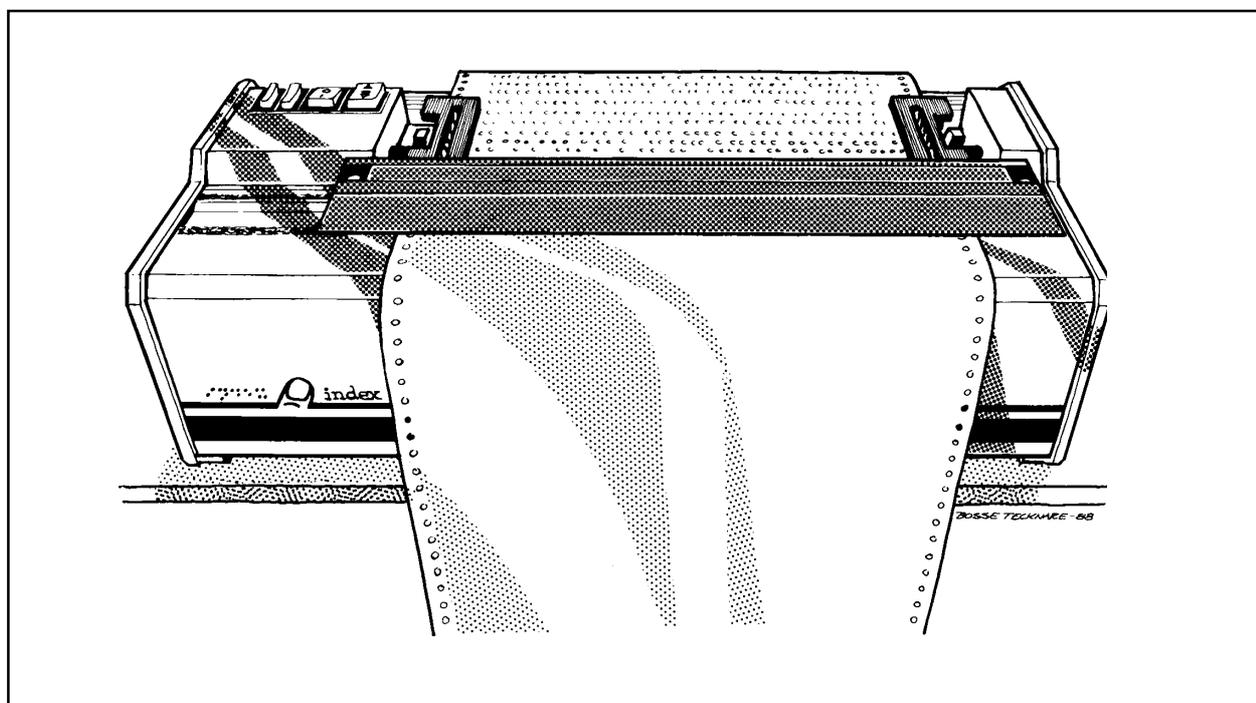


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# 1. INTRODUCTION

INDEX is a technically advanced printer that can produce both 8 dot and 6 dot Braille and a variety of graphic images. It prints at an interline\* speed of 50 characters per second. The INDEX has sixteen different Braille languages codes built-in. \*Interline speed represents a ratio of the speed used to produce a single line of braille. Full page output may be less, depending on format and transmission speed. The INDEX is very easy to use, however, we suggest that you read through the introductory chapter prior to power-on your INDEX. Reading these instructions can enable you to become familiar with the printer and its features quickly and will minimize potential problems. Keep the manual nearby for easy reference. In the event of you requiring additional advice or technical support please do not hesitate to contact your local INDEX representative.



## 2. GETTING STARTED

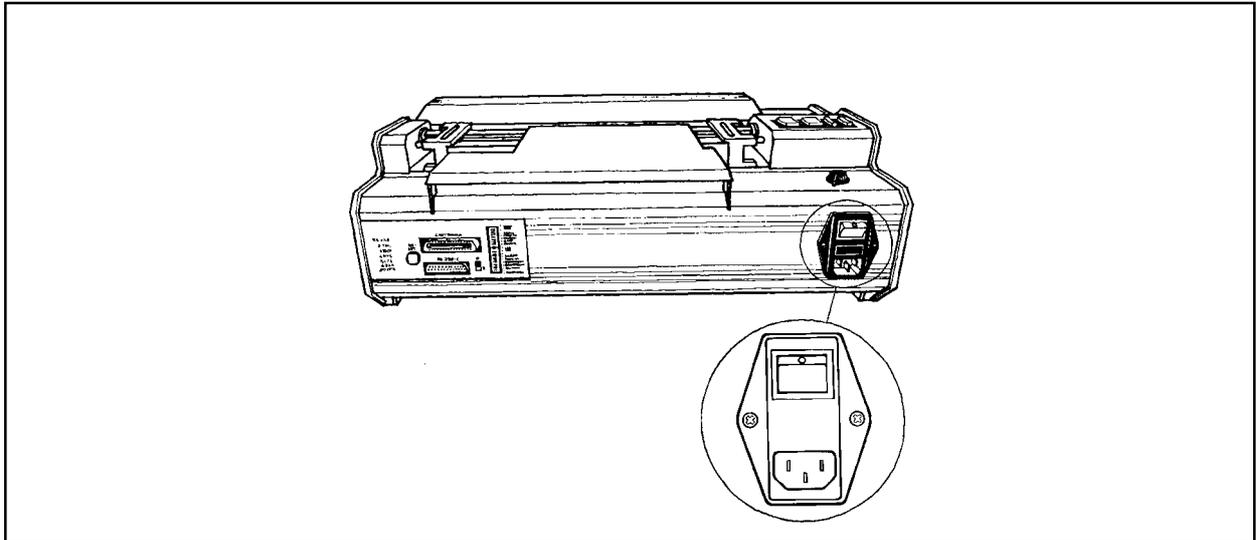
### 2.1 Unpacking

The box containing the printer should include the following parts. Please contact your agent if anything is missing.

- INDEX Basic Braille printer
- INDEX User Manual
- SET-UP Disk
- Software support disk - Draw, Letter graphic programs
- Power cable
- Interface cable for connection to the Computer

## 2.2 Powercable

1. Make sure that the printer is switched off.



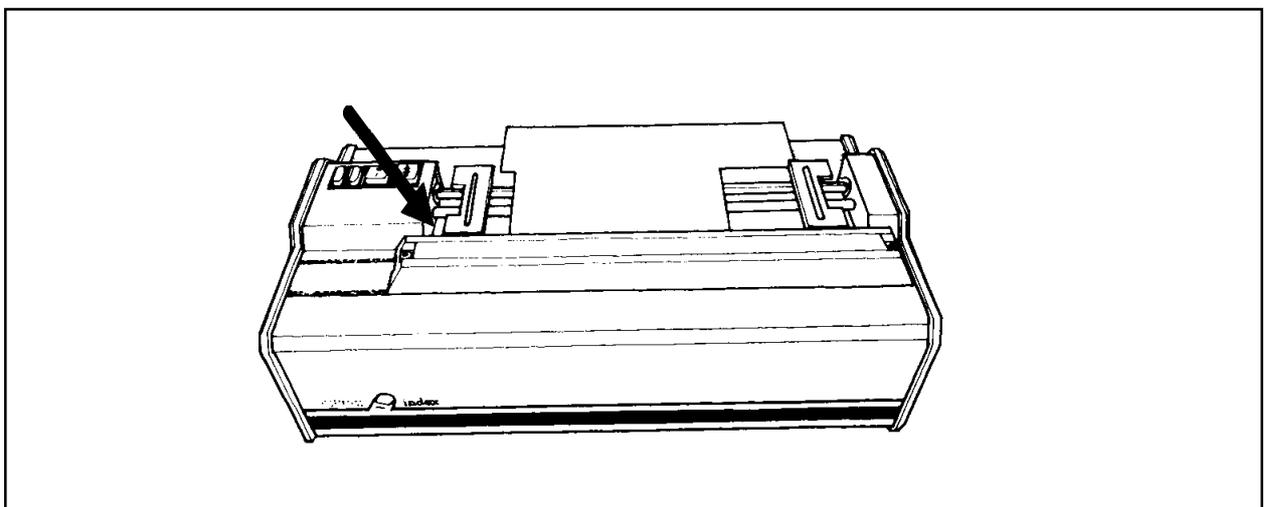
2. Connect the power cable to the socket located on the back of the printer on the left hand side.
3. Connect the pin plug to a grounded power outlet.

