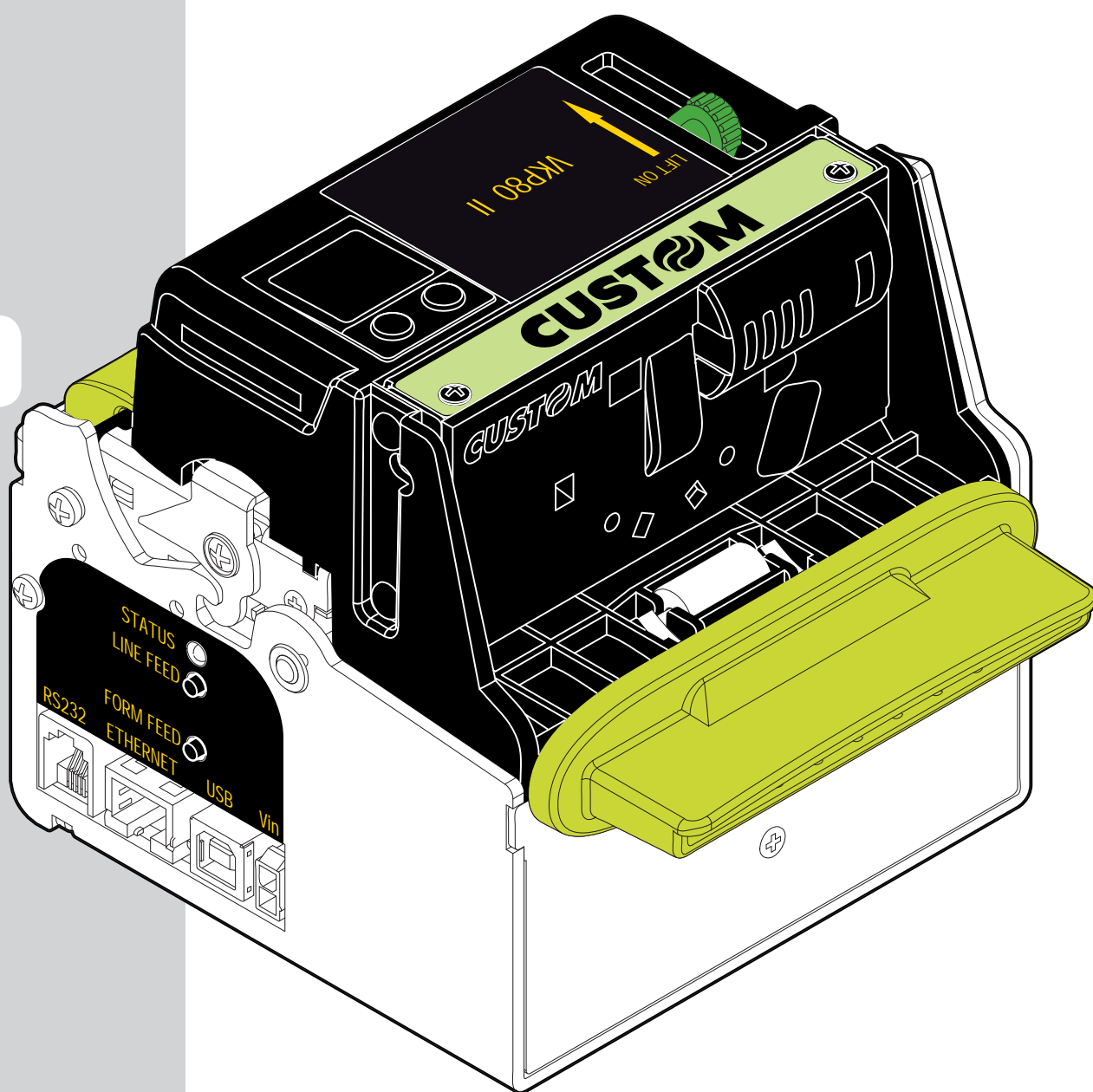


VKP80II-EE

USER MANUAL

OEM



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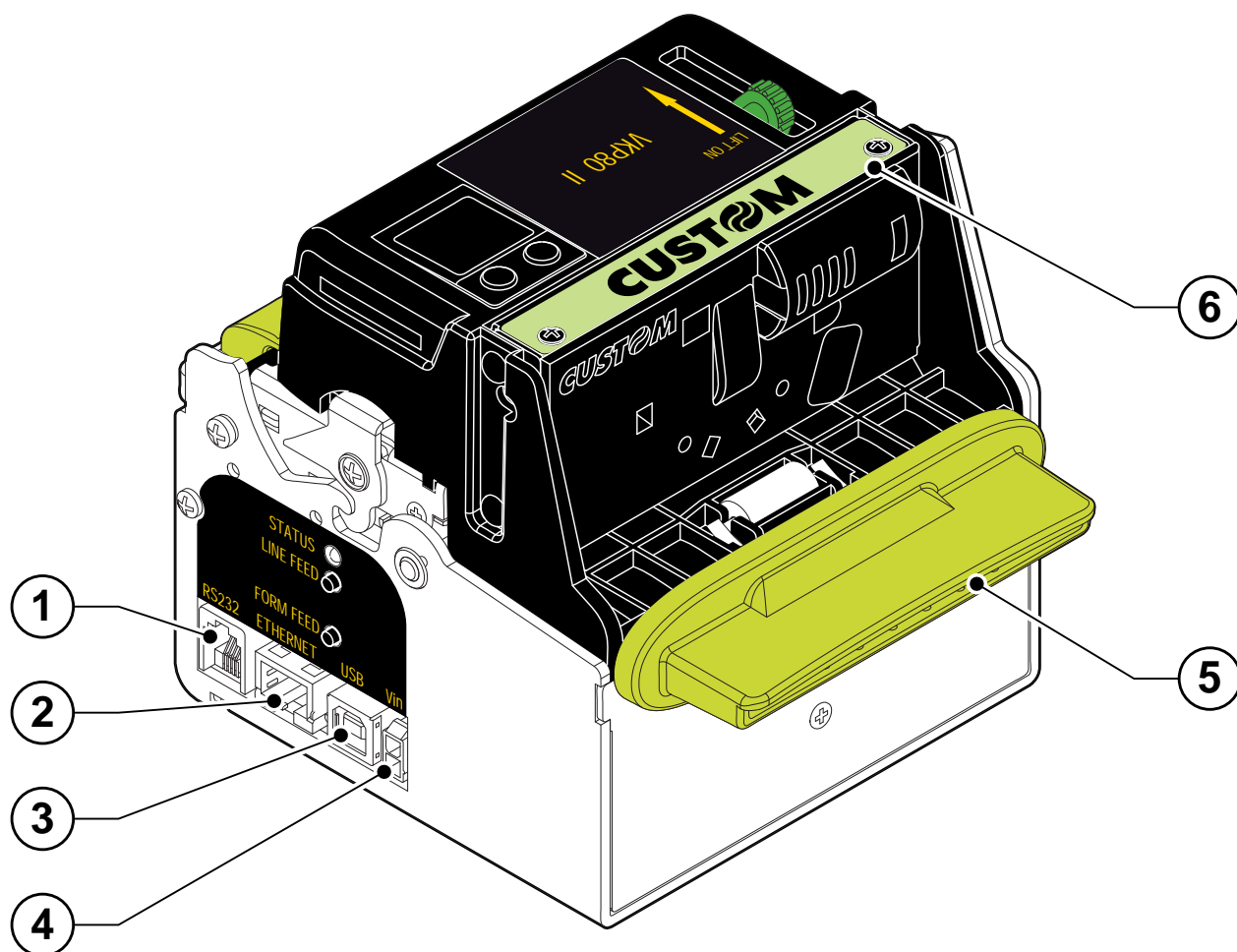
CUSTOM ENGINEERING SPA
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[http: www.custom.it](http://www.custom.it)

Customer Service Department:
Email: support@custom.it

PRINTER COMPONENTS

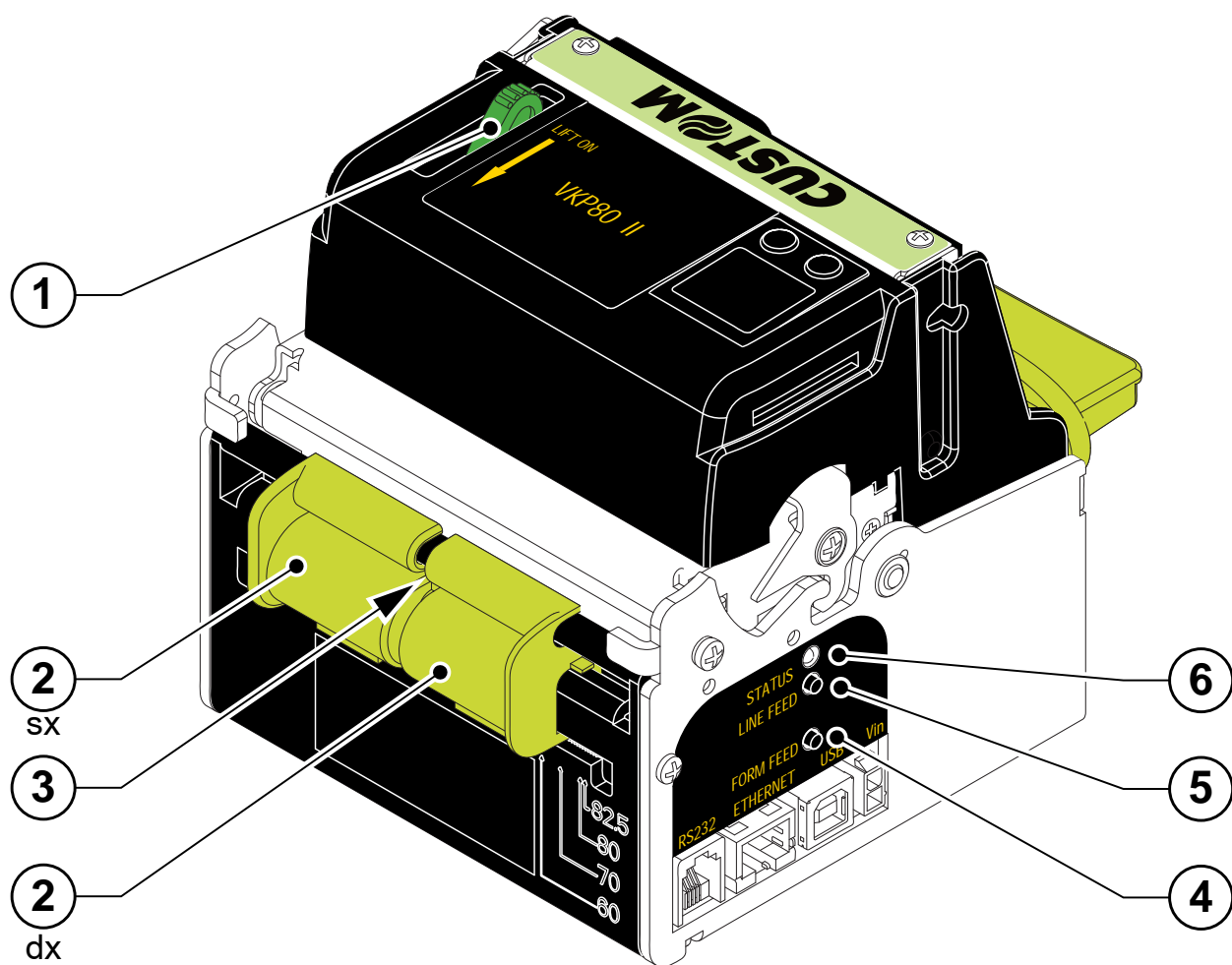
A. VKP80II-EE - Front external view

- 1- Serial connector RS232
- 2- ETHERNET connector
- 3- USB connector
- 4- Power supply connector
- 5- Output paper mouth
- 6- Cutter



B. VKP80II-EE – Rear external view

- 1- Opening lever
- 2- Paper mouth cursor
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MANUAL CONTENTS

In addition to the Introduction which includes a description of the explanatory notes used in the manual, general safety information, how to unpack the printer and a brief description of the printer including its basic features, this manual is organized as follows:

- Chapter 1: Contains the information required for correct printer installation and its proper use
- Chapter 2: Contains information on interface specifications
- Chapter 3: Contains technical specifications of the printer
- Chapter 4: Contains the character sets (fonts) used by the printer

EXPLANATORY NOTES USED IN THIS MANUAL



N.B.

Gives important information or suggestions relative to the use of the printer.



WARNING

Information marked with this symbol must be carefully followed to guard against damaging the printer.



DANGER

Information marked with this symbol must be carefully followed to guard against operator injury or damage.

GENERAL SAFETY INFORMATION

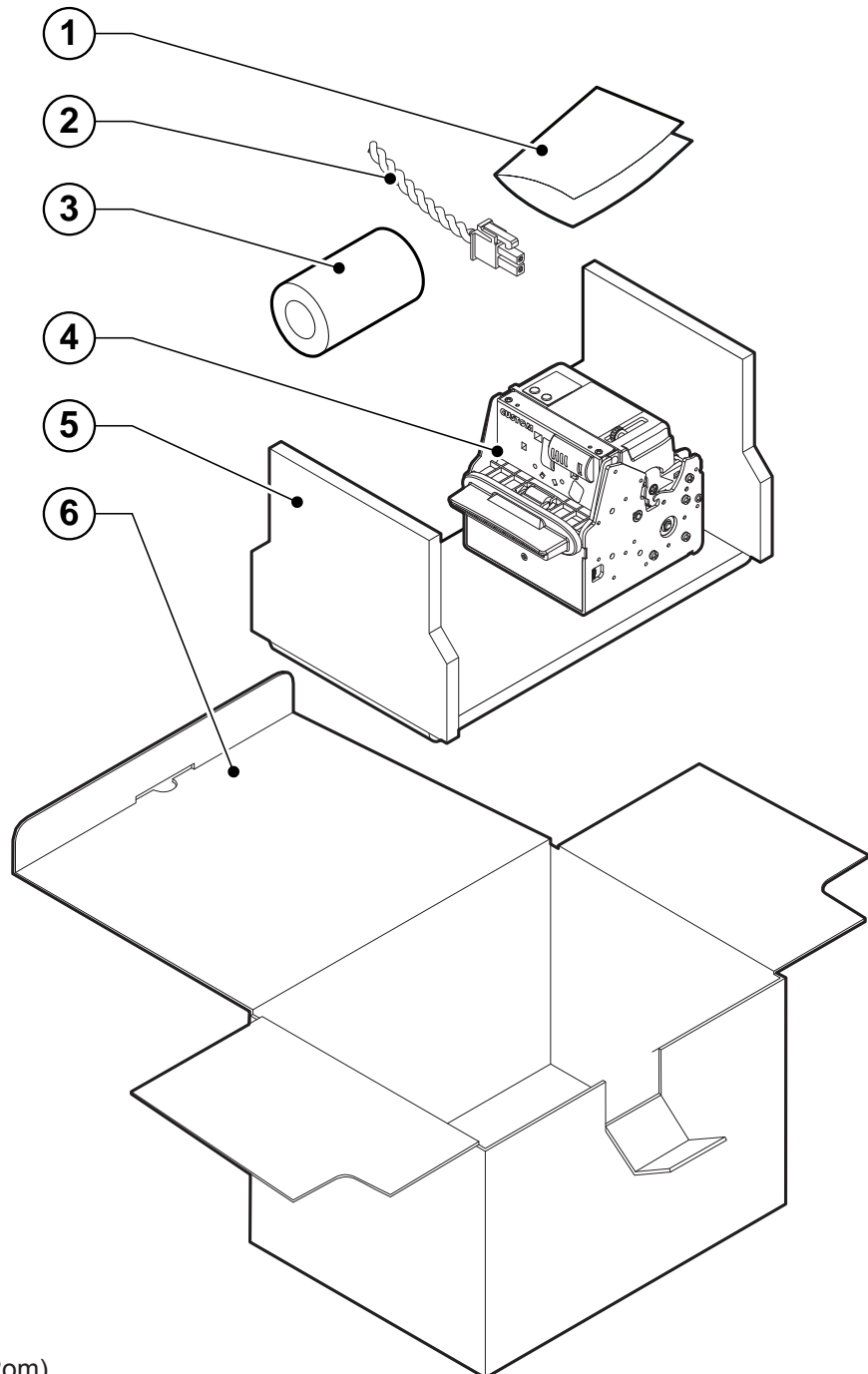
- Read and keep the instructions which follow.
- Follow all warnings and instructions indicated on the printer.
- Before cleaning the printer, disconnect the power supply.
- Clean the printer with a damp cloth. Do not use liquid or spray products.
- Do not operate the printer near water.
- Do not use the printer on unstable surfaces that might cause it to fall and be seriously damaged.
- During the integration of the printer, we strongly warn to keep an adequate paper loop outlet underneath the presenter, in order to allow the receipt being properly printed out.
- Only use the printer on hard surfaces and in environments that guarantee proper ventilation.
- Make sure the printer is placed in such a way as to avoid damage to its wiring.
- Use the type of electrical power supply indicated on the printer label. If in doubt, contact your retailer.
- Do not block the ventilation openings.
- Do not introduce foreign objects of any kind into the printer as this could cause a short circuit or damage parts that could jeopardize printer functioning.
- Do not spill liquids onto the printer.
- Do not carry out technical operations on the printer, with the exception of the scheduled maintenance procedures specifically indicated in the user manual.
- Disconnect the printer from the electricity supply and have it repaired by a specialized technician when:
 - A. The feed connector has been damaged.
 - B. Liquid has seeped inside the printer.
 - C. The printer has been exposed to rain or water.
 - D. The printer is not functioning normally despite the fact that all instructions in the users manual have been followed.
 - E. The printer has been dropped and its outer casing damaged.
 - F. Printer performance is poor.
 - G. The printer is not functioning.

UNPACKING THE PRINTER

Remove the printer from its carton being careful not to damage the packing material so that it may be re-used if the printer is to be transported in the future.

Make sure that all the components illustrated below are present and that there are no signs of damage. If there are, contact Customer Service.

1. Installation instructions
2. Electrical supply cable
3. Paper roll
4. Printer
5. Foam packing shell
6. Box



- Open the printer packaging
- Remove the paper roll
- Remove the manual (or CD-Rom)
- Remove the cable of power supply
- Take out the foam packing shell
- Take out the printer and remove it from its plastic covering.
- Keep the box, trays and packing materials in the event the printer must be transported/shipped in the future.

(Fig.1)

PRINTER FEATURES

VKP80II-EE is the latest generation of ATMs, Kiosks and Ticket Printers with high printing speed 220mm/sec and a very small footprint; it's equipped with a 204 dpi (8 dots/mm) thermal printing mechanism. In addition to normal printing functions, the printer offers a wide array of special features:

- High speed printing:

High Quality	80 mm/sec
Normal	180 mm/sec
High speed	220 mm/sec

- Easy paper changing (automatic paper loading).
- Paper width 60/76/80/82.5mm, adjustable by the user.
- Bar code UPC-A, UPC-E, EAN13, EAN8, CODE39, ITF, CODABAR, CODE93, CODE128 and CODE32.
- 3 standard and international character set fonts.
- Definition of function macros for automatic operation re-call.
- Graphic mode printing.
- Print density (-50% to +50%).
- Serial interfaces RS232: (from 1200 to 115200 bps)
- Interfaces: RS232, USB, ETHERNET
- High reliability autocutter.
- Illuminated paper mouth.
- Paper pre-tensioner system for high capability paper roll.
- Double function ticket presentation: "ejecting" and "retracting".
- Sensors: paper end, ticket present, black mark, head temperature, opening of printing unit (near paper end on roll support is optional).

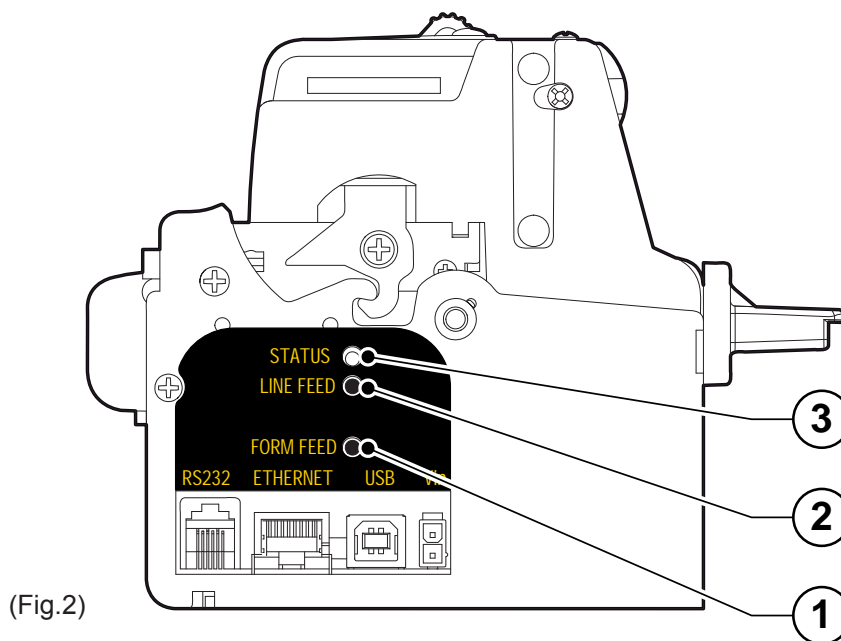
PRINTER DESCRIPTION

The printer (see fig.2) is comprised of a metal frame, printing mechanism, a cutter and an ejector. Located on the keypad are the following keys: FORM FEED (1), LINE FEED (2) and status LED (3).

