USER MANUAL

TL60III TL80III



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THE IMAGES USED IN THIS MAN-UAL ARE USED AS AN ILLUSTRA-TIVE 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 INSTRUCTIONS

CUSTOM 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.

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
- Do not fix indissolubly the device or its accessories such as power supplies unless specifically provided in this manual.
- When positioning the device, make sure cables do not get damaged.
- [Only OEM equipment] The equipment must be installed in a kiosk or system that provides mechanical, electrical and fire protection.
- The mains power supply must comply with the rules in force in the Country where you intend to install the equipment.
- 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.
- Make sure the power cable provided with the appliance, or that you intend to use is suitable with the wall socket available in the system.
- Make sure the electrical system that supplies power to the device is equipped with a ground wire and is protected by a differential switch.
- Before any type of work is done on the machine, disconnect the power supply.
- Use the type of electrical power supply indicated on the device label.
- These devices are intended to be powered by a separately certified power module having an SELV, non-energy hazardous output. (IEC60950-1 second edition).
- [Only POS equipment] The energy to the equipment must be provided by power supply approved by CUSTOM S.p.A.
- Take care the operating temperature range of equipment and its ancillary components.
- · 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.
- The equipment must be accessible on these components only to trained, authorized personnel
- Periodically perform scheduled maintenance on the device to avoid dirt build-up that could compromise the correct, safe operation of the unit.
- 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.
- Use consumables approved by CUSTOM S.p.A.



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 2014/30/EU and 2014/35/EU inasmuch as it was designed in conformity with the provisions laid down in the following Standards:

- EN 55032 (Electromagnetic compatibility of multimedia equipment - Emission Requirements)
- EN EN55024/EN55035 (Electromagnetic compatibility of multimedia equipment Immunity requirements)
- EN IEC/EN62368-1 (Audio/video, information and communication technology equipment)

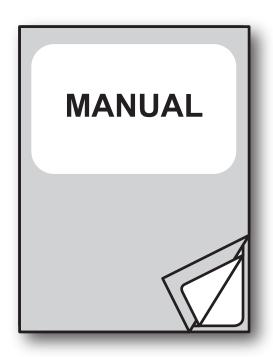
The device is in conformity with the essential requirements laid down in Directives 2014/53/EU about devices equipped with intentional radiators. The Declaration of Conformity and other available certifications can be downloaded from the site www.custom4u.it.



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 2012/19/EU, 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.





For details on the commands, refer to the manual with code **7720000005200**

For further information about the use of "PrinterSet" tool refer to the manual with code **7820000001800**

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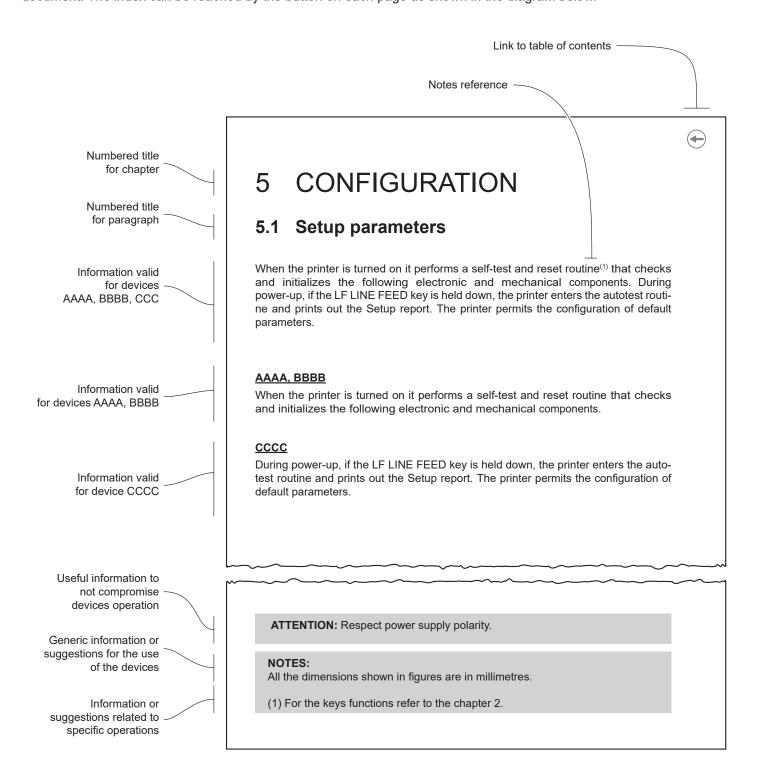
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1 INTRODUCTION

This document is divided into sections and chapters. Each chapter can be reached by the index at the beginning of this document. The index can be reached by the button on each page as shown in the diagram below.









2 IDENTIFICATION OF THE MODELS

NOMENCLATURE	DESCRIPTION
TL60III	TL60III base configuration
TL60III EJC	TL60III with motorized ejector
TL80III	TL80III base configuration









3 DESCRIPTION

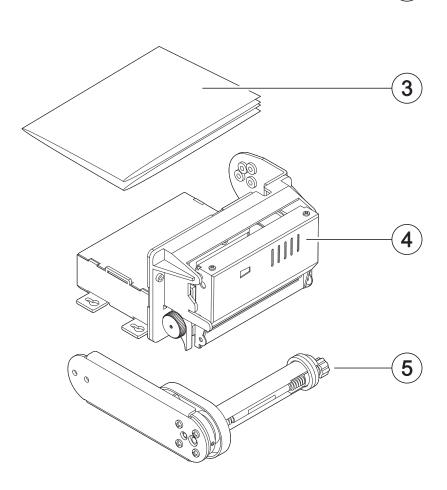
3.1 Box contents

Remove the device from its carton being careful not to damage the packing material so that it may be re-used if the device 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. Power supply cable
- 2. Fixing screws for paper roll holder
- 3. Installation instruction sheet
- 4. Device
- 5. Paper roll holder



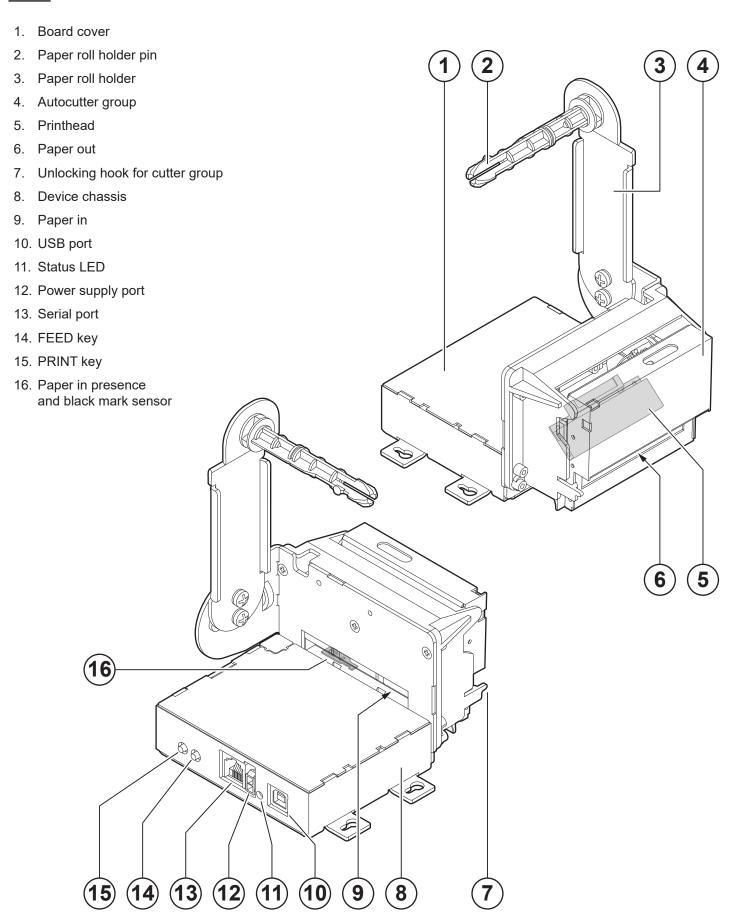






3.2 Device components

TL60III



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TL60III EJC

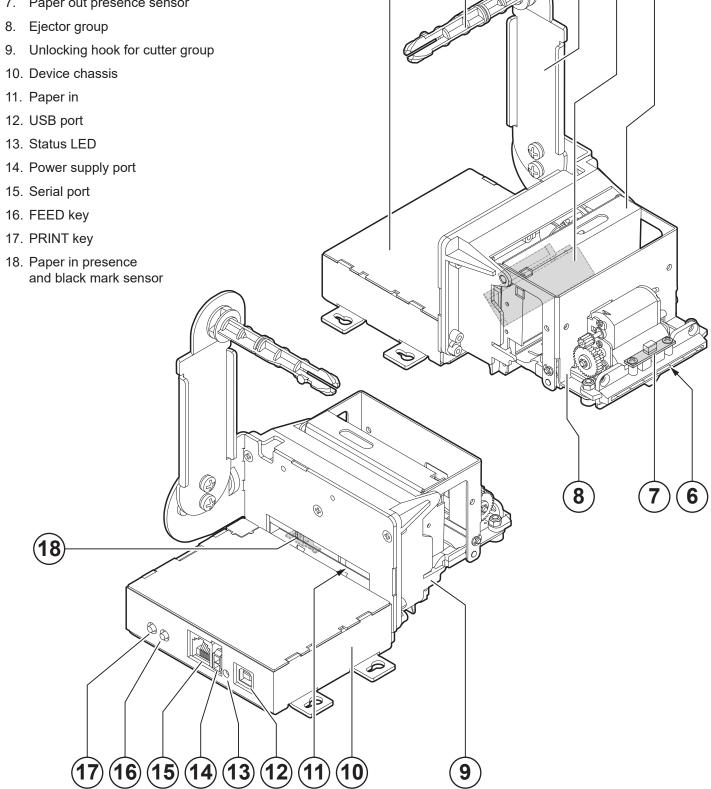
- 1. Board cover
- 2. Paper roll holder pin
- 3. Paper roll holder



Printhead



7. Paper out presence sensor

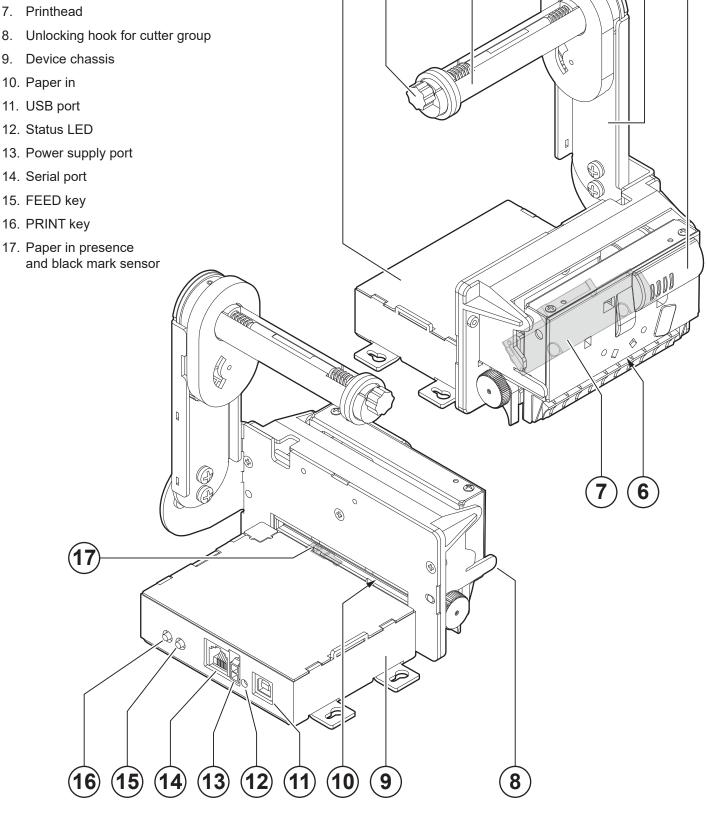




5

TL80III

- 1. Board cover
- 2. Paper width adjustment
- 3. Paper roll holder pin
- 4. Paper roll holder
- 5. Cutter group
- 6. Paper out



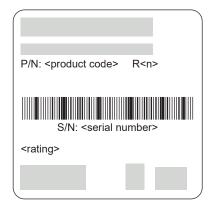
2





3.3 Product label

The main data used to identify the machine are shown on the label attached to the bottom of the device. In particular, it shows the electrical data for the connection to a power source. It also shows the product code, the serial number and the hardware revision (R).

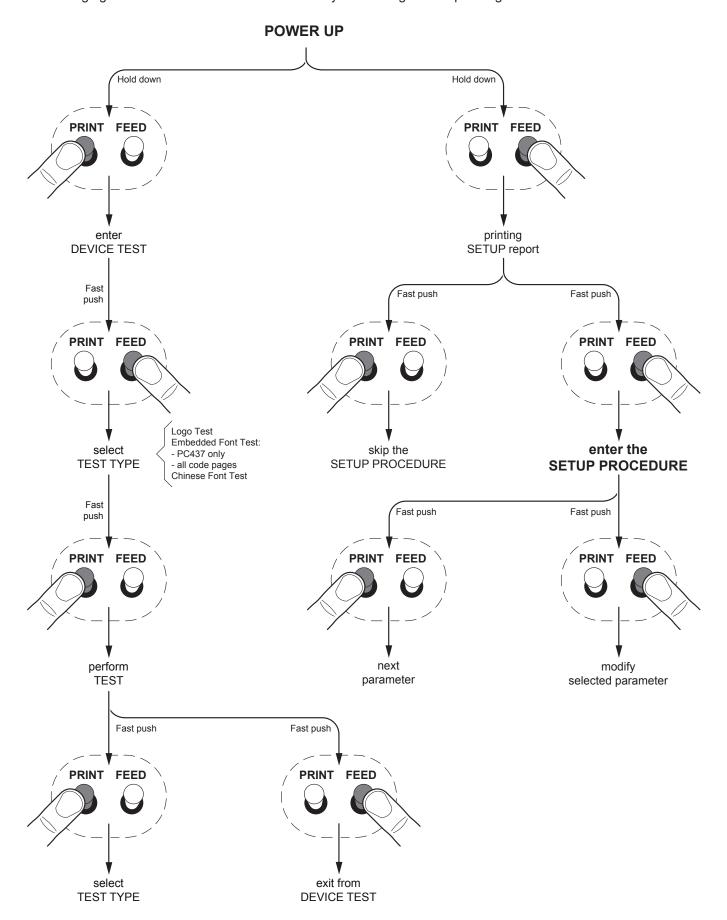






3.4 Key functions: power up

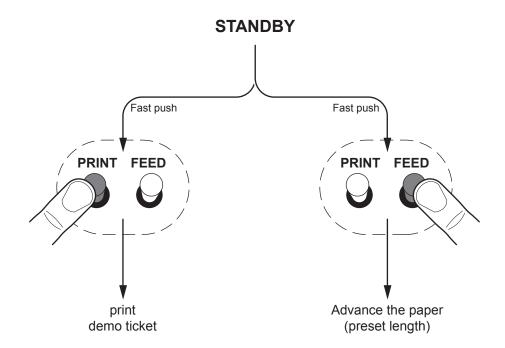
The following figure shows the functions of device's keys according to the operating condition.