**Note!** The power cable must always be connected to a grounded outlet.

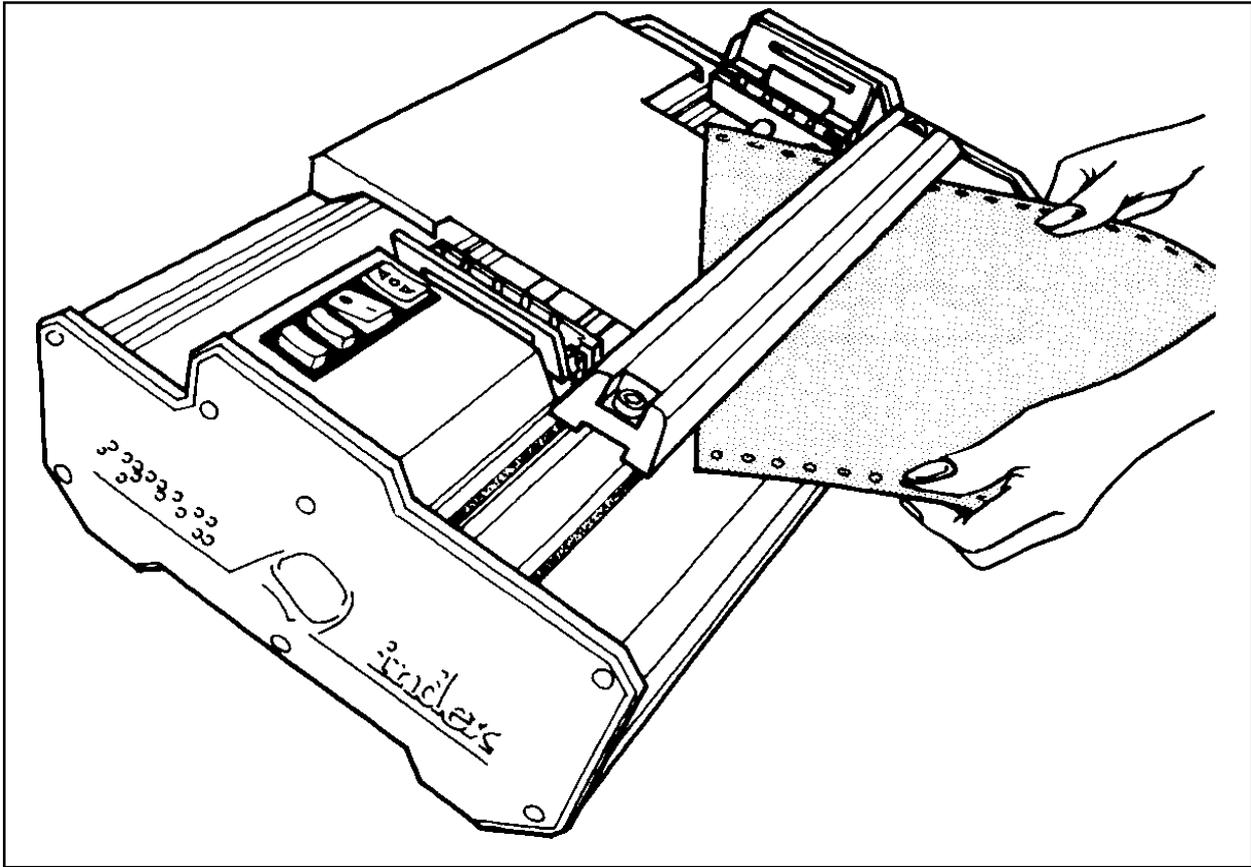
## 2.3 Before Power ON

Remember to remove the "Shipping screw", located between the left tractor-feeder and the top-switch panel just behind the printing bar. (An Allen-wrench is included with the printer.)

**NOTE!** This screw must be re-fitted whenever the printer is shipped .  
(The printing head should be at left side).

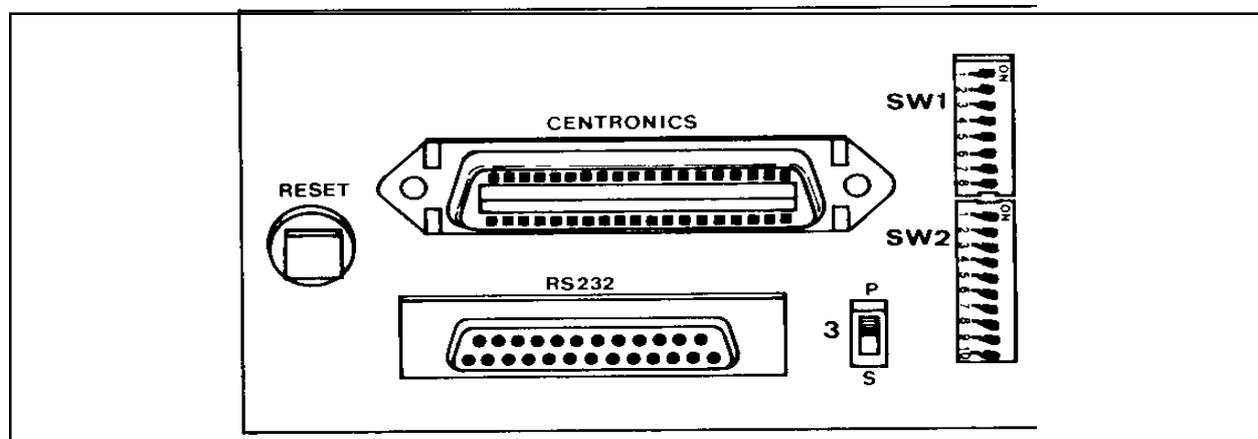


## 2.4 Paperinsertion



1. Lift up the top of both the paper tractors.
2. Insert the paper under the printing bar, from the front.
3. Fit the paper onto the tractor ensuring that the edge is straight and level, then close both tractor feed tops.

### 3. INTERFACE PANEL

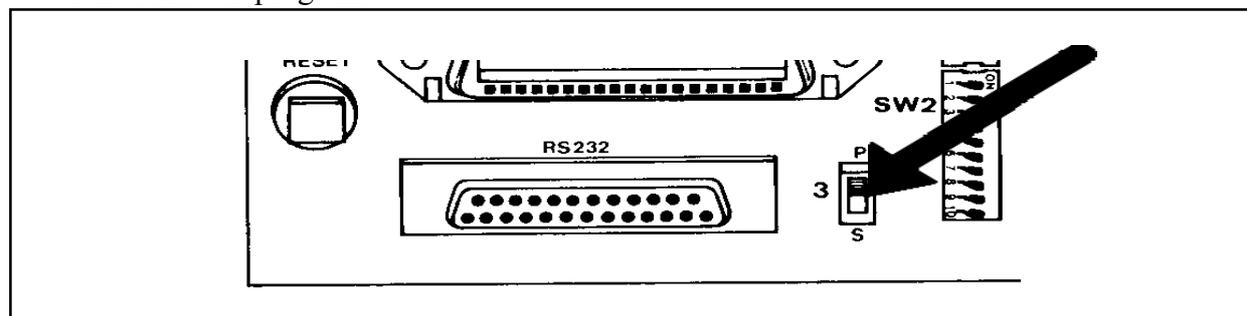


#### 3.1 Connectors

The Interface Panel for the printer is located on the right hand side of the back panel and has on it the serial and centronics interface connectors, the RESET button, two blocks of dip-switches in a vertical row, and the serial/parallel selector slide switch.

The RESET BUTTON is located on the far right-hand side of the interface panel.

The serial/parallel slide switch, located between the dip switches and the serial connector, is used to interchange between serial and centronics interfaces. To effect this change it is necessary to press the RESET button on the same panel after setting the serial/parallel switch. The two blocks of dip-switches are used to set the communication parameters on the serial interface and to select the braille code and mode on the printer. The values of the upper block of dip-switches are utilized whenever the printer is powered up or the RESET button is pressed. The values of the lower dip-switch block, which effect the language codes, are only utilized when a SYSTEM RESET\* is made. The printer program is designed in this way to enable the simple and efficient use of the SET-UP program.



