OEM

USER MANUAL

VKP80II

Commands manual **77200000001600**

CUSTOM ENGINEERING S.p.A.
Str. Berettine 2
43010 Fontevivo (PARMA) - Italy
Tel. : +39 0521-680111
Fax : +39 0521-610701
http: www.custom.biz

Customer Service Department:
Email : support@custom.it

THE IMAGES USED IN THIS MANUAL ARE USED AS AN ILLUSTRATIVE EXAMPLES. THEY COULDN'T REPRODUCE THE DESCRIBED MODEL FAITHFULLY.

UNLESS OTHERWISE SPECIFIED, THE INFORMATION GIVEN IN THIS MANUAL ARE REFERRED TO ALL MODELS IN PRODUCTION AT THE ISSUE DATE OF THIS DOCUMENT.

GENERAL SAFETY INFORMATION

Your attention is drawn to the following actions that could compromise the characteristics of the product:

- Read and retain the instructions which follow.
- Follow all indications and instructions given on the device.
- Make sure that the surface on which the device rests is stable. If it is not, the device could fall, seriously damaging it.
- Make sure that the device rests on a hard (non-padded) surface and that there is sufficient ventilation.
- When positioning the device, make sure cables do not get damaged.
- Use the type of electrical power supply indicated on the device label. If uncertain, contact your dealer.
- Make sure the electrical system that supplies power to the device is equipped with a ground wire and is protected by a differential switch.
- Do not block the ventilation openings.
- Do not insert objects inside the device as this could cause short-circuiting or damage components that could jeopardize printer functioning.
- Do not carry out repairs on the device yourself, except for the normal maintenance operations given in the user manual.
- Make sure that there is an easily-accessible outlet with a capacity of no less than 10A closely to where the device is to be installed.
- Periodically perform scheduled maintenance on the device to avoid dirt build-up that could compromise the correct, safe operation of the unit.
- Before any type of work is done on the machine, disconnect the power supply.
- Do not touch the head heating line with bare hands or metal objects. Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.

GENERAL INSTRUCTIONS

CUSTOM ENGINEERING S.p.A. declines all responsibility for accidents or damage to persons or property occurring as a result of tampering, structural or functional modifications, unsuitable or incorrect installations, environments not in keeping with the equipment's protection degree or with the required temperature and humidity conditions, failure to carry out maintenance and periodical inspections and poor repair work.

CE THE CE MARK AFFIXED TO THE PRODUCT CERTIFY THAT THE PRODUCT SATISFIES THE BASIC SAFETY REQUIREMENTS.

The device is in conformity with the essential Electromagnetic Compatibility and Electric Safety requirements laid down in Directives 2006/95/CE and 2004/108/CE inasmuch as it was designed in conformity with the provisions laid down in the following Standards:

- EN 55022 Class B *(Limits and methods of measurements of radio disturbance characteristics of Information Technology Equipment)*
- EN 55024 *(Information Technology Equipment – Immunity characteristics – Limits and methods of measurement)*
- EN 60950-1 *(Safety of information equipment including electrical business equipment)*

GUIDELINES FOR THE DISPOSAL OF THE PRODUCT

The crossed-out rubbish bin logo means that used electrical and electronic products shall NOT be mixed with unsorted municipal waste. For more detailed information about recycling of this product, refer to the instructions of your country for the disposal of these products.

- Do not dispose of this equipment as miscellaneous solid municipal waste, but arrange to have it collected separately.
- The re-use or correct recycling of the electronic and electrical equipment (EEE) is important in order to protect the environment and the wellbeing of humans.
- In accordance with European Directive WEEE 2002/96/EC, special collection points are available to which to deliver waste electrical and electronic equipment and the equipment can also be handed over to a distributor at the moment of purchasing a new equivalent type.
- The public administration and producers of electrical and electronic equipment are involved in facilitating the processes of the re-use and recovery of waste electrical and electronic equipment through the organisation of collection activities and the use of appropriate planning arrangements.
- Unauthorised disposal of waste electrical and electronic equipment is punishable by law with the appropriate penalties.

The format used for this manual improves use of natural resources reducing the quantity of necessary paper to print this copy.

INDEX

1 INTRODUCTION

1.1 Document structure

This document includes the following chapters:

1	INTRODUCTION	information about this document
2	DESCRIPTION	general description of device
3	INSTALLATION	information required for a correct installation of the device
4	OPERATION	information required to make the device operative
5	CONFIGURATION	description of the configuration parameters of the device
6	MAINTENANCE	information for a correct periodic maintenance
7	SPECIFICATION	technical specification for the device and its accessories
8	CONSUMABLES	description and installation of the available consumables for the device
9	ACCESSORIES	description and installation of the available accessories for the device
10	ALIGNMENT	information required for managing the paper alignment
11	TECHNICAL SERVICE	information required for contacting the technical service

1.2 Explanatory notes used in this manual

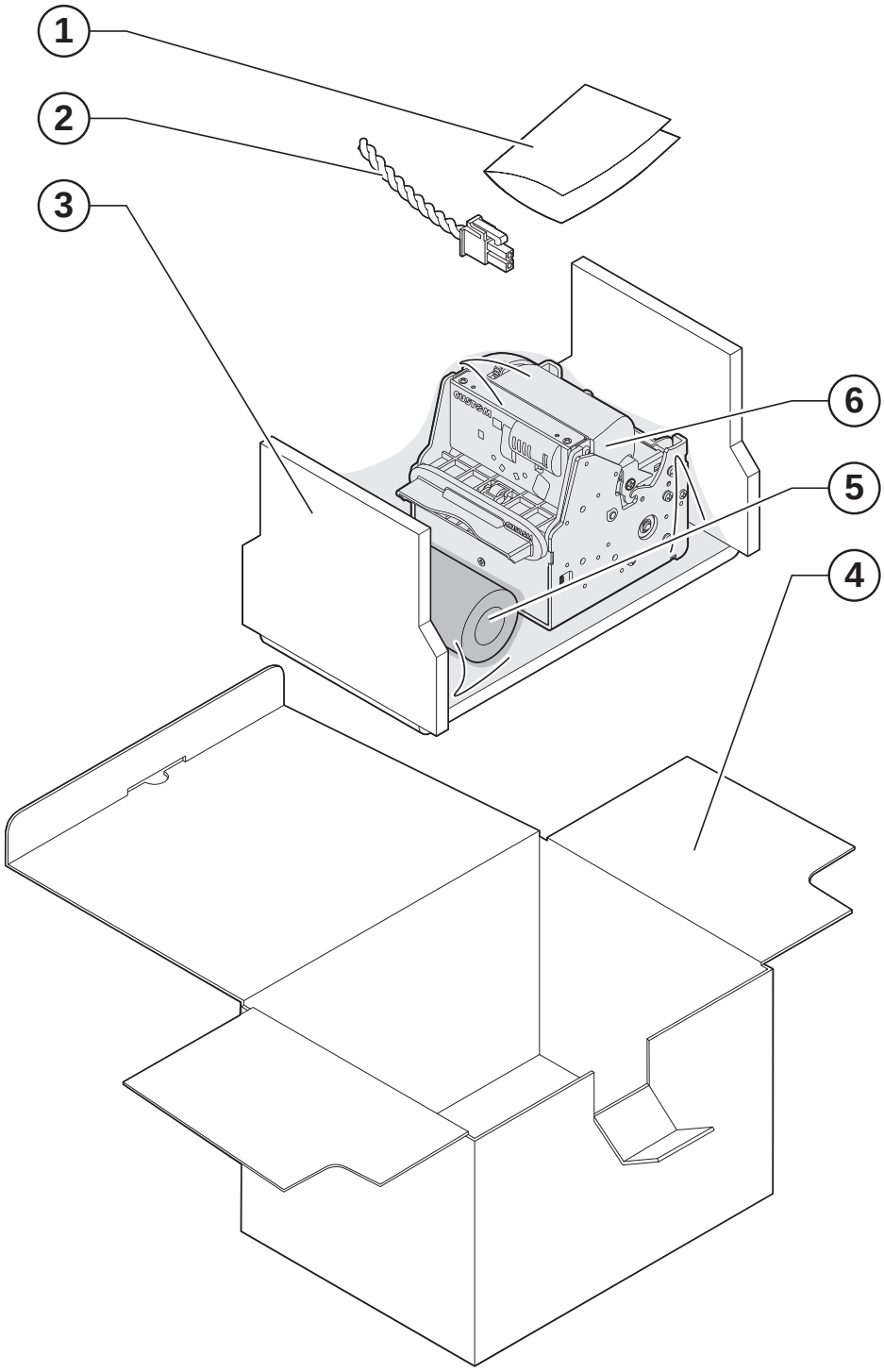
NOTE:	Information or suggestions relative to the use of the printer.
ATTENTION:	Information required to guard against damaging the printer.
DANGER:	Information required to guard against operator injury or damage.

2 DESCRIPTION

2.1 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. Power supply cable
3. Foam packing shell
4. Box
5. Paper roll (80mm)
6. Printer

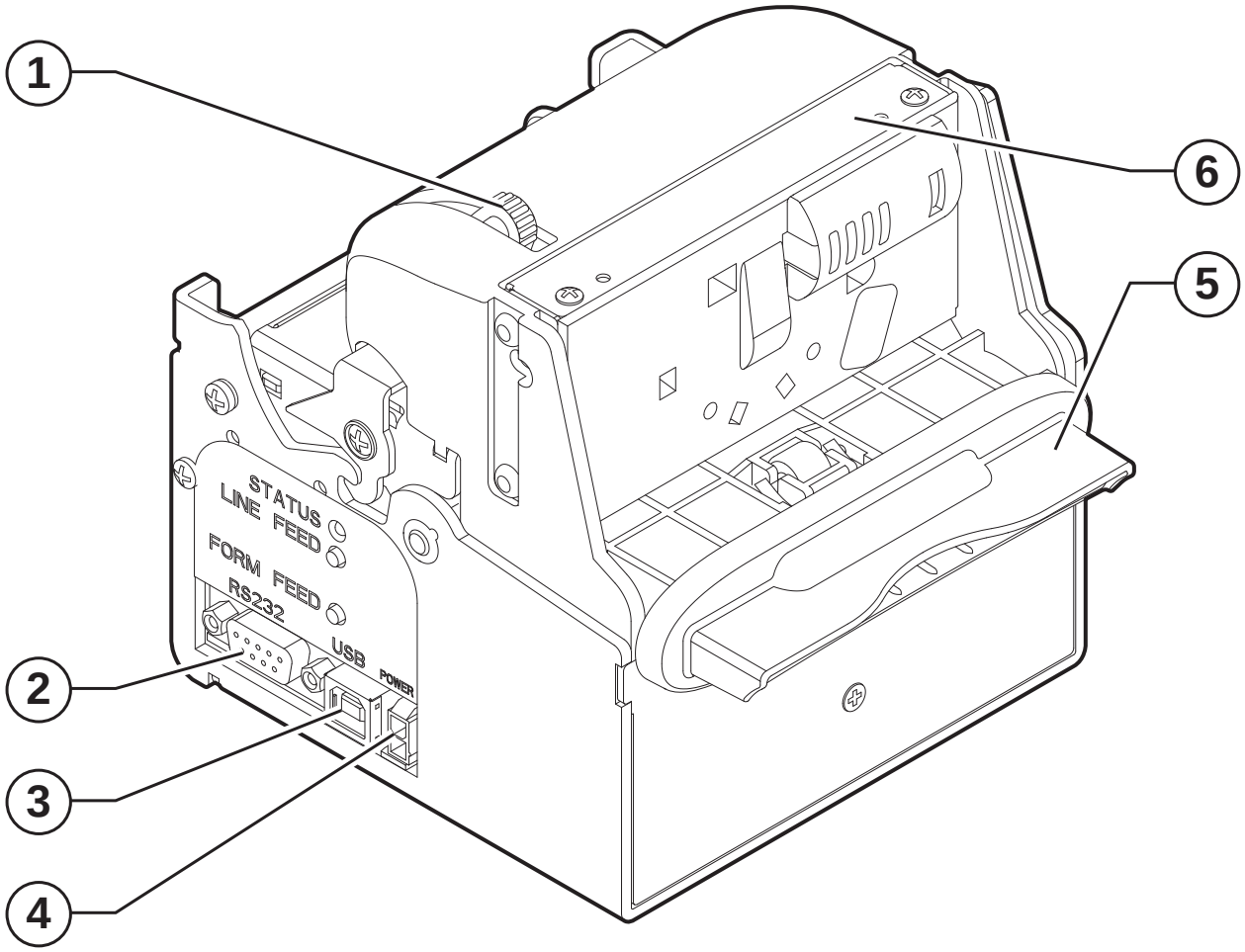


- Open the printer packaging
- Remove the paper roll
- Remove the cable of power supply
- Take out the foam packing shell
- Take out the printer and remove it from its plastic covering.
- Keep the box, trays and packing materials in the event the printer must be transported/shipped in the future..

2.2 Printer component

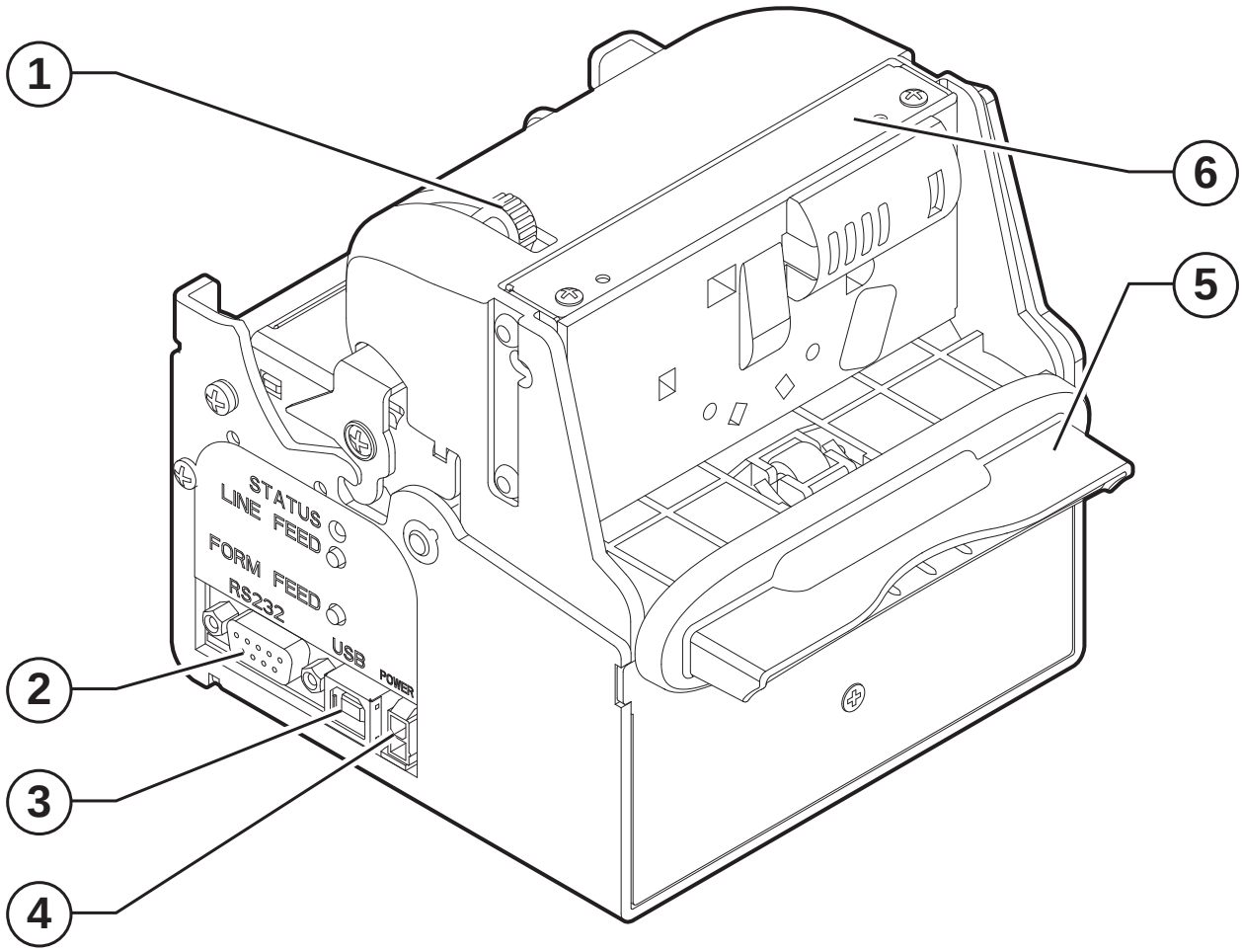
EXTERNAL FRONTAL VIEW

1. Opening lever
2. RS232 serial connector
3. USB connector
4. Power supply connector
5. Paper output
6. Cutter



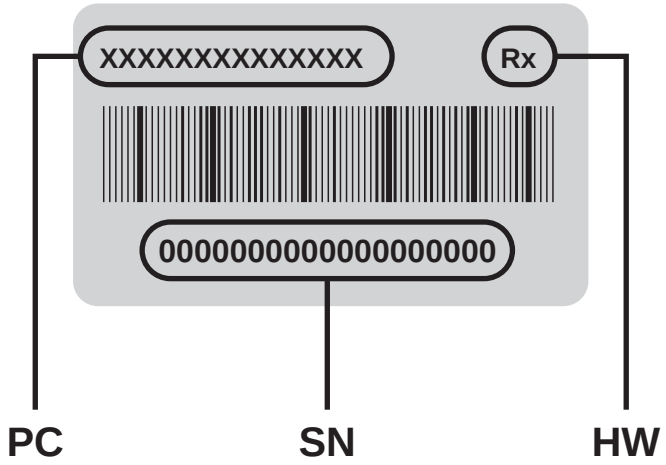
EXTERNAL REAR VIEW

1. Left cursor for paper input
2. Paper input
3. Right cursor for paper input
4. FORM FEED key
5. LINE FEED key
6. Status led



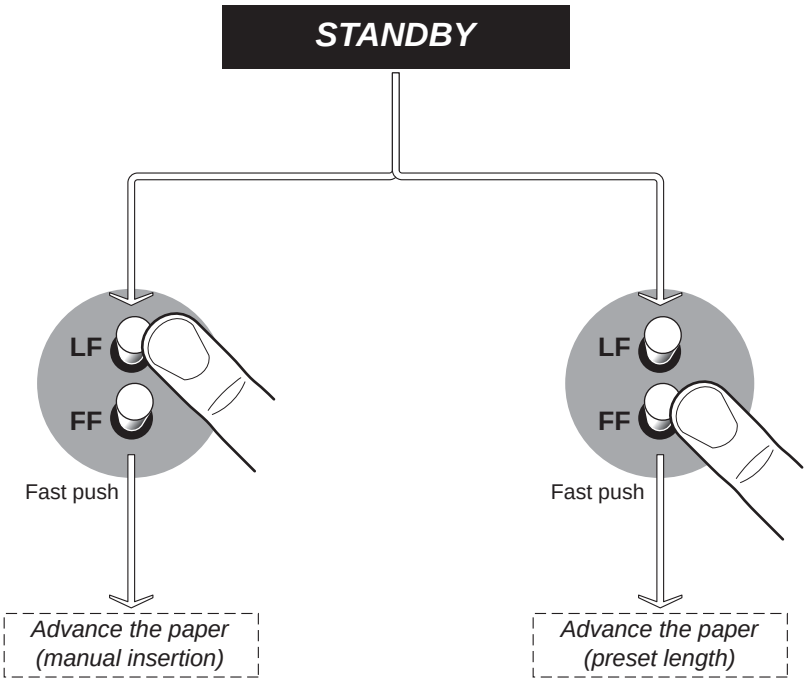
PRODUCT LABEL

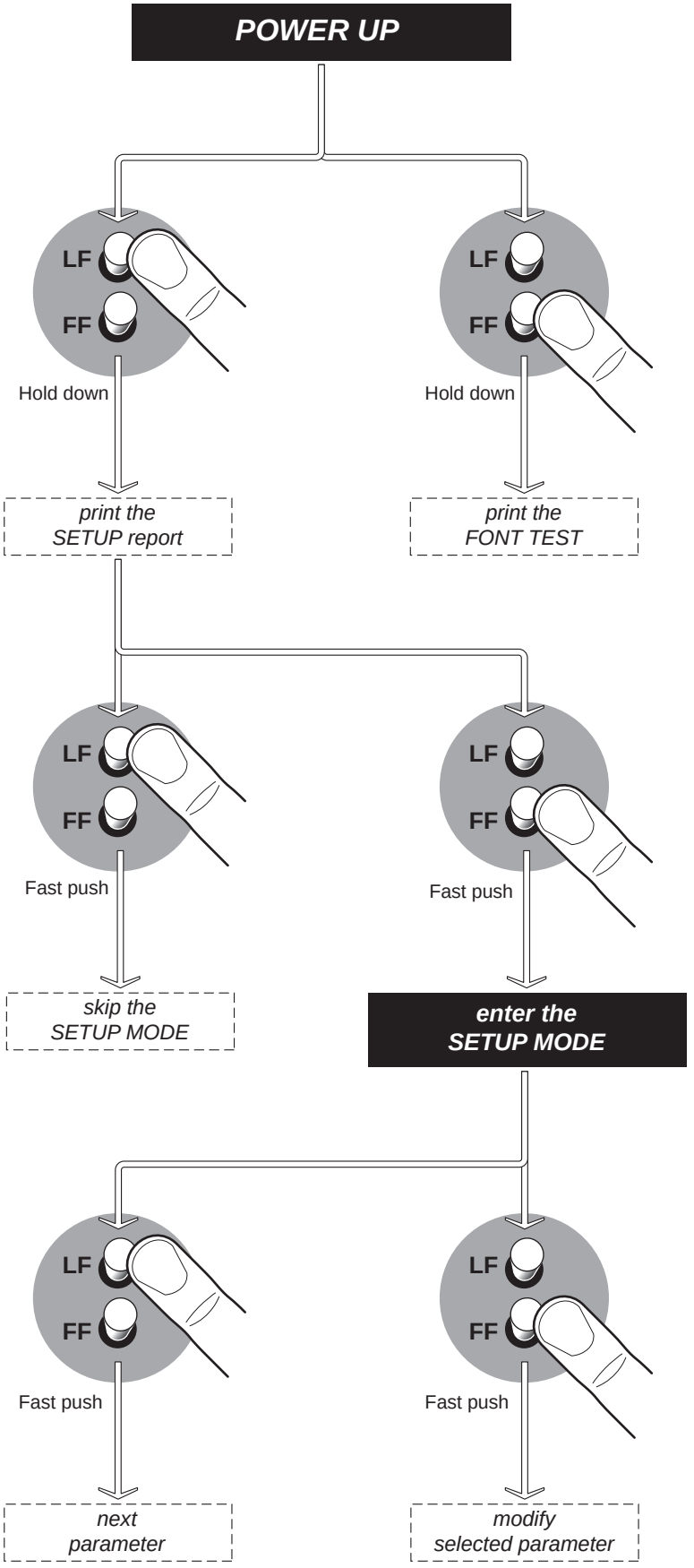
PC = Product code (14 digits)
SN = Serial number
HW = Hardware release



2.3 Key functions

The following figures show the functions of printer's keys according to the operating condition of the device.