3.5 Key functions: standby

The following figure shows the functions of device's keys according to the operating condition.







3.6 Status messages

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

STATUS LED		DESCRIPTION
	OFF	DEVICE OFF
GREEN	ON	DEVICE ON: NO ERROR
	x 1	RECEIVE DATA
	x 2	PRINTHEAD OVERHEATED
	x 3	PAPER END
	x 4	POWER SUPPLY VOLTAGE INCORRECT
GREEN COMMUNICATION	x 5	RECEPTION ERROR (PARITY, FRAME ERROR, OVERRUN ERROR)
STATUS	x 6	COMMAND NOT RECOGNIZED
	x 7	COMMAND RECEPTION TIME OUT
	x 8	INSPECTION DOOR OPEN
	x 9	PAPER JAM
	x 10	LOW PAPER (1)
GREEN UNRECOVERABLE ERROR	x 11	AUTOCUTTER ERROR

NOTE:

^{(1):} Only for models with the low paper sensor kit assembled (see chapter 11).

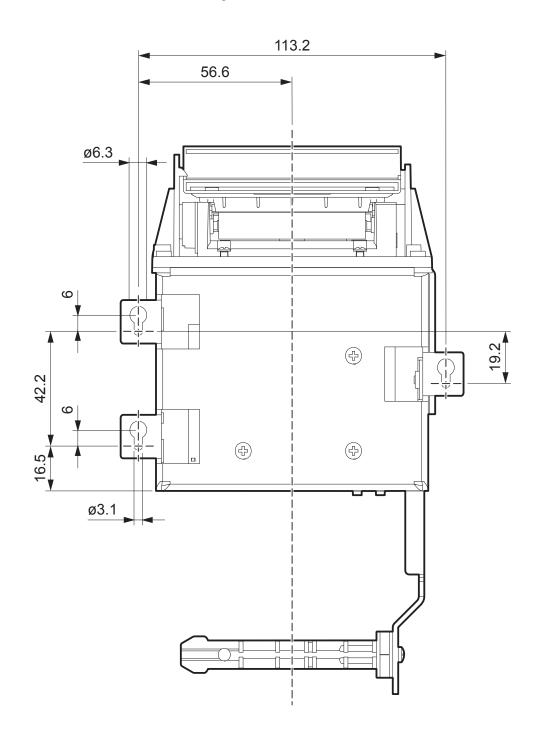


4 INSTALLATION

4.1 Fastening

TL60III, TL60III EJC

The device is provided with three fixing holes on the bottom of device (see following figure). To fasten the device on a panel, use three M3 screws. All the dimensions shown in figure are in millimetres.

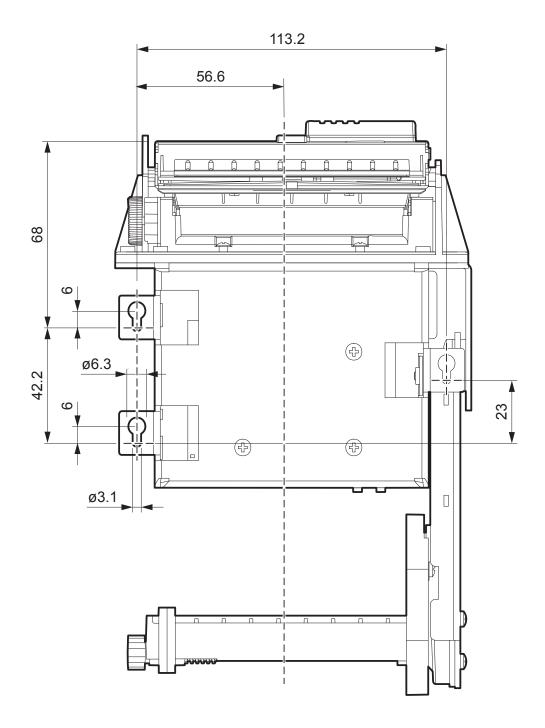






TL80III

The device is provided with three fixing holes on the bottom of device (see following figure). To fasten the device on a panel, use three M3 screws. All the dimensions shown in figure are in millimetres.



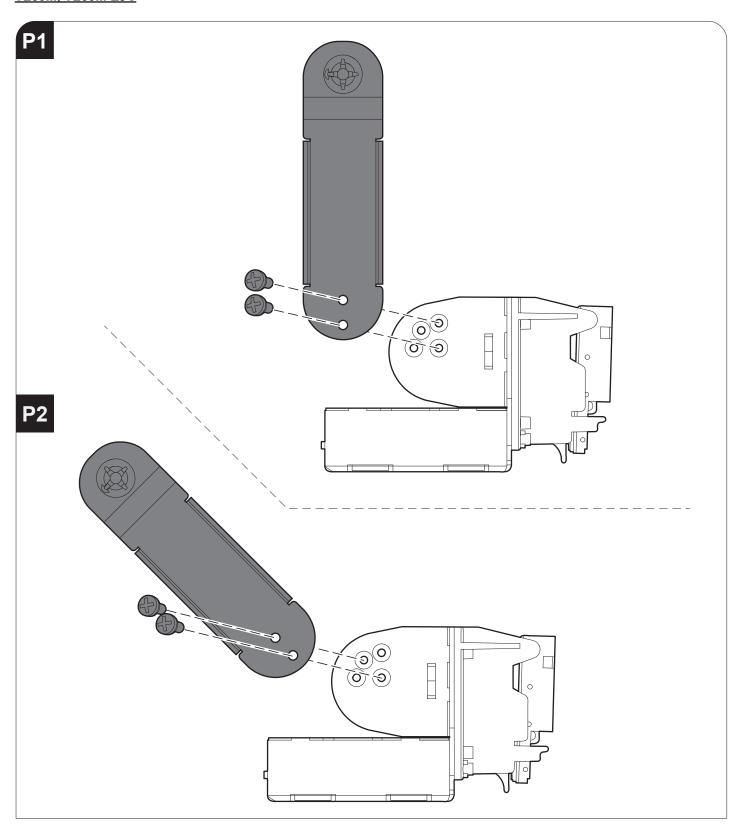




4.2 Paper roll holder assembly

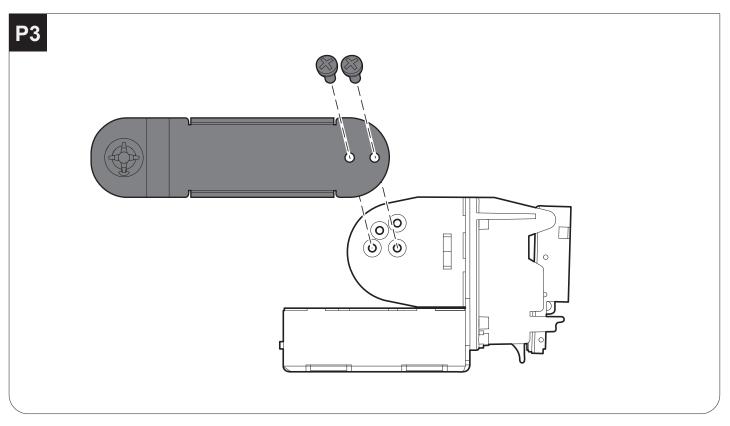
The paper roll holder position is adjustable on three different positions: upper position P1, 45° upward P2 and rear P3. Fix the paper roll holder to the device holes shown in figure according to the desired position by using the two M4x6 fixing screws supplied.

TL60III, TL60III EJC

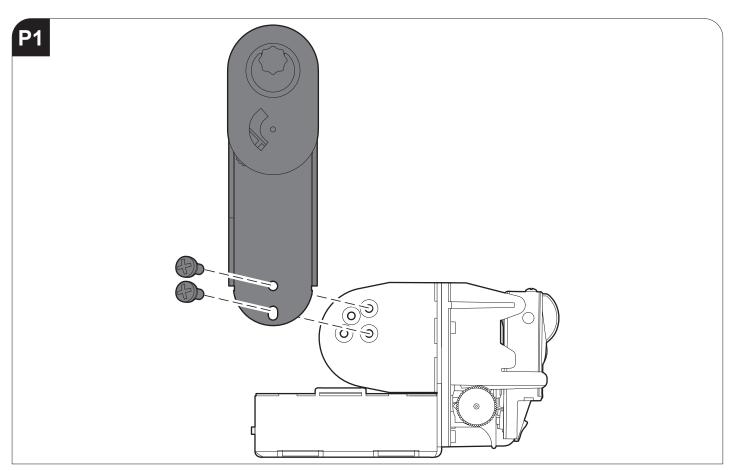




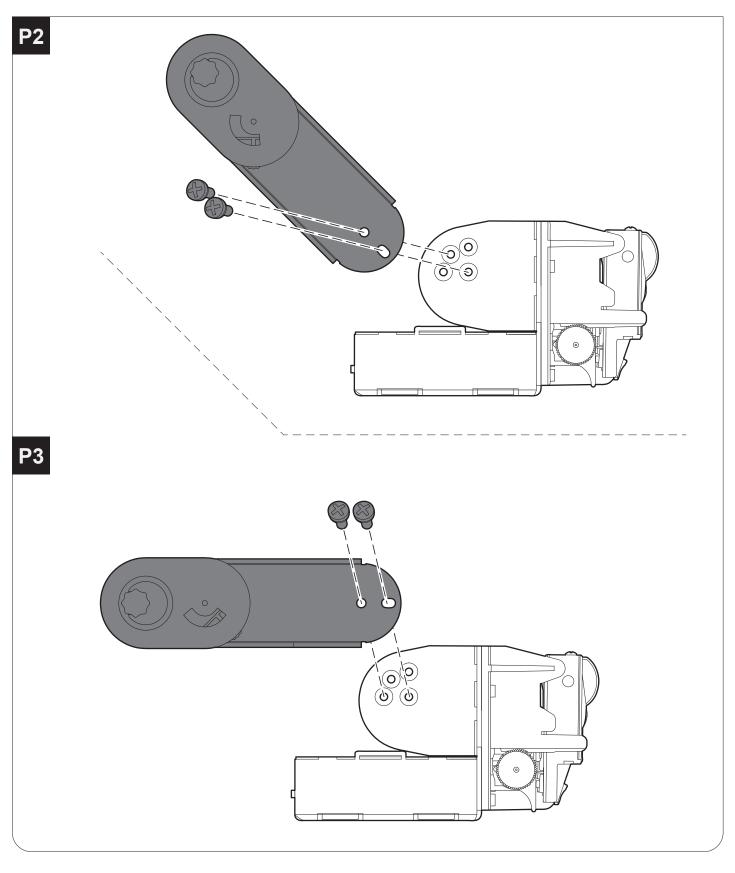




<u>TL80III</u>





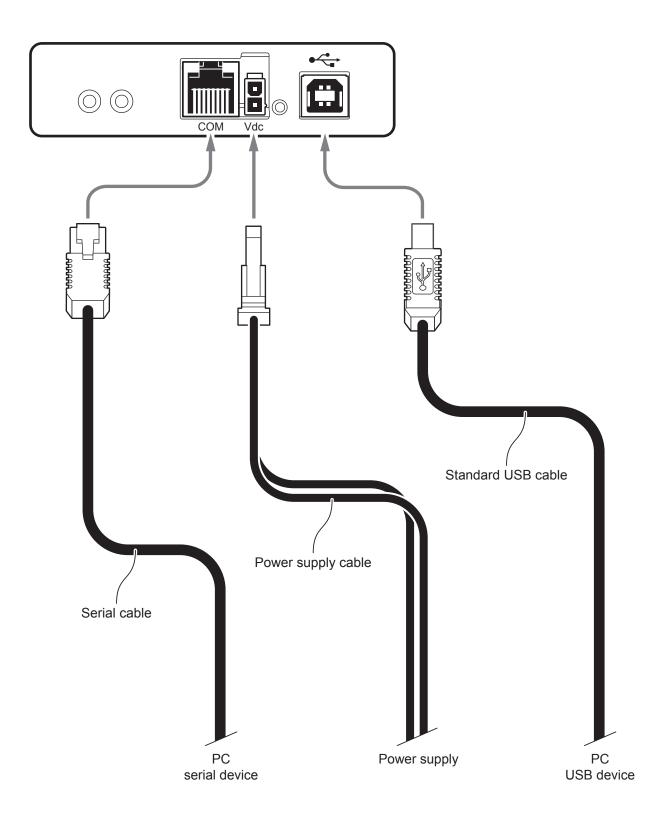






4.3 Connections

The following figure shows the possible connections for the device. When the RS232 and USB communication cables are connected to the device at the same time, the communication take place via the USB port.



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



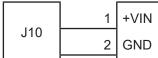
(

4.4 Pinout

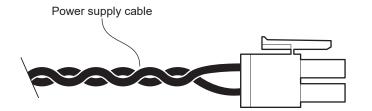


POWER SUPPLY

Male Molex connector series 5569 vertical (n° 39-30-1020)



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	+24 V
2	Black	GND

ATTENTION:

Respect power supply polarity.



USB INTERFACE

Female USB type B connector

	1	USB0_VBUS	(in)
	2	USB0_D-	(in/out)
14	3	USB0_D+	(in/out)
J1	4	GND	
	SH1	SHIELD	
	SH2	SHIELD	

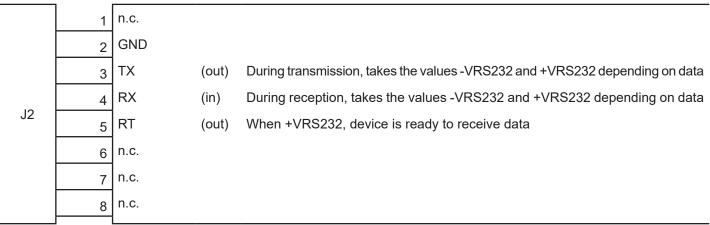






SERIAL INTERFACE

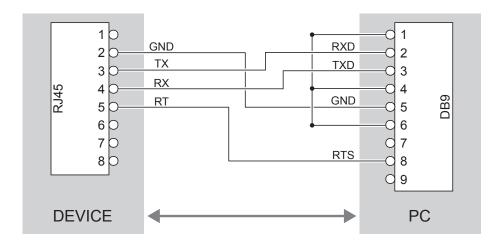
Female RJ45 connector



Given the presence of the RS232 standard, logic value "0" corresponds to the voltage value +VRS232 (voltage value between +3Vdc and +15Vdc) and logic value "1" corresponds to the voltage value -VRS232 (voltage value between -3Vdc and -15Vdc.