\* **NOTE:** Be careful not to confuse the SYSTEM RESET with the RESET button.

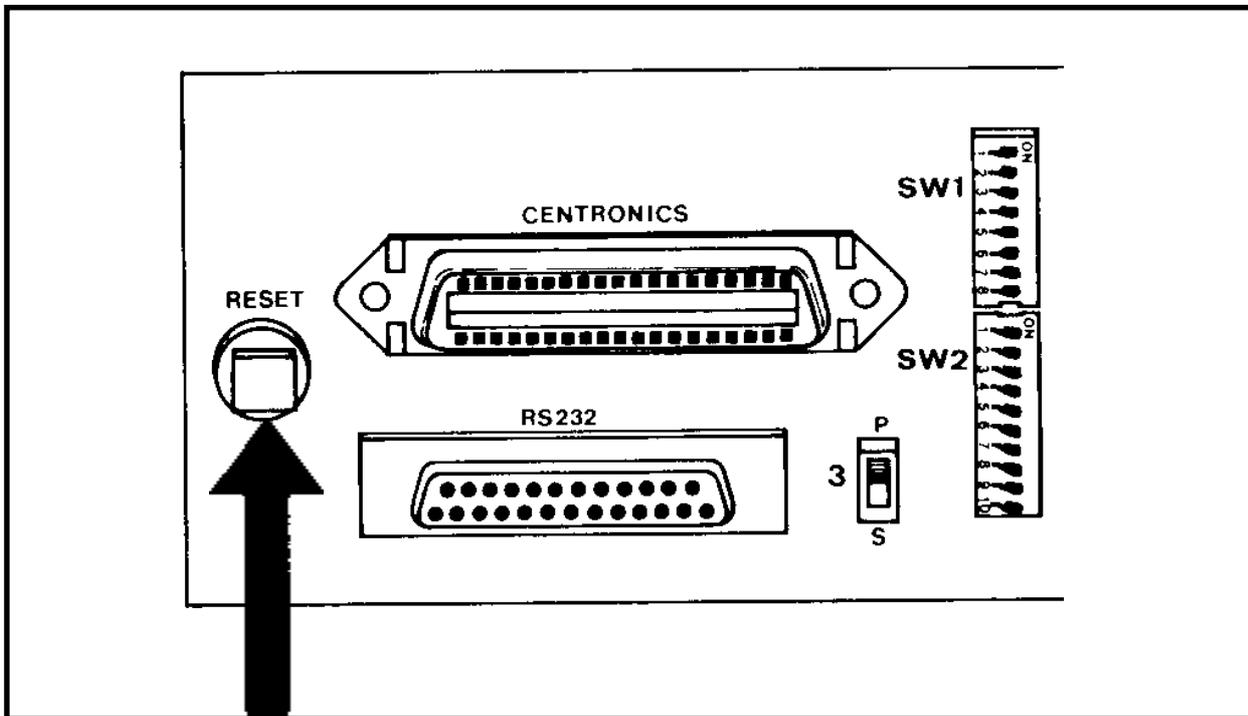
The interface panel is clearly labelled in print indicating the exact function of each switch and connector.

The factory setting of the serial interface communication values is as follows:

**9600 baud, 8 bits, No parity, 1 stop bit**

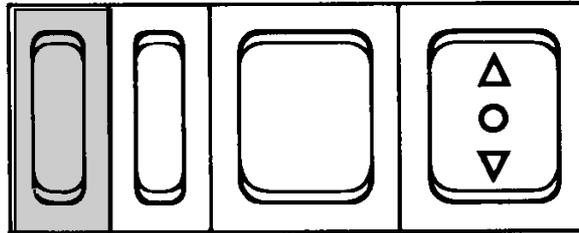
## 3.2 Reset

The RESET button is situated on the right hand side of the interface panel. This button may be used to clear the printer buffer, however, the "parameter values" previously selected in the set-up program will be retained



**NOTE!** After a RESET is it necessary to set the Top Of Form for the paper.4. TOP-SWITCH PANEL

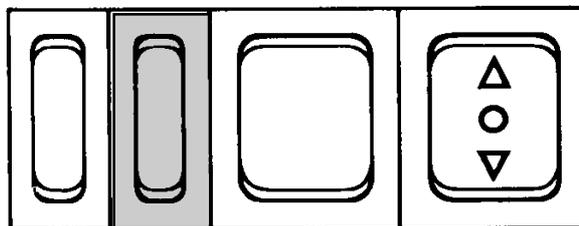
## 4.1 ON/OFF-line (the narrow switch on the left)



To obtain a print-out on INDEX this switch must be in the ON-line position (toward the front edge). To operate SET PAGE-FORM FEED and PAPER FEED the switch must be in the OFF LINE position (toward the back edge). To operate the COPY FUNCTION of the printer the switch must be in the ON-LINE position, otherwise the switches will perform their normal functions.

## 4.2 Normal/Re-formatted/Sideways (narrow switch to the right)

### 4.2.1 Normal (NOR to the front edge)



In the NORMAL position, the text will be printed with the same lay-out as the text file, similar to a normal ink printer. The text file should be arranged so that the line and page length corresponds to the page lay-out settings of INDEX.

### 4.2.2 Re-formatted (REF center position).

In the REF position, the text is re-formatted in such a way that "unnecessary" empty lines and spaces are removed. This creates a more user friendly presentation of the material especially if the text-file was prepared for an ink-printer. The INDEX performs this task without the document text requiring to be edited. In the re-formatted mode the following changes will be made to the text-file:

Multiple spaces will be reduced to one space.

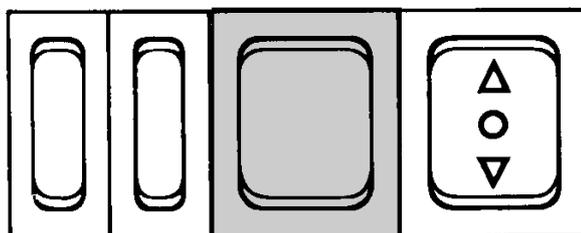
One CR will be erased More than one CR will be substituted by one CR + two spaces (Example: new paragraphs will be indicated by two spaces at the start of a new line).

Form Feed (FF) will be erased.

### 4.2.3 Sideways (SW to the back edge).

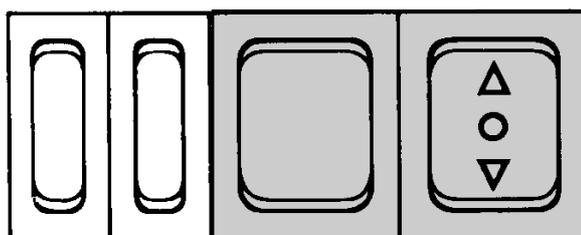
The SIDEWAYS feature enables the printing of screen-dumps, spreadsheets and tables in a meaningful and functional format. In the SIDEWAYS position the text is printed so that lines longer than the available page width (line length) will be continued on the next page in a similar line position. In the sideways mode there is automatic page numbering and line-marking. The line marks provide a good reference for the printed document. The page numbering enables the pages to be placed in the correct order. Example. A screen dump on 32 character/line length printout, will be produced in the following way: Page 1.1 (page number) line 1-24 character 1-32, Page 1.2 line 1-24 character 33-64, Page 1.3 Line 1-24 character 64-80 Page number continues with 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, ...

## 4.3 SetPage/FormFeed (the left of the two wide switches)



The SET PAGE (front edge) control determines the reference position of the page length function.

The FORM FEED (back edge) controls the advancement of the paper to the top of the next page.



### 4.3.1 To Set - Top of Form (TOF)

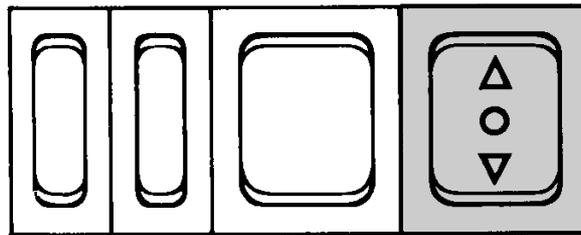
1. Put INDEX in OFF-line mode.
2. Advance the paper with PAPER FEED (wide switch on the right) so that the page perforation fold lies exactly along the top front edge of the printer case.
3. Press SET PAGE. You have now set the reference point for the page length function.
4. Press FORM FEED (FF). The paper will now advanced to the top of page ready for printing to commence.
5. Set INDEX in ON-line mode. The printer is now ready to receive the text-file.

