EIDOS
a NOVEXX Solutions company

USER MANUAL

XTO2i.20 / XTO2i.40 / XTO2i.60
XTO22i.40 / XTO22i.60 / XTO22i.90

Intermittent Thermal Transfer Overprinter (TTO)

This manual contains the EC Declaration of Conformity

Contents

Information **2**
NOTES ON THE CORRECT USE OF THE PRINTER 2
GENERAL NOTES 2
SAFETY NOTICES 3
GENERAL PRECAUTIONS 3
DANGEROUS AREAS ON THE XTO PRINTING UNIT 4
PROTECTION ELEMENTS PROVIDED ON XTO 8
Product Description **13**
FUNCTIONALITY 13
PECULIARITY 13
CARRIAGE STROKE LENGTHS AND MACHINE TYPE 14
SYSTEM MODELS 15
REAR CONNECTION PANEL 18
OPERATING PANEL 19
BASIC SETTINGS 22
Operation **27**
INSERTING CONSUMABLES 27
THE THERMAL RIBBONS 28
PRINTING 29
CREATION AND SENDING OF THE LABEL WITH EASYCODE 30
HOW TO STORE LABEL FILES (.LM1) 32
HOW TO BACK UP 32
SETTING AND MONITORING 33
STATUS MESSAGES 51
Preventive Maintenance **53**
CLEANING INSTRUCTIONS 53
CLEANING THE PRINT HEAD 54
CLEANING THE PRINTING PLATE 54
CLEANING ROLLS AND RIBBON PASSAGES 55
CLEANING THE CARRIAGE SLIDING GUIDE 56
Appendix 1 ..... **57**
EC DECLARATION OF CONFORMITY 57
Appendix 2 ..... **58**
CE LABEL 58

Information

NOTES ON THE CORRECT USE OF THE PRINTER

Read these notes together with Chapter “Safety notices" to ensure that the printer is used correctly.

Switching on the printer.

- If the printer has been left in a cold or excessively hot environment for a considerable time, wait at least 1 hour before switching it on to prevent humidity collecting on the internal circuits.
- After switching off, wait for a few seconds before switching on the printer again.

Use in particularly places

If the printer is going to be used in particularly humid conditions (for example cheese factories) the protection kits are necessary. Do not use it where there is a lot of oil, iron particles, or dust.

Disposal

The device may not be disposed of with household rubbish. This appliance is labelled in accordance with European Directive 2012/19/UE concerning used electrical and electronic appliances (waste electrical and electronic equipment - WEEE).
The guideline determines the framework for the return and recycling of used appliances as applicable throughout the EU. To return your used device, please use the return and collection systems available to you.

GENERAL NOTES

Validity of this manual and required compliance

This user manual refers exclusively to the electronic printer for thermal transfer to film named XTO.
It is used for proper operation and adjustment of the printer.
The printer must be properly installed and configured to allow for operation and settings.
For information about installation and maintenance, see the Installation manual.
For technical questions not covered in this operating manual request a service technician.

Technical release

Software version XTO: 2.3
Hardware version XTO: 68XTO2I20E, 68XTO2I40E, 68XTO2I60E
68XTO22I40A, 68XTO22I60A, 68XTO22I90B

> These instructions have to be kept for future reference and must be available throughout the expected life of the product.

Liability and Copyright

All rights to this manual are reserved. This manual may not be reproduced in any form, either wholly or partially, without the express written authorisation of Eidos Srl. The contents of this manual are subject to modifications and improvements without prior warning. Every effort has been made to ensure the accuracy of the contents. If errors and/or inaccuracies are detected, inform Eidos Srl in order to make the manual as exhaustive as possible. Eidos Srl accepts no responsibility for any accidental errors or for any damage arising from the supply, scope or use of this manual.

How information is represented

Explanation of symbols

WARNING!
A warning symbol refers to risks that can result in severe or fatal injuries! The note contains safety measures to protect affected persons.

The text within this area contains instructions for preventing damage, recommendations as well as additional information.

SAFETY NOTICES

The printer is provided with a “EC Declaration of conformity” according to the **"Machinery Directive 2006/42/EC"** which includes the reference standards for "Electromagnetic Compatibility" and "Electrical Safety":

1. Do not start up the machine without first reading and implementing t he prescriptions of the “USER MANUAL” and the present “SAFETY NOTICES”.
2. The printing unit is equipped with two covers: the first [RM1] is removable while the second [RM2] can be opened by rotating it on two hinges. The removable cover [RM1] is monitored by two sensors [SENS_C1] and [SENS4] which switch off the power supply to the motors when the cover is open. The presence of a mechanical interlock [IB1] does not allow you to open the cover [RM2] without first removing the cover [RM1] and it does not allow you to insert and close the cover [RM1] before closing the cover [RM2]. To prevent finger access in the carriage [C1/C2] movement area [A/B], the XTO print unit and the print plate must always be aligned with each other.
3. The printer must not b e used in an explosive environment or be used to treat explosive materials.
4. The printer must n ot be used in irregular situations such as working without guards being correctly fitted to the machine; working with products other than those prescribed.
5. After 7 years of operation on an 8-hour daily shift, a complete overhaul of the product is recommended.

GENERAL PRECAUTIONS

1. Be careful when moving or carrying the printer. Dropping the printer may cause injury or property damage. The machine must NOT be used by the lid or the handle. For shipping by sea or air, the parts must be packed in cases. For carriage by land, it is sufficient to package the product in pluriball and cardboard boxes. If the machine is to be stored, the parts must not be stacked.
2. Do not open the printer during printing.
3. When cleaning the surface of the printer case, do not use the cloth that is soaked in thinner, trichloroethylene, benzine, ketone or similar chemicals.
4. Do not spill liquids or spray insecticide on the printer.
5. When printer trouble occurs, do not try to dissemble it. Instead, consult our service personnel.

DANGEROUS AREAS ON THE XTO PRINTING UNIT

Dangerous areas on XTO2 - front and bottom view

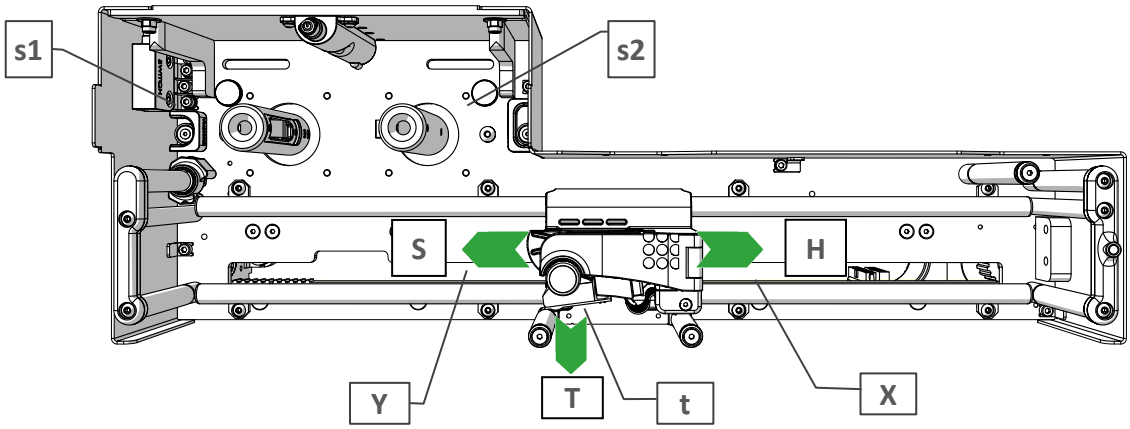


Figure 1: dangerous areas on XTO2 - front view: in the example the RH model

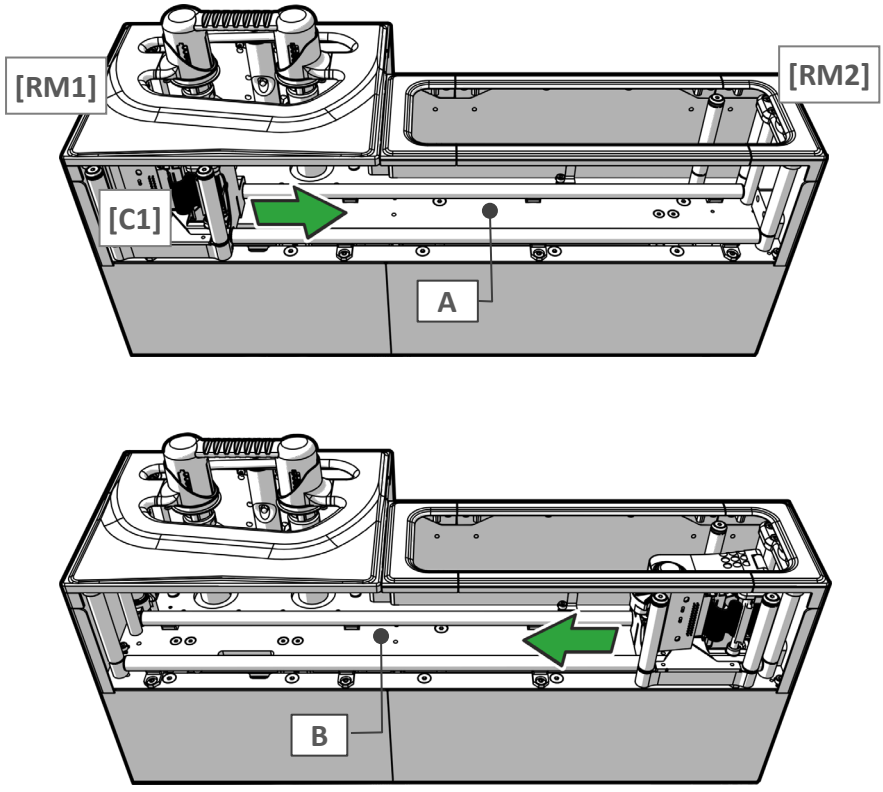


Figure 2: dangerous areas on XTO2 – bottom view: in the example the RH model

Note:
During the installation it is necessary to fix the printing plate and the printing unit so that the plate prevents finger access to the areas [A] and [B] where the carriage with the print head moves.

Dangerous areas on XTO22 (model with double carriage) - front and bottom view

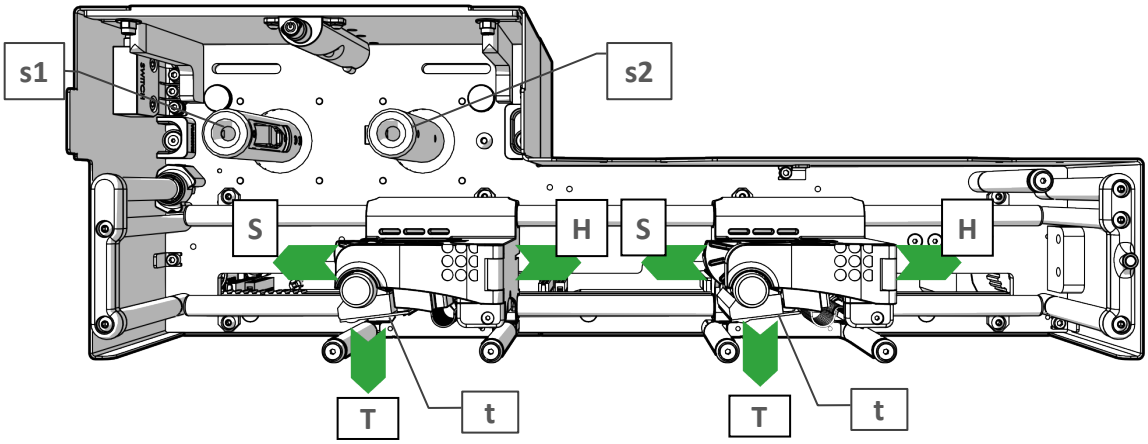


Figure 3: dangerous areas on XTO22 - front view

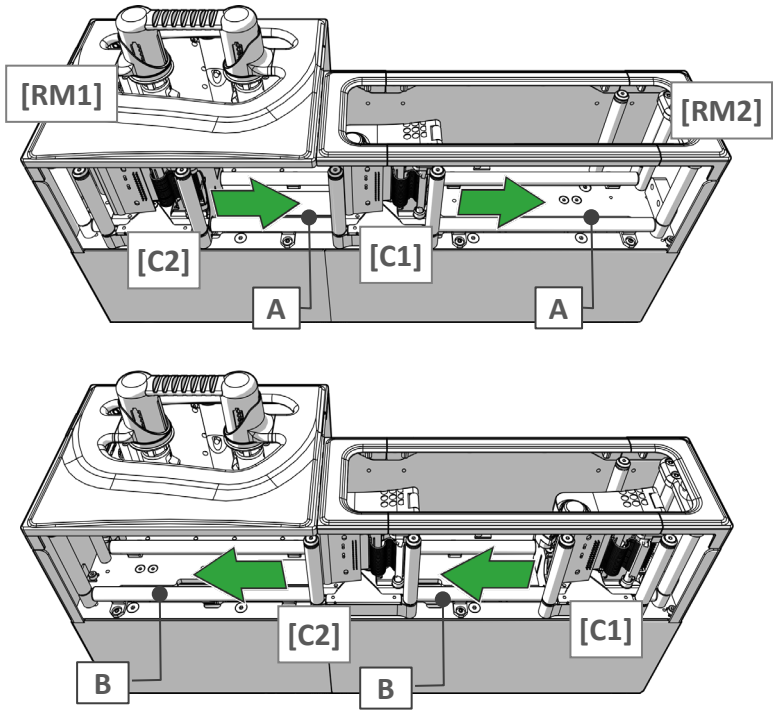


Figure 4: dangerous areas on XTO22 – bottom view

Note:
During the installation it is necessary to fix the printing plate and the printing unit so that the plate prevents finger access to the areas [A] and [B] where the carriage with the print head moves.

Dangerous areas on XTO - rear view

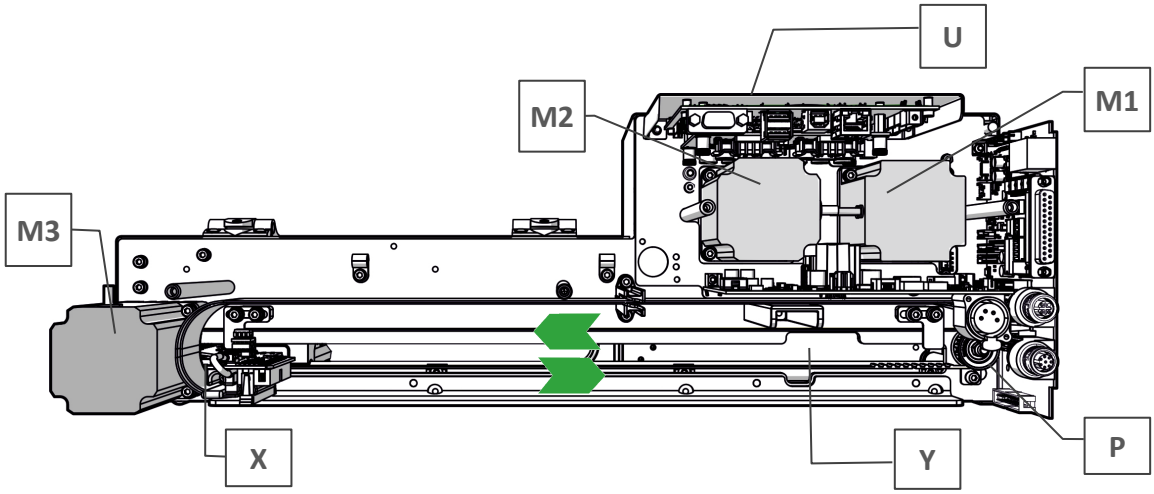


Figure 5: Dangerous areas on XTO - rear view

Dangerous areas on XTO - side views

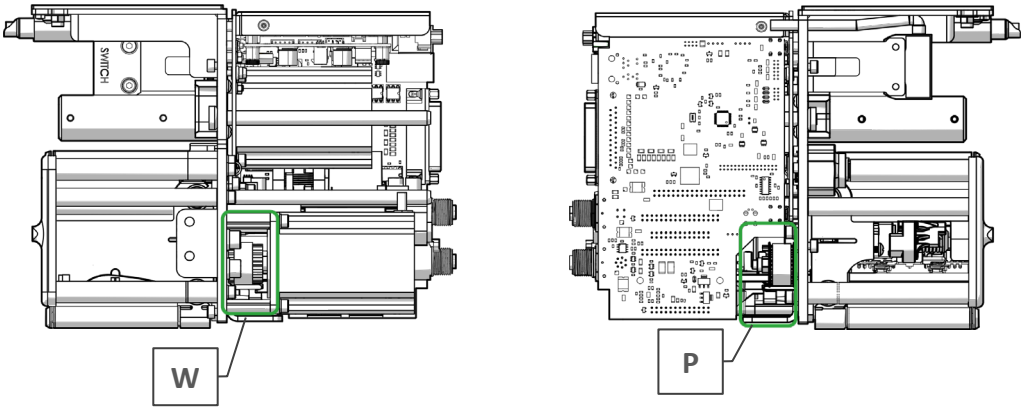


Figure 6: Dangerous areas on XTO - side views

Dangerous areas on XTO - carriage.

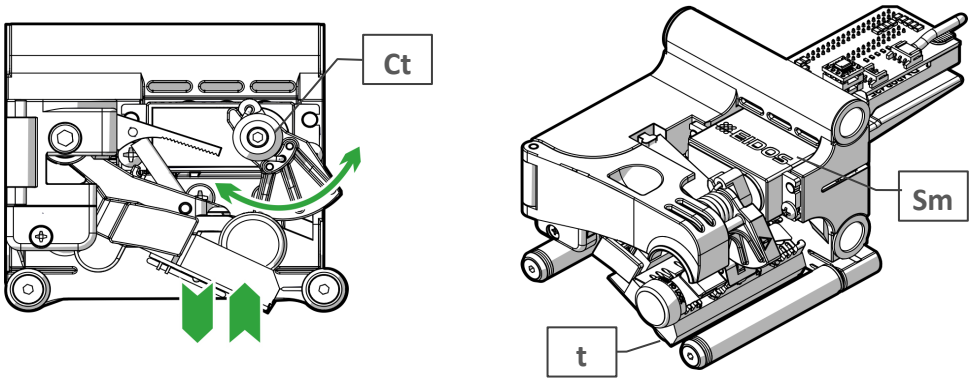


Figure 7: Dangerous areas on XTO - carriage

Passive (non-motorized) rotating rollers on XTO

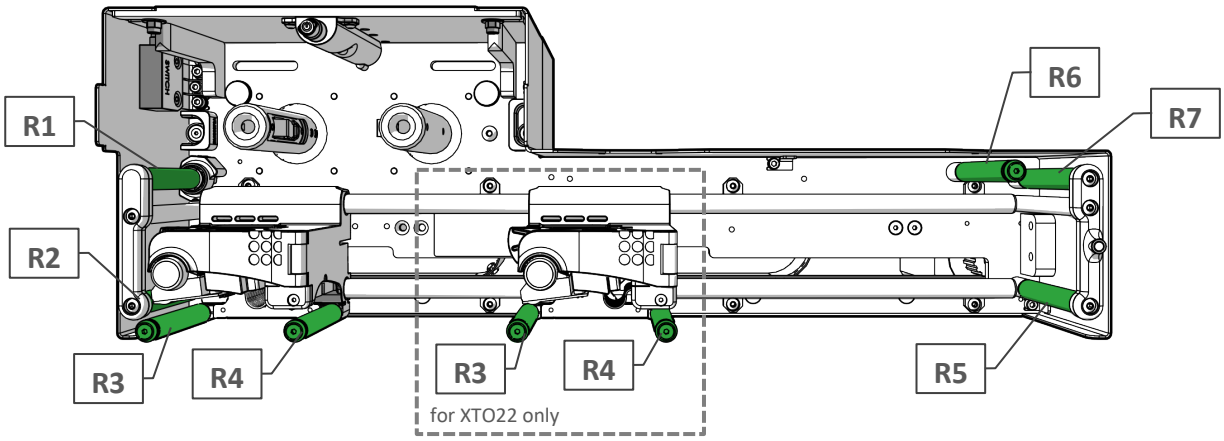


Figure 8: free rollers

Definitions

H	Movement of the carriage during printing or positioning in the "Service" area. Danger of crushing the fingers	
S	Movement of the carriage when returning to Home after printing or during a return from "Service". Danger of crushing the fingers.	
A	Access from the lower right side: carriage moving to the right (home position return)	
B	Access from the lower left side: carriage moving to the left (print)	
T	Movement of the print head	
s1	Rotation of the mandrel holding the ribbon release coil	
s2	Rotation of the mandrel holding the ribbon rewinding coil	
X	Movement of the carriage during printing or positioning in the "Service" area. Danger of crushing the fingers.	
Y	Movement of the carriage when returning to Home after printing or during a return from "Service". Danger of crushing the fingers.	
P	Rotation movement of the pulley and the belt for transmitting motion to the carriage	
W	Rotation movement of the pulley and the belt for transmitting motion to the carriage	
Ct	Print head movement servomotor cam	
R1	Rubberized ribbon encoder roller	
R2…7	Free rollers for ribbon guide	
Hot parts highlight on XTO: Part temperatures were measured at ambient temperatures of 20 ° C and after the XTO ran at full cadence for 7 hours.		
M1	Ribbon unwinding motor body	T max. 45°C
M2	Ribbon rewinding motor body	T max. 50°C
M3	Carriage movement motor body	T max. 60°C
U	CPU Heatsink	T max. 50°C
t	Print head	T max. 60°C
sm	Print head motion servo motor body	T max. 55°C

PROTECTION ELEMENTS PROVIDED ON XTO

Covers fixed with screws

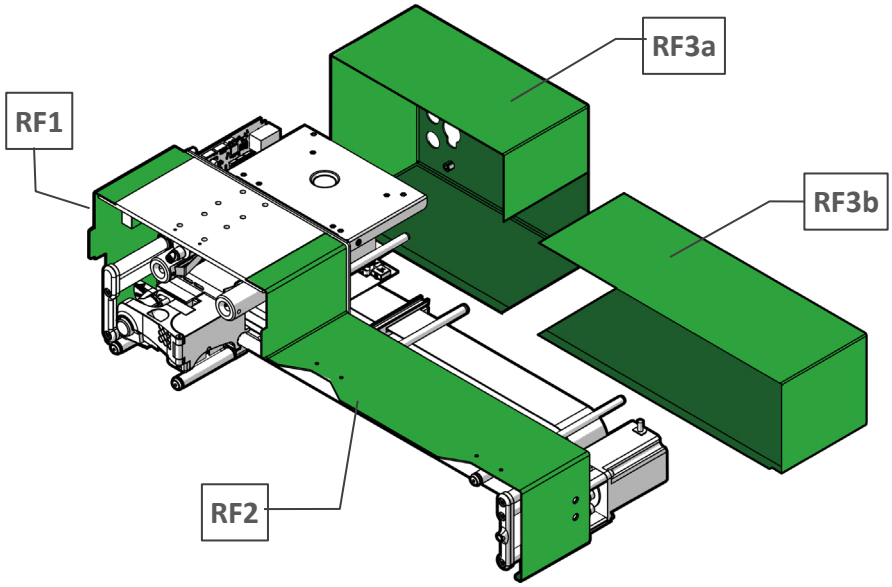


Figure 9: fixed cover

WARNING!
Disconnect the 48Vdc power supply to the printer before removing the fixed guards [RF1], [RF2], [RF3a], [RF3b]. The fixed guards must be removed only for extraordinary maintenance or repairs.

Movable interlocked guard [RM1] and openable guard [RM2]

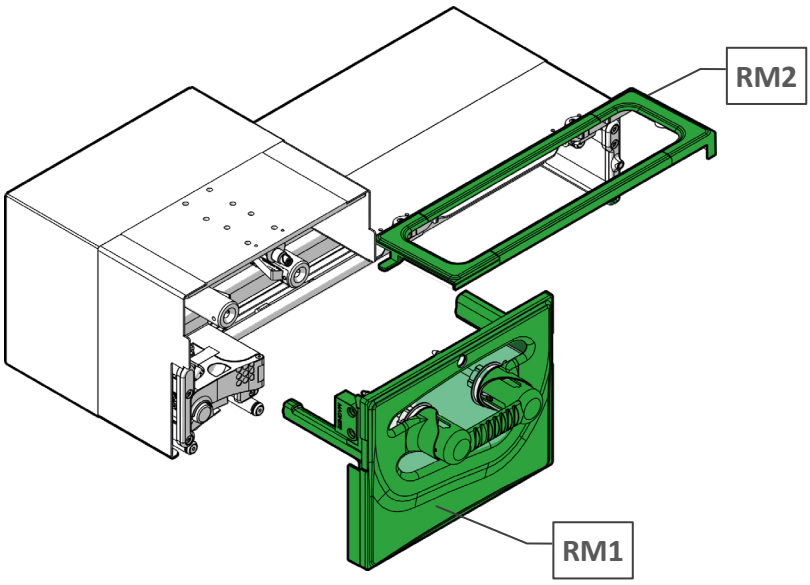


Figure 10: movable interlocked guard and openable guard

Fixed guard but not solidly screwed to the Printing Unit:
The Printing Plate [PP] cannot be strongly screwed to the Printing Unit [PU] because it is necessary to leave the passage to the packaging film [PF] to be printed.

