| | |
|---|---|
| **CODE** | ESC 5<br>$(1B)_H$ $(35)_H$ |
| **FUNCTION** | Release from red character print instruction |
| OUTLINE | The red character print instruction is released by this code. |

**CODE**

ESC R n
$(1B)_H$ $(52)_H$ n

**FUNCTION**

Select an international character.

OUTLINE

This command selects one of the international character sets in accordance with the value of "n" as shown below.

n = 0 : U.S.A. 3 : England 6 : Italy
1 : France 4 : Denmark 7 : Spain
2 : Germany 5 : Sweden 8 : Japan

International character set can be specified using the DIP Switches. However, control code settings have priority.For international characters, please refer to the character code chart in Section 8, or to the font chart in Section 9.

**CODE**

ESC & 0 $n_1$ $n_2$ [$m_0$ $m_1$ $m_2$ $m_3$ $m_4$ $m_5$] $_{n2-n1+1}$
$(1B)_H$ $(26)_H$ $(00)_H$ $n_1$ $n_2$ [$m_0$ $m_1$ $m_2$ $m_3$ $m_4$ $m_5$] $_{n2-n1+1}$

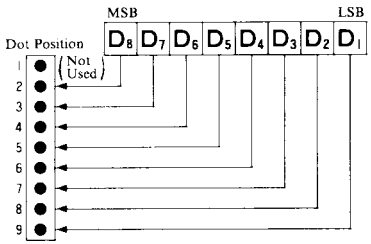
**FUNCTION**

Define download character.

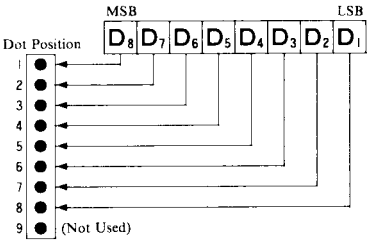
OUTLINE

In this section we will define "download characters".
This printer is able to print the characters expressed by the character codes in Section 8. In addition, the user can create special characters, which are called download characters.
A maximum of ten download characters can be defined, and the defined character pattern is stored in the printer's RAM. This means that if the power to the printer is turned off, stored download characters are lost.
The range of positions in which download characters can be written is expressed by $n_1$, $n_2$. It is specified by the range $(21)_H \leqq n_1 \leqq n_2 \leqq (7F)_H$. When the download character consists of one character, the expression becomes $n_1 = n_2$. $m_0$ expresses the relation between the character pattern and the print head. (See following explanation.) $m_1$ ... $m_5$ expresses the character pattern.

$m_0 = (00)_H$




$m_0 = (80)_H$




**CODE**

ESC % 1
$(1B)_H$ $(25)_H$ $(01)_H$ or $(1B)_H$ $(25)_H$ $(31)_H$

**FUNCTION**

Select download character

OUTLINE

This code specifies the download mode. Download characters defined by the previously explained <ESC>&0 code cannot be printed unless this code is first sent to the printer.

**CODE**

ESC % 0
$(1B)_H$ $(25)_H$ $(00)_H$ or $(1B)_H$ $(25)_H$ $(30)_H$

**FUNCTION**

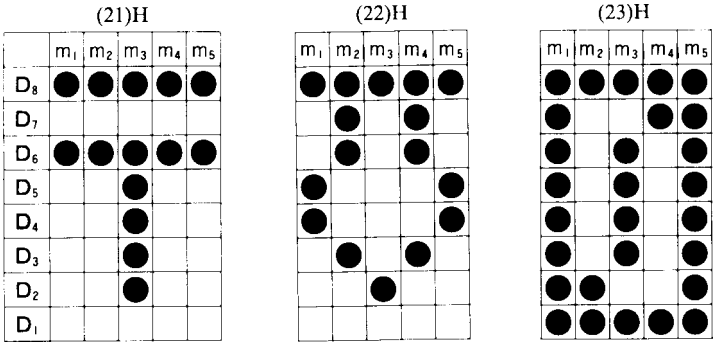
Cancel download character

OUTLINE

This code cancels the download mode and selects standard text characters (characters appearing in the character code chart in Section 8).
When power is turned on, standard text characters are selected.

**SAMPLE**

Let's try an actual example of printing a download character.
We will design the download character shown below:




Next, we will define the download character.

If the position into which the download character is written (the character code) is defined as $(21)_H$, $(22)_H$, $(23)_H$, then we have $n_1 = (21)_H$, $n_2 = (23)_H$ The relation between the character pattern data and the print head assigns the 9 pin as unused. Therefore, $m_0 = (80)_H$.
If data $m_1$ to $m_{18}$ is converted to hexadecimal, it appears as follows.

| Data | Binary | Hex. |
|---|---|---|
| $m_1$ | 10100000 | A0 |
| $m_2$ | 10100000 | A0 |
| $m_3$ | 10111110 | BE |
| $m_4$ | 10100000 | A0 |
| $m_5$ | 10100000 | A0 |

| Data | Binary | Hex. |
|---|---|---|
| $m_1$ | 10011000 | 98 |
| $m_2$ | 11100100 | E4 |
| $m_3$ | 10000010 | 82 |
| $m_4$ | 11100100 | E4 |
| $m_5$ | 10011000 | 98 |

| Data | Binary | Hex. |
|---|---|---|
| $m_1$ | 11111111 | FF |
| $m_2$ | 10000011 | 83 |
| $m_3$ | 10111101 | BD |
| $m_4$ | 11000001 | C1 |
| $m_5$ | 11111111 | FF |

**DATA TRANS - MISSION**

| | |
|---|---|
| (1) Difine download | $(1B)_H$ $(26)_H$ $(00)_H$ $(21)_H$ $(23)_H$ $(80)_H$ $(A0)_H$ $(A0)_H$ $(BE)_H$ $(A0)_H$ $(A0)_H$ $(80)_H$ $(98)_H$ $(E4)_H$ $(82)_H$ $(E4)_H$ $(98)_H$ $(80)_H$ $(FF)_H$ $(83)_H$ $(BD)_H$ $(C1)_H$ $(FF)_H$ |
| (2) Select download | $(1B)_H$ $(25)_H$ $(01)_H$ |
| (3) Character code | $(21)_H$ $(22)_H$ $(23)_H$ $(A0)_H$ |
| (4) Cancel download | $(1B)_H$ $(25)_H$ $(00)_H$ |
| (5) Character code | $(21)_H$ $(22)_H$ $(23)_H$ $(0A)_H$ |

**PRINT SAMPLE**

**CODE**

ESC a n
$(1B)_H$ $(61)_H$ n

**FUNCTION**

n-line feed

OUTLINE

After printing the data in the current line, n lines are fed by this code. The value of n ranges from 1 to 120.

**CODE**

ESC C n
$(1B)_H$ $(43)_H$ n

**FUNCTION**

Sets page length in lines

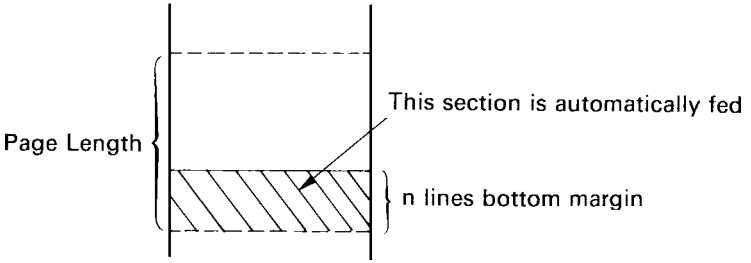
OUTLINE

This code sets the length of a page to n lines. The value of n ranges from 1 to 120. On initialization, the page length default condition will be 42 lines. The line feed pitch is one-sixth inch.

**CODE** ESC N n
$(1B)_H$ $(4E)_H$ n

**FUNCTION** Sets bottom margin in lines

OUTLINE Upon receiving this code, the bottom margin is set to n lines.
$0 \leqq n \leqq 120$; Default Value n = 0




**CODE** ESC O
$(1B)_H$ $(4F)_H$

**FUNCTION** Cancels bottom margin.

OUTLINE Upon input of this code, bottom margin setting is cleared.

**CODE** FF
$(0C)_H$

**FUNCTION** Form feed

OUTLINE The FF code prints the data in the current line and transports the paper to the start of the next page.

**CODE** ESC @
$(1B)_H$ $(40)_H$

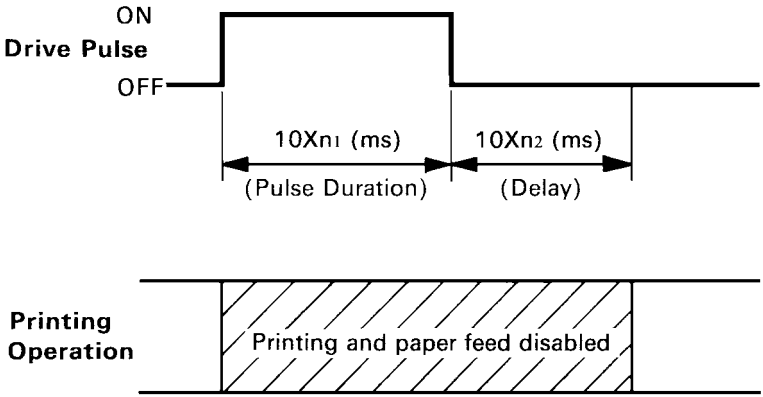
**FUNCTION** Printer initialization

OUTLINE All printing conditions except ESC BEL $n_1$ $n_2$, the line buffer and data buffer are set to the power on default condition.

**CODE** ESC BEL $n_1$ $n_2$
$(1B)_H$ $(07)_H$ $n_1$ $n_2$

**FUNCTION** Sets peripheral unit drive 1 pulse duration.

OUTLINE This command sets the pulse duration for peripheral unit drive (Paper Cutter, Take-Up Device, cash drawer, etc.)
Pulse Duration = $10 \times n_1$ (ms)
Delay = $10 \times n_2$ (ms)
$1 \leqq n_1 \leqq 127$; $1 \leqq n_2 \leqq 127$
Default value: $n_1 = n_2 = 20$




Executed by BEL code and FS code after printing.

| | |
|---|---|
| **CODE** | BEL<br>$(07)_H$ |
| **FUNCTION** | Trigger peripheral unit drive (Deferred) |
| OUTLINE | Causes a peripheral drive pulse to be generated. This code is normally stored in the buffer and is performed as it is received from the data queue. |

| | |
|---|---|
| **CODE** | FS<br>$(1C)_H$ |
| **FUNCTION** | Trigger peripheral unit drive (immediate) |
| OUTLINE | Causes a peripheral drive pulse to be generated immediately. |

| | |
|---|---|
| **CODE** | SUB<br>$(1A)_H$ |
| **FUNCTION** | Trigger peripheral unit drive 2 (immediate) |
| OUTLINE | This command causes a peripheral unit drive 2 pulse to be generated.<br>Pulse Duration : 200ms (fixed)<br>Delay : 200ms (fixed) |
| **REMARKS** | It is impossible to drive peripheral devices 1 and 2 at the same time. |

| | |
|---|---|
| **CODE** | CAN<br>$(18)_H$ |
| **FUNCTION** | Clears print buffer |
| OUTLINE | Upon input of this code the data buffer and line buffer is cleared. |