POWER UP
LF
FF
Hold down
print the SETUP report
LF
FF
Hold down
print the FONT TEST
LF
FF
Fast push
skip the SETUP MODE
LF
FF
Fast push
enter the SETUP MODE
LF
FF
Fast push
next parameter
LF
FF
Fast push
modify selected parameter

2.4 Status led flashes

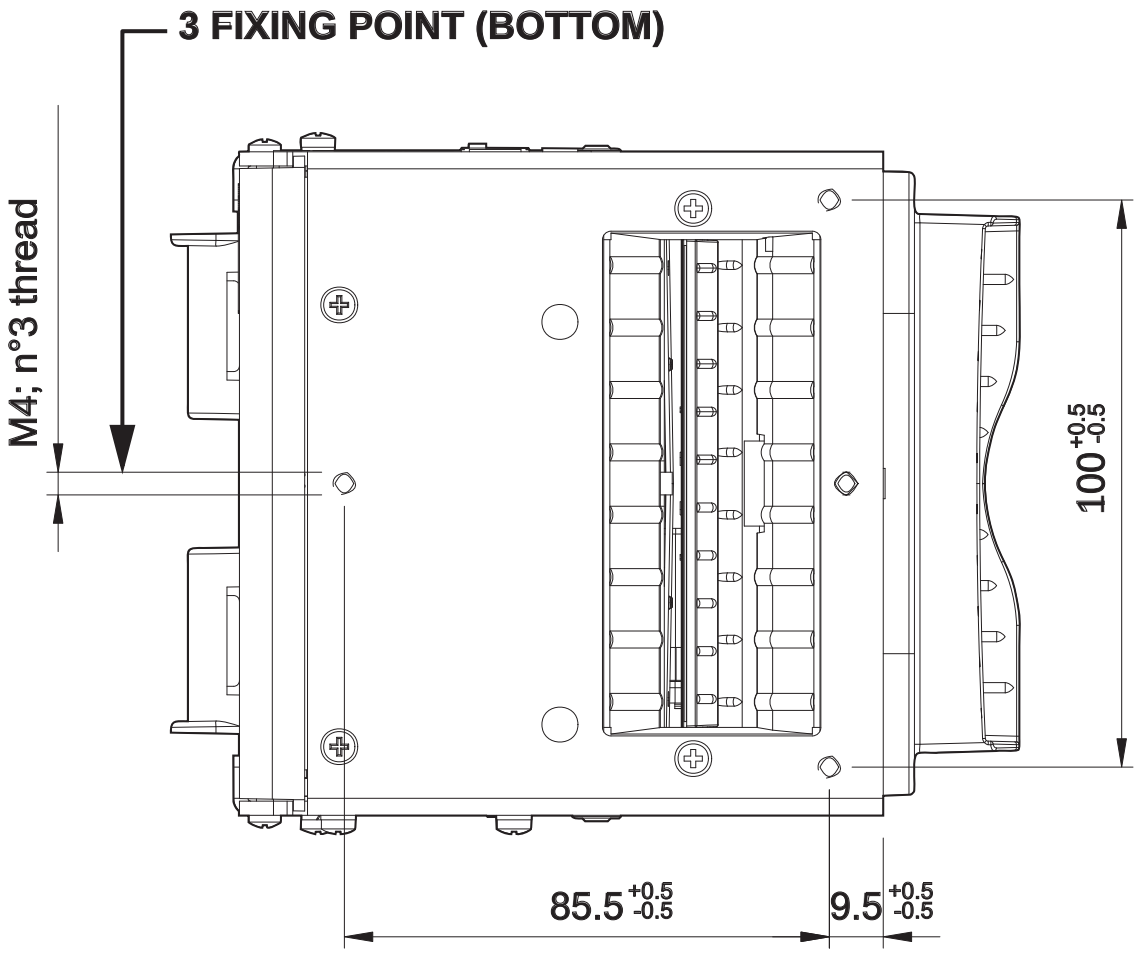
The Status led indicates hardware status of device. Given in the table below are the various led signals and the corresponding printer status.

STATUS LED		DESCRIPTION	
-	○	***OFF***	PRINTER OFF
GREEN	●	***ON***	PRINTER ON: NO ERROR
GREEN COMMUNICATION STATUS	☀	***1 x***	RECEIVE DATA
		2 x	RECEPTION ERRORS (PARITY, FRAME ERROR, OVERRUN ERROR)
		3 x	COMMAND NOT RECOGNIZED
		4 x	COMMAND RECEPTION TIME OUT
YELLOW RECOVERABLE ERROR	☀	***2 x***	HEADING OVER TEMPERATURE
		3 x	PAPER END
		4 x	PAPER JAM
		5 x	POWER SUPPLY VOLTAGE INCORRECT
		6 x	COVER OPEN
RED UNRECOVERABLE ERROR	☀	***3 x***	RAM ERROR
		4 x	EEPROM ERROR
		5 x	CUTTER ERROR

3 INSTALLATION

3.1 Fastening

The printer is provided with three fixing holes on the bottom of device (see following figure). To fasten the printer on a panel, use three M4 screws



It's very important to consider the screws length to not damage the internal components placed near the fixing holes .

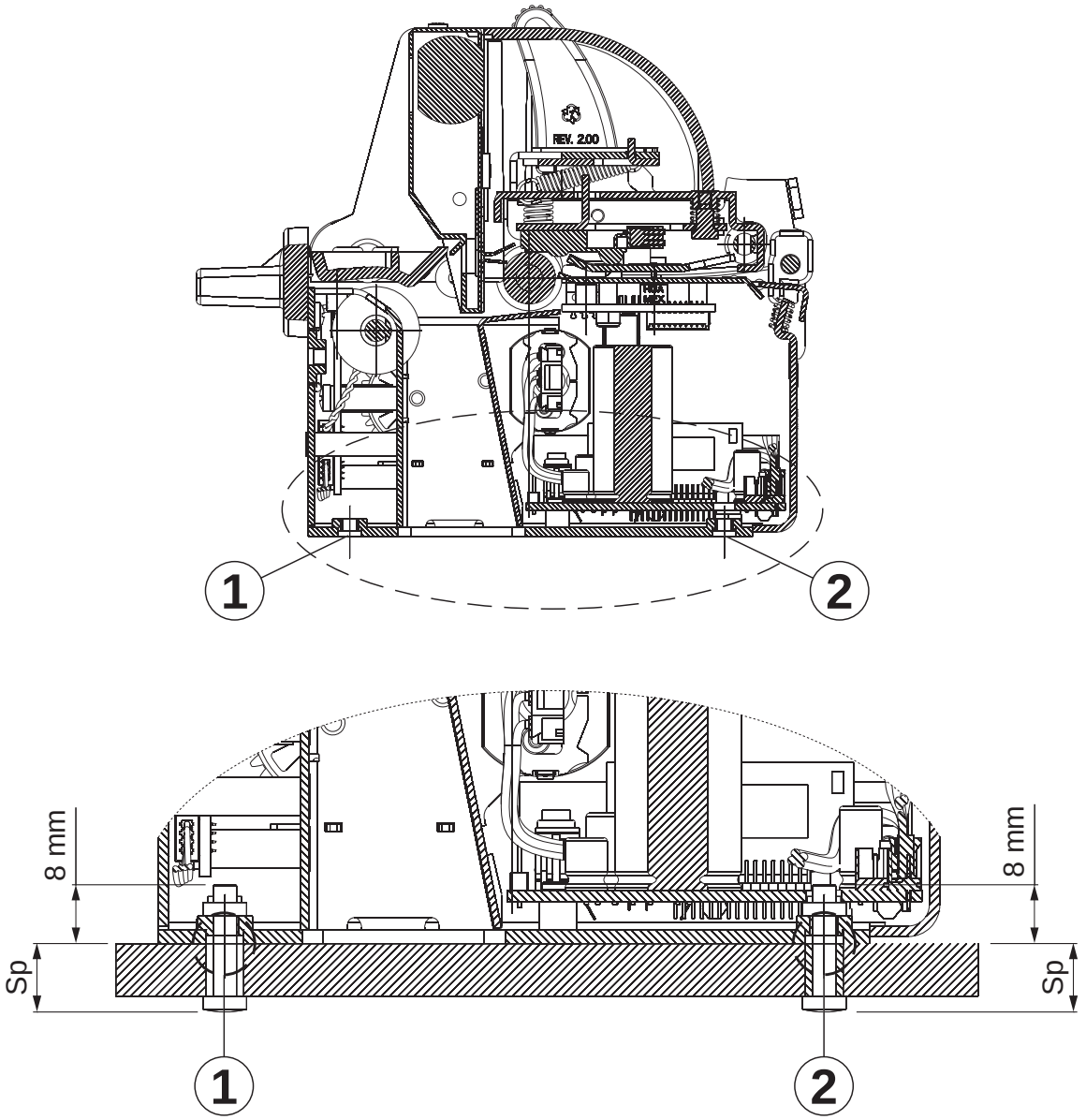
On the basis of panel thickness calculate the screws length as follows :

$$Lv \leq Pn + Sp$$

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.

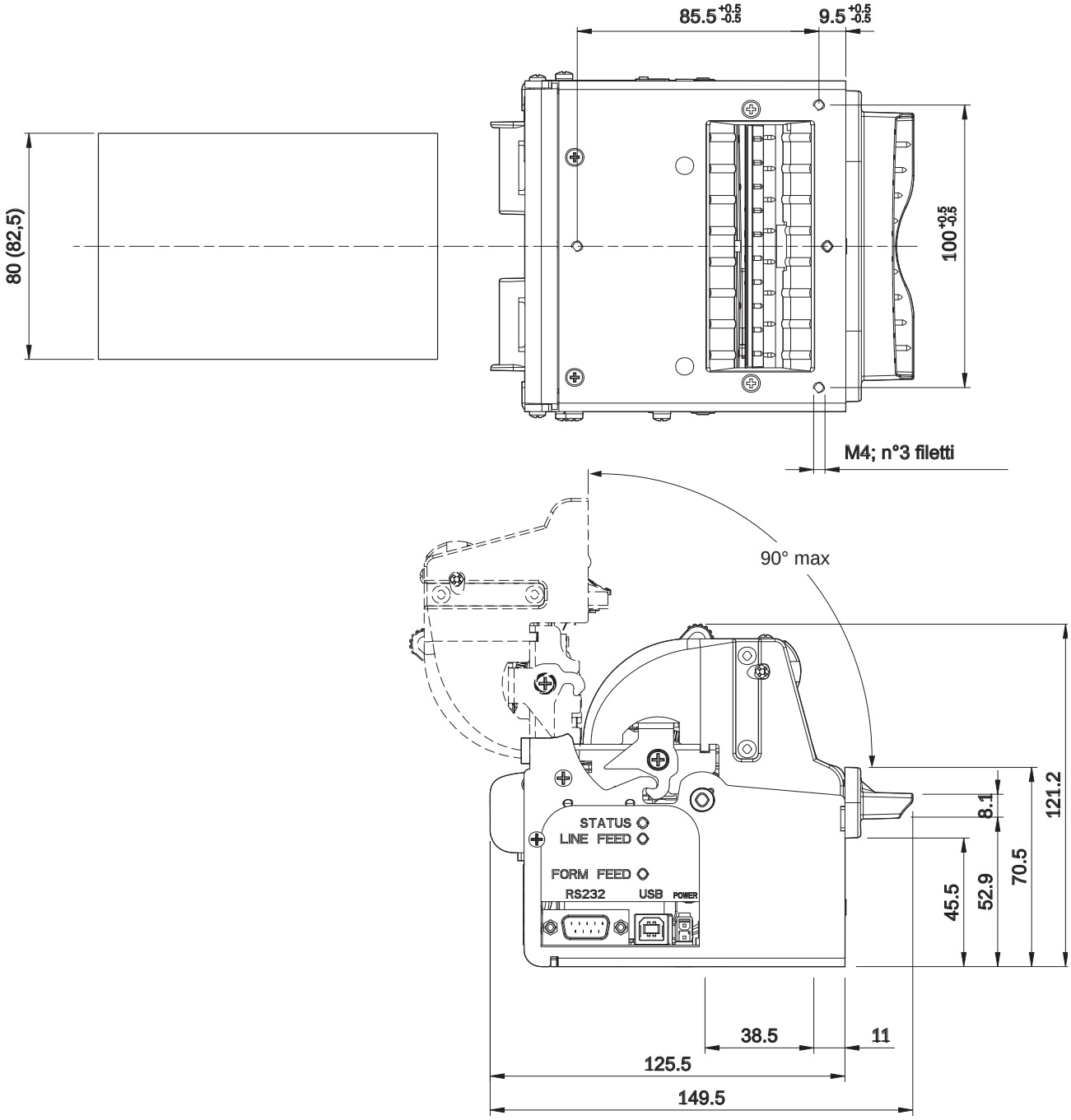


Note:
The reference (1) indicates the screws that must located in the two external holes in front of the printer; the reference (2) indicates the screw that must located in the center hole of the rear side of the printer.

3.2 Installation and use with “retracting” mode

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

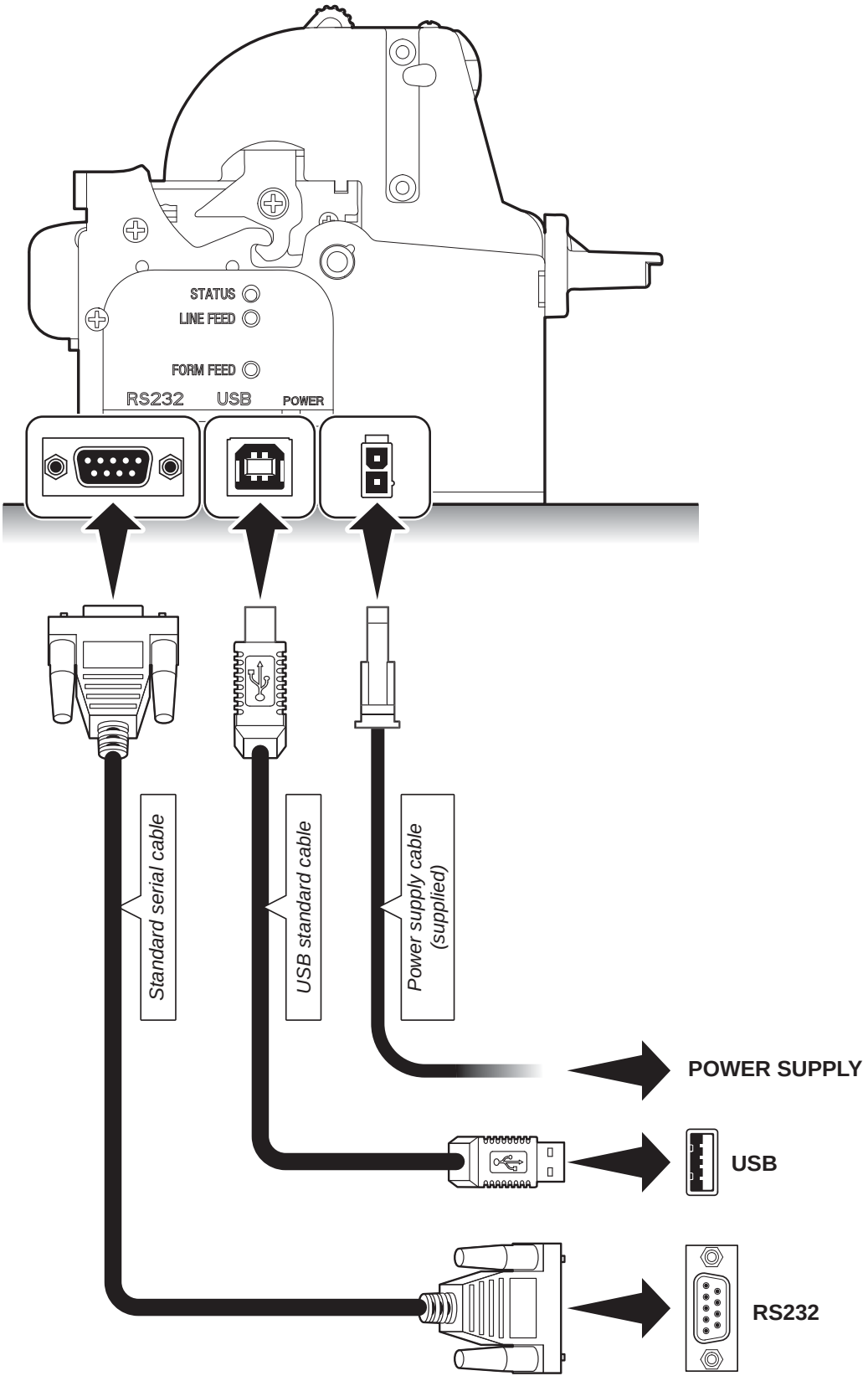
TICKET LENGTH	TICKET PRESENTATION (MAX)
70 mm	10 mm
80 mm	10mm ÷ 30mm
80mm ÷ 220mm	10mm ÷ 30mm



Note “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.

3.3 Connections

The following figures show the possible connections for device.



ATTENTION:
In some using conditions, we recommend the installation of a ferrite core on the power supply cable.

3.4 Pinout

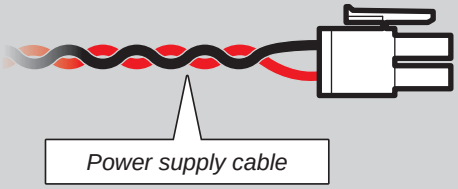
POWER SUPPLY

Male Molex connector series 5569 vertical (no. 39-30-1020)

J7	1	+24 Vdc
	2	GND

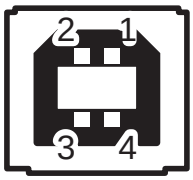
ATTENTION:
Respect power supply polarity.

Note: ***Power supply cable***
The following figure shows the connector pinout of the power supply cable for the device:



Female Molex connector series 5557 (n.39-01-3022)

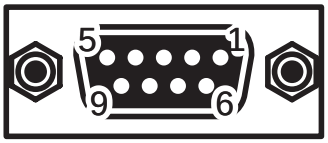
PIN	*Cable color*	*Signal*
1	*Red*	*+24V*
2	*Black*	*GND*



USB INTERFACE

Female USB type B connector

J12	1	USB-VBUS	(in)
	2	D -	(in/out)
	3	D +	(in/out)
	4	GND	
	SH1	SHIELD	
	SH2	SHIELD	



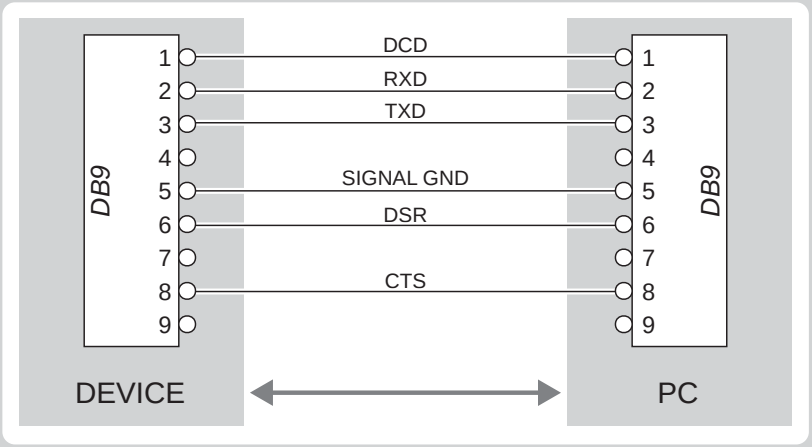
RS232 SERIAL INTERFACE

Female DB9 connector

J3	1	DTR	(out)	When “1”, printer is fed
	2	TX	(out)	During transmission, oscillates between “0” and “1” depending on data
	3	RX	(in)	During reception, oscillates between “0” and “1” depending on data
	4	n.c.		
	5	GND		
	6	DTR	(out)	When “1”, printer is fed
	7	n.c.		
	8	RTS-O	(out)	When “1”, printer is ready to receive data
	9	+5VO		

Note: Given the presence of the RS232 standard, logic value “0” corresponds to a voltage level of between +3 Vdc and +15 Vdc and logic value “1” corresponds to a voltage level of between -3 Vdc and -15 Vdc.