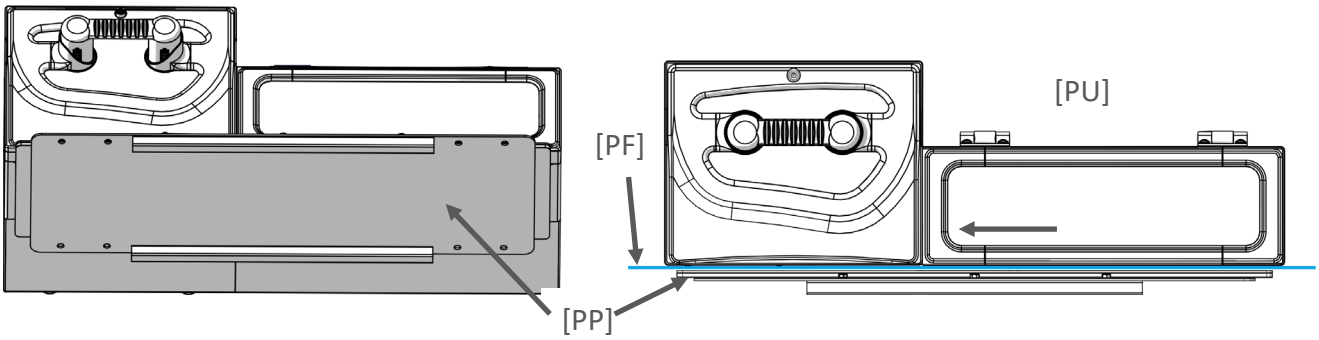


Figure 11: Printing plate

> **Note:**
> During the installation it is necessary to fix the printing plate [PP] and the printing unit [PU] so that the plate prevents finger access to the areas [A] and [B] where the carriage with the print head moves.

On supports where there is an independent adjustment of the Printing Unit [PU] and the Printing Plate [PP], it is always necessary to maintain a relative position between the two parts that prevents access to dangerous areas. Also to obtain a good print quality, the print head must be positioned at a distance from the edge of the rubber layer [RL], not less than 5 mm and that the Printing Plate [PP] is always centred with respect to the Printing Unit [PU].

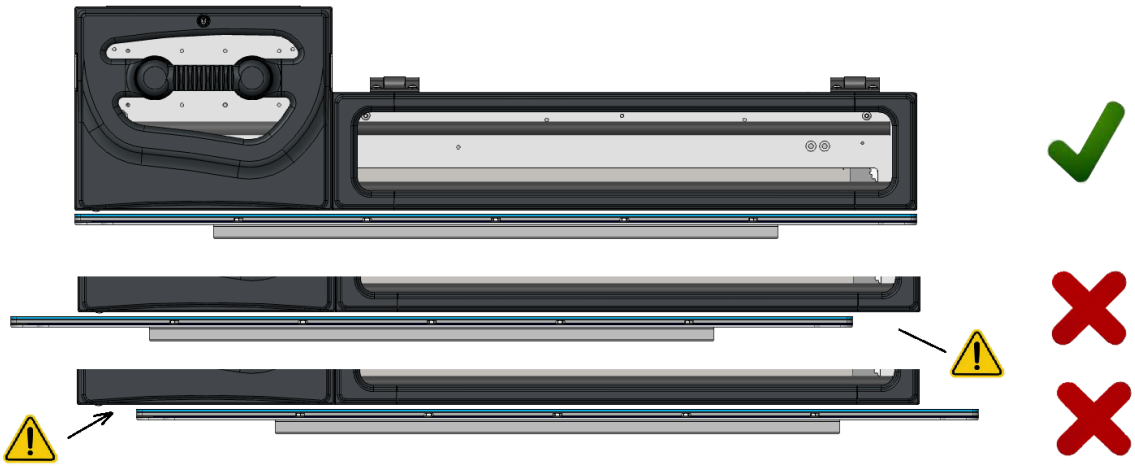


Figure 12: Printing plate and Print Unit position

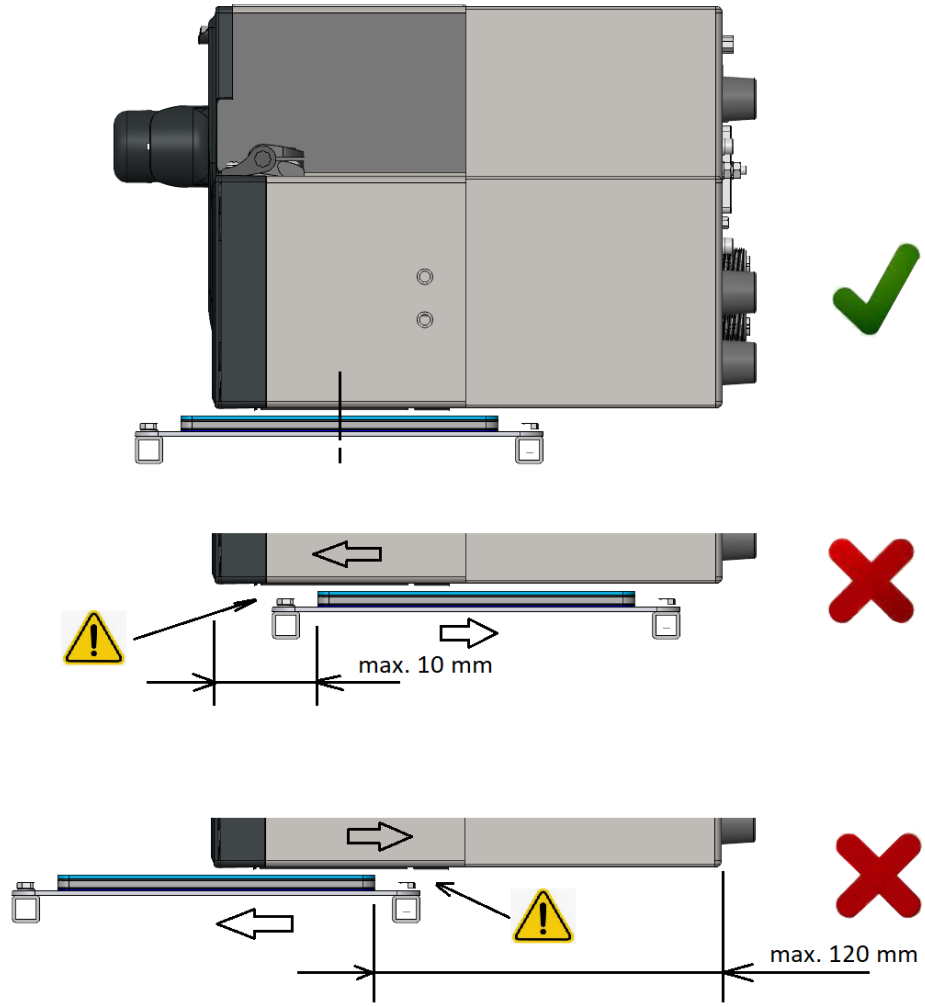


Figure 13: printing plate alignment

Monitoring sensors movable guard [RM1] inserted

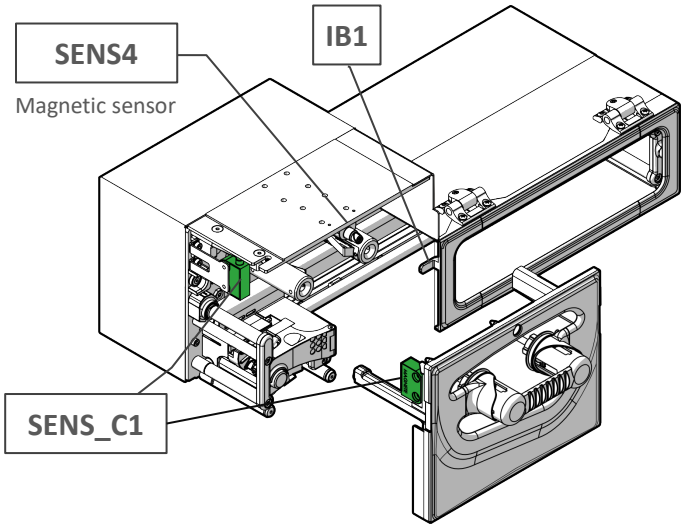


Figure 14: monitoring sensors

External safety contacts: SAFETY_A and SAFETY_B (SAF_EXT)
NOTE: If not used, they must be jumpered.

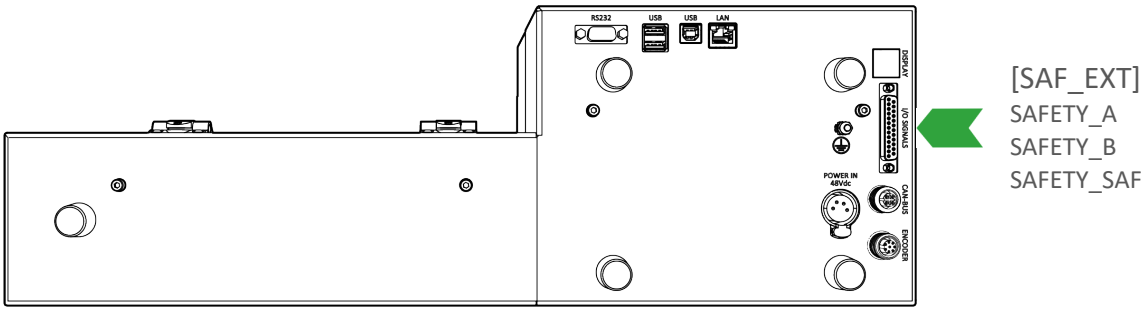


Figure 15: safety contacts

Not interlocked movable guard [RM3]
The guard is accessible only after removing the interlocked mobile guard [RM1].

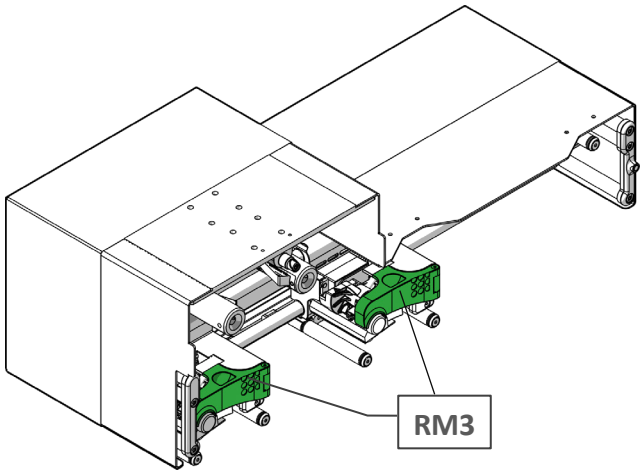


Figure 16: guard - in figure the XTO22 with double carriage

Magnets and magnets ring
To ensure good fastening of the movable guard [RM1] to the XTO printing unit, magnets [mg1], [mg2] have been provided on the printer body and magnetic rings [am1], [am2] on the ribbon inserter.

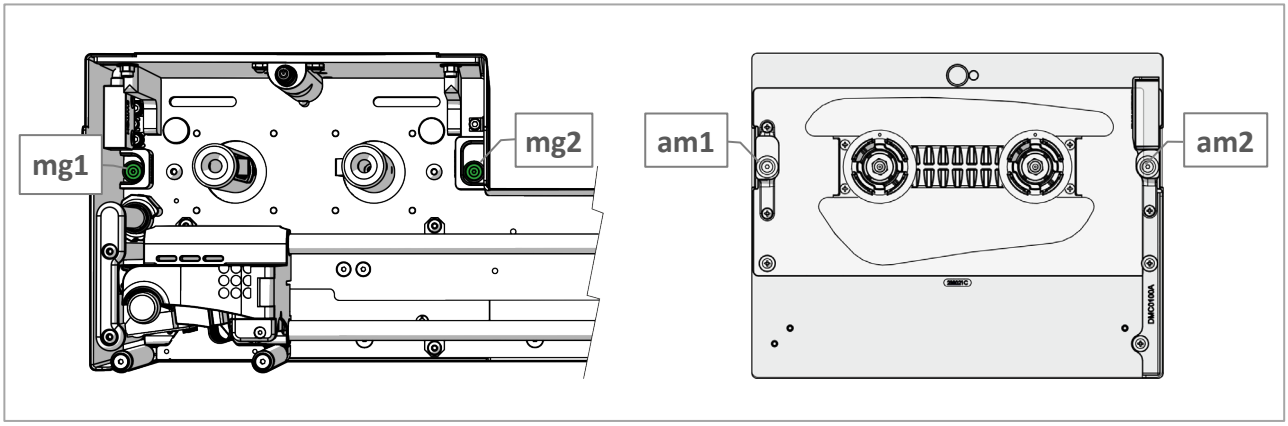


Figure 17: magnets

Warning symbols on the machine

CAUTION!
Warning symbols on the machine provide important information for the operating personnel.

➔ Do not remove warning symbols.

➔ Replace missing or illegible warning symbols.

Meaning of the warning symbols:

Warning symbol	Meaning
	The "Hot surface" symbol informs the operator and the staff assigned to the maintenance of the presence of potentially dangerous hot surfaces. Allow the device to cool off before touching it.

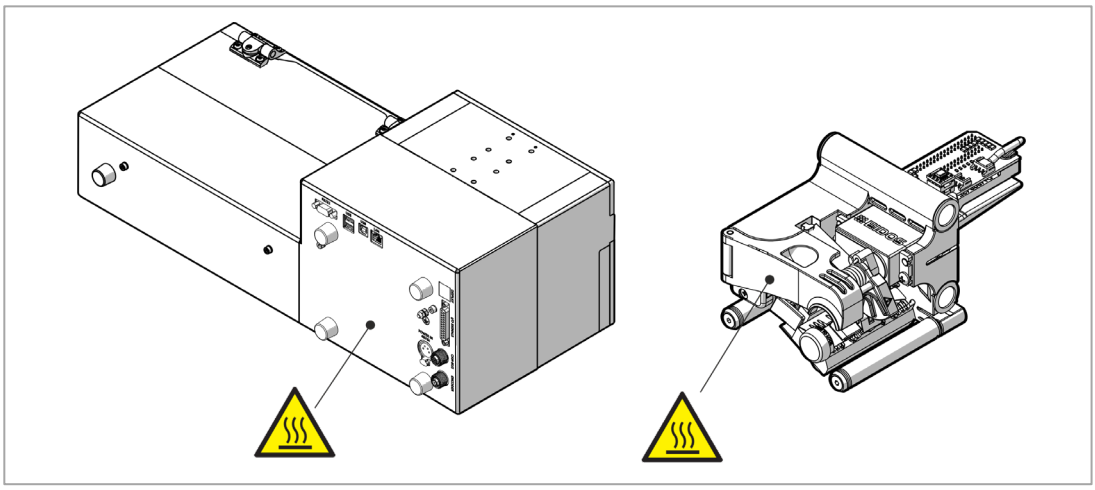


Figure 18: warning symbols

Product Description

FUNCTIONALITY

The XTO intermittent is an electronic printer for "thermal transfer to film" that is able to write automatically and directly on the plastic or paper film used in packaging machines by means of an inked thermal ribbon. The packaging film must be stationary during printing.

The XTO intermittent codes the different production batches with variable text, barcodes and logos extremely flexibly, ensuring high quality and fast printing.

In stand-alone operation, the label files created with the EASYCODE program installed in a PC can be loaded in the printer using the USB memory key.

With the XTO22 model, with double carriage, it is possible to halve the printing time and considerably increase the operating speed. It is also possible to manage and print different print formats and texts for each of the two printheads.

PECULIARITY

- Print Unit very light and compact, easy to be installed.
- Easy to service and repair; easy system of ribbon passage for changing operation.
- Programmable printing steps and format printing parameters loadable by the touch screen display (optional) or the P.C. through the use of a browser (Chrome, Edge ...).
- Improve unit uptime: not necessary to uninstall the print unit from the line.
- Modular assembly: mechanic + electronic.
- Easy and fast replacement of electronic components (no interference with mechanical parts).
- HMI (Human-Machine Interface) user friendly.
- Simply ribbon changing operation.
- Simply print head and print plate cleaning and replacing directly on board the printer.
- Printer management (parameters, labels, diagnostic etc..) with local EIDOS Touch panel or remote PC with a Web Browser.

CARRIAGE STROKE LENGTHS AND MACHINE TYPE

XTO model	Carriage stroke [C]	Print head type
XTO2ie*	100 mm	53 mm
XTO2i.20	200 mm	53 mm
XTO2i.40	400 mm	53 mm
XTO2i.60	600 mm	53 mm

The maximum print length (carriage stroke length) is autodetected when the printer is switched on.

			Distance between the two print heads [C1]	
XTO model	Carriages stroke [C1+C2]	Print head type	Minimum	Maximum
XTO22i.40	400 mm	2 x 53 mm	180 mm	350 mm
XTO22i.60	600 mm	2 x 53 mm	250 mm	550 mm
XTO22i.90	900 mm	2 x 53 mm	350 mm	850 mm

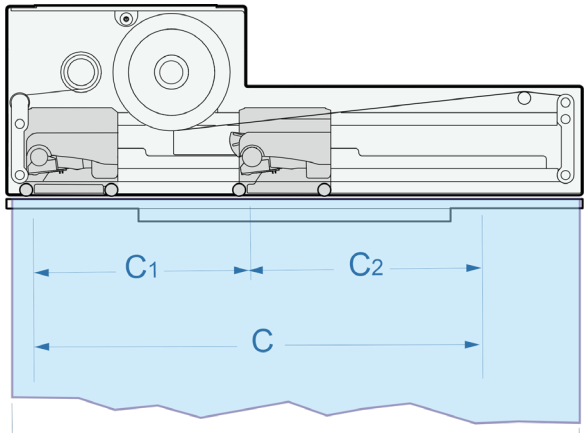


Figure 19: film passage and carriage stroke length

The “XTO model” is shown on the red bar of the Help page.

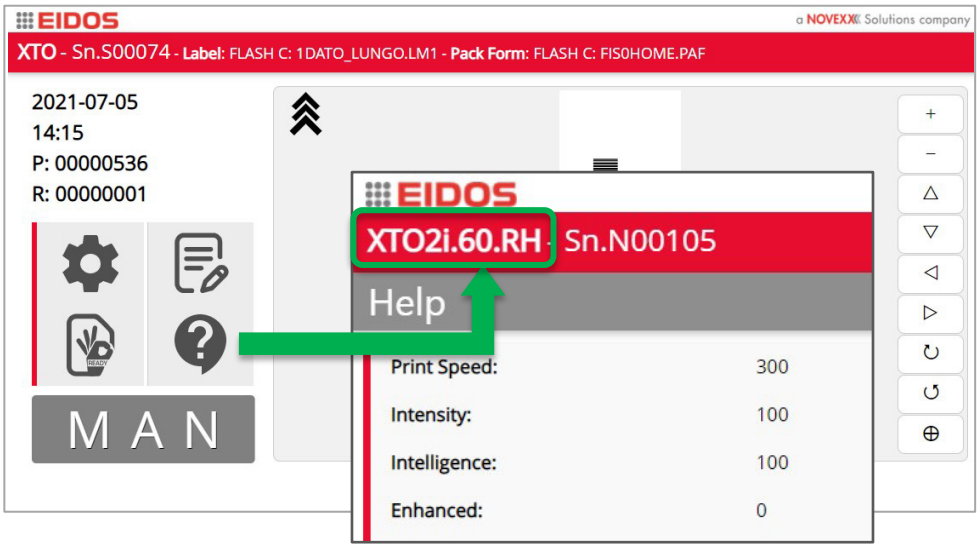


Figure 20: XTO model

The Printer is available as right hand (RH) version, i.e. printing occurs when the carriage moves from left (home position) to right.

* *For XTO2ie model see the specific manual*

SYSTEM MODELS

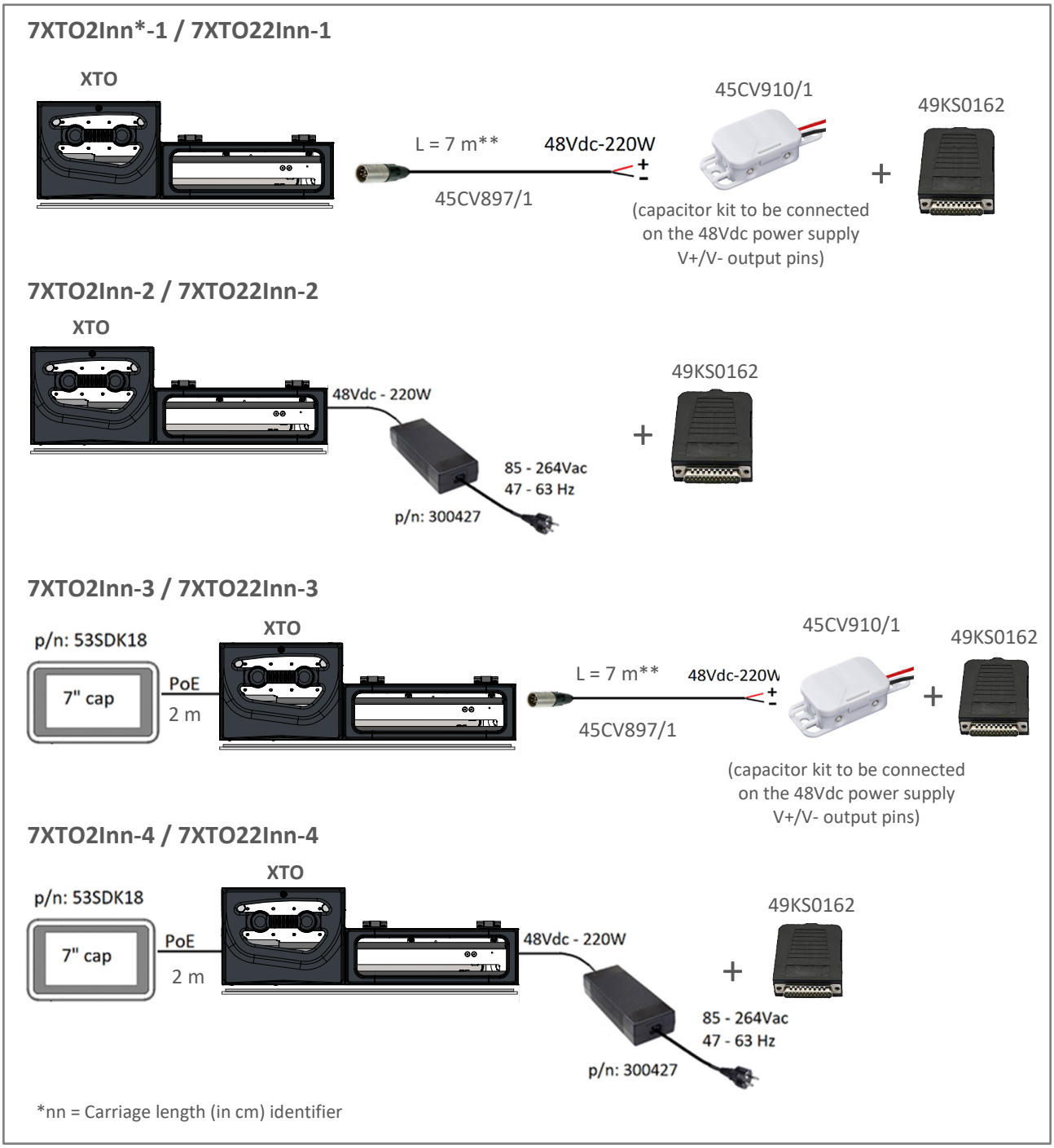


Figure 21: system models

WARNING!** the 45CV897/1 cable is supplied 7 meters long, but during installation it must be cut as short as possible, to avoid the error signalling (E207) when closing the front cover. The cable must pass far from the cables that supply motors or electrovalves, to avoid noises and spikes.

Note: The I/O SIGNALS Junction Box 49KS0162 is not intended for Industrial use.

IP Version: 7XTO2Inn*-1TR, 7XTO22Inn*-1TR / 7XTO2Inn-1IP, 7XTO22Inn-1IP

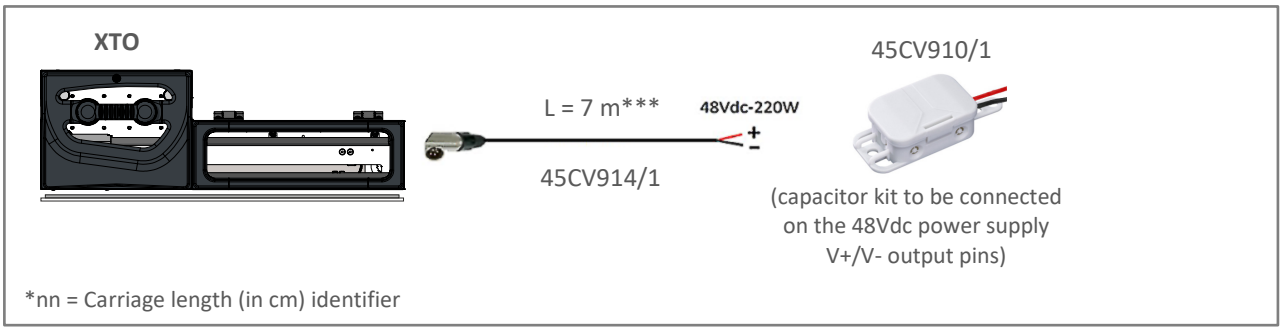


Figure 22: XTO IP model

The TR printer version offers an IP30 protection degree, having electronic boards and print head tropicalized. An IP printer version is available, with IP33 protection degree. It is equipped with tropicalized electronic boards and print head, as well as a rear cover with adequate protection for the connectors.
The optional 53SDK20 touch panel offers IP55 protection. An IP version of the Touch Panel, code 53SDK21, is also available, to be installed on the electrical cabinet of the packaging machine (a hole is required).