## Character Code List

| Character | | Code | Function |
|---|---|---|---|
| 1 | LF | (0A)H | Print and line feed instruction |
| 2 | CR | (0D)H | Print and line feed instruction<br>(same as LF) |
| 3 | SO | (0E)H | Expanded character instruction |
| 4 | DC4 | (14)H | Expanded character release |
| 5 | ESC-1 | (1B)H (2D)H(01)H<br>(1B)H (2D)H (31)H | Underline instruction |
| 6 | ESC-0 | (1B)H (2D)H(00)H<br>(1B)H (2D)H (30)H | Underline release |
| 7 | SI | (0F)H | Inverted print instruction |
| 8 | DC2 | (12)H | Inverted print release |
| 9 | ESC E | (1B)H (45)H | Emphasized print instruction<br>(one-way printing) |
| 10 | ESC F | (1B)H (46)H | Emphasized print release |
| 11 | ESC 4 | (1B)H (34)H | Red character print instruction |
| 12 | ESC 5 | (1B)H (35)H | Red character print release |
| 13 | ESC R n | (1B)H (52)H n | Select an international character set |
| 14 | ESC & 0 ... | (1B)H (26)H (00)H ... | Define download character |
| 15 | ESC % 1 | (1B)H (25)H (01)H<br>(1B)H (25)H (31)H | Select download characters |
| 16 | ESC % 0 | (1B)H (25)H (00)H<br>(1B)H (25)H (30)H | Cancel download characters |
| 17 | ESC a n | (1B)H (61)H n | n-line feed instruction5 |
| 18 | ESC C n | (1B)H (43)H n | Sets page length in lines<br>1 ≦ n ≦ 120 (default n = 42) |
| 19 | ESC N n | (1B)H (4E)H n | Set bottom margin in lines<br>0 ≦ n ≦ 120 (default n = 0) |
| 20 | ESC O | (1B)H (4F)H | Cancel Bottom margin |
| 21 | FF | (0C)H | Form feed |
| 22 | ESC @ | (1B)H (40)H | Printer initialization instruction |

| Character | | Code | Function |
|---|---|---|---|
| 23 | ESC BEL<br>$n_1$ $n_2$ | (1B)H (07)H<br>$n_1$ $n_2$ | Set peripheral unit drive pulse duration<br>$1 \leqq n_1 \leqq 127, 1 \leqq n_2 \leqq 127$<br>(default $n_1 = n_2 = 20$) |
| 24 | BEL | (07)H | Trigger peripheral unit drive 1 (Deferred) |
| 25 | FS | (1C)H | Trigger peripheral unit drive<br>(Immediate) |
| 26 | SUB | (1A)H | Trigger peripheral unit drive 2 (immediate) |
| 27 | CAN | (18)H | Clears print buffer |

# 6. GENERAL SPECIFICATIONS

| | | |
|---|---|---|
| Printing method | Serial impact dot matrix printing, 9 wires | |
| Number of print columns | 40 columns, 12 CPI | |
| Print speed | Approx. 2 lines/sec | |
| Print direction | Bi-directional | |
| Line spacing | 1/6 inch | |
| Paper feed method | Friction Feed or Sprocket-feed | |
| Paper feed speed | Approx. 12 lines/sec | |
| Character set | ASCII | 96 |
| | Special | 64 |
| | Block graphics* | 64 |
| | Katakana (Japanese) | 64 |
| | IBM Special | 83 |
| | IBM Block graphics* | 50 |
| | Download | 10 |
| Font configuration | Ordinary characters | 5 × 9 dots |
| | Block graphics* | 6 × 6 dots (6 × 8 dots) |

* Graphic Feed Not Available

| | |
|---|---|
| Character size | 2.42 (H) × 1.71(W) mm |
| Dot spacing | 0.35 (H) × 0.35 (W) mm |
| Print area | 84.3 mm |
| Print Buffer | Approx. 1.5 KB |
| Interface | Parallel Interface (Centronics compatible) |
| Peripheral drive | 2 outputs (each 1A max. at 12V. Both cannot operate at the same time.) |
| External dimensions | |
| (Printer) | 202(W) × 200(D) × 98(H) mm (without paper holder, DC Power Connector) |
| (Power supply unit) | 60(W) × 120(D) × 36(H) mm (without AC cable) |
| Weight | |
| (Printer) | Approx. 1.9 kg |
| (Power supply unit) | Approx. 0.4 kg (without AC cable) |

Power supply unit

Four supplies available with following ratings

| Input | Output |
|---|---|
| AC 100 – 240 V<br>47Hz – 63 Hz<br>0.8 A Max | DC 12.0 V ± 5%<br><br>2.0 A |

| | | |
|---|---|---|
| Paper specification | | |
| Paper type | Ordinary and carbonless copy paper | |
| Size Paper width | 114.3 mm (4.5 inches) | |
| Roll diameter | 80 mm outer diameter (Max) | |
| Thickness (single) | 0.07 mm (52.3 g/m$^2$) to 0.09 mm (64g/m$^2$) | |
| (2 copy) | One copy and one original (max 0.13 mm) | |
| Paper end | Paper should not be attached to the core | |
| Ink ribbon specification | | |
| Color | Black and red / Black only | |
| Ribbon material | Nylon (#40 denier) | |
| Ribbon size | 13mm × 6mm | |
| Spool | 13mm (width), 35mm in diameter (two spool) | |
| Recommended ribbon | SF-03BR (Black and red), SF-03B (Black) (manufactured by Fuji Kagakushi Kogyo Co., Ltd.) or approved equivalent. | |
| Operating conditions | Temperature | +5˚C – +40˚C |
| | Humidity | 10% – 80%RH |
| Storage conditions | Temperature | -20˚C – +70˚C |
| | Humidity | 5% – 95%RH (+40˚C) |
| Head life | 70 million characters | |
| Printer reliability | 5.0 million lines MCBF (except head life) | |

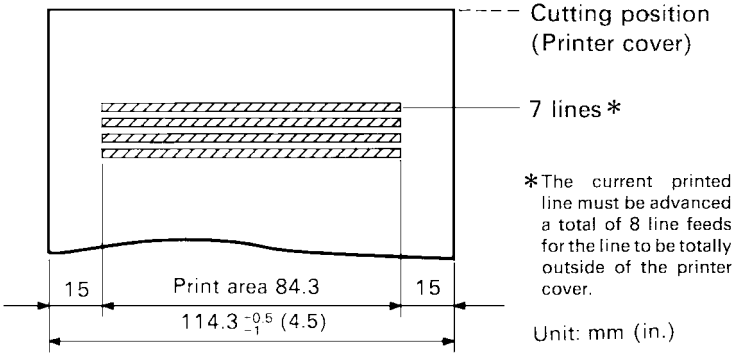



**Figure 6-1. Roll Paper and Print Area [Model DP8340FC]**

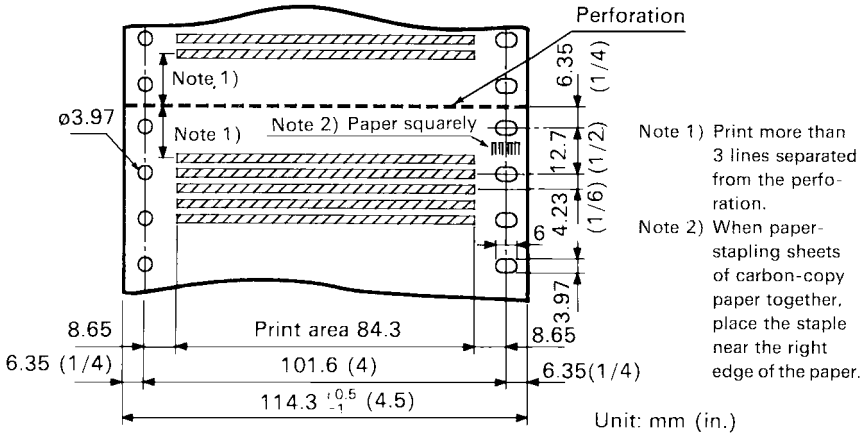



**Figure 6-2. Sprocket-feed Paper and Print Area [Model DP8340SC]**

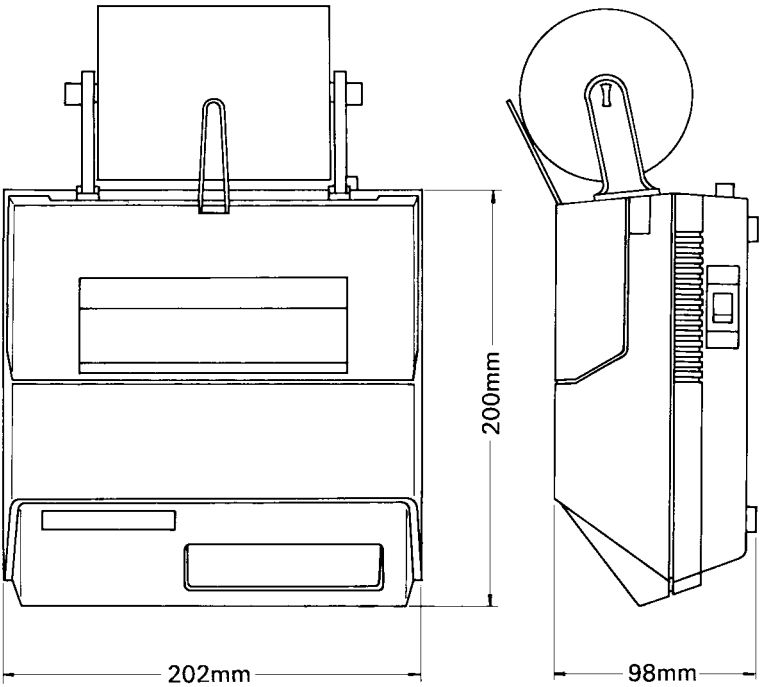
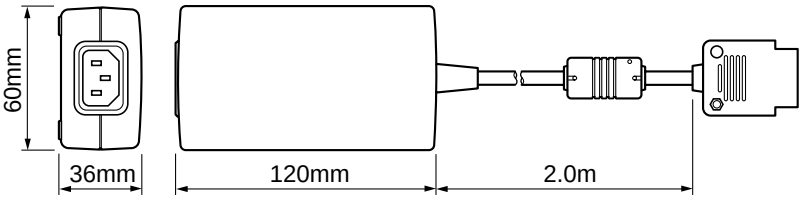



**Figure 6-3. External Dimensions (Printer)**




Shape of AC Power plug will
vary according to destinations.

**Figure 6-4. External Dimensions (Power Supply Unit)**

# 7. INTERFACE

## 7-1. Interface Specifications

This printer has a parallel interface to communicate with the computer. The operating specifications of the parallel interface are as follows.

(1) Data transfer rate — 1000 to 6000 characters per second
(2) Synchronization — Via externally supplied $\overline{\text{STROBE}}$ pulses
(3) Handshaking — $\overline{\text{ACK}}$ and BUZY signals
(4) Logic level — Compatible with TTL level

## 7-2. Interface Timing

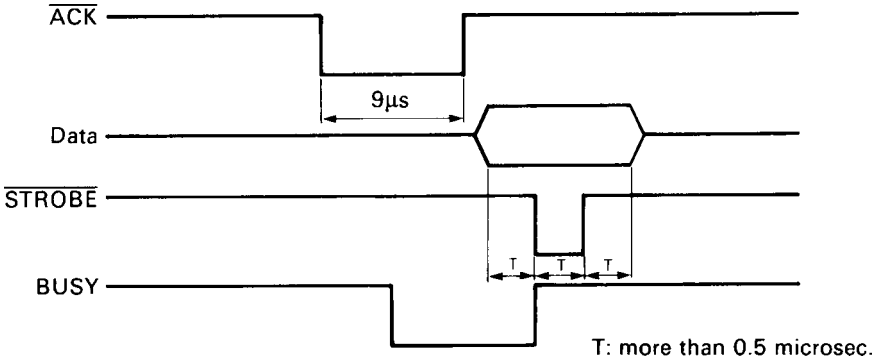


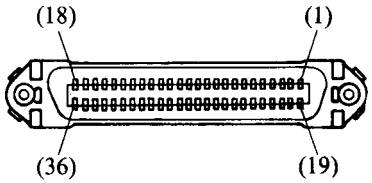

**Figure 7-1. Interface Timing Diagram**

| Signal Name | Circuit Example |
|---|---|
| DATA1-DATA8 (To Printer) | 4.7kΩ, 4.7kΩ, 74HC Compatible |
| $\overline{\text{STROBE}}$ (To Printer) | 4.7kΩ, 100Ω, 470pF, 74HC Compatible |
| BUZY, $\overline{\text{ACK}}$ (From Printer) | 4.7kΩ, 74LS Compatible |