- LINE FEED key: When the LINE FEED key is pressed, the printer advances the paper so that the paper may be inserted in the printing mechanism. During power-up, if the LINE FEED key is held down, the printer enters the SETUP routine.
- FORM FEED key: When the FORM FEED key is pressed, the printer advances the paper by a pre-set length. During power-up, if the FORM FEED key is held down, the printer will perform the FONT TEST routine.
- STATUS LED: displays printer hardware status. In case of malfunction, the colour and flash frequency changing as follows:

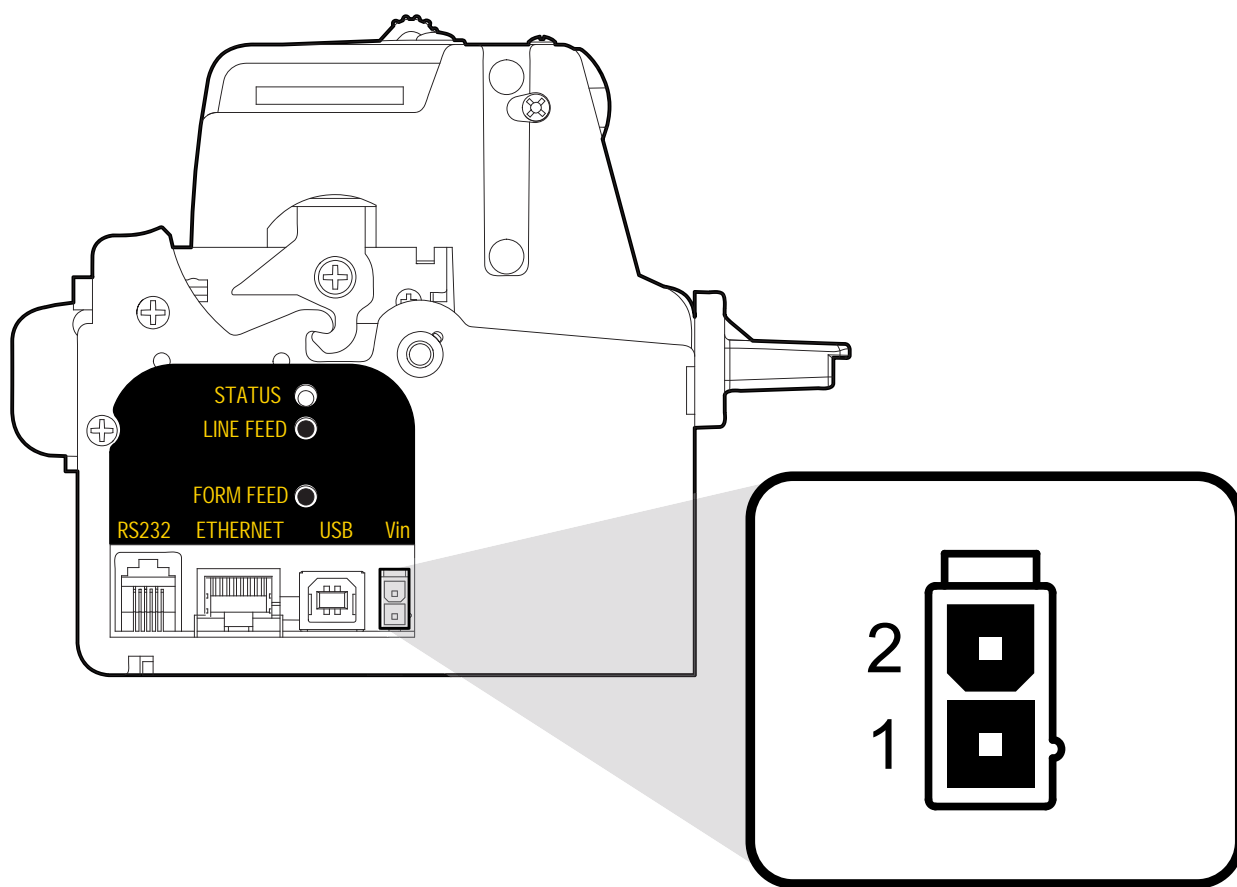
STATUS LED	COLOR	DESCRIPTION	
Turned on	Green	Printer on: no error	
Flashing	Green	Communication status	
		Nr. Flashings	Description
		1	Receive data
		2	Reception errors (parity, frame error, over-run error)
		3	Misinterpret command
		4	Command reception time out
Flashing	Yellow	Recovering error	
		Nr. Flashings	Description
		2	Heading over temperature
		3	Paper end
		4	Paper jam
		5	Power supply voltage incorrect
		6	Cover opened
Flashing	Red	Unrecovering error	
		Nr. Flashings	Description
		3	RAM error
		4	EEPROM error
		5	Cutter error

(Tab.1)



(Fig.2)

1.1 CONNECTIONS



(Fig.1.1)

1.1.1 Power Supply

The printer is equipped with a 2 pin male molex connector series 5569 (Vertical), for the power supply (see Fig. 1.1). The connector pin configuration is as follows :

Model no. type: Header : 90° Molex series 5569 (no. 39-30-1020)
Housing: Molex series 5557 (no. 39-01-3022)

PIN	SIGNAL
1	+24 V
2	GND

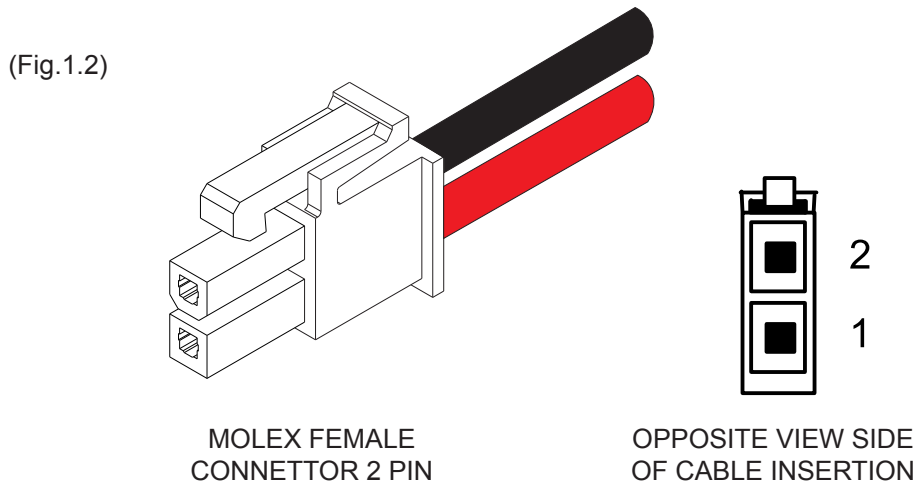
(Tab.1.1)



WARNING:
Respect power supply polarity.

1. INSTALLATION AND USE

This picture shows the power supply cable included in the printer packaging :



The connector pin configuration of this cable is as follows:

Female connector	Cable color
Pin 1	RED
Pin 2	BLACK

(Tab.1.2)

Note : The red cable is for +24 Vdc.
The black cable is for signal ground.

1.2 SELF-TEST

Printer operating status is indicated in the configuration print-out in which, next to the name of the components displayed (see figure 1.3), the following information is given:

- Under INTERFACE is given the interface present (RS232).
- Under PROGRAM MEMORY TEST, DYNAMIC RAM TEST, EEPROM TEST and CUTTER TEST, the message OK appears if functioning and NOT OK if faulty.
- Under HEAD VOLTAGE is given the voltage of the head.
- Under HEAD TEMPERATURE is given the temperature of the head.
- Under PAPER PRINTED is given the number of centimetres of paper printed.
- Under CUT COUNTER is given the number of cuts made.
- Under RETRACT COUNTER is given the number of retract made.
- Under POWER ON COUNTER is given the number of power-ups made.

PRINTER SETUP

INTERFACERS232
 PROGRAM MEMORY TEST.....OK
 DYNAMIC RAM TEST.....OK
 EEPROM TEST.....OK
 CUTTER TEST.....OK
 HEAD VOLTAGE [V] = 23,76
 HEAD TEMPERATURE [°C] = 30
 PAPER PRINTED [cm] = 69525
 CUT COUNTER = 3520
 RETRAC COUNTER = 0
 POWER ON COUNTER = 438
 PRINTER HEAD TYPE_____ T80

IP Address..... : **192. 168. 0. 1**
 Subnet Mask : **255. 255. 240. 0**
 Default Gateway..... : **192. 168. 0. 1**

MAC Address : **00-0E-E2-00-00-00**

For advanced printer setup please
 connect to: **http://192.168.0.1**

RS232 Baud Rate: **19200 bps**
 RS232 Data Length.....: **8 bits/chr**
 RS232 Parity: **None**
 RS232 Handshaking: **Xon/Xoff**
 Busy Condition: **RxFull**
 USB Address Number ⁽¹⁾.....: **0**
 Autofeed: **CR Disabled**
 Print Mode: **Normal**
 Chars / inch: **A=15 B=20 cpi**
 Speed / Quality.....: **Normal**
 Paper Retracting: **Disabled**
 Notch Alignment: **Disabled**
 Current: **Normal**
 Print Density: **0%**

[FF] *key to enter setup*

[LF] *key to skip setup*

(Fig.1.3)



⁽¹⁾ **NOTE:** This parameter is displayed if the printer has an USB interface; it's used to identify univocally the USB printer by a numerical address code, if on the PC are connected two printers that are the same models for example two VKP80II-UE.

1. INSTALLATION AND USE

1.3 CONFIGURATION

This printer permits the configuration of default parameters divided into two groups:

- parameters for Ethernet setup;
- parameters for printer setup.

It's possible to configure both the groups or skip one of them following the instructions printed on the paper for the FORM FEED key and LINE FEED key functionality.

1.3.1 Ethernet setup

The Ethernet parameters are:

IP Address: printer IP network address; the network administrator assigns it.

Subnet Mask: this parameter identifies the local network address.

Default gateway: this parameter identifies the Gateway IP address used to send applications to the external network.

Mac address: this is the number, provided by the constructor, that identifies the printer; this number is univocal. This parameter can't be modified by set up.



ATTENTION: any changes to network parameters will interrupt browser connection!!! If the server not responding you MUST reconnect to the new IP address set.

To configure Ethernet parameter, follow the instructions printer on the paper.

[FF] key to modify parameter [LF] key for next parameter IP Address.....: 1 92. 168. 000. 001
--

The "IP Address" parameter is a number, in dotted decimal, composed by 4 bytes that identifies the IP address in 32 bit. Each byte is composed by three-digit number, of a maximum value of 255. To change this value is possible to modify the digits of each byte

192	.	168	.	000	.	007
1 st byte		2 nd byte		3 rd byte		4 th byte

1 ^o byte:	1	9	2
	1 st digit	2 nd digit	3 rd digit

where

1st digit: 0 - 2

2nd digit, 3rd digit: 0 - 9

The selected digit is highlighted (the number is written in negative mode).

Press FORM FEED key to modify the value of the highlighted digit; every single FORM FEED key pressure increases of 1 his value. Once the value 9 (or 2) is reached the counting starts again from 0.

Pressing LINE FEED key to move the cursor on the next digit; if the cursor position is on the latest digit, proceed to next parameter pressing the LINE FEED key again.

For example to modify the value of "IP Address" parameter from 192.168.0.1 to 192.168.0.7 you have to change the 3rd digit of 4th byte replacing 1 with 7.

3rd selected digit

1	9	2	.	1	6	8	.	0	0	0	.	0	0	1
														↑



⁽¹⁾ **NOTE:** The first digit of each byte can assumes only values between 0-2 because the maximum value is 255.

1.3.2 Printer setup

The printer's configurable parameters are:

RS232 Baud Rate: 115200, 57600, 38400, 19200^D, 9600, 4800, 2400, 1200.

RS232 Data length: 7, 8^D bits/char.

RS232 Parity: None^D, Even, Odd.

RS232 Handshaking: XON/XOFF^D, Hardware.

Busy condition: RxFullID, OffLine/RxFull⁽¹⁾.

USB Address Number: 0^D, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Autofeed: CR disabled^D, CR enabled.

Print mode: Normal^D, Reverse.

Characters per inch: A=11 B=15 cpi, A=15 B=20 cpi^D, A=20 B=15.

Speed/Quality: High Quality, Normal^D, High Speed.

Paper retract ⁽²⁾: Disabled^D, Enabled.

Notch Alignment: Disabled^D, Enabled.

Current: Low, High, Normal^D.

Print density: -50%, -37%, -25%, -12%, 0%^D, +12%, +25%, +37%, +50%.

Please note: the parameters marked with the symbol ^D represent the default values.



⁽¹⁾ **NOTE:** parameter valid only with serial interface; using this parameter, it is possible to select whether the Busy signal is activated when the printer is both in Off Line status and the buffer is full, or only if the reception buffer is full.

⁽²⁾ **NOTE:** If, at power-up, paper is present on the ejector and if this parameter has been activated, the printer will retract the paper. Otherwise, if the parameter is deactivated, the printer will eject the paper.

The settings made are stored in EEPROM (nonvolatile memory).

During power-up, if the LINE FEED key is held down, the printer enters the autotest routine and prints out the setup report. The printer will remain in standby in Hexadecimal dump mode (see section 1.5) until another key is pressed or characters are received through the printer communication port.

When the FORM FEED key is pressed, the printer enters parameter configuration.

When the LINE FEED key is pressed, the printer exits setup and terminates the Hexadecimal dump function.

When the receive buffer is full, if handshaking is set to XON/XOFF, the printer sends the XOFF (\$13) on the serial port.

When the receive buffer has cleared once again, if handshaking is set to XON/XOFF, the printer sends the XON (\$11) on the serial port.

1.4 Hexadecimal dump

This function is used to display the characters received from the communications port; the printer prints out both the hexadecimal code received as well as the corresponding ASCII code.

Once the autotest routine has finished, the printer enters Hexadecimal Dump mode. The printer remains in standby until a key is pressed or characters are received from the communications port; for every 24 characters received it prints hexadecimal values and ASCII codes (if the characters appear underlined, it means the receive buffer is full). Shown below is an example of a Hexadecimal Dump :

HEXADECIMAL DUMP		ASCII DUMP
0x000000	48 65 78 61 64 65 63 69 6D 61 6C 20 64 75 6D 70 20 66 75 6E 63 74 69 6F	Hexadecimal dump function
0x000018	6E 20 30 31 32 33 34 35 36 37 38 39 20 61 62 63 64 65 66 67 68 69 6A 6B	n 0123456789 abcdefghijk
0x000030	6C 6D 6E 6F 70 71 72 73 74 75 76 77 78 79 7A 2E	lmnopqrstuvwxyz.

(Fig.1.4)

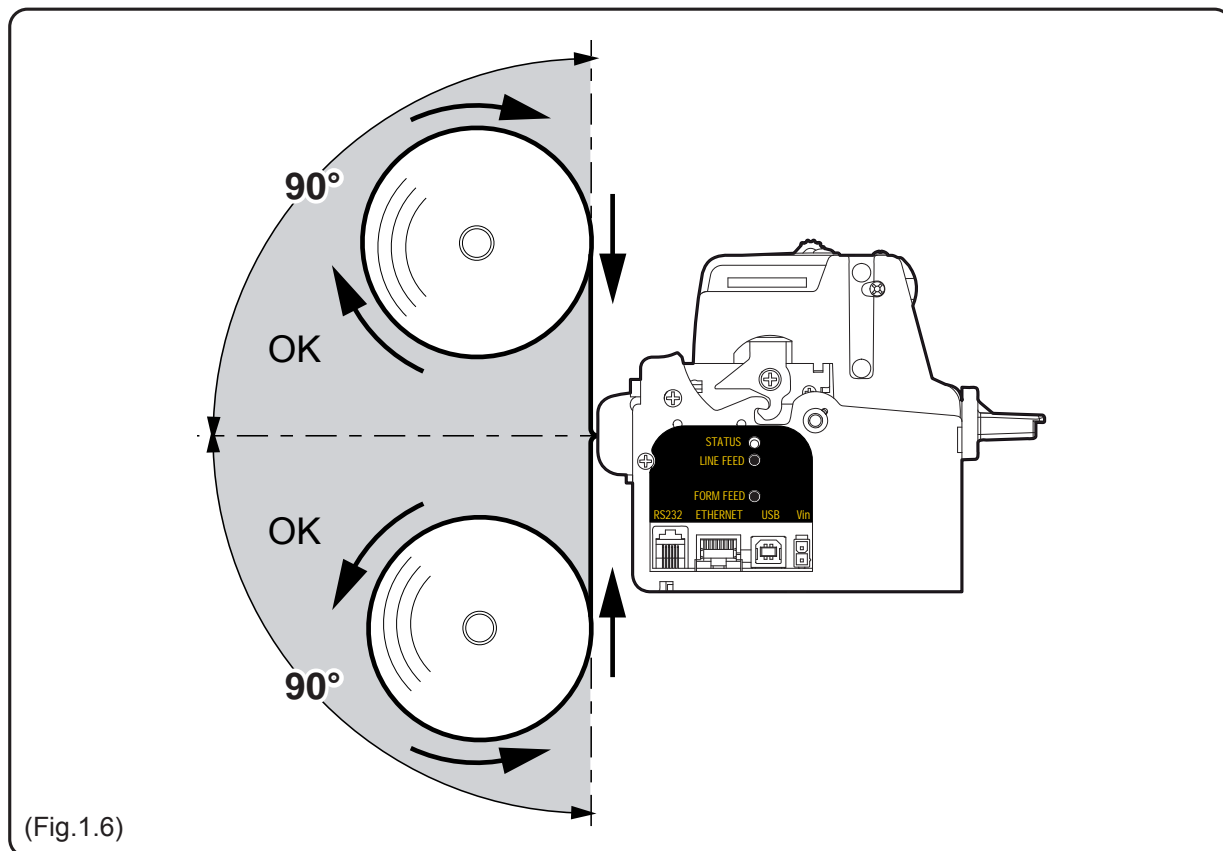
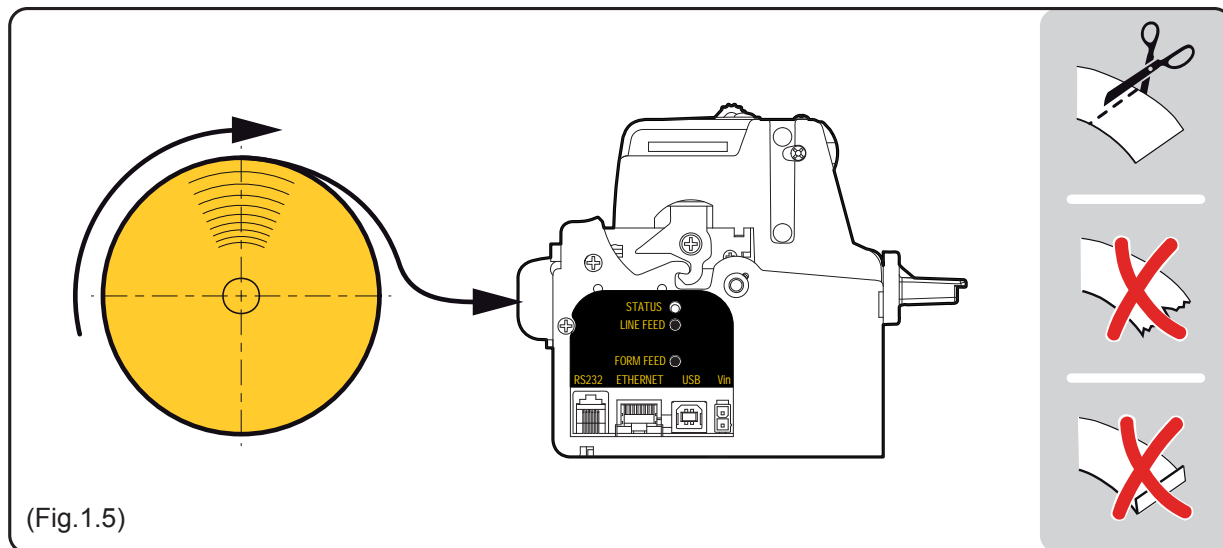
1.5 MAINTENANCE

1.5.1 Changing the paper roll

To change the roll of paper, proceed as follows:

1. Position the paper roll so that it unrolls in the direction shown in fig.1.5;
2. Insert the paper into the paper infeed opening and wait for it to load automatically (see fig.1.5).

Fig.1.6 gives alignment specifications for correct paper loading without paper roll holder support.



WARNING

Before inserting the paper, make sure the cut is straight.

1.5.2 Ticket specifications

Paper with alignment notches may be used; referred to Appendix B on this manual to see the ticket specifications and management of notch alignment.

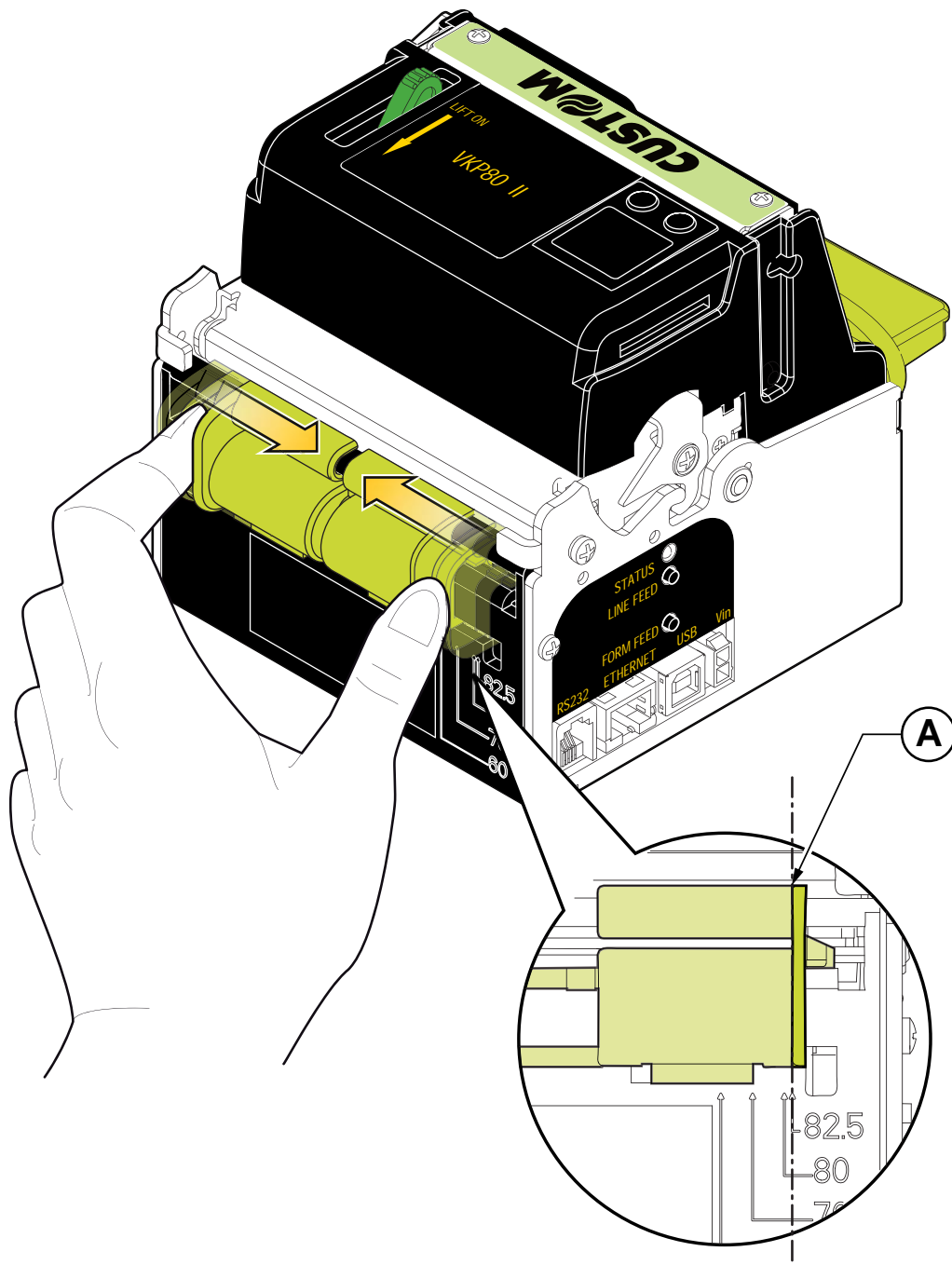
1.5.3 Adjusting paper width

Paper width may be adjusted from 60mm to 82.5mm using the right (Dx) and Left (Sx) slides located at the paper infeed opening.

Move the right and left slides to adjust the paper width (see fig.1.7).

Below the right slide there are four point of reference for paper width (60, 70, 80 and 82.5mm).

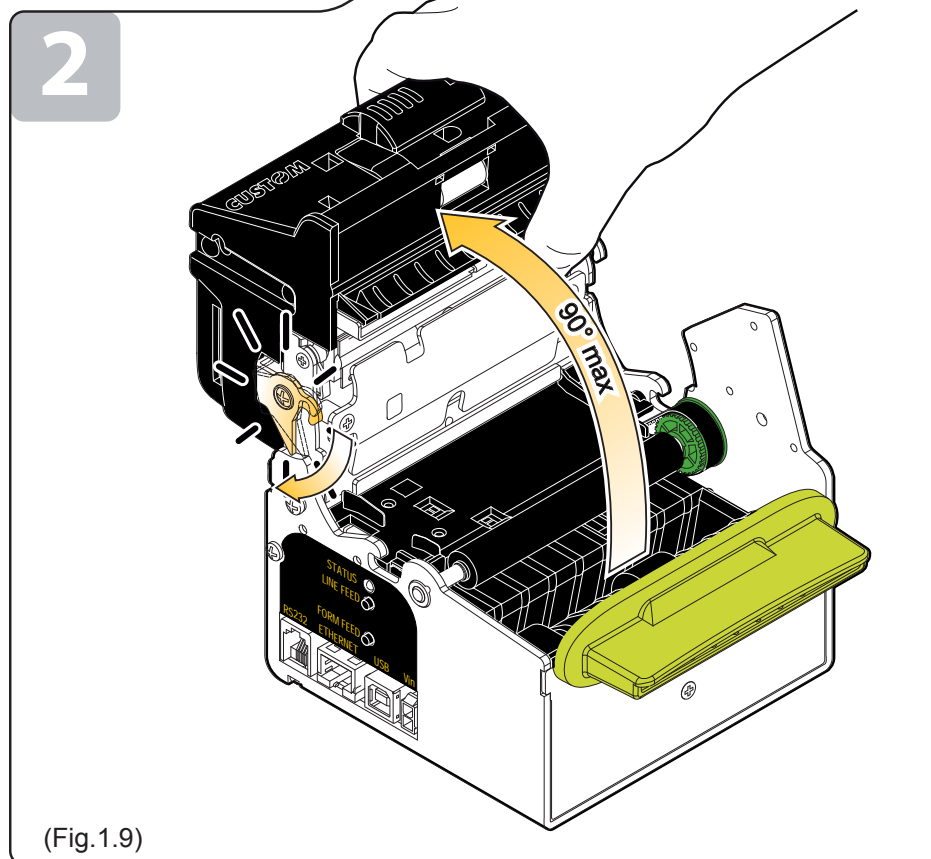
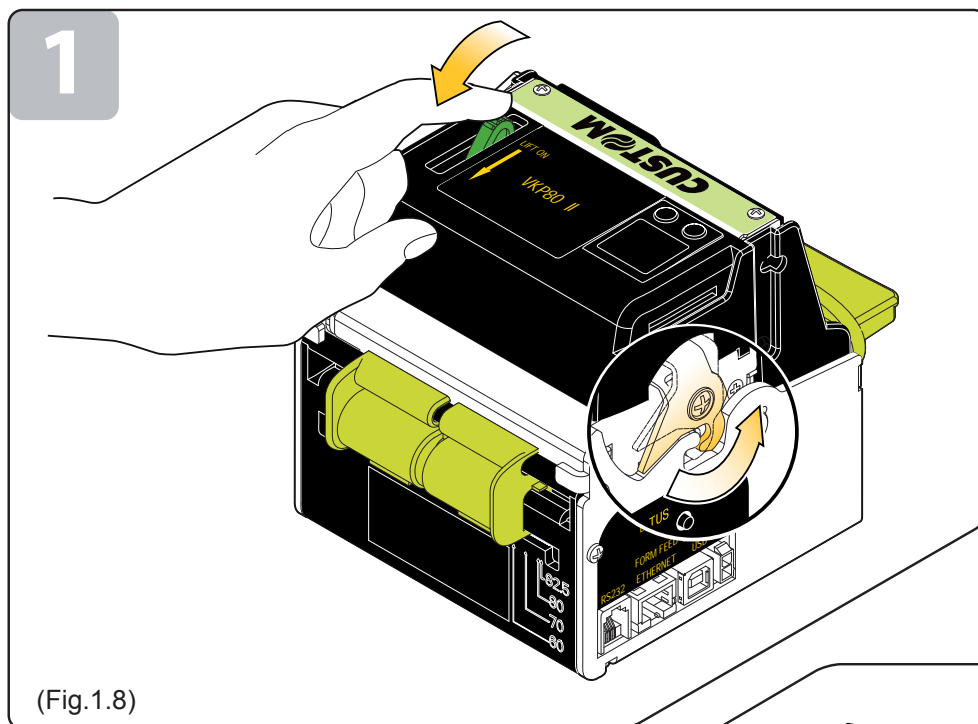
Move the slides to align the internal side of the fin (A) with the point of reference.