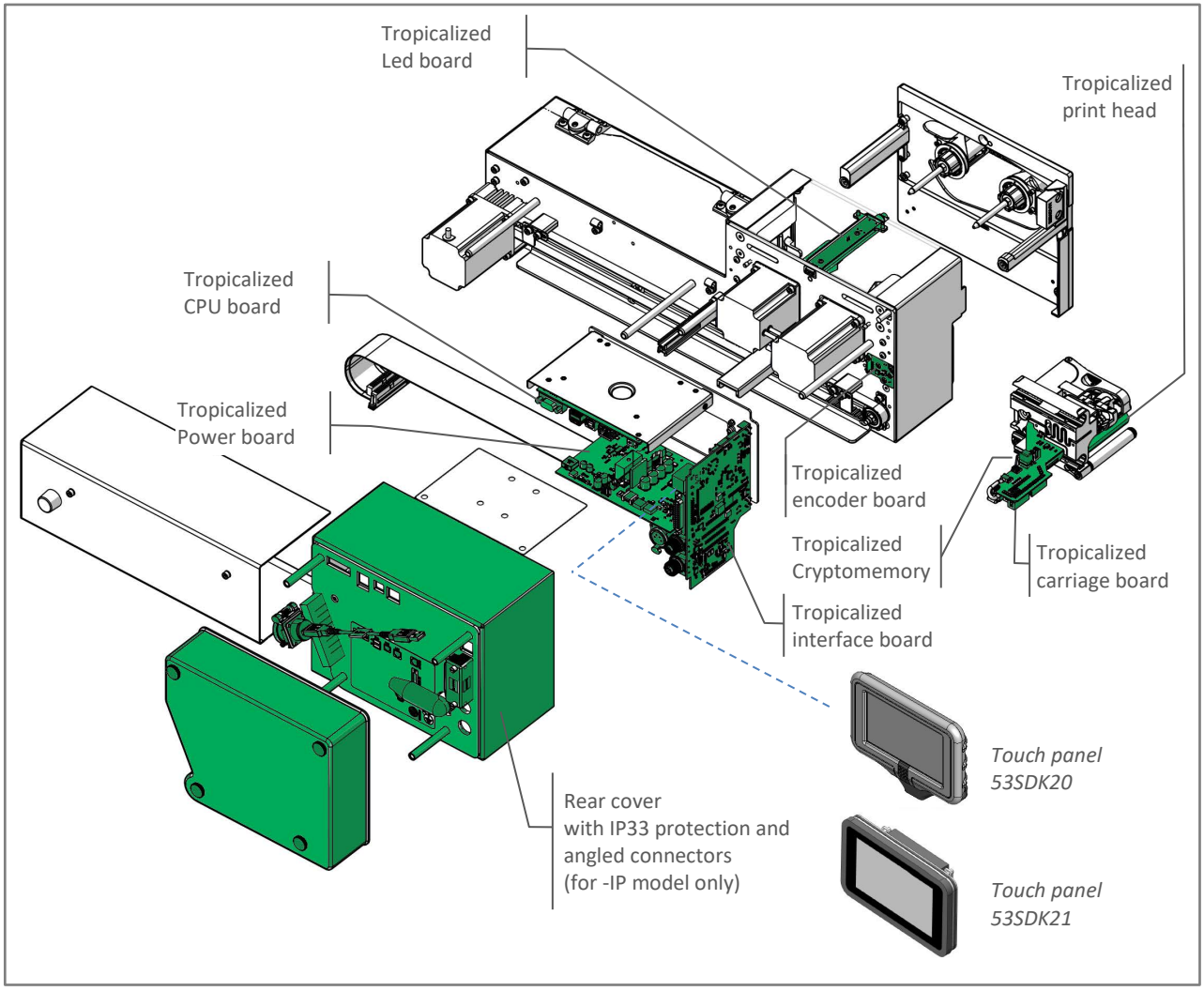


Figure 23: XTO-IP protected components

WARNING! *** the 45CV914/1 cable is supplied 7 meters long, but during installation it must be cut as short as possible, to avoid the error signalling (E207) when closing the front cover. The cable must pass far from the cables that supply motors or electrovalves, to avoid noises and spikes.

53SDK21 Touch panel

It is a 7 "TFT color graphic display with capacitive touch connected via ethernet to the printer, from which it is also powered.

To fix the EIDOS Touch Panel to the packaging machine, a hole must be made, to be made as per the drawing below. Fixing is ensured by means of an IP55 protection class sealing gasket. The EIDOS Touch Panel is therefore also suitable for applications in humid or dusty environments.

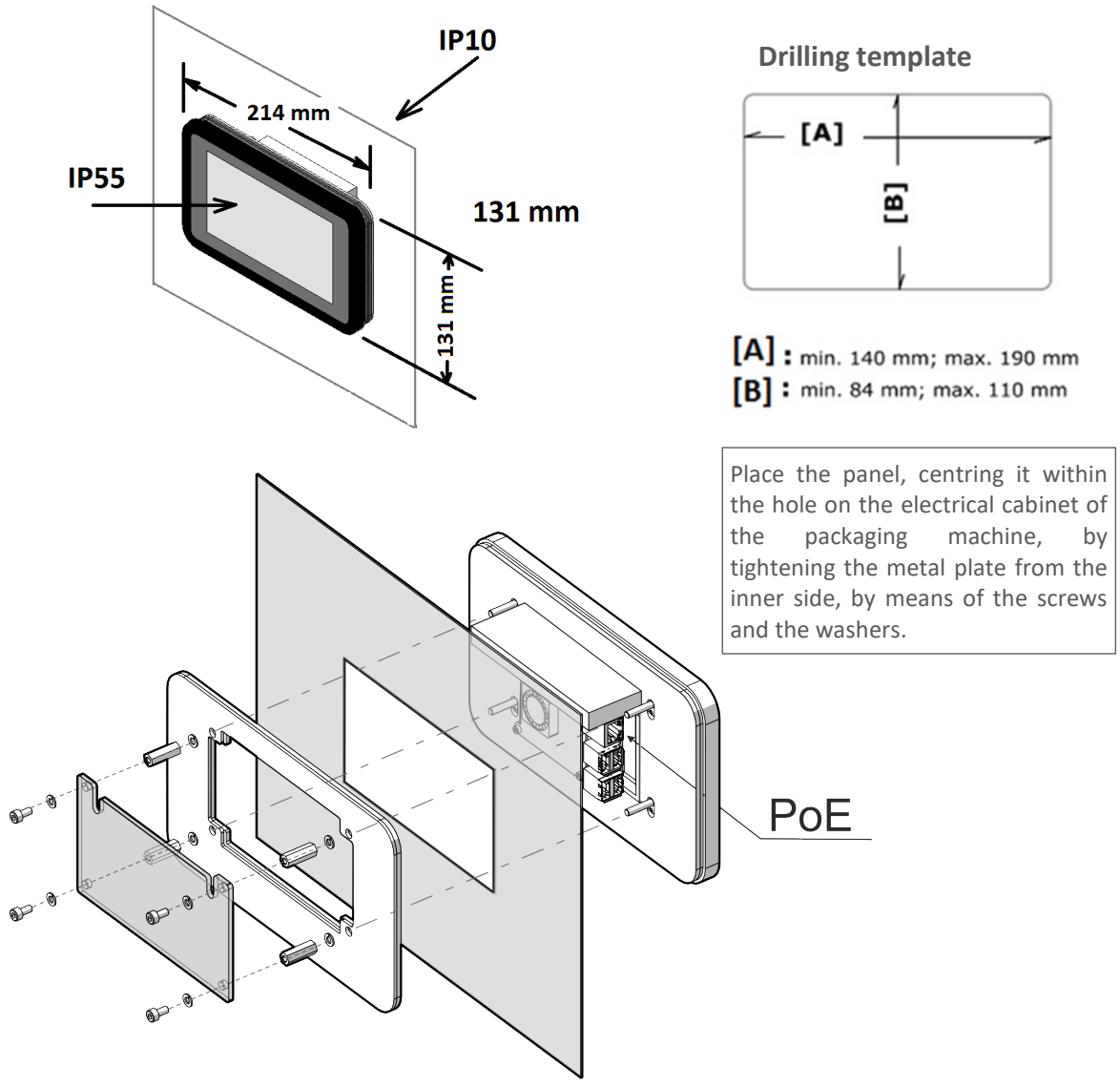


Figure 24: Touch Panel EIDOS 53SDK21

Note: The maximum thickness of the plate on which the "EIDOS Touch Panel" can be applied is 4.5 mm

REAR CONNECTION PANEL

WARNING!
This printer operates using 48Vdc – 220W voltage! Touching live electrical parts may expose you to hazardous electrical currents and may lead to burns.

➔ Make sure that the printer is switched off before connecting the power cable.

➔ Only connect the 48Vdc Power Supply to a grounded power socket fitted to authorised standards.

A. Connection to the 48Vdc-220W Power Supply
B. RS232 connection DSUB 9 pin female
C. USB-A/USB-B interface for label files exchange with USB memory stick (disk A, disk B)
D. USB device for direct connection to the PC (it does not work on XTO printer)
E. LAN Network connection (Ethernet 10/100/1000)
F. Ethernet POE port for EIDOS HMI connection (XTO printer IP: 10.0.0.1 not changeable)
G. Digital 24V I/O SIGNALS for print command, anomaly, external safety, page I/O... connections
H. CAN-BUS port for external devices (not managed by XTO)
I. Encoder port for packaging line speed detection (XTO2.c)
J. Connection to ground

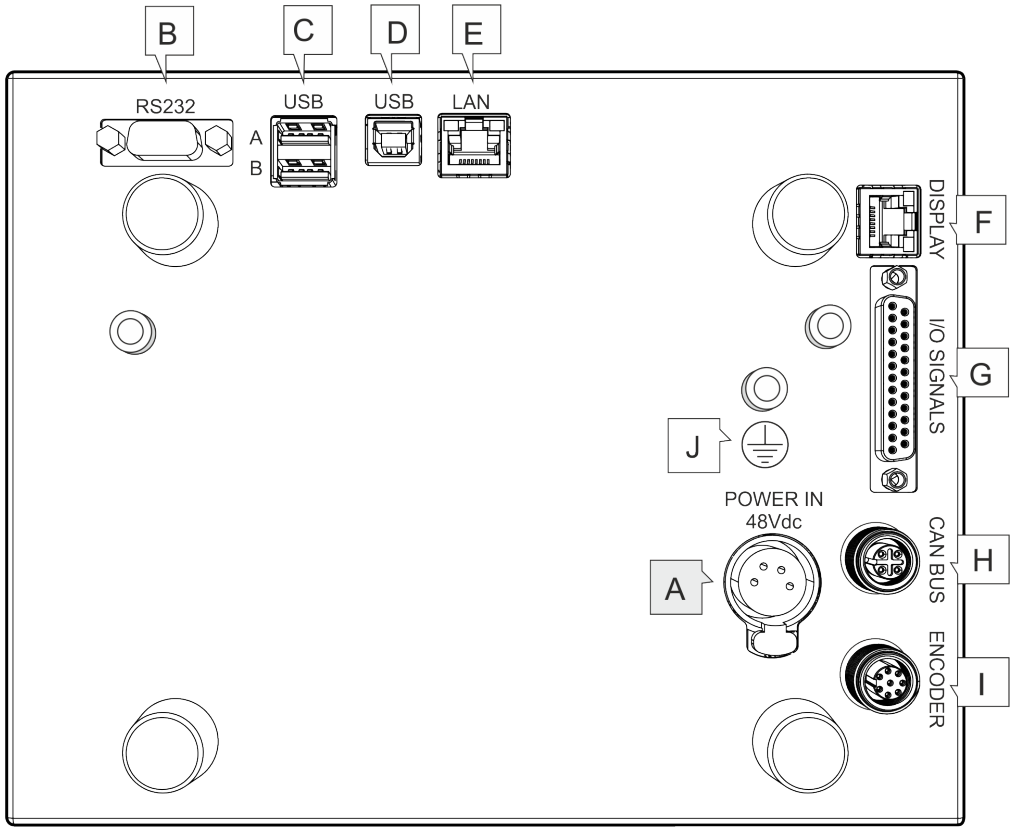


Figure 25: rear panel

For the cable connections refer to the Technical manual.

OPERATING PANEL

The operating panel is a comfortable external control panel for the XTO intermittent, which can be operated display devices. You can use the 59SDK18 device or a PC.

Prerequisites

- Display device, e.g. 59SDK18, Raspberry, tablet, PC
- Ethernet connection to the XTO printer

The software program has been developed and tested for the following browsers:

- Chromium (Raspberry Pi)
- Chrome (18 and up)
- Firefox (35 and up)
- Safari (6 and up)
- Edge (44 and up)

Main Functions

Manual mode

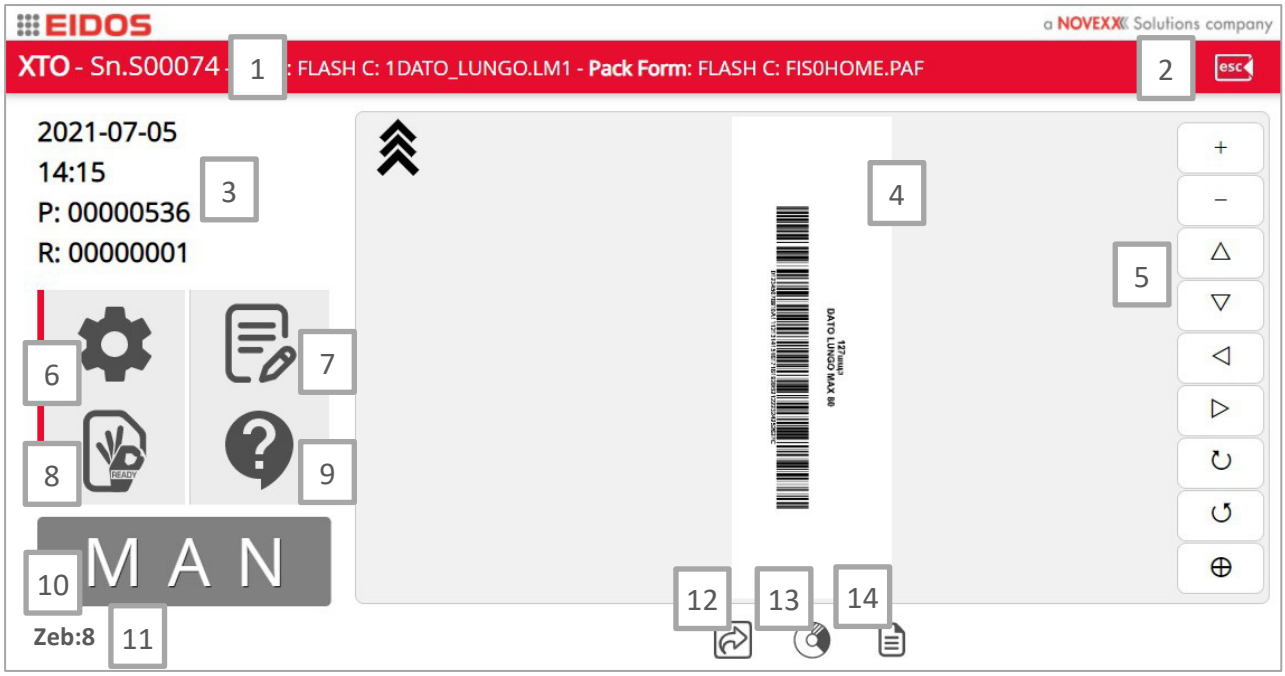


Figure 26: Manual mode view

1	Printer serial number	2	ESC button to select another printer or remote-control panel
3	Printer data: Current Date, Current Time, Progressive number, Quantity number	4	Label view
5	Label Pan and zoom	6	Go to Parameters Setting menu
7	Load a new label (this icon appears if the label does not contain any operator data) Set new operator data (this icon appears if the label contains some operator data	8	Go to Ready
9	Go to Info page	10	Current Printer status

11	Zebra Emulation actives (Zeb: 8 = 200dpi, Zeb:12=300dpi, Zeb:24=600dpi)	12	Shortcut (goes to the page containing the most used commands)
13	Go to Production Performance page view	14	Show label or LMT labels (1-2-3- 4)

Ready mode

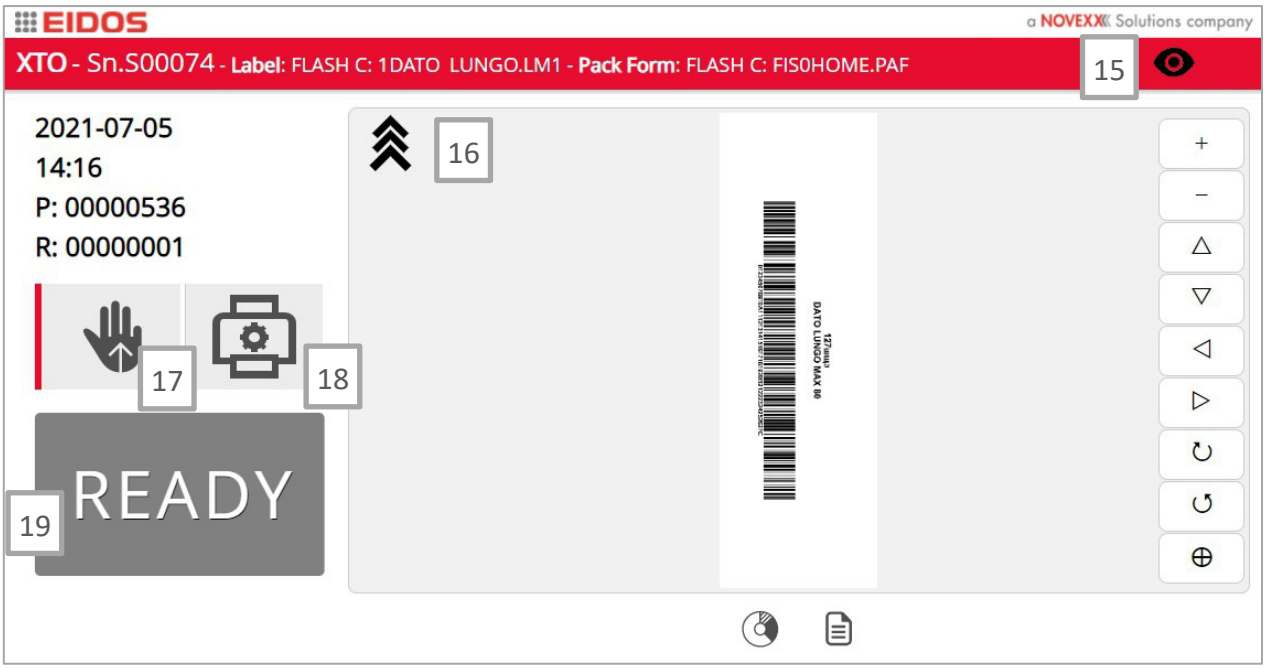


Figure 27: Ready mode view

15	Remote view status (the black eye appears when the user is logged with "view only" permission)	16	Print direction
17	Go to Manual status	18	Go to Printer parameters
19	Current Printer status		

Info page [9]

This page contains the information about all the parameters currently set relating to printer, label, counters, fw and sw versions, communication parameters ...

20	Model of the printer
21	Go to Communication parameters info
22	Parameters about printer and label loaded

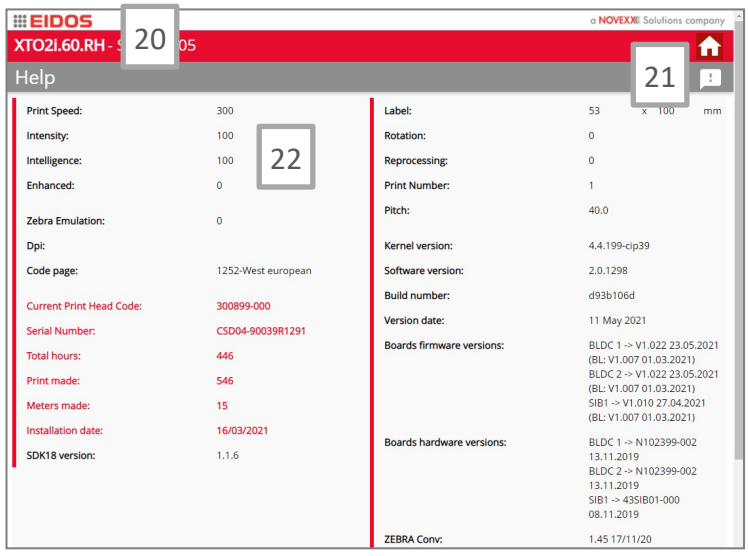


Figure 28: Information page

Production Performance page view [13]

In this page, the print job in progress can be monitored.

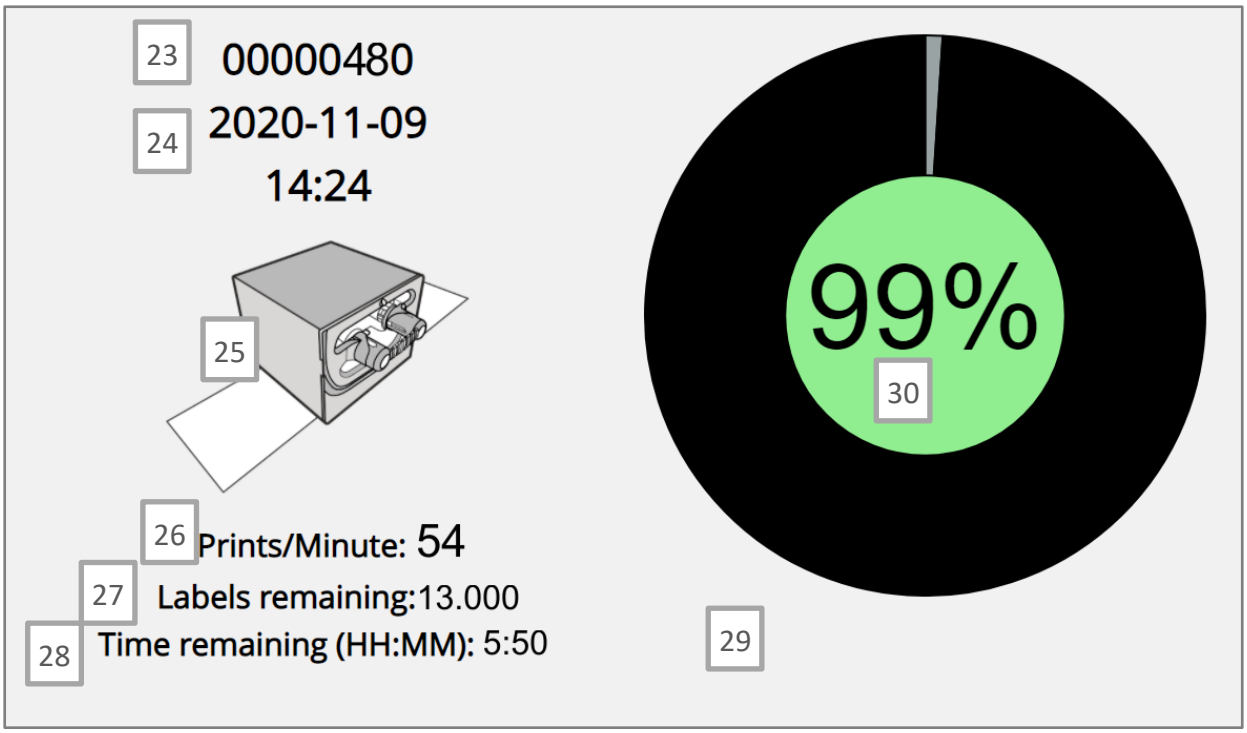


Figure 29: production view

23	Print counter	24	Current date and time
25	The animation runs when a print command is received (it is not a real time view)	26	Print rate: number of prints per minute
27	Number of labels that can still be printed with available ribbon, referred to the current print rate	28	Time remaining before finishing the ribbon, referred to the current print rate
29	Click in any part of anywhere in the window to come back in the MAN (or READY) view	30	Percentage of remaining ribbon (Green = OK, Yellow = Reserve status when time remaining is less than the "Ribbon Warning 1" threshold. Red = the ribbon is close to finish. When time remaining is less than the "Ribbon Warning 2" threshold)

BASIC SETTINGS

Settings in the Parameter **Menu**

Level 0 allows the operator to set the parameters necessary for printing the label.
This level is always accessible.