**Figure 7-2. Typical Interface Circuit**

## 7-3. Connectors and Signals

| Pin No. | Signal Name | IN/OUT | Function |
|---|---|---|---|
| 1 | $\overline{\text{STROBE}}$ | IN | Signals when data is ready to be read.Signal gose from HIGH to LOW (for at least 0.5 microsec.) when data is available. |
| 2-9 | DATA1-8 | IN | These signals provide the information of the first to eighth bits of parallel data.Each signal is at HIGH level for a logical 1 and at a LOW level for a logical 0. |
| 10 | $\overline{\text{ACK}}$ | OUT | A 9 microsecond LOW pulse acknowledges receipt of data. |
| 11 | BUSY | OUT | When this signal goes LOW, the printer is ready to accept data. When the printer is in one of the conditions below."HIGH" is set.<br>1. Data being entered.<br>2. Off line.<br>3. Error condition. |
| 12 | PAPER OUT | OUT | This signal is normally LOW. It will go HIGH if the printer runs out of paper. |
| 13 | SELECTED | OUT | This signal is HIGH when the printer is online. |
| 14-15 | N/C | | Unused |
| 16 | SIGNAL GND | | Signal ground. |
| 17 | CHASSIS GND | | Chassis ground, isolated from logic ground. |
| 18 | N/C | | Unused |
| 19-30 | GND | | Twisted pair return signal ground level. |
| 31 | $\overline{\text{RESET}}$ | IN | When this signal gose LOW, the printer is reset to its power-on condition. |
| 32 | $\overline{\text{ERROR}}$ | OUT | This signal is normally HIGH. This signal goes LOW to signal that the printer cannot print due to an error condition.<br>Refer to Item 7-6 Emergency Suspension. |
| 33 | EXT GND | | External ground. |
| 34-36 | N/C | | Unused. |




This connector mates with an Amphenol 57-30360 connector.

**Figure 7-3. Parallel Interface Connector (Printer side)**

## 7-4. Setting of the DIP Switches

Factory settings : all ON

| Switch | Function | ON | OFF |
|---|---|---|---|
| 1 | Character Table (See below) | | |
| 2 | | | |
| 3 | Control cord CR | Disable | Enable |
| 4 (*1) | Printing Direction (Red printing) | Bi. | Uni. |
| 5 (*2) | Ink Ribbon | 2-color | monochrome |
| 6 | International Character Set (See below) | | |
| 7 | | | |
| 8 | | | |

(*1) DIP Swich 4 should be set to OFF when you use 2-part sprocket paper having the seam on the right since the ribbon snags at the seam if shifted.
The DIP Switch 4 Should be otherwise set to ON.

(*2) DIP Swich 5 should be set to ON when you use a 2-color ribbon for 2-color printing.
It should be set to OFF when a monochrome ribbon is used.

Character Table

| SW NO. | USA & Europe | IBM#1 | IBM#2 | JAPAN |
|---|---|---|---|---|
| 1 | ON | OFF | ON | OFF |
| 2 | ON | ON | OFF | OFF |

International Character Set

| SW NO. | USA | France | Germany | England | Denmark | Sweden | Itary | Spain |
|---|---|---|---|---|---|---|---|---|
| 6 | ON | OFF | ON | OFF | ON | OFF | ON | OFF |
| 7 | ON | ON | OFF | OFF | ON | ON | OFF | OFF |
| 8 | ON | ON | ON | ON | OFF | OFF | OFF | OFF |

Note: When DIP Switches 1 and 2 are set to OFF, the printer always selects the Japan international character set regardless of the status of DIP Switches 6, 7 and 8.
When DIP Swiches 1 and 2 are otherwise set, the printer selects the character set determined by DIP Switches 6, 7 and 8.
Each international character set is selectable through software regardless of the selection by DIP Switches.

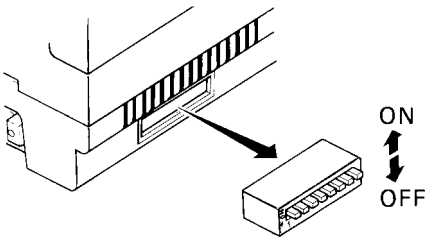



**Figure 7-4. DIP Switch Setting**

## 7-5. Peripheral Unit Drive Circuit

The Control Board of this printer is equipped with a circuit for driving peripheral units (Paper Cutter, Take-Up Device, Cash Drawer, etc.)
The 6P Modular Jack is used as the Drive Circuit. When using this circuit, connect the peripheral unit cable to the 6P Modular Jack (cable is not included).

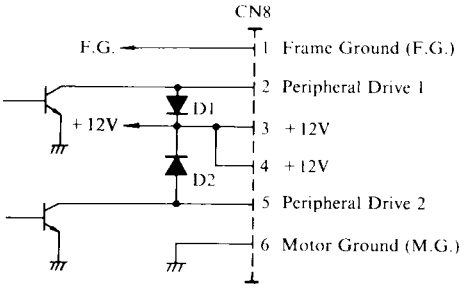
**Note:** Peripheral unit drive circuit connector only connects to peripheral units such as cash drawers, etc.
Do not connect it to a telephone.

1. Drive Circuit

| Drive Output | 12V,MAX. 1A |
|---|---|

| | Absolute Ratings (Ta = 25˚C) | |
|---|---|---|
| $D_1$ | Voltage Breakdown | 100V |
| $D_2$ | Peak Forward Current | 1A |

**Note:** It is impossible to drive peripheral devices 1 and 2 at the same time




[Printer side]

**Figure 7-5. Drive Circuit**

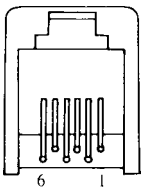



**Figure 7-6. 6P Modular Jack Connector**

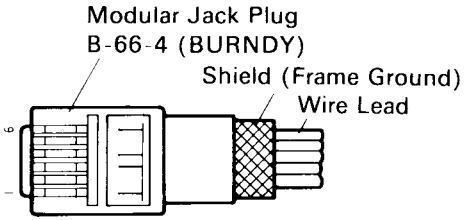



**Figure 7-7. Recommend Cable**

**Note:** Make sure that the metal structural parts of the peripheral device are connected to frame Ground (Pin 1) to provide a static drain path.

2. Control code
Codes for Drive Circuit control are ESC BEL $n_1$ $n_2$, BEL, FS and SUB.
Refer to the Control Codes in Section 5.

## 7-6. Emergency Suspension

If an error condition is detected during operation, the printer will stop printing and $\overline{\text{ERROR}}$ signal will go Low.
It is necessary to turn the printer power off and on again in order to recover from the emergency suspension.
This printer can detect the following error conditions:

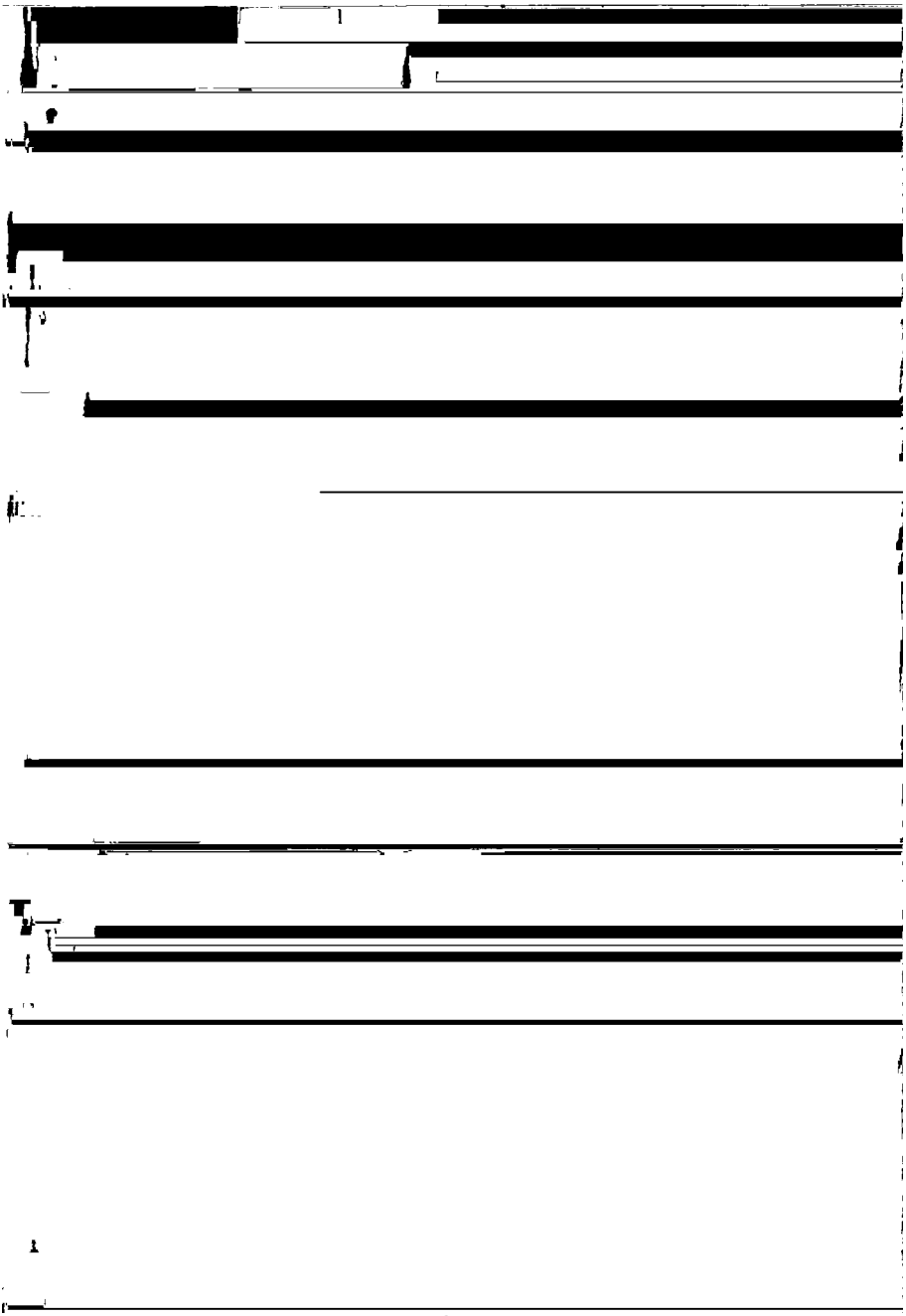
a. Motor Lock
b. Defective timing detector

# 8. CHARACTER CODE LIST

## 1) U.S.A. & Europe (DIP SW1: ON, SW2:ON)

| Hexa-decimal | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | SP 32 | 0 48 | @ 64 | P 80 | ` 96 | p 112 |
| 1 | 1 | 17 | ! 33 | 1 49 | A 65 | Q 81 | a 97 | q 113 |
| 2 | 2 | DC2 18 | " 34 | 2 50 | B 66 | R 82 | b 98 | r 114 |
| 3 | 3 | 19 | # 35 | 3 51 | C 67 | S 83 | c 99 | s 115 |
| 4 | 4 | DC4 20 | $ 36 | 4 52 | D 68 | T 84 | d 100 | t 116 |
| 5 | 5 | 21 | % 37 | 5 53 | E 69 | U 85 | e 101 | u 117 |
| 6 | 6 | 22 | & 38 | 6 54 | F 70 | V 86 | f 102 | v 118 |
| 7 | BEL 7 | 23 | ' 39 | 7 55 | G 71 | W 87 | g 103 | w 119 |
| 8 | 8 | CAN 24 | ( 40 | 8 56 | H 72 | X 88 | h 104 | x 120 |
| 9 | 9 | 25 | ) 41 | 9 57 | I 73 | Y 89 | i 105 | y 121 |
| A | LF 10 | SUB 26 | * 42 | : 58 | J 74 | Z 90 | j 106 | z 122 |
| B | 11 | ESC 27 | + 43 | ; 59 | K 75 | [ 91 | k 107 | { 123 |
| C | FF 12 | FS 28 | , 44 | < 60 | L 76 | \ 92 | l 108 | ¦ 124 |
| D | CR 13 | 29 | − 45 | = 61 | M 77 | ] 93 | m 109 | } 125 |
| E | SO 14 | 30 | . 46 | > 62 | N 78 | ^ 94 | n 110 | ~ 126 |
| F | SI 15 | 31 | / 47 | ? 63 | O 79 | _ 95 | o 111 | ▩ 127 |