DEVICE > PC connection

The following picture shows an example of connection between the device and a personal computer using an 8 pin serial RJ45 male connector and a 9 pin female connector.



When use a serial cable, we recommend the installation of a ferrite core on the power supply cable.





4.5 Driver and SDK

In the website www.custom4u.it are available the drivers for the following operating system:

OPERATING SYSTEM	DESCRIPTION	INSTALLATION PROCEDURE
	Driver for Windows XP	_
Windows	Driver for Windows VISTA (32/64 bit)	
	Driver for Windows 7 (32/64 bit)	From the Start menu, press Run
	Driver for Windows 8 (32/64 bit)	and type-in the path where the SW was saved on PC, then click OK. Follow the instructions on the screen
	Driver for Windows 8.1 (32/64 bit)	to install the driver.
	Driver for Windows 10 (32/64 bit)	
	Self-installing driver for Virtual COM (32/64 bit) (see paragraph 6.4)	
Linux	32/64 bit	Follow the instruction get back on the "Readme.txt" file. You can find it in the software package downloaded in advance.



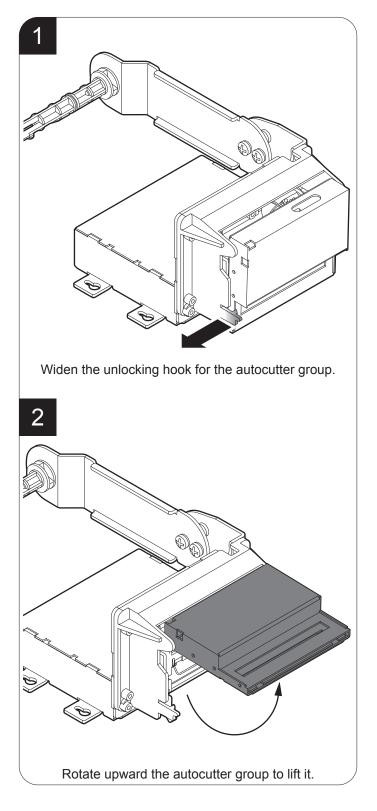




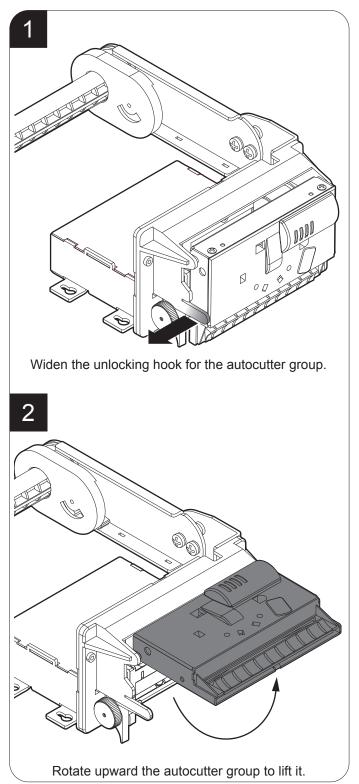
5 OPERATION

5.1 Device opening

TL60III



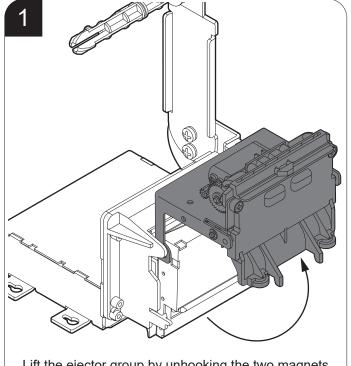
TL80III



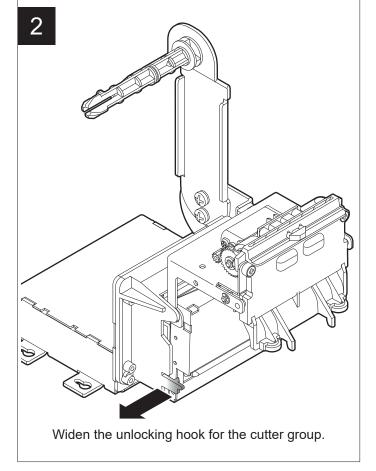


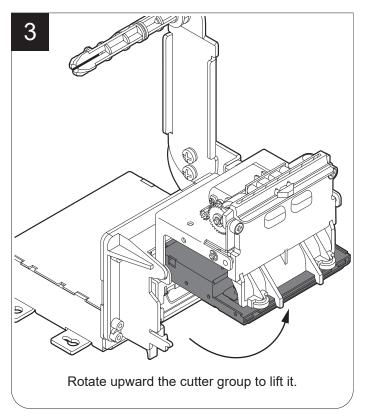


TL60III EJC



Lift the ejector group by unhooking the two magnets on the bottom side and rotating the group upward.



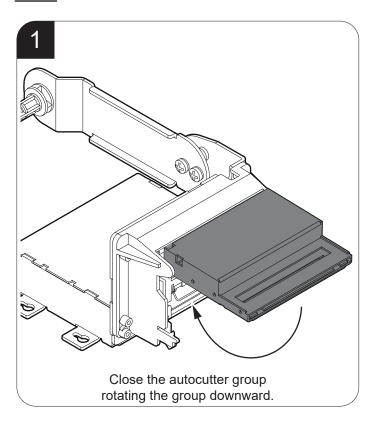




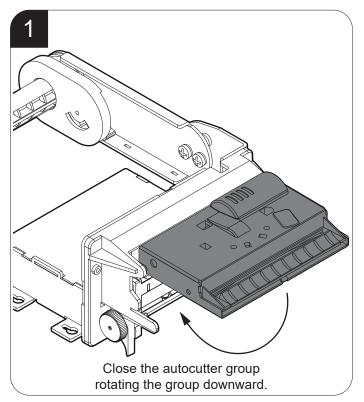
5.2 Device closing

Before closing cutter group, check inside the device and remove any scraps of paper.

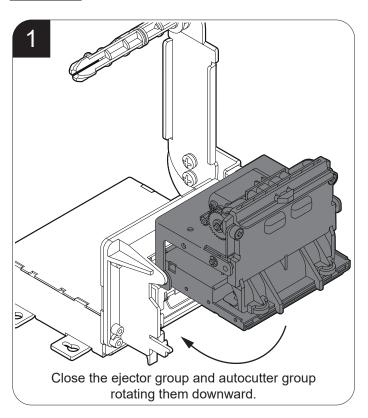
TL60III



TL80III



TL60III EJC



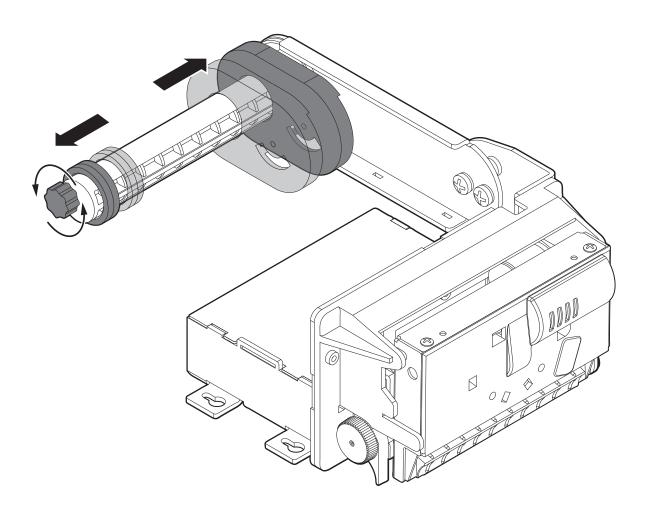




5.3 Adjusting paper width

TL80III

The device allows the use of paper roll width from 52 mm to 80 mm. To adjust the width of the paper roll case, rotate the knob as shown in the following figure.

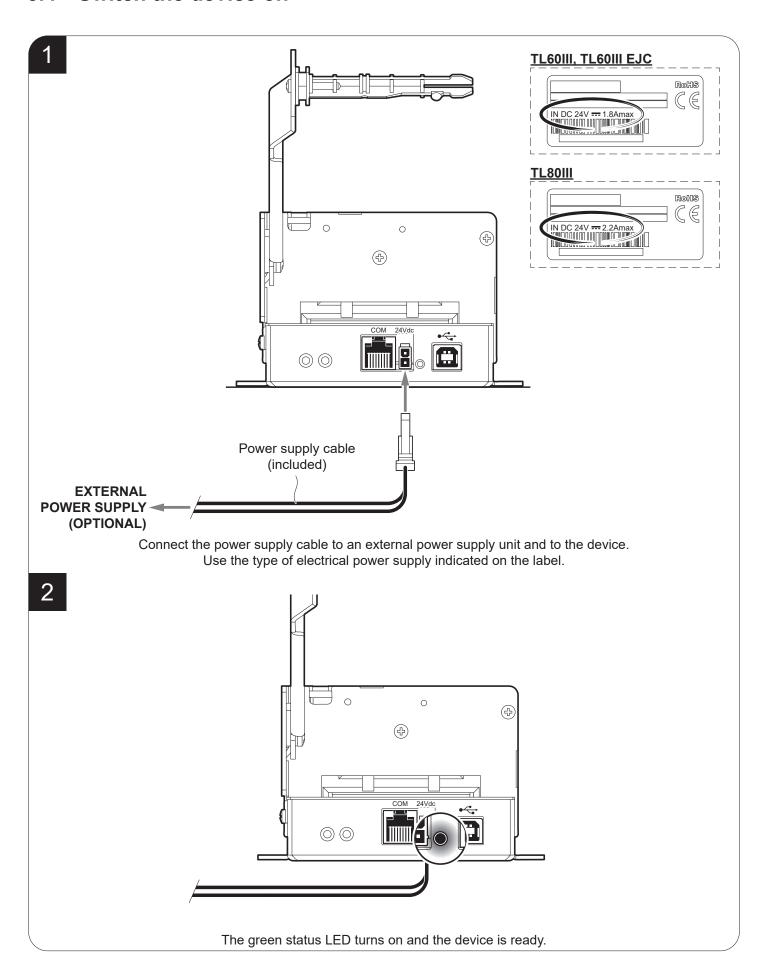


NOTE:

Properly set the value of the "Paper Width" parameter during the setup procedure (see chapter 6).



5.4 Switch the device on



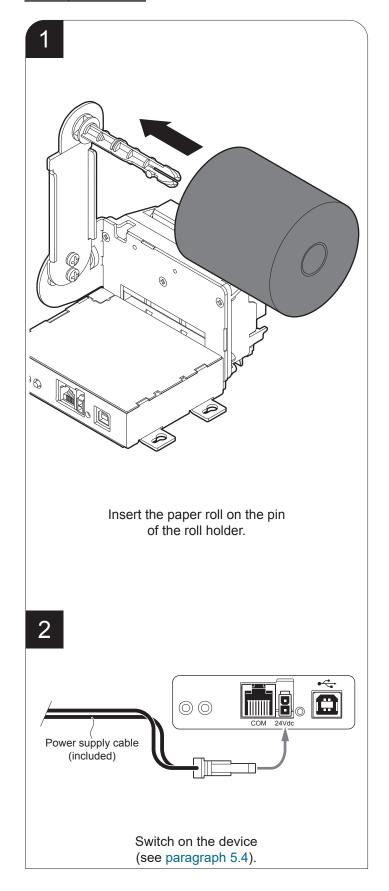


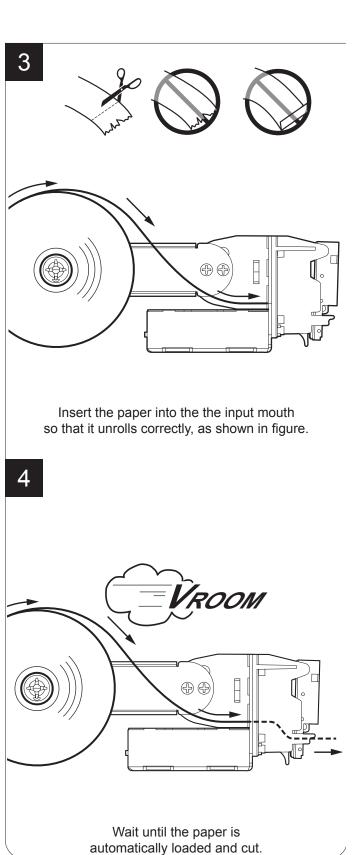


5.5 Loading the paper roll

To change the paper proceed as follows.