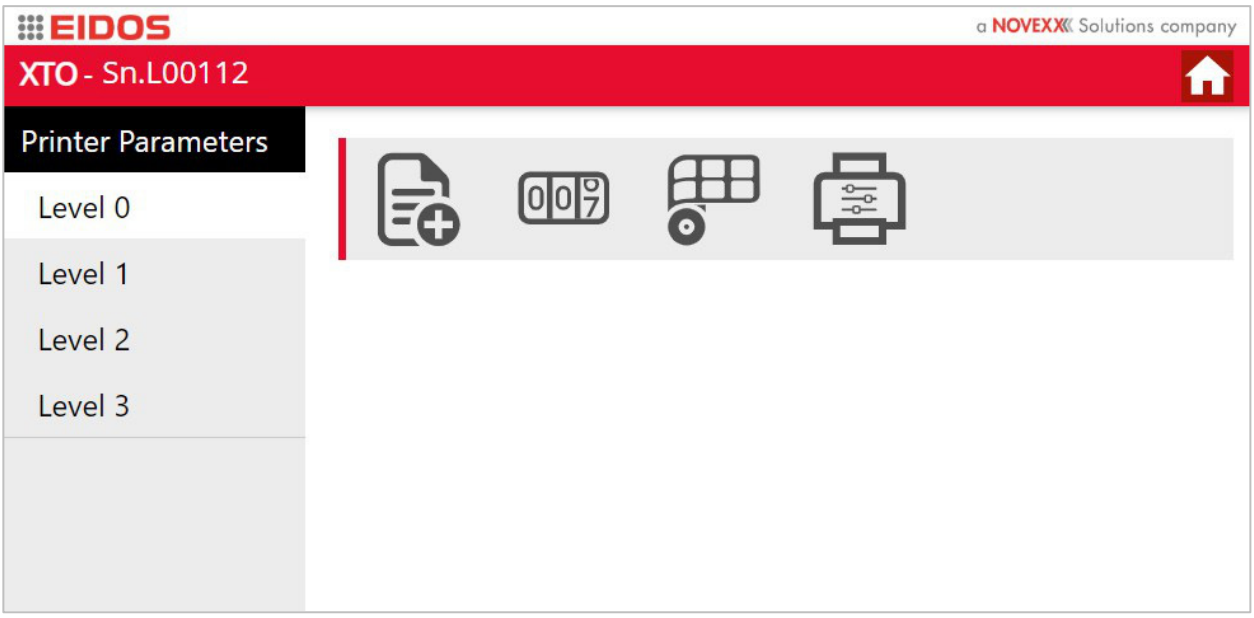


Figure 30: level 0 parameters

Load new label
Set counters
Load packaging format
Printer Set up

Password protection

Password protection allows different levels of access to the various operating features of the printer. The password can be set for each user, allowing access to the various levels; Operator (1) and Expert Technician (2). The third level is for the Technical Assistance technician.
The User level (0) is not password protected and allows the operations necessary for the main printing operations.

> At the first access to the menu all levels are freely accessible.
> For greater security, it is recommended to make them accessible by password.
> → How to set the password is shown in Chapter “Operation -Setting and Monitoring” of this Manual.

Load new label

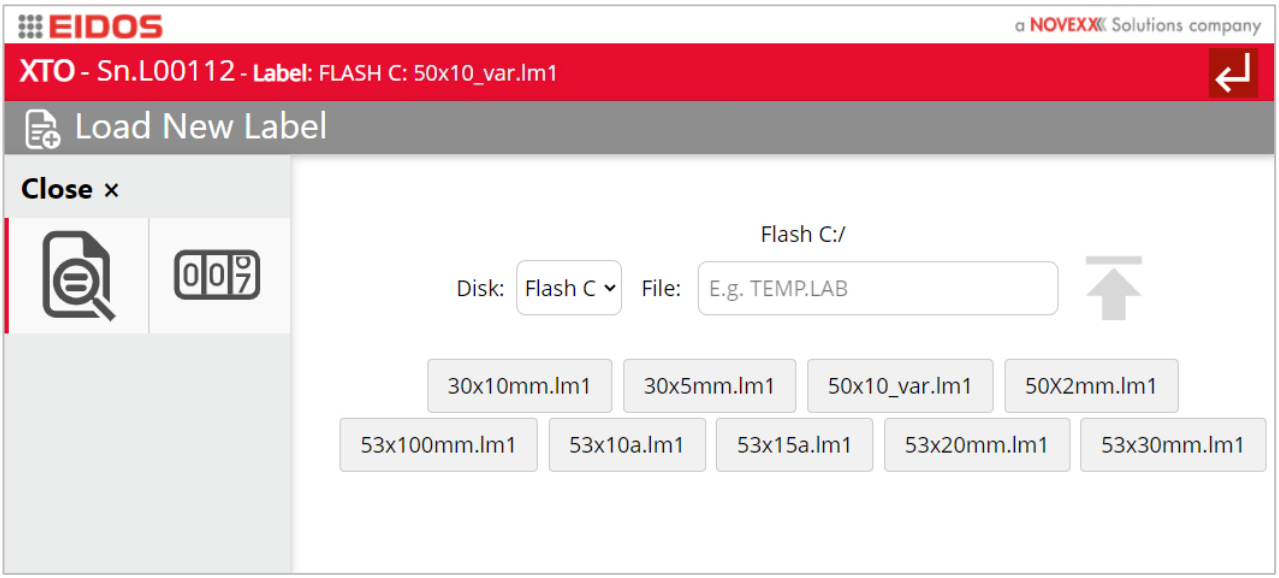


Figure 31: load label

Select the drive and load new label.
You can see the preview of the label by clicking on the button in the left menu.

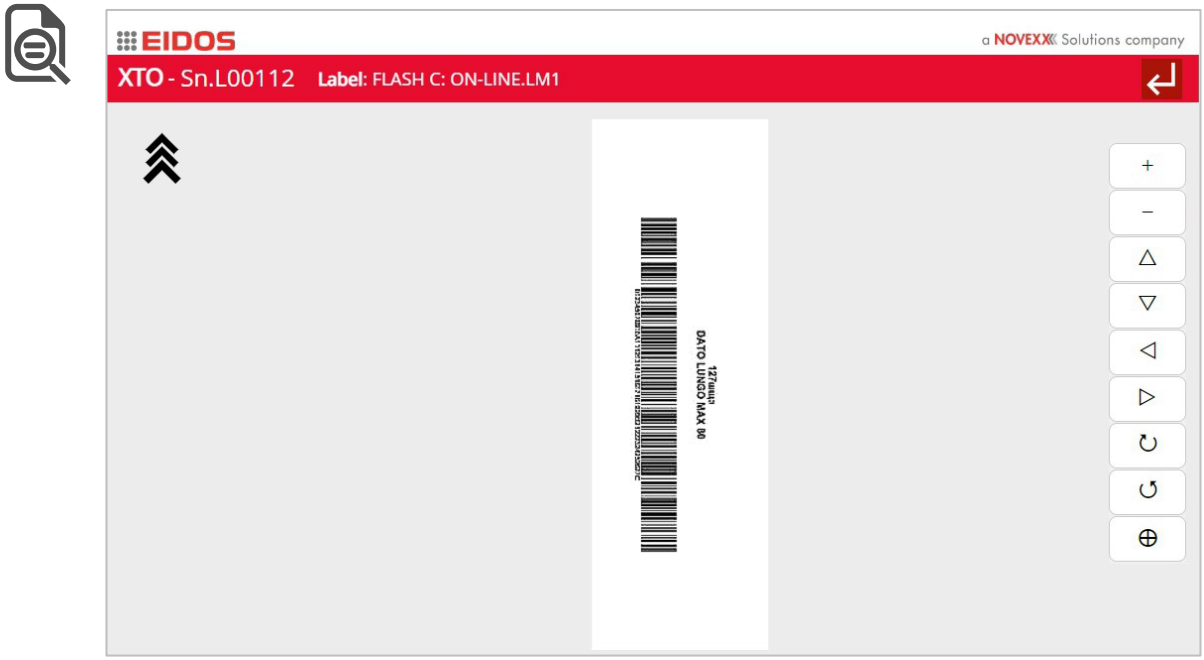


Figure 32: label preview

The zoom and pan function are enabled. It is also possible to rotate the label on the display (attention: just the image on the video, not the direction of printing).

> **NOTE**: each time a different label is loaded it is advised to feed the ribbon to avoid print overposition. Press the key reachable from the "shortcuts" page from Manual mode (see point 12 of the figure in the chapter "Control panel - Main functions - Manual mode" of this manual).

By clicking on the second button you can set the counters.

Figure 33: set counters

This page is also accessible by the same icon on the Parameters menu.

Load Packaging format

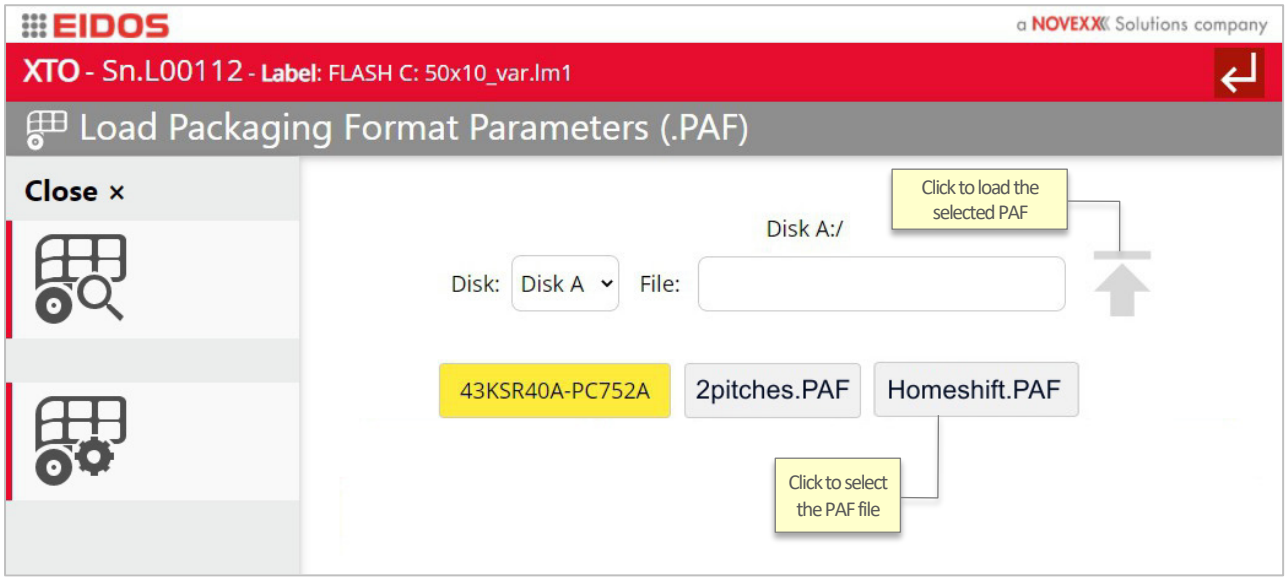


Figure 34: load PAF parameters

Select the drive and load the Packaging format (PAF) file. The text file with .PAF extension contains all the previously saved packaging format parameters. Every time you load a .PAF file you update the printer parameters. This function helps the operator to avoid incorrect printer settings.

By clicking on the button is it possible to view the current PAF parameter.

> **NOTE:** you can view the Paf without load it selecting the PAF file and clicking the icon.

By clicking on the button is it possible to set the current PAF parameters or create a new.

> **NOTE:** you can modify a Paf without load it selecting the PAF file and clicking the icon. This can be useful if you want to edit different files at the same time and load them later or save them for use on other printers.

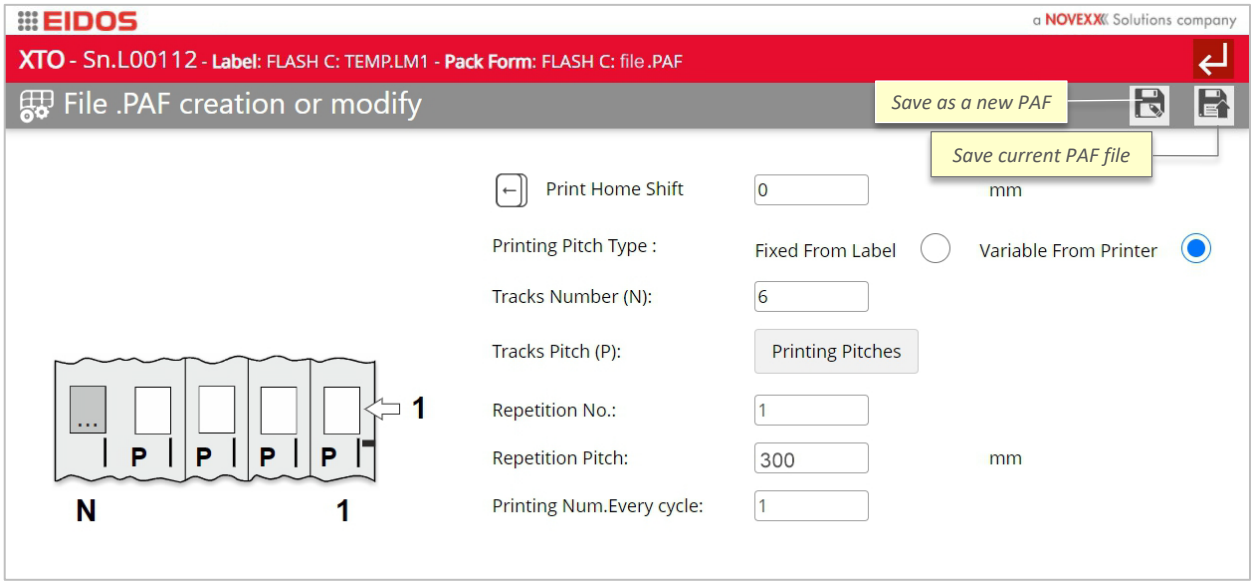


Figure 35: PAF creation

The printer can print labels on multi tracks packaging film. To do this you must set how many tracks must be printed and the pitch between each printed image on film.
Print Home shift: increase this parameter to get a shift of the printed image in the direction of the carriage movement.
Printing Pitch Type
Fixed From Label: the tracks pitch "P" and the print number "N" are stored in the label file. Any track has the same pitch.
Variable From Printer: the printing pitch for each track and the number of tracks "N" are set as printer parameters.
Track Number (N): this parameter defines the number of tracks "N" to be printed.
Tracks Pitch (P) - Printing Pitches button: between each track you can set different printing pitches (P1, P2, P3...)

Figure 36: printing pitches

Repetition No.: this parameter can be set only when an .LMT label file is loaded. The .LMT label file is a multi-text label file that can contain internally till 4 different labels. This parameter sets how many times you want to repeat, in printing, the .LMT file on the packaging film.
Repetition Pitch: in case of LMT repetition (Repetition No>1) this parameter sets the repetition pitch as the distance between the start of the first label on the first LMT printed file and the start of the first label on the next LMT printed file.
Printing Num. Every Cycle: it sets a limit to the maximum number of labels printed in case of LMT repetition. For example: you have a .LMT file of 4 labels and you want to repeat it twice but you need only 7 labels instead of 8 (4 x 2); in this case you must set this parameter = 7.

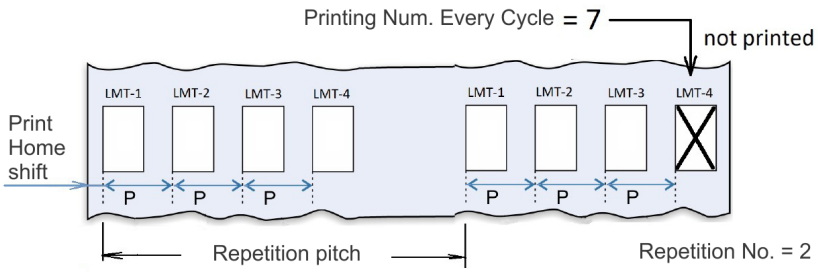


Figure 37: LMT file with4 text; Repetition No>1 and Print Num. Every Cycle =7

> **Note:** each time a different PAF is loaded, a new ribbon feed must be done, to avoid overwriting the already used ribbon. Press the key reachable from the "shortcuts" page from Manual mode (see point 12 of the figure in the chapter "Control panel - Main functions - Manual mode" of this manual).

Printer Setup

This menu allows adjustment of the basic parameters; to make a fine adjustment without the risk of compromising the operation of the printer, only 10% adjustment of the set value is allowed. The value can be freely set by accessing the Level 1 “Printer Parameters” menu.

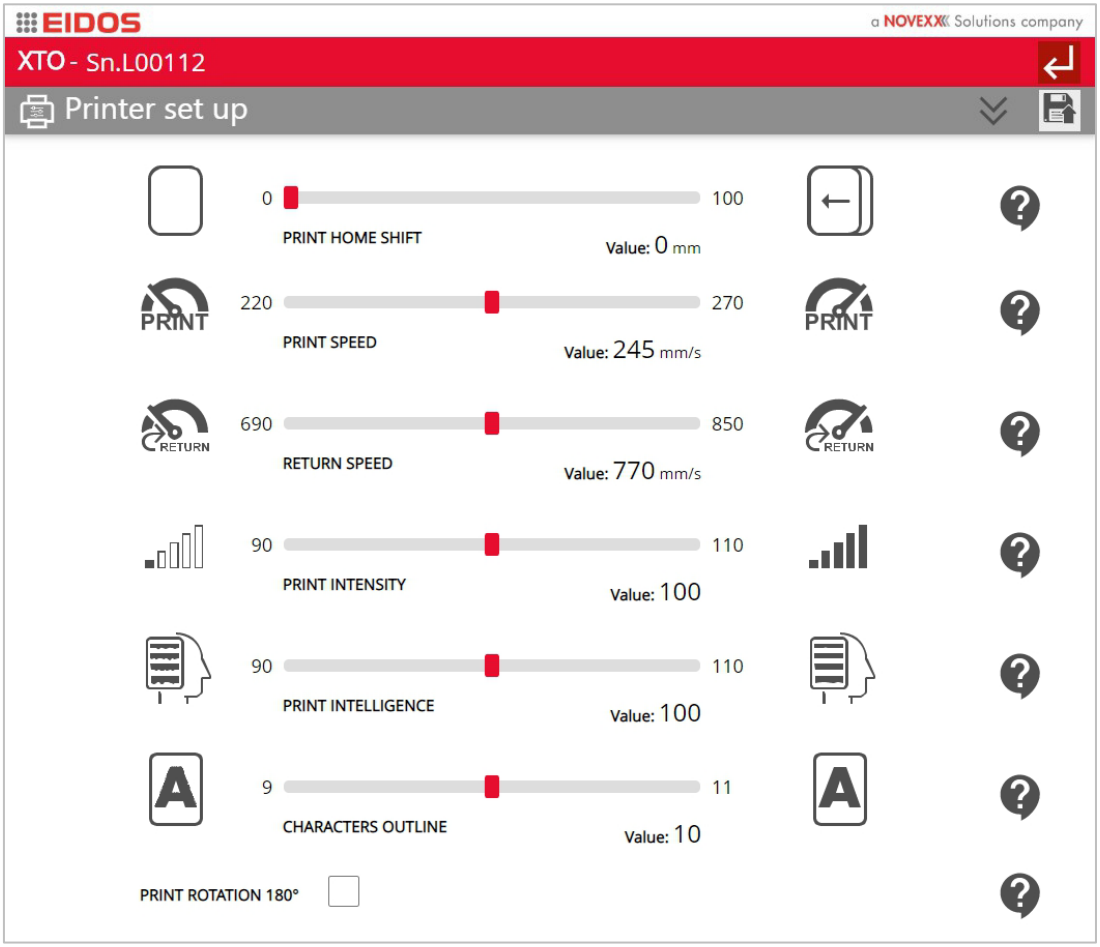


Figure 38: setup parameters

By clicking on the button you can view the help of each parameter.

Operation

INSERTING CONSUMABLES

How to load the thermal ribbon

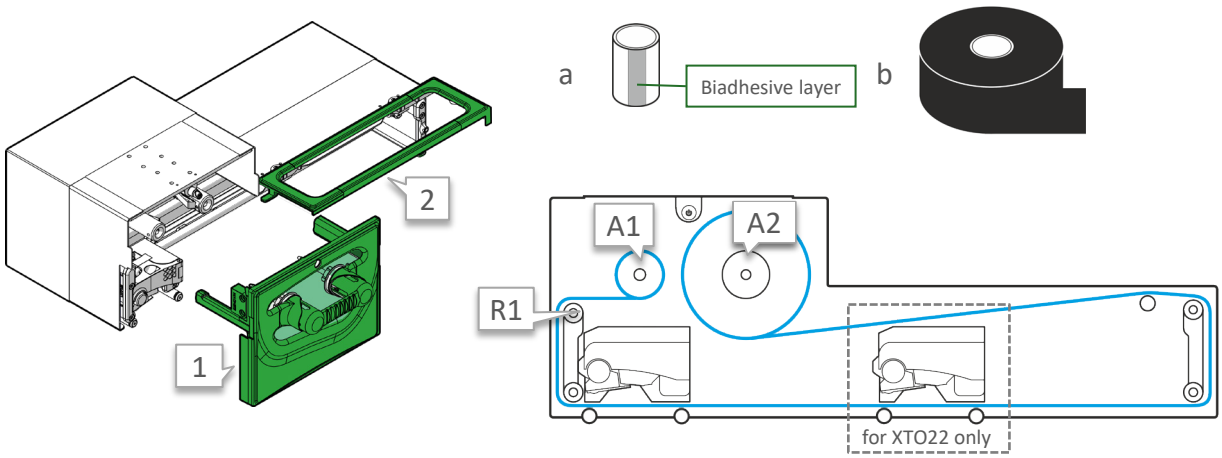


Figure 39: ribbon passage

How to operate

- Remove the front cover [1]
- Open the side cover [2]
- Remove the used ribbon.
- Clean the rubberized ribbon roller [R1] using alchool to have a good grip with the ribbon.
- Insert the empty cardboard core [a] with biadhesive layer on shaft [A1] and the ribbon core [b] on shaft [A2].
- Unwind the ribbon from the full core and pass it through the slits, as shown in figure .
- Wrap the ribbon tail around the empty core to have a grip with the biadhesive layer. If there is no bi-adhesive on the empty core, fix the ribbon to the core using added adhesive.
- Close the side cover [2].
- Insert the front cover [1].
- Wait the automatic ribbon feed operation to extend the thermal ribbon and to avoid wrinkles.
- Set the printer READY.
- Restart the packaging line.

> **NOTE**: for 30 mm wide ribbon it is necessary to insert ring spacers 49KS0113 on the shafts. XTO requests to have ribbon centered to the print head.

The thermal ribbon reserve condition is reported on the basis of the diameter of the ribbon recovery reel and is always visible on the page “Production view” of the Printer software (see Chapter “Product Description - OPERATING PANEL” of this manual).

> To ensure good print, always clean the print head before fitting a new ribbon to the printer.

THE THERMAL RIBBONS

Smart-Black - XTO series ribbon

The XTO ribbons selection include two different wax-resin products (standard and special) available in 1200m length and two different resin alternatives (standard and special) available in 1000m length. Moreover is possible to print on craft films by a special ribbon.
All the ribbons are winded on 1 inch plastic core, ink IN.
Peculiar characteristics of the Eidos Smart-Black ribbon line are: high quality and high speed of printing, maximum ribbon length, resistance to freezing and humidity, resistance to scratching, heat resistance.
Using EIDOS ribbons is recommended for the protection and durability of the print head. The EIDOS ribbons allow you to set "Intensity" of printing and "intelligence" to default values = 100. The use of non-EIDOS ribbons with intensity values >> 100 and intelligence << 100 risks damaging the print head in a short time.

Technical data

code	3xNE51y	3xNE52y	3xNE53y	3xNE54y	3xNE50y
Ink	wax/resin	wax/resin Premium	resin	resin	wax/resin
Speed max	600 (mm/s)	600 (mm/s)	500 (mm/s)	300 (mm/s)	600 (mm/s)
Print intelligence	**100**	**100**	**100-50**	**120**	**100**
Enhanced mode	**NO**	**NO**	**NO**	**YES**	**NO**
Resistance to smudge	**3**	**4**	**5**	**5**	**3**
Resistance to scratch	**3**	**5**	**5**	**5**	**3**
Resistance to freezing	**5**	**5**	**5**	**5**	**5**
Resistance to heat	**2**	**3**	**4**	**5**	**2**
Resistance to solvents	**2**	**3**	**4**	**5**	**2**
Flexible packaging PP	**√**	**√**	**√**	**√**	
Aluminium (coffee, pet food, powder protein)			**√**	**√**	
Resistance to sterilization and boiling			**√**	**√**	
Craft paper					**√**
Food approval	**√**	**√**	**√**	**√**	**√**

1= not enough 2=sufficient 3= discrete 4=good 5=excellent
x = 7 Length 1000 or 1200 m according to the model; x = 8 Length 600 m (the supply is subject to technical evaluation by EIDOS).
y = 7 Width 55 mm; y = 9 Width 30 mm

The rolls of thermal ribbon must be bought from the printer supplier in order to have the best possible guarantee of operating efficiency.
Using uncertified ribbons makes malfunctions highly likely and may greatly increase damage to the thermal head or cause dragging problems that are due to dirtying of the ribbon guide rolls.

⚠ Make sure you use the right thermal ribbon for each surface! Contact the supplier for tests or certification. The printer's warranty does not extend to local damage to the head in the form of mechanical nicks but only to normal uniform wear along the entire head.