## 4.4 Paper Feed (wide switch on right)

The PAPER FEED switch is used to move the paper either forwards or backwards.

It should be noted that use of the PAPER FEED switch may affect the line spacing or number of lines on that page, however it will not affect the SET PAGE function when the following page commences.

To operate PAPER FEED the on/off line switch must be in the OFF LINE position (towards the back edge).



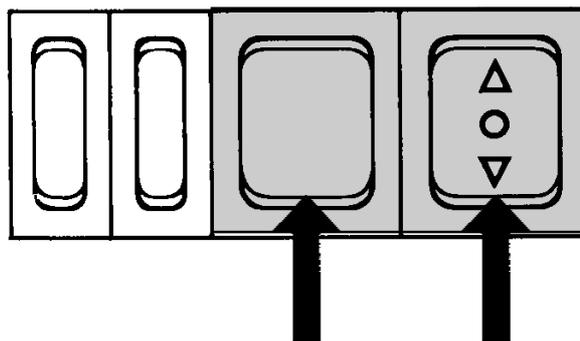
## 5. MULTIPLE COPY FUNCTION

The multiple copy function is set up from the Top Switch Control Panel and the Reset Button. The copying operation is then controlled either via ESC sequences at the beginning of the text file or directly from the Top Switch Control Panel and the Reset Button, depending on the preference of the operator.

### 5.1 Start copy

Set the paper in position for Set Page.

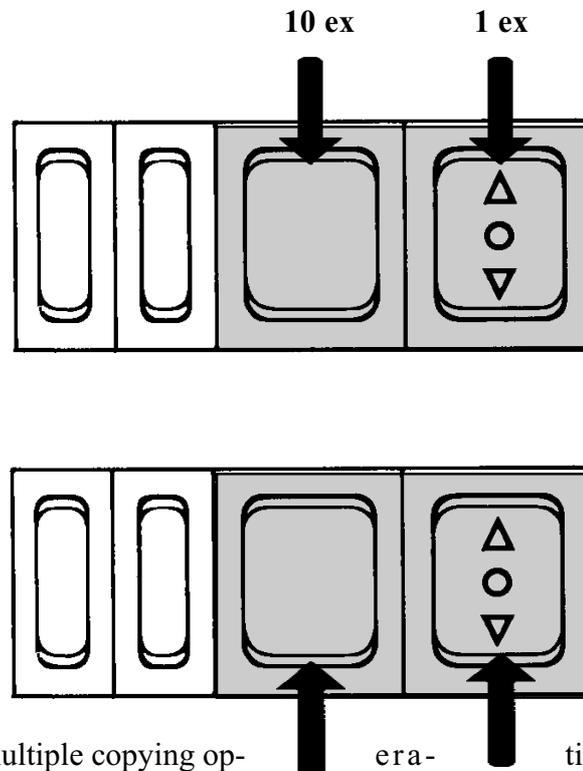
1. Set INDEX to ON LINE.
2. Press and hold down the PAPER REVERSE (front edge) AND SET PAGE (front edge) buttons at the same time press the RESET button. (interface panel.)
3. You will hear a short beep to indicate that the INDEX is ready to receive the text file.



## 5.2 Control - Top Switch Panel

Start the copy function with sequence 1-3, followed by:

4. Send the text file from the computer to the INDEX. A series of long beeps will indicate that the text file has been successfully received by the INDEX.
5. Go OFF LINE and make a Set Page, then go back ON LINE.
6. To select the number of copies to be printed, up to a maximum of 9999, you are required to press a combination or sequence of the PAPER ADVANCE (back edge) and FORM FEED (back edge) buttons on the Top Switch Control Panel. The FORM FEED has a value of ten copies and the PAPER ADVANCE a value of one. To reset the copy function to zero, press the FORM FEED and PAPER ADVANCE together.
7. Return back to ON LINE



8. To commence the multiple copying operation press the PAPER REVERSE (front edge) and PAPER ADVANCE (back edge) buttons together. To reset the copy function press the PAPER REVERSE (front edge) and FORM FEED (back edge) buttons together.

9. The completion of the multiple copy function will be indicated by a series of short beeps from the INDEX, further copies or additional text files can now be printed by commencing the above sequence of instructions. The RESET button should be pressed to return the printer to the normal print mode.

## 5.3 Control-ESC Sequences

On completion of the instructions 1-3 (above) and it has been indicated by the audible signal that the INDEX is in the Multiple Copy mode, insert the following sequence at the beginning of the text-file:

**Esc Ctrl N 9999cr (cr = Carriage return)**

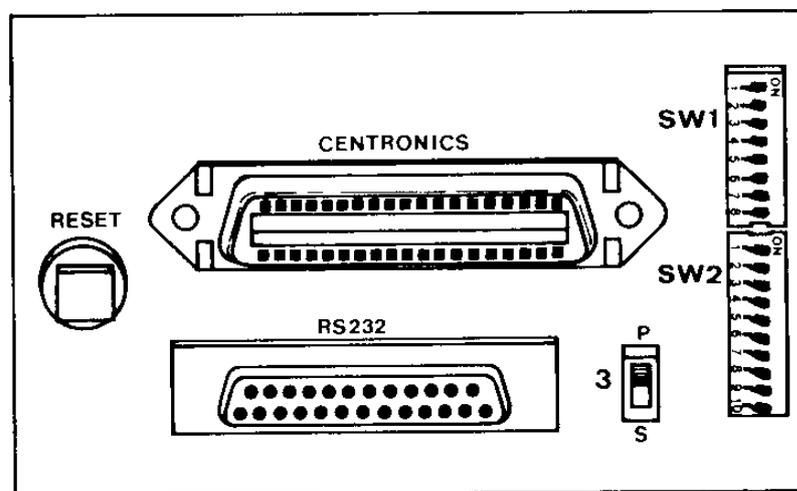
**Note!** There must be no spaces in the ESC sequence which must end with a CR  
9999 Indicates the number of copies to be produced. The text-file should then be sent to the printer, INDEX will then commence printing the instructed number of copies. The completion of the multiple copy function will be indicated by a series of short beeps from the INDEX, further copies or additional text files can now be printed by commencing the above sequence of instructions.

The RESET button must be pressed to return the printer to the normal print mode.

## 6. INTERFACE - TECHNICAL INFORMATION

### 6.1 Serial Communication - RS232C

The slide switch situated between the serial connector and the dip-switches on the interface panel of the printer must be in the down position, marked "S" for Serial. Whenever this switch is moved the RESET button must be pressed. The connector cable should not exceed 50 feet in length as this can effect the data transmission.



#### 6.1.1 Dip-Switch Settings

The dip-switches that control the communication values on the printer are situated on the interface panel on the back of the printer. (The vertical row of switches). The upper switches numbered 1-8 from the top, should be set as indicated in the table below. Following any changes in the dip-switch settings the RESET button must be pressed

Baudrate sw 1-3 (right = ON)

	<b>1</b>	<b>2</b>	<b>3</b>
19200	on	on	on
9600	off	on	on
4800	on	off	on
2400	on	on	off
1200	off	on	off
600	on	off	off
300	off	off	off

(4) 7/8 Data-bits	on = 8 data bits	off = 7 data bits
(5) Parity	on = parity check	off = no parity
(6) Parity even/odd	on = even parity	off = odd parity
(7) Stop-bits	on = 2-stop-bits	off = 1-stop-bit
(8) Handshake	on = DTR	off = XON/XOFF

## 6.1.2 Pin Configuration

Index is design like a DTR (Data Terminal Equipment), according to the RS232-C standard. With a 25 female D-sub connector. When using DTR handshake you can link pin 4 and 5 on INDEX and normally on the computer-side also.

With XON/XOFF communication is it possibly to use a three wire connector pin 2,3,7 on INDEX and link 4-5 and 6-20.