(Fig.1.7)

1.5.4 Periodic cleaning

The printer requires a periodic cleaning of the inner components. To clean the printer, proceed as follows. While pushing the opening lever down, lift the head/cutter unit (see figs. 1.8 and 1.9) until it locks into position.

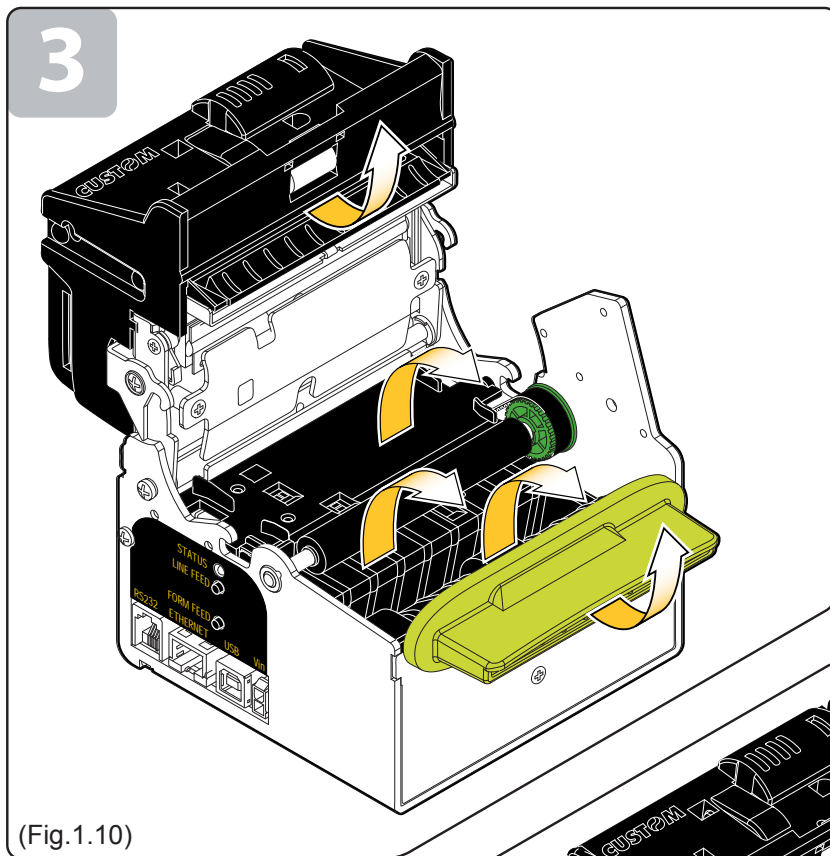


Check that there are no scraps of paper on the paper infeed and outfeed openings, on the cutter opening or the ejector roller (see fig.1.10). Remove the scraps before proceeding with any other operation.

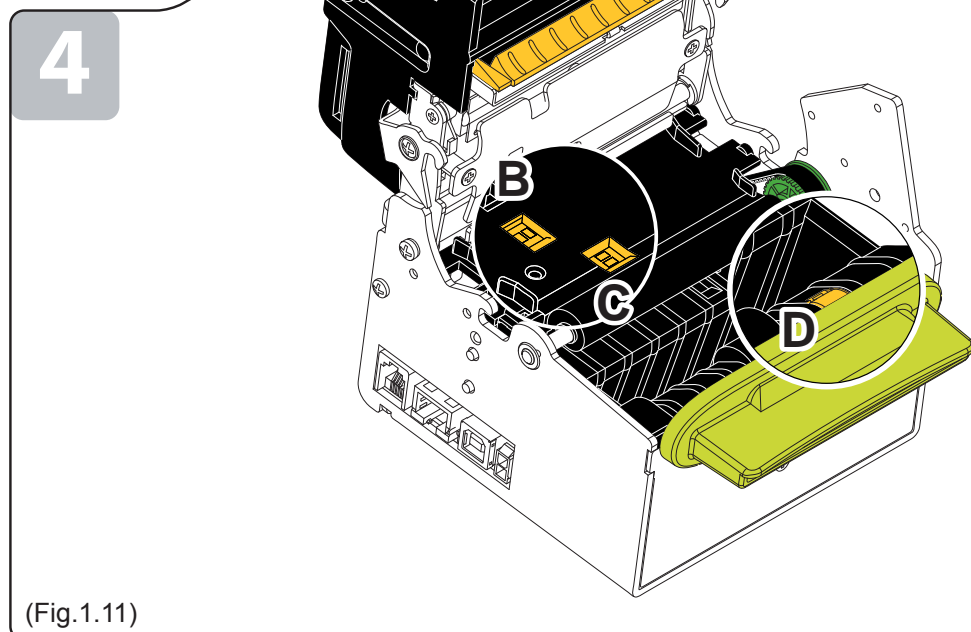


WARNING

Periodically remove accumulated paper dust from the upper plastic slide (A) and the area around the paper outfeed sensor (D). Clean carefully the paper sensor (B) and the notch sensor (C). To clean, do not use harsh chemical solvents; the use of a soft, alcohol-moistened cloth and pneumatics air is recommended (see fig.1.11).



(Fig.1.10)



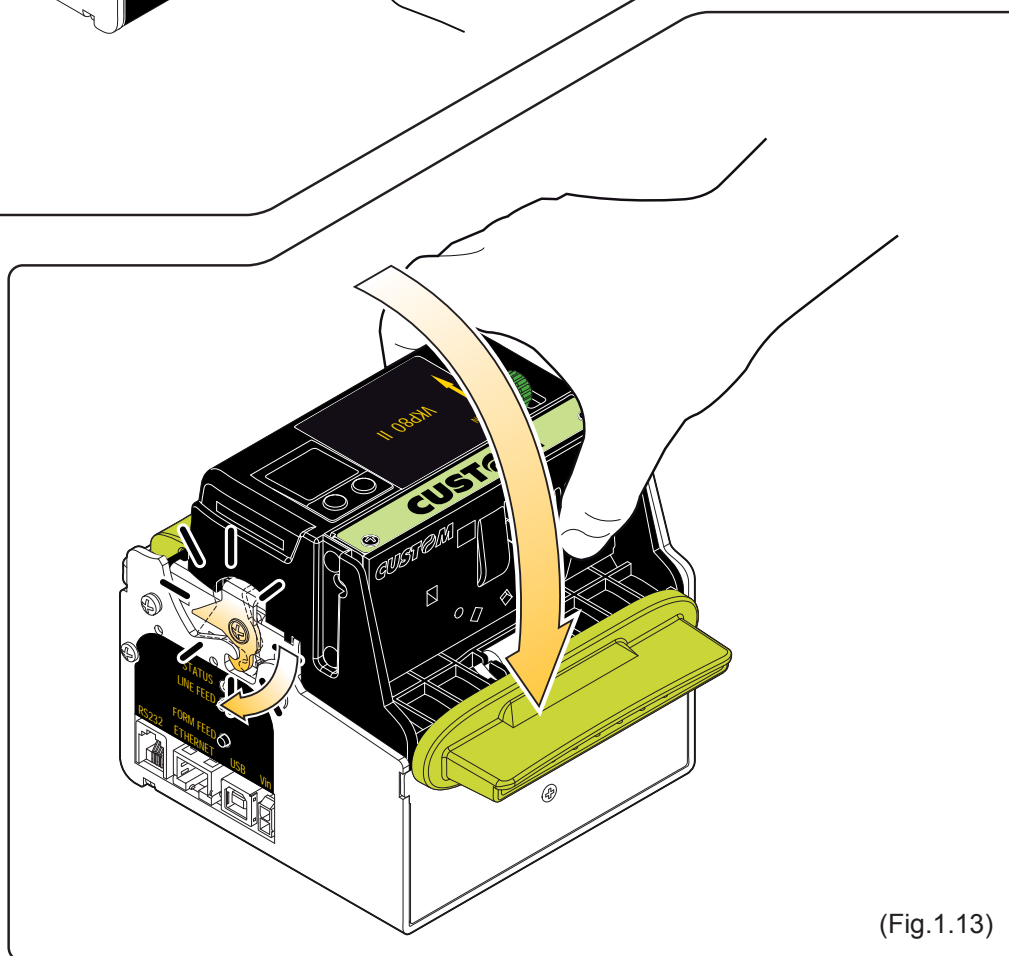
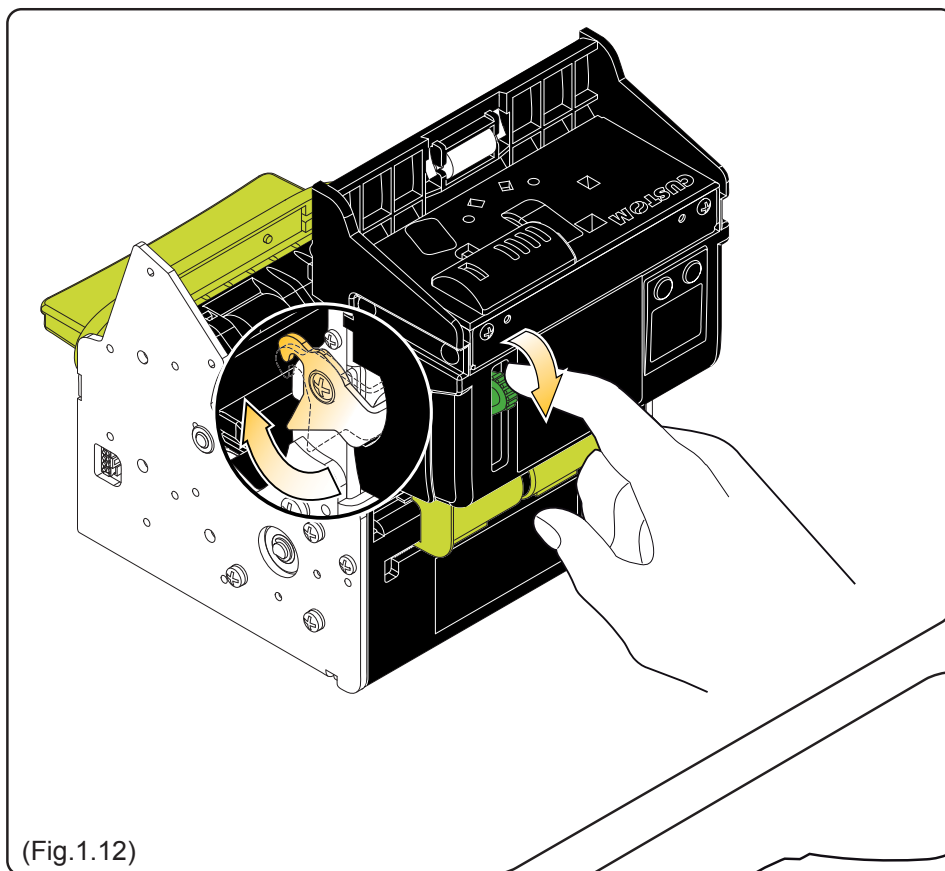
(Fig.1.11)



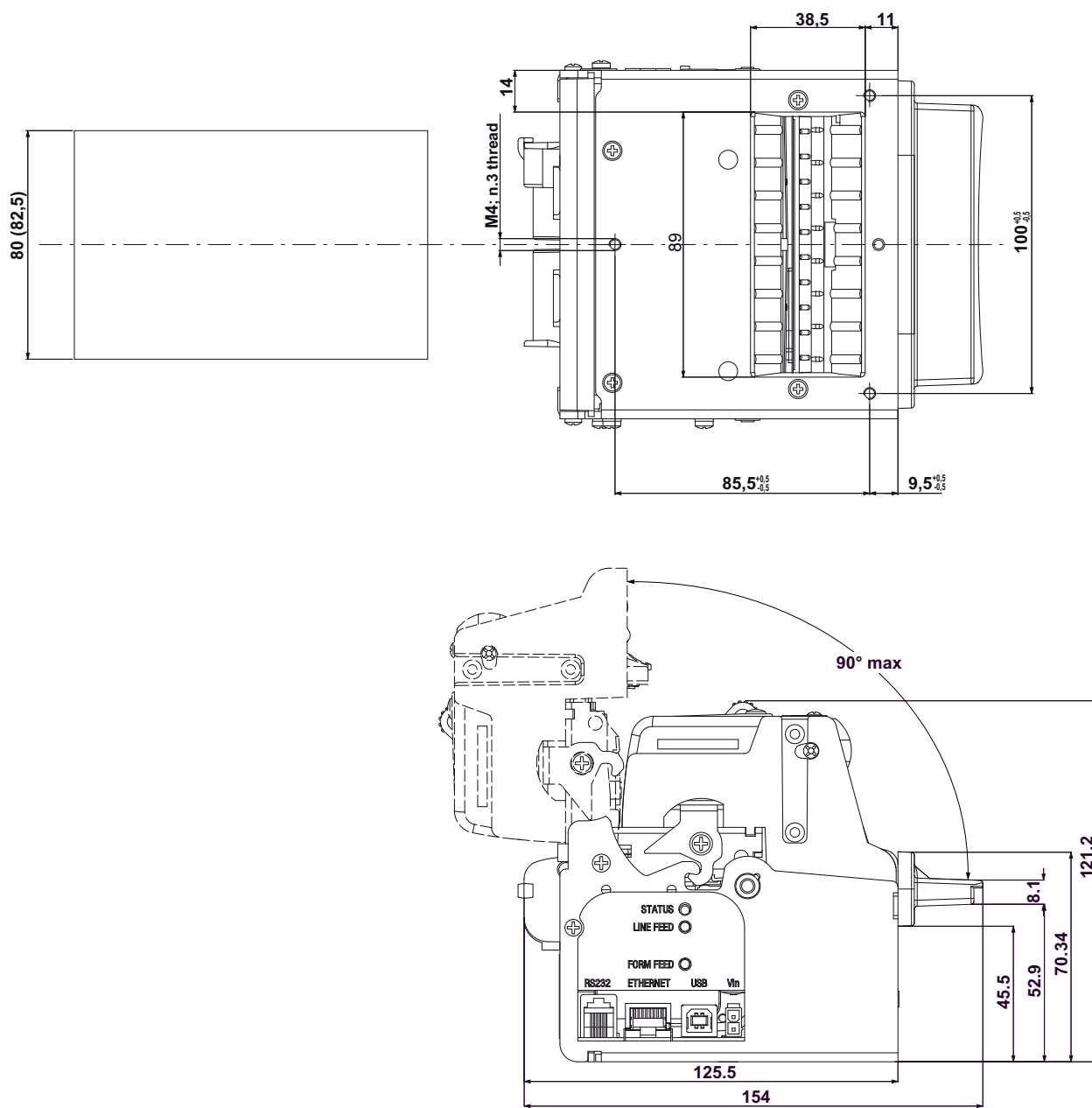
WARNING

To close the head/cutter unit:

- 1) push the opening lever down (see fig. 1.12);
- 2) lower the head/ cutter unit and press hard in the position shown in fig. 1.13.



1.5.5 Notes for installation and use of printer with retracting



(Fig.1.14)



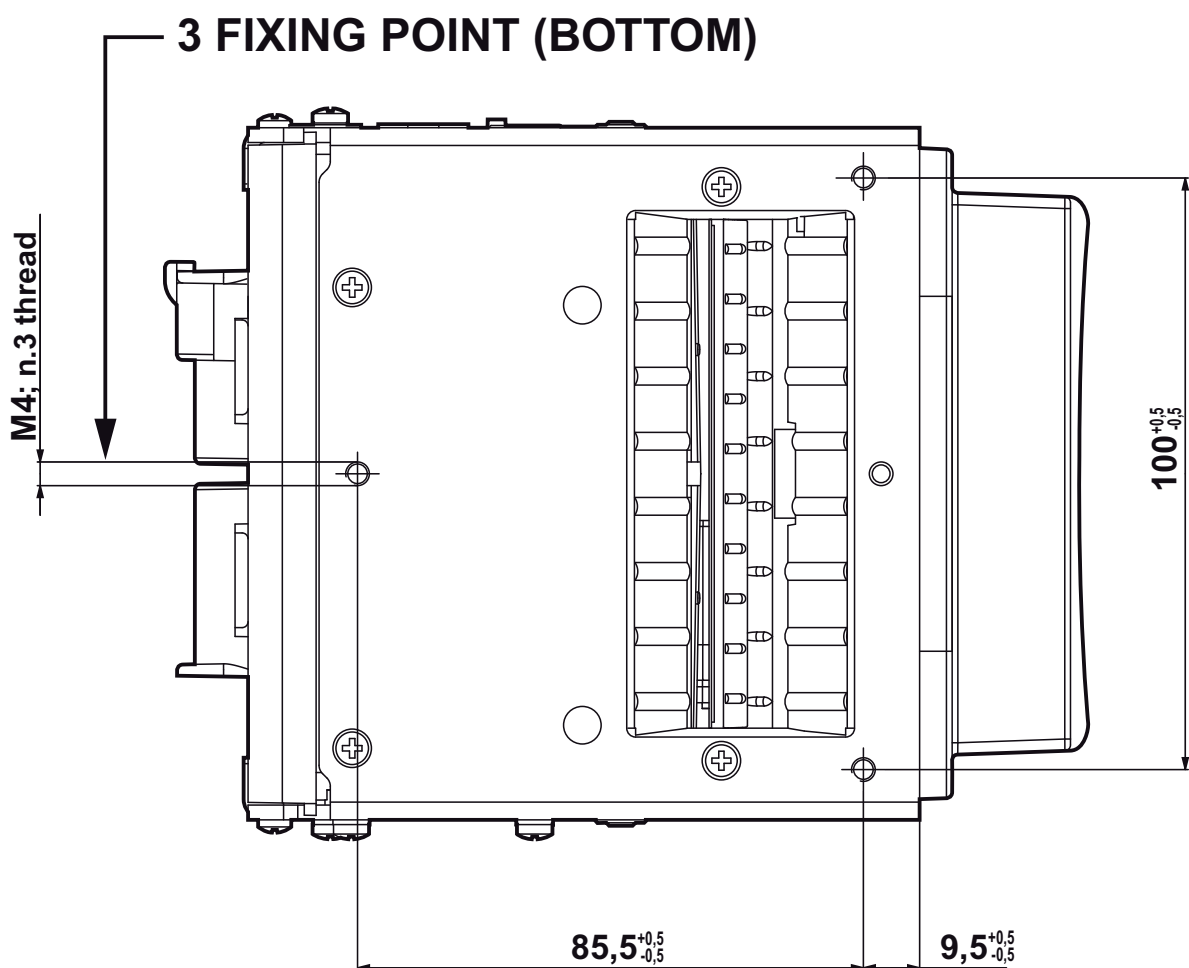
N.B.: “Ejector outfeed”: When assembling the printer on the machine, be sure to leave adequate space for the paper loop below. If this is not done, the ticket could crease at the cutting area, causing the ticket to jam in the paper outfeed opening.

1. INSTALLATION AND USE

In the following table are reported the length recommended for the tickets using of the retracting function:

TICKET LENGTH	TICKET PRESENTATION (MAX)
70 mm	10 mm
80 mm	10mm ÷ 30mm
80mm ÷ 220mm	10mm ÷ 30mm

1.5.6 Notes for installation and lower fastening of printer



(Fig.1.15)



ATTENTION

It's very important to consider the screws length to not damage the internal sensor board near the lower fixing holes (see fig. 1.16).