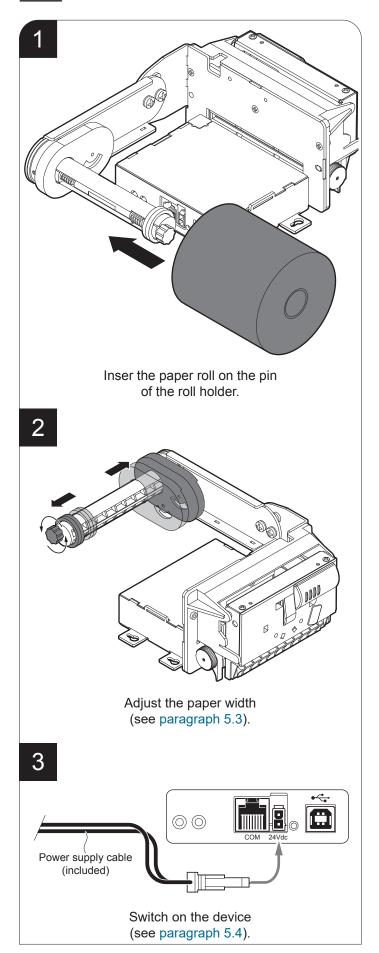
TL60III, TL60III EJC

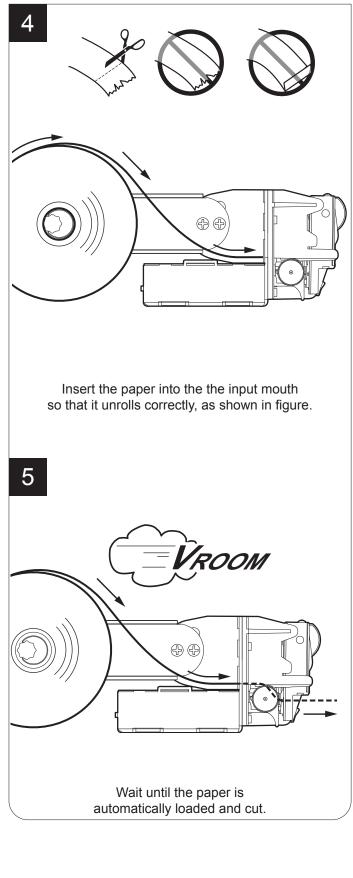




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TL80III





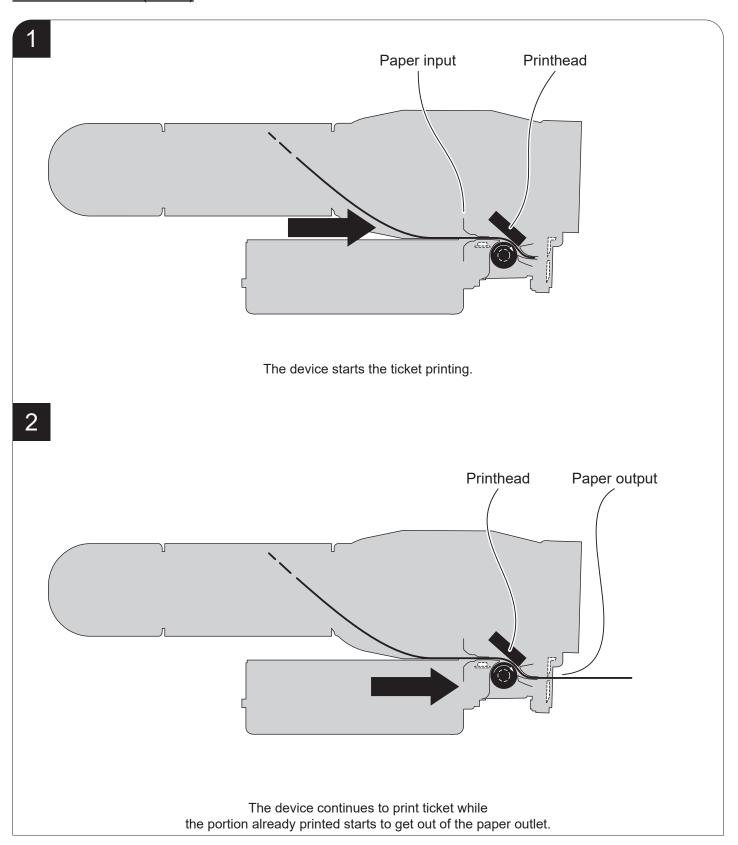




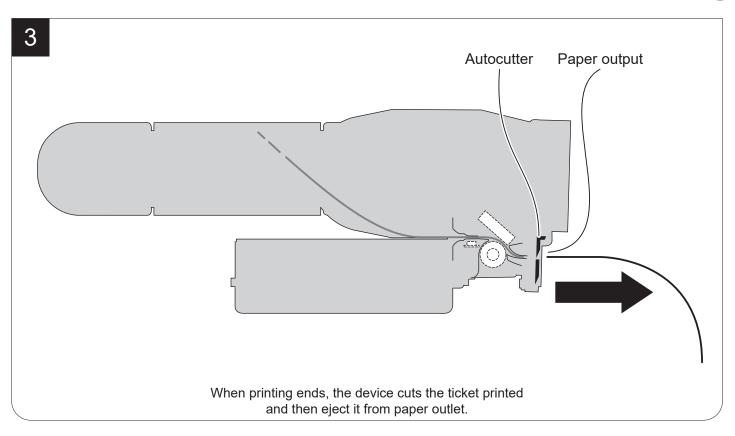
5.6 Issuing ticket

The device allows you to choose between different operating modes for the issuance of printed tickets. The operating modes shown in the following images, depend on the settings of the configuration parameters and commands sent to the device.

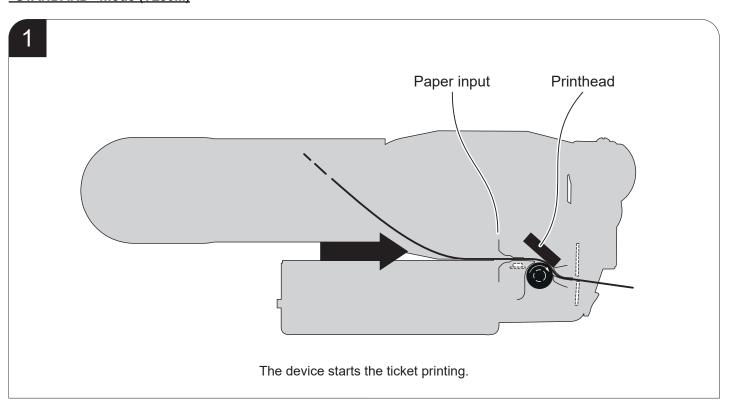
"STANDARD" mode (TL60III)





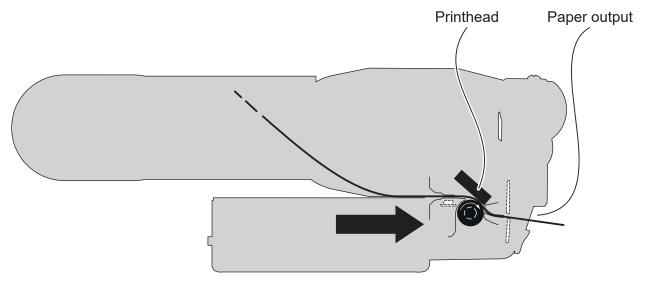


"STANDARD" mode (TL80III)



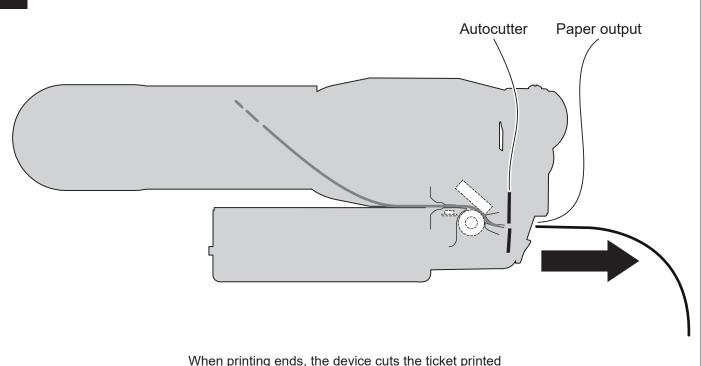






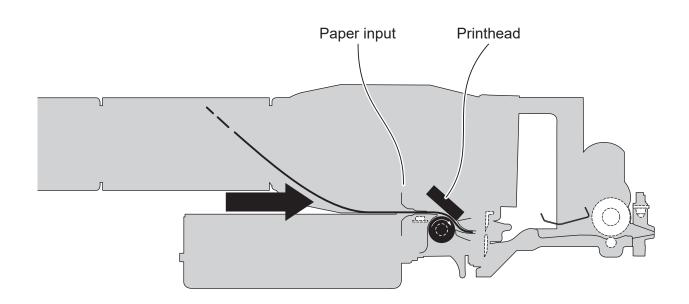
The device continues to print ticket while the portion already printed starts to get out of the paper outlet.





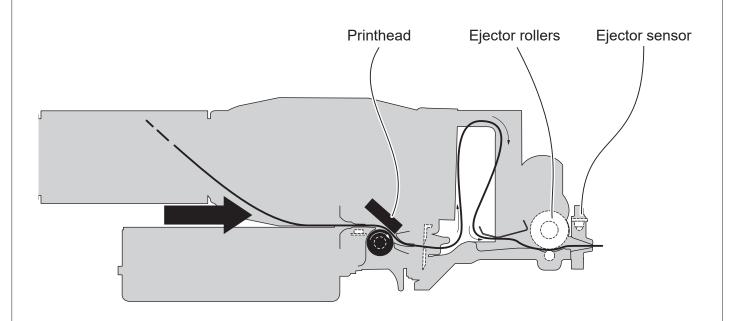
When printing ends, the device cuts the ticket printed and then eject it from paper outlet.

1



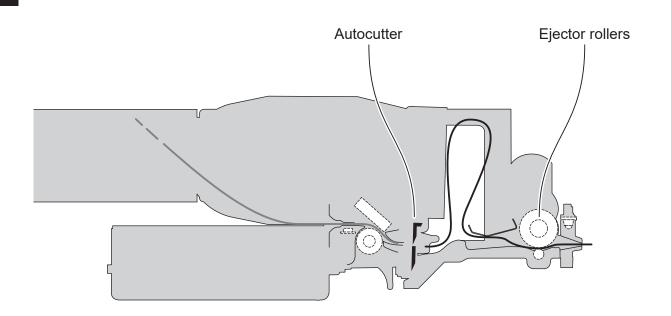
The device starts the ticket printing.

2

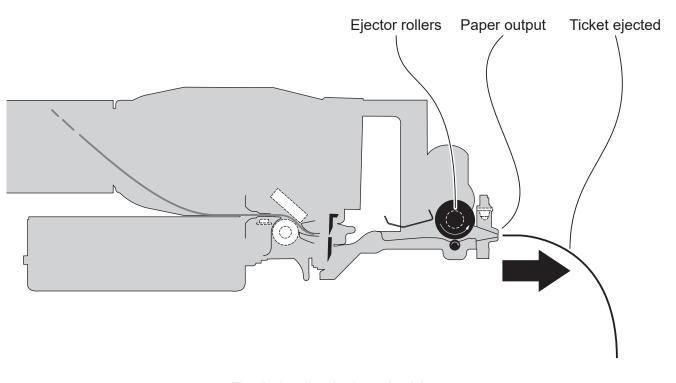


The ticket advances ahead to engage the ejector sensor and is caught between the ejector rollers. The printed portion of ticket is collected in the space between autocutter and ejector while the device continues printing.



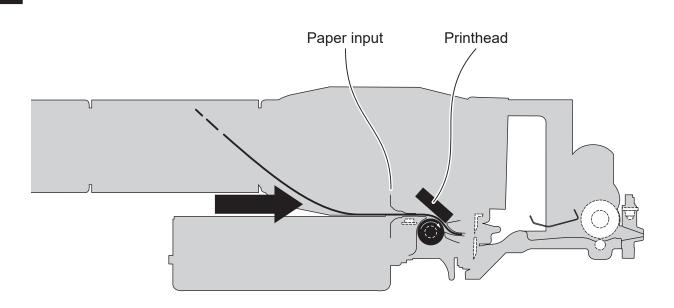


When printing ends, the device cuts the ticket printed.



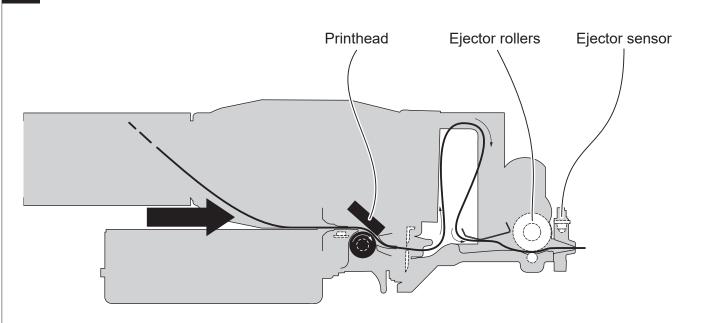
The device directly ejects the ticket.

1



The device starts the ticket printing.

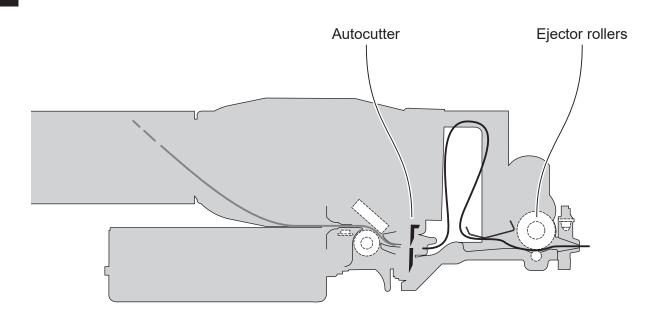
2



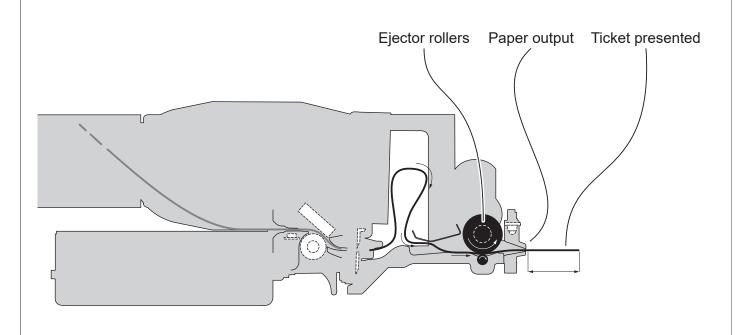
The ticket advances ahead to engage the ejector sensor and is caught between the ejector rollers. The printed portion of ticket is collected in the space between autocutter and ejector while the device continues printing.





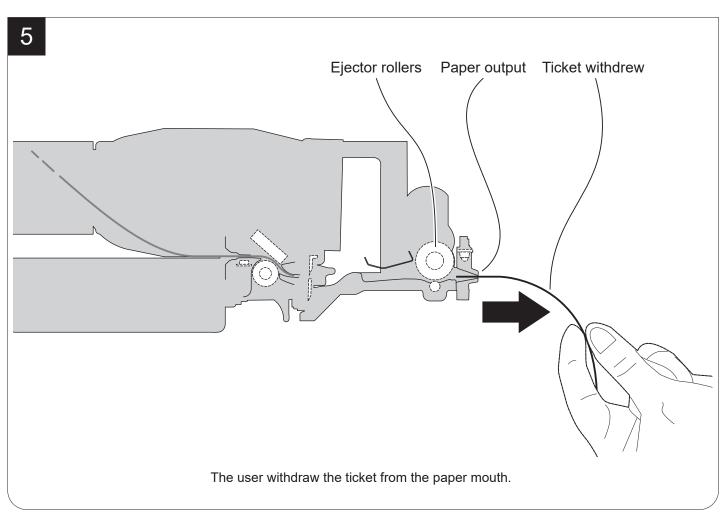


When printing ends, the device cuts the ticket printed.

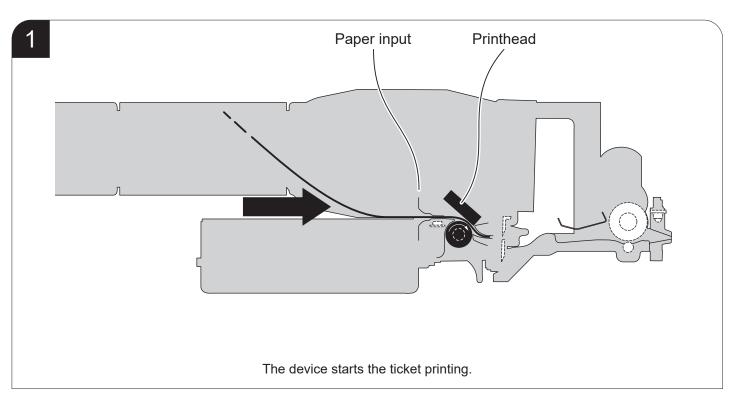


The device presents a portion of the ticket printed on the paper mouth.