Pin 1 GND = N/A Protected Ground  
 Pin 2 TXD = FROM Transmitted Data  
 Pin 3 RXD = TO Receive Data  
 Pin 4 RST = FROM, Request to send  
 Pin 5 CTS = TO Clear to send  
 Pin 6 DSR = TO Data set ready  
 Pin 7 SG = N/A Signal ground  
 Pin 20 DTR = FROM, Data terminal ready

## 6.1.3 IBM PC - Index Connection

When connecting the printer to an IBM PC, XT or AT or IBM compatible computers, the serial (Com1 or Com2 must be set for the right communication parameters. The best way to do this is with the following DOS commands which will normally be in the AUTOEXEC.BAT file:

**MODE COM1:9600,n,8,1,p**

This will set the communication value on COM1 to: 9600 baud, no parity, 8 data bits, 1 stop bit an p to enable the transmission of data from the computer to the printer.

## 6.1.4 Cable INDEX IBM-PC

On the Index side a 25 pin male D-sub and on the PC side a 25 or 9 pin female D-sub. Cable with the following wires.

### Basic - 25p D-sub

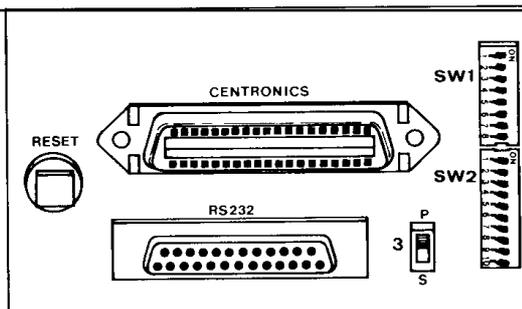
1-1, 2-3, 3-2, 4-5, 5-4, 6-20, 20-6, 7-7.

### Basic - 9p D-sub

2-2, 3-3, 4-8, 5-7, 6-4, 7-5, 20-6.

## 6.2 Centronics Communication

The slide switch situated between the serial connector and the dip-switches must be in the up position which is indicated by the letter "P" (Parallel). Whenever this slide switch is moved the RESET button must be pressed to complete the change. The cable adapted for the parallel output is standardized in accordance with the Centronics standard. The length of the cable should not exceed ten feet in length. Use only cable of good quality with shielded conductors.

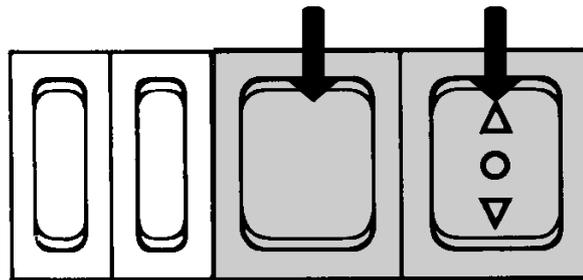


## 7. CONTROLS

### 7.1 SystemReset

To reset the printer to the selected dip-switch settings perform the following sequence:-  
NOTE: Performing a SYSTEM RESET will erase ALL parameter values selected by the set-up program. However, both operator defined tables will be protected.

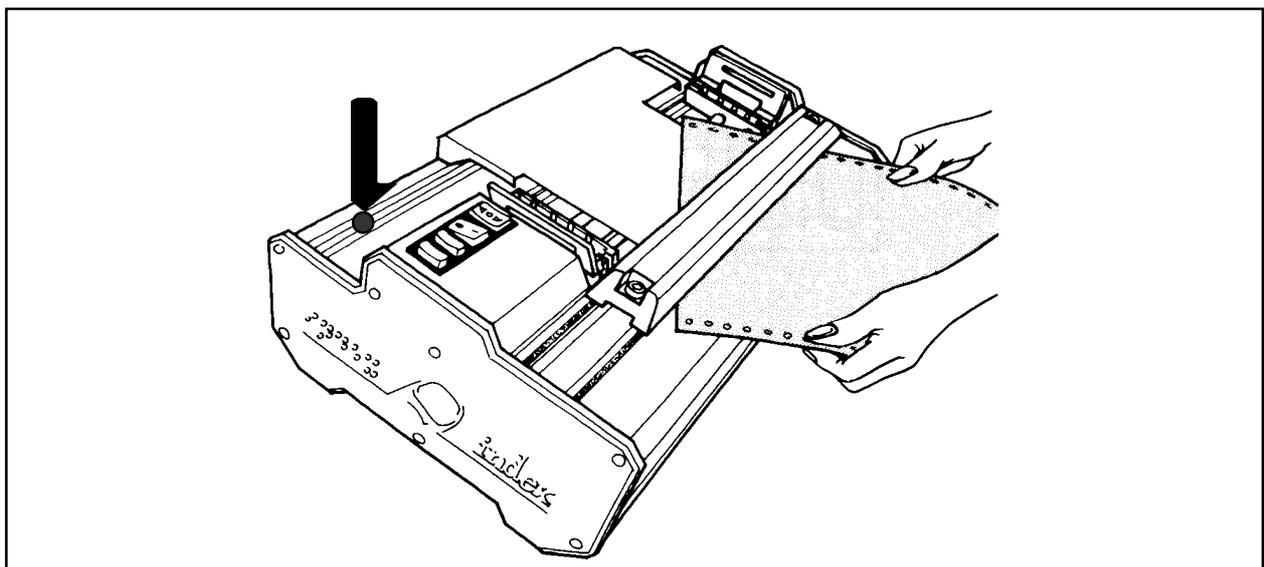
1. Switch off the power to the printer.
2. Hold down both the FORM FEED and PAPER FEED top-switches away from you (back edge of top-switch), and switch on the power.
3. The parameter values of the INDEX are now set-up according to dip-switch selection.



### 7.2 ImpactLevel

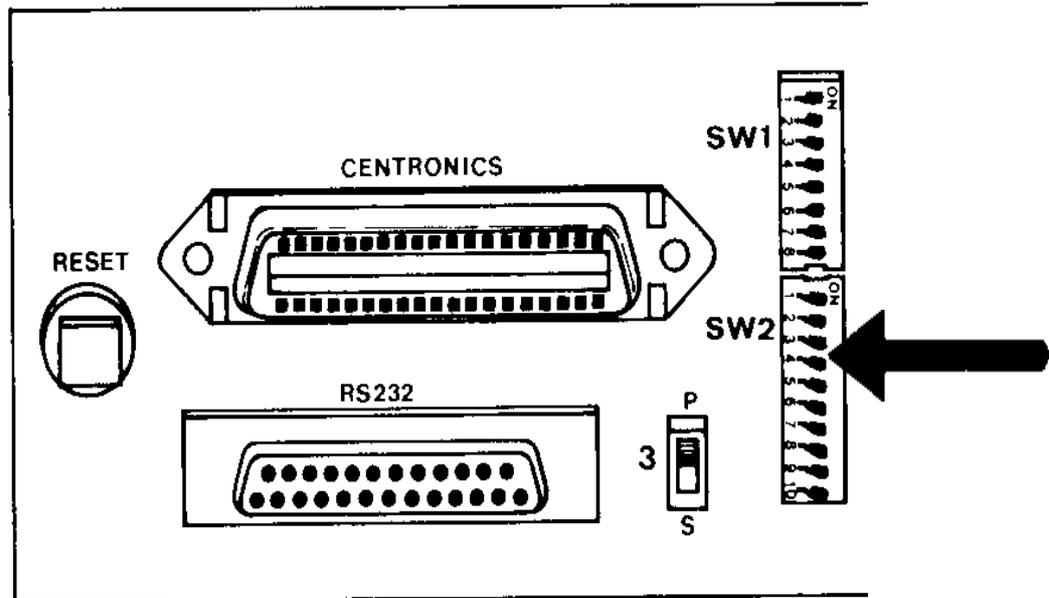
The Impact Level control is situated directly behind the Top Switch Control Panel on top of the printer. This control may be used to adjust the print quality when using a variety of paper thickness. Many different paper qualities can be used with INDEX; high quality braille paper will normally result in better quality braille copy. However, normal print paper can be used for draft copies.

The recommended method of adjusting the impact level is to commence printing the "Self Test - Printout" with the levels set at minimum, then gradually increase the impact level (during print-out) until the optimum quality is obtained. The impact level should not be set higher than necessary as this may in fact reduce the quality of print and increase the operating sound levels.



## 7.3 Paper Indicator

The INDEX has a paper sensor which emits an audible signal when it is out of paper. This feature may be over-riden by changing the setting of "position 10" of the lowest position of the lower dip-switch block.