On the basis of panel thickness calculate the screws length as follows :

$$Lv \leq Pn + Sp$$

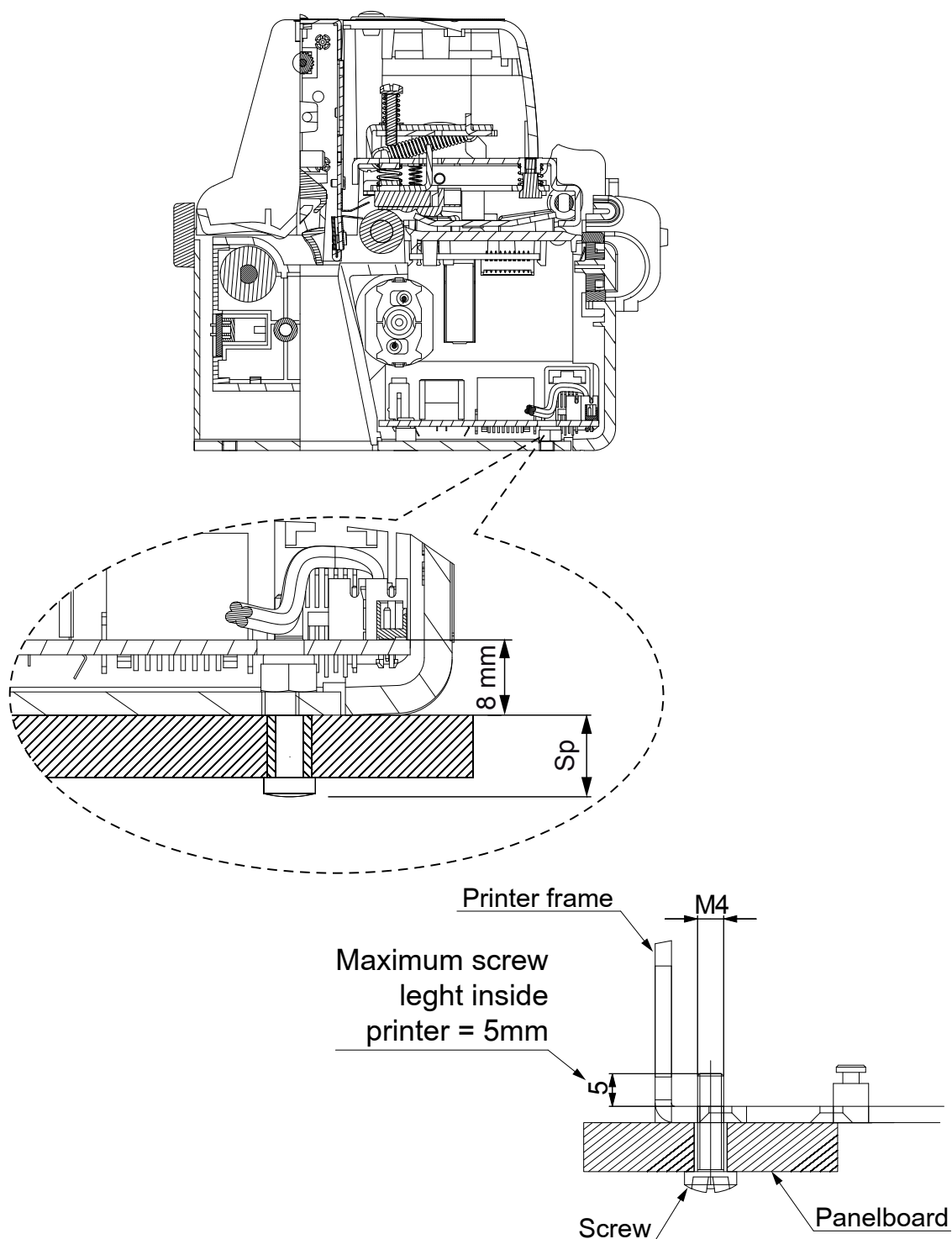
where

Lv : indicates screw length

Pn : 8 mm

Sp : panel thickness

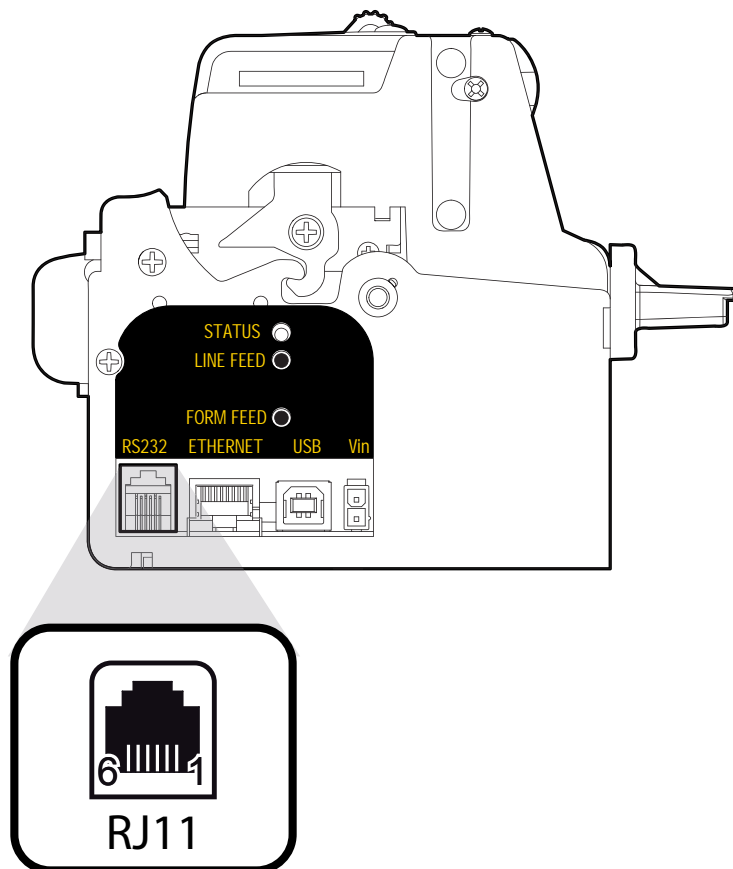
For example if panel thickness is 10mm (Sp = 10mm) the max screw length will be 18mm.



Blank page

2.1 SERIAL INTERFACE

The printer has an RJ11 interface with 6-pin female connector. Refer to the table below for the connector pin signals:

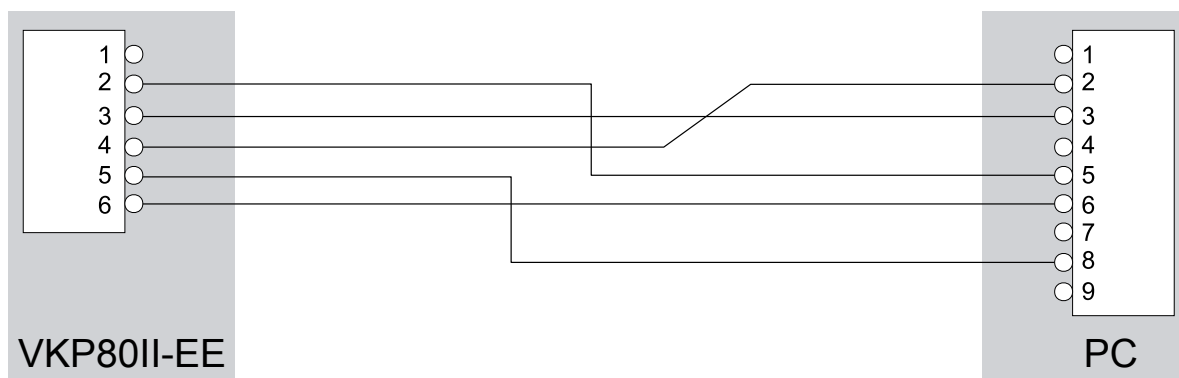


(Fig.2.1)

(Tab.2.1)

PIN	SIGNAL	IN/OUT	DESCRIPTION
1	+5 VF	OUT	Power supply
2	GND	-	Ground signal
3	RXD	IN	Receive data. Serial data input (to the host)
4	TXD	OUT	Transmit data. Serial output (from the host)
5	RTS	OUT	Ready to send. Ready to receive data (active with level high)
6	DTR	OUT	Ready to send. Ready on and operational (active with level high)

The diagrams below illustrate a sample connection between the printer and PC using a 9-pin female connector.

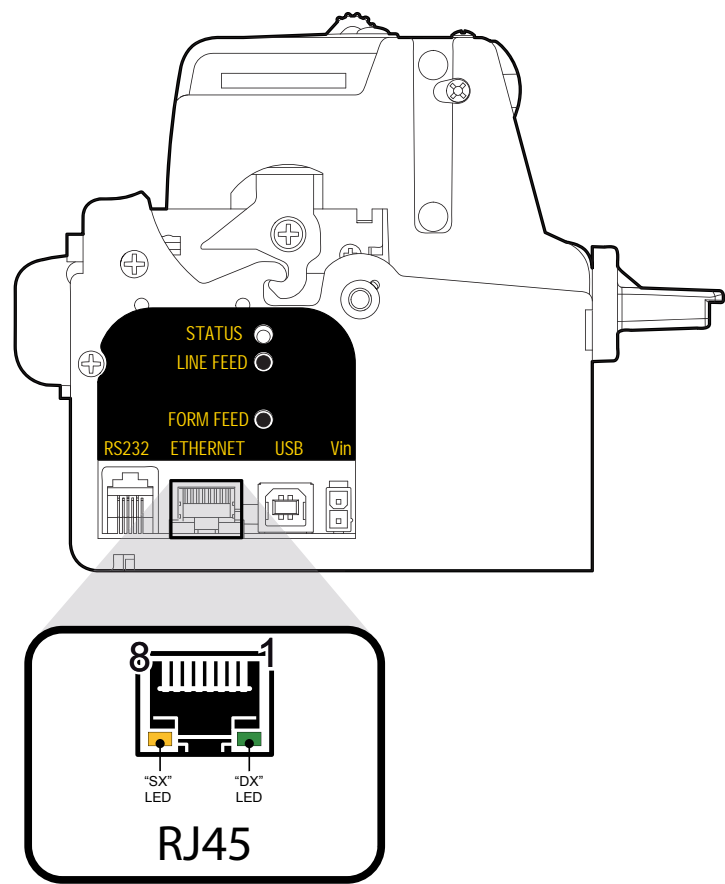


(Fig.2.2)

2. INTERFACES

2.2 ETHERNET INTERFACE

The printer has an RJ45 interface with 8-pin connector. Refer to the table below for the connector pin signals:



(Fig.2.3)

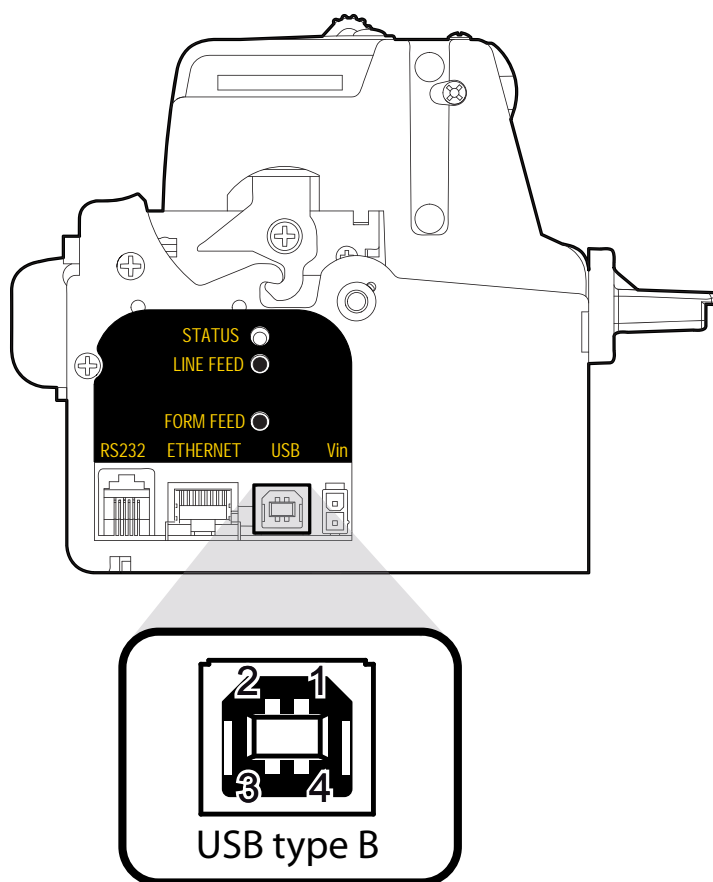
PIN	SIGNAL	DESCRIPTION
1	ETX+	ETX+
2	ETX-	ETX-
3	ERX+	ERX+
4	+24 VT	Not connected
5	+ 24 VT	Not connected
6	ERX-	ERX-
7	GND	Not connected
8	GND	Not connected

(Tab.2.2)

NOTE : The functionality of two leds, Sx and Dx, are specified in the following table:

LED	HW version 2.00 or later
Sx	Link (yellow color): the led light on when a connection is active
Dx	Rx/Tx (green color): the led light on when occurs a data reception or transmission

2.3 USB INTERFACE



(Fig.2.4)

Printers with USB serial interface conform to USB 1.1 standards and have the following specifications:

- Communication speed 12 Mbit/sec
- "Receptacle series B" - type connector.

Refer to the table below for the connector pin signals and connection to a device:

PIN	SIGNAL	DESCRIPTION
1	VBUS	N.C.
2	D-	Data -
3	D+	Data +
4	GND	Ground signal
Shell	Shield	Cable shield

(Tab.2.3)

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3.1 TECHNICAL SPECIFICATIONS

Table 3.1 gives the main technical specifications for the 204 dpi printer model.

(Tab.3.1)

Print method	Thermal, fixed head (8 dot/mm)		
Resolution	204 DPI (8 dot/mm)		
Paper specifications			
Type of paper	Thermal rolls Heat-sensitive side on outside of roll		
Recommended types of paper	from 55 g/m ² to 110 ⁽¹⁾ g/m ² (KANZAN)		
Width	from 60 ⁽²⁾ to 82,5 mm		
Internal roll core diameter	25mm		
External roll diameter	max Ø180 mm ⁽³⁾⁽⁴⁾		
	OPTIONAL	Upper attachment	max Ø170 mm ⁽⁵⁾
	OPTIONAL	Rear attachment	max Ø180 mm ⁽⁵⁾
	OPTIONAL	Lower attachment	max Ø180 mm ⁽⁵⁾
Core type	Cardboard or plastic		
Sensors	Head temperature, black mark, paper presence, ticket presence on output, opening of printing unit, (near paper end on roll support is optional)		
Printing mode	Straight, 90°, 180°, 270°		
Printing format	Height/Width from 1 to 8, bold, reverse, underlined, italic		
Character fonts	PC437, PC850, PC860, PC863, PC865, PC858.		
Available interfaces	RS232	USB	ETHERNET
Baud rate	From 1200 to 115200 bps		
Receive buffer	24 Kbytes		
Flash memory	384 Kbytes		
Printing Driver	Windows 2K ⁽⁶⁾ , XP, Linux		
Dimensions ⁽⁵⁾	Length [mm] = 154 (with cover closed), 183 (with cover open) Height [mm] = 121,2 (with cover closed), 165,7 (with cover open) Width [mm] = 123,5		
Weight ⁽⁵⁾	2117 gr.		
Printing speed			
High quality	80 mm/sec		
Normal	180 mm/sec		
High speed	220 mm/sec		



NOTE: ⁽¹⁾ For paper from 90 to 110 g/m² enable the dispenser continuous mode:
\$1D \$65 n [m]

⁽²⁾ For ticket width = 60 mm do not exceed a max length of 250 mm.

⁽³⁾ Referred to model without paper holder support.

⁽⁴⁾ It's better to use an external shock absorber for rolls with a diameter higher than or equal to 100 mm.

⁽⁵⁾ Referred to model without paper holder support.

⁽⁶⁾ Only for USB and serial connection.

3. TECHNICAL SPECIFICATIONS

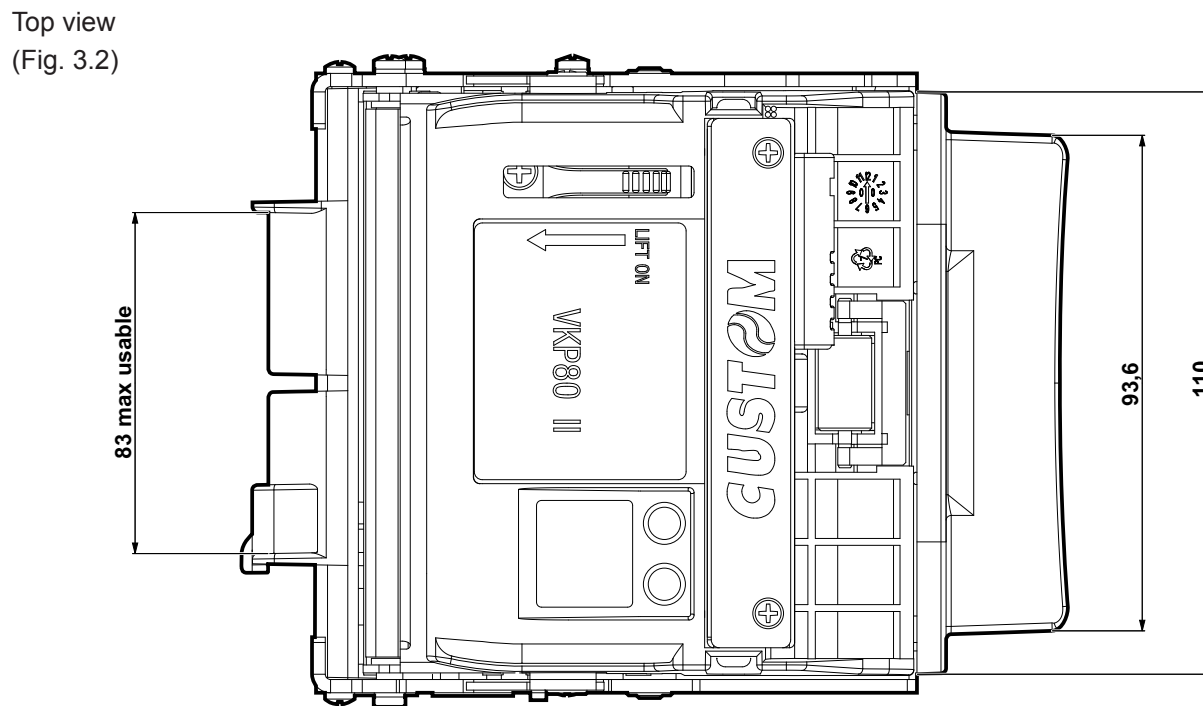
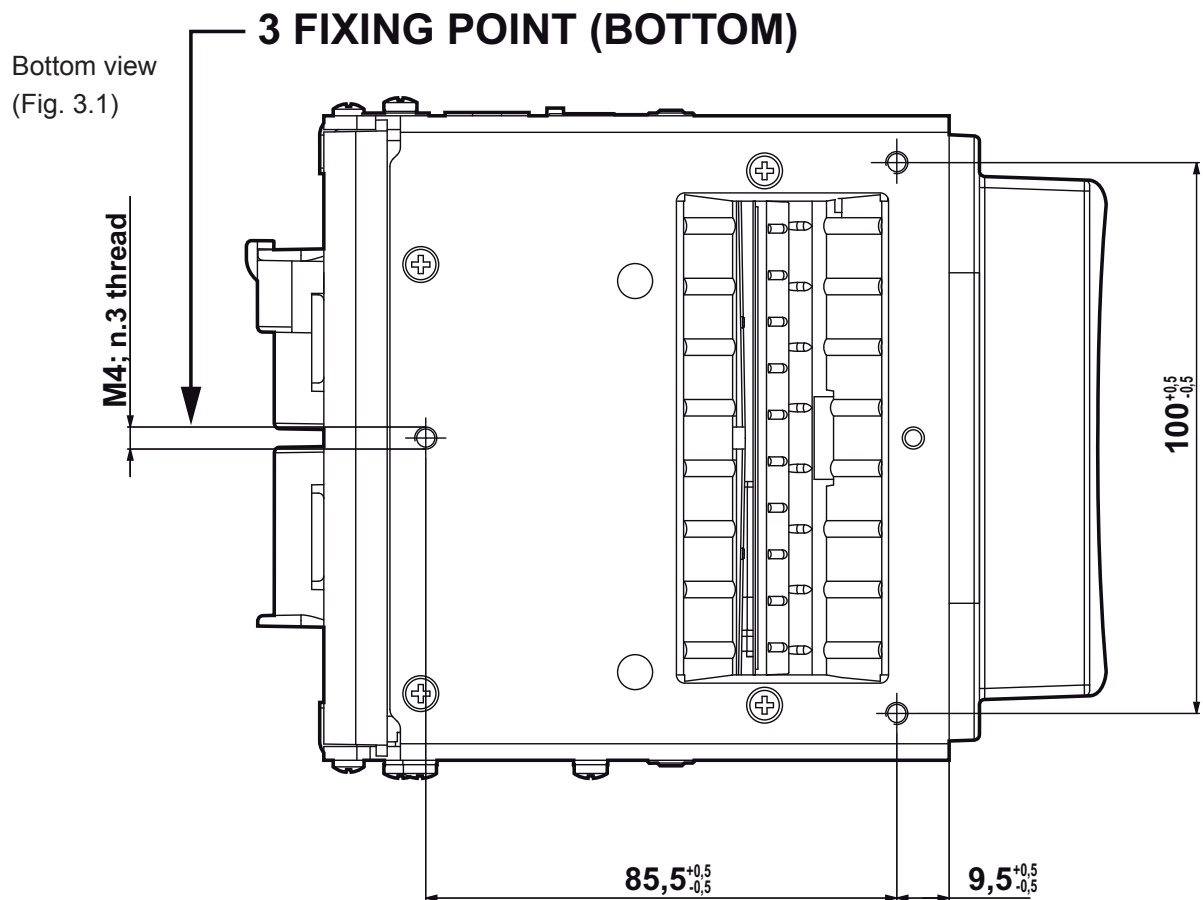
Power supply	24 Vdc ± 10% (optional external power supply)		
Absorption (current setting = Normal)			
Stand-by	0,1 A		
Medium (50% dot ON)	2,2 A		
Environmental conditions			
Operating temperature	0°C - 50°C		
Relative humidity	10% - 80% w/o condensation		
Storage temperature / Humidity	-20°C - 70°C / 10% - 90%		
OPTIONS	Roll holder support		
Emulation	ESC/POS™		
Character density	11 cpi	15 cpi	20 cpi
Number of columns	88	123	160
Chars / sec	1760	2460	3200
Lines / sec	20	20	20
Characters			
Normal	2,25x3	1,625 x 3	1,25 x 3
Retracting function			
Ticket length	Ticket presentation		
70 mm	10 mm		
80 mm	10 mm - 30 mm		
80 mm - 220 mm	10 mm - 30 mm		
Ejecting function			
Ticket length	Ticket presentation		
70 mm	10 mm		
> 80 mm	10 mm - 30 mm		
350 mm ⁽⁷⁾	10 mm - 30 mm		



NOTE: ⁽⁷⁾ Maximum length recommended to guarantee the printer efficiency.

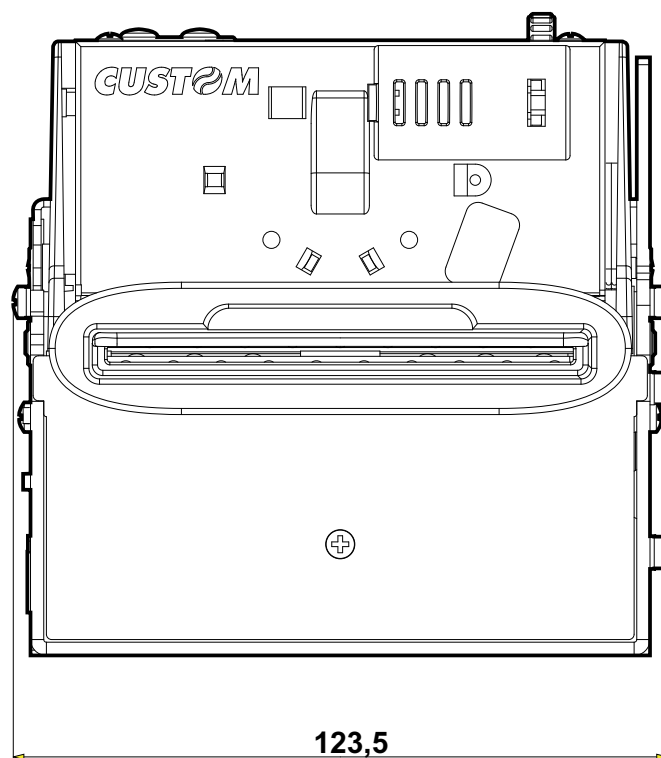
3.2 DIMENSIONS

In the following figures shows the dimensions of the printer.