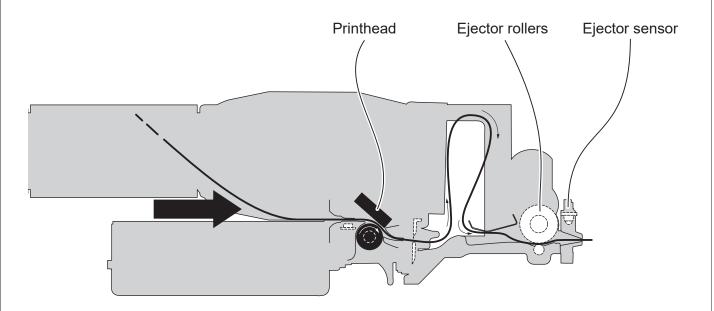


"PRESENT-EJECT" mode (TL60III EJC)

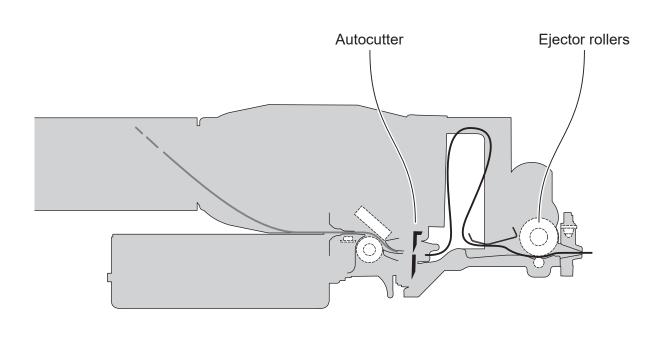






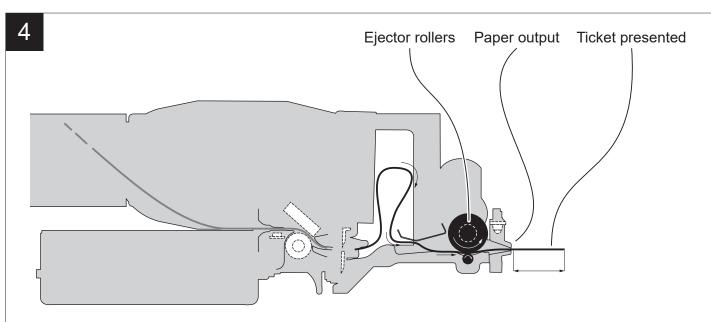


The ticket advances ahead to engage the ejector sensor and is caught between the ejector rollers. The printed portion of ticket is collected in the space between autocutter and ejector while the device continues printing.



When printing ends, the device cuts the ticket printed.



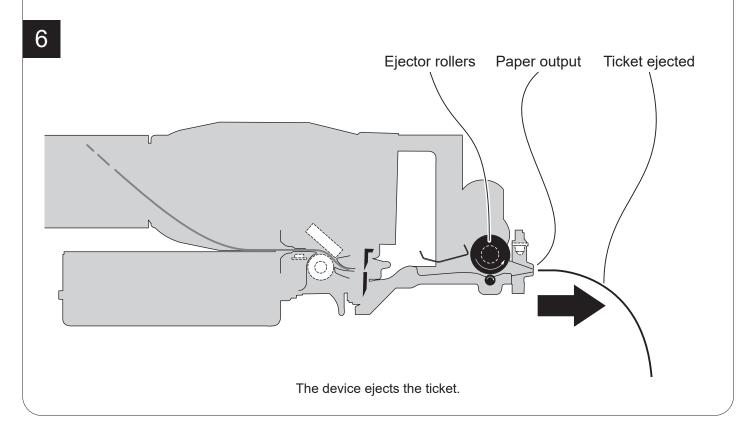


The device presents a portion of the ticket printed on the paper mouth.

5



The ticket is waiting on the bezel for a preset period of time.



NOTE: For further information, refer to the commands manual.



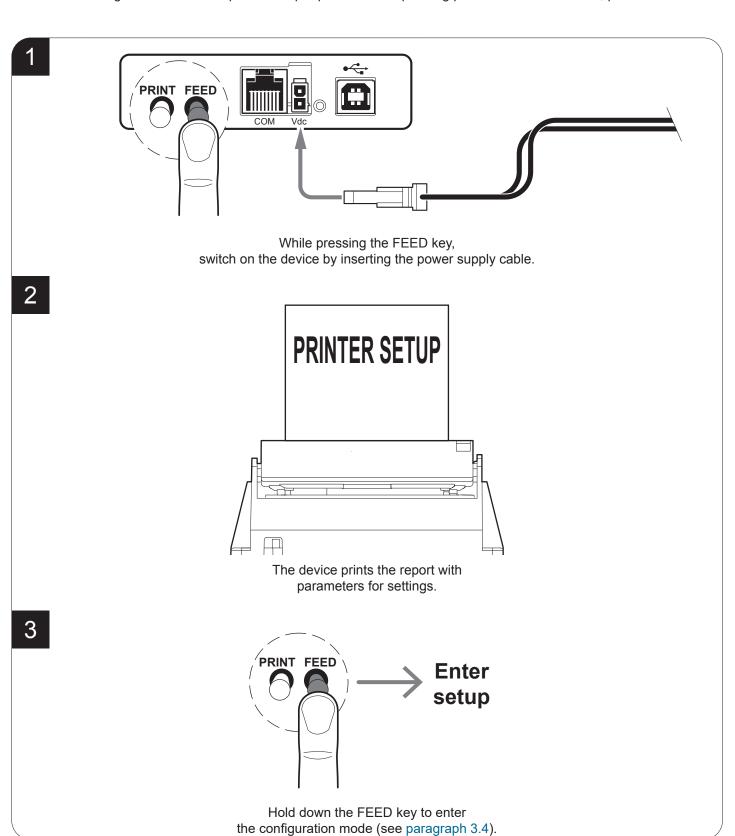


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6 CONFIGURATION

6.1 Configuration by keys

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







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

NOME DISPOSITIVO E REVISIONE MODULI FIRMWARE

< device name >

SCODE: <code> - rel 1.00 FCODE: <code> - rel 1.00 LCODE: <code> - rel 1.00

PRINTER SETTINGS

AUTODIAGNOSI DISPOSITIVO

PARAMETRI

DISPOSITIVO

CONFIGURAZIONE

PRINTER TYPE<device model>
INTERFACERS232
PROGRAM MEMORY TEST.....OK

DYNAMIC RAM TEST.....OK

CUTTER TEST.....OK

HEAD VOLTAGE

[V] = 23.37

HEAD TEMPERATURE [°C] = 25
POWER ON COUNTER = 72
PAPER PRINTED [cm] = 6220

CUT COUNTER = 2218

RS232 Data Length 8 bits/chr
RS232 Parity None
RS232 Handshaking ... Hardware
Busy Condition ... RxFull

Print Mode Normal

Autofeed CR Disabled

Code Table [num] : **0**

Chars / inch A=20 B=25 cpi
Font Type...... International

Black Mark Distance [mm]...... +00.0
PaperEnd Buffer Clear..... Disabled

USB Address Number 0

USB Class : Printer
Low Energy Mode : Disabled
Cutter : Enabled

Print Density.....: 0%

FUNZIONI TASTI [FEED] enter Printer setup skip Setup





6.2 Configuration by software

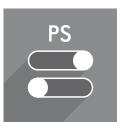
The setup parameters can be set by using the "PrinterSet" software tool available on www.custom4u.it. For a detailed description of the device operating parameters see the following paragraphs. To configure the device by software, proceed as follows.

1



Connect the device to a PC directly (see paragraph 4.3), without using HUB devices.

2



Start "PrinterSet" software tool.

3

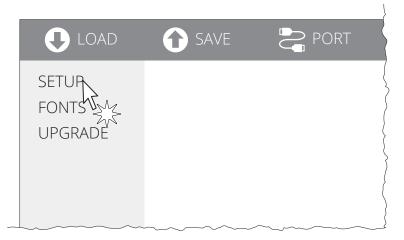


Click on LOAD > FROM DEVICE and select the device connected to the PC.



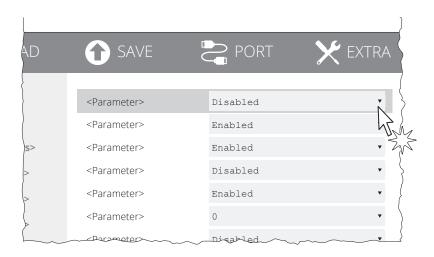


4



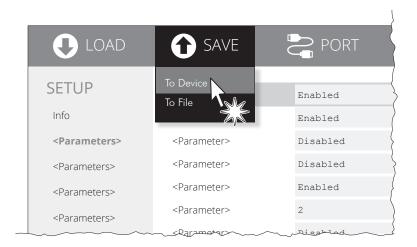
Click on SETUP to access the operating parameteres of the device to be configured.

5



Make the desired changes to the device operating parameters.

6



Click on SAVE > TO DEVICE to make the changes made effective.

ATTENTION:

During saving, it is strongly discouraged to disconnect the communication cable or to remove the power supply of the PC or the device.



6.3 Device status

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

PRINTER TYPE	device model			
INTERFACE	interface present			
PROGRAM MEMORY TEST	OK appears if functioning and NOT OK if faulty			
DYNAMIC RAM TEST	OK appears if functioning and NOT OK if faulty			
CUTTER TEST	OK appears if functioning and NOT OK if faulty			
HEAD VOLTAGE	voltage of the head			
HEAD TEMPERATURE	temperature of the head			
POWER ON COUNTER	number of power-ups made			
PAPER PRINTED	centimetres of paper printed			
CUT COUNTER	number of cuts made			
PWM BLACK MARK AVG. *	average value of the PWM of the alignment sensor			
PWM BLACK MARK WHITE *	value of the PWM for the white color of the alignment sensor			
PWM BLACK MARK BLACK *	value of the PWM for the black color of the alignment sensor			

NOTE:

^{*} Only for TL80III model.





6.4 Communication parameters

The device 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 device has been turned off and they are stored in non-volatile memory.

RS232 BAUD RATE	Communication speed of the serial interface:							
	9600	5760	00					
	19200	1152						
	38400							
	This parameter is valid only with serial interface.							
RS232 DATA LENGTH	Number of bit used for characters encoding:							
	7 bits/car							
	8 bits/car ^D							
	This paramet	This parameter is valid only with serial interface.						
RS232 PARITY	Bit for the parity control of the serial interface:							
	None D =	parit	y bit omitt	ed				
	Even =			parity bit				
	Odd =	odd	value for _l	parity bit				
	This parameter is valid only with serial interface.							
RS232 HANDSHAKING	Handshaking:							
	XON/XOFF = software handshaking Hardware D = hardware handshaking (CTS/RTS)							
	This parameter is valid only with serial interface.							
	When the receive buffer is full, if handshaking is set to XON/XOFF, the device sends the XOFF (0x13) on the serial port. When the receive buffer has cleared once again, if handshaking is set to XON/XOFF, the device sends the XON (0x11) on the serial port.							
BUSY CONDITION	Activation mode for Busy signal:							
	OffLine/ RXFull = Busy signal is activated when the device is both in OffLine status and							
	the buffer is full							
	RXFull ^D = Busy signal is activated when the buffer is full							
	This parameter is valid only with serial interface.							
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 2 4 6 8							
	0 ^D 2 1 3	4 5	6 7	8 9				
		-	-	-				





USB CLASS

USB communication class definition.

Printer D =

Printer D = setting the printer function

Virtual COM = setting the USB port as a virtual serial port





6.5 Operating parameters

The device 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 device has been turned off and they are stored in non-volatile memory.

PRINTER EMULATION	Available emulations for the device:			
	TGH [□]			
	CUSTOM/POS			
PRINT MODE	Printing mode:			
	Normal ^D = enables printing in normal writing way			
	Reverse = enables printing rotated 180 degrees			
AUTOFEED	Setting of the Carriage Return character:			
	CR disabled [□] = Carriage Return disabled			
	CR enabled = Carriage Return enabled			
CHARS / INCH	Font selection:			
	A = 11 cpi, B = 15 cpi ^D			
	A = 15 cpi, B = 20 cpi			
	A = 25 cpi, B = 20 cpi			
	A = 20 cpi, B = 25 cpi			
	CPI = Characters Per Inch.			
FONT TYPE	Setting of the font type:			
	International D = Enables the use of the 256 characters font tables			
	Chinese GB18030 = Enables the use of the chinese extended font GB18030-2000 Korean CP949 = Enables the use of the korean font CP949			
	When the "International" fent is analysed, you need to choose the character code table			
	When the "International" font is enabled, you need to choose the character code table (parameter "Code Table"). When the Chinese font is enabled, the selection of the character			
	code table is suspended (parameter "Code Table").			
CODE TABLE	Identifier number of the character code table to use.			
	See paragraph 9.6 to learn about the character tables corresponding to the identification			
	numbers set with this parameter.			
	The character tables set with this parameter are the same set with the command 0x1B 0x74 (refer to the commands manual of the device).			
SPEED / QUALITY	Setting of printing speed and printing quality:			
	Normal D			
	Normal ^D High Speed			
	riigii opood			

PRINT WIDTH	Width of printing area:
-------------	-------------------------

TL60III, TL60III EJC TL80III

52 mm 64 mm 76 mm ^D 52 mm 56 mm D 56 mm 68 mm 80 mm

60 mm 72 mm

PAPER THRESHOLD

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

30% 60% 90%

40% D 70% 50% 80%

PAPEREND BUFFER CLEAR Cleaning mode of the data in receive buffer, if the printing is stopped due to lack of paper:

Disabled D = the data remain in the receive buffer. When the paper runs out, the device keeps the remaining data in the receive buffer and prints the remaining

portion of the ticket after that the new paper is loaded. Enabled = when the paper runs out, all data in the receive buffer are deleted.

LOW ENERGY MODE

Setting the inactivity period in seconds after which the device enters in sleep mode:

Disabled D 15 s 30 s

60 s

CUTTER

Set the autocutter management:

Disabled = Autocutter disabled Enabled D= Autocutter enabled

PRINT DENSITY

Adjusting the printing density:

-25% 0 D +25% -12% +12%

The print quality is strongly influenced by the type of chemical treatment and the type of storage to which the thermal paper has been subjected, as well as by the weight of the same. It may therefore necessary to act on this parameter to obtain the desired print quality.



(+)

6.6 Alignment 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.

BLACK MARK POSITION

Management of the paper alignment:

Disabled D = the black mark alignment is not performed Enabled = the black mark alignment is performed

BLACK MARK THRESHOLD

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

30% ^D 70% 40% 80% 50% 90% 60%

.