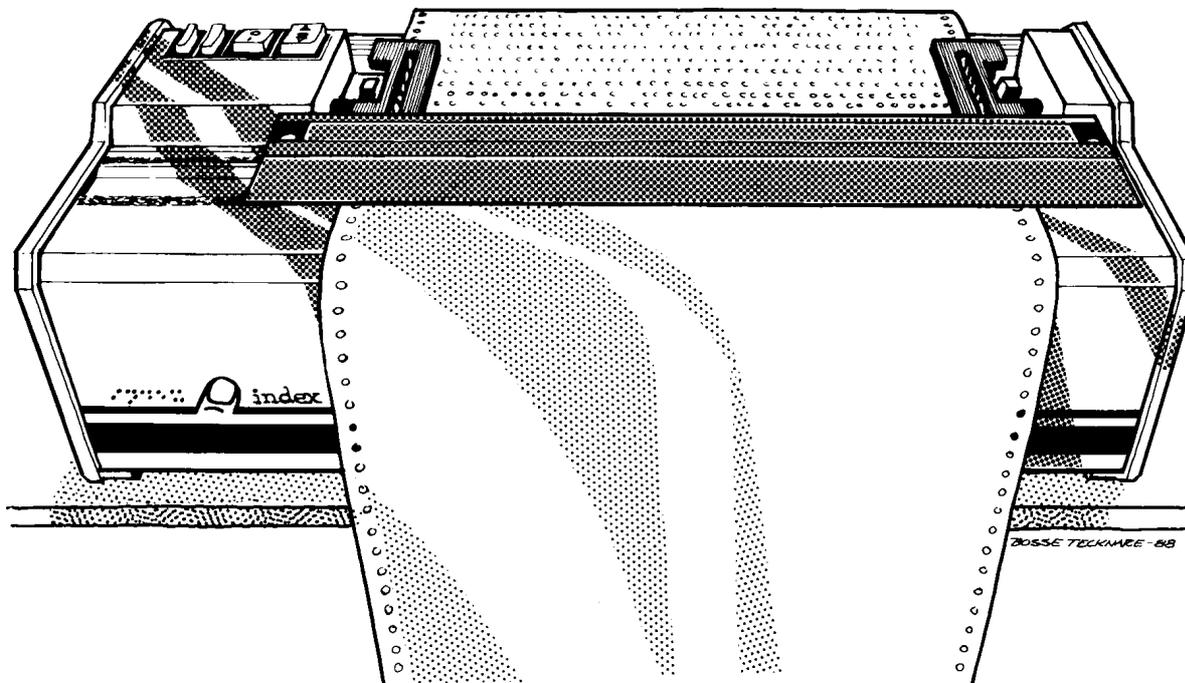


**ON** = right position - Override the papersensor  
**OFF** = left position - Papersensor in use

## 8. PRO-PRINTER EMULATION

INDEX emulates IBM PRO-PRINTER, and in computer program in which the printer is to be chosen you set the program for IBM PRO-PRINTER. Control commands that is sent out from the program will be used or removed by INDEX.

For further information regarding IBM Pro-printer emulation please refer to Appendix A at the back of this manual.



---

## 9. SET-UP INDEX

### 9.1 Set-up Program - INDEX

The SET-UP program for the INDEX is designed as an aid to "setting up" the parameters of the printer easily and efficiently.

NOTE! All the values which are selected will remain the "same" until a SYSTEM RESET has been executed or new values are programmed.

### 9.2 Installation

This SET-UP program can be operated with an IBM-PC, XT or AT and IBM compatible devices. To obtain a satisfactory screen lay-out you should have a "**CONFIG.SYS**" with the "**DEVICE=ANSI.SYS**" file on the boot disk.

Basic should be connected to the computer in the approved manner and must be in the ON LINE mode. If the printer is to be operated on serial interface the parameters should be selected on COM1: or COM2:. The recommended method to set-up the serial interface is with a MODE file in the AUTOEXEC.BAT file. This will select the parameters for the serial interface when you boot the system.

Providing no changes have been made on the printer, the MODE file will appear as follows:

```
MODE COM1:9600,N,8,1,P (Connected to COM1:)
```

```
MODE COM2:9600,N,8,1,P (Connected to COM2:)
```

Any changes to the CONFIG.SYS or AUTOEXEC.BAT files can be made using a regular word-processing program. Always make a copy of the original computer set-up file prior to making changes. When the changes have been made the file must be stored as an ASCII file not as a document, this process being dependent on the program being used to create the file.

### 9.3 Start Set-Up Program

The SET-UP program is selected by entering INDEX followed by a carriage return (CR) at the A prompt. The program version will be displayed followed by the current default settings.

The main menu can be selected by entering CR.

The default values which are displayed, will be those last selected on the SET-UP program and will normally be those on the printer. Howe-ver, if there is any doubt, these values on the SET-UP program may be simply installed on the printer by selecting item "7: Copy default set-ting" from the main menu followed by CR.

## 9.4 Main Menu

- 1: Select printer port
- 2: Edit braille code
- 3: Select language
- 4: Set up page layout
- 5: Select cell size
- 6: Special features
- 7: Copy default settings

Items from the menu may be selected by entering the desired module number or by use of the cursor arrows followed by CR. To escape to a higher level or exit the program use the ESC key.

### 9.4.1 Select Printer Port

To select the port to which the INDEX is connected, either LPT1:, LPT2:, COM1:, or COM2:.

### 9.4.2 Edit Braille Code

This module may be utilized to change or amend the relationship between the ASCII code and the braille character on any of the source tables available with the SET-UP program. Such changes can be stored on the disk and on the printer as OPERATOR TABLE A or B (two separate tables). The source table will determine whether this will be computer or literary (grade 1) braille. There are a number of menus available within this module as follows:

### 9.4.3 Select Source Table

This is a listing of the ASCII braille codes available within the program, with selection being made by use of the cursor arrows followed by CR. (Note: The OPERATOR A or B tables are those last saved on the disk.)

### 9.4.4 Change Braille Cell

The first page of the selected table will be displayed on the screen. To select a particular character from this screen use the cursor arrows up or down. To move to another page use PAGE UP/DOWN. To move directly to a particular character or symbol, press the appropriate key (only after Pg Up). The program cursor will then be placed on the character selected. The braille dot configuration displayed can be changed by pressing CURSOR ARROW RIGHT once, then the numeric values of the new dot combination followed by CR. There is no limit to the number of characters you may change within any one language table.

---

## 9.4.5 Prefix and Double-Character

It is possible to have one ASCII character displayed by two braille characters. To select this function press the CURSOR ARROW LEFT key once, the following menu will be displayed.

- 1: Edit double-braille
- 2: Edit number prefix
- 3: Edit capital prefix
- 4: Edit capital prefix (multiple letter selection)
- 5: List prefix

If item "1" is selected you may edit up to sixteen symbols within the table which can be represented by two braille characters. It is important to remember that braille characters edited by utilizing the DOUBLE-BRAILLE will appear AFTER the symbol in the normal table. When editing this module you either enter "C" to Change or "R" to Reset. If "C" to change is selected, you enter the symbol to be displayed by two characters followed by the new dot combination.

This sequence must be repeated for each symbol to be changed up to a maximum of sixteen. If Items "2, 3 or 4" are selected you should then enter "C" followed by the new braille dot combination. If "R" Reset is selected, the character will be replaced by the default values. If item 5 is selected a list of all current prefixes will be displayed.

## 9.4.6 Save Operator Table A/B

When all the changes have been made enter ESC to return to the main menu. You will be prompted to select a table on which to store the changes, as follows: Save as:

- 1: Operator table A
- 2: Operator table B
- 3: Quit

**NOTE !** When you make your selection, to store a changed table in this fashion it will DELETE THE CURRENT TABLE on both the disk and on INDEX. When you make your selection the following message will be displayed WAIT SAVING OPERATOR TABLE. Following the transmission of the revised table from the PC to INDEX the program will advance directly to module "3: Select language" of the main program menu.

## 9.4.7 SelectLanguage

Offers a selection of languages available on INDEX including the following:

- Computer or literary braille
- Six or eight dot braille
- Capital prefix Y/N
- IBM standard or normal

Computer braille can be either six or eight dot braille, but does not normally utilize double-character braille or prefix.