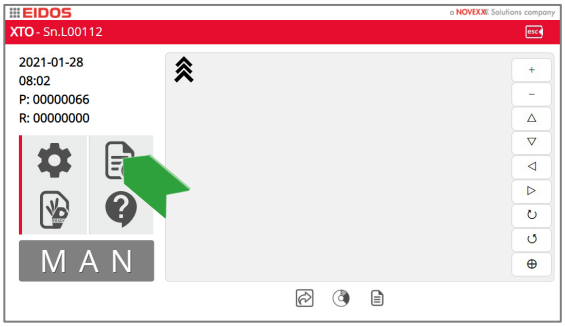
PRINTING

Description of operation

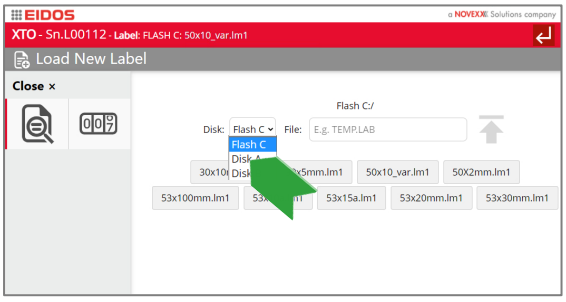
(Refer to Chapter “Product Description – Operating Panel” of this manual.)
Switch on the printer and wait for the programme loading phase.
The printer can receive the commands from the production line if it is in READY (automatic) status.

Load the label to be printed.

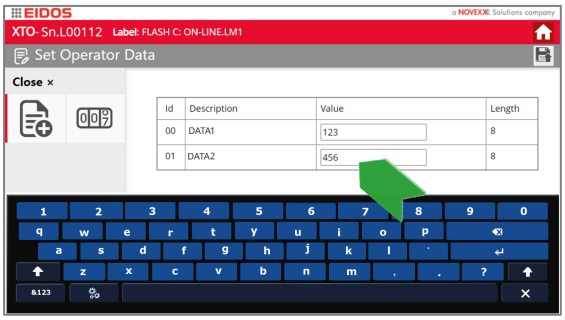
Put the printer in MAN (manual) mode and click to the Load new label /Operator data button.



Select the desired label, choosing it from the disk [flash CPU disk C] or from disks [A/B] (USB memory stick).



Set any consecutive number and the variable data, using the keyboard of the PC or HMI.



On the display, check that the label and data entries are correct. The zoom function is available: on the right side of the screen you can drag the label up and down and zoom it in and out.

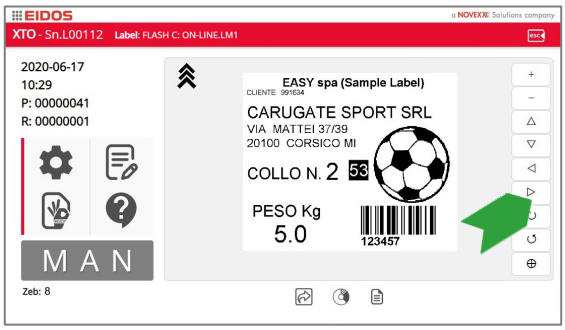


Figure 40: loading a label

Starting and Monitoring a Print Job

The printer starts to print, as soon as the following conditions are met:

- The display shows the “READY” screen
- An STA digital input pulse is received

If the printer shows the “MAN” screen:

➔ Press the key, to toggle to the “READY” screen and to start printing.

CREATION AND SENDING OF THE LABEL WITH EASYCODE

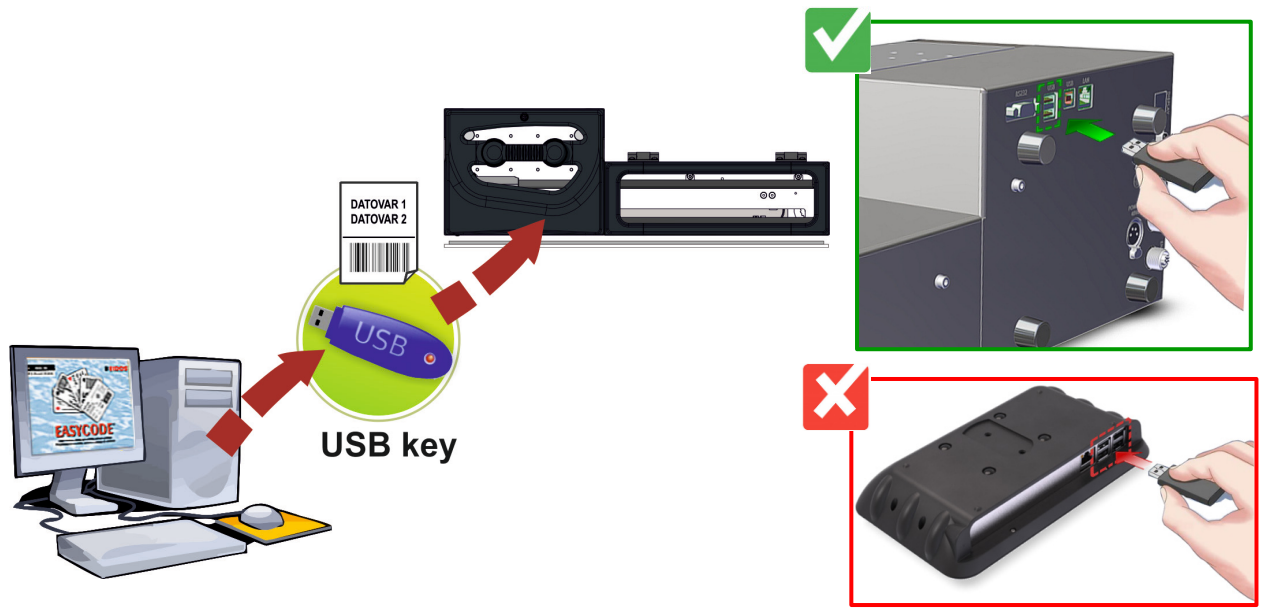
The EIDOS EASYCODE program permits immediate creation of the labels including texts, bar-codes, lines, boxes and images and also by importing variable data from the customer's Data Base. The label generated can be sent or copied to the printer.
The variable data can be entered from keyboard, recalled from a data-base at the time of printing, introduced by the operator on the printer and managed by the customer’s program based on the E-LIB Eidos tool - for more information refer to the EASYCODE software manual -.

Label copy from USB disk to XTO flash disk C:

With the EASYCODE software Liv.1 (Demo version) you can create, modify, save labels and copy them to EIDOS printers via USB Memory or you can transfer the files via ethernet connection to the XTO printer memory (C. disk). The label file will be loaded manually from XTO disk.

How to operate

➔ Create the label layout (.LM1 file) using Easycode (version 1st level is sufficient).
➔ Copy the label layout in the Disk C: of the printer via USB key.



Be careful: the key must be put in the USB port of the printer, not the panel.

Figure 41: sending label via USB key

Label transmission to XTO with LAN connection

With the EASYCODE software license "R" version, you can create, modify, save labels and send them to EIDOS and no-EIDOS printers by means of their Windows driver via LAN network connection.

How to operate

➔ Create the label layout (.LM1 file) using Easycode (version R with license is required).

➔ Transferring Label Layout using Easycode to the printer via LAN network connection. You can manage the sending of labels to up to 4 printers.

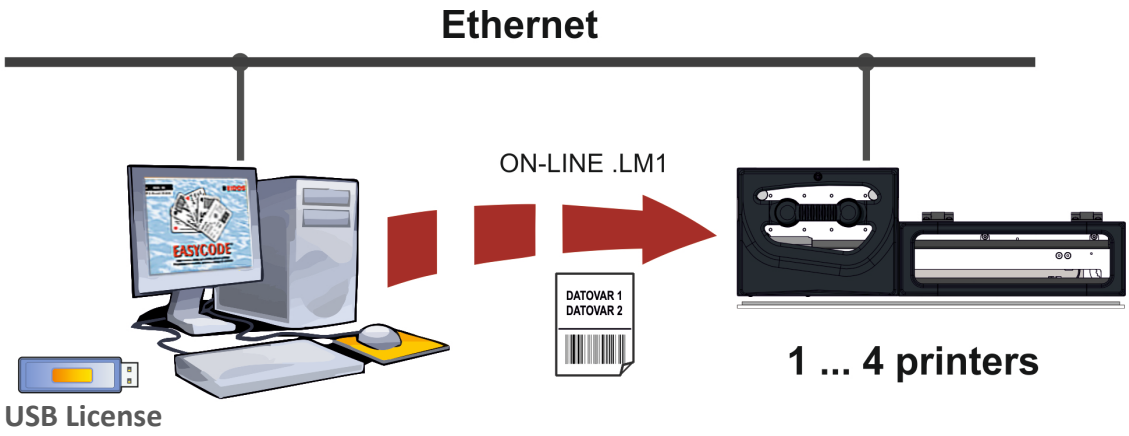


Figure 42: sending label by LAN network connection

Transmission of label with variable data from database

With EASYCODE software "DATABASE" license version, you can create, modify, save labels and send them to EIDOS and no-EIDOS printers by means of their Windows driver via LAN network connection and manage variable data from database (Microsoft Access .mdb and .accdb database files only).

How to operate

➔ Create the labels layout using Easycode.

➔ Type the variable data from the keyboard or insert them by the database managed by EASYCODE. The label can contain progressive numbers or automatic data (date, time, deadline etc) elaborated by the printer.

➔ Sending the compiled label to the printer via LAN network connection.

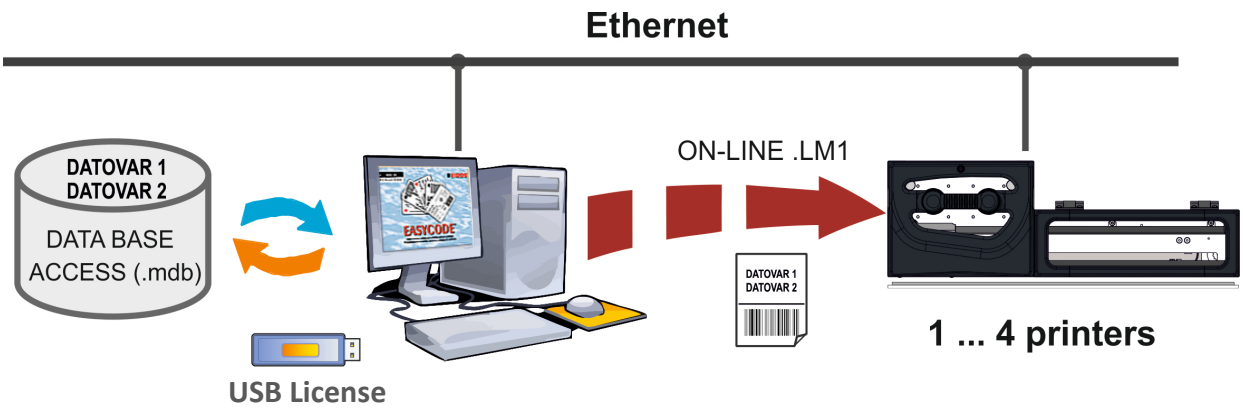


Figure 43: label with variable data from database

HOW TO STORE LABEL FILES (.LM1)

Insert the memory key containing the label .LM1 files.
Put the printer in MANUAL mode and enter the Parameter Setting.

- Click on “File management” button
- Click on “Copy files”.
- Select the origin and destination of the copy, click on "Copy” and wait for command to be run.

> The File management menu is only accessible with password, if the menu levels have been assigned to different users.

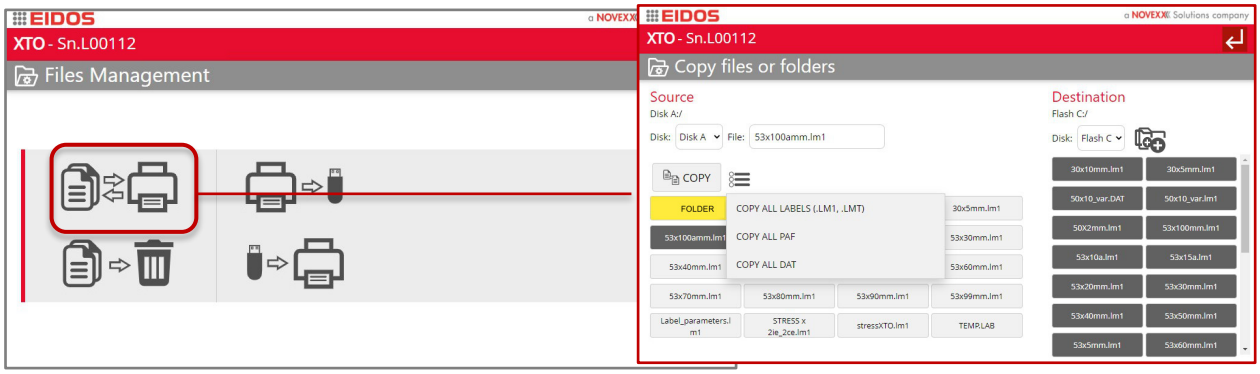


Figure 44: copy files or folders

HOW TO BACK UP

Insert the memory key on which to store the data.
Put the printer in MANUAL mode and enter the Parameter Setting.

- Click on “File management” button.
- Click on “Back up” .

> **IMPORTANT!**
> Back up the data after printer installation is complete. Repeat the backup procedure periodically, in any case after making substantial changes to the parameters and, if possible, in case of replacement of the Electronic Unit. The backup file name will be similar to: bkxtoi_L0012.zip where "L0012" is the printer serial number.

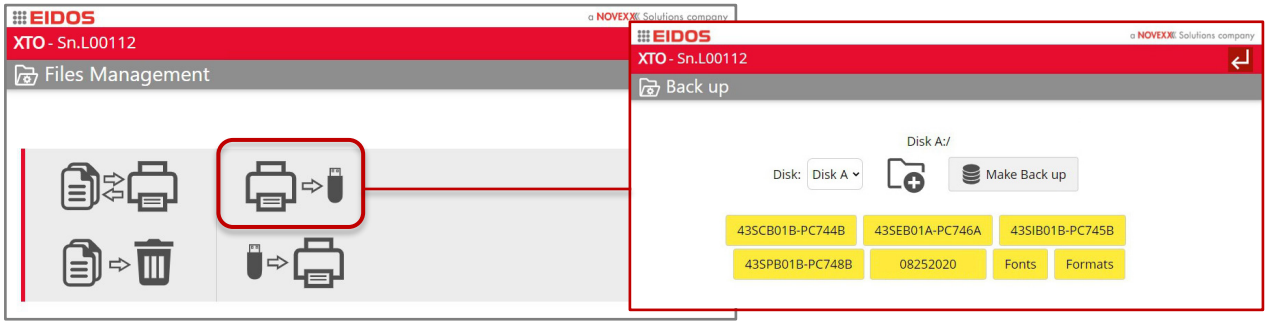


Figure 45: back up

SETTING AND MONITORING

Printer Parameters: general information

From the main menu, with the printer in the MAN position, you access the parameter page, where you can adjust the printer.

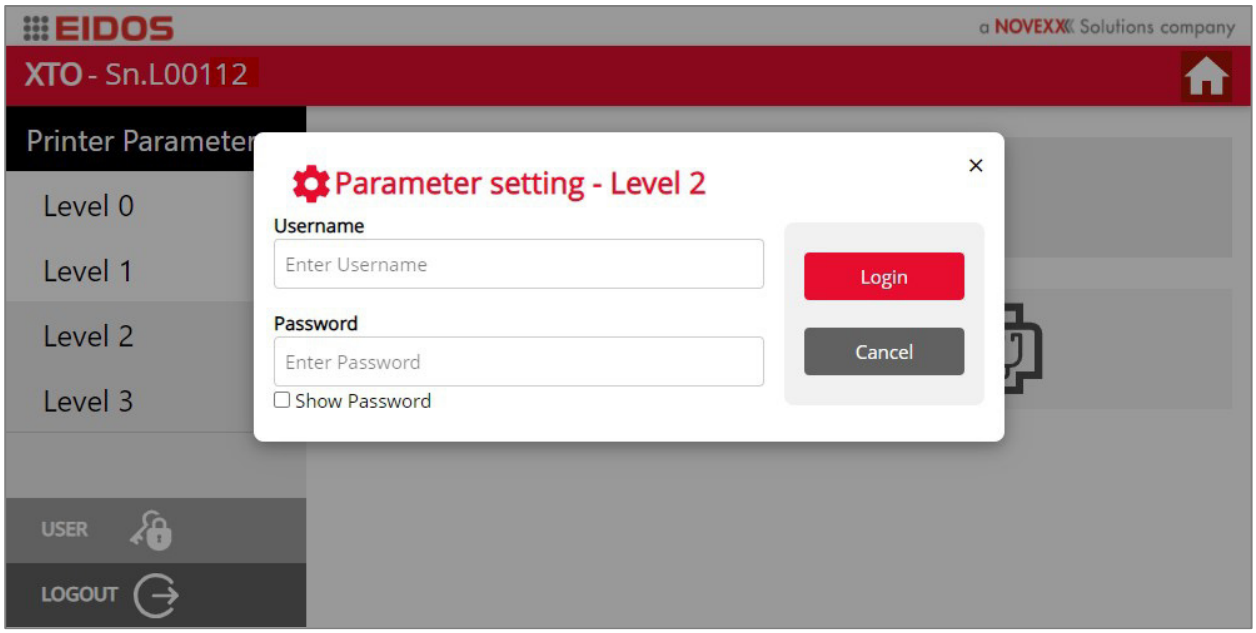


Figure 46: Login

To access the desired level, select the level (from 0 to 3) on the left of the screen, enter username and password and press Login. The page for the selected level will appear on the display.

Figure 47: Pinter Parameter page - Level 2

Add user and password

At the first installation, access to levels 1 and 2 will be password-free. If you want to restrict access to users, you must set a level 2 password. Afterwards, only by logging in with this password, it will be possible to create additional level 1 and 2 passwords for the desired users.

> **IMPORTANT**!
> The level 3 password is accessible only by specialized technicians and / or by the technical assistance service.
> ➔ For any information contact technical support.

Click on the button USER, on the left menu: the following page will appear on the display.

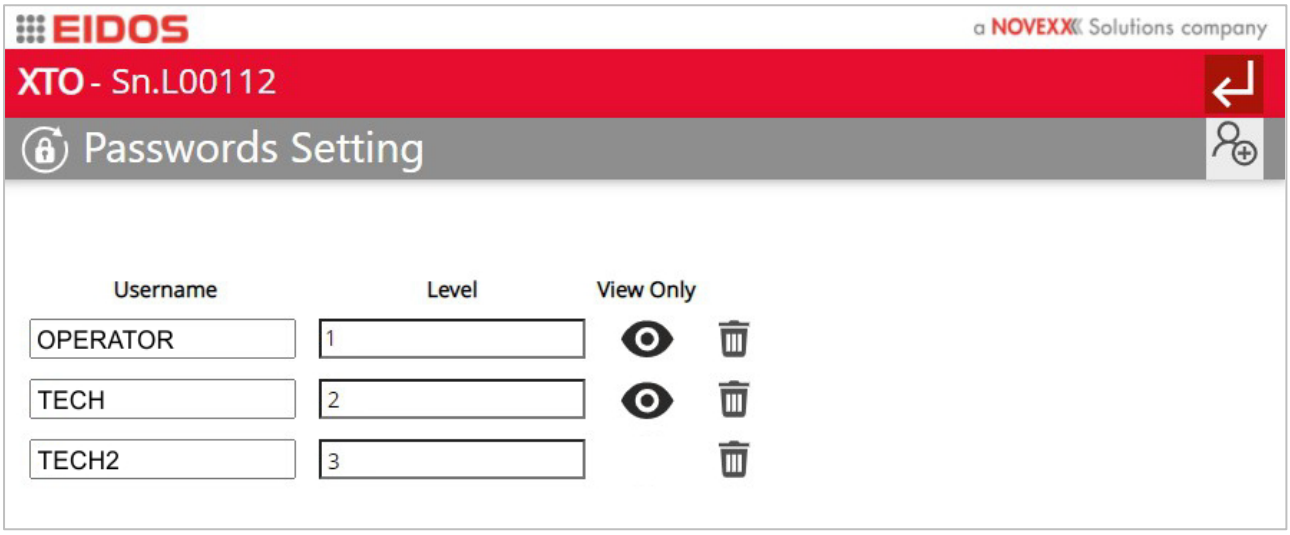


Figure 48: password setting

In this page the user data can be cancelled and a new user can be added by clicking on the button. When adding a new user, you must enter the username, password, level to which he has access and also decide if he can only view the pages or modify the parameters.