BLACK MARK DISTANCE

"Black Mark Distance" is the minimum distance (in millimetres) between the upper edge of ticket and the black mark (see chapter 7).

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:

BLACK MARK DISTANCE SIGN

+ D = positive distance

Sign setting:

- = negative distance

Setting the digit for tens:

BLACK MARK DISTANCE [mm x 10]

0 ^D 2 4 1 3 5

Setting the digit for units:

BLACK MARK DISTANCE [mm x 1]

0 ^D 2 4 1 3 5

Setting the digit for decimals:

BLACK MARK DISTANCE [mm x 0.1]

0 ^D 2 4 1 3 5

6 7

6

6

7

8

8

9

8

9

NOTE:

For example, to set the black mark distance to 15 mm, modify the parameters as follows:

Black Mark Distance Sign = +

Black Mark Distance [mm x 10] = 1

Black Mark Distance [mm x 1] = 5

Black Mark Distance [mm x .1] = 0

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6.7 Hexadecimal dump

This function is used for the diagnosis of the characters received from the communications port. Characters are printed as hexadecimal code and the corresponding ASCII code (see below). Each line is preceded by a counter in hexadecimal that indicates the number of bytes received.

During the startup, if you hold down the FEED key, the printer enters the self-test routine and print the setup report. The printer remains in standby until a key is pressed or characters are received through the communication port (Hexadecimal Dump mode). For each character sent, the ticket shows the hexadecimal value and the ASCII codes (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 12345 ... 39 30 31 32 33 90123 ... 75 37 38 39 69 789ui ... 68 6B 6A 73 64 hkjsd ... 73 64 66 6B 6A sdfkj ... 73 66 64 66 6B fsdfk ... 79 75 65 69 6F eioyu ... 6F 72 69 75 77 oriuw ... 75 77 72 6F 65 ouwer ... 77 65 72 69 6F werio ... 72 75 77 69 6F riouw ... 6В 6C 73 64 66 klsdf ... 66 73 64 6В 64 dfksd ... 73 sdfkj ... 64 66 6В 6A 66 6B F2 6A 73 fk≥j ... 6A 6B 6C 68 jklh







7 ALIGNMENT

The device is provided with a sensor for the use of alignment black mark in order to handle rolls of tickets with pre-printed fields and a fixed length.

The alignment sensor is a "reflection" sensor: this kind of sensor emits a band of light and detects the quantity of light reflected to it. The presence of the black mark 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.

To ensure the correct alignment, you must enable the "Black Mark Position" parameter during the setup procedure (see paragraph 6.6).

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





7.1 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 "Black Mark Position" parameter is set to a value other than "Disabled" (see paragraph 6.6).

When self-calibration starts, the device performs some paper feeds and then it prints the calibration result and the value of the PWM duty-cicle of the alignment sensor driver so that it can be perform an optimal black mark detection:

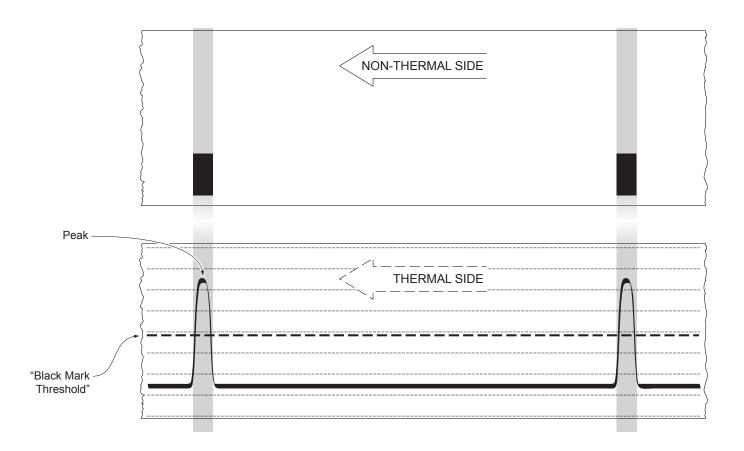
Autosetting Black Mark: OK PWM Duty Cycle: 85.3%

The "Autosetting Black Mark" 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 "Black Mark Threshold" parameter which represents the detection threshold of the black mark.

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 "Black Mark Threshold" value. This graphic representation is useful to set the most suitable value to assign to the "Black Mark 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.

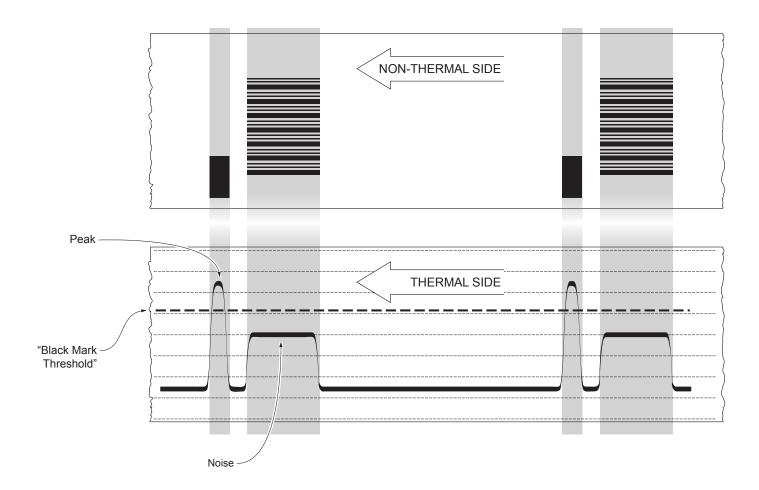
The following figure shows an example of paper with the non-thermal paper printed with black marks: the outgoing voltage is constant while passing the white paper between two black marks and presents a peak at each black mark. In this case, the optimal value for the "Black Mark Threshold" parameter is 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 black marks, presents a peak at each black mark and presents some "noise" at each barcode. In this case, the optimal value for the "Black Mark 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 "Black 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 black mark 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 black mark.



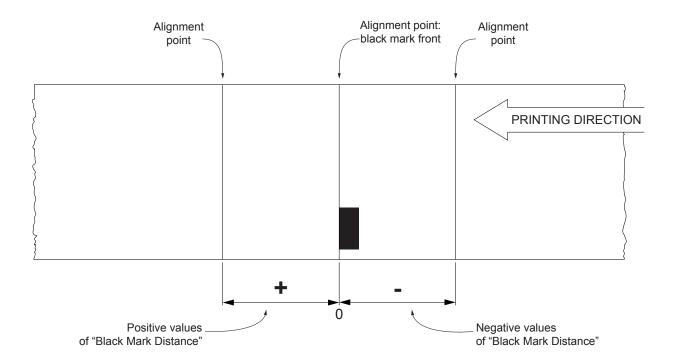


7.2 Alignment parameters

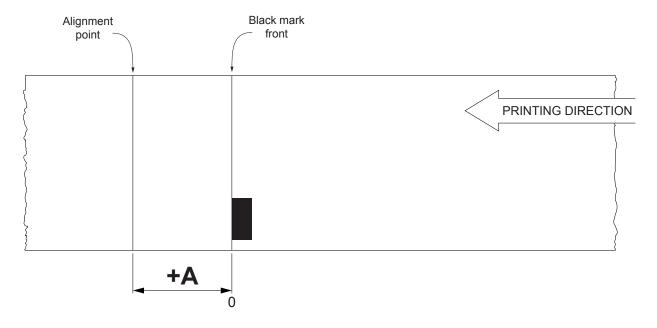
The "alignment point" is defined as the position inside the ticket to use for the black mark alignment. The distance between the black mark edge and the alignment point is defined as "Black Mark Distance".

Referring to the front of the black mark, the value of "Black Mark Distance" varies from -19.9 mm minimum and +99.9 mm maximum.

If the "Black Mark Distance" value is set to 0, the alignment point is set at the beginning of the black mark.



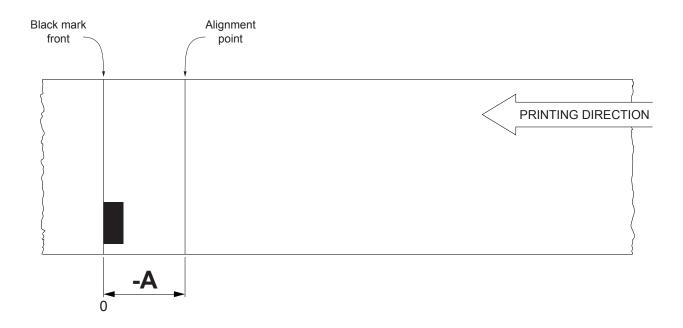
The following figure shows an example of paper with alignment point set by a positive value of "Black Mark Distance" ("Black Mark Distance" = + A):





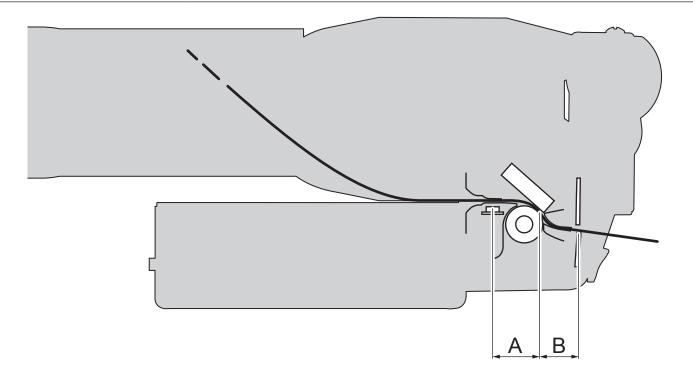


To set a negative value of the "Black Mark Distance" parameter is useful in cases where the alignment point refers to the black mark printed on the previous ticket or where the desired cutting line is placed in the middle of the alignment black mark. In the following images, the value of "Black Mark Distance" parameter is set to -A.



The following figure shows a section of the device with the paper path and the distances between the alignment sensor, the printhead and the autocutter (cutting line), where:

device	A = distance between the alignment sensor and the printing line	B = distance between the printing line and the cutting line
TL60III	11.7 mm	13 mm
TL80III	12.5 mm	12.5 mm







To define the alignment point you need to set the printer parameters that compose the numerical value of the "Black Mark Distance" parameter (see paragraph 6.6).

For example, to set a black mark distance of 15 mm between the black mark and the alignment point, the parameters must be set on the following values:

Black Mark Distance sign : +
Black Mark Distance [mm x 10] : 1
Black Mark Distance [mm x 1] : 5
Black Mark Distance [mm x .1] : 0

The "Black Mark Distance" parameter, may be modified as described in chapter 6.

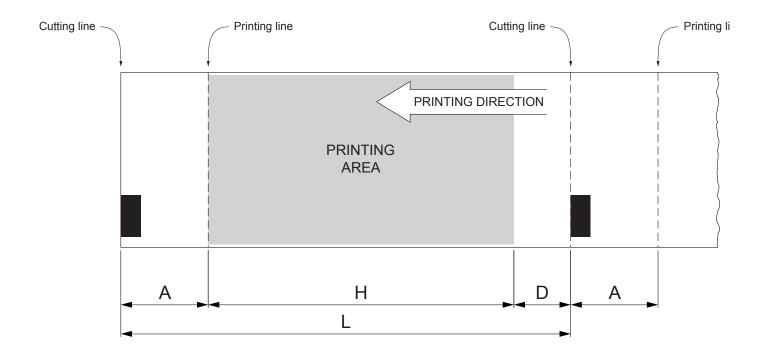




7.3 Printing area

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

The following figure shows an example of tickets with "Black Mark Distance" set to 0:



A "Non-printable area" = "Distance between autocutter/printhead"

where:

- "Distance between autocutter/printhead" = 13 mm for TL60III
- "Distance between autocutter/printhead" = 12.5 mm for TL80III
- H Distance between the first and the last print line, called "Height of the printing area".
- L Distance between an edge of the black mark and the next one, called "Inter-black mark distance".
- D Automatic feed for alignment at the next black mark.

To use all the black marks 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 but no further.





(+)

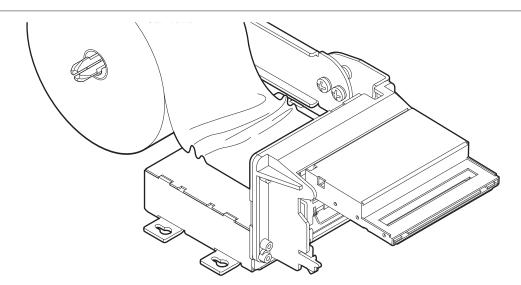
8 MAINTENANCE

8.1 Paper jam

In case of paper jam inside the device, proceed as follows:

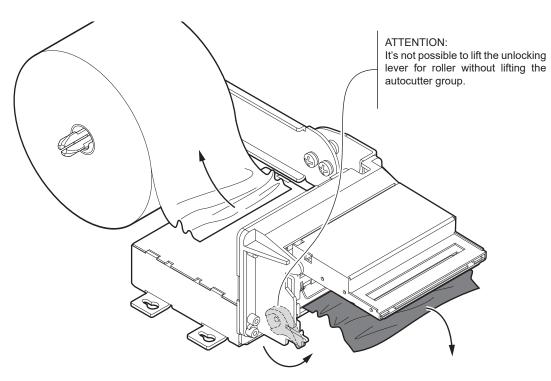
TL60III

1



Open the device (see paragraph 5.1).

2



Lift the unlocking lever for the platen roller and remove any scraps of paper from the front and the rear side of the device.

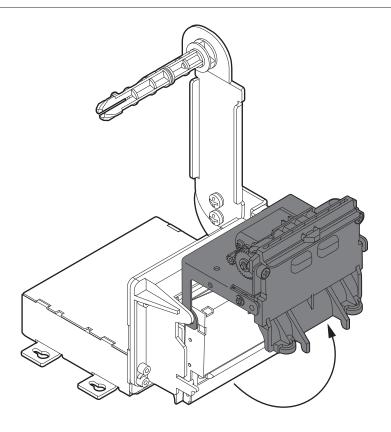
The printhead will return to its working position simply by releasing the lever.



BEFORE LIFTING THE UNLOCKING LEVER MAKE SURE THE AUTOCUTTER IS LIFTED UP

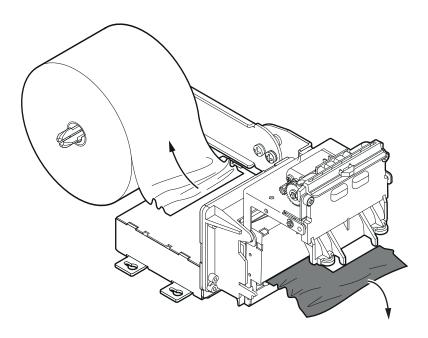


1



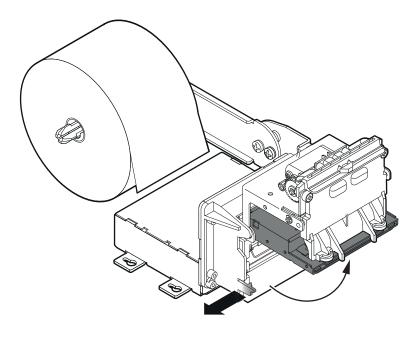
Open the device (see paragraph 5.1).