Literary braille always utilizes the NUMBER PREFIX but the CAPITAL PREFIX is an optional selection.

The IBM STANDARD OR NORMAL function enables INDEX to be operated either with computers utilizing seven bit codes or with the IBM-PC eight bit codes. Most braille tables are only defined for 127 characters. By selecting the IBM Standard the INDEX utilizes the upper case symbols thereby increasing the number of characters available and enabling the normal operation of the IBM-PC.

## 9.4.8 SetPageLayout

This module offers a selection of paper lengths, paper widths, position of the left margin and the number of characters per line. Select the desired item and enter "C" = Change, followed by the selected option. To return to the default values enter R = Reset.

## 9.4.9 SelectCellSize.

This option offers a selection of horizontal distances between braille cells and vertical distances between lines of braille. The selection of options is achieved as in item 4: Set page layout.

## 9.4.10 SpecialFeatures

The options available on this module are as follows:

**Wordwrap or split word.** Wordwrap will wrap the last (to long) word to the next line. Split word will split the last (to long) word between two lines.

### **Auto Line Feed (LF) ON/OFF**

This depends on what program being used. With AUTO LF **OFF** the computer must transmit CR (carriage return) + LF (line feed) at end of each line, with AUTO LF **ON** INDEX automatically preforms LF after CR.

### **AUTO PAGE NUMBERING ON/OFF**

With AUTO PAGE NUMBERING ON the number of the first page may be set. (The page number will appear in the center of the page at the bottom).

## 9.4.11 CopyDefaultSetting

This option offers a fast and efficient way of transmitting all default values from a SET-UP disk directly to INDEX either with or without the OPERATOR TABLE A/B being included.

## 9.5 Set-Up "Without" Set-Up Program

It is not always possible to select the parameter values by using the SET-UP program or the dip-switches. In such situations it is also possible to select parameter values, by transmitting ESC sequences to the printer from a terminal or from a computer with a terminal program. The ESC sequences transmitted to the printer in this way are identical to the values created by the SET-UP program.

All control commands must be made in the following sequence and format (Note: ESC = Esc key on the keyboard), for example to select "Automatic Page Numbering On":

**ESC 8 ESC P Y cr ESC 9**

## 9.6 Start and End Set-Up Mode

Start the set-up sequence with "Esc8", followed by selected control code "EscPY", then a "CR" and finally to end the set-up mode with "Esc9". NOTE! There must be NO spaces in the command sequence. Esc8EscPYcrEsc9

To start and end the Set-up mode the following commands must always be given:

**ESC 8 Start SET-UP Mode**

**ESC 9 End SET-UP Mode**

## 9.7 ESC Commands

### ESC Commands Tables

ESC F x Wordwrap	Y = Complete word N = Split world
ESC P x Page numbering	Y = Auto page numbering N = No page numbering
ESC P ^Y xxxx	xxxx = First page number in the printout.
ESC M xxx	Left margin, given in numbers of character spaces
ESC C xx,yy	Cell width and spacing (14-255 steps). xx = horizontal distance between dots yy = horizontal distance between cells (1 step = 0.175mm(35/200))
ESC W xx Line length	xx = Line length in numbers of characters, excluding left margin.
ESC D x,yyy	Line feed in 6 and 8 dot braille. X = 6 or 8 dot braille yyy = number of steps for one L (9999) 80 steps = 1/2 inch
ESC T xxx Paper length	xxx = Paper length (470 -9999 steps) 80 steps = 1/2 inch
ESC 5 x Auto line feed	Y = Auto line feed N = No auto line feed

## 10. Set Up from Dip-Switches

The lower block of Dip-Switches (10 switches) may be used to select the following options:  
Changes effect only after a SYSTEM RESET!!!

<b>LANGUAGE</b>	<b>no1</b>	<b>no2</b>	<b>no3</b>
Swedish	off	off	off
N.American	on	off	off
English	off	on	off
German	on	on	off
French	off	off	on
Italian	on	off	on
Operator	on	on	on

(1-3) Language; (Above)

(4) Computer or literary braille	on= Computer Braille off= Litterary braille
(5) capital prefix	on = Capital prefix off= no prefix
(6) 6/8 dot braille	on= 8 dot braille off= 6 dot braille
(7) 40/32 Character/line	on= 32 characters/line off= 40 characters/line
(8) 11/12 Inch paper	on= 12 inch paper off= 11 inch paper
(9)	no effect
(10) Over-ride the paper censor	on = Override papersensor off = papersensor active

**NOTE!** Always make a SYSTEM RESET after changing on the low switch-bank. Without SYSTEM RESET the new dip-switch settings will have no effect.

INDEX will read the setting of the lower block of dip-switch (pos 1-8) ONLY AFTER A SYSTEM RESET. (Hold down both wide switches, back edge, and power up INDEX). Any changes made to the parameter values by utilizing the SET-UP program will remain in effect until such time as a SYSTEM RESET is made. If it is essential that when the language parameters are set by the dip-switches a SYSTEM RESET must be performed.

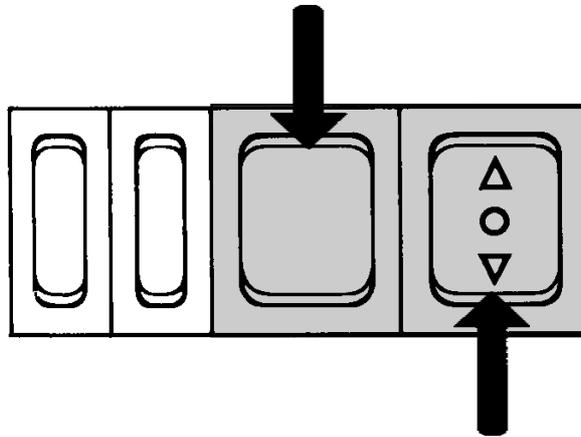
## 11. SELFTESTS

### 11.1 Self Test-ASCII and Printer Set-Up

The "Self test ASCII & PRINTER SETUP" will print the current printer setting and ASCII to Braille translation, to run this feature complete the following sequence;

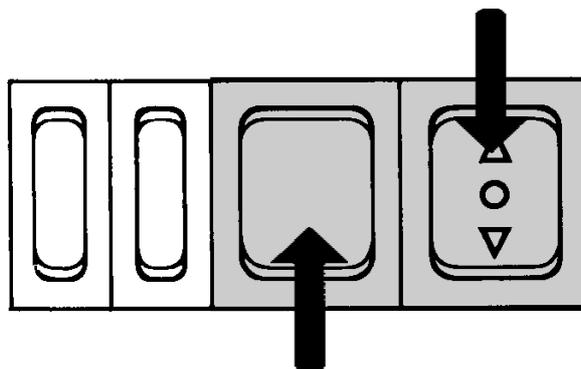
1. Hold down the top switches FORM FEED (back edge) and PAPER-FEED (front edge) and POWER ON the printer. (To stop the self test process, press the RESET button, located on the interface panel on the back of the printer.)
2. After the self test is completed (two pages), the printer will go back to normal print.

### 11.2 Self Test-Printout



The self test printout will produce a graphic display followed by continuous lines of full braille cells. After five full pages of full braille cells (to adjust dot quality) the printer will continue to produce pages of braille text until the RESET button is pressed. To start the self-test printout follow this sequence.

1. Hold down the two wide top-switches, for SET PAGE and PAPER FEED away from you (back edge).
2. At the same time - POWER ON. When the printing sequence commences release the top-switches.



3. To stop the self test press the RESET button.

## 12. INDEX GRAPHIC FUNCTIONS

The INDEX has two separate graphic functions installed, which are capable of producing graphic printouts with a variety of software for braille graphics. The dot configuration or spacing is uniform and pre-set, producing four dots per centimetre. The INDEX is set in the graphic mode by an ESC sequence transmitted as part of the graphics file to be printed, a similar ESC sequence is used to end the graphic mode.