Note: ***VKP80II > PC connection***
The following pictures show an example of connections between the printer and a personal computer using a 9 pin female serial connector:



Note: When use a serial cable, we recommend the installation of a ferrite core on the serial cable.

3.5 Driver

The drivers are available for the following operating system:

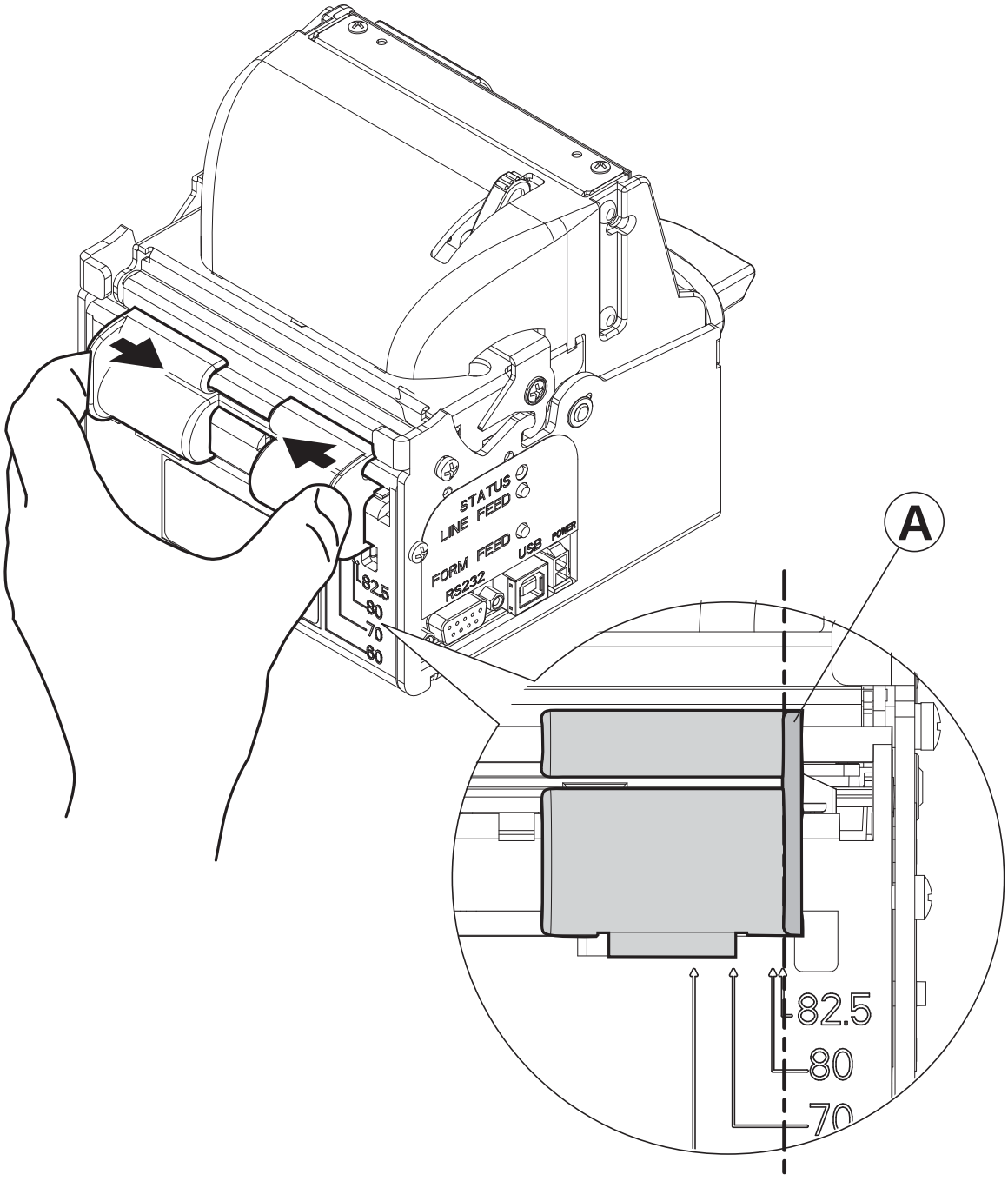
<table>
<tr><th>OPERATING SYSTEM</th><th>INSTALLATION PROCEDURE</th></tr>
<tr><td>Windows XP</td><td rowspan="4">From the START menu, press Enter and key-in the path where the SW was saved on your PC, then click OK. Follow the instructions that appear on the screen to install the driver.</td></tr>
<tr><td>Windows VISTA (32/64bit)</td></tr>
<tr><td>Windows 7 (32/64bit)</td></tr>
<tr><td>Opos</td></tr>
<tr><td>Linux</td><td>Follow the instruction get back on the README.TXT file you can find it in the software package downloaded in advance.</td></tr>
</table>

All drivers can be found in the DOWNLOAD section of the web site www.custom.biz.

4 OPERATION

4.1 Adjusting paper width

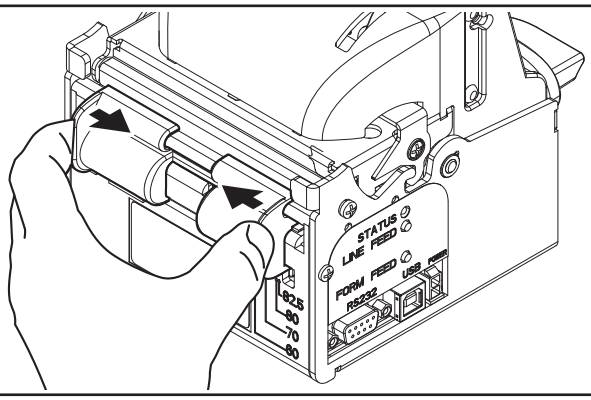
Paper width may be adjusted from 60mm to 82.5mm using the right (Dx) and Left (Sx) slides located at the paper infeed opening.
Move the right and left slides to adjust the paper width (see following figure). Below the right slide there are four point of reference for paper width (60, 70, 80 and 82.5mm).
Move the slides to align the internal side of the fin (A) with the point of reference.



4.2 Paper roll insertion

At every change of paper roll, check inside the printer. To change the paper roll, proceed as follows:

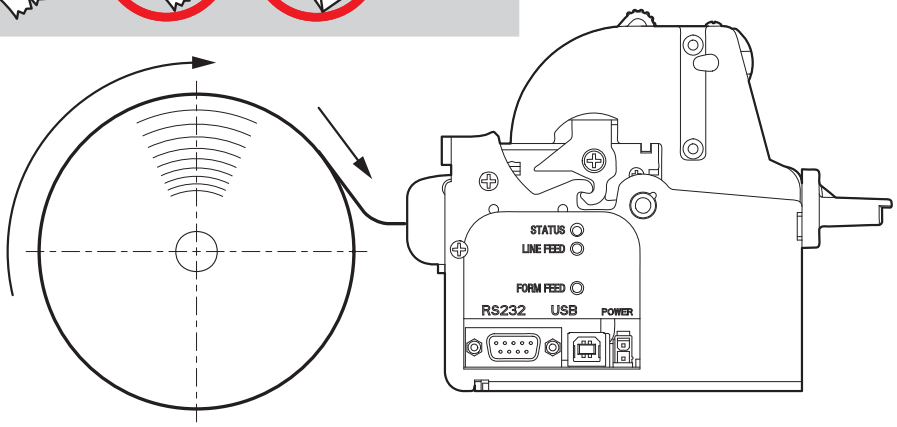
1



Adjust the paper width (see previous paragraphs).

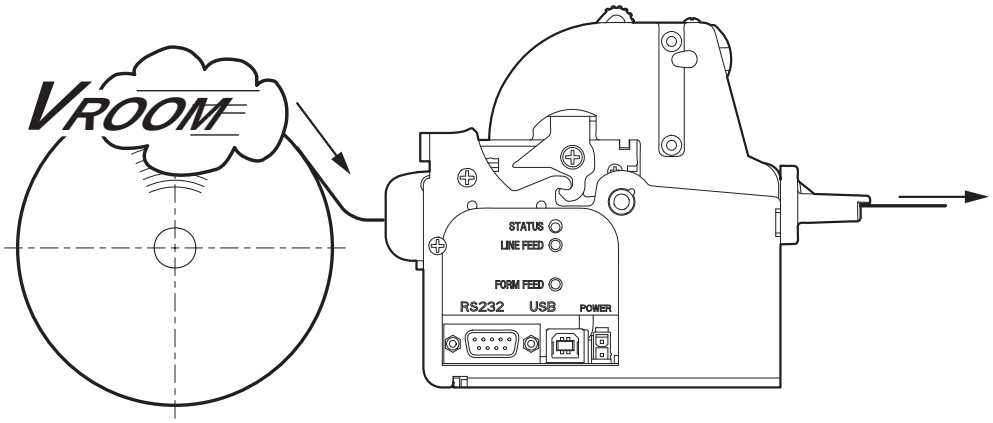
2

ATTENTION:
Make sure the cut is straight.



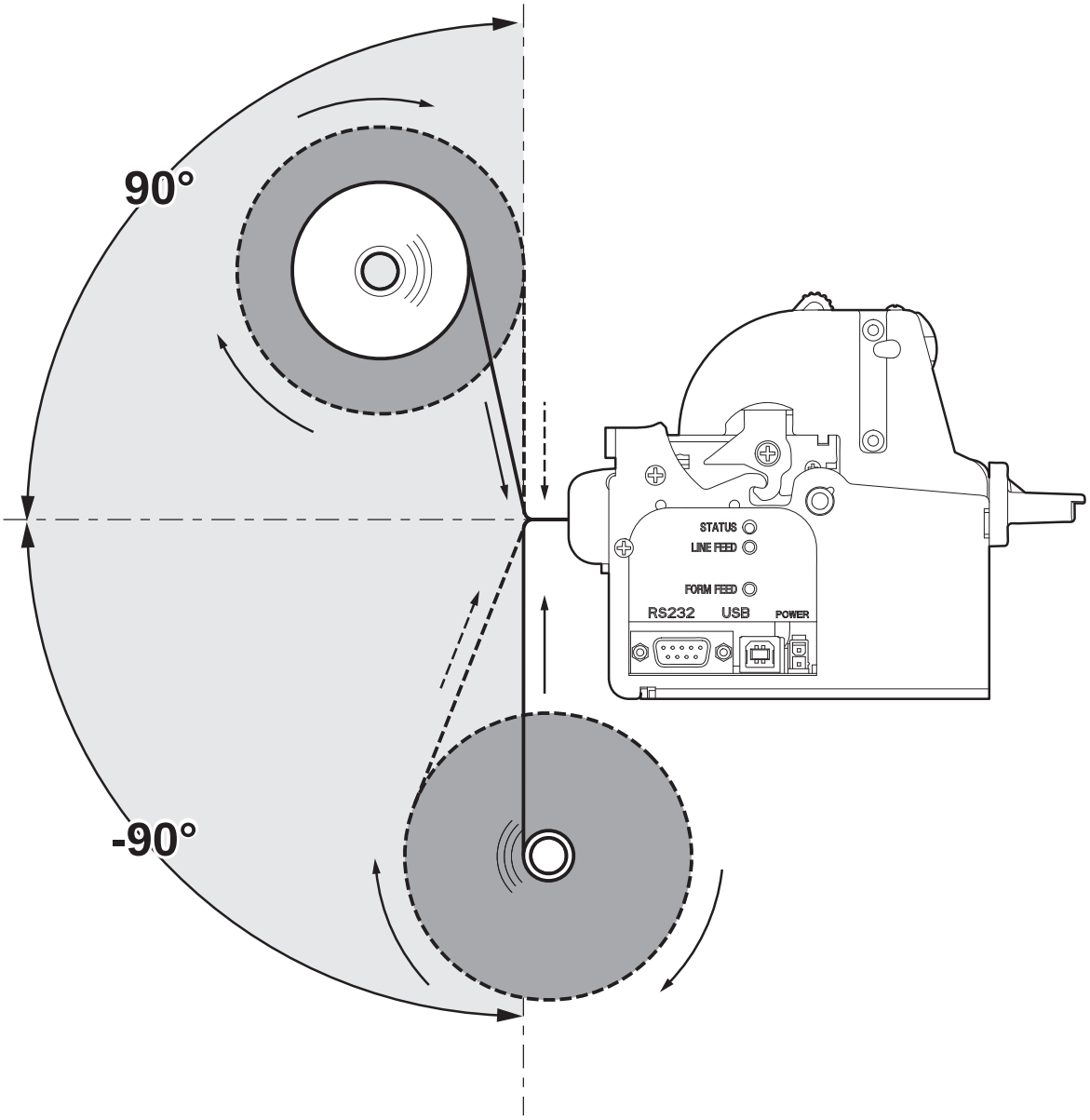
Position the paper roll, so that it unrolls correctly as shown in figure.

3



Insert the paper into the paper infeed opening and wait for it to load automatically.

The following figure gives the limit positions of the paper roll related to the printer for a correct paper loading without a paper roll holder support.
The direction of the paper will always form a maximum angle of 90 ° or -90 ° with the insertion plane of paper inside the printer.

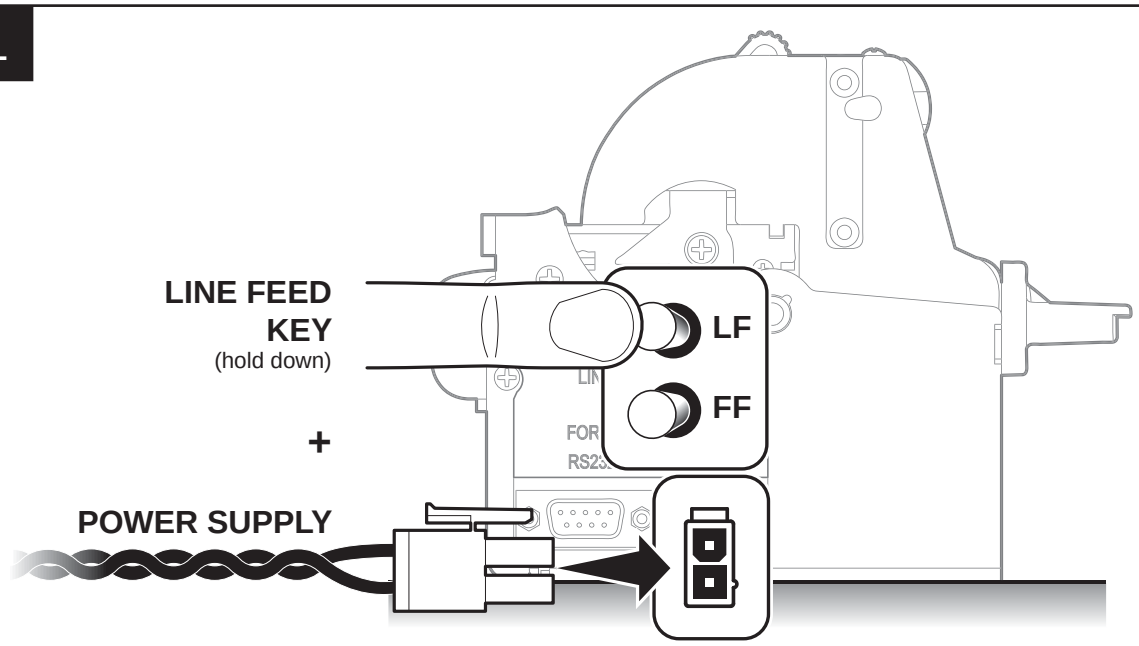


5 CONFIGURATION

5.1 Configuration mode

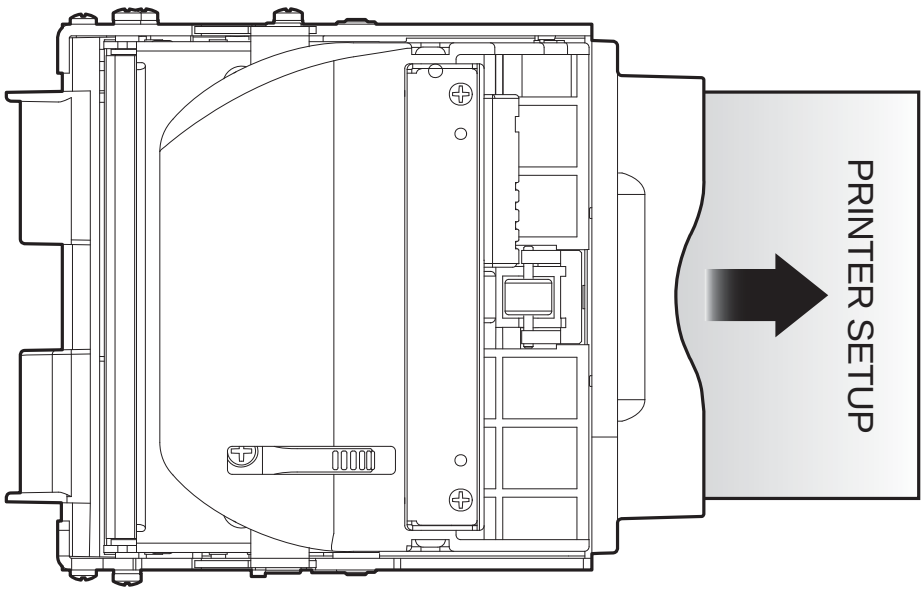
To enter the configuration mode and print a SETUP report with the operating parameters of the printer, proceed as follows.

1



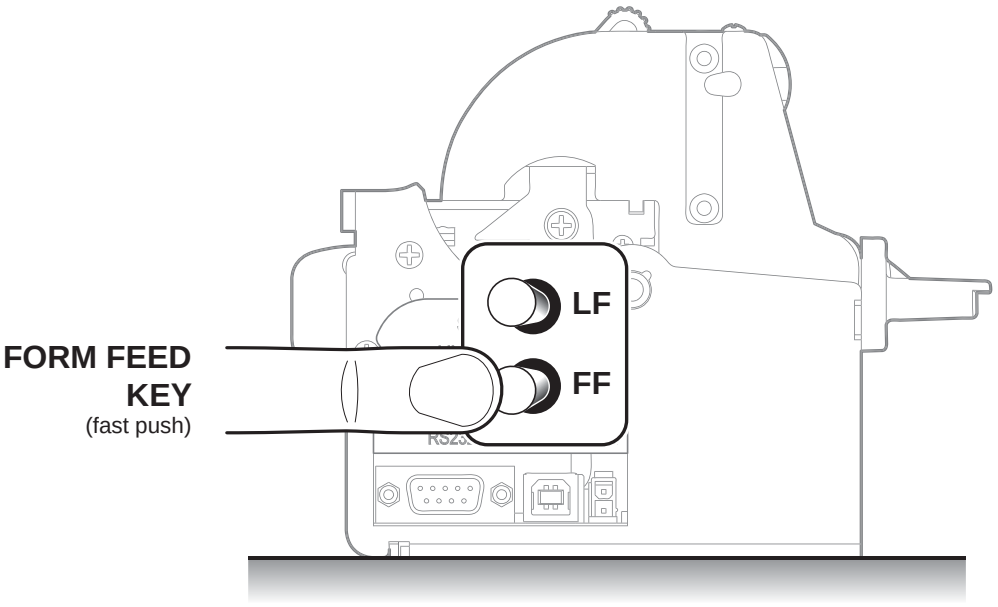
During power-up, hold down the LINE FEED key
while the wiring is plugged into the power supply connector of the printer.

2



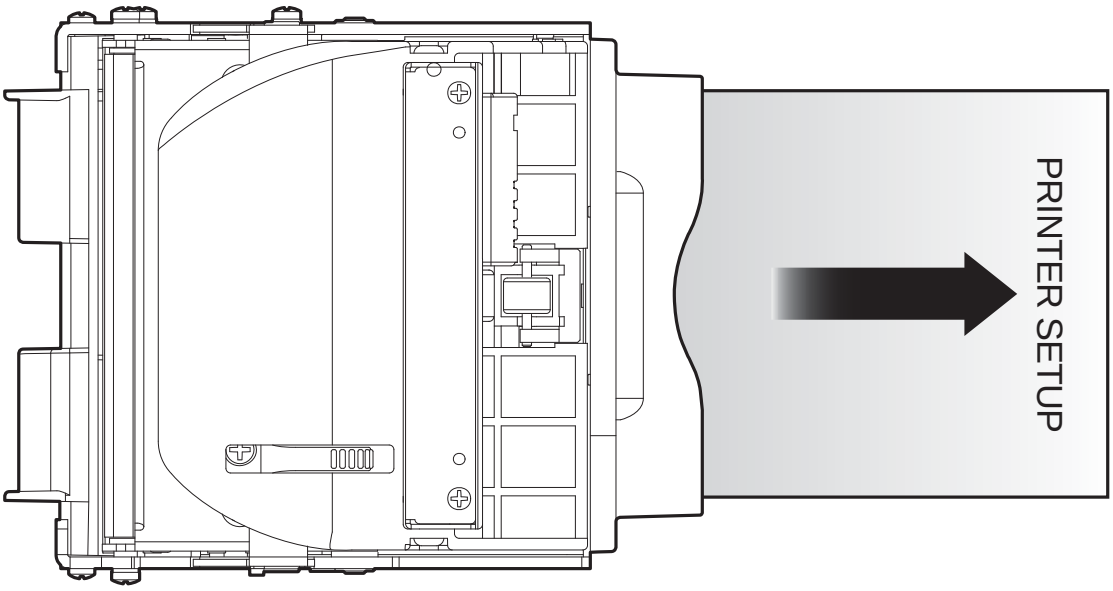
The device prints a SETUP report.