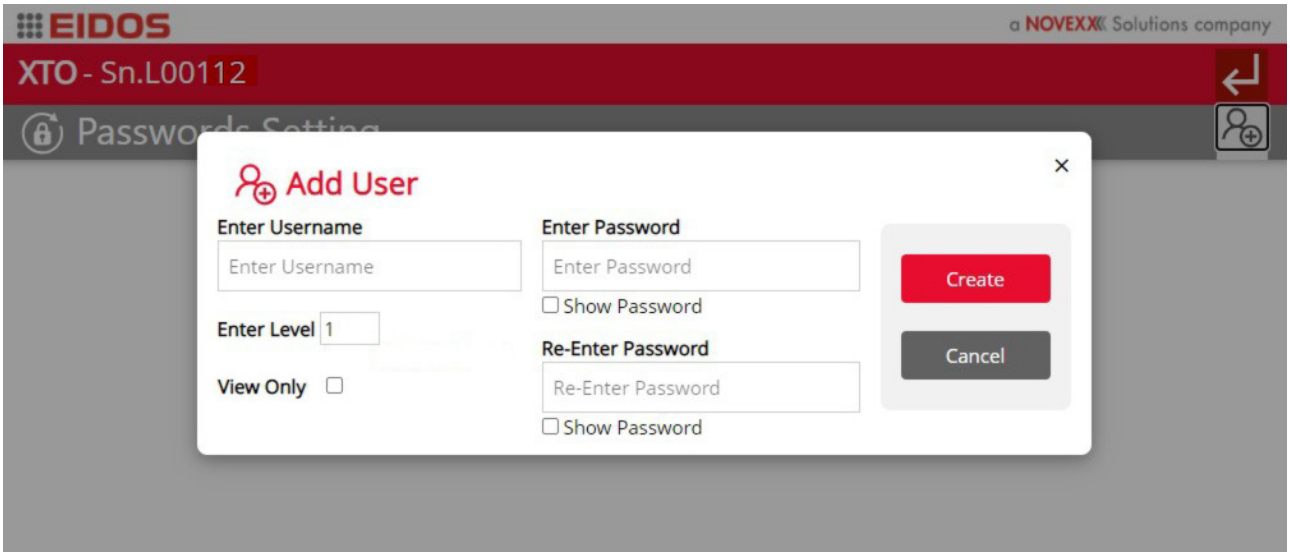


Figure 49: add user name

Printer Parameters: added with Level 1

File management

Copy files or folders

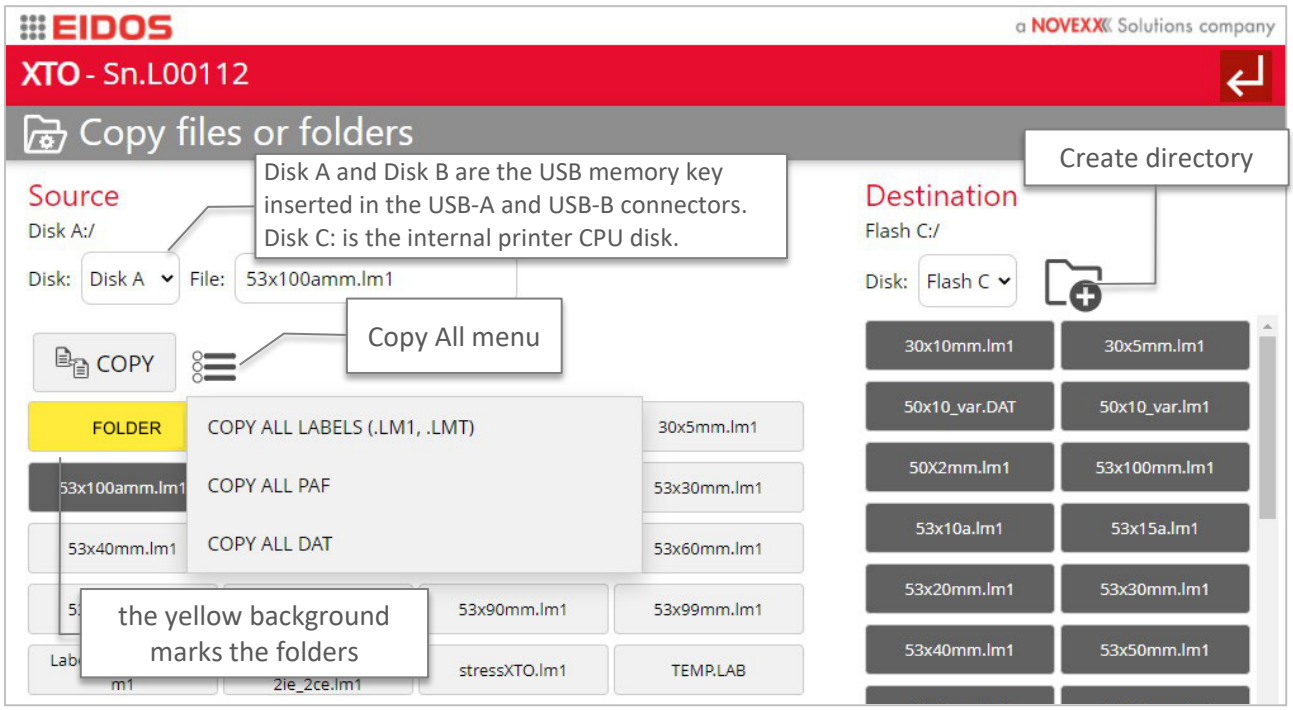


Figure 50: copy files

Delete files from disk

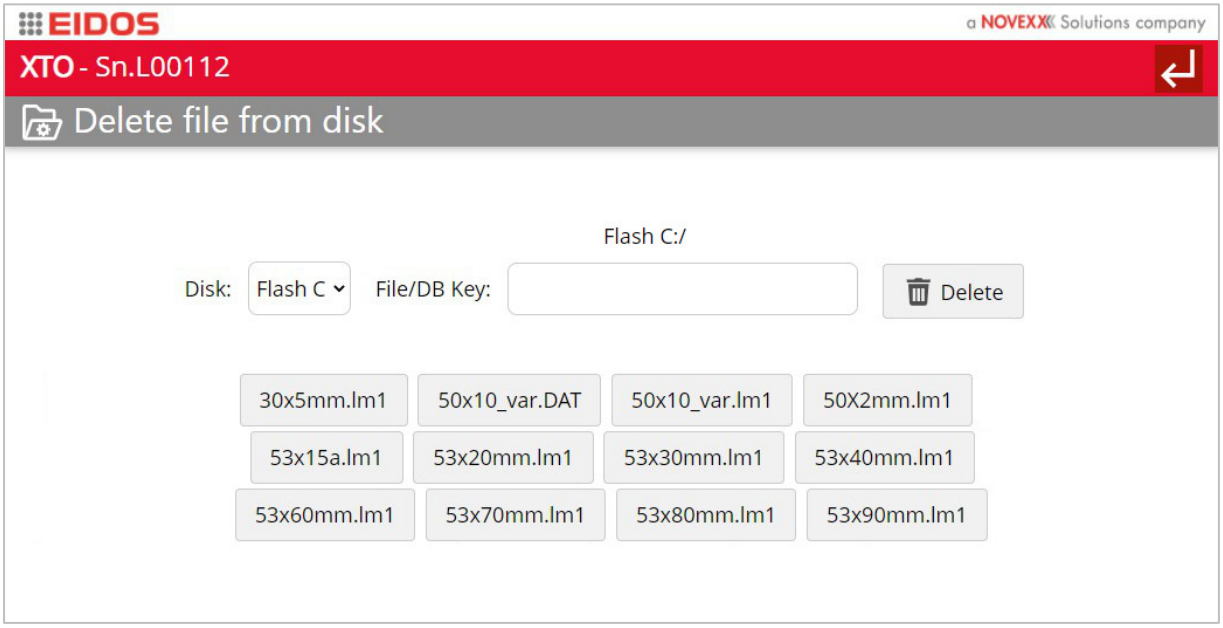


Figure 51: delete files

Back up

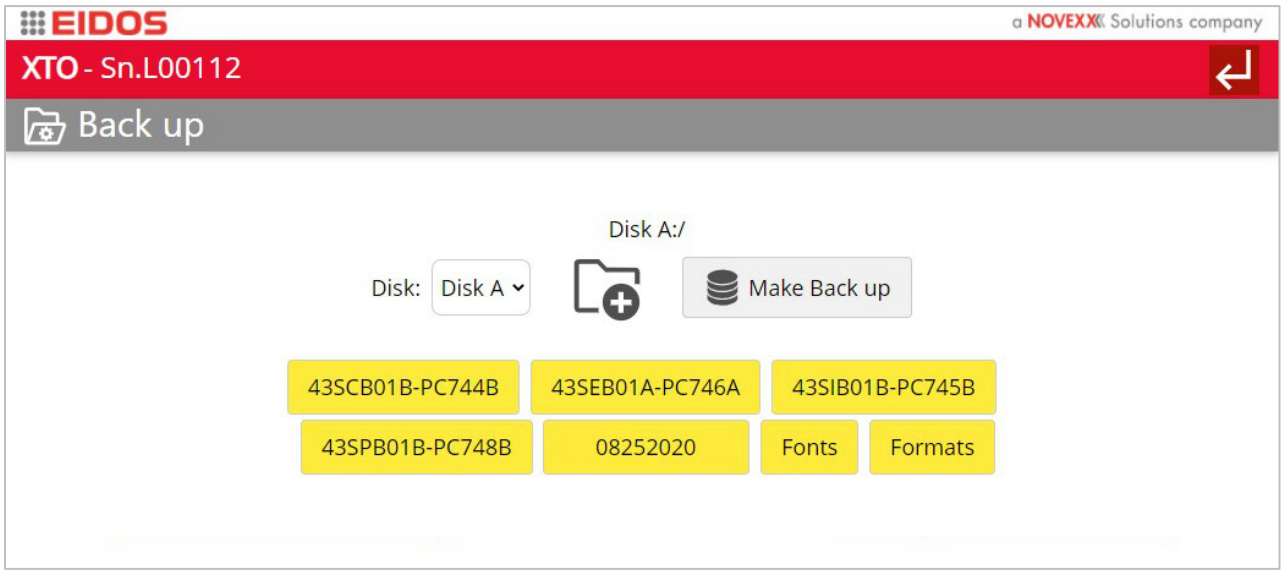


Figure 52: back up

Insert the memory card on which to store the data and click on "Make Back up" button.
Repeat the back-up procedure periodically and in any case, after making substantial changes to the parameters

Note: folders are highlighted in yellow. New folder can be created by the button .

Restore Backup

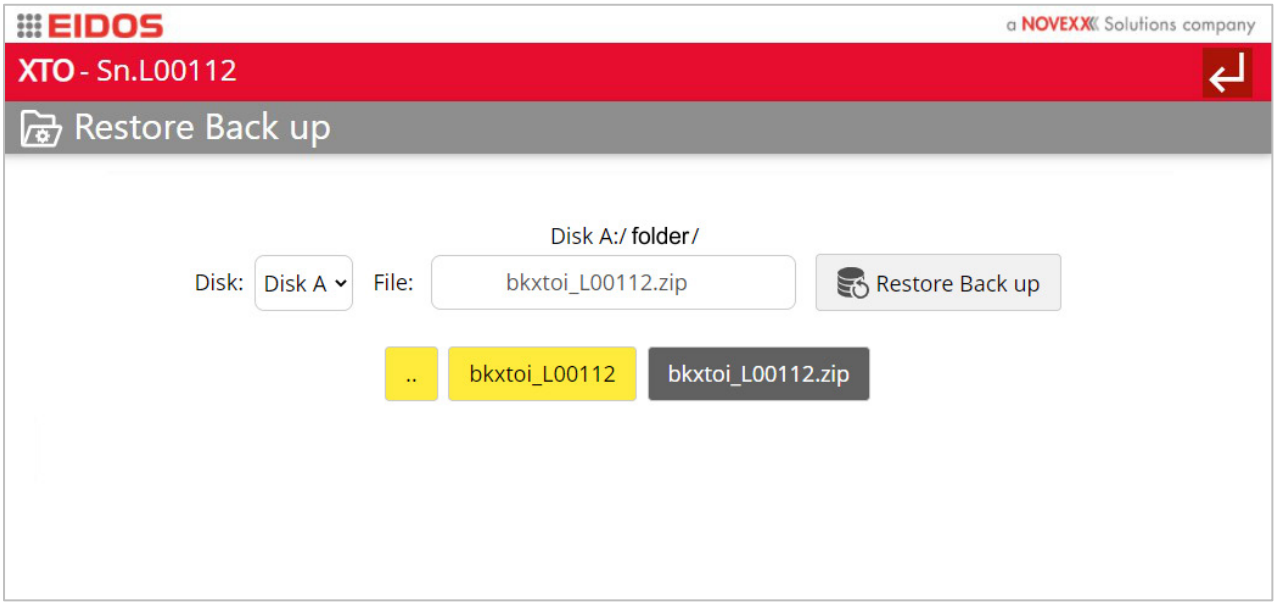


Figure 53: restore back up

Insert the memory card in which the data was saved and click on "Restore Back up" button.

Set Printer Parameters

This menu allows adjustment of the basic parameters. after making the desired adjustments, press the save button to make them effective.

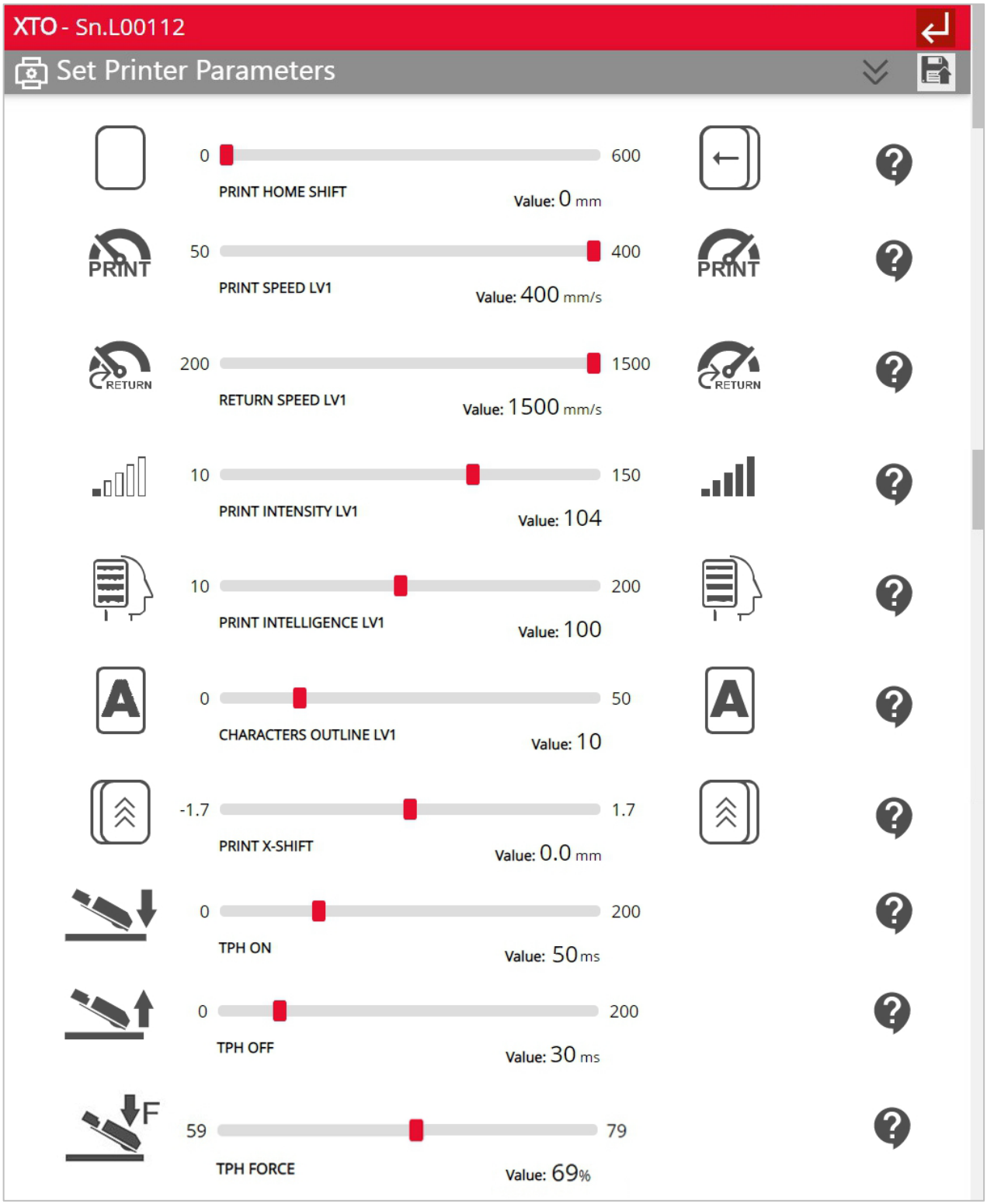


Figure 54: Printer Parameter - part A

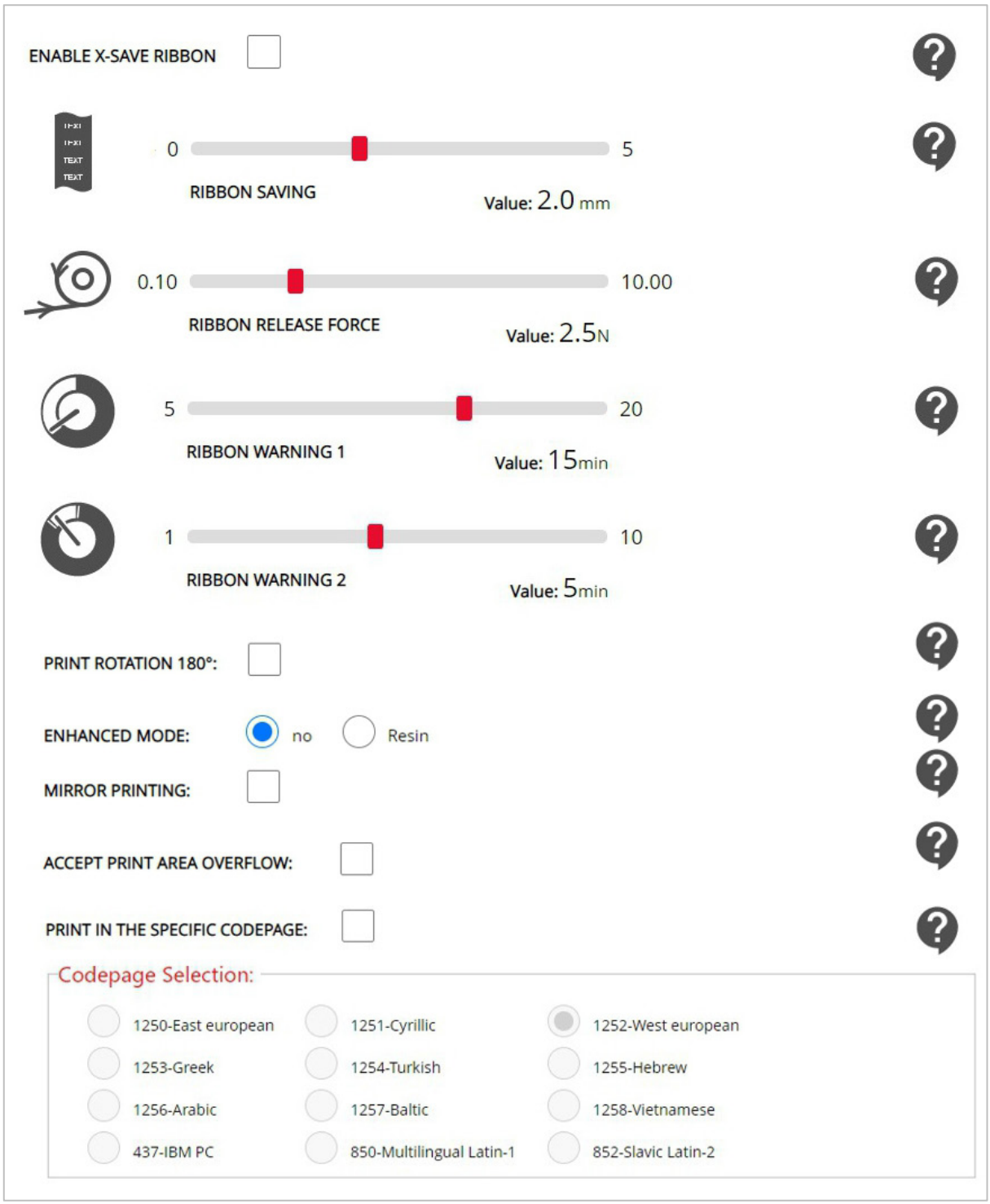


Figure 55: Printer parameter - part B

IMPORTANT! by clicking on the button you can view the help of each parameter.

In the case of XTO22 model, it is possible to set the TPH force parameters for each of the two print heads.

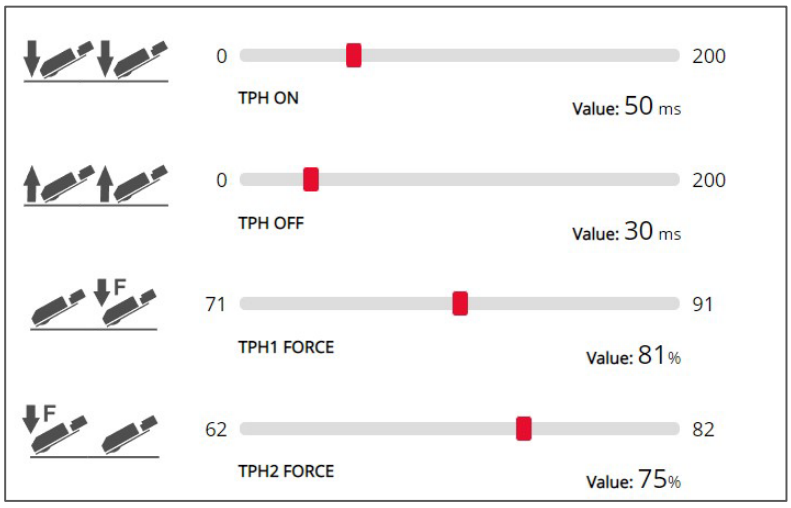


Figure 56: TPH parameters for XTO22

Label

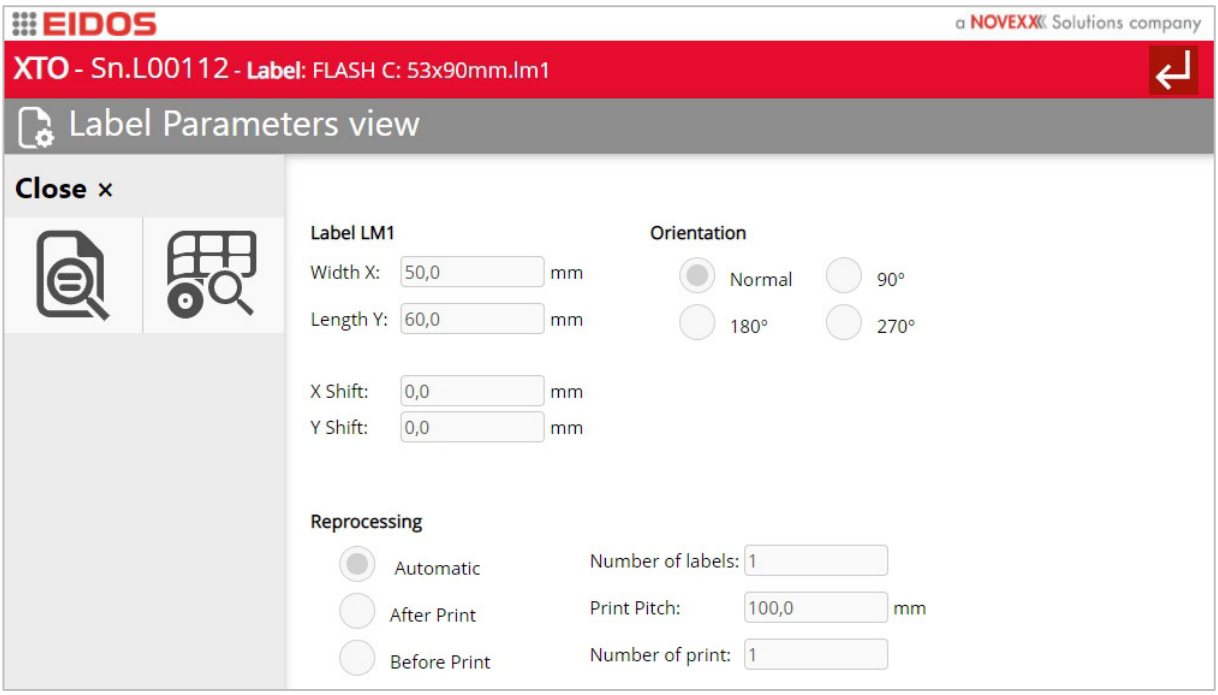


Figure 57: label parameters view

The label parameters are automatically updated in the printer every time a new .LM1 file is loaded. These label dimensions and parameters must be set (with EASYCODE program) during the label creation. The label .LM1 file parameters in this page are view only.

- *Width X:* label dimensions in the parallel direction to the print head dots line.
- *Length Y:* label length in printing and carriage movement direction.
- *X Shift:* the shift of the image along the dot line direction.
- *Y Shift:* the shift of the image along the carriage movement direction.

Reprocessing

Automatic: date or time are updated automatically every minute or texts containing progressive numbering are updated without increasing the cycle time.

After Print: the label is re-processed at the end of print while the carriage is returning in home position.

Before Print: this option will delay a little bit the print command execution; recommended for labels with barcodes that contain date and time variables to be updated before every printing.
Number of labels: number of prints each cycle for multi-tracks printing.
Print Pitch: distance between the print start points for two consecutive labels.
Number of print: number of prints.
You can see the preview of the label by clicking on the button in the left menu.
By clicking on the button is it possible to view the current PAF parameter (see chapter "Product Description > Basic settings" of this manual).

Set Date/Time

Figure 58: calendar

Printer diagnostic

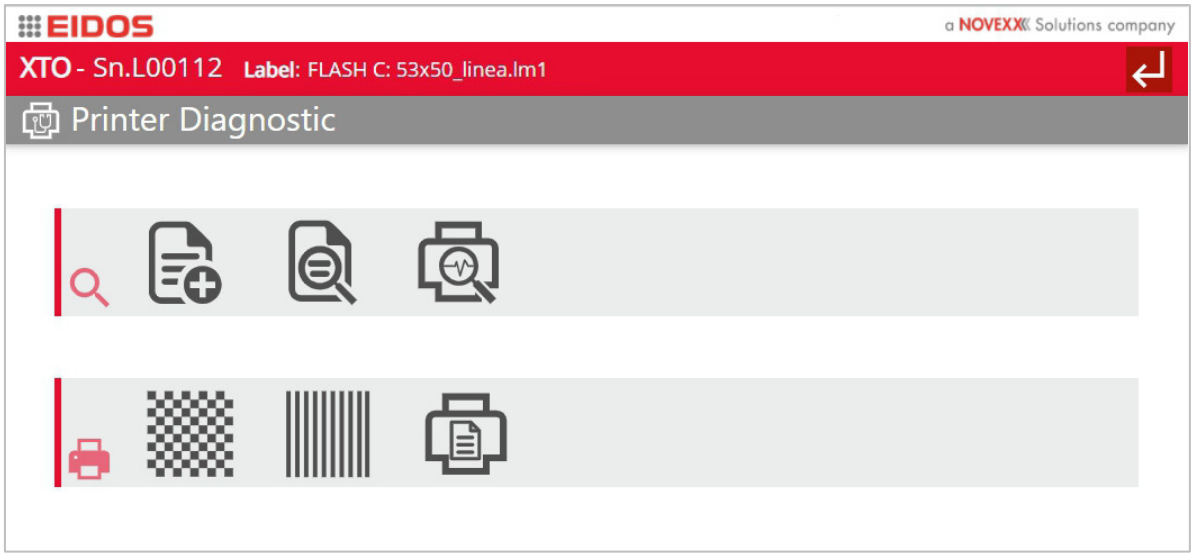


Figure 59: diagnostic menu

The buttons on the first grey strip allow you to view and adjust the diagnostic parameters.