### 12.1 Graphic Mode - Four Dot

**EscCtrlG** Start graphic mode

**EscCtrlF** Exit graphic mode

In this mode, INDEX only uses the four "less significant" bits in the computer code, there is no translation into Braille. See figure A table of the graphic matrices of INDEX in four dot graphic code:

Dec. ASCII	64	65	66	67	68	69	70	71
Character	space	A	B	C	D	E	F	G
Graphic matrix	○	●	○	●	○	●	○	●
	○	○	●	●	○	○	●	●
	○	○	○	○	●	●	●	●
	○	○	○	○	○	○	○	○
Dec. ASCII	72	73	74	75	76	77	78	79
Character	H	I	J	K	L	M	N	O
Graphic matrix	○	●	○	●	○	●	○	●
	○	○	●	●	○	○	●	●
	○	○	○	○	●	●	●	●
	●	●	●	●	●	●	●	●

### 12.2 Graphic Mode - Six Dot

This feature may be operated using any of the six dot computer braille "Language" codes available; together with a number of American braille graphic programs originally based on 6 dot US computer Braille.

**Esc Ctrl A** Start 6 dot graphic mode

**Esc Ctrl B** End 6 dot graphic mode

The number of lines per page and characters per line may be set by utilizing the Index SET-UP program.

---

## 12.3 Large Print Graphic Program - LETTER

This program may be used to produce a "Large Print" graphic braille display of upper-case letters and figures. The program is on the INDEX Set-Up Program disk under the "LETTER" directory and operates only on the LPT1: port. To operate the program follow this sequence:

A: CD LETTER enter

A: LETTER enter

A series of menus will be displayed offering a selection of paper width; font size; this is followed by a prompt to enter the text to be printed. All Capital letter A-Z and 0-9 are able to be printed with this program.

You can write up to ten lines of text, when you are ready select to print or to save with a function key followed by enter.

F2= Save on disk

F3= Appent on an existing file

F4= Print on LPT1

### 12.3.1 Functionkeys

The function key effect with the function key followed by enter.

F1 = Help screen.

F2 = Save the file on disk. Filename in DOS format.

F3 = Append new text on a existing file.

F4 = Send text to INDEX (LPT1).

F5 = Width, Change between A4 and A5.

F6 = Dir, Shows directory.

F8 = Exit to Dos.

F10 = Back to menu, change character set or paper-width.

## 12.4 Draw

What will the program DRAW do?

The program DRAW makes it possible to produce graphic pictures with your printer. With the direction key you can control the cursor on the screen and create a picture that could be printed out on the braille printer. The picture below is produced by the program DRAW.

How to use DRAW

- a. Insert the disk in the disk drive, for example drive A.
- b. Press A:\DRAW and ENTER
- c. Start the program by typing DRAW and press the ENTER button.

d. Select paper size from the table on the screen:

1= A3 12"

2= A3 11"

3= A4 12"

e. Select type of screen:

0= EXIT

1= HERCULES (720 x 348)

2= EGA (640 x 350)

3= VGA (640 x 480)

After choosing screen type the following picture will be displayed:

### 12.4.1 Draw function keys

F1 : DRAW - Draw.

F2 : ERASE - Rub out.

F3 : MOVE THE CURSOR - Move the cursor without draw.

F4 : LOAD/SAVE - DOS format : A:\directory\filename.filetype, directory max 8 characters, file name max 6 characters, filetype max 3 characters.

F5 : PRINTING - The program assume that the printer is connected to LPT1.

F6 : TEXT - DOS format.

F7 : CLEAR SCREEN - Clear screen.

F8 : DIR - List directory.

F9 : RESTART - Start all over again.

F10: QUIT - Quit the program without saving.

**Note:** Always save the picture before printout.

## 13. FAULT DETECTING

<b><u>FAULT</u></b>	<b><u>REMEDY</u></b>
Printer does not start	Check if power is on Make a system-reset ASCII & Printer Set-Up Self Test-Printout
Prints unintelligible characters	Check dip-switch settings + system reset. Right MODE for serial communication No operator table is stored in INDEX
Wrong character-set	No system reset after setting the dip-switch
The Printer beeps and does not start	Put a new stack of paper to the printer Major electronic failure
The Printer does not print out.	Make a SYSTEM-RESET ON/OFF LINE switch Check if you have the right out-port from the computer
Mechanic failure on the printinghead	Printing bar moved out of its position
The printer is not working according to setting on set-up disk.	Check that right port is connected. Check communication parameters Check cable and connectors
An extra line feed No line feed	Set Auto Line feed OFF in the Set-program No line Set Auto Line feed ON in the Set-Up program
Empty page between each page	Check if there is a Form-feed in the file.
Printout does not start at the top page	Make a Set-Page Check that the paper length is correct by the Set Page Lay-Out in the Set-Up program
The Copy function does not work	Check if the printer is ON LINE Check if the printer has recieved the textfile. If it is successful you should hear the long beeps (Reset exit copy mode)

## 14. Factory Installed Parameter Values

Wordwrap	ON
Auto Line Feed	OFF
Page numbering	OFF
Margin	3 Characters
Cell width	2.625 mm
Character spacing	3.5 mm
Line length	40 characters
Line feed	5 mm
Page length	29 lines/12 inch paper

## 15. Technical Description

- \* Interline Print speed 50 CPS (characters/sec)
- \* Noise level 65-68 dB(A)
- \* Printer buffer 30 kB
- \* Serial communication RS-232 C
- \* Centronics communication
- \* Braille languages; Swedish, French, English, North American, German, Italian, German and Operator
- \* Definable Code mode; Six and Eight Dot Computer Braille
- \* Literary Braille (grade one) with Number Prefix and Optional Capital Prefix Braille Cells;
- \* Adjustable distances for dot and cell spacing;
- \* Print mode; Normal, Re-formatted, Side-way (Split page)
- \* Graphic, 6 and 4 dot System.
- \* Transparent print-out mode
- \* Copy function
- \* Page numbering

### APPENDIX "A". PRO-PRINTER EMULATION

The simplest method of installing an application program with the INDEX is to select "IBM PRO-PRINTER" when installing the program in the computer. The INDEX utilizes and interprets the control commands in a similar way to the IBM-PROPRINTER. The control commands which are only applicable to inkprinters are removed automatically from the text file.

**Table of ESC Sequences**

* ESC A	Text Line Spacing
* ESC B	Vertical Tabs.
* ESC C	Form Length
* ESC D	Horizontal Tabs
* ESC E	Emphasized Print
* ESC F	Cancel Emphasized Print
* ESC G	Near Letter Quality
* ESC H	Cancel Near Letter Quality
* ESC I	Font Selection
* ESC J	Variable Line Space
* ESC K	Normal Density Bit Image Graphics
* ESC L	Dual Density Bit Image Graphics
# ESC N	Automatic perforation Skip
ESC n	n (n0 Hex value number of lines)
# ESC o	Cancel Automatic perforation skip
* ESC P	Proportional Space Mode
* ESC Q	De-select Proprinter XL
* ESC R	Reset Tabs
* ESC S	Sub/Superscript Print
* ESC T	Cancel Sub/Superscript Print
# ESC U	Uni-directional Print
ESC U1	Right Way Printing
ESC u0	Bi-directional printing
* ESC W	Double Wide Print
* ESC X	Set Horizontal Margins
* ESC y	Dual Density Bit-Image Graphics
* ESC Z	High Density Bit-Image Graphics
* ESC 0	1/8 Inch Line Spacing
* ESC 1	7/72 Inch Line Spacing
* ESC 2	Start Text Line Spacing
* ESC 3	Graphic Line Spacing
# ESC 4	Set Top of Form
# ESC 5	Automatic Line feed
ESC51	Auto Line Feed ON
ESC50	Auto Line Feed OFF
# ESC 6	Select Character set 2
# ESC 7	Select Character set 1
* ESC	Continuous Overscore
* ESC	Continuous Underscore
* ESC :	12 CPI Print
* ESC =	Font Image Download
# ESC \	Select all Characters Chart ESC\n1(n2x256) Transparent mode where n1 and n2 (Hex) are the number of characters in the transparent string. In the string there is no translation. "Bit 1" corresponds to "dot", "bit 2" to "dot 2" and so on.
* ESC	Double height printing

**\* = This ESC sequence is removed from the text file by Index**

**# = This ESC sequence controls INDEX in a similar way to the IBM-Proprinter**

**APPENDIX B - ESC Sequences - Index Command**

ESC ^C	Select 6-dot braille cell
ESC ^D	Select 8-dot braille cell
ESC ^A	Start 6-dot graphic
ESC ^B	End 6-dot graphic
ESC ^G	Start 4 dot graphic
ESC ^F	End 4 dot graphic

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