3



Press the FORM FEED key to enter the configuration mode

4

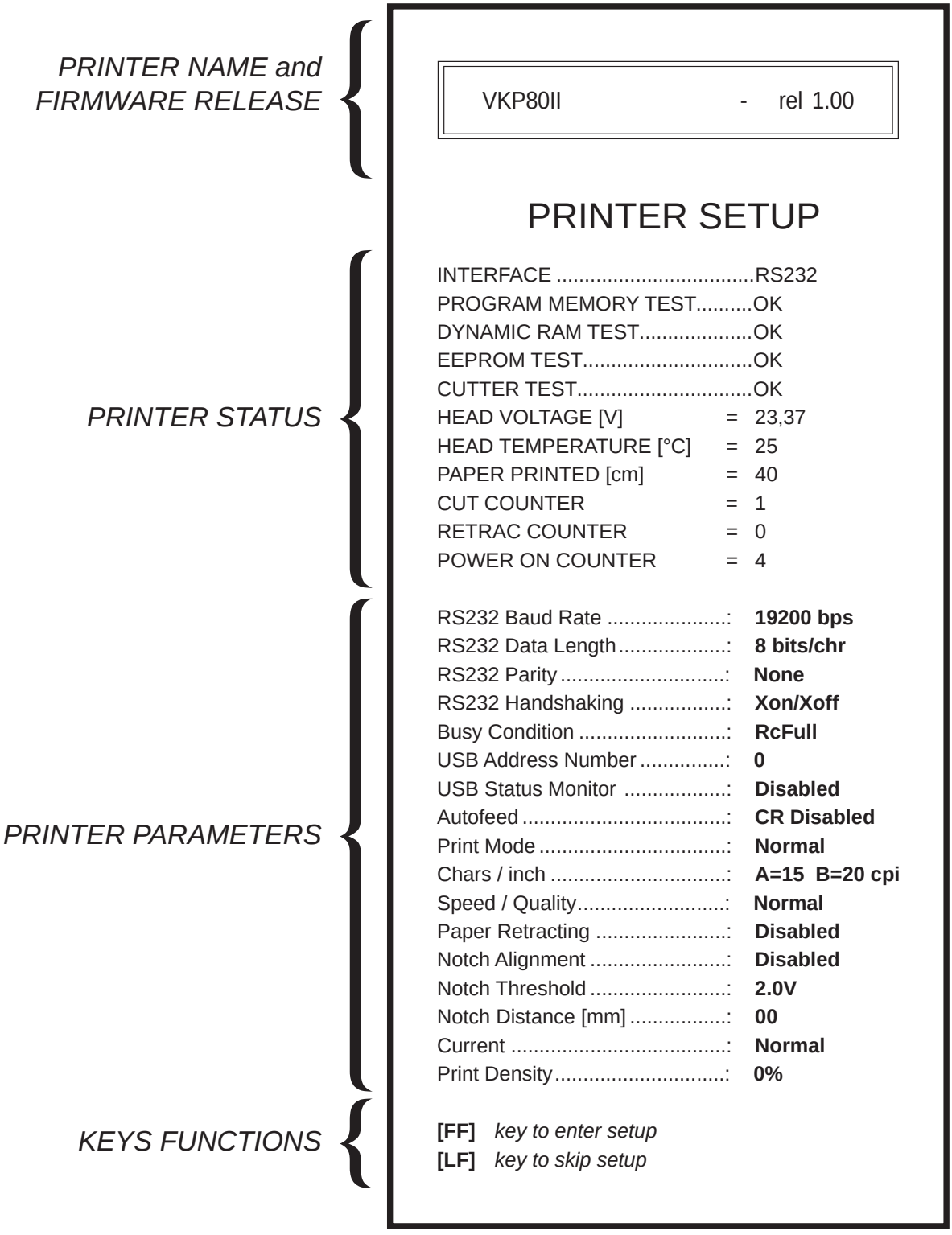


Proceed with the configuration by using the keys according the functions printed on paper (see par.2.3).
For description and values of setup parameters, see the following paragraphs.

NOTE:
During power-up, if the LINE FEED key is held down, the printer enters the auto-test routine and prints out the setup report. The printer will remain in standby in Hexadecimal dump mode (see following paragraphs) 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.

5.2 Setup report

The following figure shows the setup report of the printer. The shown values for parameters are sample values; for the list and the description of printer parameters see the following paragraphs.



5.3 Printer status

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

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

5.4 Printer parameters

This printer allows the configuration of the parameters listed in the following table.
The parameters marked with the symbol [D] are the default values.
Settings remain active even after the printer has been turned off and they are stored in non-volatile memory.

RS232 BAUD RATE	*Communication speed of the serial interface:* *115200 — 19200 [D] — 2400* *57600 — 9600 — 1200* *38400 — 4800*
RS232 DATA LENGTH	*Number of bit used for characters encoding:* *7 bits/car* *8 bits/car [D]*
RS232 PARITY	*Bit for the parity control of the serial interface:* *None [D] = parity bit omitted* *Even = even value for parity bit* *Odd = odd value for parity bit*
RS232 HANDSHAKING	*Handshaking:* *XON/XOFF = software handshaking* *Hardware [D] = hardware handshaking (CTS/RTS)*
BUSY CONDITION	*Activation mode for Busy signal:* *RXFull [D] = Busy signal is activated when the buffer is full* *OffLine/ RXFull = Busy signal is activated when the printer is both in OffLine status and the buffer is full* **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.
USB ADDRESS NUMBER	*Numerical address code for the univocal identification of the USB device (in case of more than a USB device connected with the same PC):* *0 [D] — 3 — 6 — 9* *1 — 4 — 7* *2 — 5 — 8* **NOTE:** This parameter is 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.
USB STATUS MONITOR	*Setting for the driver module Status Monitor:* *Disabled [D] = Status Monitor disabled* *Enabled = Status Monitor enabled* **NOTE:** The Status Monitor is an additional printing driver component that allows the printer status monitoring. It must be enabled only if the Status Monitor specifi c driver was installed.
AUTOFEED	*Setting of the Carriage Return character:* *CR disabled [D] =Carriage Return disabled* *CR enabled = Carriage Return enabled*

PRINT MODE

Printing mode:

Normal [D] = enables printing in normal writing way
Reverse = enables printing rotated 180 degrees

CHARS / INCH

Font selection:

A = 11 cpi, B = 15 cpi
A = 15 cpi, B = 20 cpi [D]
A = 20 cpi, B = 15 cpi

NOTA: CPI = Characters Per Inch

SPEED / QUALITY

Setting of printing speed and printing quality:

High Quality
Normal [D]
High Speed

PAPER RETRACTING

Setting of the "retract" function of the paper, with paper presence on ejector during power-up:

Disabled [D] = "retract" function disabled
Enabled = "retract" function enabled

NOTE: During power-up, if paper is present on the ejector and if this parameter is set to "Enabled", the printer will retract the paper. Otherwise, if the parameter is set to "Disabled", the printer will eject the paper.

NOTCH ALIGNMENT

Alignment management:

Disabled [D] = the notch alignment is not performed
Enabled = the notch alignment is performed

NOTCH THRESHOLD

Threshold value (in percent) for the recognition of the presence of notch by the notch sensor:

0,5	*2,0 [D]*	*3,5*
1,0	*2,5*	*4,0*
1,5	*3,0*	*4,5*

NOTE: If the "Notch Alignment" parameter is disabled, this parameter is not printed.

NOTCH DISTANCE

"Notch Distance" is the minimum distance (in mm) between the upper edge of ticket and the notch.
The numeric value of the distance is made up with the following four parameters for the setting of three digits (two for the integer part of the number and one for the decimal part) and of the sign:

NOTCH DISTANCE [mm x 10]

Setting the digit for tens:

0 [D]	*2*	*4*	*6*	*8*
1	*3*	*5*	*7*	*9*

NOTCH DISTANCE [mm x 1]

Setting the digit for units:

0 [D]	*2*	*4*	*6*	*8*
1	*3*	*5*	*7*	*9*

NOTE: For example, to set the notch distance to 15 mm, modify the parameters as follows:
Notch Distance [mm x 10] = 1
Notch Distance [mm x 1] = 5

NOTE: If the "Notch Alignment" parameter is disabled, the parameters for the "Notch Distance" are not printed.

NOTE: In Setup mode, it is possible to set the notch distance using a values range from 0mm to 39mm. The maximum distance accepted is 32mm, so even if values from 33mm to 39mm are inserted, the distance remains 32mm.

CURRENT	*Setting of the current consumption:* *Low* *High* *Normal* [D]
PRINT DENSITY	*Adjusting the printing density:* *-50% -12% +25%* *-37% 0* [D] *+37%* *-25% +12% +50%*

5.5 Hexadecimal dump

This function is used to diagnose the characters received through the communication port; the characters are printed out both as hexadecimal codes and ASCII codes.

Once the self-test routine has finished, the printer enters Hexadecimal Dump mode. The printer remains in standby until a key is pressed or characters are received through the communication port. For example, in the 200 dpi model, for every 8 characters received, the hexadecimal and corresponding ASCII codes are printed out (if the characters are underlined, the receive buffer is full).
Shown below is an example of a Hexadecimal Dump:

HEXADECIMAL DUMP

```
31 32 33 34 35 36 37 38     12345678
39 30 31 32 33 34 35 36     90123456
37 38 39 75 69 73 64 66     789uisdf
68 6B 6A 73 64 68 66 68     hkjsdhfh
73 64 66 6B 6A 68 73 64     sdfkjhsd
66 73 64 66 6B 68 6A 77     fsdfkhjw
65 69 6F 79 75 77 71 65     eioyuwqe
6F 72 69 75 77 65 72 69     oriuweri
6F 75 77 65 72 69 6F 75     ouweriou
77 65 72 69 6F 75 77 65     weriouwe
72 69 6F 75 77 65 72 68     riouwerh
6B 6C 73 64 66 68 6B 73     klsdfhks
64 66 6B 73 64 66 68 6A     dfksdfhj
73 64 66 6B 6A F2 73 64     sdfkj≥sd
66 6B F2 6A 73 68 64 66     fk≥jshdf
6A 6B 6C 68                 jklh
```

6 MAINTENANCE

6.1 Planning of cleaning operations

The regular cleaning of the device keeps the print quality and extends its life. The following table shows the recommended planning for the cleaning operations.

EVERY ROLL CHANGE	
Printing head	Use isopropyl alcohol
Rollers	Use isopropyl alcohol
EVERY 5 ROLL CHANGES	
Cutter	Use compressed air
Paper path	Use compressed air or tweezers
Sensors	Use compressed air
EVERY 6 MONTHS OR AS NEEDED	
Printer case	Use compressed air or a soft cloth

For specific procedures, see the following pages.

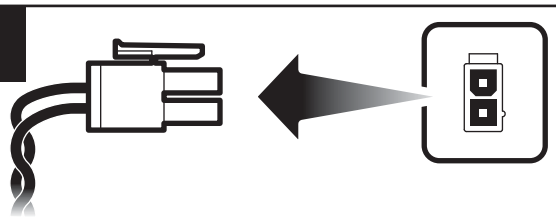
NOTE:
If you use the device in dusty environments, you must reduce the intervals between the cleaning operations.

6.2 Cleaning

For periodic cleaning of the printer, see the instructions below.

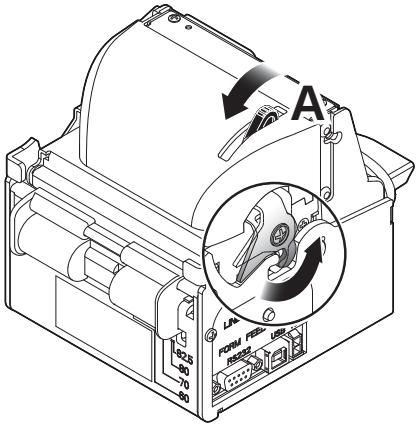
CUTTER

1



Disconnect the
power supply cable.

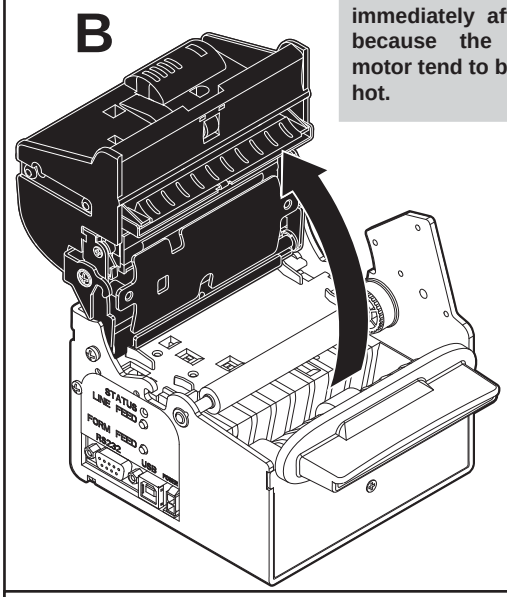
2



Unlock the printing group
by using the lever A

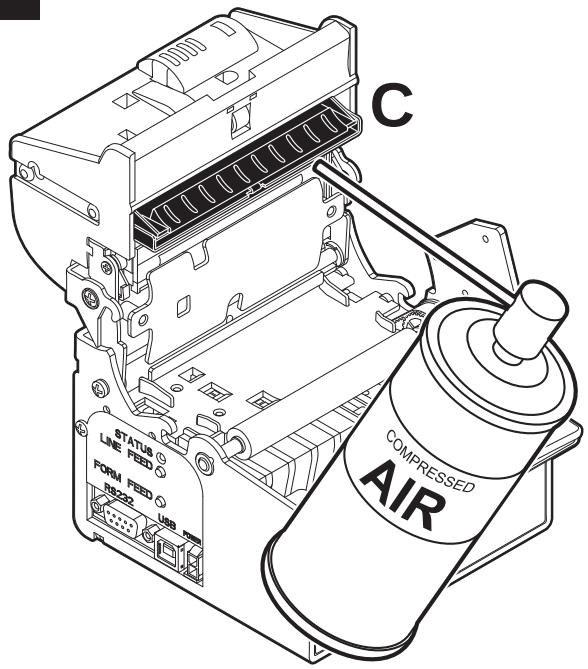
3

ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.



Rotate the printing group B
to the locking position.

4

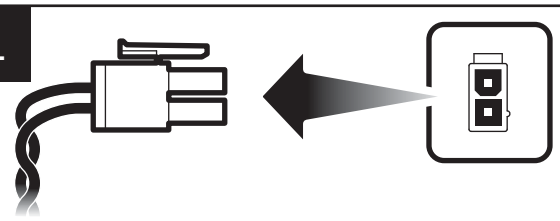


ATTENTION:
Do not use alcohol, solvents, or hard brushes. Do not let water or other liquids get inside the machine.

Clean the cutter C
by using compressed air.

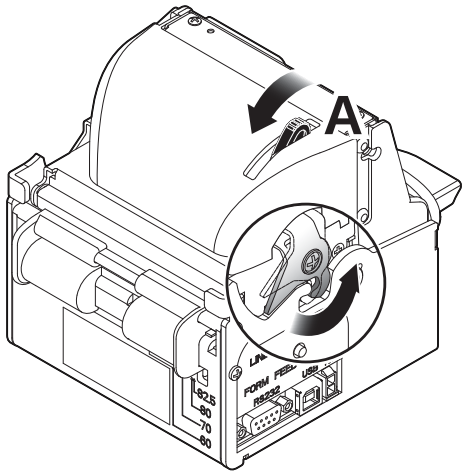
SENSORS

1



Disconnect the
power supply cable.

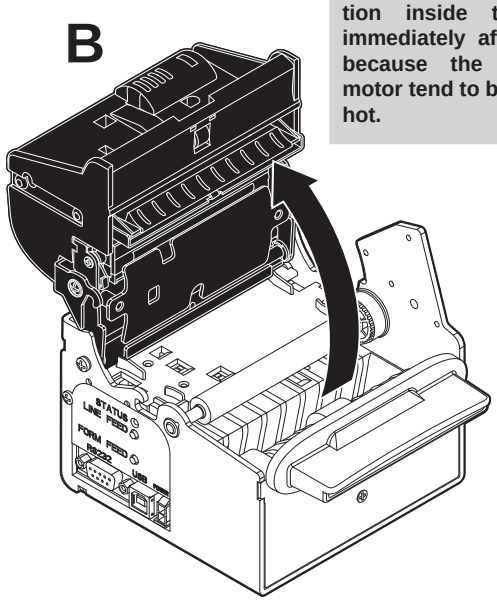
2



Unlock the printing group
by using the lever A

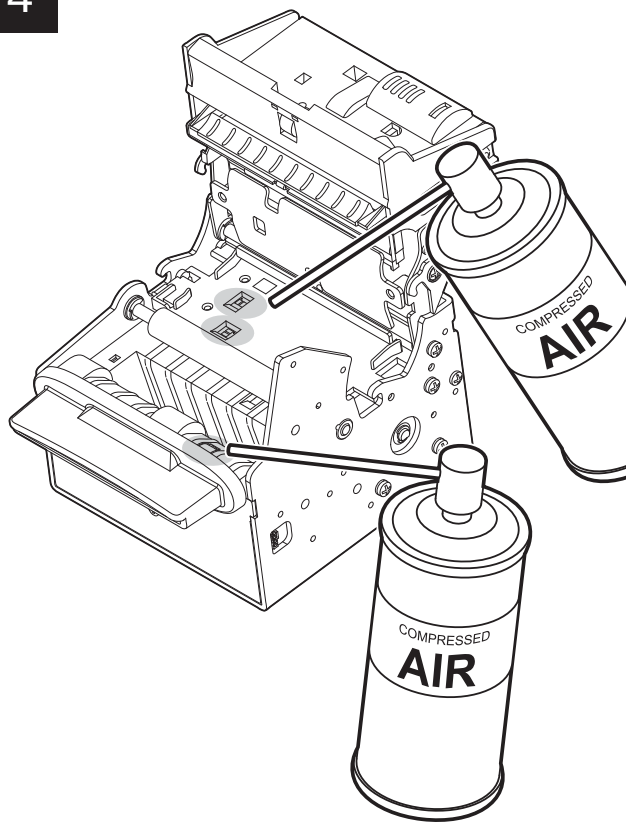
3

ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.



Rotate the printing group B
to the locking position.

4

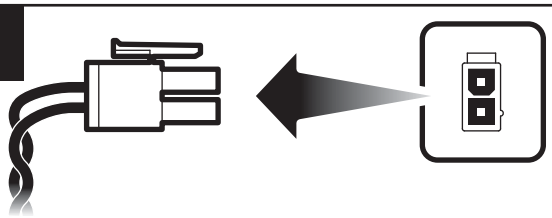


ATTENTION:
Do not use alcohol, solvents, or hard brushes.
Do not let water or other liquids get inside the machine.

Carefully clean the notch and the paper presence
sensors by using compressed air.

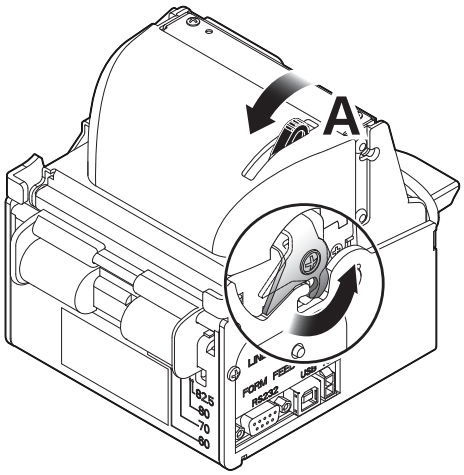
PAPER PATH

1



Disconnect the
power supply cable.

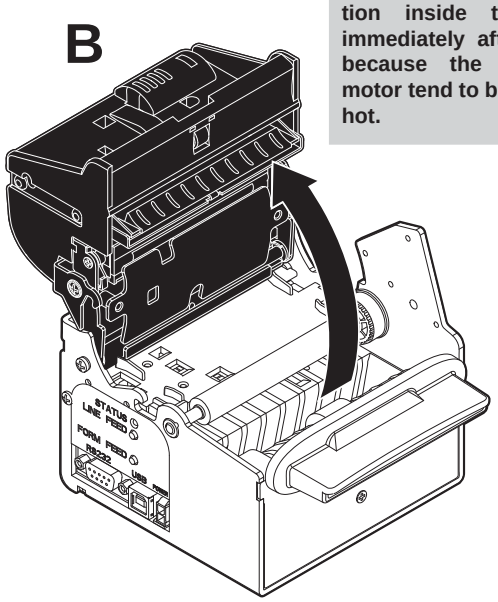
2



Unlock the printing group
by using the lever A

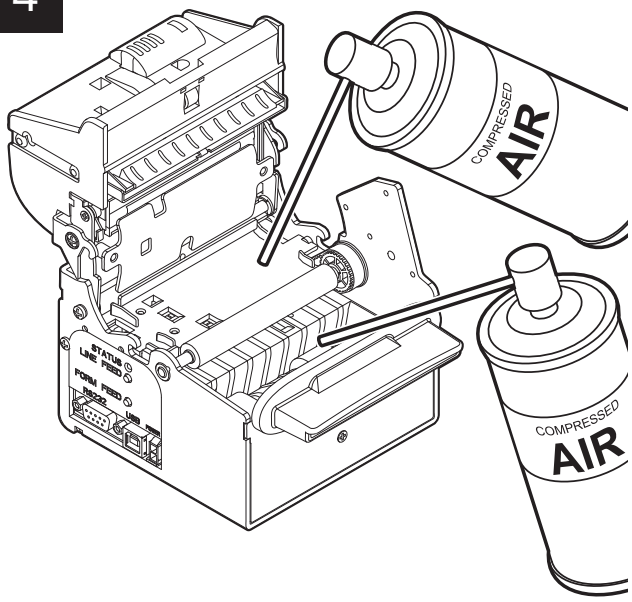
3

ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.