(SP: Space)



## 2) IBM Character Set #1 (DIP SW1: OFF, SW2: ON)

| Hexa-decimal | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | SP 32 | 0 48 | @ 64 | P 80 | ` 96 | p 112 |
| 1 | 1 | 17 | ! 33 | 1 49 | A 65 | Q 81 | a 97 | q 113 |
| 2 | 2 | DC2 18 | " 34 | 2 50 | B 66 | R 82 | b 98 | r 114 |
| 3 | 3 | 19 | # 35 | 3 51 | C 67 | S 83 | c 99 | s 115 |
| 4 | 4 | DC4 20 | $ 36 | 4 52 | D 68 | T 84 | d 100 | t 116 |
| 5 | 5 | 21 | % 37 | 5 53 | E 69 | U 85 | e 101 | u 117 |
| 6 | 6 | 22 | & 38 | 6 54 | F 70 | V 86 | f 102 | v 118 |
| 7 | BEL 7 | 23 | ' 39 | 7 55 | G 71 | W 87 | g 103 | w 119 |
| 8 | 8 | CAN 24 | ( 40 | 8 56 | H 72 | X 88 | h 104 | x 120 |
| 9 | 9 | 25 | ) 41 | 9 57 | I 73 | Y 89 | i 105 | y 121 |
| A | LF 10 | SUB 26 | * 42 | : 58 | J 74 | Z 90 | j 106 | z 122 |
| B | 11 | ESC 27 | + 43 | ; 59 | K 75 | [ 91 | k 107 | { 123 |
| C | FF 12 | FS 28 | , 44 | < 60 | L 76 | \ 92 | l 108 | ¦ 124 |
| D | CR 13 | 29 | - 45 | = 61 | M 77 | ] 93 | m 109 | } 125 |
| E | SO 14 | 30 | . 46 | > 62 | N 78 | ^ 94 | n 110 | ~ 126 |
| F | SI 15 | 31 | / 47 | ? 63 | O 79 | _ 95 | o 111 | 127 |

(SP: Space)

| Hexa-decimal | 8 | 9 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| 0 | 128 | 144 | á 160 | ▒ 176 | └ 192 | ╨ 208 | α 224 | ≡ 240 |
| 1 | 129 | 145 | í 161 | ▓ 177 | ┴ 193 | ╤ 209 | β 225 | ± 241 |
| 2 | 130 | DC2 146 | ó 162 | ▓ 178 | ┬ 194 | ╥ 210 | Γ 226 | ≥ 242 |
| 3 | 131 | 147 | ú 163 | │ 179 | ├ 195 | ╙ 211 | π 227 | ≤ 243 |
| 4 | 132 | DC4 148 | ñ 164 | ┤ 180 | ─ 196 | ╘ 212 | Σ 228 | ⌠ 244 |
| 5 | 133 | 149 | Ñ 165 | ╡ 181 | ┼ 197 | ╒ 213 | σ 229 | ⌡ 245 |
| 6 | 134 | 150 | ª 166 | ╢ 182 | ╞ 198 | ╓ 214 | µ 230 | ÷ 246 |
| 7 | BEL 135 | 151 | º 167 | ╖ 183 | ╟ 199 | ╫ 215 | τ 231 | ≈ 247 |
| 8 | 136 | CAN 152 | ¿ 168 | ╕ 184 | ╚ 200 | ╪ 216 | Φ 232 | ° 248 |
| 9 | 137 | 153 | ⌐ 169 | ╣ 185 | ╔ 201 | ┘ 217 | Θ 233 | ∙ 249 |
| A | LF 138 | SUB 154 | ¬ 170 | ║ 186 | ╩ 202 | ┌ 218 | Ω 234 | · 250 |
| B | 139 | ESC 155 | ½ 171 | ╗ 187 | ╦ 203 | ▉ 219 | δ 235 | √ 251 |
| C | FF 140 | FS 156 | ¼ 172 | ╝ 188 | ╠ 204 | ▄ 220 | ∞ 236 | n 252 |
| D | CR 141 | 157 | ¡ 173 | ╜ 189 | ═ 205 | ▌ 221 | ø 237 | ² 253 |
| E | SO 142 | 158 | « 174 | ╛ 190 | ╬ 206 | ▐ 222 | ∈ 238 | ■ 254 |
| F | SI 143 | 159 | » 175 | ┐ 191 | ╧ 207 | ▀ 223 | ∩ 239 | 255 |

### 3) IBM Character Set #2 (DIP SW1: ON, SW2: OFF)

| Hexa-decimal | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | SP 32 | 0 48 | @ 64 | P 80 | ` 96 | p 112 |
| 1 | 1 | 17 | ! 33 | 1 49 | A 65 | Q 81 | a 97 | q 113 |
| 2 | 2 | DC2 18 | " 34 | 2 50 | B 66 | R 82 | b 98 | r 114 |
| 3 | ♥ 3 | 19 | # 35 | 3 51 | C 67 | S 83 | c 99 | s 115 |
| 4 | ♦ 4 | DC4 20 | $ 36 | 4 52 | D 68 | T 84 | d 100 | t 116 |
| 5 | ♣ 5 | § 21 | % 37 | 5 53 | E 69 | U 85 | e 101 | u 117 |
| 6 | ♠ 6 | 22 | & 38 | 6 54 | F 70 | V 86 | f 102 | v 118 |
| 7 | BEL 7 | 23 | ' 39 | 7 55 | G 71 | W 87 | g 103 | w 119 |
| 8 | 8 | CAN 24 | ( 40 | 8 56 | H 72 | X 88 | h 104 | x 120 |
| 9 | 9 | 25 | ) 41 | 9 57 | I 73 | Y 89 | i 105 | y 121 |
| A | LF 10 | SUB 26 | * 42 | : 58 | J 74 | Z 90 | j 106 | z 122 |
| B | 11 | ESC 27 | + 43 | ; 59 | K 75 | [ 91 | k 107 | { 123 |
| C | FF 12 | FS 28 | , 44 | < 60 | L 76 | \ 92 | l 108 | ¦ 124 |
| D | CR 13 | 29 | - 45 | = 61 | M 77 | ] 93 | m 109 | } 125 |
| E | SO 14 | 30 | . 46 | > 62 | N 78 | ^ 94 | n 110 | ~ 126 |
| F | SI 15 | 31 | / 47 | ? 63 | O 79 | _ 95 | o 111 | 127 |

(SP: Space)

| Hexa-decimal | 8 | 9 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| 0 | Ç 128 | É 144 | á 160 | ⣿ 176 | └ 192 | ╙ 208 | α 224 | ≡ 240 |
| 1 | ü 129 | æ 145 | í 161 | ▓ 177 | ┴ 193 | ╤ 209 | β 225 | ± 241 |
| 2 | é 130 | Æ 146 | ó 162 | ▒ 178 | ┬ 194 | ╥ 210 | Γ 226 | ≥ 242 |
| 3 | â 131 | ô 147 | ú 163 | │ 179 | ├ 195 | ╙ 211 | π 227 | ≤ 243 |
| 4 | ä 132 | ö 148 | ñ 164 | ┤ 180 | ─ 196 | ╘ 212 | Σ 228 | ⌠ 244 |
| 5 | à 133 | ò 149 | Ñ 165 | ╡ 181 | ┼ 197 | ╒ 213 | σ 229 | ⌡ 245 |
| 6 | å 134 | û 150 | ª 166 | ╢ 182 | ╞ 198 | ╓ 214 | µ 230 | ÷ 246 |
| 7 | ç 135 | ù 151 | º 167 | ╖ 183 | ╟ 199 | ╫ 215 | τ 231 | ≈ 247 |
| 8 | ê 136 | ÿ 152 | ¿ 168 | ╕ 184 | ╚ 200 | ╪ 216 | Φ 232 | ° 248 |
| 9 | ë 137 | Ö 153 | ⌐ 169 | ╣ 185 | ╔ 201 | ┘ 217 | Θ 233 | ∙ 249 |
| A | è 138 | Ü 154 | ¬ 170 | ║ 186 | ╩ 202 | ┌ 218 | Ω 234 | · 250 |
| B | ï 139 | ¢ 155 | ½ 171 | ╗ 187 | ╦ 203 | ■ 219 | δ 235 | √ 251 |
| C | î 140 | £ 156 | ¼ 172 | ╝ 188 | ╠ 204 | ▬ 220 | ∞ 236 | n 252 |
| D | ì 141 | ¥ 157 | ¡ 173 | ╜ 189 | ═ 205 | ▌ 221 | ø 237 | ² 253 |
| E | Ä 142 | ₧ 158 | « 174 | ╛ 190 | ╬ 206 | ▐ 222 | ∈ 238 | ■ 254 |
| F | Å 143 | ƒ 159 | » 175 | ┐ 191 | ╧ 207 | ▀ 223 | ∩ 239 | 255 |

## 4) JAPAN (DIP SW1: OFF, SW2: OFF)

| Hexa-decimal | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | SP 32 | 0 48 | @ 64 | P 80 | ` 96 | p 112 |
| 1 | 1 | 17 | ! 33 | 1 49 | A 65 | Q 81 | a 97 | q 113 |
| 2 | 2 | DC2 18 | " 34 | 2 50 | B 66 | R 82 | b 98 | r 114 |
| 3 | 3 | 19 | # 35 | 3 51 | C 67 | S 83 | c 99 | s 115 |
| 4 | 4 | DC4 20 | $ 36 | 4 52 | D 68 | T 84 | d 100 | t 116 |
| 5 | 5 | 21 | % 37 | 5 53 | E 69 | U 85 | e 101 | u 117 |
| 6 | 6 | 22 | & 38 | 6 54 | F 70 | V 86 | f 102 | v 118 |
| 7 | BEL 7 | 23 | ' 39 | 7 55 | G 71 | W 87 | g 103 | w 119 |
| 8 | 8 | CAN 24 | ( 40 | 8 56 | H 72 | X 88 | h 104 | x 120 |
| 9 | 9 | 25 | ) 41 | 9 57 | I 73 | Y 89 | i 105 | y 121 |
| A | LF 10 | SUB 26 | * 42 | : 58 | J 74 | Z 90 | j 106 | z 122 |
| B | 11 | ESC 27 | + 43 | ; 59 | K 75 | [ 91 | k 107 | { 123 |
| C | FF 12 | FS 28 | , 44 | < 60 | L 76 | ¥ 92 | l 108 | \| 124 |
| D | CR 13 | 29 | − 45 | = 61 | M 77 | ] 93 | m 109 | } 125 |
| E | SO 14 | 30 | . 46 | > 62 | N 78 | ^ 94 | n 110 | ‾ 126 |
| F | SI 15 | 31 | / 47 | ? 63 | O 79 | _ 95 | o 111 | ▩ 127 |