2



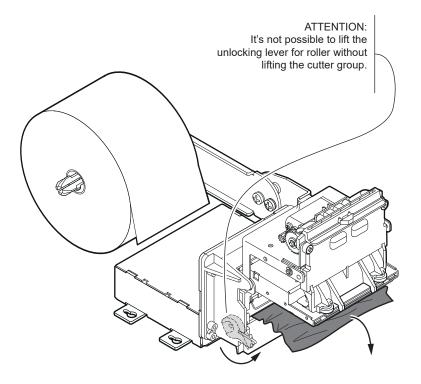
Lift the ejector group by unhooking the two magnets on the bottom side and remove any scraps of paper from the front and the rear side of the device.





Widen the unlocking hook for the cutter group and rotate upward the cutter group to lift it.

4



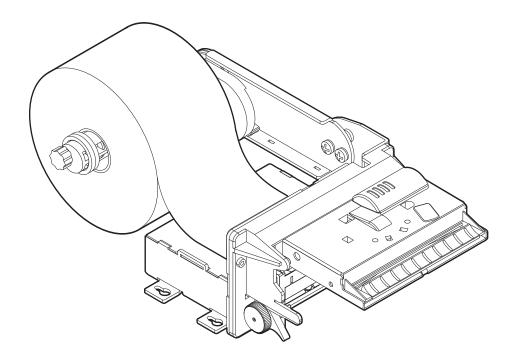
Lift the unlocking lever for the platen roller and remove any scraps of paper from the front and the rear side of the device.

The printhead will return to its working position simply by releasing the lever.



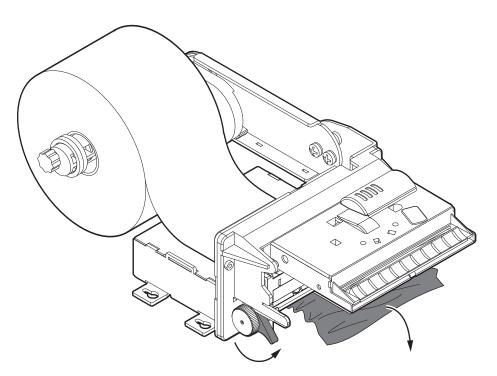
BEFORE LIFTING THE UNLOCKING LEVER MAKE SURE THE AUTOCUTTER IS LIFTED UP





Open the device (see paragraph 5.1).

2



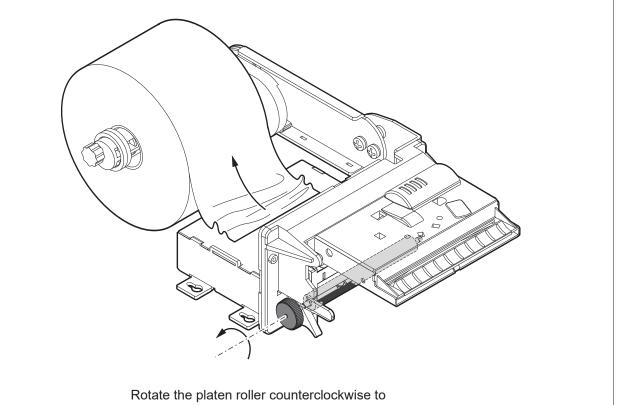
Lift the unlocking lever for the platen roller and remove any scraps of paper from the front and the rear side of the device.

The printhead will return to its working position simply by releasing the lever.



BEFORE LIFTING THE UNLOCKING LEVER MAKE SURE THE AUTOCUTTER IS LIFTED UP





Rotate the platen roller counterclockwise to eject the paper from the rear side of the device.



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

For specific procedures, see the following pages.

EVERY PAPER CHANGE	
Rollers	Use isopropyl alcohol
EVERY 5 PAPER CHANGES	
Paper path	Use compressed air or tweezers
Autocutter	Use compressed air
Ejector (only for TL60III EJC)	Use compressed air
EVERY 6 MONTHS OR AS NEEDED	
Chassis	Use compressed air or a soft cloth

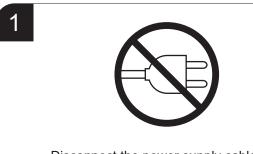




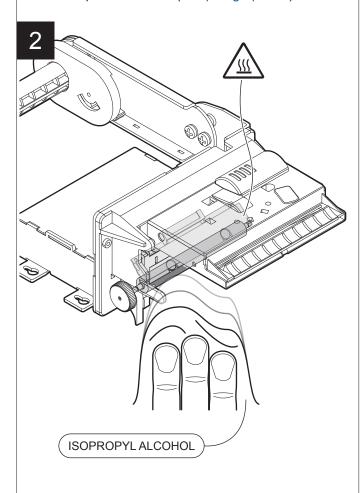
8.3 Cleaning

For periodic cleaning of the device, see the instructions below

Rollers



Disconnect the power supply cable and open the device (see paragraph 5.1).



ATTENTION:

Do not use solvents, or hard brushes. Do not let water or other liquids get inside the device.







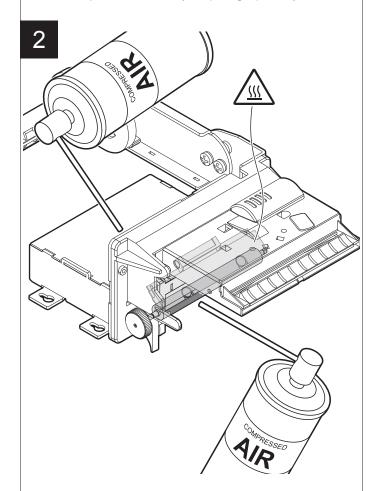
Clean the platen roller by using a non-abrasive cloth moistened with isopropyl.

Paper path





Disconnect the power supply cable and open the device (see paragraph 5.1).



ATTENTION:

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









Remove any scraps of paper and the accumulated paper dust on the platen roller and in areas near to the paper presence sensor.





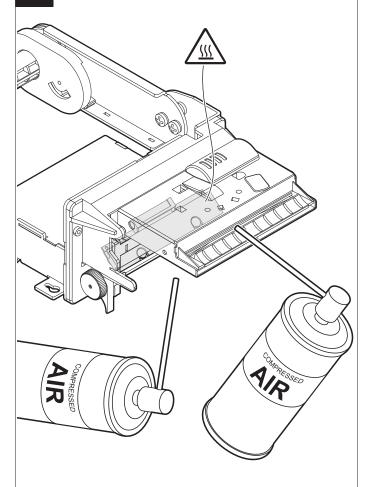
<u>Autocutter</u>

1



Disconnect the power supply cable and open the device (see paragraph 5.1).

2



ATTENTION:

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





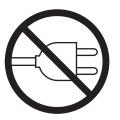




Remove any scraps of paper and the accumulated paper dust on the input and the output of autocutter.

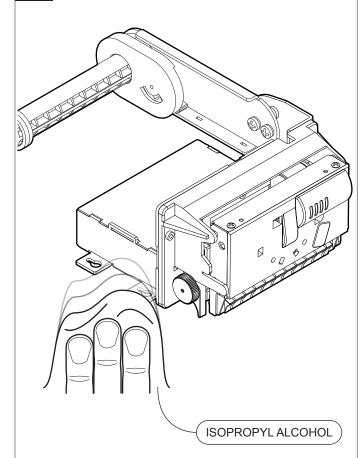
Chassis

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 device.









To clean the device, use compressed air or a soft cloth.

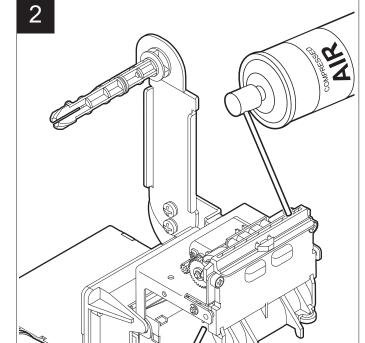
(

Ejector (TL60III EJC)

1



Disconnect the power supply cable and lift the ejector group (see paragraph 5.1).



ATTENTION:

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









Remove any scraps of paper and the accumulated paper dust on the input and the output of the ejector.



•

8.4 Firmware upgrade

Firmware upgrade can be performed by using the "PrinterSet" software tool available on www.custom4u.it. To upgrade firmware, proceed as follows.

1



Login to the website www.custom4u.it, type in the product code of the device and download the latest firmware release available.

2



Connect the device to a PC directly (see paragraph 4.3), without using HUB devices.

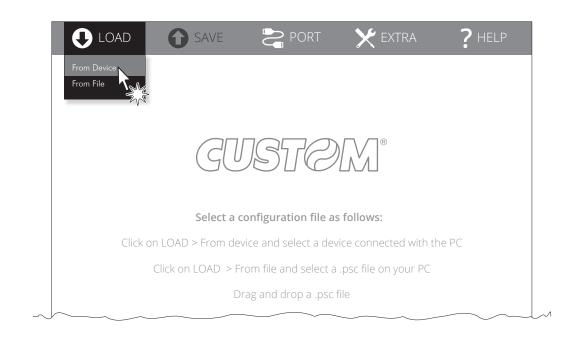
3



Start the "PrinterSet" software tool.

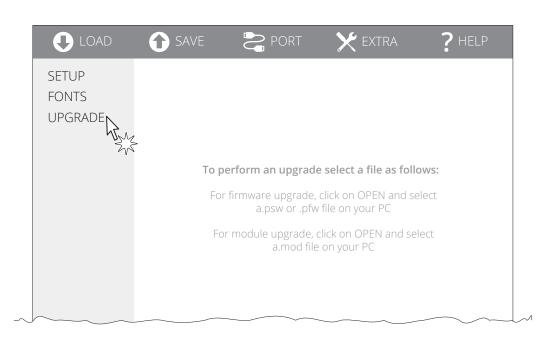


4



Click on LOAD > FROM DEVICE and select the device connected to the PC.

5



Click on UPGRADE and follow the instructions shown on the screen.

ATTENTION:

During saving, it is strongly discouraged to disconnect the communication cable or to remove the power supply of the PC or the device.









9 SPECIFICATION

9.1 Hardware specifications

GENERAL	
Sensors	
TL60III, TL80III	Paper presence in input, head temperature
TL60III EJC	Paper presence in input, paper presence in output, head temperature
Emulations	TGH, CUSTOM/POS
Printing driver	Windows XP Windows VISTA (32/64 bit) Windows 7 (32/64 bit) Windows 8 (32/64 bit) Windows 8.1 (32/64 bit) Windows 10 (32/64 bit) Self-installing driver for Virtual COM (32/64 bit) Linux (32/64 bit)
INTERFACES	
RS232 serial connector	from 9600 bps to 115200 bps
USB connector	12 Mbit/s
MEMORIES	
Receive buffer	8 kB
Flash memory	1 MB internal + 4 MB external
RAM memory	256 kB internal
Graphic memory	
TL60III, TL60III EJC	2 logos (448 x 584 dots)
TL80III	2 logos (608 x 430 dots)





PRINTER	
Resolution	203 dpi (8 dot/mm)
Printing method	Thermal, fixed head
Head life (1)	
Abrasion resistance (2)	50 km (with recommended paper, 12.5% duty cycle)
Pulse durability	100 M (referred to each dot)
Printing width	
TL60III, TL60III EJC	52 mm, 56 mm
TL80III	from 52 mm to 80 mm (step 4 mm)
Printing mode	Normal, 180°
Printing format	Height/width from 1 to 8, bold, reverse, underlined, italic
Character fonts	55 character code tables (see paragraph 9.6) Extended chinese GB18030-2000 Korean CP949
Printable barcode	Codabar, Code 32, Code 39, Code 93, Code 128, EAN-8, EAN-13, ITF, UPC-A, UPC-E, Data Matrix, PDF417, QRCode
Printing speed (1)(3)	Normal = 95 mm/s High Speed = 120 mm/s
PAPER	
Type of paper	Thermal rolls, heat-sensitive side on outside of roll
Maximum paper width	
TL60III, TL60III EJC	from 52 mm ± 0.5 mm to 60 mm ± 0.5 mm
TL80III	from 52 mm ± 0.5 mm to 80 mm ± 0.5 mm
Paper thickness	63 μm ± 0.5 μm (for 55 g/m² paper) 85 μm ± 0.6 μm (for 80 g/m² paper)
Paper weight	from 55 g/m² to 80 g/m²





Recommended types of paper	KANZAN KF50 o KP460 MITSUBISHI PF5067 o TL4000
External roll diameter	
TL60III, TL60III EJC	max. 80 mm
TL80III	max. 90 mm
Paper end	Not attached to roll core
Internal roll core diameter	
TL60III, TL60III EJC	13 mm
TL80III	25 mm
Core type	Cardboard or plastic
Minimum ticket length (4)	
TL60III, TL80III	40 mm
TL60III EJC	94 mm
AUTOCUTTER	
Paper cut	
TL60III, TL60III EJC	Total cut, partial cut
TL80III	Total cut
Estimated life (1)	1000000 cuts (with paper thickness 100 μm, ambient temperature)
DEVICE ELECTRICAL SPECIFICATIONS	
Power supply	24 Vdc ± 10% (optional external power supply)
Medium consumption (5)	
TL60III, TL60III EJC	1.8 A max
TL80III	2.2 A max





Typical consumption (3)	0.88 A
Standby consumption	
TL60III, TL60III EJC	0.024 A
TL80III	0.023 A
Low energy mode consumption	
TL60III, TL60III EJC	0.005 A
TL80III	0.004 A
ELECTRICAL SPECIFICATIONS POWER SUPPLY code 963GE020000	0071 (optional)
Power supply voltage	from 90 Vac to 264 Vac
Frequency	from 47 Hz to 63 Hz
Output	24 V, 2.5 A
Power	60 W
ENVIRONMENTAL CONDITIONS	
Operating temperature	from -20 °C to +70 °C ⁽⁶⁾
Relative humidity (RH)	from 10% to 85% (without condensation)
Storage temperature	from -20 °C to +70 °C
Storage relative humidity (RH)	from 10% to 90% (without condensation)

NOTES

- (1): Respecting the regular schedule of cleaning for the device components.
- (2): Damages caused by scratches, ESD and electromigration are excluded.
- (3): Referred to a standard CUSTOM receipt (L = 10 cm, Density = 12.5% dots on).
- (4): In the case of a printing length of less than 40 mm, the printer automatically corrects the length to 40 mm.
- (5): Referred to the UL measurements (L = 10 cm, Density = 50% dots on, Print density = +50%).
- (6): If you use the device with the power supply code 963GE020000071, supplied as an accessory, the operating temperature range is from 0 °C to +40 °C.