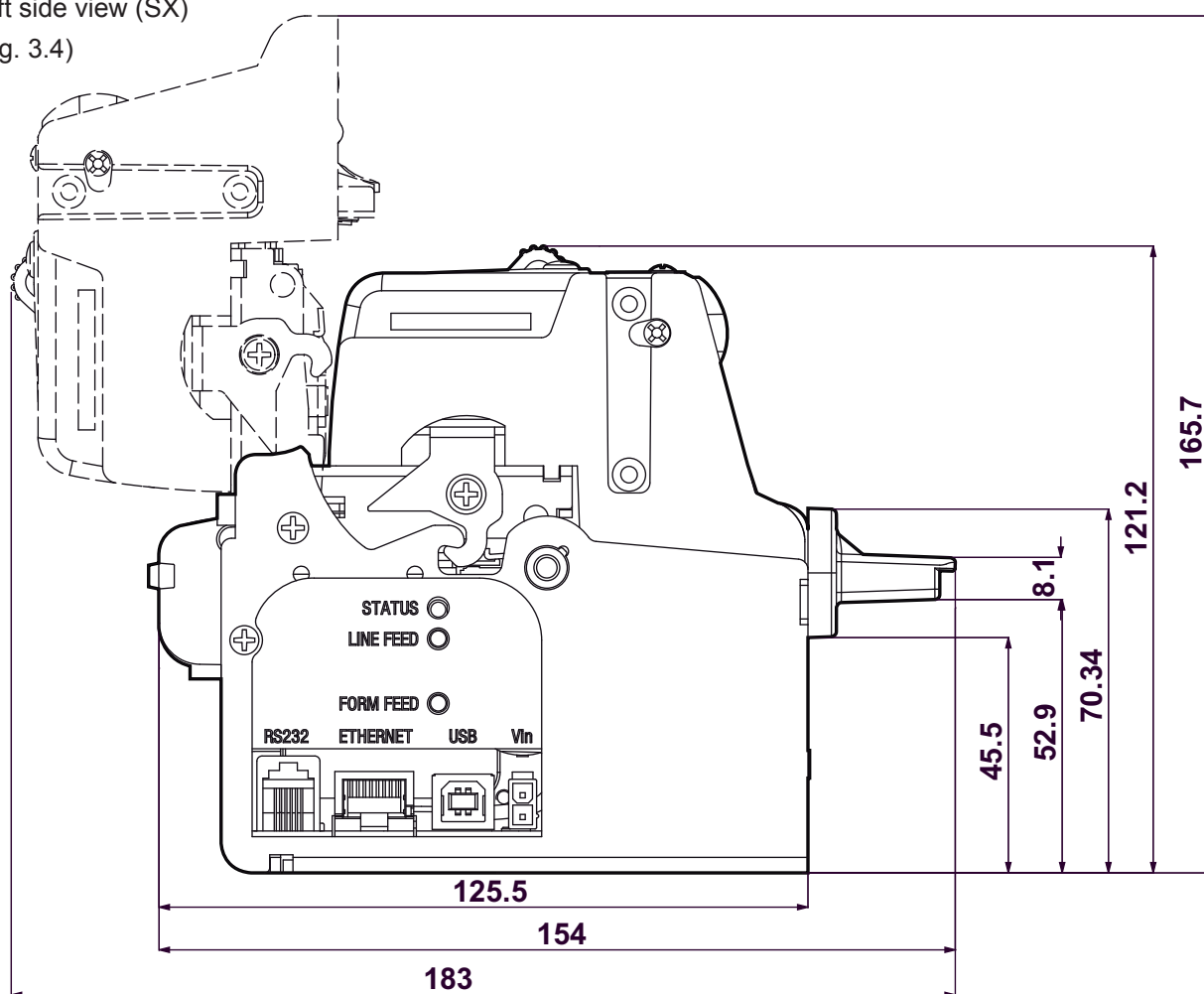


3. TECHNICAL SPECIFICATIONS

Front view
(Fig. 3.3)

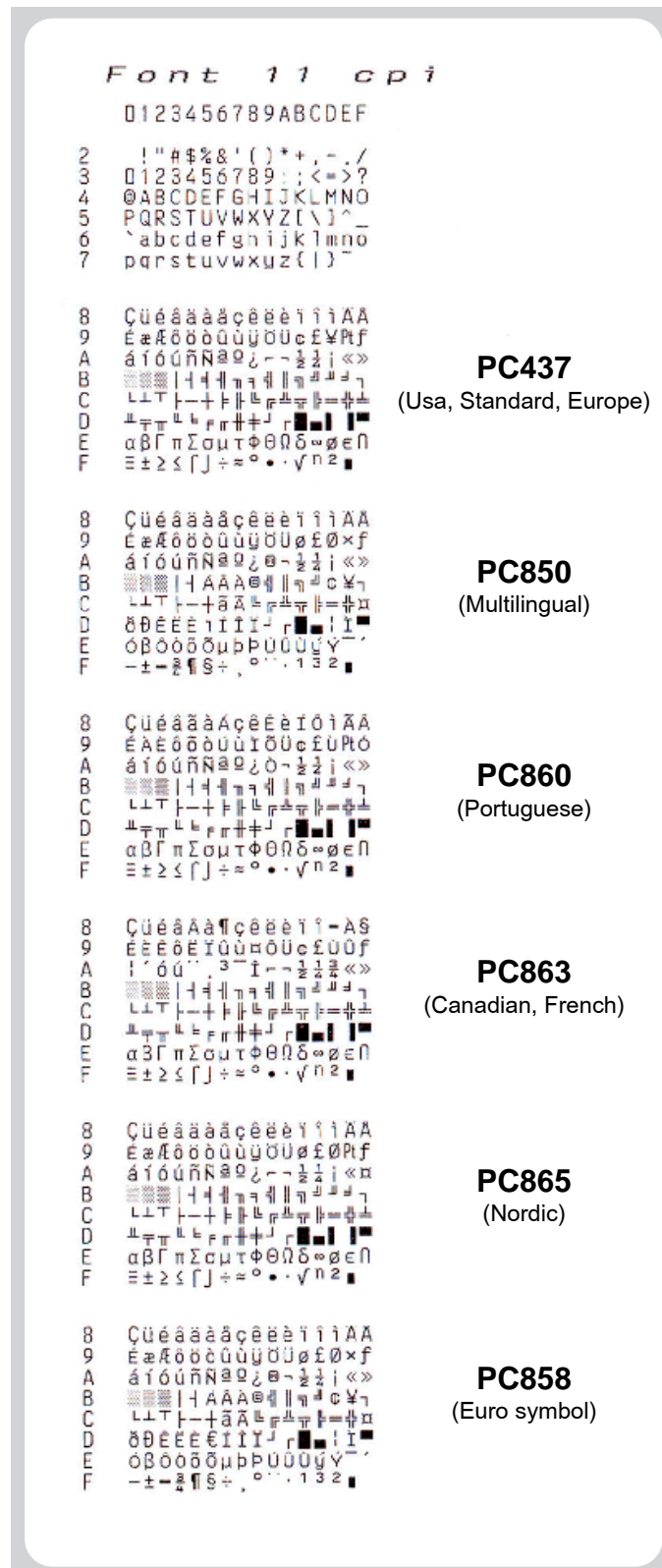


Left side view (SX)
(Fig. 3.4)



4.1 CHARACTER SETS

The printer has 3 fonts of varying width (11, 15 and 20 cpi) which may be accessed through programming (section 1.2) or control characters. Each of these fonts offers the following code tables: PC437, PC850, PC860, PC863, PC865, PC858. Shown below in figures 4.1 are examples of the 11 cpi character set.



(Fig.4.1)

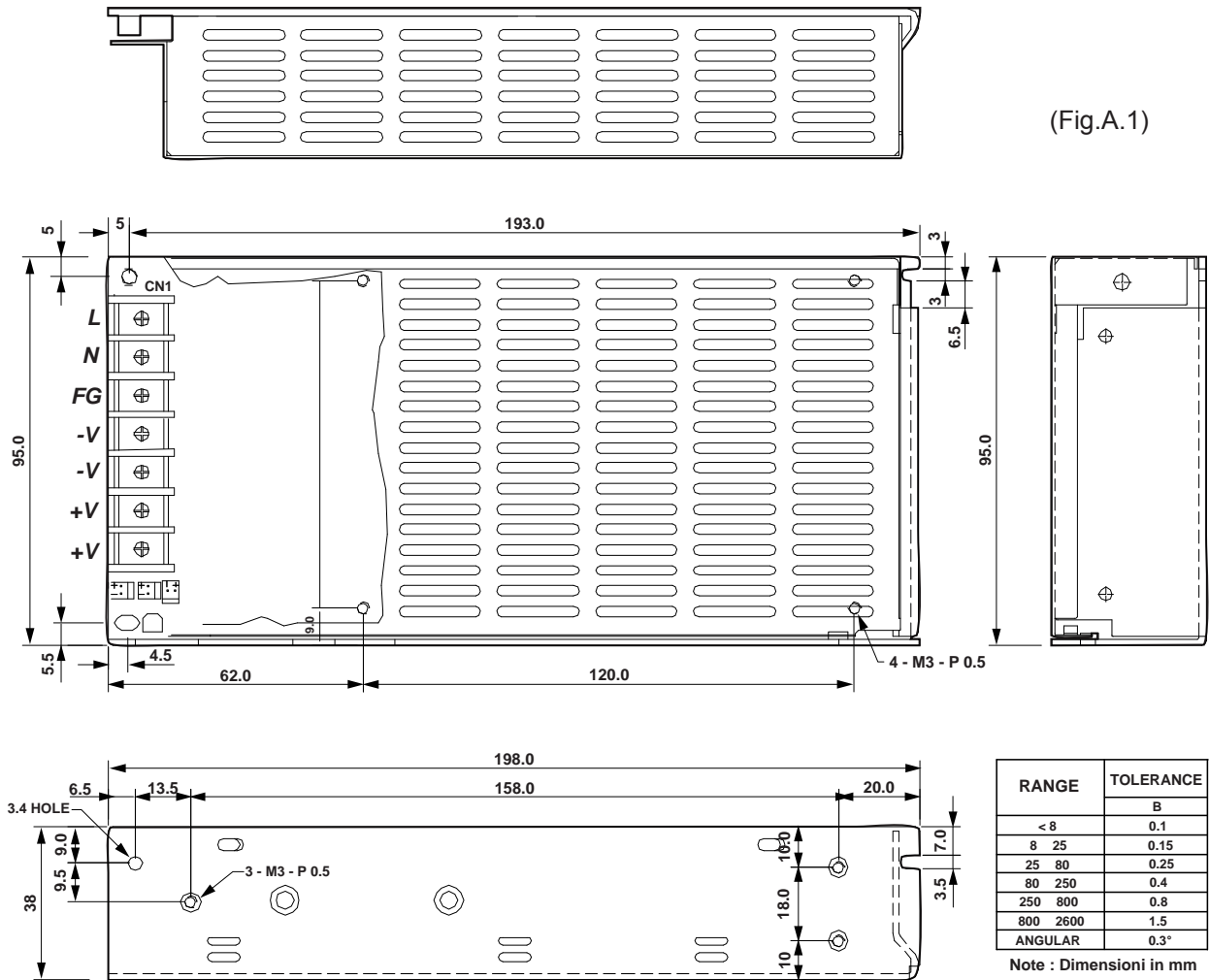
To print the Euro (€) symbol, the command sequence is: \$1B, \$74, \$13, \$D5.

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A.1 ACCESSORIES

A.1.1 Power Supply

The figure below illustrates the power supply provided by Custom to be used for printer operation.




(Tab.A.1)

PPSPS-100-24V	Switching power supply 24V 100W	
Input specification	Input voltage	85V ÷ 264V
	Current	0A ÷ 4.5A
	Input frequency	47Hz ÷ 63Hz
Output specification	Output voltage	24V
	Output current	0A ÷ 4,5A
	Efficiency	80%
Environmental condition	Operating temperature	0°C ÷ 70°C
	Humidity	20% ÷ 85% Rh (w/o condensation)
	Storage temperature / Humidity	-10°C ÷ 75°C/ 10% ÷ 95% (w/o condensation)

Protection devices: Shortcircuit, overload and overvoltage.

A.1.2 CD Full driver

	DOCD-VKP80II-EE
	CD-ROM Full driver for VKP80II-EE

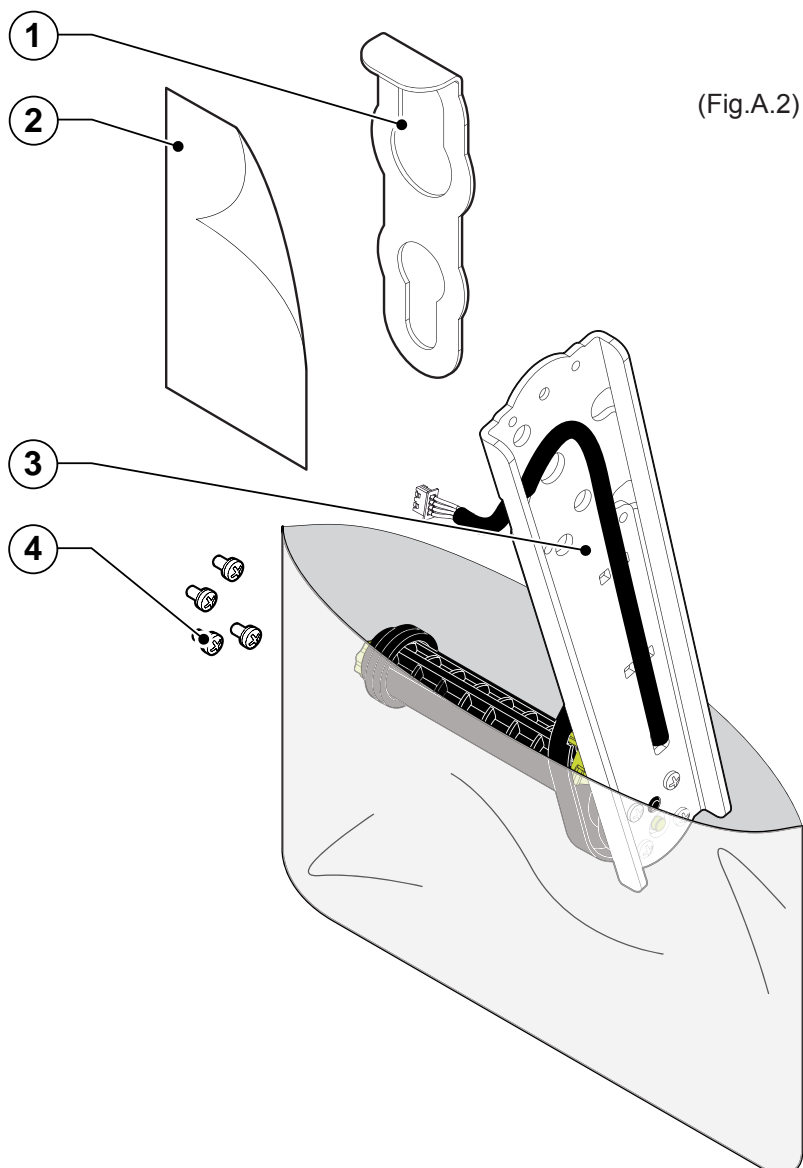
A.1.3 Adjustable paper holder support

An adjustable paper holder support kit (see fig. A.2) is available for the printer to make it possible to use larger-width rolls of paper (180mm max.).

PCXSP-VKP80II-EE	Paper roll holder kit with sensor for VKP80II-EE
------------------	--

The kit includes (see fig. A.2) :

- 1 Tie for roll blocking
- 2 Instruction sheet
- 3 Paper holder support assembled complete of:
 - Near paper end sensor
 - paper width regulating system
- 4 N°4 fastening screws



(Fig.A.2)



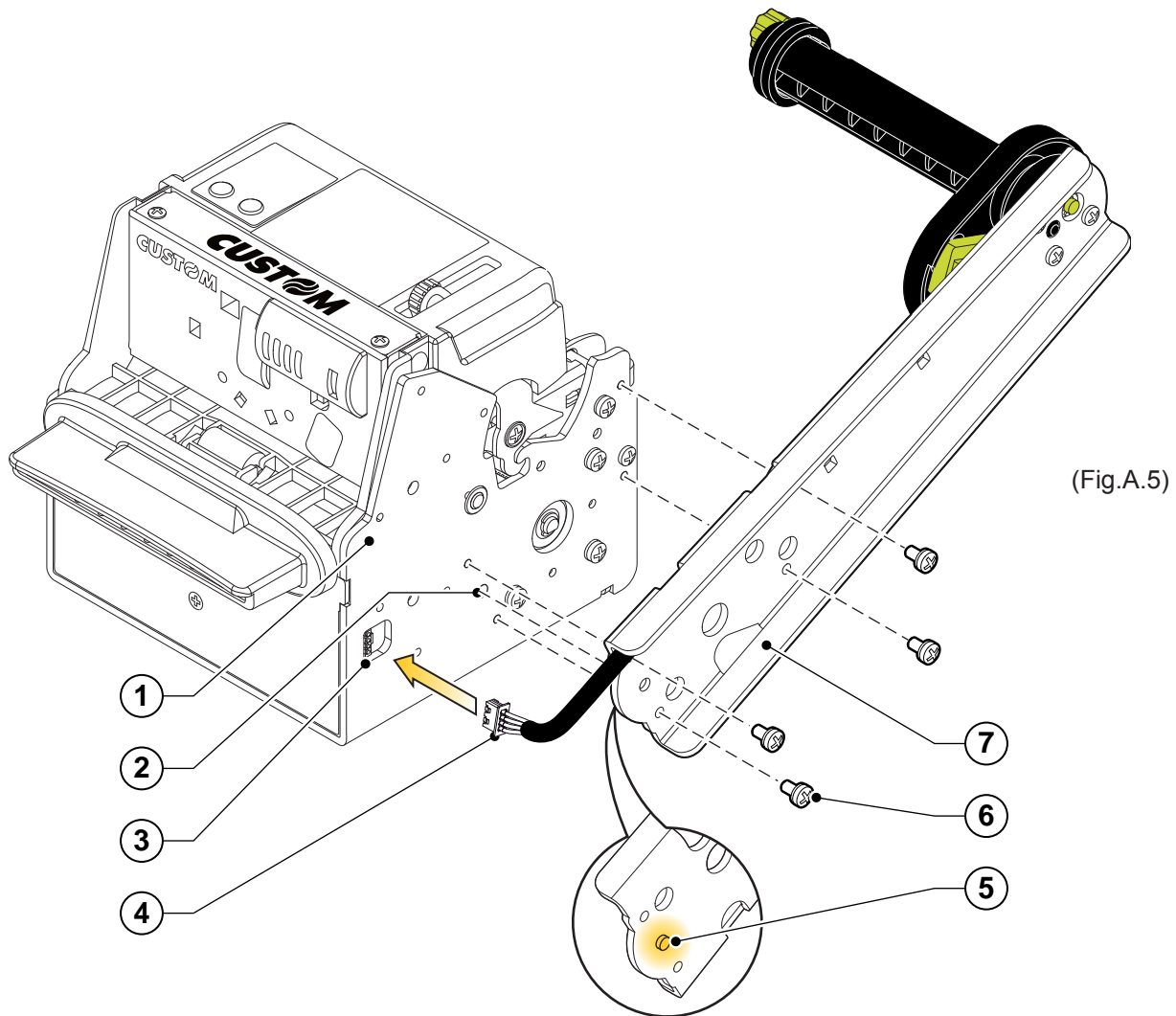
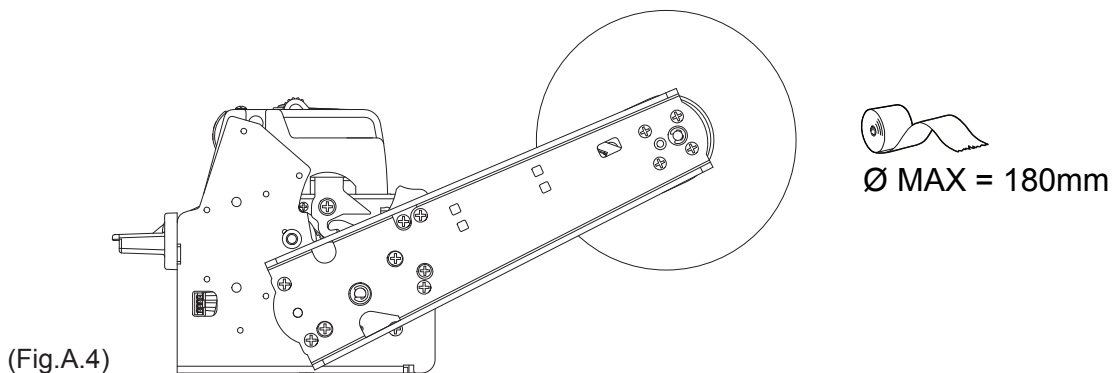
N.B.: Mounting the paper holder support using the instruction sheet enclosed with the kit.

Assembly instructions

The position of the roll holder support is not fixed and its rear, lower and upper position may be adjusted. The support is attached to the printer frame at four points, as shown in figure A.3.

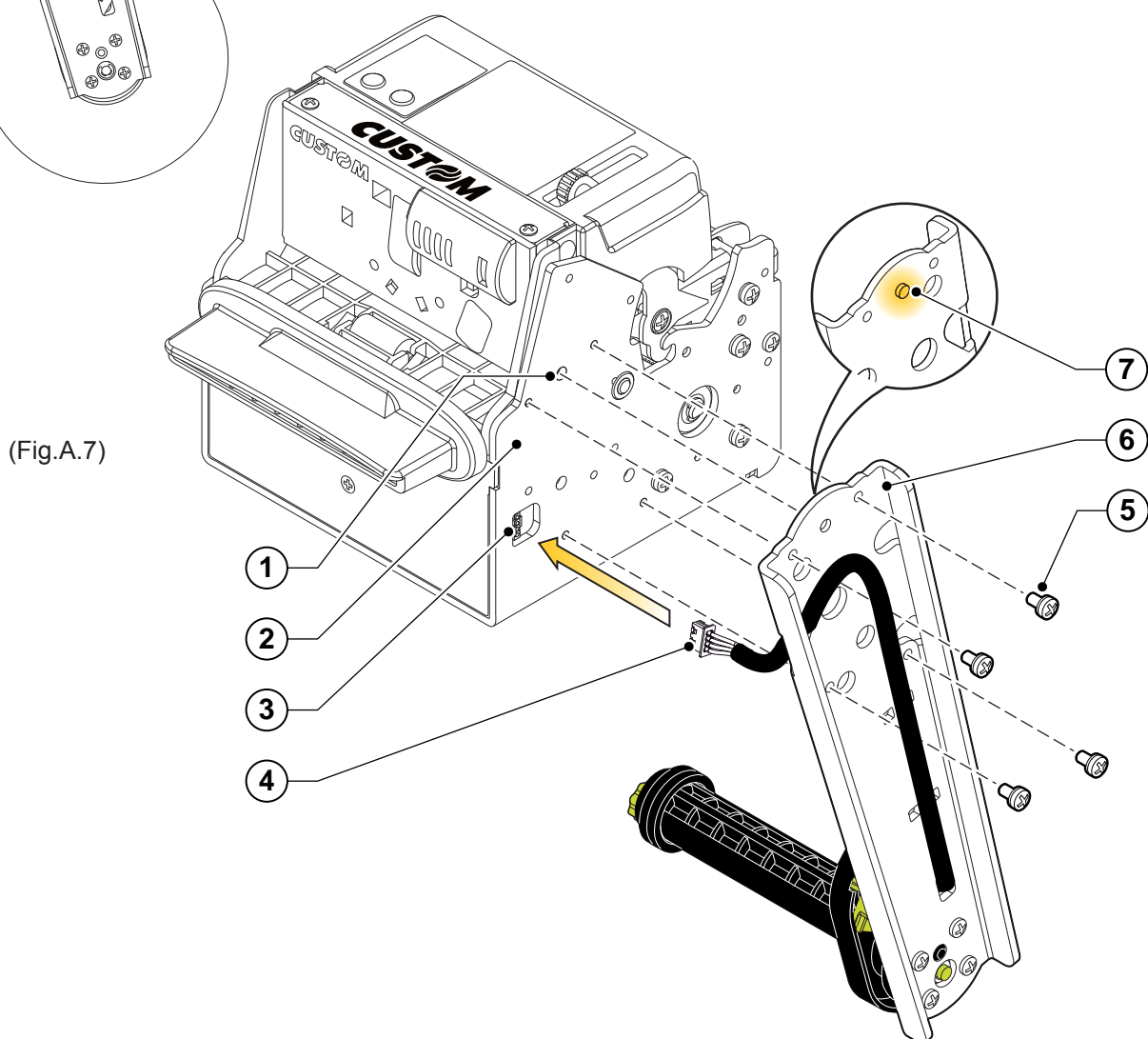
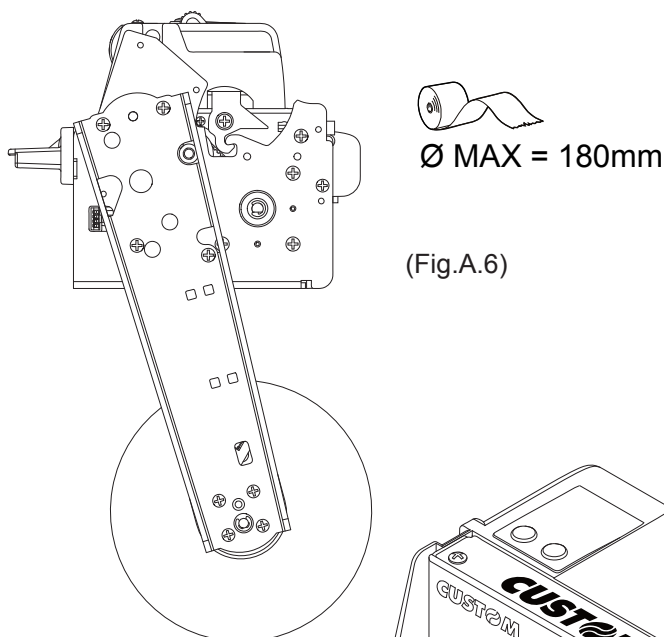


Rear attachment



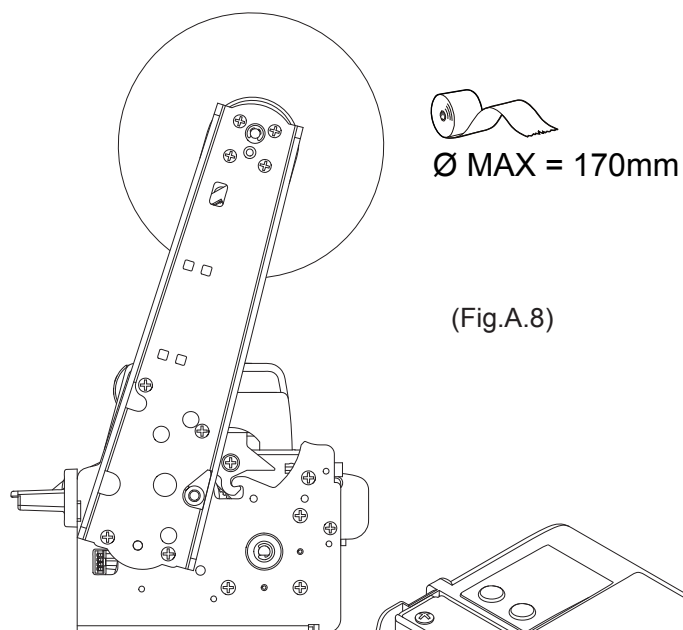
1. Put the paper holder support near the printer body (1). Insert the point of reference (5) (paper holder support) into the hole (2) (printer body) (see fig. A.5).
2. Attach the paper holder support (7) to the printer body (1) using four M4x8 screws (6) supplied with the kit (see fig. A.5).
3. Insert the near paper end sensor connector (4) of the paper holder support into the connector of the sensor card located on the printer (3) (see fig. A.5).