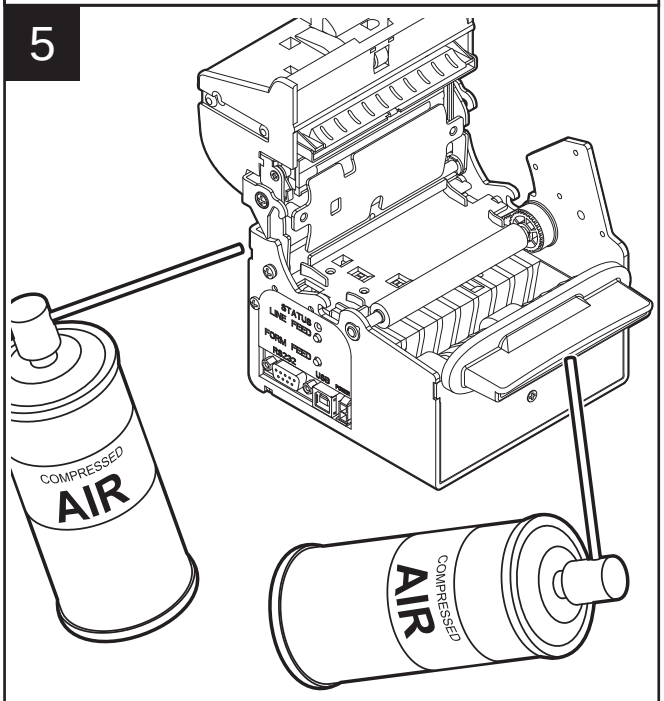
Rotate the printing group B
to the locking position.

4



Clean the plastic flat and the ejector roller
by using compressed air.

5

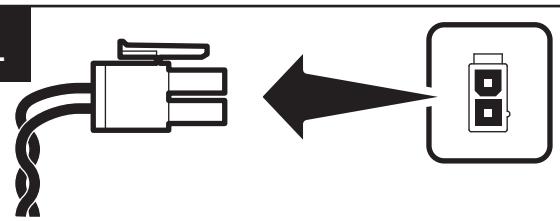


ATTENTION:
Do not use alcohol, solvents, or hard brushes.
Do not let water or other liquids get inside the machine.
To remove paper scraps, use tweezers or compressed air.

Clean the paper input and output
by using compressed air.

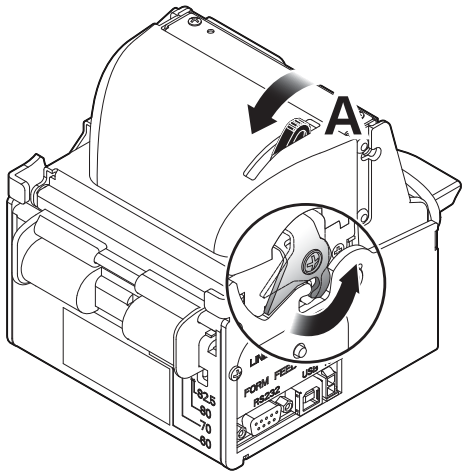
PRINTING HEAD

1



Disconnect the
power supply cable.

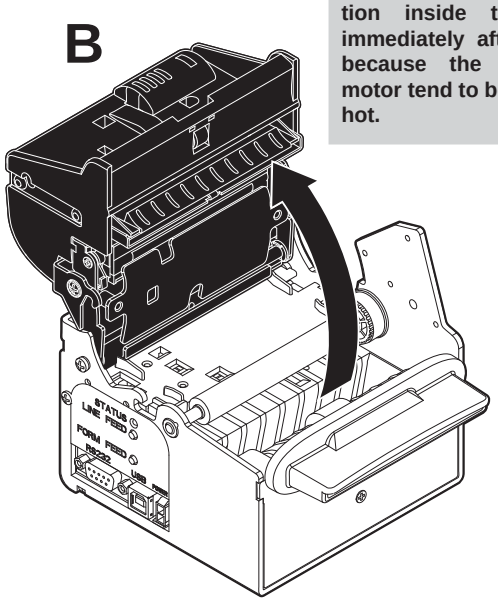
2



Unlock the printing group
by using the lever A

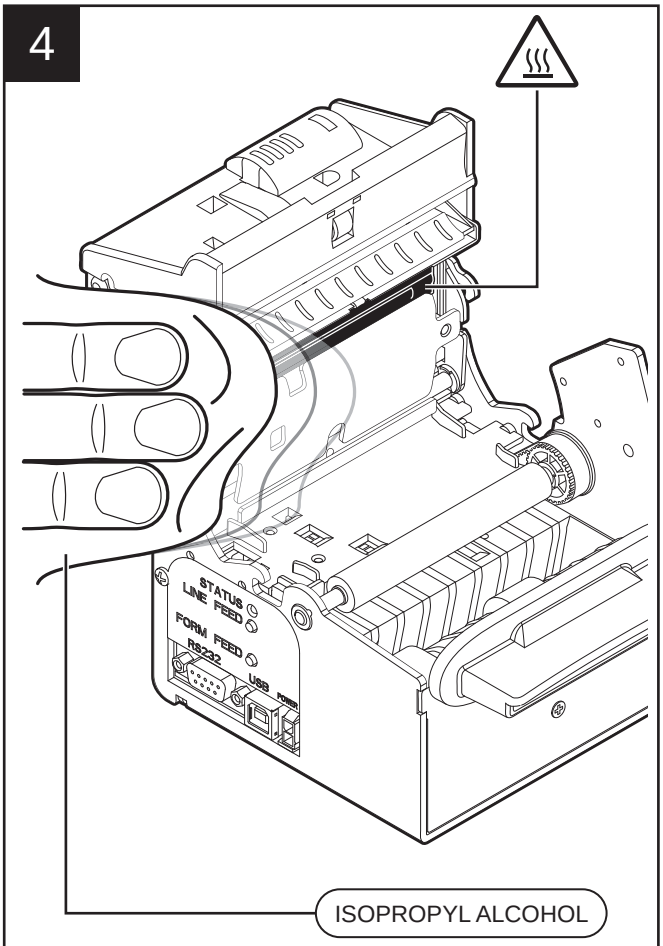
3

ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.



Rotate the printing group B
to the locking position.

4

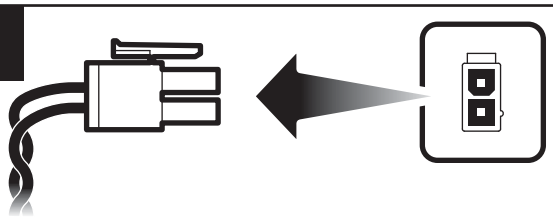


ATTENTION:
Do not use alcohol or hard brushes.
Do not let water or other liquids get inside the machine..

Clean the printing head by using a
soft cloth moistened with isopropyl

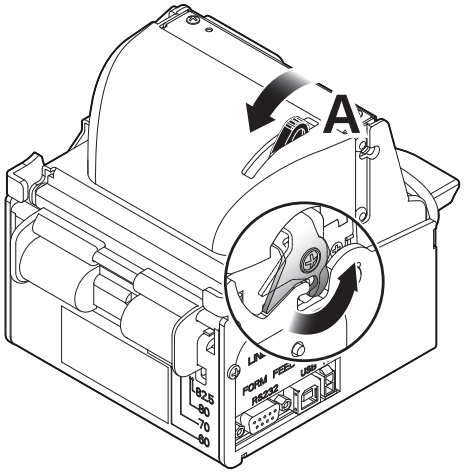
DRAGGING ROLLER

1



Disconnect the
power supply cable.

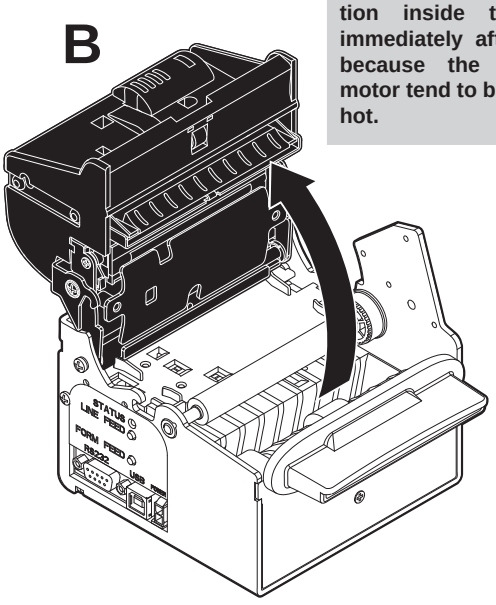
2



Unlock the printing group
by using the lever A

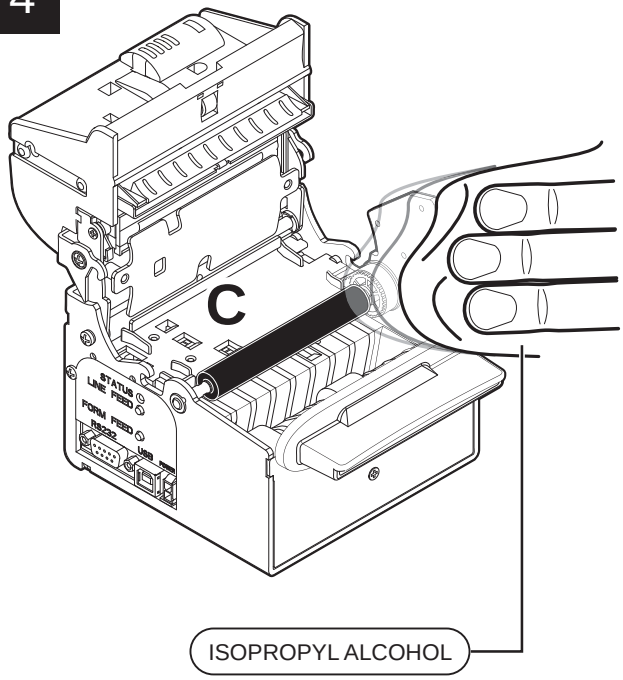
3

ATTENTION:
Do not touch the head heating line with bare hands or metal objects.
Do not perform any operation inside the printer immediately after printing because the head and motor tend to become very hot.



Rotate the printing group B
to the locking position.

4

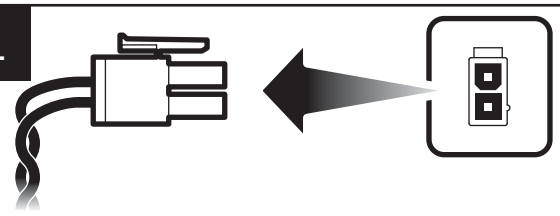


ATTENTION:
Do not use alcohol or hard brushes.
Do not let water or other liquids get inside the machine..

Clean the dragging roller C by using
a soft cloth moistened with isopropyl.

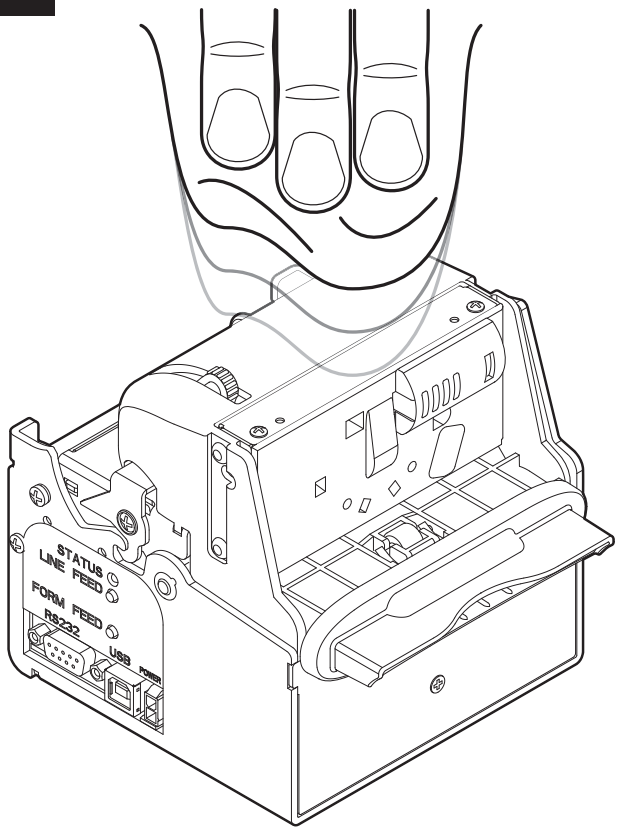
CASE

1



Disconnect the
power supply cable.

2



ATTENTION:
Do not use alcohol, solvents, or hard brushes.
Do not let water or other liquids get inside the machine.

To clean the machine,
use pneumatic air or soft cloth.

6.3 Upgrade firmware

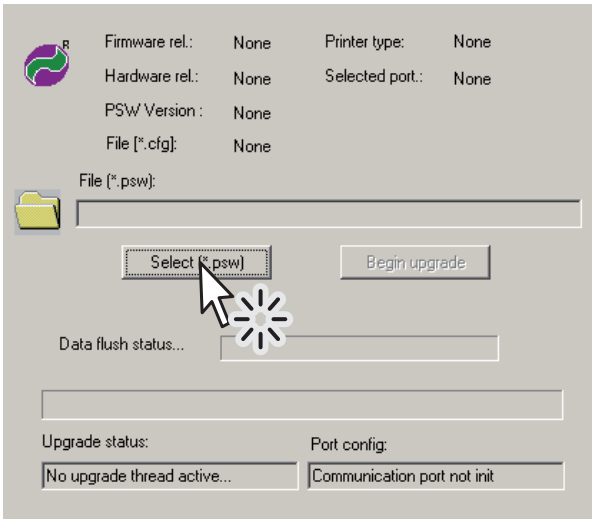
WARNING: During communication between PC/ printer for the firmware update it is strictly forbidden to disconnect the communication cable or to remove the power supply of the devices not to endanger the proper functioning of the printer.

Note: Install on the PC used for printer upgrading the UPGCEPRN software available in the download area of the web site www.custom.biz.

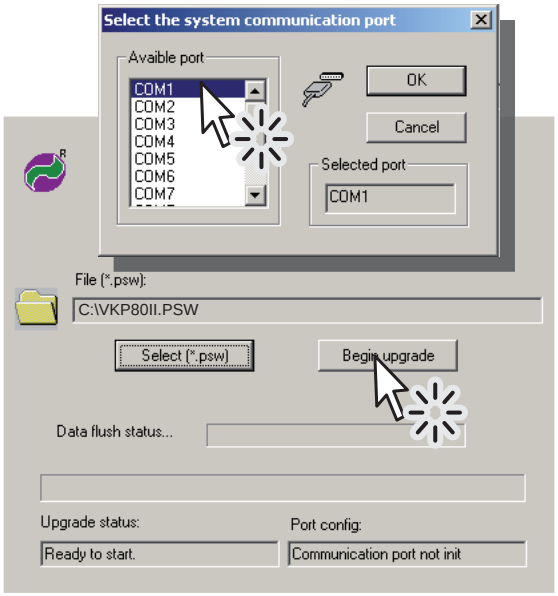
UPDATE VIA SERIAL INTERFACE

Proceed as follows:

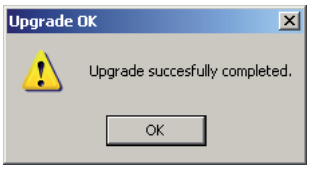
1. Write down the product code (14 digits) printed on the product label (see par. 2.2).
2. Go to the web site www.custom.biz and download the appropriate firmware release from the DOWNLOAD area.
3. Print the SETUP report (see chapter 5).
4. Switch OFF the printer.
5. Connect the printer to the PC using a USB cable or a serial cable (see paragraph 3.3).
6. Switch ON the printer.
7. Start the software UPGCEPRN.
8. Select the update file .PSW location :



9. Select the serial communication port (ex. COM1):



10. Detecting and setting of the parameters necessary for serial communication are performed automatically and then updating begins.
11. After a few minutes a message on the screen warns that the update is completed.



12. Print a new SETUP report to verify the new firmware release (see chapter 5).

UPDATE VIA USB INTERFACE

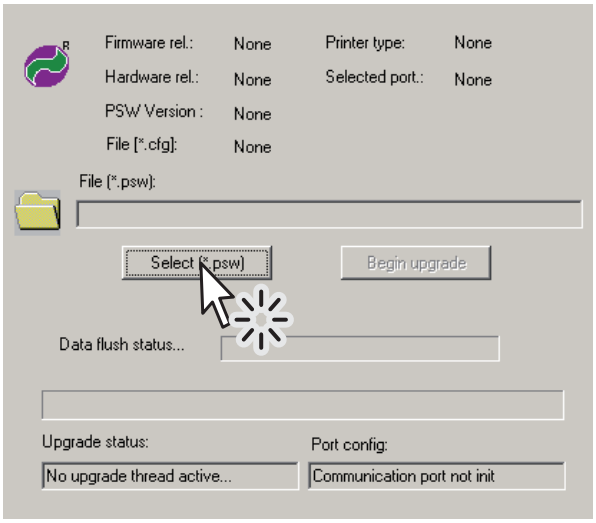
ATTENTION: Only during the firmware update, the connection between PC and printer must be direct, without the use of wireless HUB.

ATTENTION: Only during the firmware update, do not connect or disconnect other USB devices.

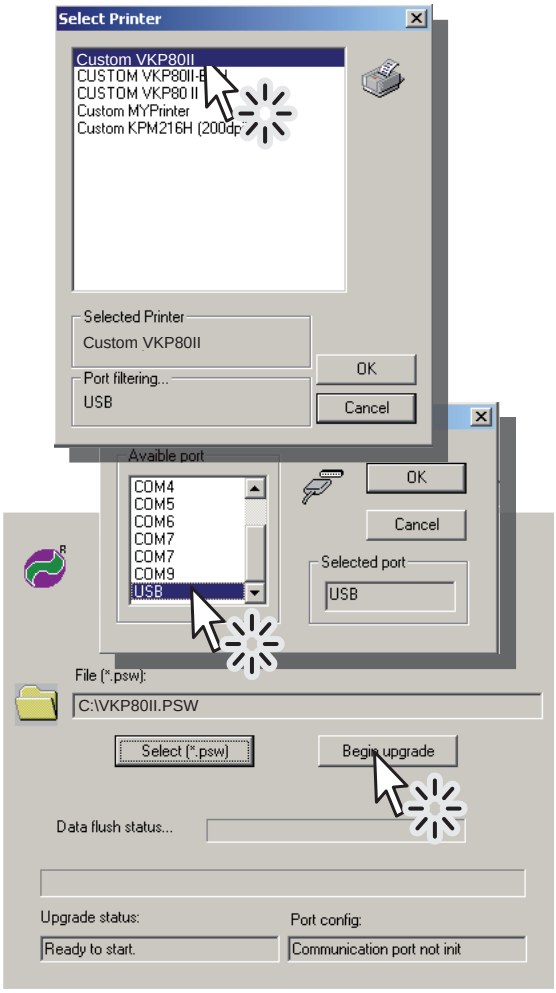
NOTE: For communication via USB you must install on PC the printer driver available in the download area of the web site www.custom.biz.

Proceed as follows:

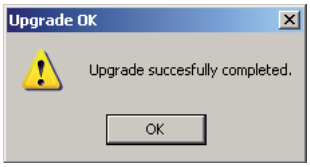
1. Write down the product code (14 digits) printed on the product label (see par. 2.2).
2. Go to the web site www.custom.biz and download the appropriate firmware release from the DOWNLOAD area.
3. Print the SETUP report (see chapter 5).
4. Switch OFF the printer.
5. Connect the printer to the PC using a USB cable or a serial cable (see paragraph 3.3).
6. Switch ON the printer.
7. Start the software UPGCEPRN.
8. Select the update file .PSW location :



9. Select item USB and then select the USB device among those proposed (ex. VKP80II):



10. After a few minutes a message on the screen warns that the update is completed.



11. Print a new SETUP report to verify the new firmware release (see chapter 5).

7 SPECIFICATIONS

7.1 Hardware specifications

GENERAL	
Sensors	Printing head temperature, notch presence, paper presence, paper presence on output, printing unit open, (near paper end on external paper roll holder optional)
Emulations	ESC/POS™
INTERFACES	
RS232 serial connector	from 1200 to 115200 bps
USB connector	12 Mbit/sec
MEMORIES	
Flash memory	384 Kbytes
Receive buffer	16 Kbytes
Graphic memory	2 logos of 608 x 862 (for 80/82.5 mm paper width)
PRINTER	
Resolution	203 DPI (8 dot/mm)
Printing method	thermal, fixed head
Printing mode	normal, 90°, 180°, 270°
Printing format	height/width from 1 to 8, bold, reverse, underlined, italic
Character fonts	PC437, PC850, PC860, PC863, PC865, PC858 (euro)
Printing speed	High quality = 80 mm/sec Normal = 180 mm/sec High speed = 220 mm/sec
PAPER	
Type of paper	Thermal rolls, thermal side on outside of roll
Recommended types of paper (1)	from 55 g/m^2 to 110 g/m^2 *(KANZAN)*
Paper width (2)	from 60 mm to 82,5 mm
External roll diameter	max 180 mm (4) upper fixing : max 150 mm (5) rear or lower fixing : max 180 mm (5)
Internal roll core diameter	25 mm
Core type	Cardboard or plastic

ELECTRICAL SPECIFICATIONS VKP80II	
Power supply	24 Vdc ±10% (optional external power supply)
Medium consumption (6) (7)	1 A
Stand-by consumption (6)	0,04 A
ELECTRICAL SPECIFICATIONS POWER SUPPLY cod.963GE020000003 (OPTIONAL)	
Power supply voltage	from 100Vac to 240Vac
Frequence	from 50Hz to 60Hz
Current (output)	24 Vdc ± 10%
Power	60 W
ENVIRONMENTAL CONDITIONS	
Operating temperature	from -20°C to +70°C ±10%
Relative humidity	from 10% Rh to 80% Rh
Storage temperature	from -20 °C to +70 °C
Storage relative humidity	from 10% Rh to 90% Rh

NOTES:
(1) : For paper from 90 g/m^2 to 110 g/m^2 enable the dispenser continuous mode with command ($1D $65, see Command Reference).
(2) : For ticket width = 60mm do not exceed a max length of 250mm.
(3) : It's better to use an external shock absorber for rolls with a diameter higher than or equal to 100mm.
(4) : Referred to model with paper holder support.
(5) : Referred to model without paper holder support.
(6) : Referred to "Normal" value for "Current" parameter (see Printer Setup).
(7) : Referred to a standard CUSTOM receipt (L = 10cm, Density = 12,5% dots on).