(SP: Space)

| Hexa-decimal | 8 | 9 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| 0 | SP 128 | 144 | SP 160 | ー 176 | タ 192 | ミ 208 | 224 |  240 |
| 1 |  129 | 145 | 。 161 | ア 177 | チ 193 | ム 209 |  225 |  241 |
| 2 | 130 | 146 | 「 162 | イ 178 | ツ 194 | メ 210 |  226 |  242 |
| 3 | 131 | 147 | 」 163 | ウ 179 | テ 195 | モ 211 | 227 |  243 |
| 4 | 132 | 148 | 、 164 | エ 180 | ト 196 | ヤ 212 |  228 |  244 |
| 5 | 133 | 149 | ・ 165 | オ 181 | ナ 197 | ユ 213 |  229 |  245 |
| 6 | 134 |  150 | ヲ 166 | カ 182 | ニ 198 | ヨ 214 | 230 |  246 |
| 7 |  135 | 151 | ァ 167 | キ 183 | ヌ 199 | ラ 215 |  231 |  247 |
| 8 | 136 | 152 | ィ 168 | ク 184 | ネ 200 | リ 216 |  232 |  248 |
| 9 | 137 |  153 | ゥ 169 | ケ 185 | ノ 201 | ル 217 | 233 |  249 |
| A | 138 | 154 | ェ 170 | コ 186 | ハ 202 | レ 218 |  234 |  250 |
| B | 139 | 155 | ォ 171 | サ 187 | ヒ 203 | ロ 219 |  235 |  251 |
| C | 140 |  156 | ャ 172 | シ 188 | フ 204 | ワ 220 | 236 |  252 |
| D |  141 | 157 | ュ 173 | ス 189 | ヘ 205 | ン 221 |  237 |  253 |
| E | 142 | 158 | ョ 174 | セ 190 | ホ 206 | ゛ 222 |  238 |  254 |
| F | 143 |  159 | ッ 175 | ソ 191 | マ 207 | ° 223 | 239 |  255 |

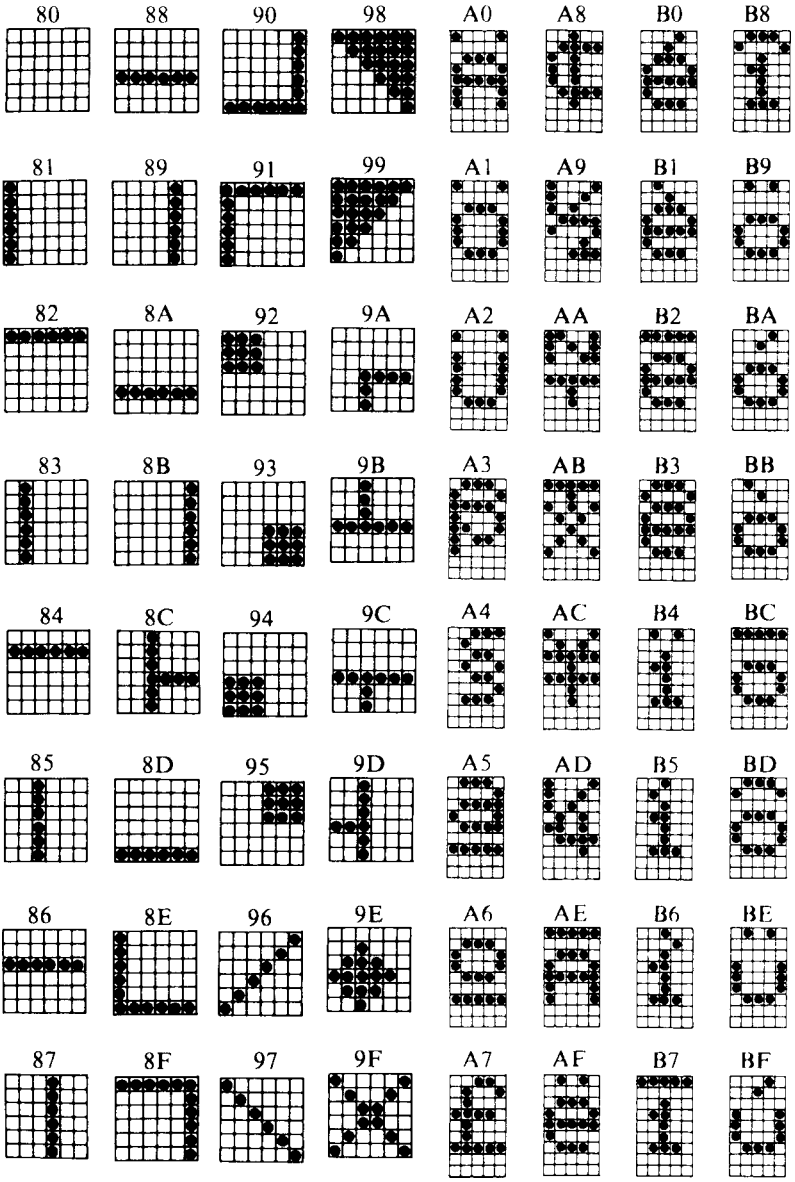
(SP: Space)

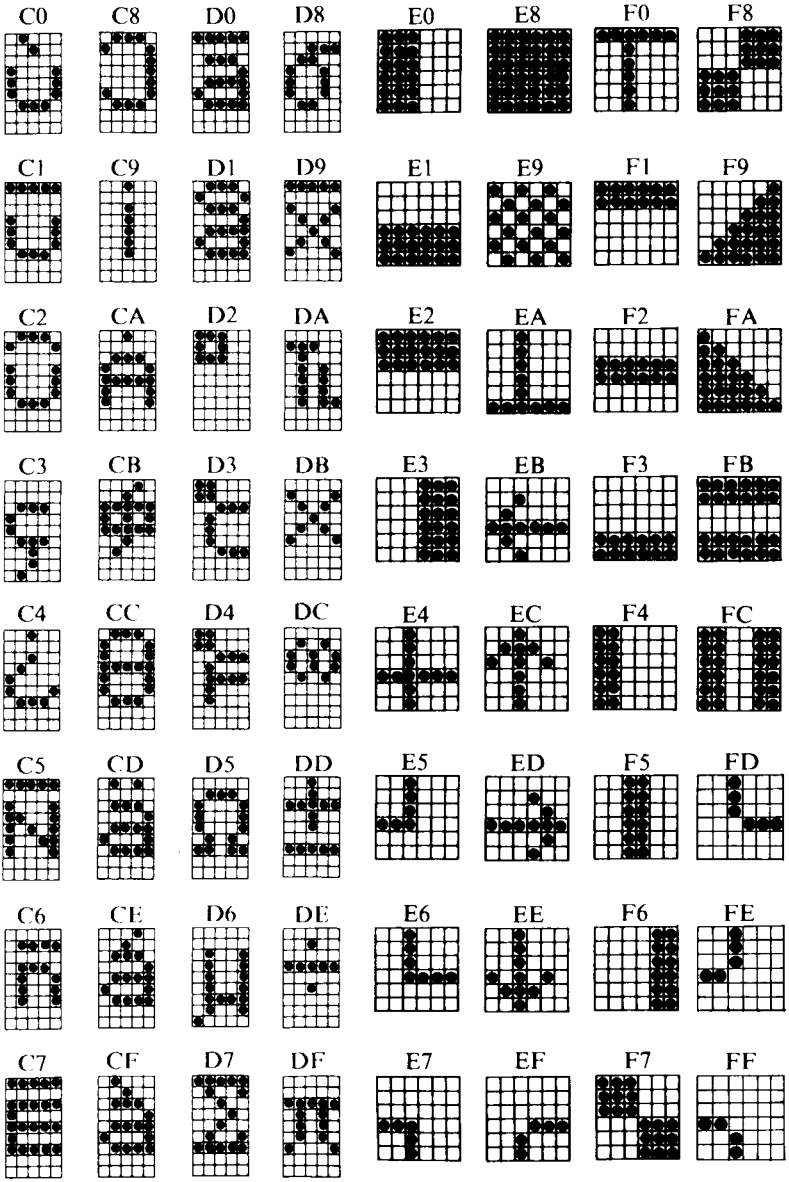
## International Character Sets

| Hexadecimal | 23 | 24 | 40 | 5B | 5C | 5D | 5E | 60 | 7B | 7C | 7D | 7E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U.S.A. | # | $ | @ | [ | \ | ] | ^ | ` | { | ¦ | } | ~ |
| France | # | $ | à | ° | ç | § | ^ | ` | é | ù | è | ¨ |
| Germany | # | $ | § | Ä | Ö | Ü | ^ | ` | ä | ö | ü | ß |
| England | £ | $ | @ | [ | \ | ] | ^ | ` | { | ¦ | } | ~ |
| Denmark | # | $ | @ | Æ | Ø | Å | ^ | ` | æ | ø | å | ~ |
| Sweden | # | ¤ | É | Ä | Ö | Å | Ü | é | ä | ö | å | ü |
| Italy | # | $ | @ | ° | \ | é | ^ | ù | à | ò | è | ì |
| Spain | ₧ | $ | @ | ¡ | Ñ | ¿ | ^ | ` | ¨ | ñ | } | ~ |
| Japan | # | $ | @ | [ | ¥ | ] | ^ | ` | { | \| | } | ¯ |