Lower attachment

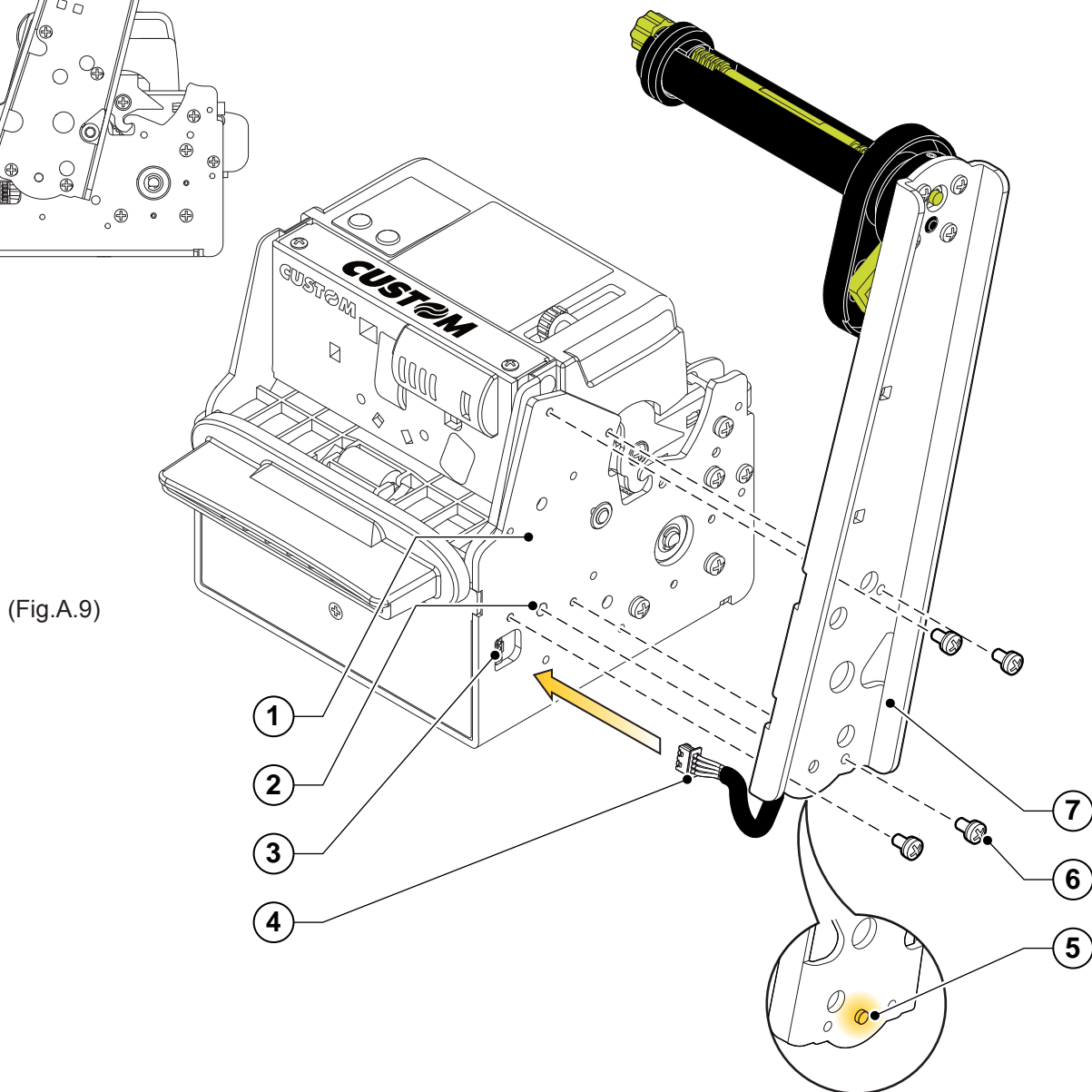


1. Have the near paper end sensor connector (4) pass through the slit on the paper holder support
2. Insert the near paper end sensor connector (4) of the paper holder support into the connector of the sensor card located on the printer (3).
3. Put the paper holder support near the printer body (1). Insert the point of reference (7) (paper holder support) into the hole (1) (printer body) (see fig. A.7).
4. Attach the paper holder support (6) to the printer body (1) using four M4x8 screws (5) supplied with the kit (see fig. A.7).

Upper attachment



(Fig.A.8)



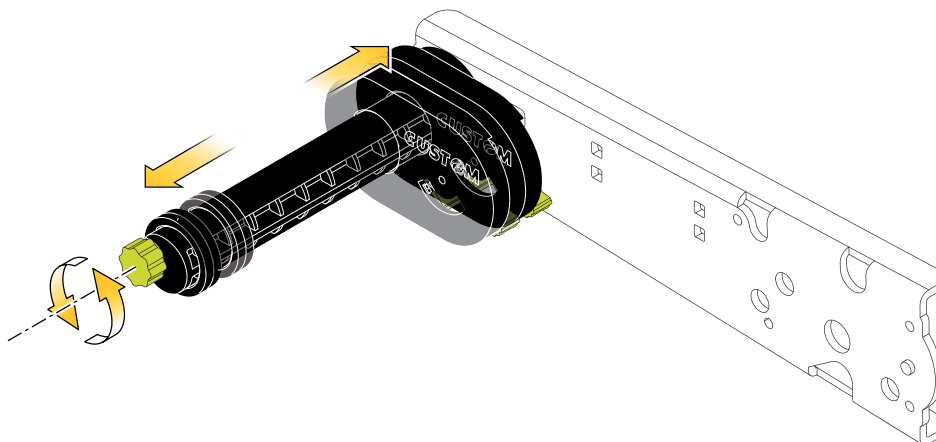
(Fig.A.9)

1. Put the paper holder support near the printer body (1). Insert the point of reference (5) (paper holder support) into the hole (2) (printer body) (see fig. A.9).
2. Attach the paper holder support (7) to the printer body (1) using four M4x8 screws (6) supplied with the kit (see fig. A.9).
3. Insert the near paper end sensor connector (4) of the paper holder support into the connector of the sensor card located on the printer (3) (see fig. A.9).

Paper width adjustment with roll holder support

Paper width may be set from 60mm to 82.5mm max. Rotate the knob (1) to adjust the width of the housing for paper roll (see fig. A.10).

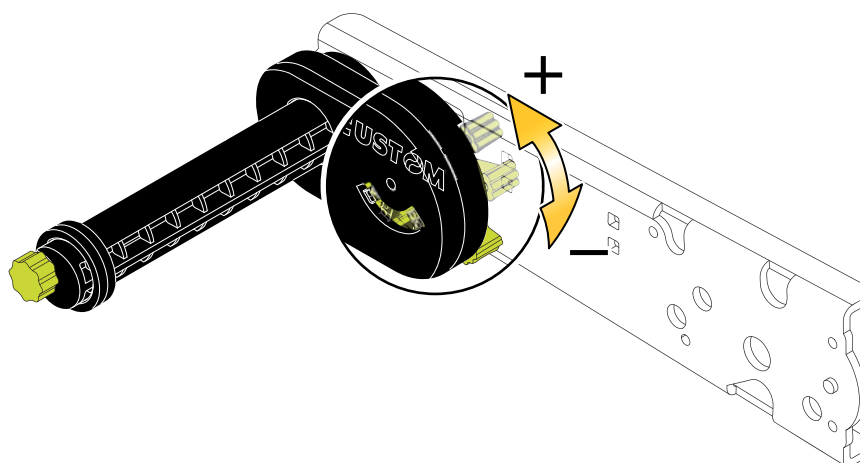
(Fig.A.10)



Near paper end adjustment

Rotate the lever (1) to adjust the sensor position for nearly paper end. Move the lever up to increase the reserve of paper, move the lever down to decrease the reserve of paper (see fig. A.11).

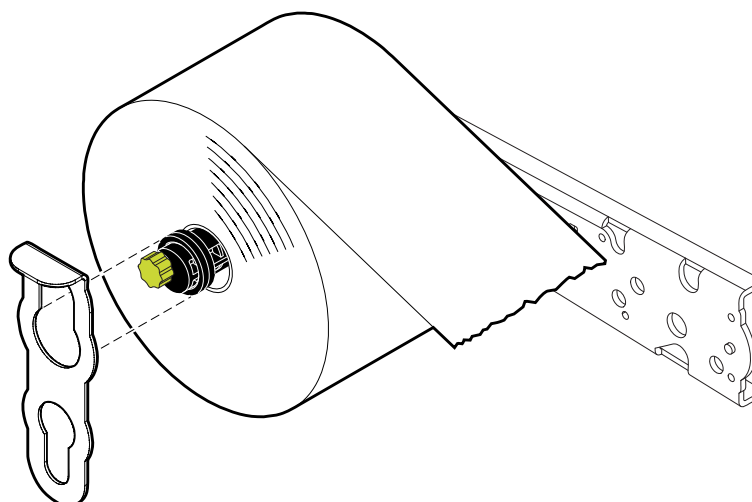
(Fig.A.11)



“Tie” for roll blocking

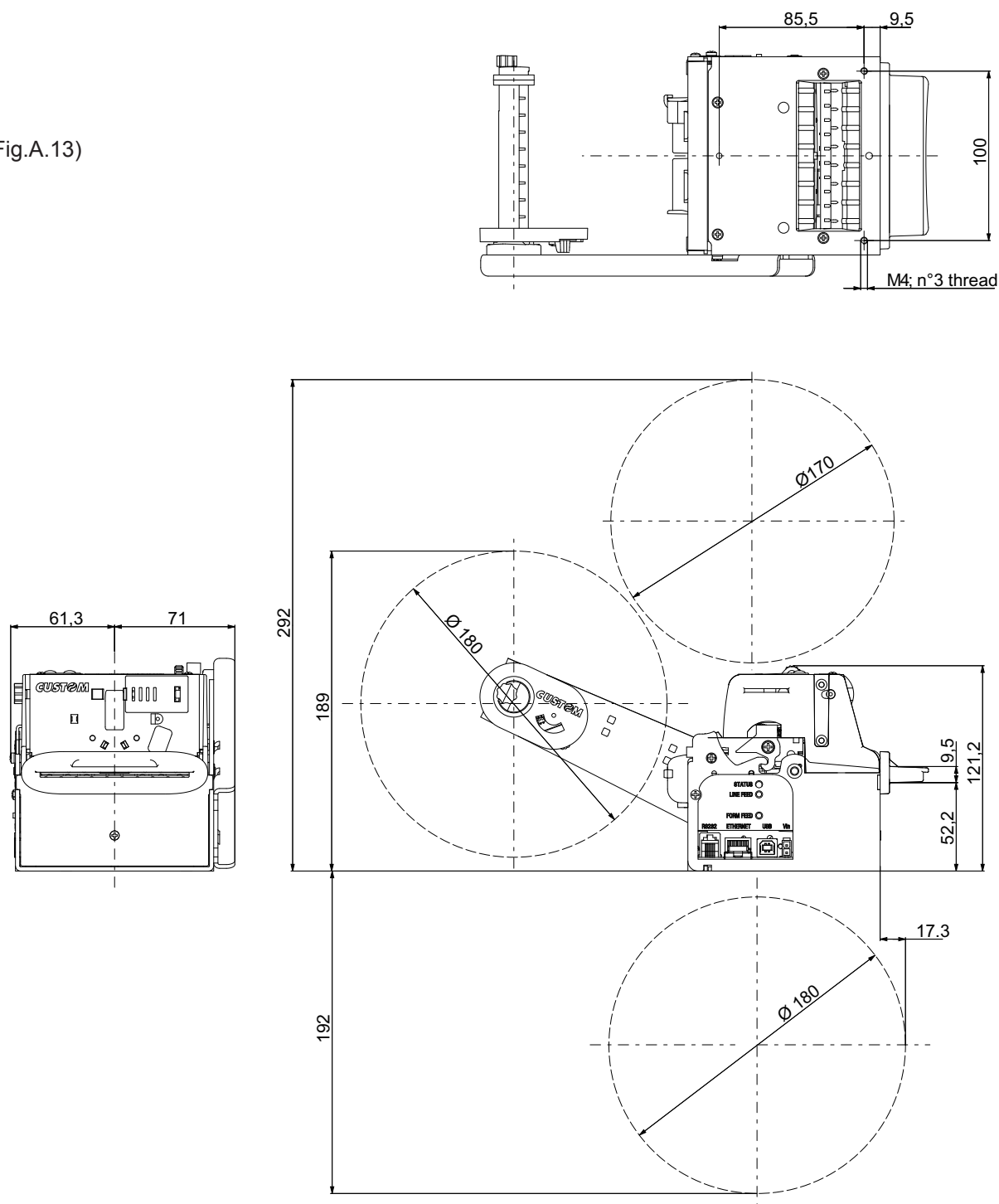
Insert the “tie” (1) as shown in figure A.12 to avoid the paper roll come out accidentally from the pin.

(Fig.A.12)



Printer dimensions with roll holder support

(Fig.A.13)



A.2 SUPPLIES

RCT80X48-25MM-RS	80mm thermal paper roll back side pre-printed
------------------	---

Paper roll with paper holder support

RCT80X130-25MM	Thermal paper roll 80mm
----------------	-------------------------

A.3 NOTES FOR TECHNICAL ASSISTANCE



ATTENTION: The operations here described are exclusively aimed to the personnel handling the technical assistance of the printer.

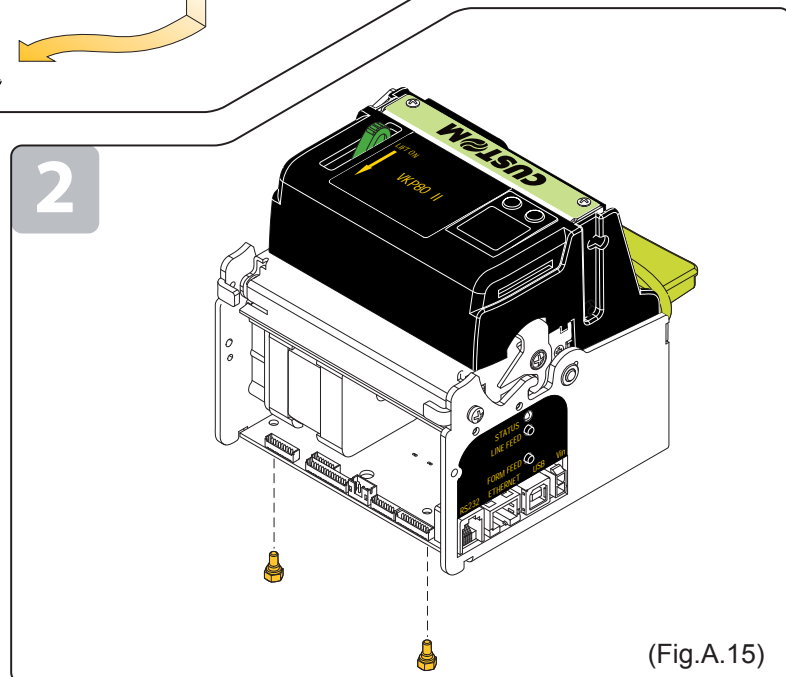
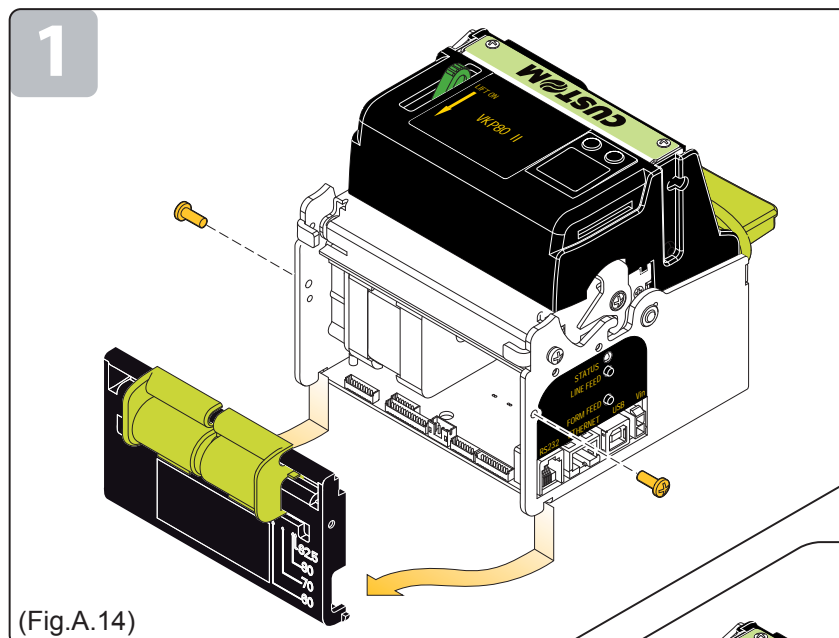
A.3.1 Replacing fuse



ATTENTION: Before replacing the fuse, it's important to check up that the supply cable of the printer is out.

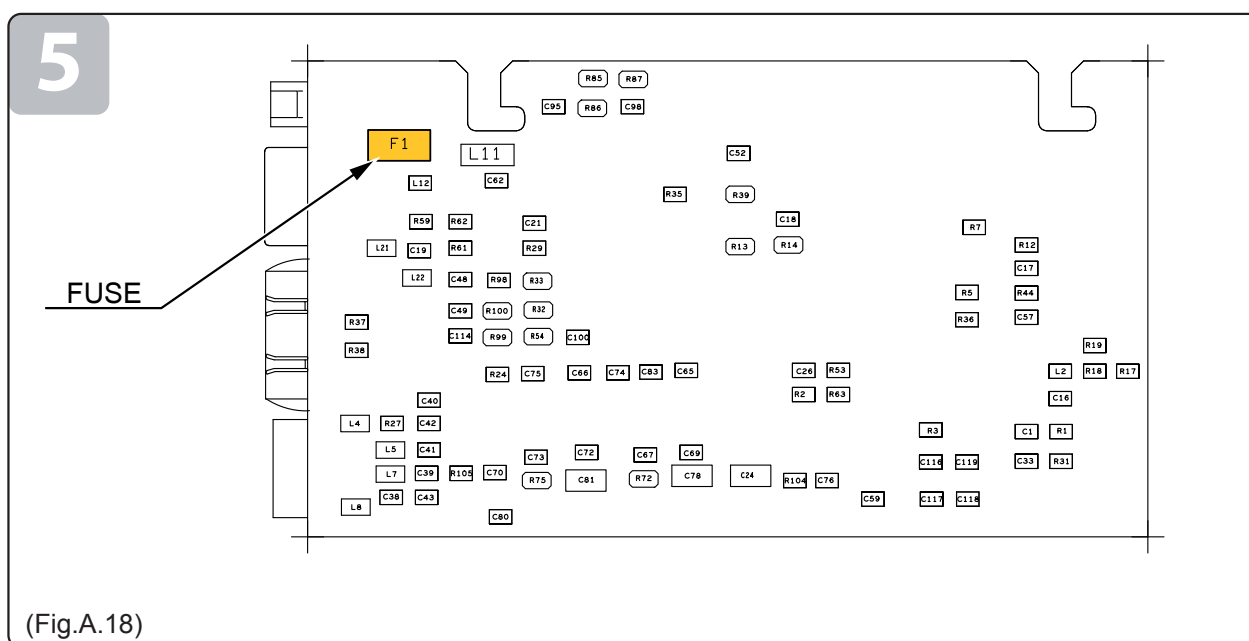
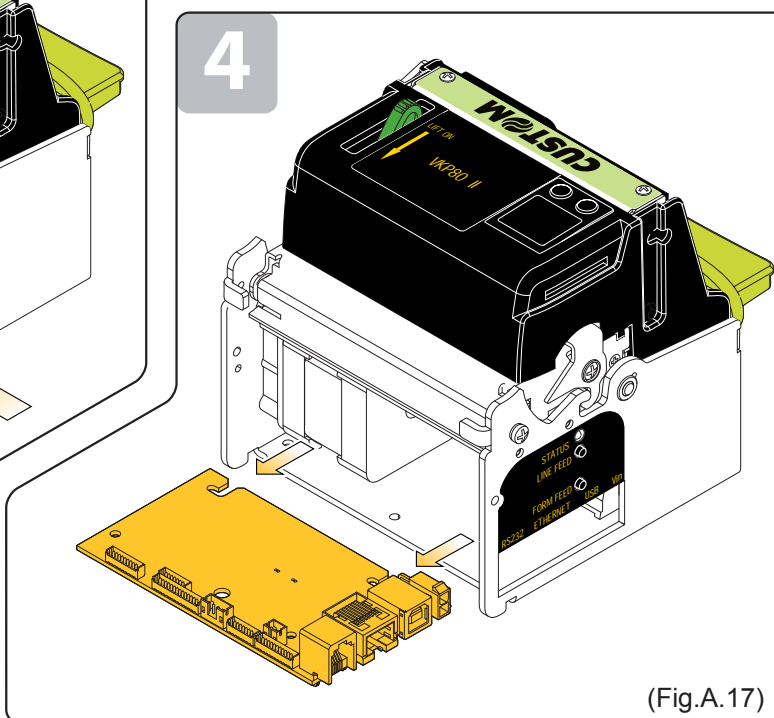
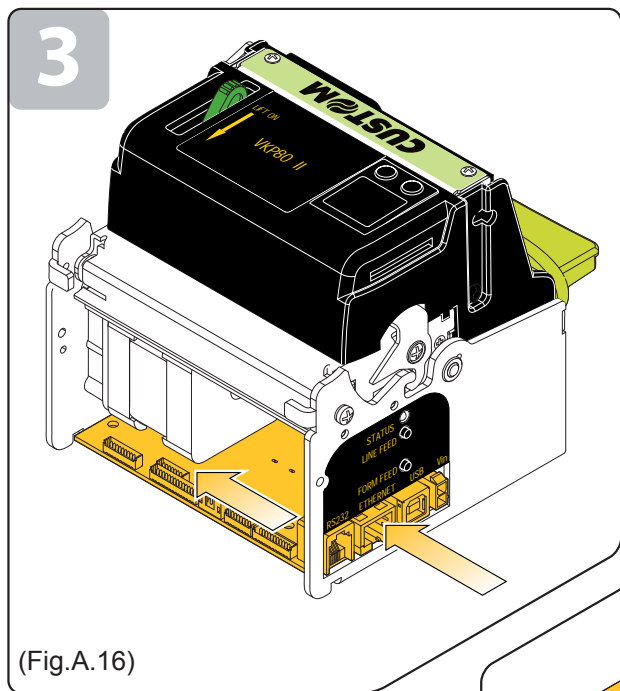
The fuse is on the control board of the printer, near the supply connector (fig. A.18), proceed as follows :

- unscrew the two fixing screw for the back closing. Move back closing down and then remove as shown in fig. A. 14.
- Unscrew the two screws that fixing control board to the chassis as shown in fig. A.15.