7.2 Character specifications

ESC/POS™ EMULATION			
Character density	11 cpi	15 cpi	20 cpi
Number of columns	88	123	160
Printing speed			
Chars / sec	1760	2460	3200
Lines / sec	20	20	20
Characters (L x H mm)			
Normal	2,25 x 3	1,625 x 3	1,25 x 3

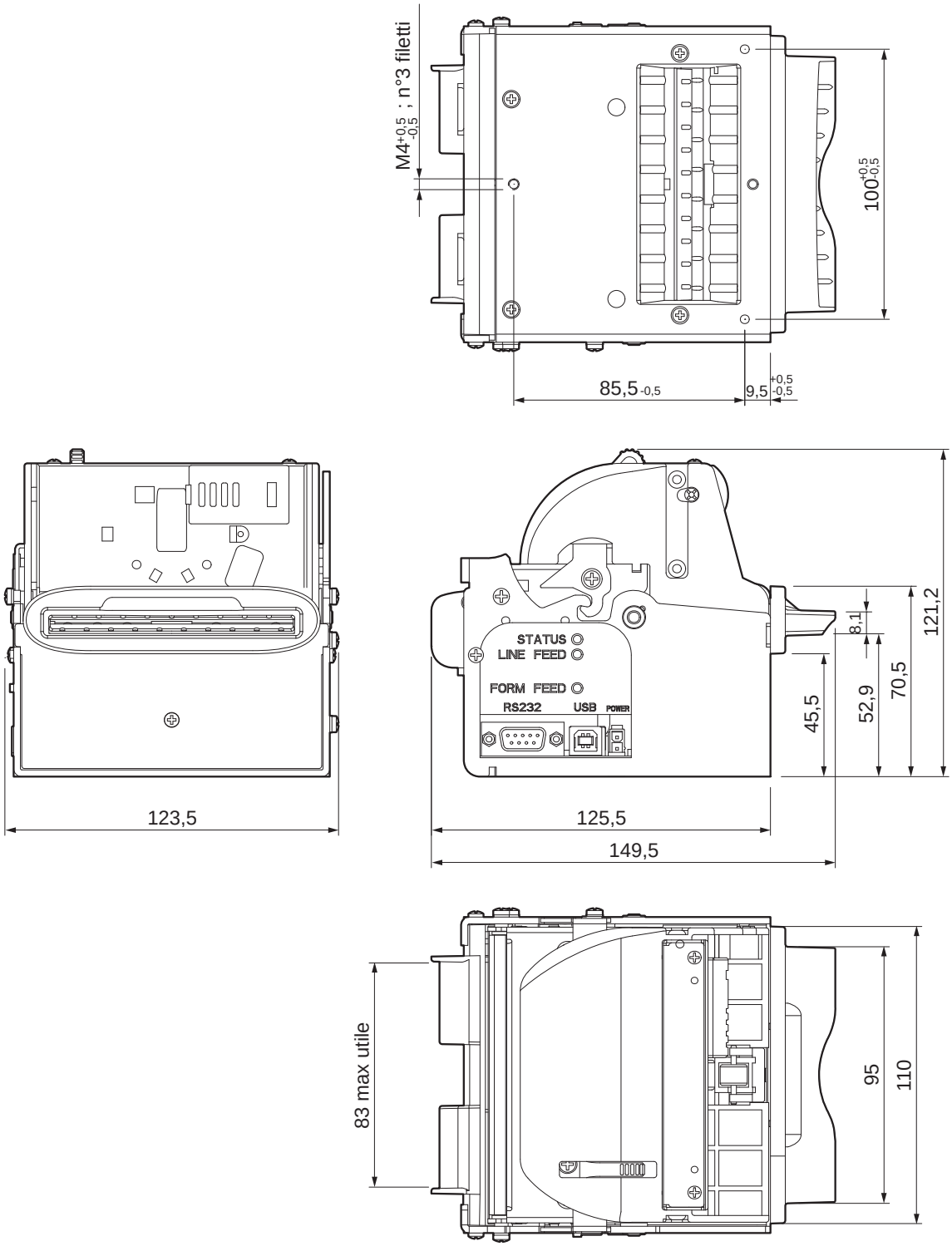
7.3 Ejector specifications

EJECTOR		
“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
	60 mm	10 mm
	> 80 mm	10 mm - 30 mm
	350 mm (1)	10 mm - 30 mm

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

7.4 Printer dimensions

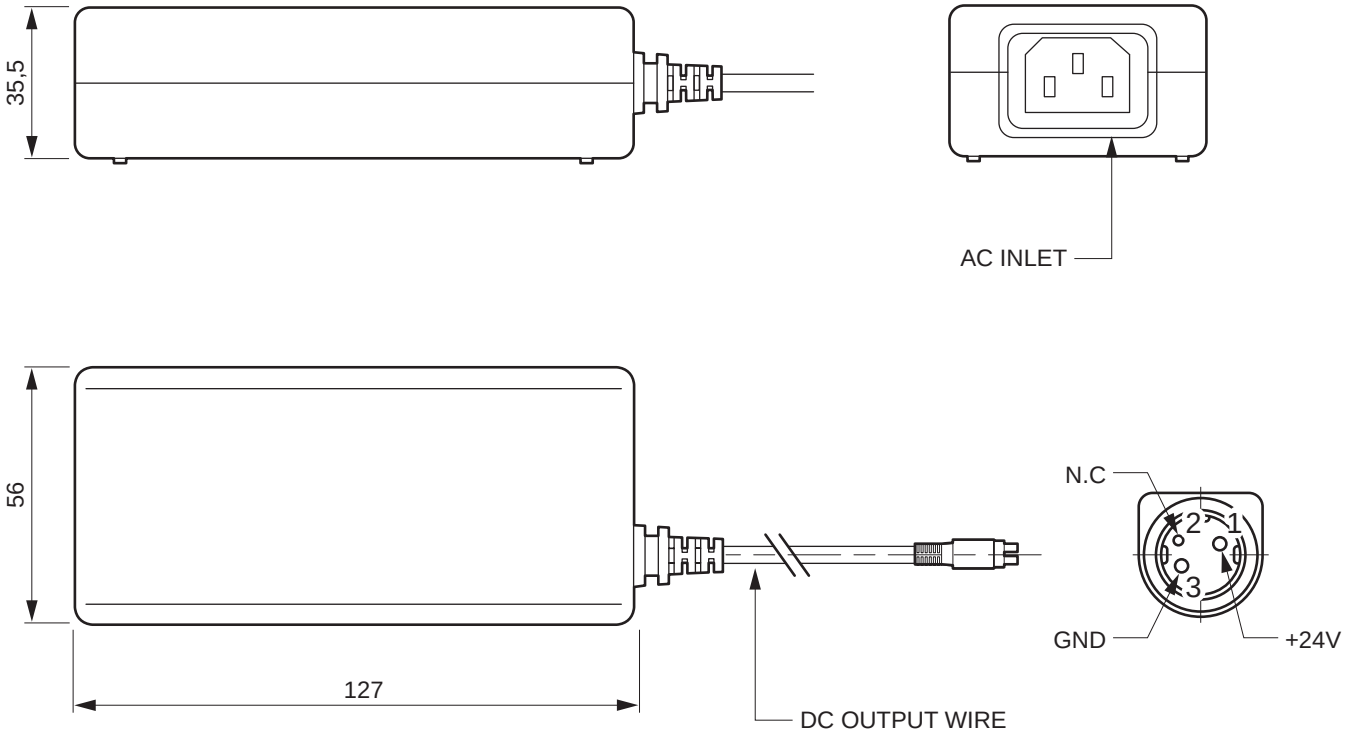
Length	149,5 mm
Height	121,2 mm
Width	123,5 mm
Weight	1600 g



NOTE: Referred to printer models without paper roll holder optional.

7.5 Power supply dimensions cod.963GE020000003 (optional)

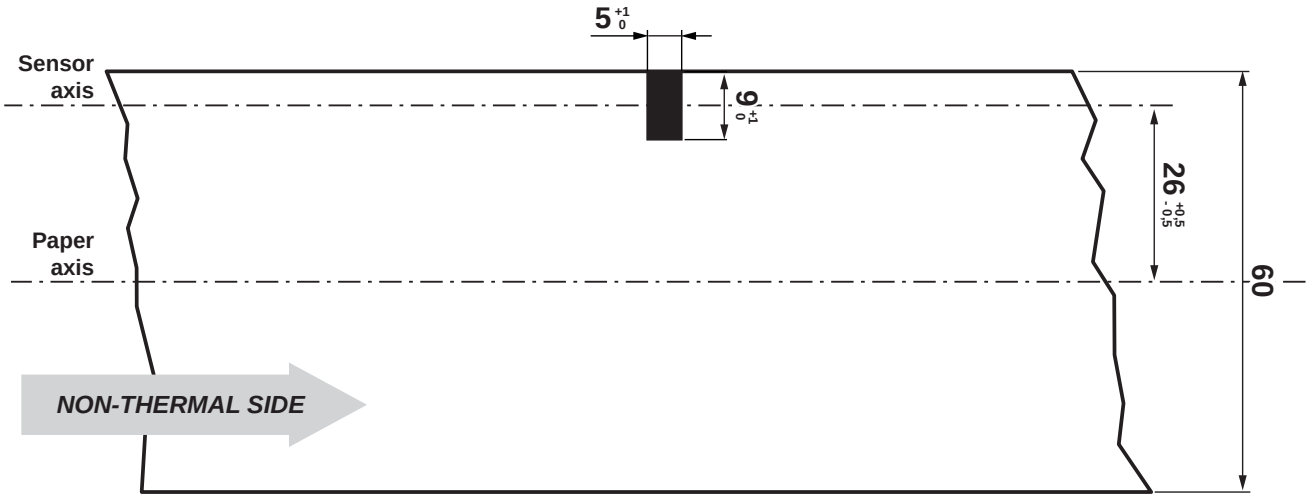
Length	127 mm
Height	35,5 mm
Width	56 mm



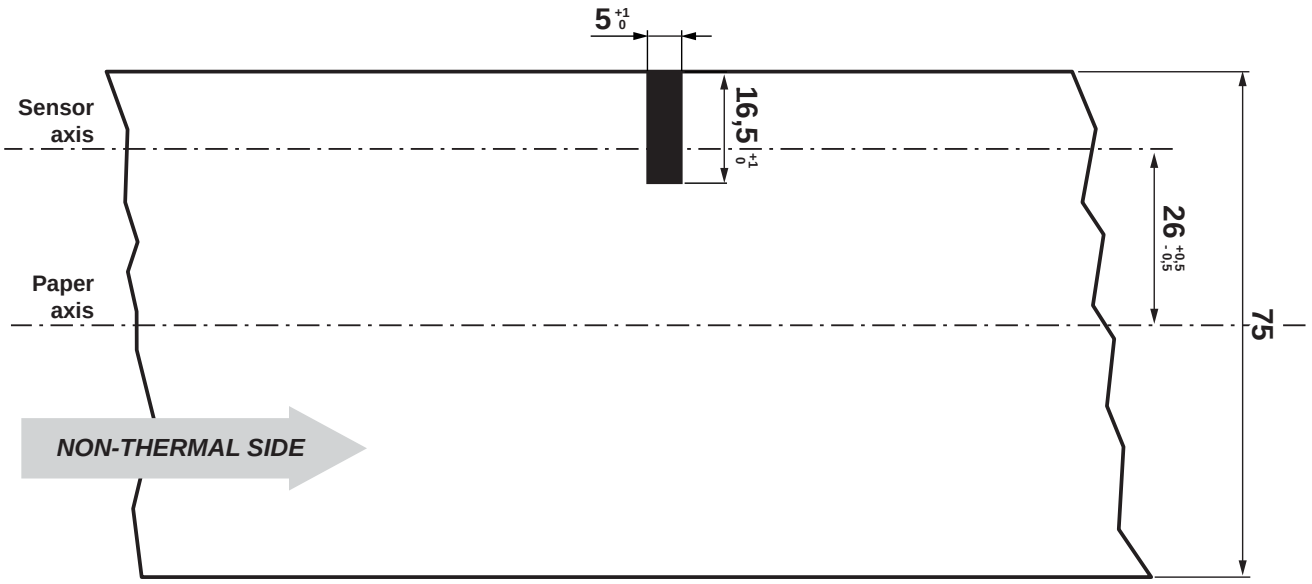
7.6 Paper specifications

The notch must be positioned on the non-thermal side of the paper as shown in the following figures, showing some example of paper with alignment notch depending on the paper width.

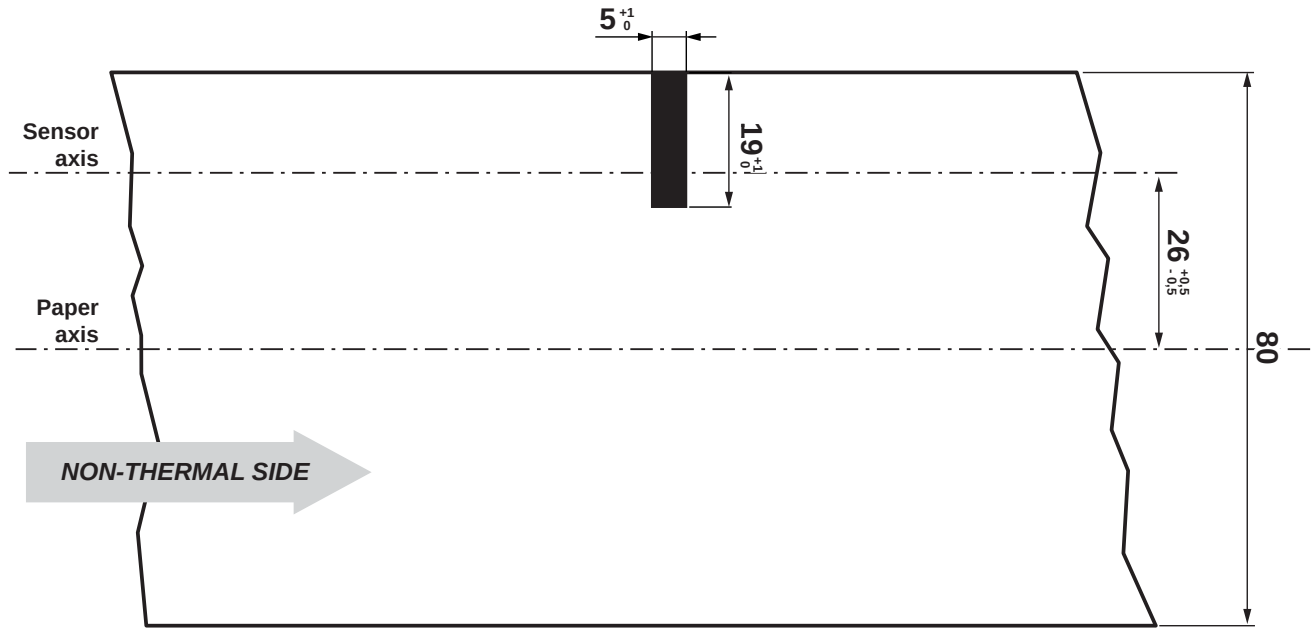
NOTCH ON 60mm PAPER



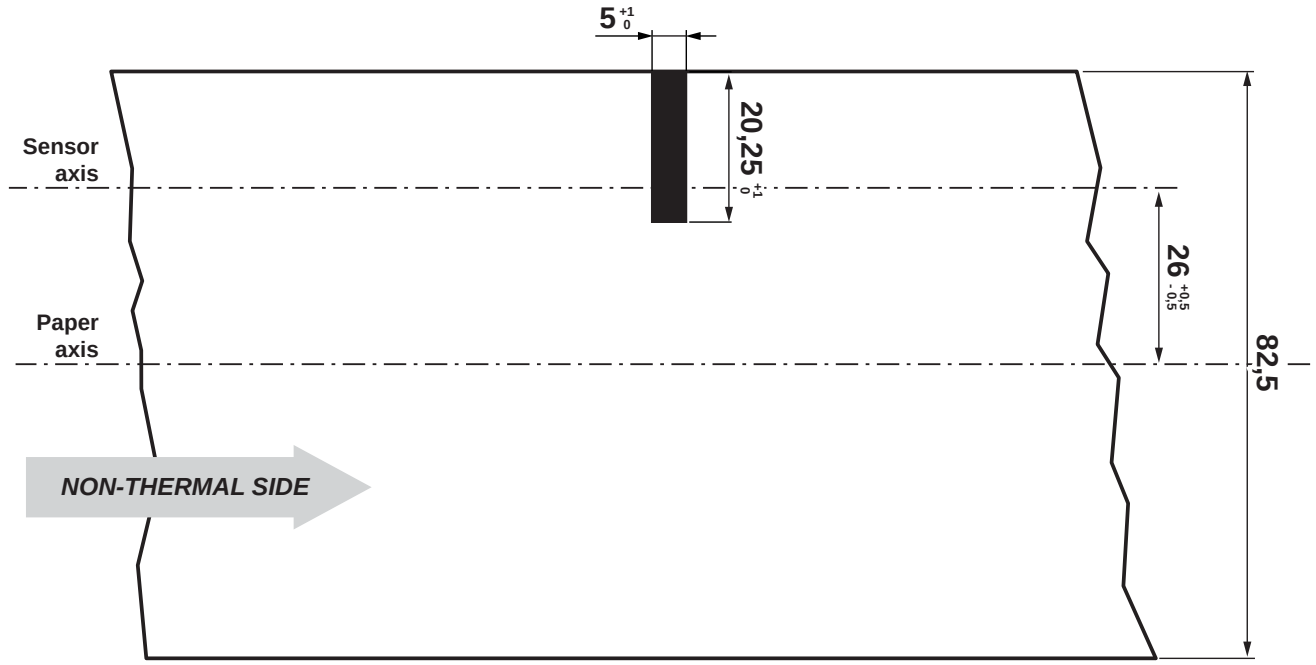
NOTCH ON 75mm PAPER



NOTCH ON 80mm PAPER



NOTCH ON 82,5mm PAPER



7.7 Western characters

The printer has 3 fonts of varying width (11, 15 and 20 cpi) which may be accessed through programming or control characters.
Each of these fonts offers the following code tables: PC437, PC850, PC860, PC863, PC865, PC858.