9.2 Character specifications

TL60III, TL60III EJC

Character set		3	
Character density	11 cpi	15 cpi	20 cpi
Number of columns	24	32	44
Chars / sec	995	1280	1792
Lines / sec	40	40	40
Characters (L x H mm)-Normal	2.2 x 3	1.7 x 3	1.2 x 3

TL80III

Character set		3	
Character density	11 cpi	15 cpi	20 cpi
Number of columns	35	45	64
Chars / sec	1540	1980	2773
Lines / sec	43	43	43
Characters (L x H mm)-Normal	2.2 x 3	1.7 x 3	1.2 x 3

NOTE: Theoretical values.





9.3 Device dimensions

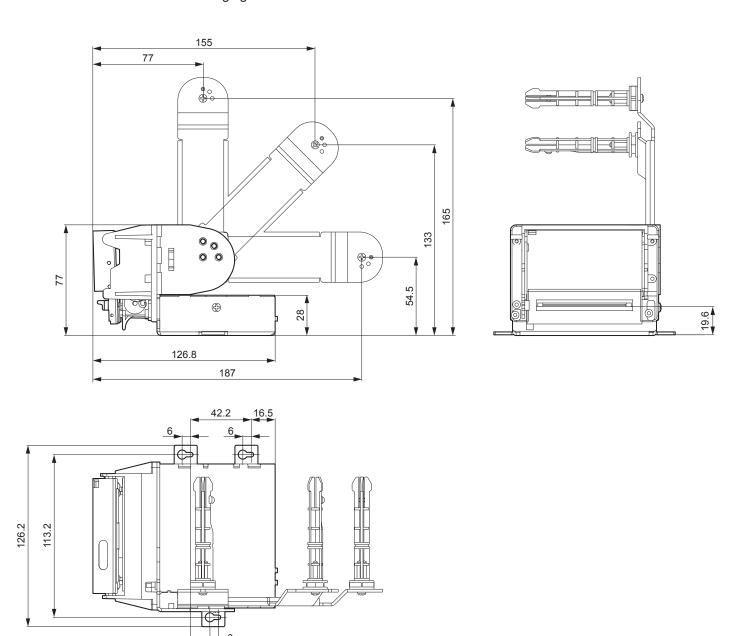
TL60III

Length	126.8 mm
Height	77 mm
Width	126.2 mm
Weight	800 g

Data refer to device without paper roll holder.

All the dimensions shown in following figures are in millimetres.

19.2

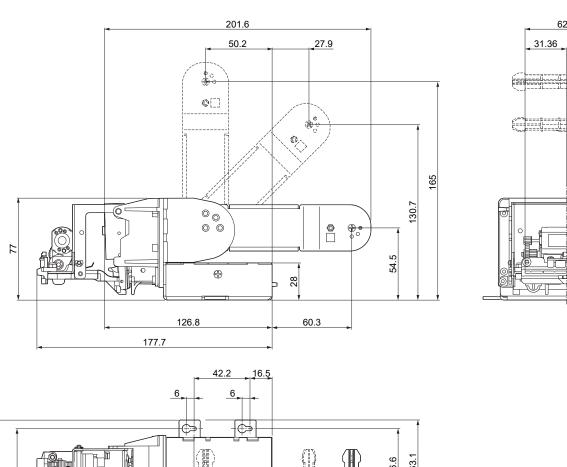


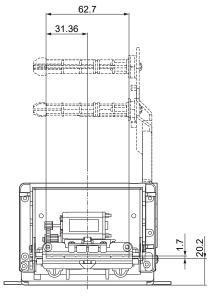


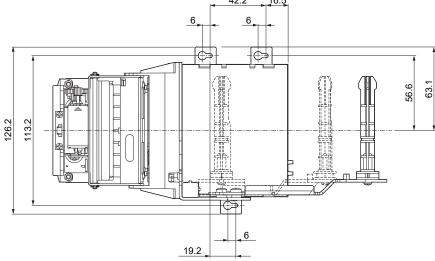
TL60III EJC

Length	177.7 mm
Height	77 mm
Width	126.2 mm
Weight	950 g

Data refer to device without paper roll holder. All the dimensions shown in following figures are in millimetres.







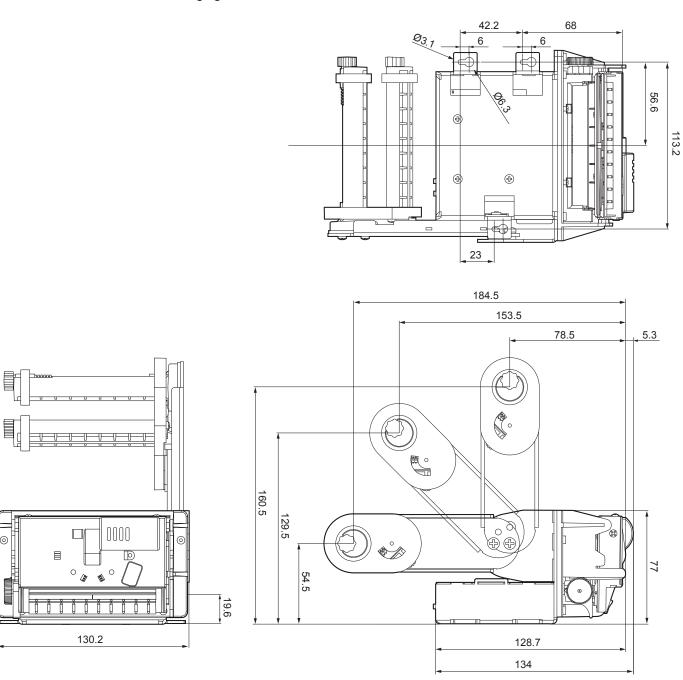




TL80III

Length	128.7 mm
Height	77 mm
Width	130.2 mm
Weight	900 g

Data refer to device without paper roll holder. All the dimensions shown in following figures are in millimetres.





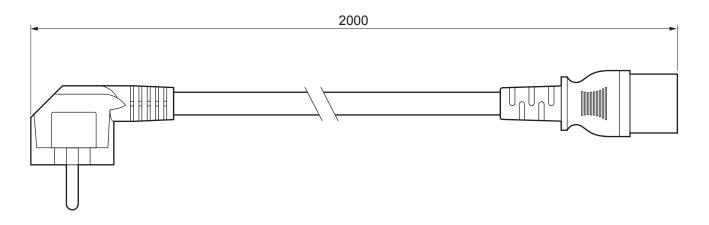
9.4 Power supply and power cord dimensions (optionals)

The following table shows the dimensions of the power supply, the power cord and the adapter for power supply optionals for the device:

POWER CORD code 26100000000311	
Length	2000 mm
ADAPTER FOR POWER SUPPLY code 2690000000005	
Length	200 mm
POWER SUPPLY code 963GE020000071	
Length	130 mm
Height	36 mm
Width	57 mm

All the dimensions shown in following figures are in millimetres.

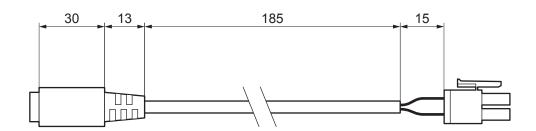
POWER CORD code 2610000000311



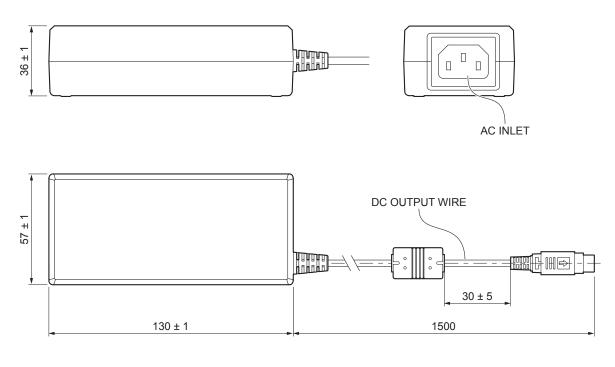


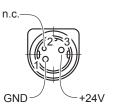


ADAPTER FOR POWER SUPPLY code 26900000000005



POWER SUPPLY code 963GE020000071

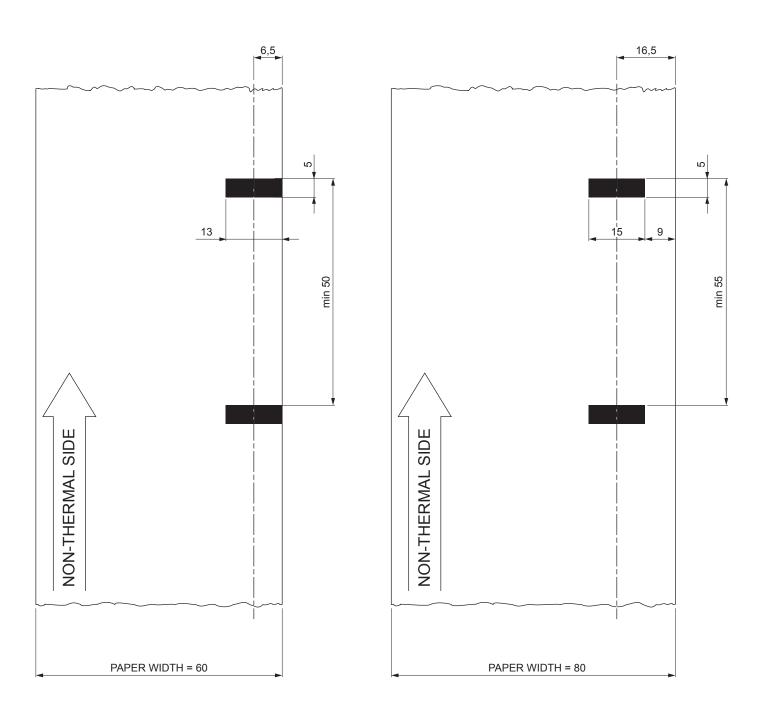






9.5 Paper specification

The following images show two example of black mark placement on the non-thermal side of paper. All the dimensions shown in following figures are in millimetres.







9.6 Character sets

The device has 3 fonts of varying width (11, 15 and 20 cpi) which may be related one of the coding tables provided on the device.

To know the coding tables actually present on the device, you need to print the font test (see paragraph 3.4).

You can set font and coding table by using the commands (see the commands manual of the device) or using the "Code Table" and the "Chars / Inch" parameters during the setup procedure (see paragraph 6.5).

The following is the full list of coding tables that can be installed on the device.

<codetable></codetable>		Coding table	
0	PC437 - U.S.A., Standard Europe		
1	Katakana		
2	PC850 - Multilingual		
3	PC860 - Portuguese		
4	PC863 - Canadian/French		
5	PC865 - Nordic		
6	VISCII - Vietnamese Standard Code		
11	PC851 - Greek		on request
12	PC853 - Turkish		on request
13	PC857 - Turkish		
14	PC737 - Greek		
15	ISO8859-7 - Greek		on request
16	WPC1252 - Scandinavian		
17	PC866 - Cyrillic 2		
18	PC852 - Latin 2		
19	PC858 for Euro symbol in position 213		
20	FKU42 - Thai		
21	TIS11 - Thai		on request
26	TIS18 - Thai		on request
30	TCVN_3 - Vietnamese		on request
31	TCVN_3 - Vietnamese		on request
32	PC720 - Arabic		on request
33	WPC775 - Baltic Rim		on request





<codetable></codetable>		Coding table	Coding table	
34	PC855 - Cyrillic			
35	PC861 - Icelandic		on request	
36	PC862 - Hebrew			
37	PC864 - Arabic			
38	PC869 - Greek		on request	
39	ISO8859-2 - Latin 2		on request	
40	ISO8859-15 - Latin 9		on request	
41	PC1098 - Farsi			
42	PC1118 - Lithuanian		on request	
43	PC1119 - Lithuanian		on request	
44	PC1125 - Ukrainian			
45	WPC1250 - Latin 2			
46	WPC1251 - Cyrillic			
47	WPC1253 - Greek			
48	WPC1254 - Turkish			
49	WPC1255 - Hebrew			
50	WPC1256 - Arabic			
51	WPC1257 - Baltic Rim			
52	WPC1258 - Vietnamese			
53	KZ1048 - Kazakh		on request	
255	Space page			









10 CONSUMABLES

TL60III, TL60III EJC

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

6730000000362

THERMAL PAPER ROLL Width = 60 mm Ø external = 80 mm Ø core = 13 mm



TL80III

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

67300000000406

THERMAL PAPER ROLL Width = 80 mm Ø external = 90 mm Ø core = 25 mm









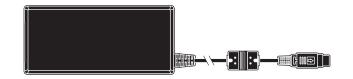
11 ACCESSORIES

TL60III, TL60III EJC

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

963GE020000071

POWER SUPPLY (for technical specifications, see paragraph 9.1)



26100000000311

POWER CORD SCHUKO PLUG length = 2 m (see paragraph 9.4)



2690000000005

ADAPTER CABLE FOR POWER SUPPLY length = 200 mm (see paragraph 9.4)



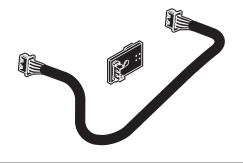
26500000000311

SERIAL CABLE RJ-DB9F Length = 1.5 m



976CG010000001

LOW PAPER SENSOR KIT





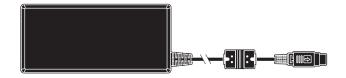


TL80III

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

963GE020000071

POWER SUPPLY (for technical specifications, see paragraph 9.1)



26100000000311

POWER CORD SCHUKO PLUG length = 2 m (see paragraph 9.4)



2690000000005

ADAPTER CABLE FOR POWER SUPPLY length = 200 mm (see paragraph 9.4)



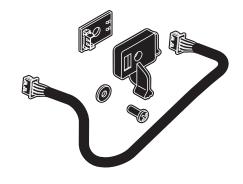
26500000000311

SERIAL CABLE RJ-DB9F Length = 1.5 m



976CK010000001

LOW PAPER SENSOR KIT



4B000000113900

ANTISTATIC STRIP SUPPORT KIT







12 TECHNICAL SERVICE

In case of failure, contact the technical service accessing the website www.custom4u.it and using the support tools on the homepage. It is advisable to keep the identification data of the product at hand.

The product code, the serial number and the hardware release number can be found on the product label (see paragraph 3.3). The firmware release number (SCODE) can be found:

- on the setup report (see paragraph 6.1)
- connecting the device to a PC and starting the "PrinterSet" tool (see paragraph 6.2)





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