APPENDIX A - ACCESSORIES AND SPARE PARTS

- Make a note with the connectors position and then disconnect the connectors on the control board.
- Unlock the control board position pushing in the direction indicated by the arrow as shown in fig. A.16.
- Extract the control board from its seating in the direction indicated by the arrow as shown in fig. A.17.
- The fuse is on the control board of the printer, near the supply connector (fig A.18). Unsolder the fuse at his end, paying attention to not heat excessively the closed components, to not take any risk to damage it.
- Replace the fuse with a new one with same specifications (4A, 125V) and place it again in its seating.
- Reassemble the printer.



B.1 TICKET ALIGNMENT

B.1.1 Ticket alignment

Paper with an alignment notch can be used in order to handle tickets with pre-printed fields and a fixed length.

To guarantee the alignment it is necessary that the “*Notch Alignment*” parameter is enabled from the key setup (see setting configuration parameters), that the alignment sensor is calibrated and that the parameters are set.

The calibration of the sensor occurs automatically within the printer setup.

B.1.2 Enabling, calibrating and setting of parameters.

The notch sensor is a reflection sensor that emits a band of light and detects the quantity of light reflected to it.

The presence of the notch is therefore detected by the amount of light that returns to the sensor, taking into account that the light is reflected by the white paper and absorbed by the black.

Calibration of the sensor occurs automatically and consists in adjusting the quantity of light emitted to adapt it to the degree of whiteness of the paper used.

To start self-calibration, the “*Notch Alignment*” parameter will have to be enabled from the printer setup (see setting configuration parameters):

Notch Alignment : **Enabled**

The printer will perform some paper FEEDS, at the end of which it will print the value settings, for example:

Autosetting Notch : **OK**
Threshold White : **2.3V [70%]**

The “*Autosetting Notch*” parameter indicates the operating condition of the self-calibration process; OK will appear if it has been successful, but if it has failed the words NOT OK will appear.

In this case the default parameters concerning the “*Threshold White*” parameter will be set.

The “*Threshold White*” parameter indicates the power-up level of the sensor emitting side; its value ranges from 0V to 3.3V with the corresponding value appearing as a percentage (from 0% to 100%).

Another parameter that needs to be set is the threshold:

Notch Threshold.. : 1.98V

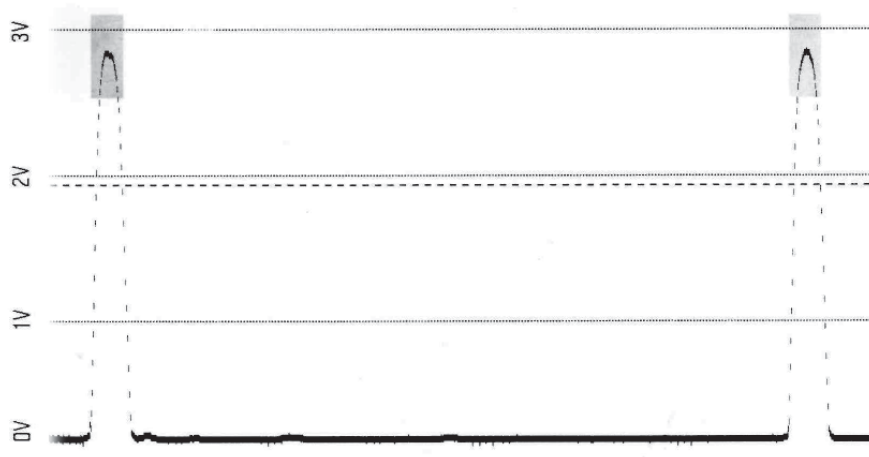
It is used to detect the presence of the notch: if the voltage value read by the sensor exceeds the threshold value set the notch is identified, otherwise the white paper is considered.

In order to better identify the optimum threshold for the paper being used, a paper characterisation function is also available in setup.

Characterize Paper. :Yes

By activating this parameter the outgoing voltage of the sensor will be presented in a graphic form as shown in figure B.1 below:

PAPER CHARACTERIZATION



(Fig.B.1)

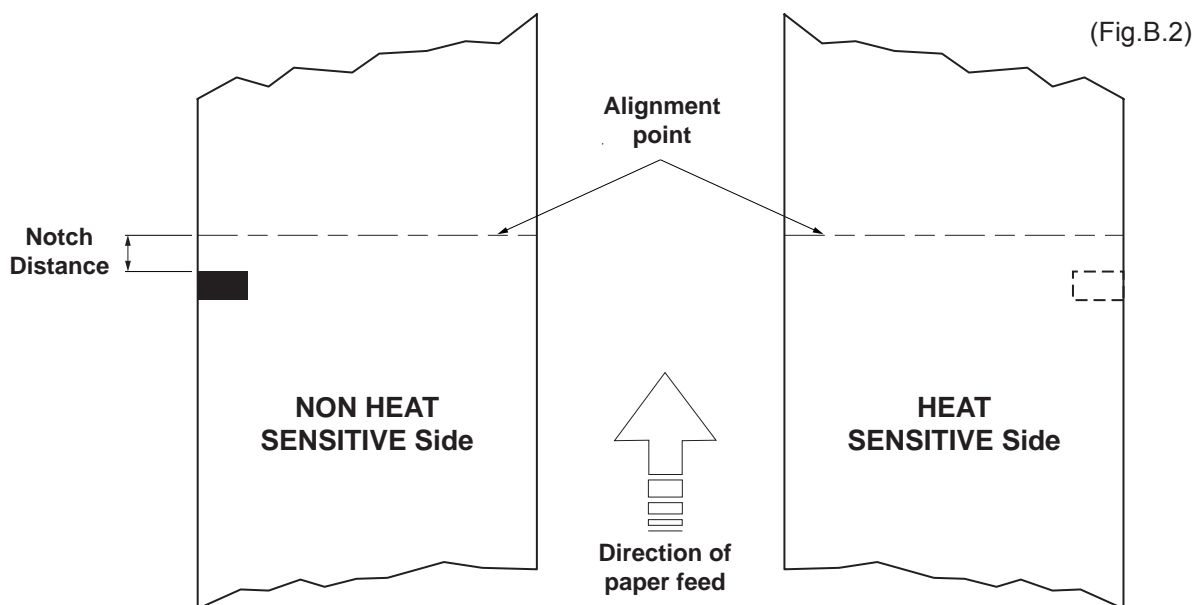
The graphic shows the references in Volts (from 0 to 3.3V) and the threshold value previously set. It is clear that by adjusting the threshold value it is possible to find the best position that takes into account the signal peak and the small oscillations around zero.

The ALIGNMENT POINT is defined as the position inside the ticket that is the desired alignment point. The ALIGNMENT POINT can be defined over the notch or near this one; for this reason, the final parameters to be set in setup are:

Notch Dist. [mm x 10] : 1

Notch Dist. [mm x 1] : 5

These parameters define the “Notch Distance” that represents the distance from the notch to align; in the above example the notch distance is 15 mm.



(Fig.B.2)

Figure B2 shows how the “Notch Distance” parameter represents the distance that exists between the notch and the desired alignment point. This parameter can have a minimum value of 0mm (in this case the alignments occur in proximity of the beginning of the notch) and a maximum of 32 mm. In reality the maximum distance corresponds to the mechanical distance between the notch sensor and the head, and it is for this reason that higher values are not permitted, and negative values are not envisaged.

B.2 COMMANDS

B.2.1 Ticket Alignment.

Two alignment commands are available: \$1D \$F6 and \$1D \$F8.

The command \$1D \$F6 performs an alignment to the print head: the paper is fed through until the print head is at the first available alignment point.

The command \$1D \$F8 on the other hand refers to the cutter: the paper is fed through until the cutter is at the set alignment point, so that a subsequent cut will occur precisely at the alignment point.

Further explanations can be found in command documentation.

B.2.2 Setting the alignment distance.

The "Notch Distance" parameter can be changed via the printer setup or by using the command \$1D \$E7 nH nL. For further information refer to the command itself.

B.2.3 Examples.



N.B.: To a better comprehension, in the following figures, the Notch is indicated on the same side of the printing text.

Example 1.

To print a ticket's sequence with the cut is made over the notch it's necessary set the notch distance to zero as follows (this setting have effect after the ticket already in the printer):

{Set Notch Distance}

\$1D,\$E7,\$00,\$00,

{Print text}

'TICKET 1',\$0A,'FIRST LINE',\$0A,'SECOND LINE',\$0A

{Cut alignment}

\$1D, \$F8,

{Cut}

ESC,'i',

...

{Print text}

'TICKET 1',\$0A,'FIRST LINE',\$0A,'SECOND LINE',\$0A

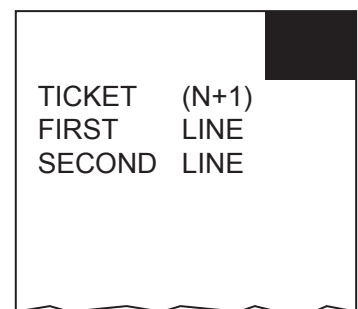
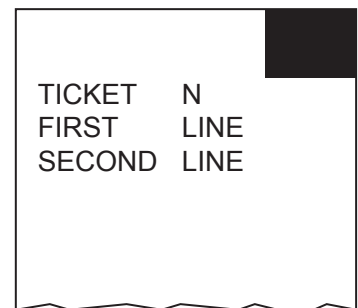
{Cut alignment}

\$1D,\$F8,

{Cut}

ESC,'i',

...



(Fig.B.3)

Example 2

To cut 10 mm before the notch the command sequence is (this setting have effect after the ticket already in the printer):

```
$1D, $E7, $00, $0A,
```

```
{Print text}
```

```
'TICKET 1', $0A, 'FIRST LINE', $0A, 'SECOND LINE', $0A
```

```
{Cut alignment}
```

```
$1D, $F8,
```

```
{Cut}
```

```
ESC, 'i',
```

```
...
```

```
{Print text}
```

```
'TICKET 1', $0A, 'FIRST LINE', $0A, 'SECOND LINE', $0A
```

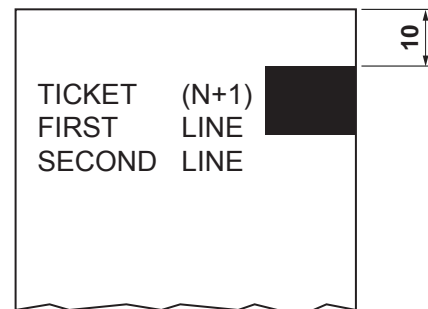
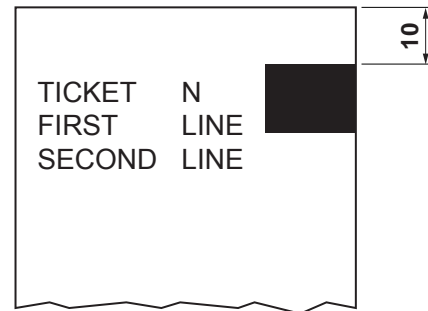
```
{Cut alignment}
```

```
$1D, $F8,
```

```
{Cut}
```

```
ESC, 'i',
```

```
...
```



(Fig.B.4)

Example 3.

To print over the notch the command sequence is (this setting have effect after the ticket already in the printer):

```
{Set Notch Distance}
```

```
$1D, $E7, $00, $00,
```

```
{Print text}
```

```
'TICKET 1', $0A, 'FIRST LINE', $0A, 'SECOND LINE', $0A
```

```
{Cut}
```

```
ESC, 'i'
```

```
...
```

```
{Set Notch Distance}
```

```
$1D, $E7, $00, $00,
```

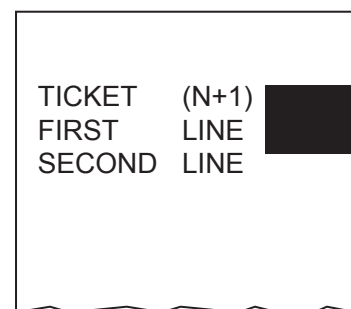
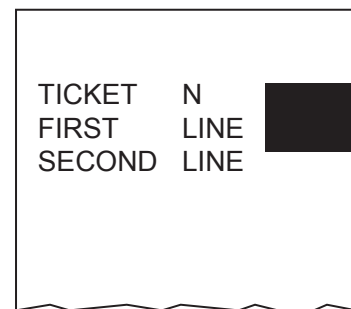
```
{Print text}
```

```
'TICKET 1', $0A, 'FIRST LINE', $0A, 'SECOND LINE', $0A
```

```
{Cut}
```

```
ESC, 'i',
```

```
...
```



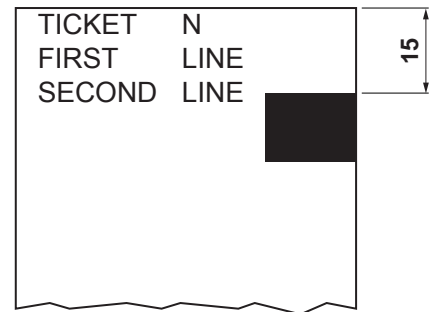
(Fig.B.5)

Example 4.

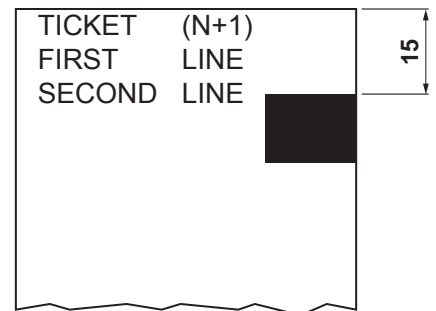
To print 15 mm before the notch the command sequence is (this setting have effect after the ticket already in the printer):

```
{Set Notch Distance}
$1D,$E7,$00,$00,
```

```
{Print text}
'TICKET 1',$0A,'FIRST LINE',$0A,'SECOND LINE',$0A
{Cut alignment}
$1D, $F8,
{Cut}
ESC,'i',
...
```



```
{Print text}
'TICKET 1',$0A,'FIRST LINE',$0A,'SECOND LINE',$0A
{Cut alignment}
$1D,$F8,
{Cut}
ESC,'i',
```



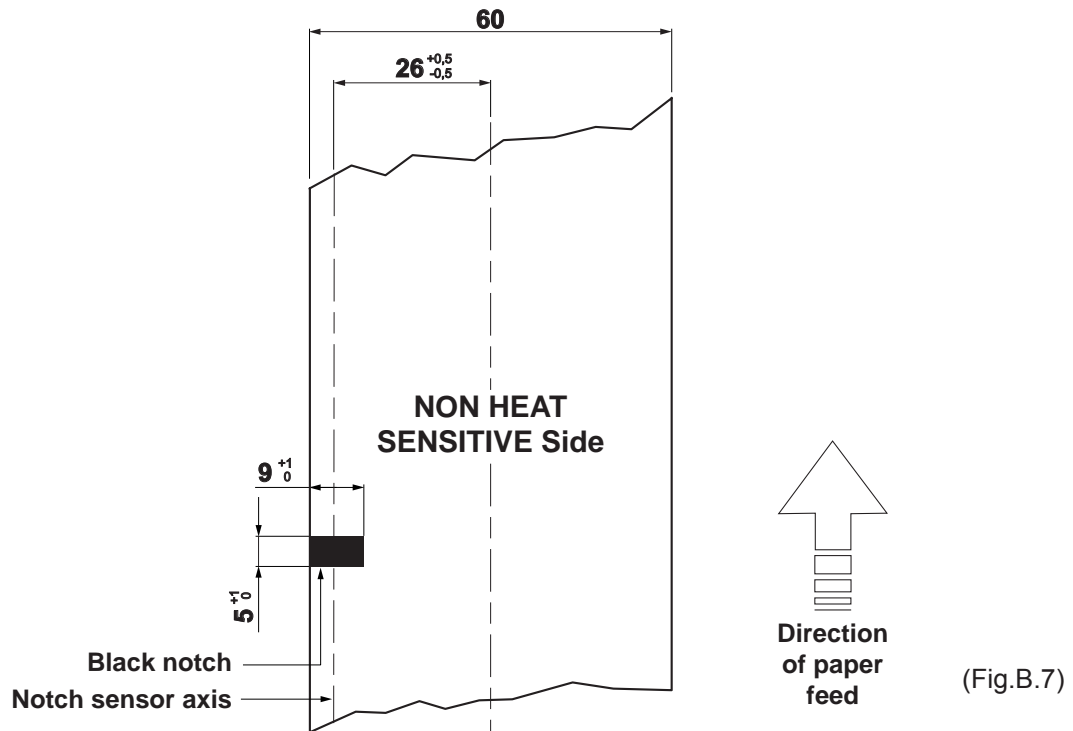
(Fig.B.6)

B.3 CHARACTERISTICS OF THE PAPER.

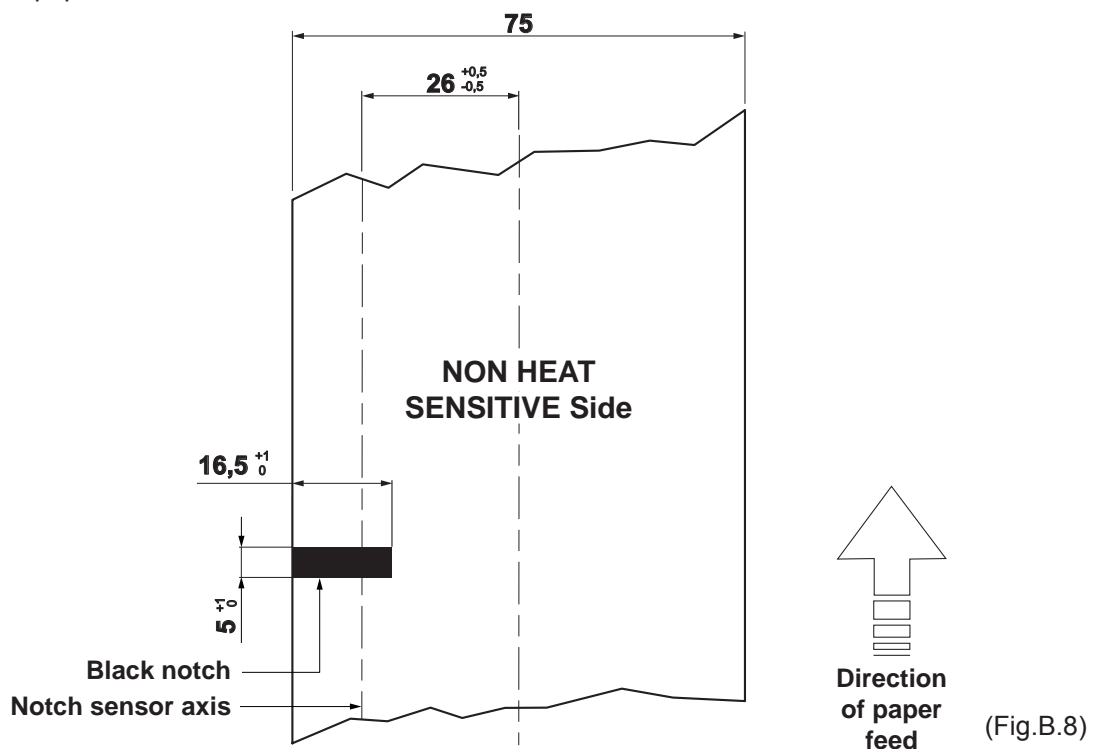
B.3.1 Dimensions and position of the notch.

The notch must be positioned on the non-heat sensitive side of the paper as shown in figures B.7, B.8, B.9 and B.10, showing some fac-similes of paper with alignment notch depending on the width of the paper used.

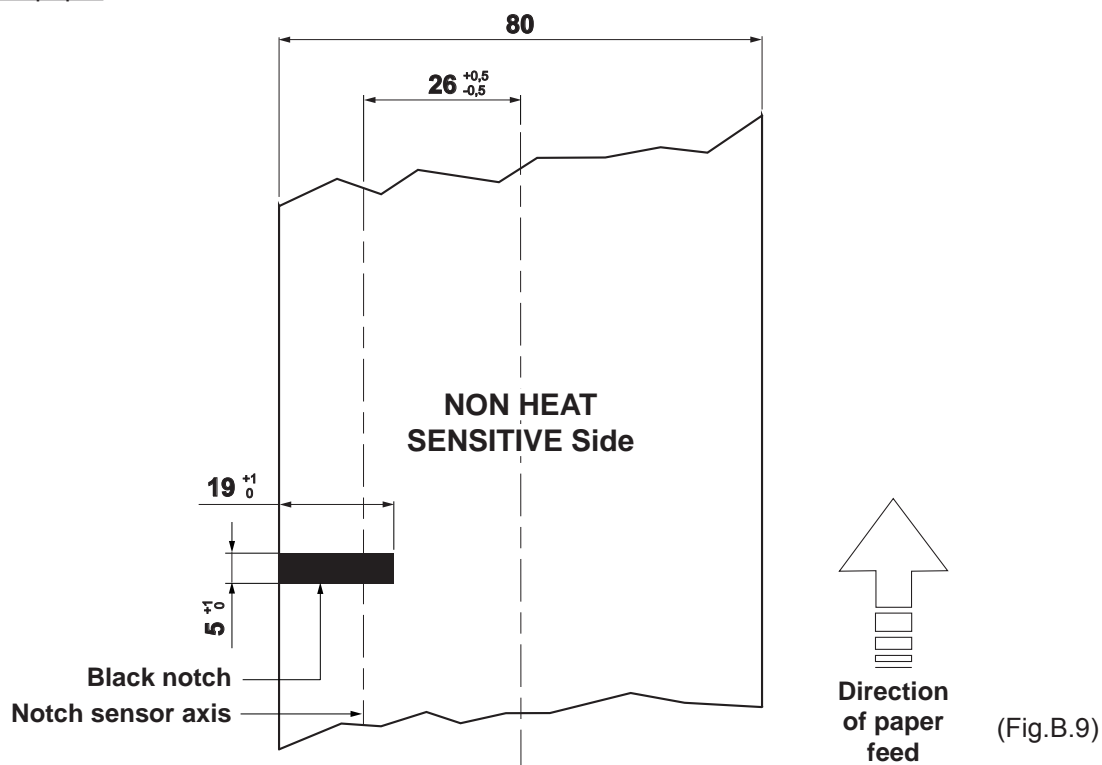
Notch on 60mm paper



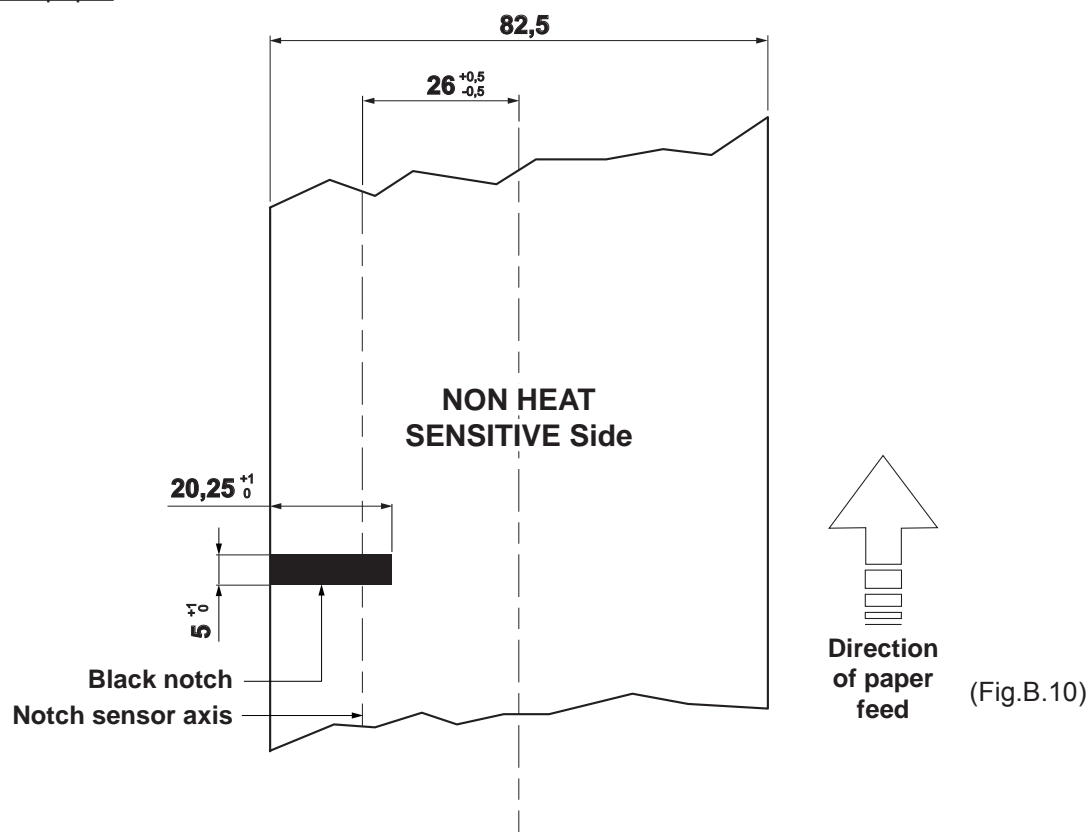
Notch on 75 mm paper



Notch on 80 mm paper



Notch on 82,5 mm paper



B.3.2 Position of sensors

Figure B.11 shows a section of the printer and the distances between the head, the cutter and the notch sensor.