PC437 CODE TABLE (Usa, Standard Europe)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	¢	£	¥	Pts	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	▒	▒	▓	|	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▄	▌	▐	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	ⁿ	²	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC850 CODE TABLE (Multilingual)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	░	▒	▓	|	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	ð	Ð	Ê	Ë	È	ı	Í	Î	Ï	┘	┌	▉	▄	¦	Ì	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	¯	´
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	SHY	±	‗	¾	¶	§	÷	¸	°	¨	·	¹	³	²	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC860 CODE TABLE (Portuguese)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ã	à	Á	ç	ê	Ê	è	Í	Ô	ì	Ã	Â
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	À	È	ô	ö	ò	Ú	ù	Ì	Õ	Ü	¢	£	Ù	Pts	Ó
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	Ò	¬	½	¼	¡	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	▒	▒	▓	┃	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▄	▌	▐	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	n	2	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC863 CODE TABLE (Canadian, French)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	Â	à	¶	ç	ê	ë	è	ï	î	‗	À	§
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	È	Ê	ô	Ë	Ï	û	ù	¤	Ô	Ü	¢	£	Ù	Û	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	¦	´	ó	ú	¨	¸	³	¯	Î	⌐	¬	½	¼	¾	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▄	▌	▐	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	n	2	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

PC865 CODE TABLE (Nordic)

Char	SP	!	“	#	$	%	&	‘	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	Pts	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	⌐	¬	½	¼	¡	«	¤
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	░	▒	▓	│	┤	╡	╢	╖	╕	╣	║	╗	╝	╜	╛	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	╞	╟	╚	╔	╩	╦	╠	═	╬	╧
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	╨	╤	╥	╙	╘	╒	╓	╫	╪	┘	┌	▉	▄	▌	▐	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	≡	±	≥	≤	⌠	⌡	÷	≈	°	∙	·	√	ⁿ	²	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

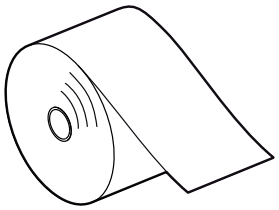
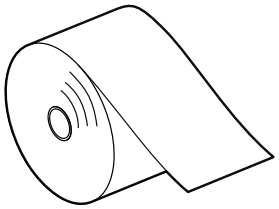
PC858 CODE TABLE (Euro symbol)

Char	SP	!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
Hex	0020	0021	0022	0023	0024	0025	0026	0027	0028	0029	002A	002B	002C	002D	002E	002F
Dec	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Char	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
Hex	0030	0031	0032	0033	0034	0035	0036	0037	0038	0039	003A	003B	003C	003D	003E	003F
Dec	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
Char	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Hex	0040	0041	0042	0043	0044	0045	0046	0047	0048	0049	004A	004B	004C	004D	004E	004F
Dec	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
Char	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
Hex	0050	0051	0052	0053	0054	0055	0056	0057	0058	0059	005A	005B	005C	005D	005E	005F
Dec	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
Char	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
Hex	0060	0061	0062	0063	0064	0065	0066	0067	0068	0069	006A	006B	006C	006D	006E	006F
Dec	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
Char	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	⌂
Hex	0070	0071	0072	0073	0074	0075	0076	0077	0078	0079	007A	007B	007C	007D	007E	007F
Dec	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Char	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
Hex	0080	0081	0082	0083	0084	0085	0086	0087	0088	0089	008A	008B	008C	008D	008E	008F
Dec	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
Char	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
Hex	0090	0091	0092	0093	0094	0095	0096	0097	0098	0099	009A	009B	009C	009D	009E	009F
Dec	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
Char	á	í	ó	ú	ñ	Ñ	ª	º	¿	®	¬	½	¼	¡	«	»
Hex	00A0	00A1	00A2	00A3	00A4	00A5	00A6	00A7	00A8	00A9	00AA	00AB	00AC	00AD	00AE	00AF
Dec	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
Char	▒	▒	▓	|	┤	Á	Â	À	©	╣	║	╗	╝	¢	¥	┐
Hex	00B0	00B1	00B2	00B3	00B4	00B5	00B6	00B7	00B8	00B9	00BA	00BB	00BC	00BD	00BE	00BF
Dec	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
Char	└	┴	┬	├	─	┼	ã	Ã	╚	╔	╩	╦	╠	═	╬	¤
Hex	00C0	00C1	00C2	00C3	00C4	00C5	00C6	00C7	00C8	00C9	00CA	00CB	00CC	00CD	00CE	00CF
Dec	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
Char	ð	Ð	Ê	Ë	È	€	Í	Î	Ï	┘	┌	▉	▄	¦	Ì	▀
Hex	00D0	00D1	00D2	00D3	00D4	00D5	00D6	00D7	00D8	00D9	00DA	00DB	00DC	00DD	00DE	00DF
Dec	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
Char	Ó	ß	Ô	Ò	õ	Õ	µ	þ	Þ	Ú	Û	Ù	ý	Ý	¯	´
Hex	00E0	00E1	00E2	00E3	00E4	00E5	00E6	00E7	00E8	00E9	00EA	00EB	00EC	00ED	00EE	00EF
Dec	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Char	SHY	±	‗	¾	¶	§	÷	¸	°	¨	·	¹	³	²	■	NBSP
Hex	00F0	00F1	00F2	00F3	00F4	00F5	00F6	00F7	00F8	00F9	00FA	00FB	00FC	00FD	00FE	00FF
Dec	240	241	242	243	244	245	246	247	248	249	250	251	252	253	251	255

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

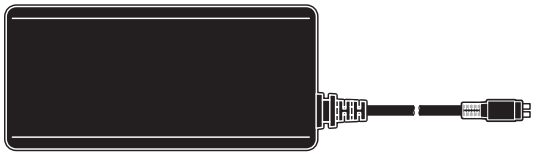
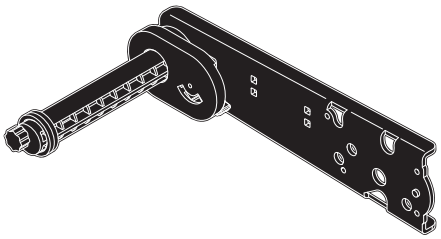
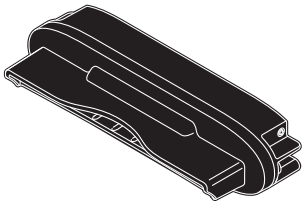
8 CONSUMABLES

The following table shows the list of available consumables for device:

DESCRIPTION	CODE
THERMAL PAPER ROLL WITH BACK SIDE PRE-PRINTED weight = 58g/m^2 width = 80mm Ø external = 48mm Ø core = 25mm	**67300000000395** 
THERMAL PAPER ROLL weight = 58g/m^2 width = 80mm Ø external = 130mm Ø core = 25mm	**67300000000380** 

9 ACCESSORIES

The available accessories for the device are listed in the following table:

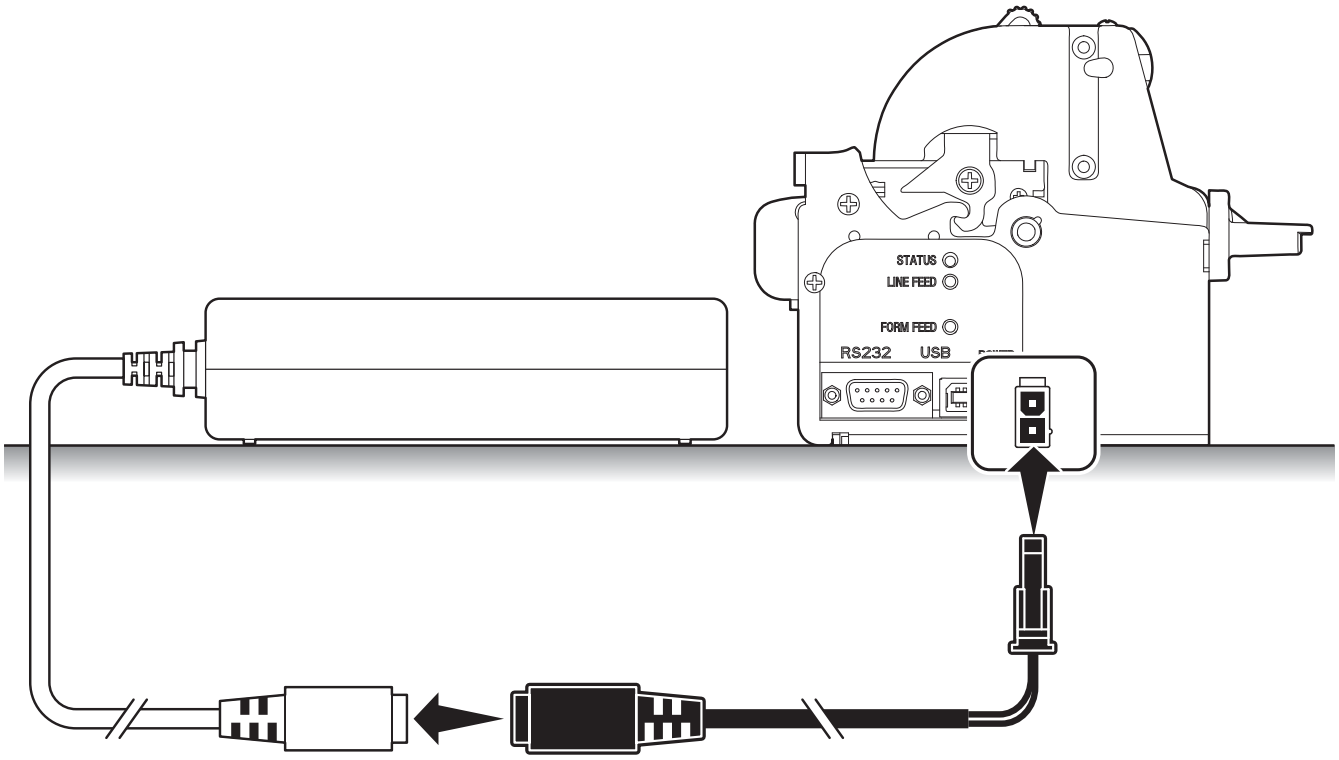
DESCRIPTION	CODE
POWER SUPPLY (for technical specifications, see paragraphs 7.1 and 7.5)	**963GE020000003** 
ADAPTER CABLE FOR POWER SUPPLY (see the paragraph 9.1)	**26900000000005** 
PAPER ROLL HOLDER WITH NEAR PAPER END SENSOR to assemble on the left side of the device (see the paragraph 9.2)	**974DW010000318** 
“SHUTTER” DEVICE KIT (see the paragraph 9.3)	**976DX010000001** 

9.1 Adapter cable for power supply

For the device is available an adapter cable (cod. 26900000000005) supplied as an accessory, for connecting the printer to the external power supply unit (cod. 963GE020000003 - optional).

ASSEMBLY INSTRUCTIONS

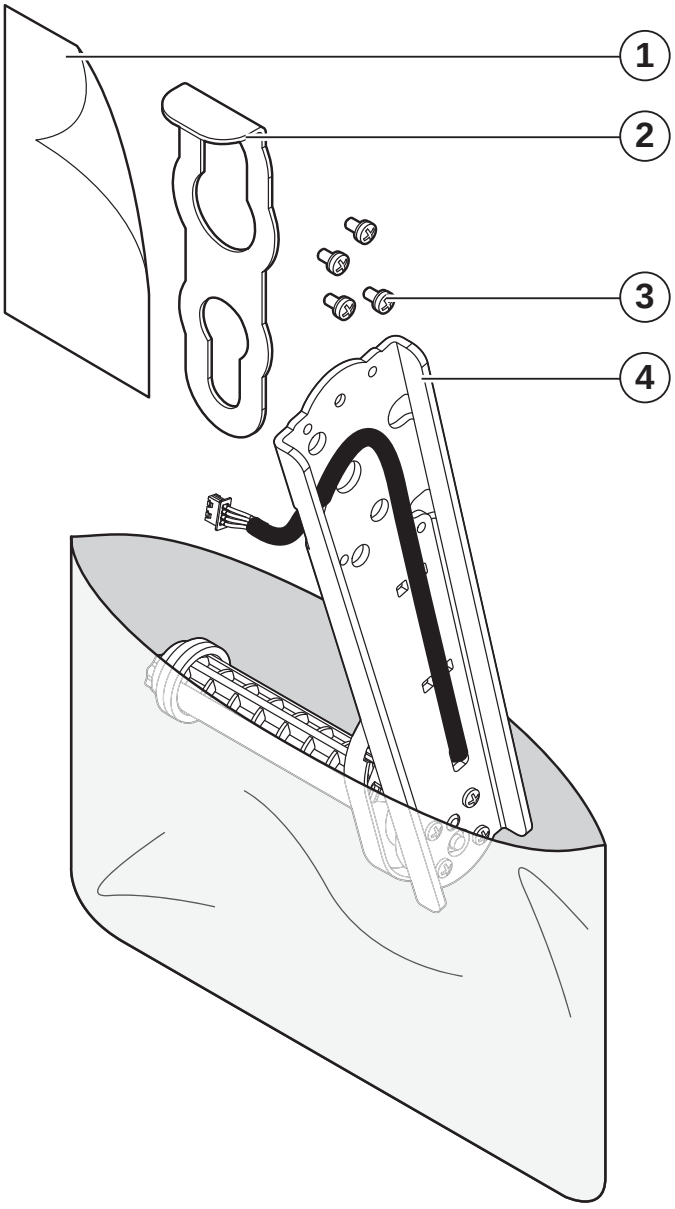
Connect the adapter cable to the power supply unit as follows:



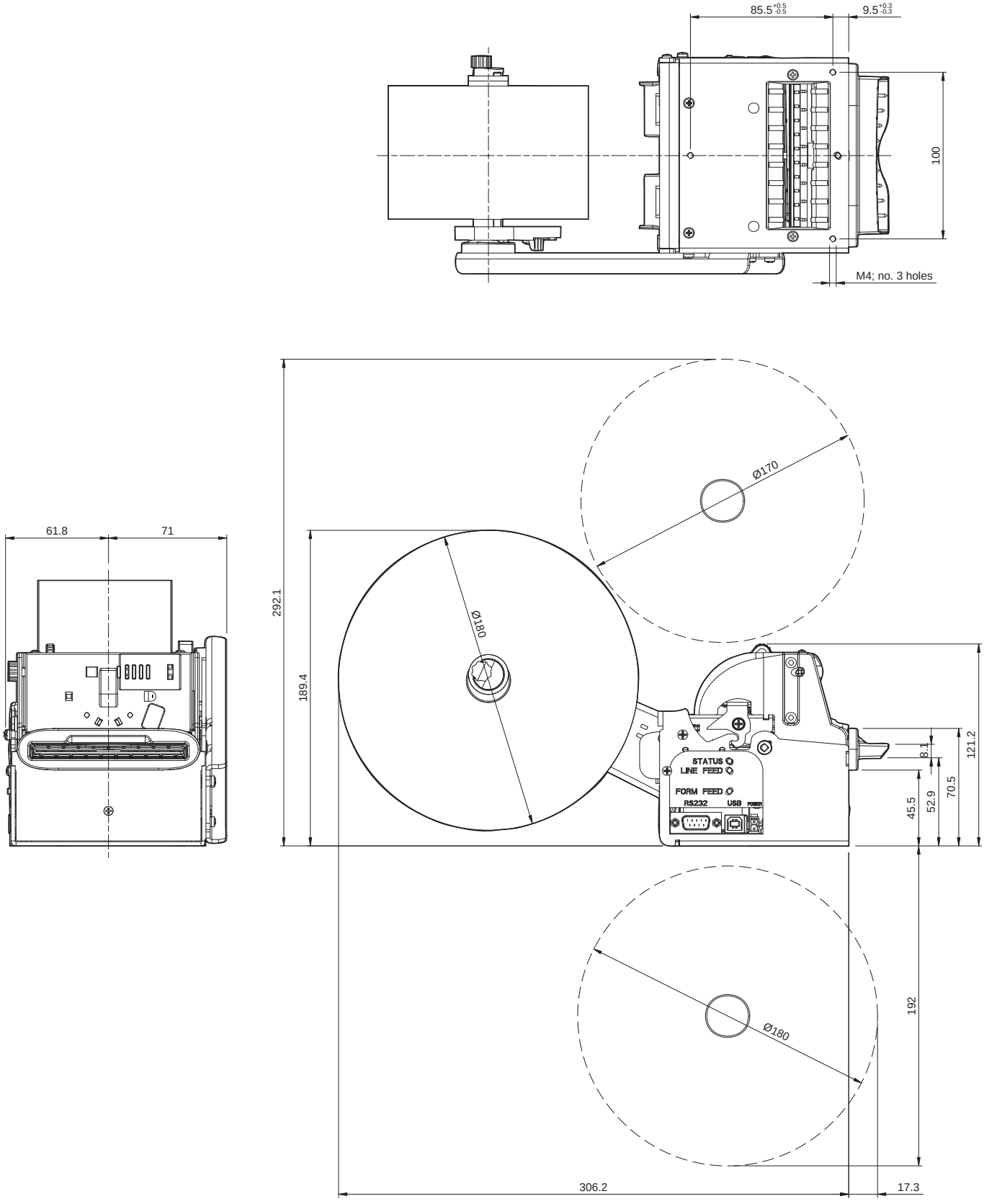
9.2 Paper roll holder

A paper roll holder kit (cod.974DW010000318) is available for the printer to make it possible to use larger-width rolls of paper.
The paper roll holder can be only assembled on the left side of the printer as shown in the following figures.

The kit includes (see figure):
1. Instruction sheet
2. Tie for roll blocking
3. No. 4 fastening screws
4. Paper holder support with near paper end sensor and regulating system for paper width.



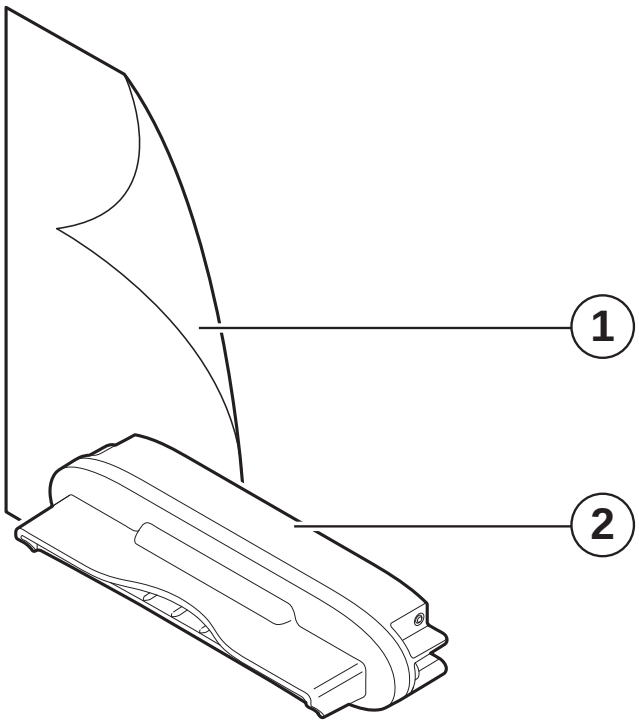
The following figure shows the printer dimensions with the paper roll holder assembled:



9.3 “Shutter” device

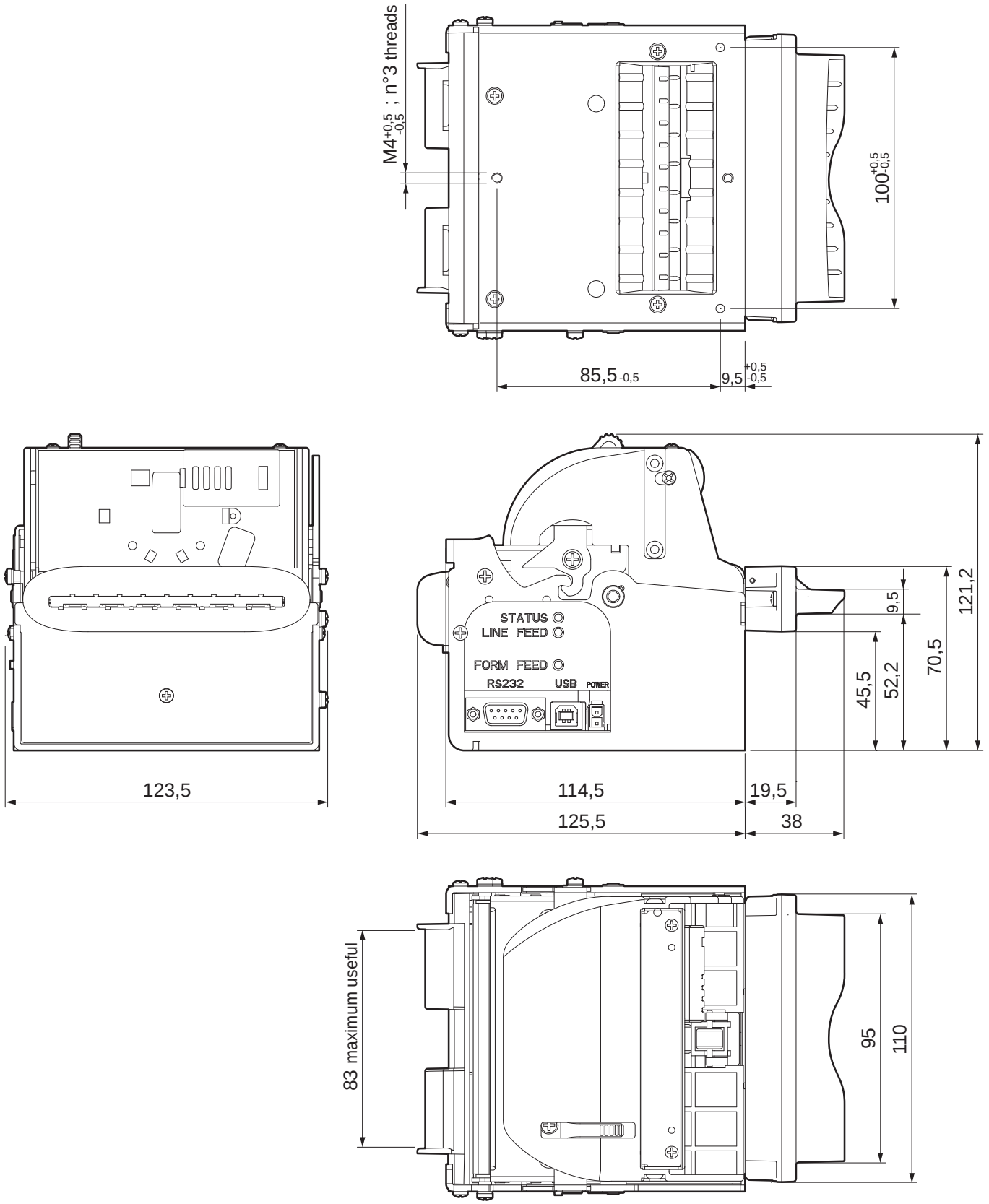
A “shutter” device (cod.976DX010000001) is available for the printer. This device prevents the insertion of paper or foreign objects into the outlet of the paper.

The kit includes (see figure):
1. Instruction sheet
2. “Shutter” group



NOTE: To assemble the kit refer to the instruction sheet enclosed with the kit.

The following figure shows the printer dimensions with the “shutter” device assembled:



10 ALIGNMENT

Device is provided with sensors for the use of alignment notch in order to handle roll of tickets with pre-printed fields and a fixed length.

The alignment sensors assembled on printer, are “reflection” sensors: this kind of sensor 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, considering that the light is reflected by the white paper and absorbed by the black mark.

The following paragraphs show how to correctly set the configuration parameters of device in order to assure the alignment.

10.1 Enable alignment

To guarantee the alignment, it is necessary to enable the parameter “Notch Alignment” during the Setup procedure (see chapter 5).