Load new label: a new label is loaded

Label preview: the label is displayed

System diagnosis: (see following pages)

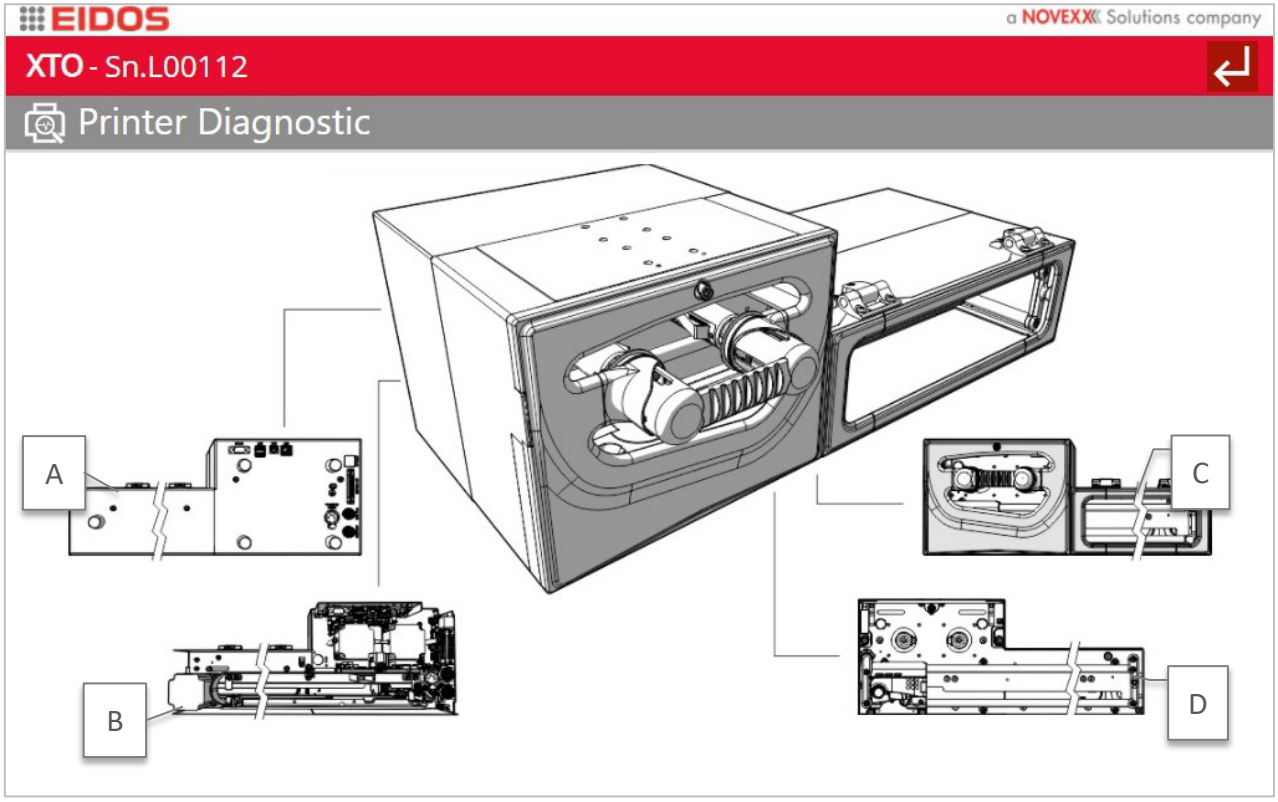


Figure 60: Printer diagnostic

A)

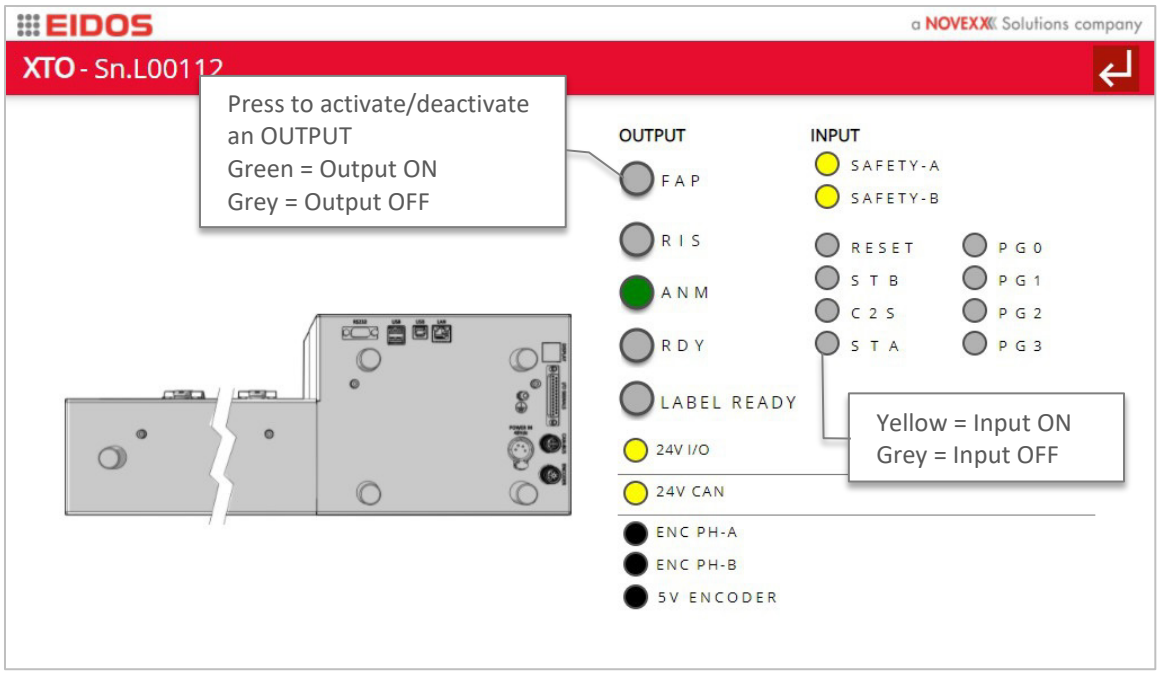


Figure 61: diagnostic

B)

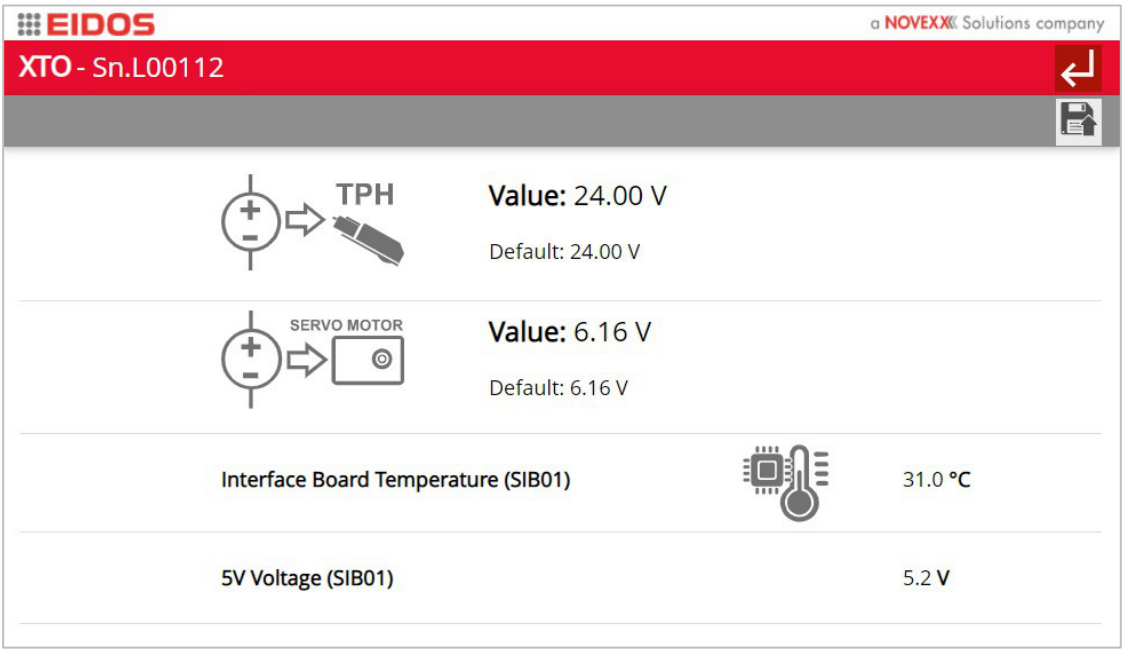


Figure 62: diagnostic

C)

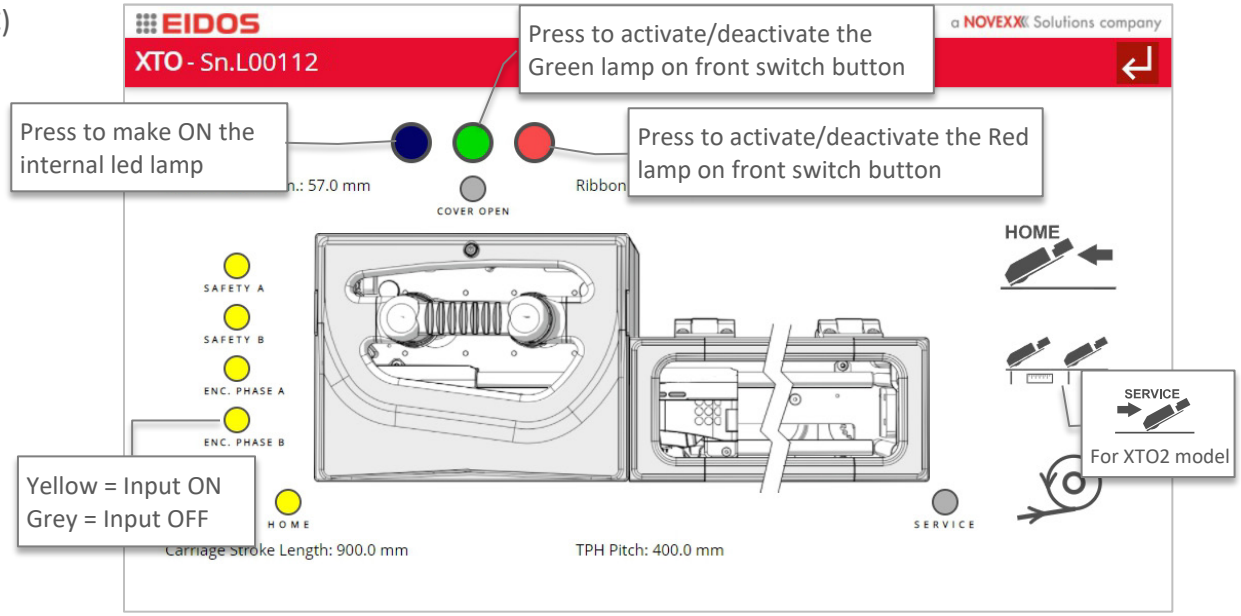
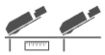


Figure 63: diagnostic - in figure the XTO22 page

Carriage in home position



TPH pitch (for XTO22 only)
the carriage moves to service position and the distance between the two heads is measured.

Carriage in service position

Ribbon feed: tensions the thermal ribbon by rewinding it

(this button is also accessible through the shortcuts *on the Manual mode view, if you have at least level 1 access. See "Product Description – Operation Panel")*

D)

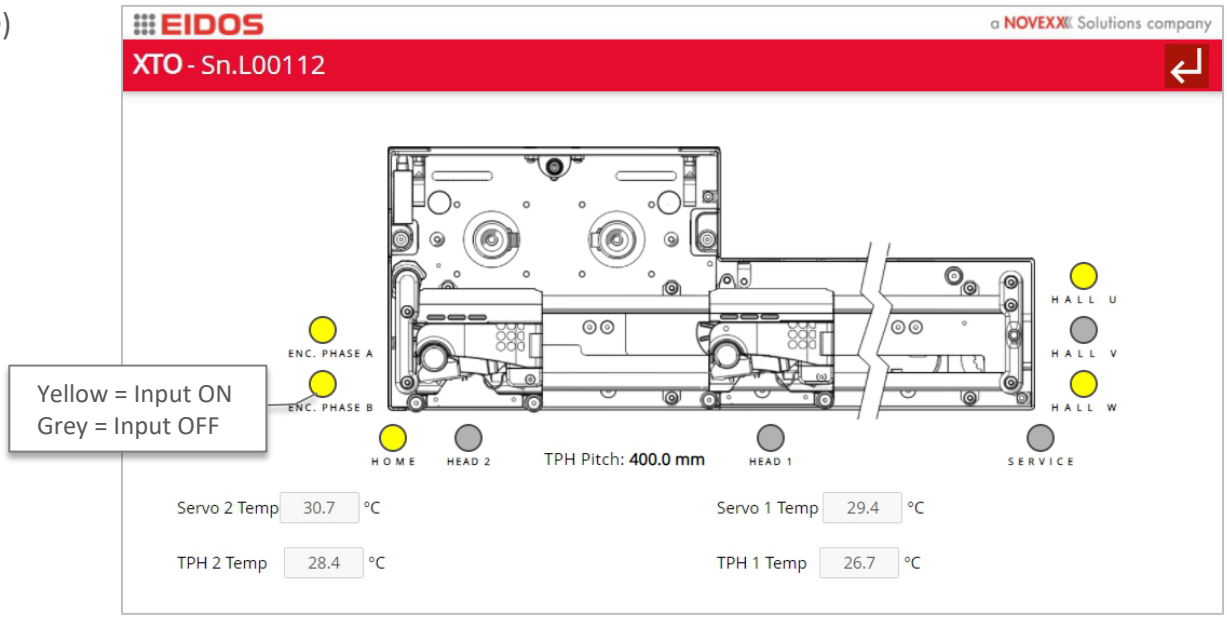


Figure 64: diagnostic - in figure the XTO22 page

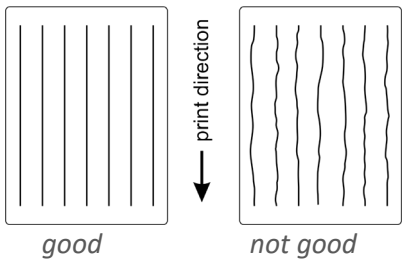
The buttons on the bottom strip allow you to test the printer.

Print grid:

Print test to check if the print head has some broken dots or if the print head and the print plate or roll are perfectly aligned in the whole print area size. In case of white lines in print direction it means that some dots are probably broken, or that the print head could be dirty. The current date is also printed on the grid to highlight the date when the test has been done. So, the operator can have day by day the status of the print head.

Print lines:

Print test of lines parallel to the print direction. The lines are parallel to the print direction. This test helps to verify the settling and the stability of the head on the media during print. In case of bends it means that the print head support or the head alignment to the print roll or plate is not in the best condition or that the support is not stable.



Note: print grid and lines will be printed with the current label size.

Print current page: press this button to print the current label.

(This button is also accessible through the shortcuts on the Manual mode view, if you have at least level 1 access. See "Product Description – Operation Panel")

Printer Parameters: added with Level 2

Set I/O parameters.

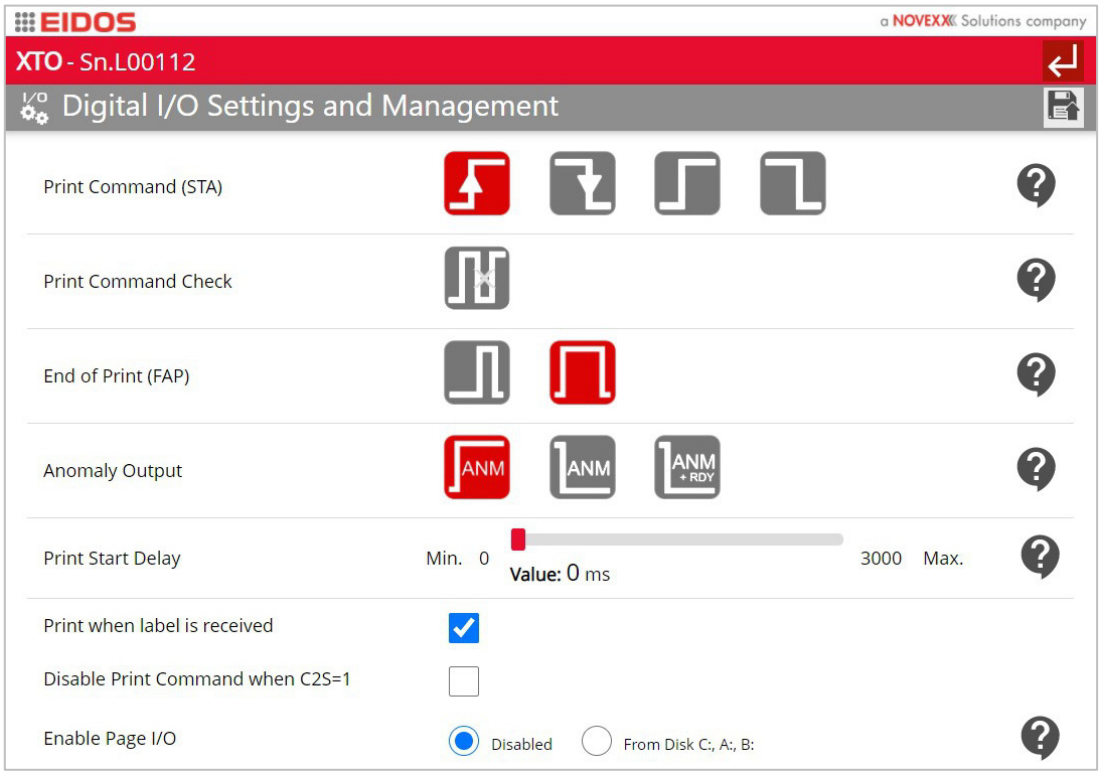
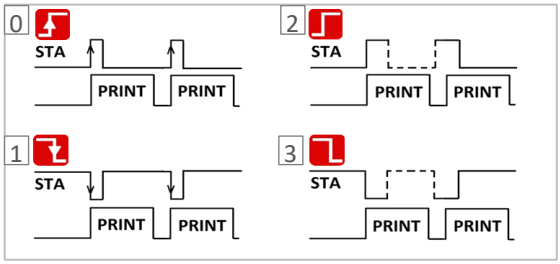
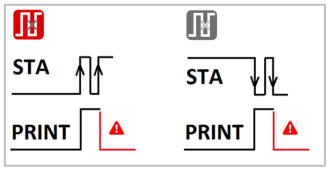


Figure 65: I/O management

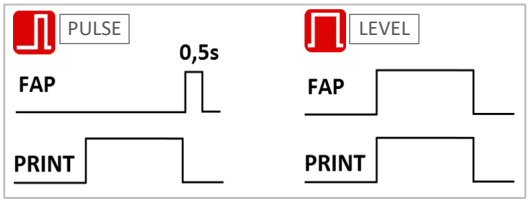
Print command "STA"
0 = Front OFF-ON (default)
1 = Front ON-OFF
2 = Level ON
3 = Level OFF



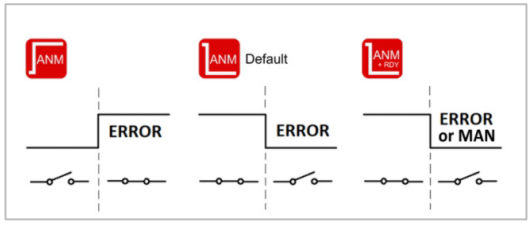
Print command check
0 = disabled
1 = enabled (default)



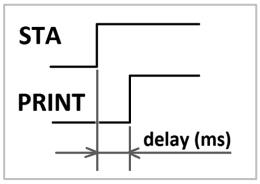
End of Print (FAP) output type
0 = pulse (default). It generates an impulse at the end of the cycle lasting 0.5 s
1 = level. At the start of the cycle (arrival of the STA command) it activates the FAP output and deactivates it at the end of the print when the "TPH OFF" time set in the parameters has elapsed.



Anomaly Output

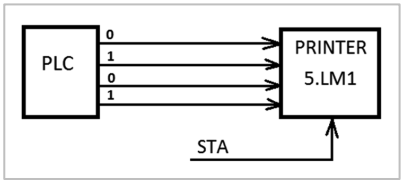


Print Start Delay
It delays the start of the printing cycle of the programmed time.
Print_Start_Delay_Max = 1000 ms
Print_Start_Delay_Min = 0 ms
Default = 0 ms



Print when label is received - the print cycle will start automatically at the end of label file reception.
Disable Print Command when C2S=1 - if the check is enabled C2S input disables the print command execution. If C2S arrives during the print cycle phase, the cycle in progress is terminated and an FAP pulse is generated.

Enable Page I/O
0 = disabled
1 = from disk C:, A:, B:



To enable this flag means that the labels 0.LM1, … ,15.LM1 previously stored in the printer memory, can be selected via 4 digital inputs; these 4 opto-isolated inputs are available on the ENCODER port of the printer.

Set IP parameters:

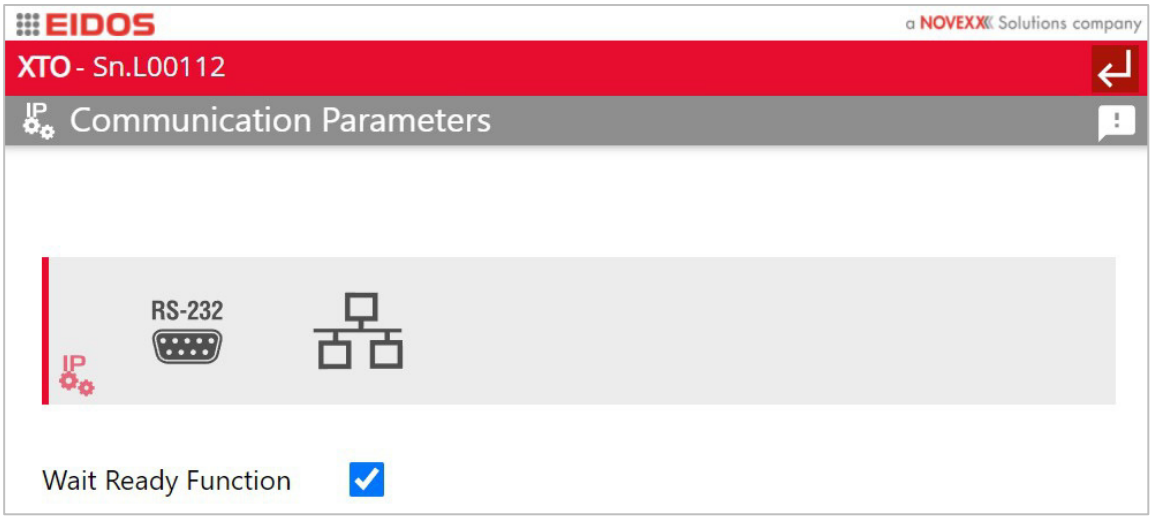


Figure 66: communication parameters

If the Wait Ready function is enabled, W character is emitted when the print cycle starts and R character is emitted when the print cycle is finished (before the carriage comes back to home) or immediately when an error occurs during print.

RS-232

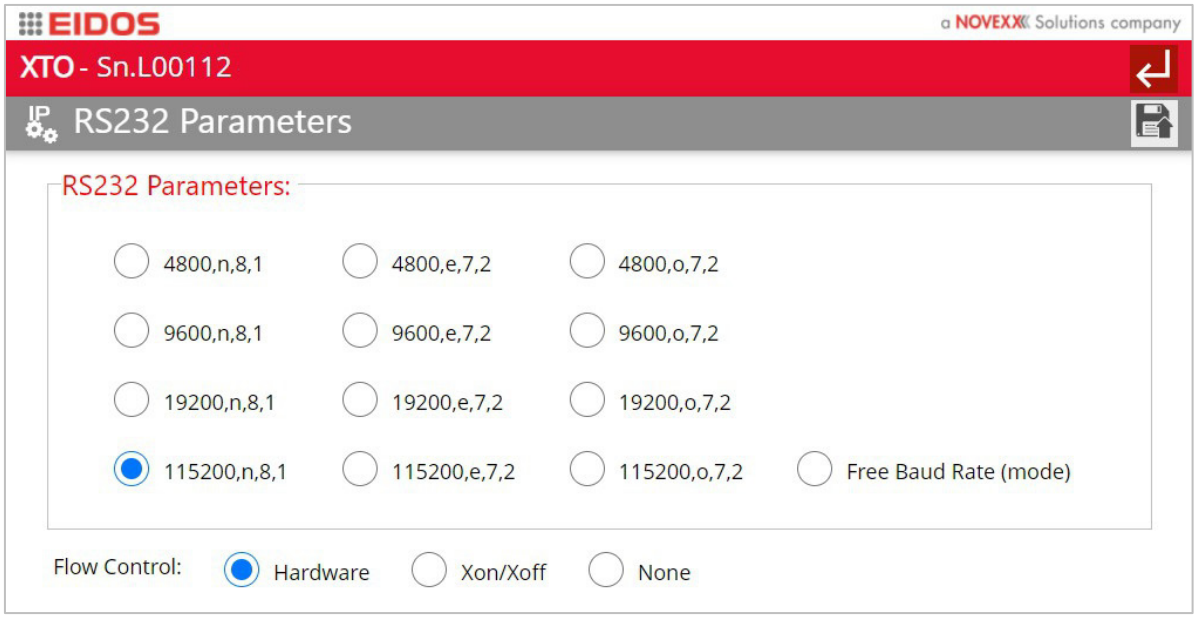


Figure 67: RS232 parameters

Connect the serial cable to the printer and set the transmission speed of the serial line. Recommended: 115200, n, 8.1 Baud.

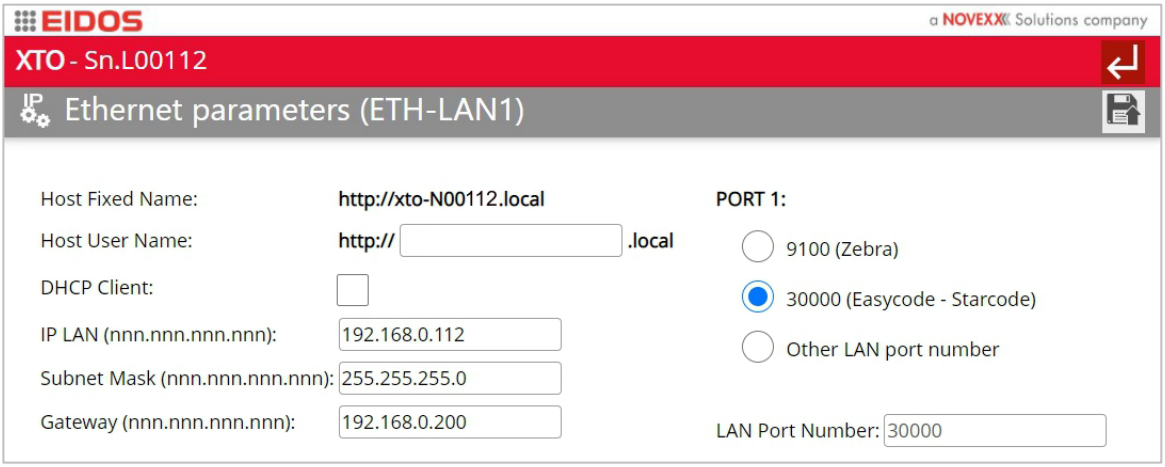


Figure 68: ETH-LAN

> **Note:**
> the parameters for connecting to the PC via the Ethernet port are explained in detail in the Chapter "Installing the printer -> Connections" of the Technical Manual.