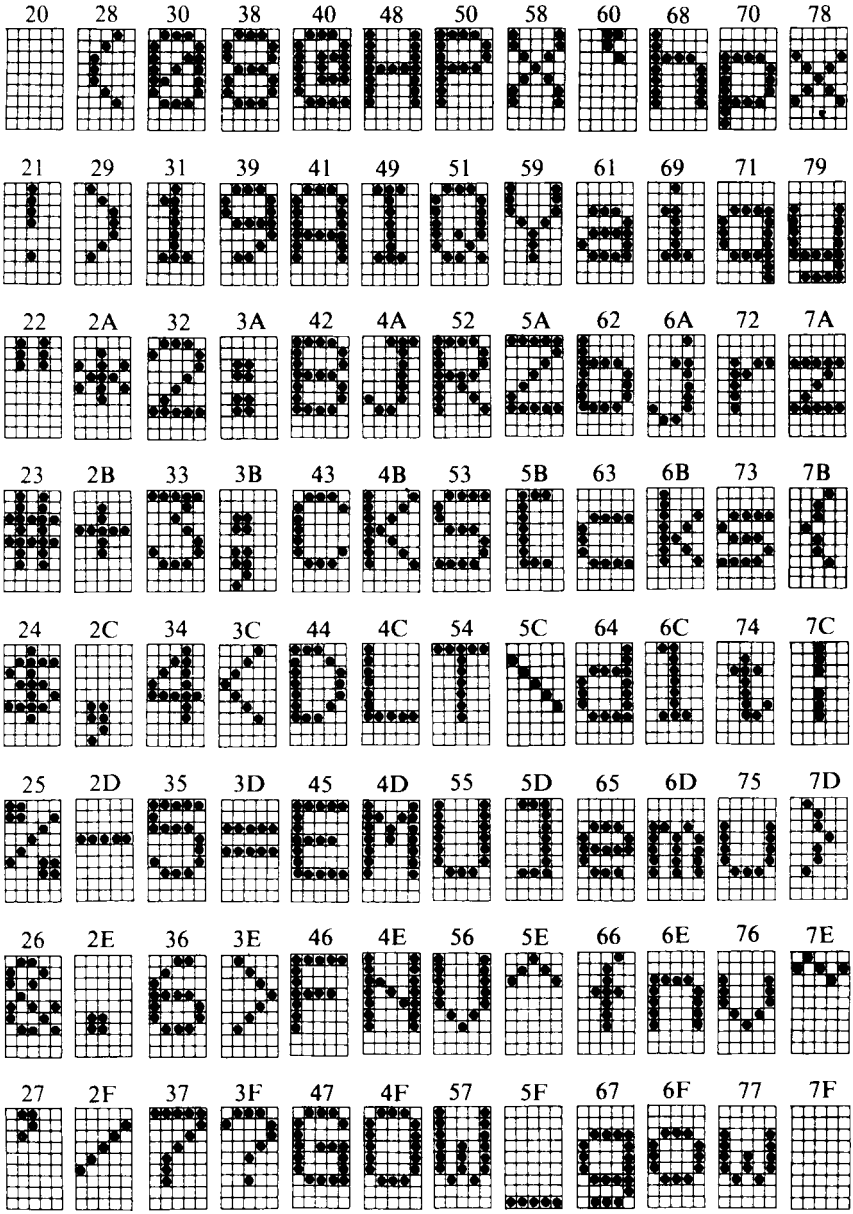
# 9. FONT LIST

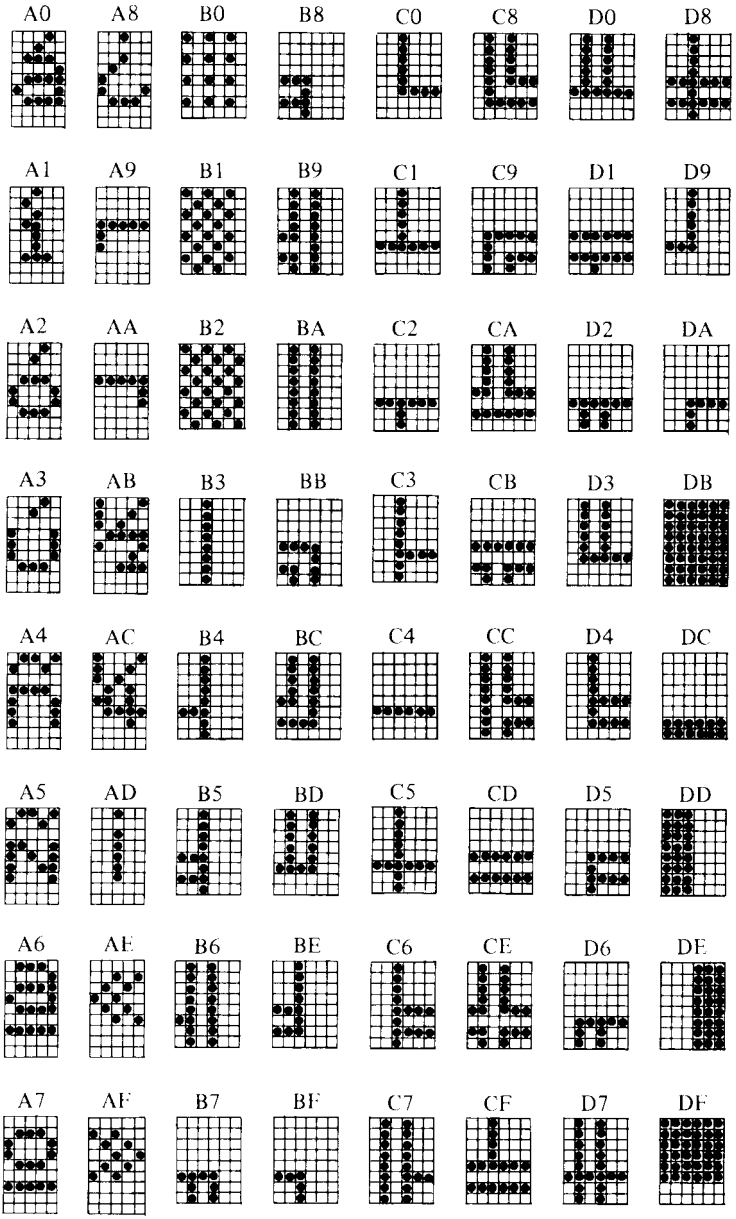
## 1) U.S.A. & Europe (DIP SW1: ON, SW2:ON)

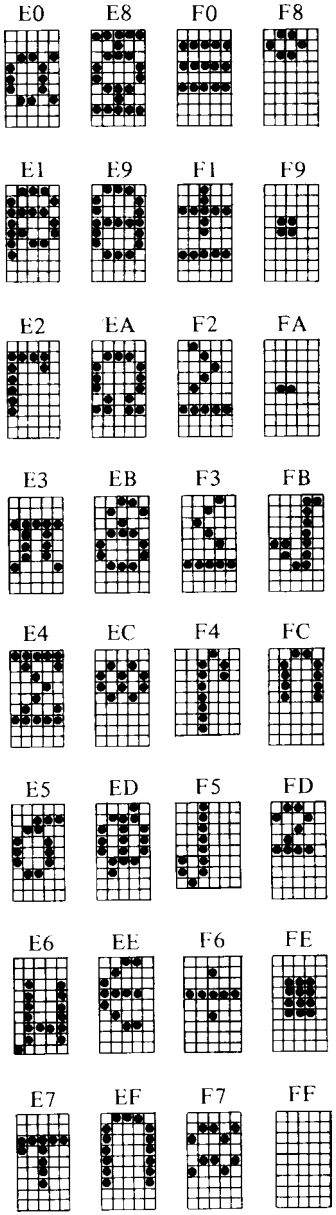

80
88
90
98
A0
A8
B0
B8
81
89
91
99
A1
A9
B1
B9
82
8A
92
9A
A2
AA
B2
BA
83
8B
93
9B
A3
AB
B3
BB
84
8C
94
9C
A4
AC
B4
BC
85
8D
95
9D
A5
AD
B5
BD
86
8E
96
9E
A6
AE
B6
BE
87
8F
97
9F
A7
AF
B7
BF


C0
C8
D0
D8
E0
E8
F0
F8
C1
C9
D1
D9
E1
E9
F1
F9
C2
CA
D2
DA
E2
EA
F2
FA
C3
CB
D3
DB
E3
EB
F3
FB
C4
CC
D4
DC
E4
EC
F4
FC
C5
CD
D5
DD
E5
ED
F5
FD
C6
CE
D6
DE
E6
EE
F6
FE
C7
CF
D7
DF
E7
EF
F7
FF

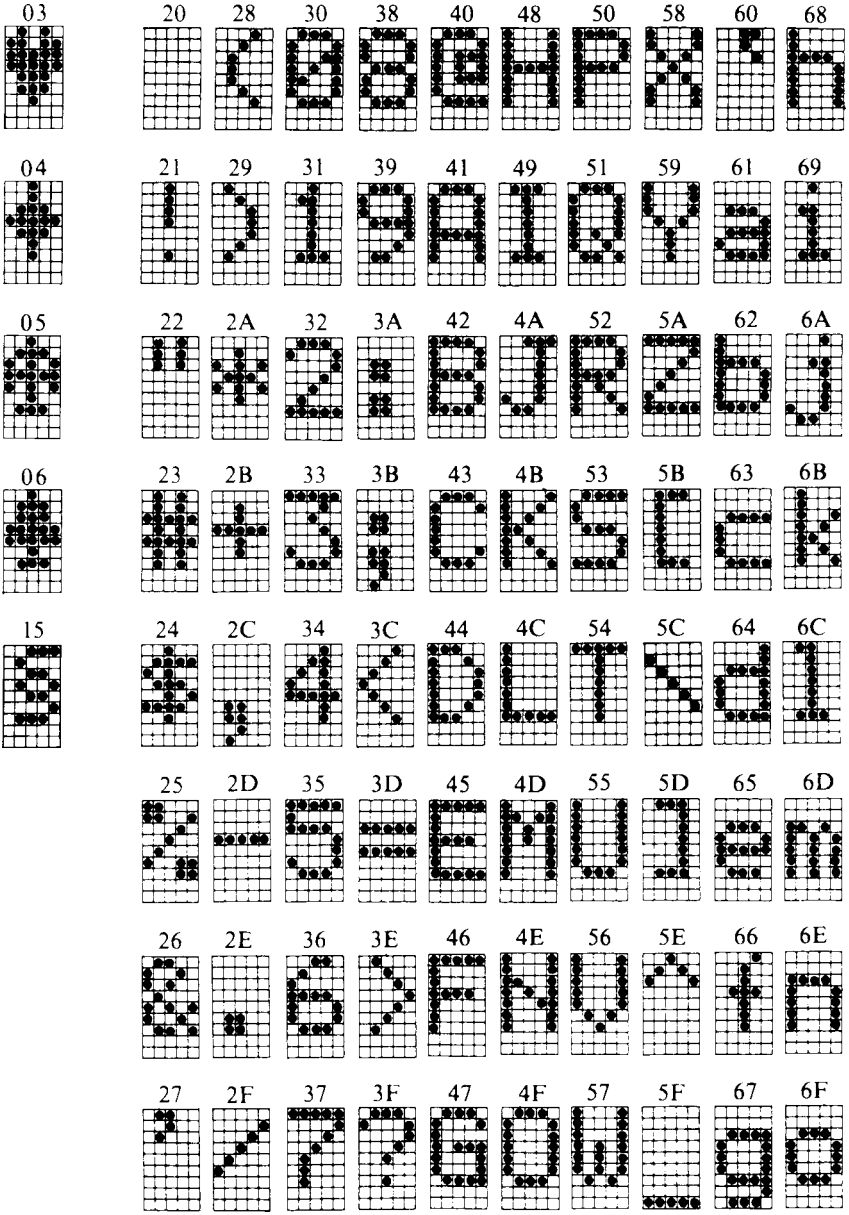
## 2) IBM Character Set #1 (DIP SW1: OFF, SW2: ON)