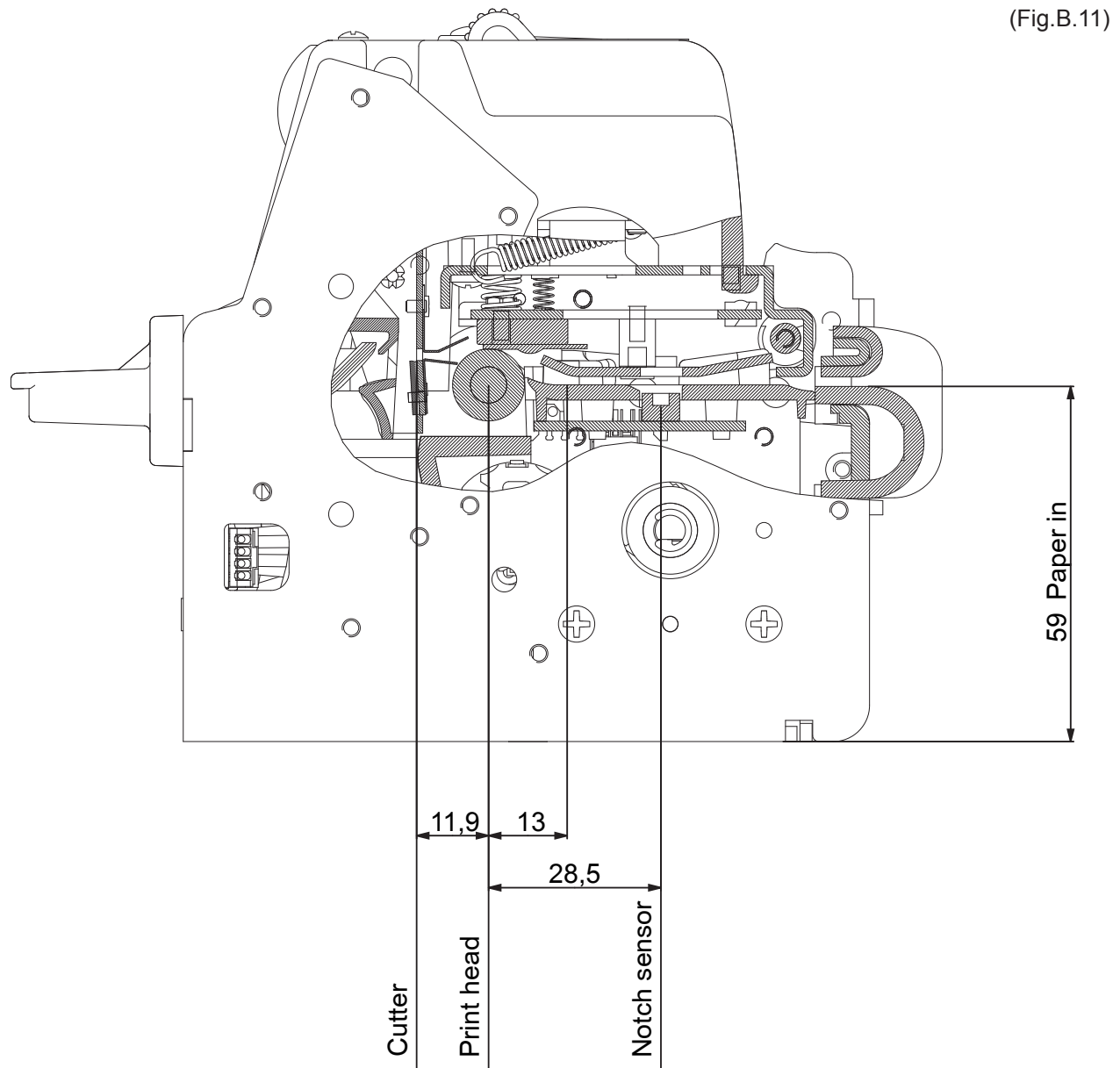


Figure B.11 clearly shows why the alignment distance (Notch Distance) cannot exceed the notch sensor-head distance. The moment that the notch sensor detects a notch, the head is already mechanically positioned 32 mm upstream of the notch in order therefore for it to align itself with this notch, as a reference the paper can only be fed forward, and so reduce the distance already there.

B.3.3 Dimension of tickets

It is very important to well calibrate the height of the printer area, according to the distance between the two edges of the notch.

In order not to miss a notch (a ticket must therefore contain only one notch) the following equation must be used:

$$\text{INTER-NOTCH DISTANCE} > \text{PRINTED AREA HEIGHT} + \text{NON-PRINTABLE AREA}$$

where

INTER-NOTCH DISTANCE = the distance between two notch edges

NON-PRINTABLE AREA = cutter-head distance

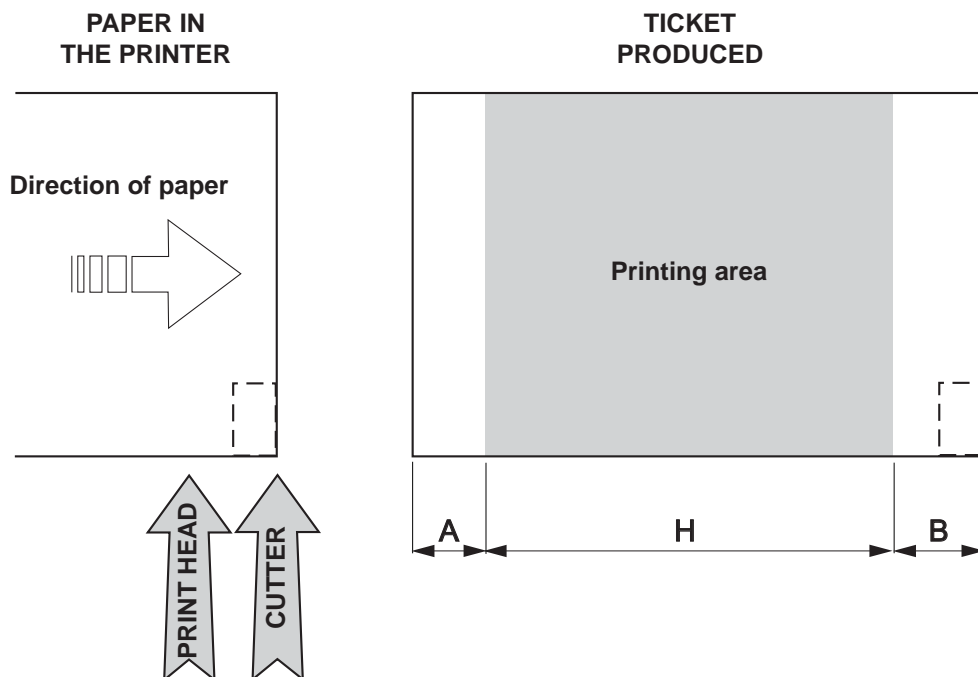
The picture in figure B.12 shows a sequence of printed tickets aligning each one at the cut. It can be noted that increasing the printed area will result in superimposing what is to be printed at the subsequent notch. The size of the print area can be enlarged until it renders the alignment feed void, but not beyond. It is very important never to forget about the non-printable area that corresponds to the cutter-head distance and is the result of every cut.

LEGEND:

A = Alignment feed

H = Printing area height

B = Non printable area (CUTTER - PRINT HEAD)



(Fig.B.12)

B.4 METHODS OF USAGE

B.4.1 Command sequences

It is possible, when printing sequences of tickets, to primarily identify two different methods of operation that involve the alignment: ticket aligned at the cut and ticket aligned at printing.

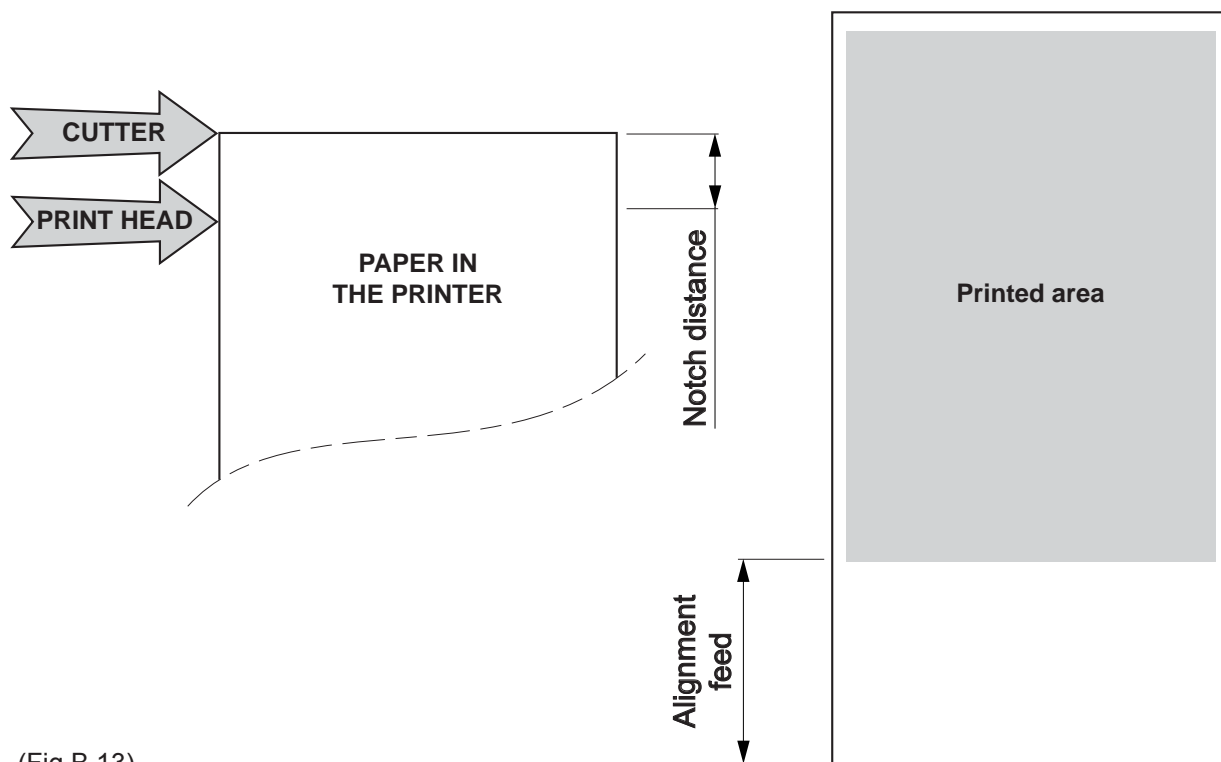
Another very important aspect to bear in mind is the condition from which printing commences. In figure B.12, that shows a ticket aligned at the cut, it can be seen how every time a ticket printing begins this originates from an alignment at the cut, and therefore the distance between the start of the print area and the alignment line is equal to the head-cutter distance. The same situation applies to an alignment at printing.

B.4.1.1 Alignment at the cut

The sequence of commands to be entered when wanting to align a ticket at the cut is as follows:

1. Ticket general setting; formatting of characters, print density, margins etc.
2. Print ticket: Printing of text, logos or any other graphics.
3. Alignment at the cut command: \$1D \$F8
4. Cut command

The result is shown in figure B.13.



(Fig.B.13)

It is possible to see how the start of the ticket print area is not aligned, but the print starts in the rest position that the head took up at the moment the previous ticket was cut. At the end of the print area the printer has fed the paper through to align itself and perform the cut at the desired position.

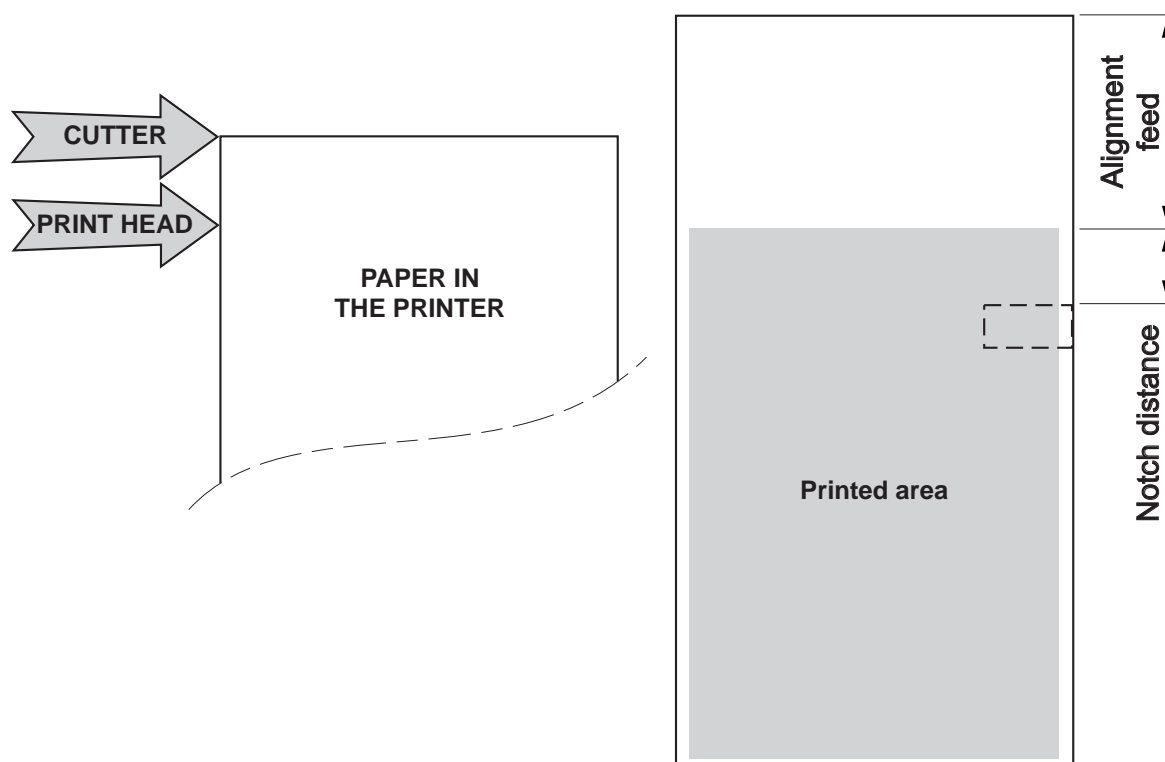
B.4.1.2 Alignment at printing

Alignment at printing requires the following sequence of commands:

1. Ticket general setting; formatting of characters, print density, margins etc.
2. Print alignment commands: \$1D \$F6
3. Print ticket: Printing of text, logos or any other graphics.
4. Cut commands

The result is shown in figure B.14.

Unlike the previous case, the alignment feed takes place before the start of printing, so as to align the print area in the position required.



(Fig.B.14)

Blank page

C.1 USE OF EMBEDDED WEB SERVER

The VKP80II-EE model is equipped with an Embedded Web Server that allow to obtain the printer informations, through a clear web interface, including :

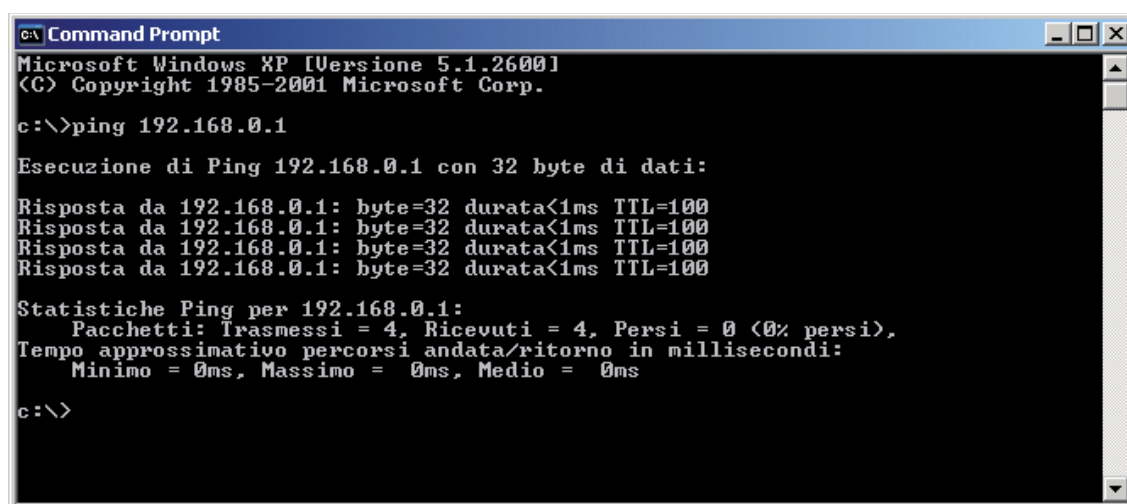
- monitoring the printer status;
- setting the printer working parameters;
- configuring the network setting;
- configuring the e-mail service to make diagnostics and maintenance operations easier;
- download manuals, printer drivers and software tools from a specific support area;
- directly upgrade online the printer firmware.

C.2 EMBEDDED WEB SERVER ACCESS

Before entering in the Embedded Web Server, you have to check that:

- the printer is connected and turned on;
- the printer provides a network connection based on the IP protocol;
- the printer is connected to the network and its IP Address and its Subnet Mask are set up in a correct way. To check the setting of this parameters open a new window from MS-DOS Prompt and type “ping” on the command bar followed by the IP Address of the printer. The picture C.1 shows an example of a positive result after the “ping” command. Otherwise if it is not possible to execute the connection, to its IP Address, will appear an overdue request mistake.

Example: ping 192.168.0.1



```

C:\ Command Prompt
Microsoft Windows XP [Versione 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

c:\>ping 192.168.0.1

Esecuzione di Ping 192.168.0.1 con 32 byte di dati:

Risposta da 192.168.0.1: byte=32 durata<1ms TTL=100
Risposta da 192.168.0.1: byte=32 durata<1ms TTL=100
Risposta da 192.168.0.1: byte=32 durata<1ms TTL=100
Risposta da 192.168.0.1: byte=32 durata<1ms TTL=100

Statistiche Ping per 192.168.0.1:
    Pacchetti: Trasmessi = 4, Ricevuti = 4, Persi = 0 (0% persi),
    Tempo approssimativo percorsi andata/ritorno in millisecondi:
        Minimo = 0ms, Massimo = 0ms, Medio = 0ms

c:\>
  
```

(Fig.C.1)

- have a Web browser on the computer ⁽¹⁾

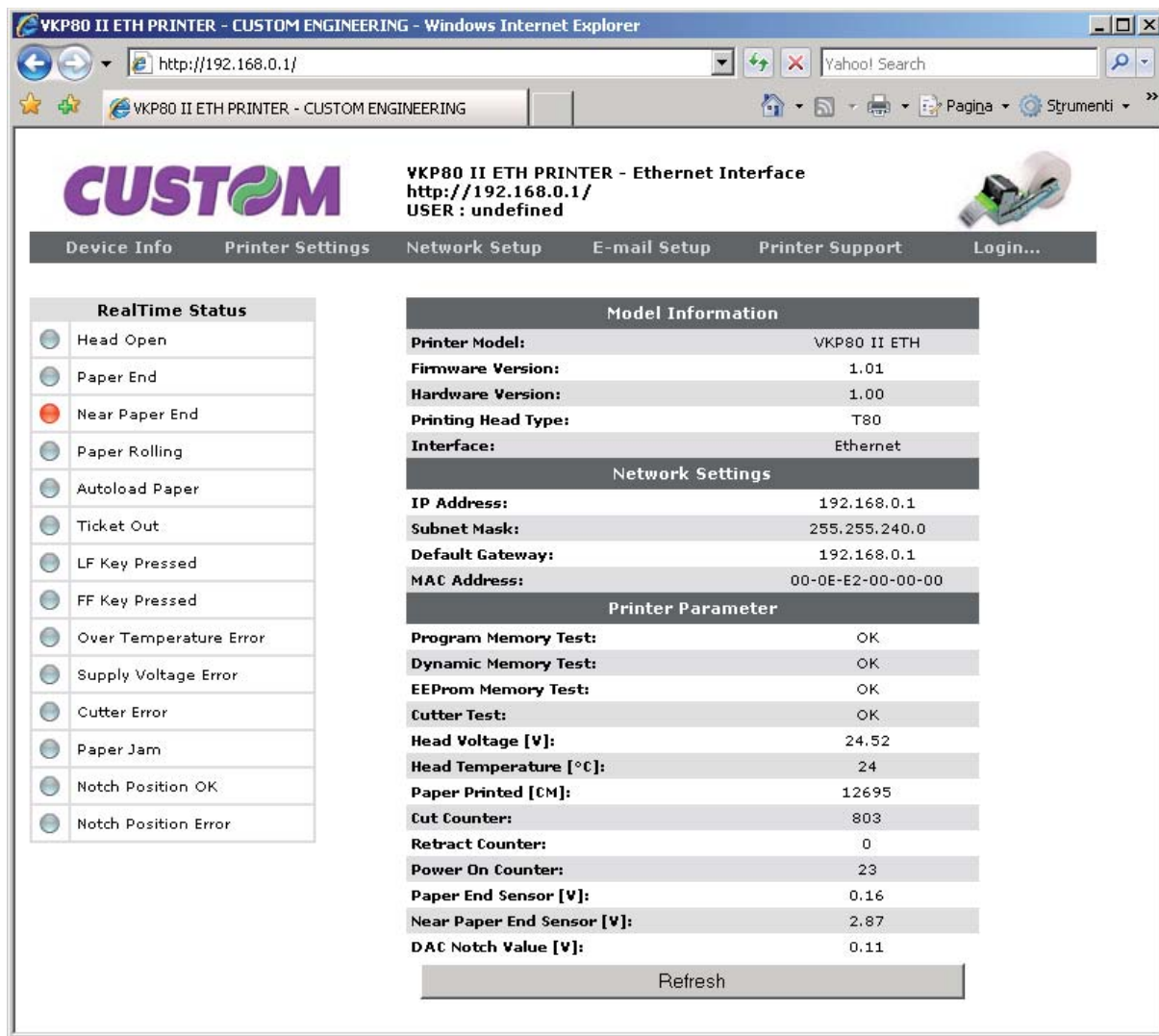
To enter in the Embedded Web Server, type the IP Address assigned to the printer, into Web browser. If the IP address of the printer is, for example, 192.168.0.1 ⁽²⁾, type in the web browser:

http://192.168.0.1

On the screen will appear the internal default page that corresponds to the section “Device Info” (see fig.C.2).



NOTE: ⁽¹⁾ The Embedded Web Server has been tested on the Internet Explorer browser.
⁽²⁾ To know the IP Address of the printer, enter in the printer setting page (see par. 1.3.1).



(Fig.C.2)

The Embedded Web Server has 6 sections (see fig. C.2) :

- **Device Info** (RESERVED)
- **Printer Setting** (RESERVED)
- **Network Setting** (RESERVED)
- **E-mail Setup** (RESERVED)
- **Printer Support**
- **Login...**

These sections are present in every web page as horizontal command bar.



NOTE (RESERVED): It shows that are reserved sections, authorized areas, where it is necessary to have the access. Press the section “Login...” to obtain the registration and the permissions to access to the other configuration services of the printer (see par. C.3).

C.3 LOGIN

In the “Login..” page the identification of the user and password are required to enter in printing configuration menù (see fig.C.3).

(Fig.C.3)

To enter in the “reserved” printer services it is necessary to have the access to these restricted areas. Click the page “Login...” to make registration and to obtain the access. Insert the user name and the password, then click the button “Login...”.

User Name	Type the user name that is: Custom
Password	Type the password that is: AlwaysOn

(Tab.C.1)

CUSTOM



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Always On!