10.2 Calibration

The sensor calibration occurs automatically and consists in adjusting the quantity of light emitted to match the degree of whiteness of the paper used and the degree of black of the mark printed on paper.

The device automatically performs the self-calibration during the Setup procedure only if the “Notch Alignment” parameter is set to “Enabled” value (see chapter 5).

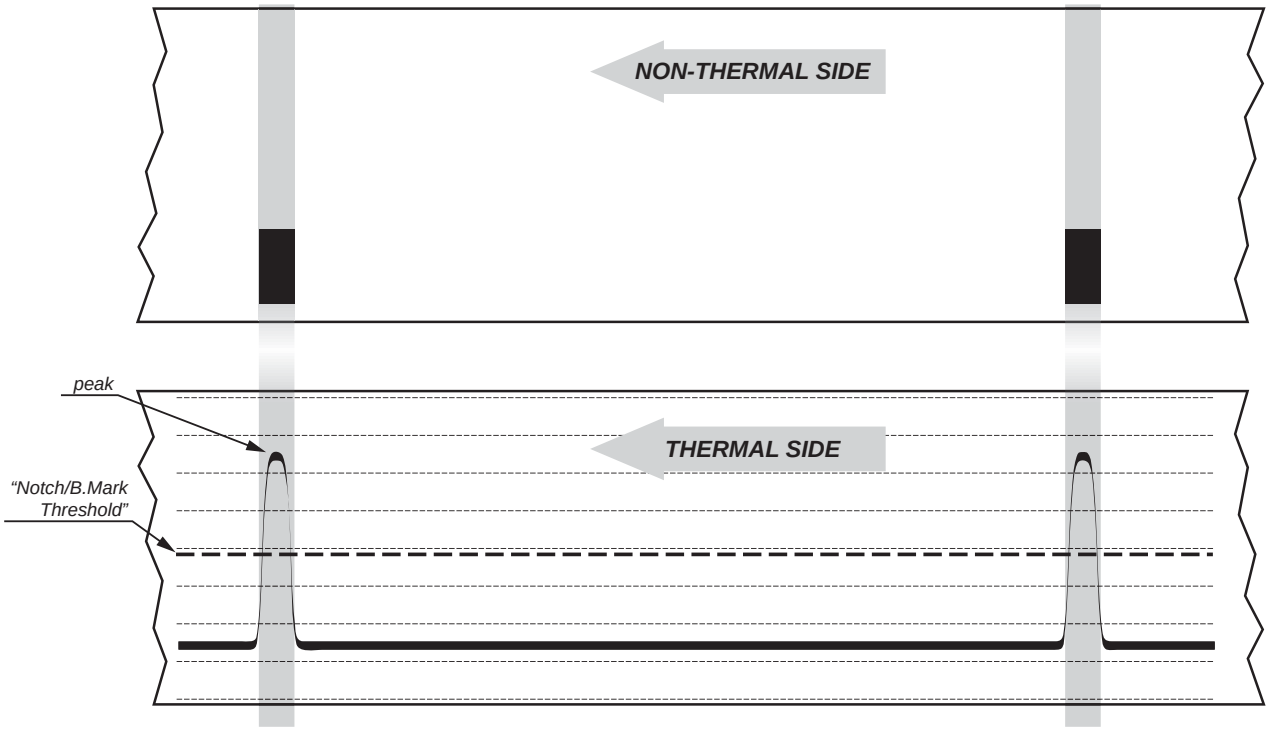
When self-calibration starts, the device performs some paper feeds and then it prints the calibration result and the value (numeric and as a percentage) of the *“Threshold White”* parameter that indicates the power-up level of the sensor emitting side (the value ranges from 0V to 5V):

Autosetting Notch : OK
Threshold White : 1,9V [39%]

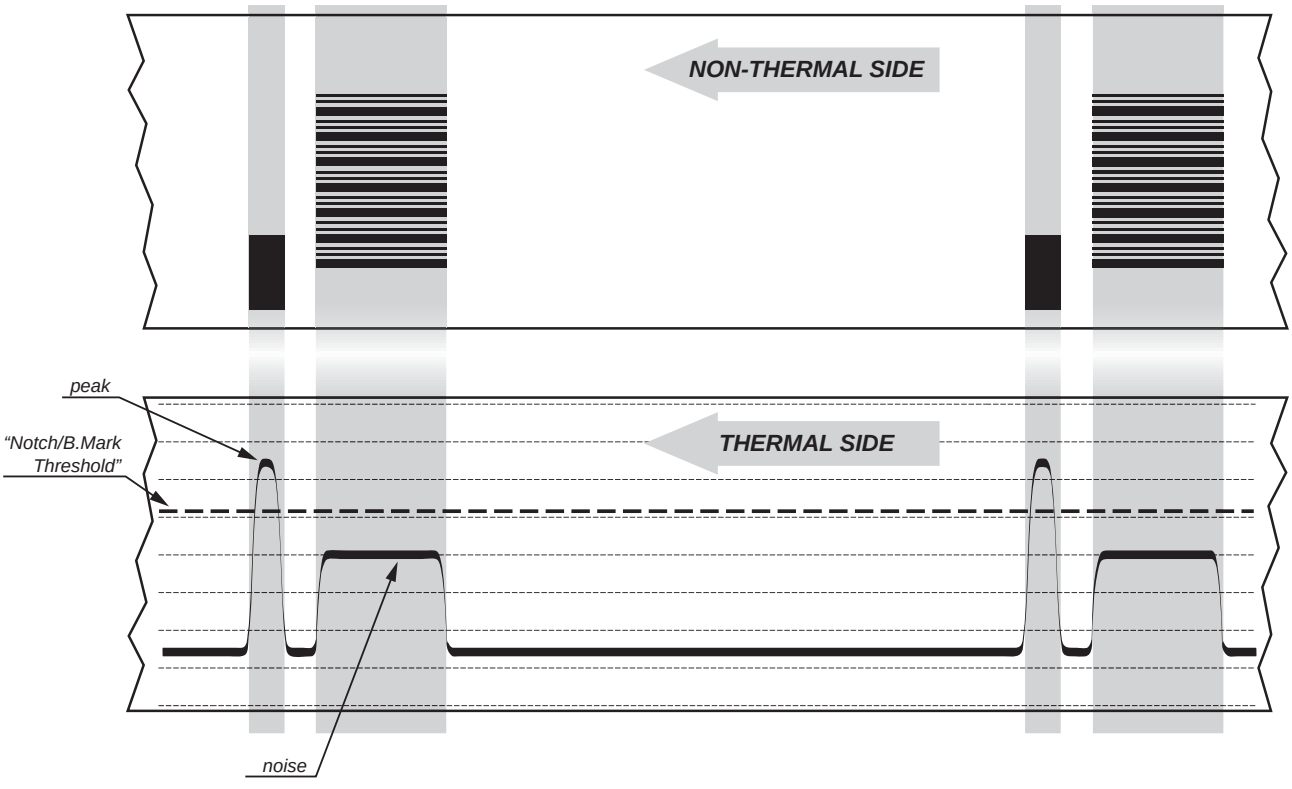
The “Autosetting Notch” parameter indicates the result of the self-calibration procedure; OK will appear if it has been successful, NOT OK will appear if the procedure has failed.

After the printing of the procedure result, the device offers the execution of the function of paper characterization “Characterize Paper” and the change of the “Notch Threshold” parameter which represents the detection threshold of the notch.
Choosing the “Yes” value for the “Characterize Paper” parameter, the device prints a graphic representation (see following figures) of the outgoing voltage of the alignment sensor (expressed as a percentage) and the “Notch Threshold” value.
This graphic representation is useful to set the most suitable value to assign to the “Notch Threshold” parameter and then to better identify the optimal threshold value which takes into account the variations of the signal and the small oscillations around zero.

The following figure shows an example of paper with the non-thermal paper printed with black marks: the outgoing voltage is constant while passing the white paper between two notches and presents a peak at each black mark.
In this case, the optimal value for the “Notch Threshold” parameter is placed about half of the peak.



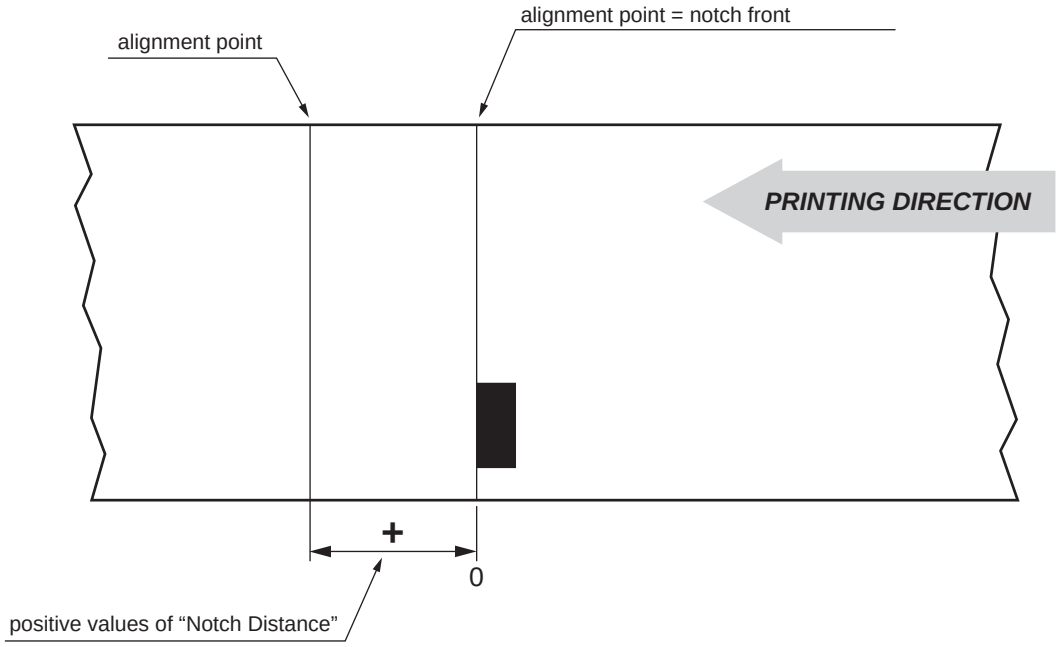
The following figure shows an example of paper with the non-thermal paper printed with black marks and other graphics (for example, a barcode): the outgoing voltage is constant while passing the white paper between two notches, presents a peak at each black mark and presents some “noise” at each barcode.
In this case, the optimal value for the “Notch Threshold” parameter is located about halfway between the peak value and the maximum value of the “noise”.



If the maximum value of “noise” read by the sensor is very close to the peak value, it might be difficult to place the value of the “Notch/B.Mark Threshold” at an intermediate point. In these cases, it is mandatory that the portion of paper between the point of printing end and the front notch is completely white (no graphics). In this way, the only next graphic detected by the sensor for alignment after the printing end will be the notch.

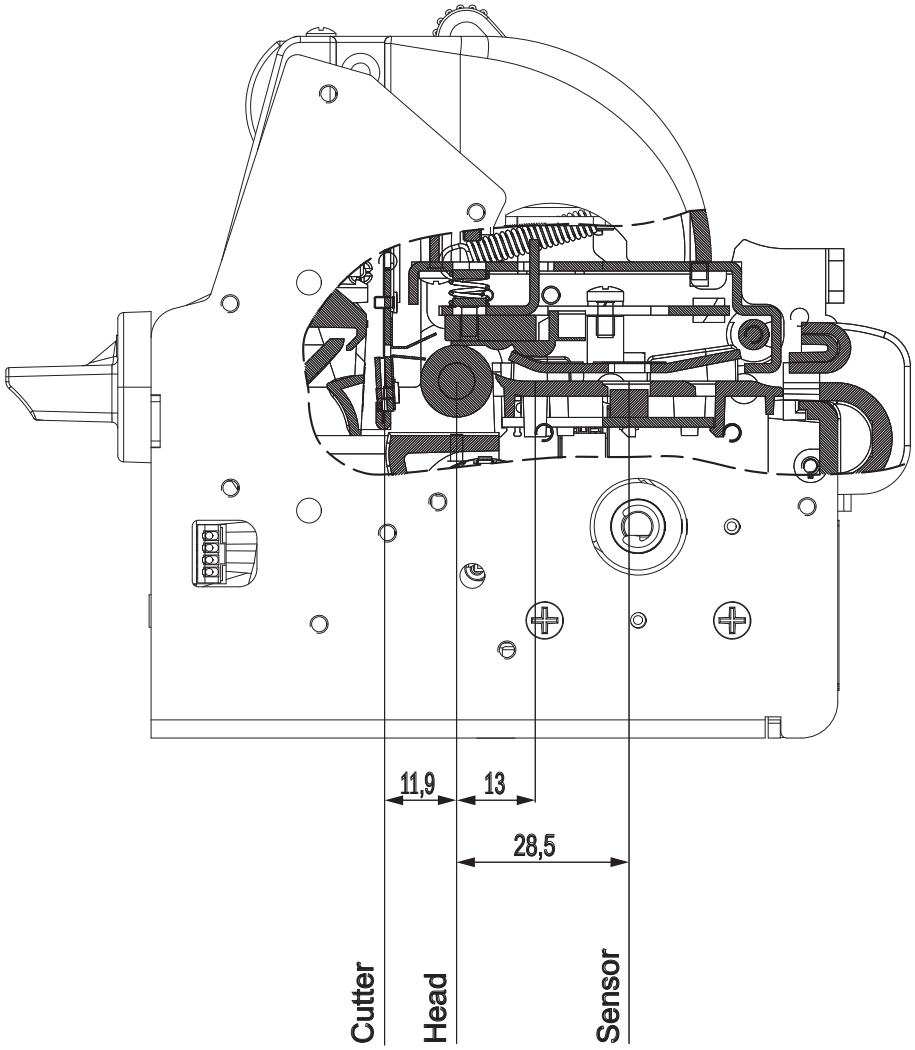
10.3 Alignment parameters

The “alignment point” is defined as the position inside the ticket to use for the notch alignment.
The distance between the notch edge and the alignment point is defined as “Notch Distance”.
If the “Notch Distance” value is set to 0, the alignment point is set at the beginning of the notch.



The value of “Notch Distance” varies from 0mm minimum and 32mm maximum (this value is fix according to the mechanical distance between notch sensor and printing head)

The following figure shows a section of the device with the distances between the alignment sensors, the printing head and the cutter (cutting line):



ESC/POS™ EMULATION

To define the alignment point you need to set the printer parameters that compose the numerical value of the “Notch Distance” parameter.
For example, to set a notch distance of 15 mm between the notch and the alignment point, the parameters must be set on the following values:

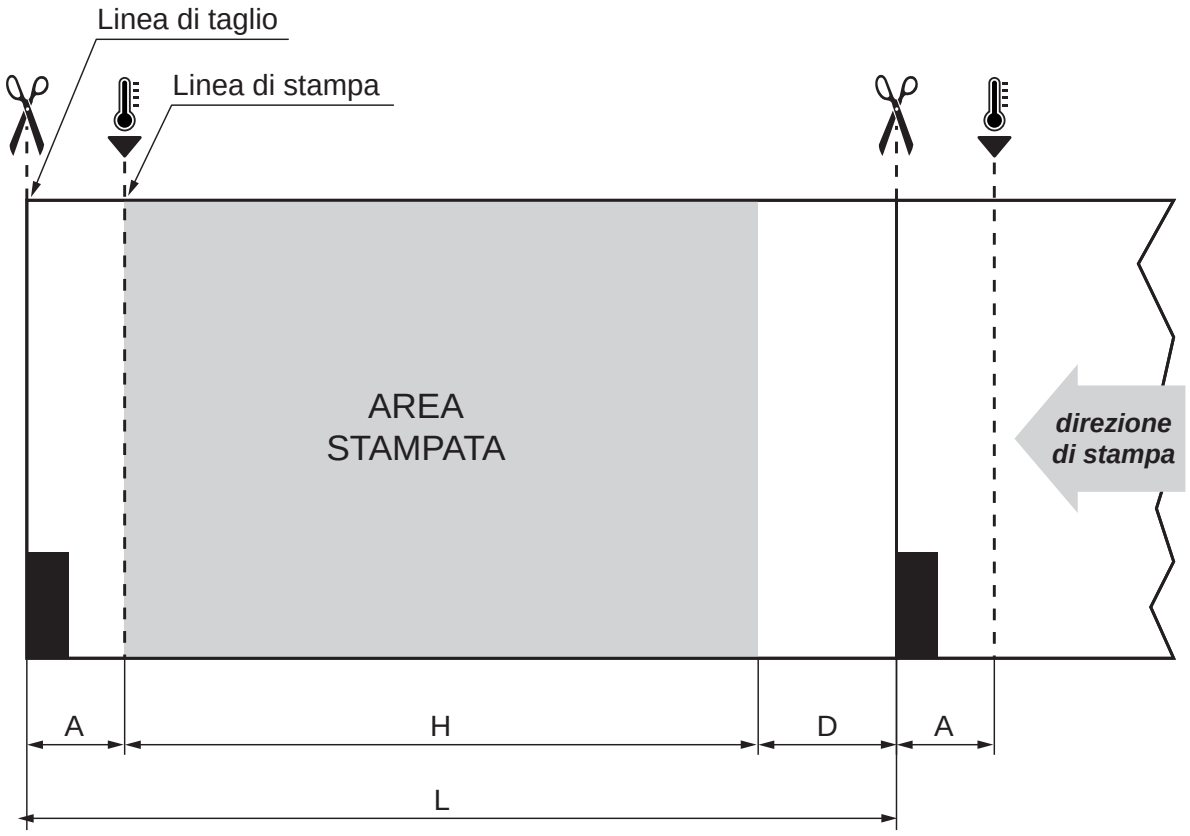
Notch Distance [mm x 10] : 1
Notch Distance [mm x 1] : 5

The “Notch Distance” parameter, may be modified as follows:
- during the Setup procedure of the device (see chapter 5)
- by using the $1D $E7 command (for more details, refer to the Commands Manual)
- by driver.

10.4 Printing area

It is important to well calibrate the height of the printing area of ticket according to the inter-notch distance, in order to print ticket containing only one notch and to not overlay printing to a notch (that will make it useless for the next alignment).

The following figure shows an example of tickets with “Notch Distance” set to 0:



A “Non-printable area” = “Distance between cutter/printing head” = 11,9mm (fixed distance)

H Distance between the first and the last print line, called “Height of the printing area”.

L Distance between an edge of the notch and the next one, called “Inter-notch distance”.

D Automatic feed for alignment at the next notch.

To use all the notches on the paper, you must comply with the following equation:

$$H + A \leq L$$

The height of the printing area (H) can be increased to make no progress on alignment (D = 0) but no further.

11 TECHNICAL SERVICE

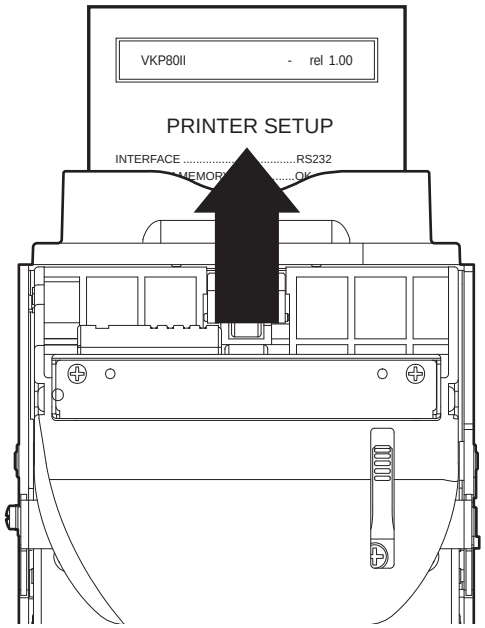
In case of failure, contact the Technical Service by sending an e-mail to support@custom.it detailing:
1. Product code
2. Serial number
3. Hardware release
4. Firmware release

To get the necessary data, proceed as follows:

1

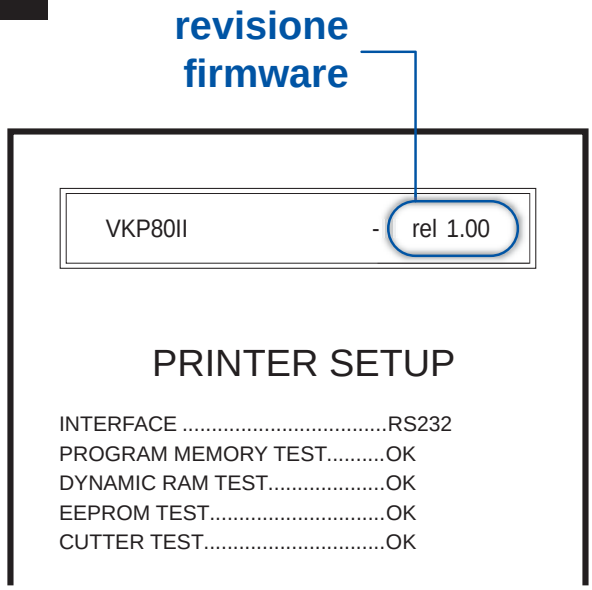
Write down the data printed
on the product label (see paragraph 2.2)

2



Print a Setup report
(see paragraph 5.2)

3



The Setup report shows
the firmware release

4

support@custom.it
Customer Service Department

Send an e-mail to the Technical Service,
with the data collected

Part Number : 7620000002900 Rev.1.60

CUSTOM ENGINEERING S.p.A.
World Headquarters
Via Berettine, 2 - 43010 Fontevivo, Parma ITALY
Tel. +39 0521 680111 - Fax +39 0521 610701
info@custom.biz - www.custom.biz