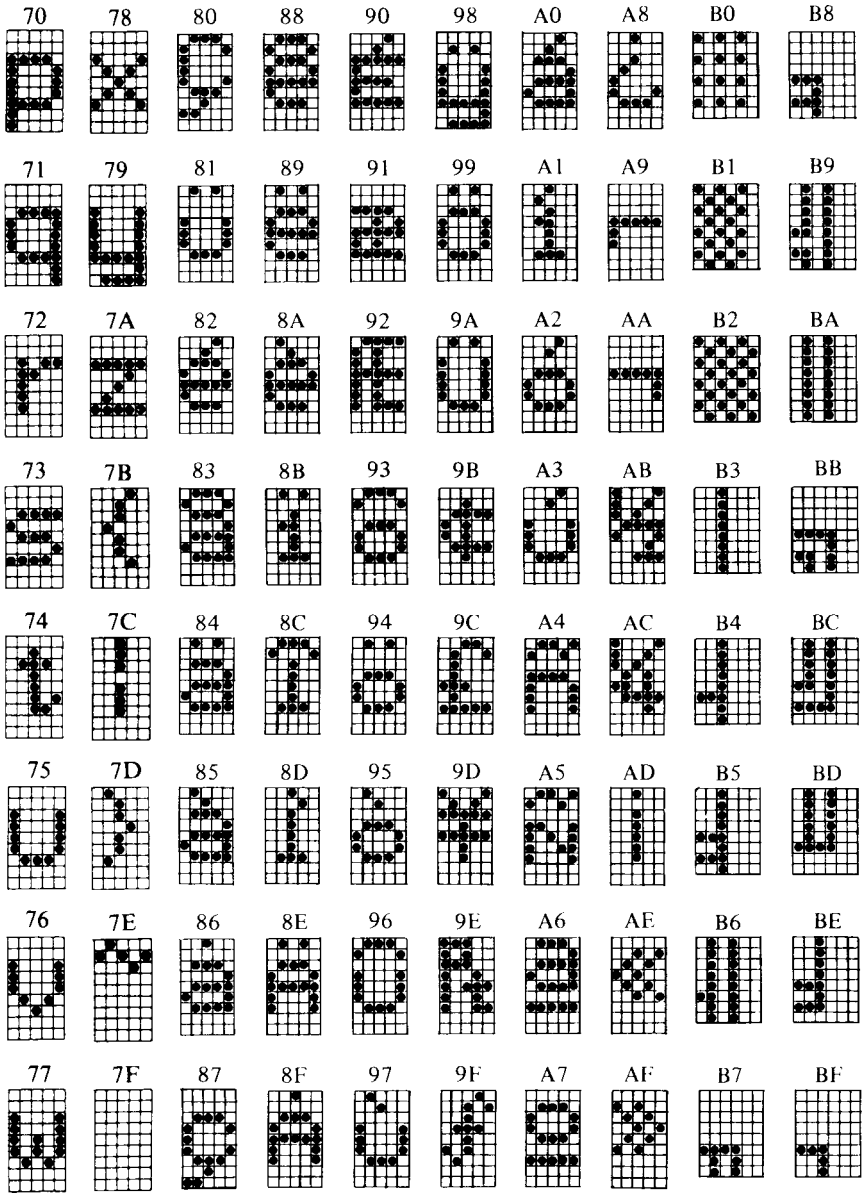


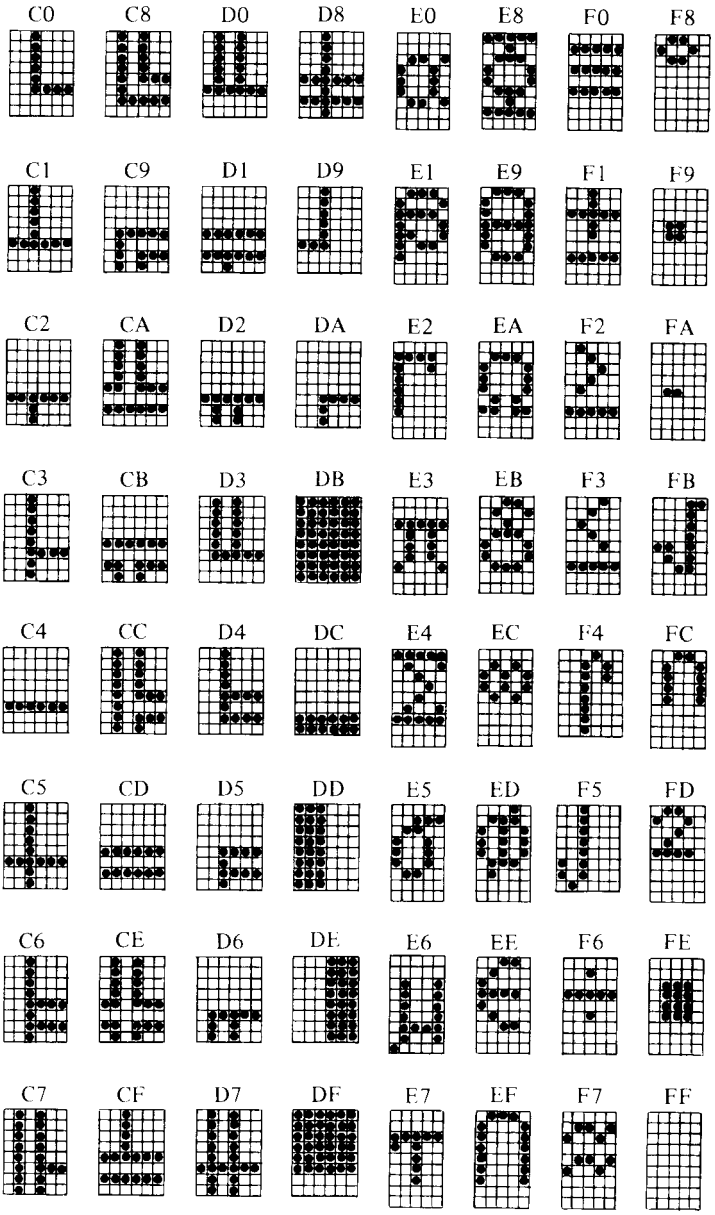

A0
A8
B0
B8
C0
C8
D0
D8
A1
A9
B1
B9
C1
C9
D1
D9
A2
AA
B2
BA
C2
CA
D2
DA
A3
AB
B3
BB
C3
CB
D3
DB
A4
AC
B4
BC
C4
CC
D4
DC
A5
AD
B5
BD
C5
CD
D5
DD
A6
AE
B6
BE
C6
CE
D6
DE
A7
AF
B7
BF
C7
CF
D7
DF


E0
E8
F0
F8
E1
E9
F1
F9
E2
EA
F2
FA
E3
EB
F3
FB
E4
EC
F4
FC
E5
ED
F5
FD
E6
EE
F6
FE
E7
EF
F7
FF

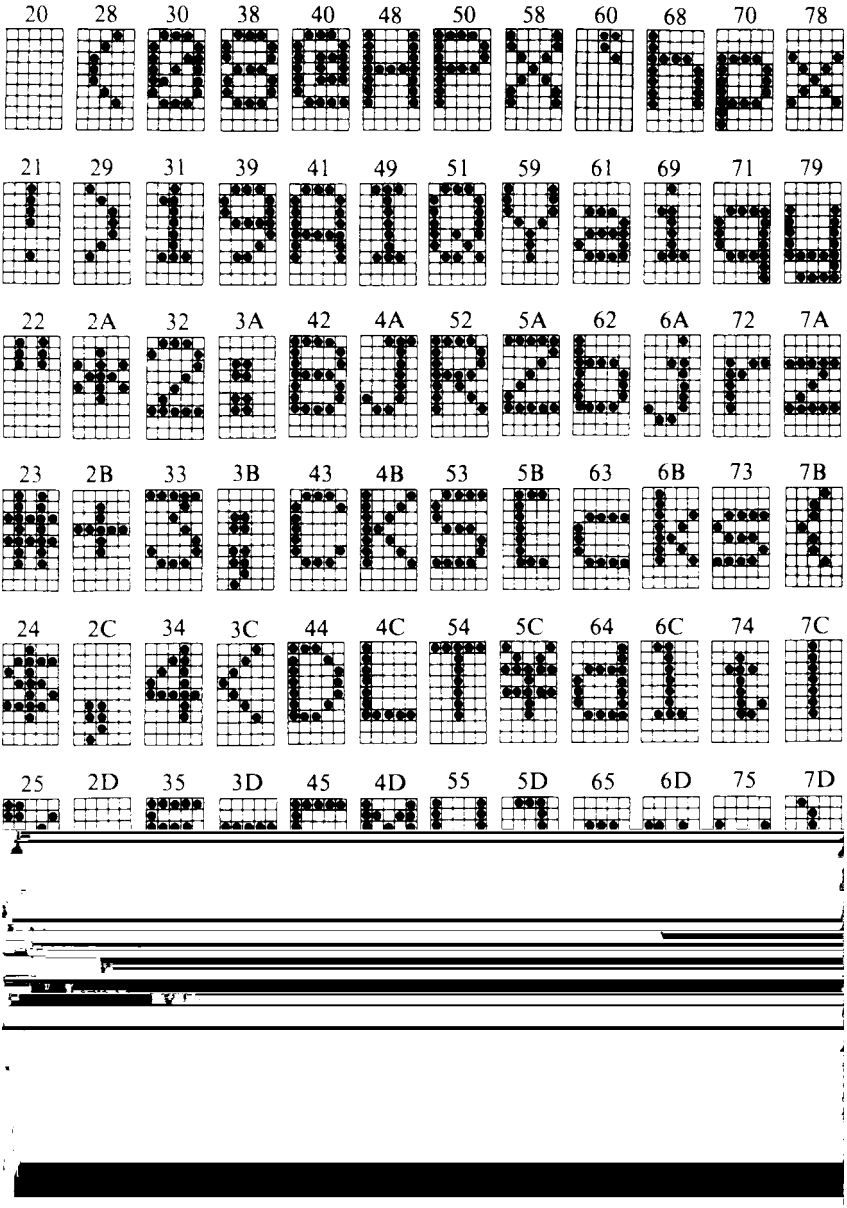
## 3) IBM Character Set #2 (DIP SW1: ON, SW2: OFF)

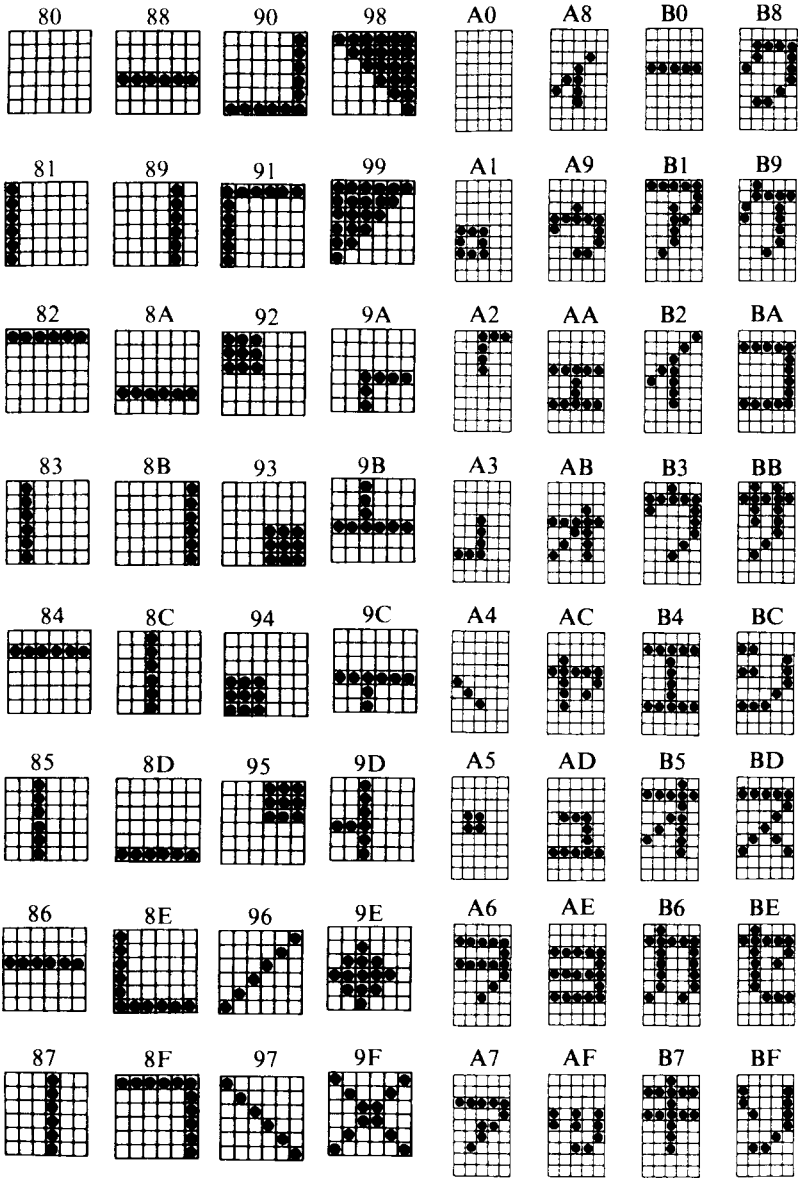


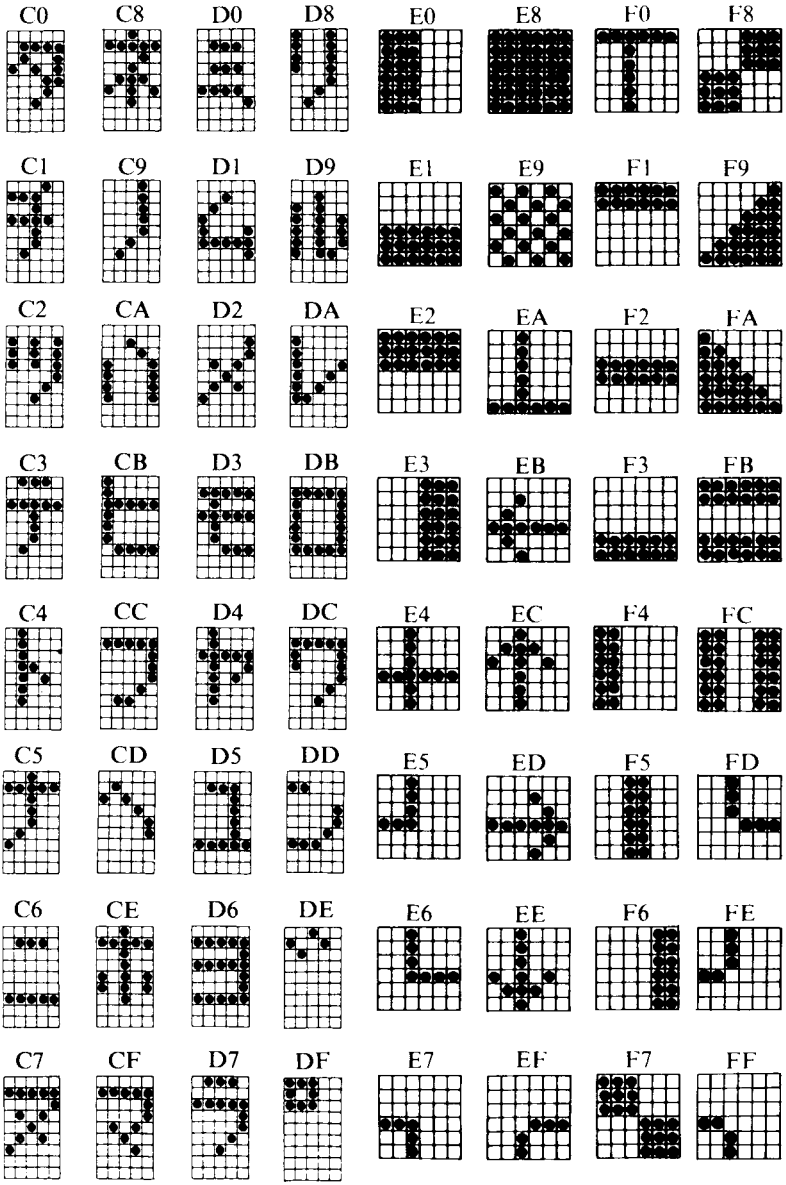

70 78 80 88 90 98 A0 A8 B0 B8
71 79 81 89 91 99 A1 A9 B1 B9
72 7A 82 8A 92 9A A2 AA B2 BA
73 7B 83 8B 93 9B A3 AB B3 BB
74 7C 84 8C 94 9C A4 AC B4 BC
75 7D 85 8D 95 9D A5 AD B5 BD
76 7E 86 8E 96 9E A6 AE B6 BE
77 7F 87 8F 97 9F A7 AF B7 BF


C0
C8
D0
D8
E0
E8
F0
F8
C1
C9
D1
D9
E1
E9
F1
F9
C2
CA
D2
DA
E2
EA
F2
FA
C3
CB
D3
DB
E3
EB
F3
FB
C4
CC
D4
DC
E4
EC
F4
FC
C5
CD
D5
DD
E5
ED
F5
FD
C6
CE
D6
DE
E6
EE
F6
FE
C7
CF
D7
DF
E7
EF
F7
FF

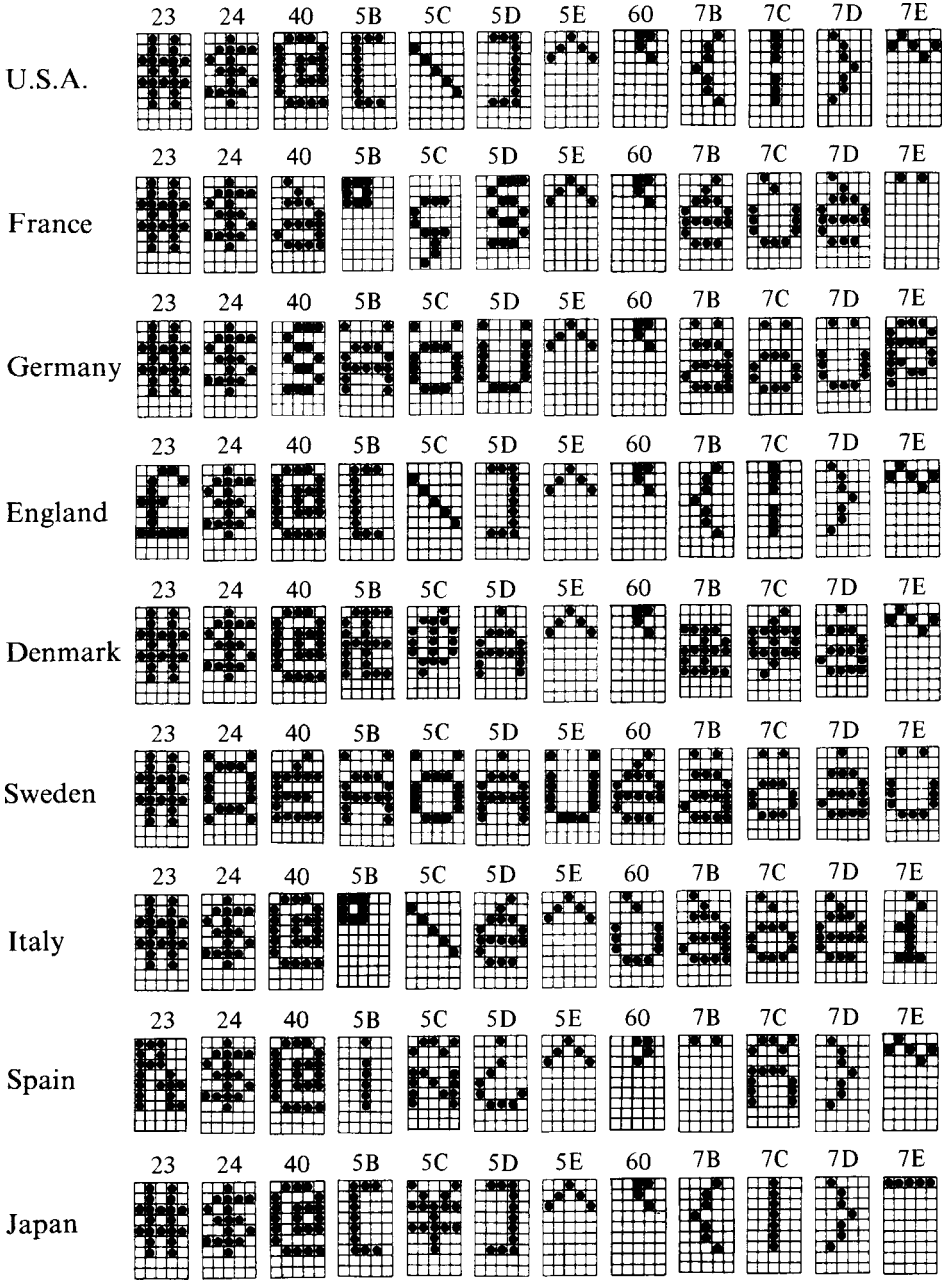
## 4) JAPAN (DIP SW1: OFF, SW2: OFF)




80
88
90
98
A0
A8
B0
B8
81
89
91
99
A1
A9
B1
B9
82
8A
92
9A
A2
AA
B2
BA
83
8B
93
9B
A3
AB
B3
BB
84
8C
94
9C
A4
AC
B4
BC
85
8D
95
9D
A5
AD
B5
BD
86
8E
96
9E
A6
AE
B6
BE
87
8F
97
9F
A7
AF
B7
BF


C0
C8
D0
D8
E0
E8
F0
F8
C1
C9
D1
D9
E1
E9
F1
F9
C2
CA
D2
DA
E2
EA
F2
FA
C3
CB
D3
DB
E3
EB
F3
FB
C4
CC
D4
DC
E4
EC
F4
FC
C5
CD
D5
DD
E5
ED
F5
FD
C6
CE
D6
DE
E6
EE
F6
FE
C7
CF
D7
DF
E7
EF
F7
FF

## International Character Sets

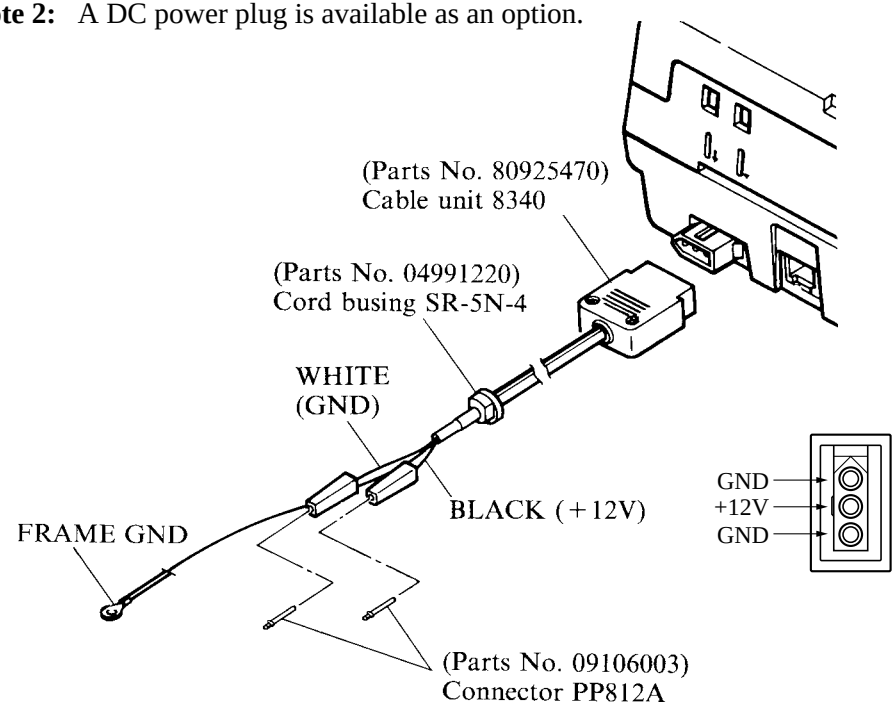


# 10. WHEN POWER IS SUPPLIED BY THE USER

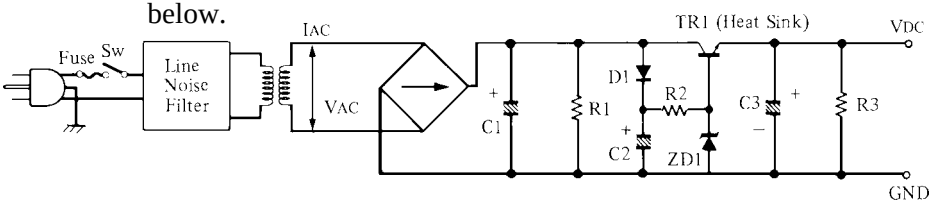
When printer power is supplied by the user rather than through the accessory power source unit, please be careful of the following points.

**Note 1:** The power supply must be $+12V^{+10\%}_{-5\%}$ 2A or above. An electrolytic capacitor (C = 4700µF/25V to 6800µF/25V) must be connected across the output of the power supply.

**Note 2:** A DC power plug is available as an option.




Reference: Design the power supply referring to the power supply circuit shown below.




**Note:** A line noise filter must be used to prevent line transients from passing through power supply. Filter design to be determined by environmental noise requirements.

| | | | |
|---|---|---|---|
| VAC | 14V | C2 | 100 ~ 200μF/25V |
| VDC | 12V $^{+10\%}_{-5\%}$ | ZD1 | VZD = 14V (1W) |
| IAC | 2 ~ 3A | C3 | 4700 ~ 6800μF/25V |
| C1 | 6800μF/25V | TR1 | 2SD633 (TOSHIBA) |

Other parameters may be determined by user.

**Figure 10-1. Power Supply Reference Circuit**

**– MEMO –**

**ELECTRONIC PRODUCTS DIVISION**
**STAR MICRONICS CO., LTD.**
536 Nanatsushinnya, Shimizu, Shizuoka
424-0066 Japan
Tel: 0543-47-0112, Fax: 0543-48-5271

Please access the following URL
http://www.star-micronics.co.jp/service/sp_sup_e.htm
for the lastest revision of the manual.

**OVERSEAS SUBSIDIARY COMPANIES**
**STAR MICRONICS AMERICA, INC.**
70-D Ethel Road West, Piscataway, NJ 08854 U.S.A
Tel: 732-572-9512, Fax: 732-572-5095

**STAR MICRONICS U.K. LTD.**
Star House, Peregrine Business Park, Gomm Road,
High Wycombe, Bucks, HP 13 7DL, U.K.
Tel: 01494-471111, Fax: 01494-473333

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