Set TPH calibration:

> **IMPORTANT**!
> it is advised to make the TPH calibration with the packaging film overposed on the printing plate to take in account the thickness of the film.

> **Note:** for XTO2i.nn the TPH calibration function allows to calibrate and check the TPH distance from the printer plate in 3 positions: HOME, MIDDLE, SERVICE.

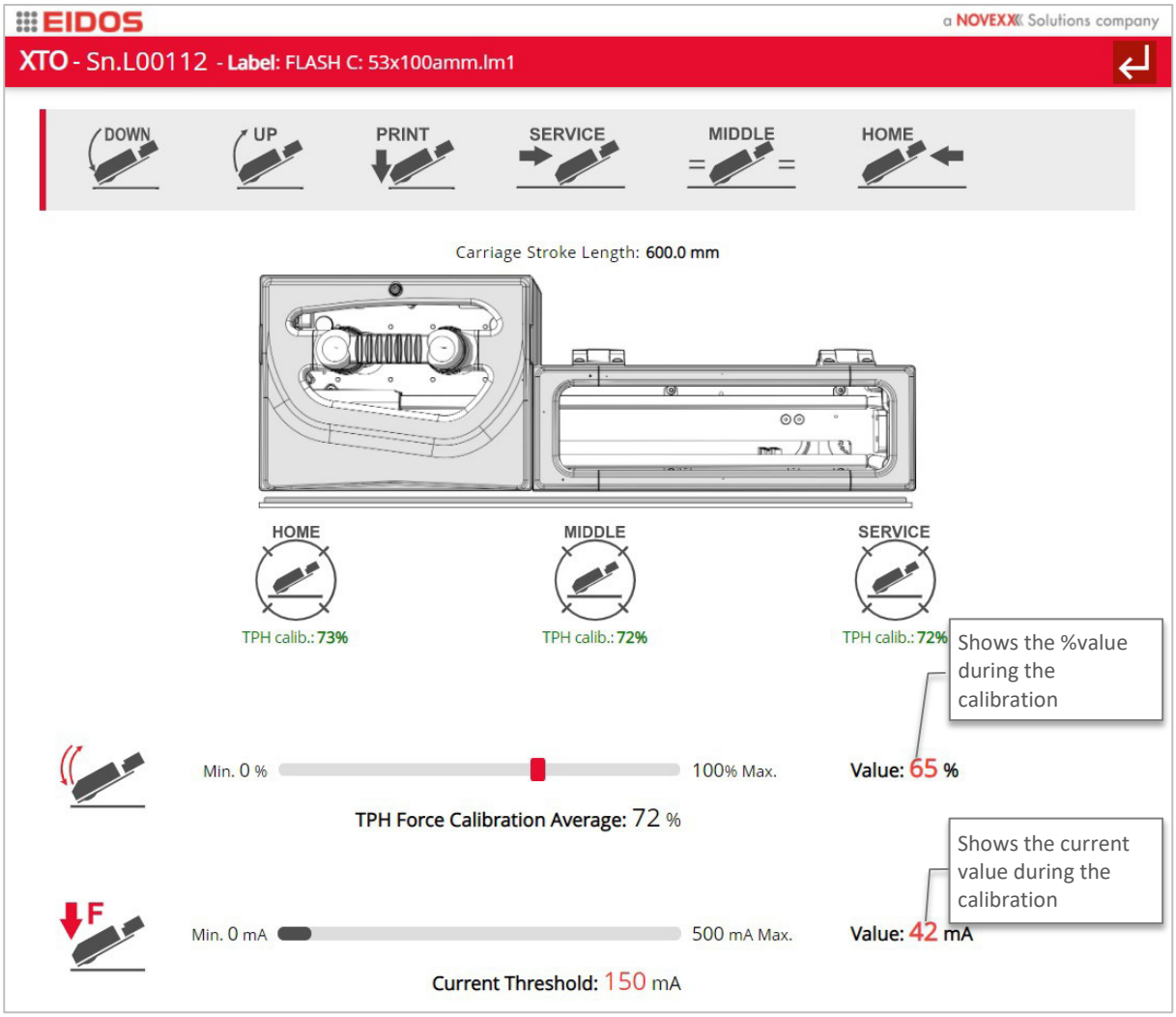


Figure 69: TPH calibration page for XTO2 model

Note: for XTO22i.nn the TPHs calibration function allows to calibrate and check the TPH1 and TPH2 distance from the printer plate in 2 positions:
- HOME for TPH2 and MIDDLE for TPH1 when HOME calibration function is activated.
- MIDDLE for TPH2 and SERVICE for TPH1when SERVICE calibration is activated.

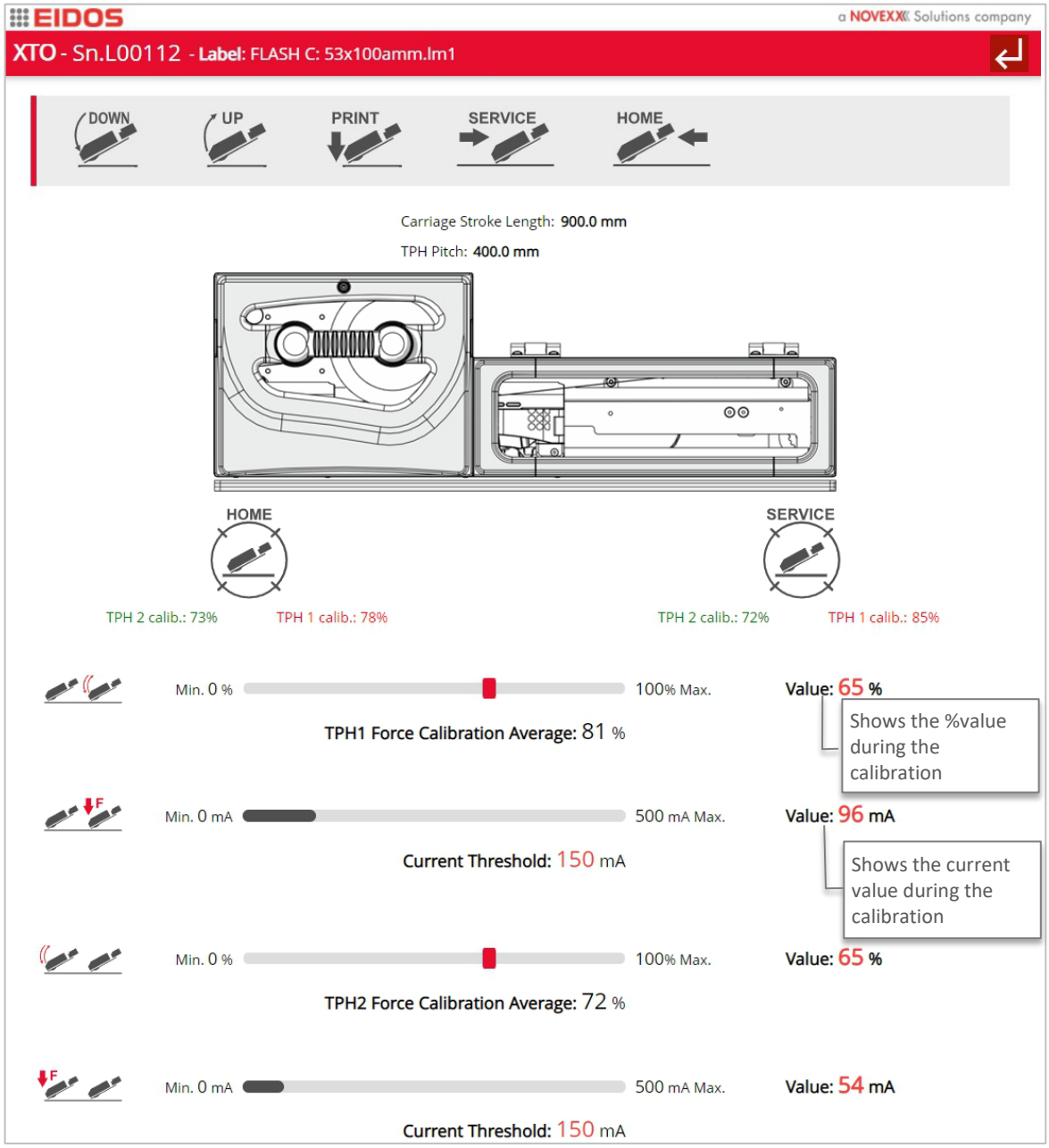


Figure 70: TPH calibration page for XTO22 model

move TPH down (Ready to print position)

move TPH up (Ribbon change operation position)

move TPH in print position for 5 seconds
Print position is the position detected by last calibration or set in the TPH force parameter.

move carriage to service position

move carriage to middle stroke position (not for XTO22 models)

move carriage to home position

Press the relative “calibration” key to move the carriage at the desired position (SERVICE-MIDDLE*HOME) and start the calibration. If the indication under the symbol is green, the calibration is OK. If it is red, the calibration is not OK.

The value detected is coloured red when it is 2% higher or lower than the average value between the values detected (SERVICE/MIDDLE*/HOME). Carry out the calibration in all the positions, to have an optimal calibration average value.
The best values are between 74-77%. If the detected value is higher than 80% the W562 warning will appear, because the print head is too far from the printing plate.
If the detected value is less than 69% the W567 warning will appear because the print head is too close to the printing plate. The higher the detected value, the higher the angle of the print head is during printing.
During calibration the print head moves to the rubber plate and then increase the pressure until it reaches the threshold, defined as the value of the current absorbed by the servomotor (default = 150 mA). After performing a calibration the “TPH FORCE” Print parameter will be set at the value detected by the calibration, with the possibility of reducing the value or increase the value in a range of +/- 10%.
This could be done in the "Printer Parameter" menu (not possible at level 0).

Figure 71: TPH force parameter for XTO2 models

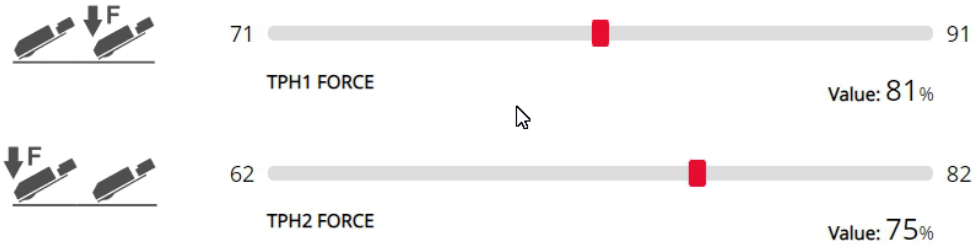


Figure 72: TPH force parameters for XTO22 models

The TPH calibration function detects the distance between the print head and the rubber plate and sets the recommended TPH FORCE value in terms of head pressure on the film.

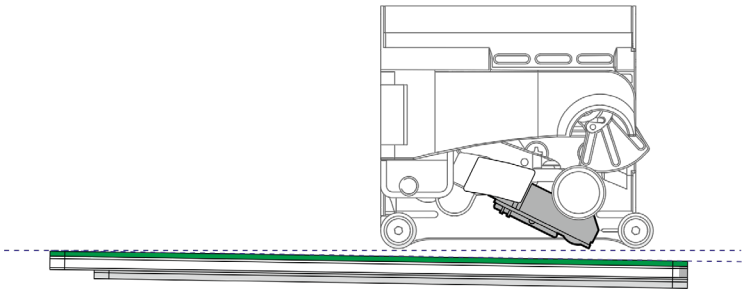


Figure 73: printing plate not parallel to the print line

** Not for XTO22 models*

Set emulation parameters:

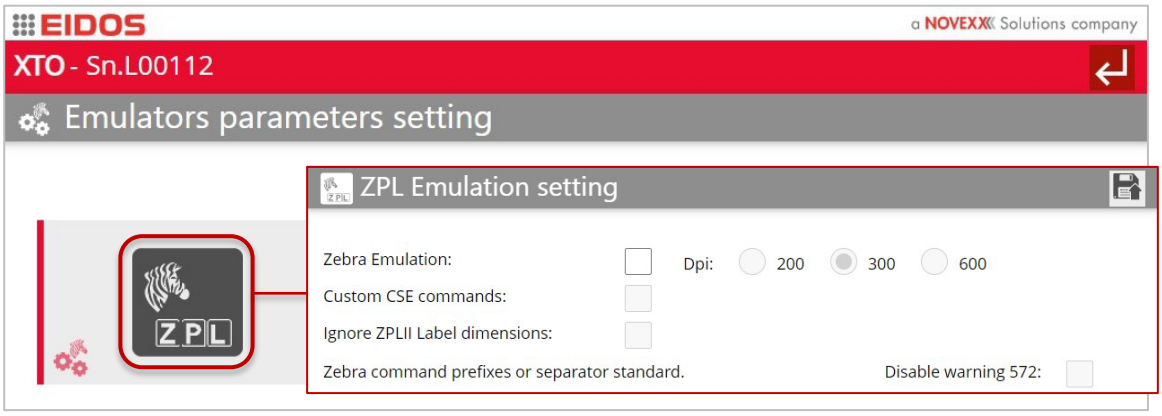


Figure 74: emulators setting

Zebra Emulation: enable this function to receive files as ZEBRA ZPLII protocol. The label transmission can only take place via Ethernet LAN (not managed from USB key). If Zebra emulation is active, the setting parameter is also displayed in the Manual mode page (the dpi values 200, 300 and 600 are displayed as Zeb: 8, Zeb12 and Zeb 24). The XTO is a 300dpi printer, but can receive and print Zebra ZPL labels generated by Zebra drivers at 200, 300 or 600dpi. Set dpi of the Zebra Emulator according to the dpi of the Zebra driver or native ZPL file, to get in print the correct image size.
Custom CSE command: enable this flag if you need a custom EIDOS printer management. You can manage a EIDOS printer as ZEBRA for the data to be printed and as EIDOS printer for the status request and wait/ready protocol. With this flag enabled some EIDOS CSE commands will be also managed when the Zebra Emulation is enabled.
Ignore ZPLII Label dimensions: set this flag to ignore the ZPL commands to program the label dimensions; the EIDOS printer will use the X and Y dimensions of the last loaded label.
Zebra command prefixes or separator standard. If non-standard Zebra commands are used a Warning message will appear each time the system is turned on. This message can be disabled by selecting the "Disable Warning 572" flag.

> **Note:** create and send the label with the correct dimensions, as it will not be possible to modify them later.
>
> **ATTENTION.** If you are not working in Zebra emulation, the flag must be disabled.

Set languages:

Figure 75: language selection

Scroll the flag and select the proper language. Press the Save Data key to confirm.

Set ribbon

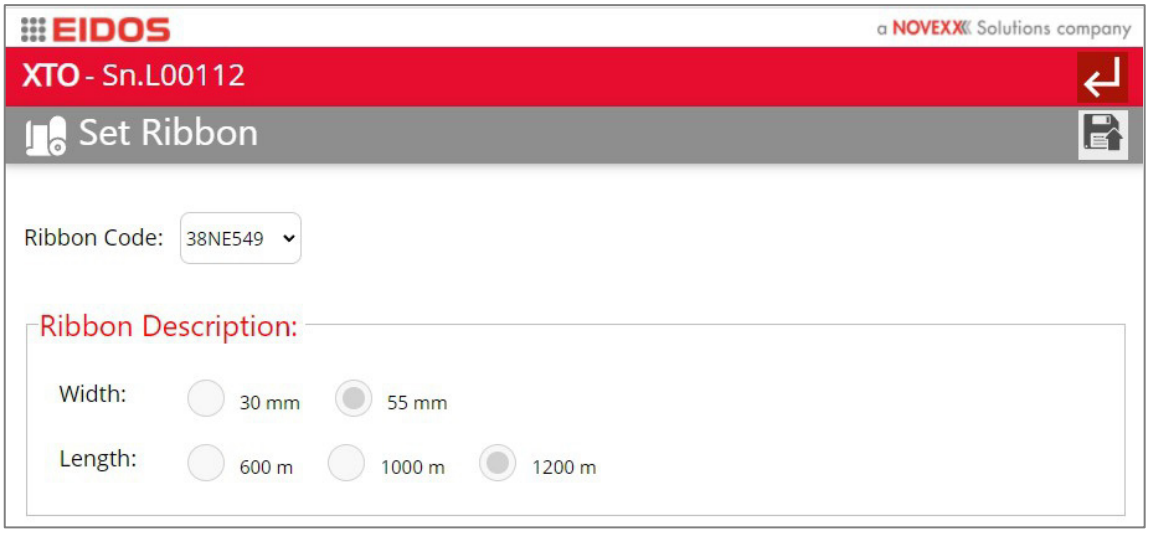


Figure 76: Ribbon setting

Set the code of the EIDOS ribbon used. The setting of the used ribbon code requires that some specific parameters of the printer are automatically set in the optimal way for the ribbon in use (e.g. Enhanced Mode, Accelerations, Jerk etc).

> **NOTE:**
> The thermal ribbon rolls must be purchased from the printer supplier, in order to have the maximum guarantee of good operation. The use of non-certified ribbons carries a high probability of malfunction with possible accelerated damage to the thermal head or ribbon drag problems.

STATUS MESSAGES

General information about status reports

During operation, tests are continually carried out to determine whether a malfunction has occurred. If a malfunction is detected, the corresponding status report appears on the display.

Warning messages

Warnings inform the operator about the occurrence of a certain event at the printer. The message is displayed until it is unlocked by the user. If in READY status the printer continues operating without intervention from the user. If the message appears in MANUAL mode, it must be unlocked to go to READY mode and allow printing. The status report shown on the display is structured as follows:

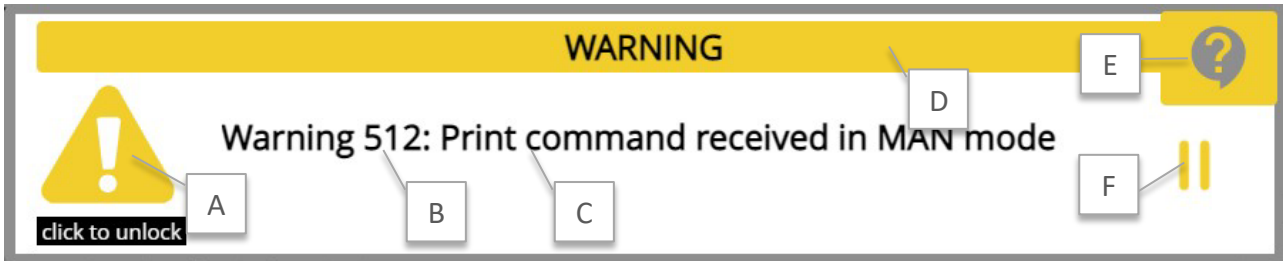


Figure 77: Warning message

A *Alarm icon:* press the key below the symbol to unblock the status message.
B *Warning number*
C *Warning message*
D *Background colour:* yellow
E *Help icon:* after pressing the icon, a quick troubleshooting guide appear.
F *Pause:* it unlocks the message. The message will appear again when the operator comes back to the main pages.

Error messages

Error messages must be acknowledged by the operator as the triggering event or fault endangers normal operation. The status report shown on the display is structured as follows:

Figure 78: Error message

A *Alarm icon:* press the key below the symbol to unblock the status message.
B *Error number*
C *Error message*
D *Background colour:* red
E *Help icon:* after pressing the icon, a quick troubleshooting guide appear.

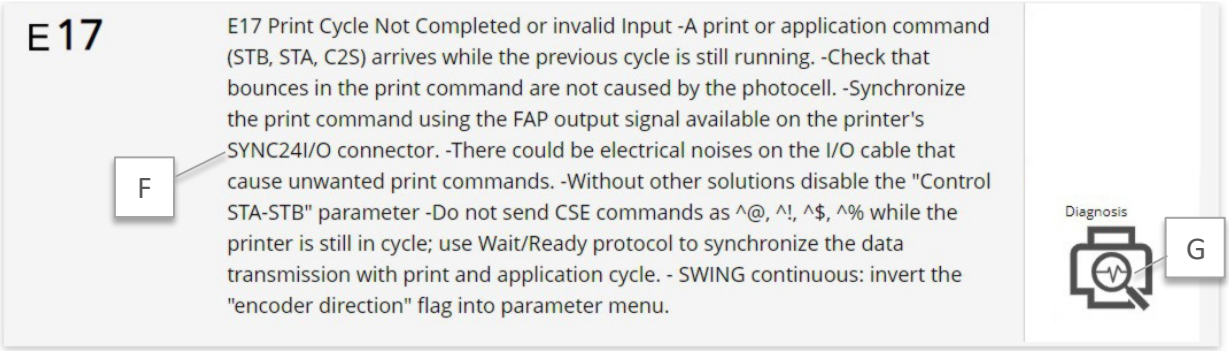


Figure 79: Troubleshooting guide

F *Error text:* each error number has a status text in the language of the control panel.
G *Diagnosis icon:* pressing the button, you are sent to the appropriate diagnostic page.
H *Pause:* it unlocks the error message (not the error) to allow access to the diagnostic pages. The error will appear again when the operator comes back to the main pages.

Preventive Maintenance

CLEANING INSTRUCTIONS

WARNING!
Dangerous situations may arise during maintenance and cleaning work. Accidents may occur if the relevant safety instructions are not observed!

- ➔ Switch off the machine before cleaning or maintenance and pull out the mains power connecting line!
- ➔ Never allow liquid to get into the machine!
- ➔ Repairs to the machine must only be made by trained service technicians!

Cleaning agents

CAUTION!
Sharp cleaning materials may damage the printer.

- ➔ Do not use any cleaning agents or materials that could damage or destroy the paint finish, labelling, display, type plates, electrical component etc.!
- ➔ Do not use abrasive cleaners or cleaners which could damage the plastic!
- ➔ Do not use acid or alkaline solutions!

Note: dirty environments may require shorter intervals between preventive maintenance routine.

CLEANING THE PRINT HEAD

Switch off and lock out the printer before performing this task!
You are advised to clean daily the printing line of the thermal head located on the printing unit. Clean the fixed pin **[P]** located on the left side of the printing head.

How to operate

1. Switch off the printer and remove the front cover.
2. Move the carriage manually to have easy access to the head area from the top.
3. Clean the printing line **[L]** with a clean tissue or with a paper cleaning tissue soaked in isopropyl alcohol. On no account use metal objects or any hard material.
   In case of XTO22 model perform the operation for both the carriages.

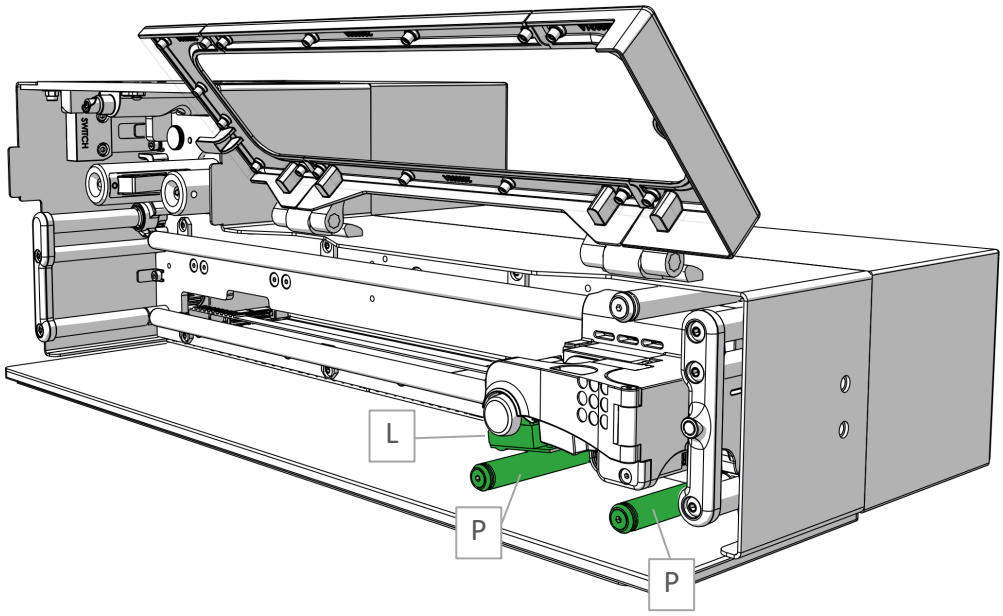


Figure 80: cleaning the print head

CLEANING THE PRINTING PLATE

Clean with a cleaning tissue or with a paper tissue soaked in isopropyl alcohol.
Advisable when the printer is in fixed position.

How to operate

1. Switch off the printer and remove the rolls of thermal ribbon.
2. Move manually the carriage to the end of its stroke to have access to the printing plate surface.
3. Clean the print plate surface.
   In case of XTO22 model, move manually both carriages to have a good access to the complete printing plate.

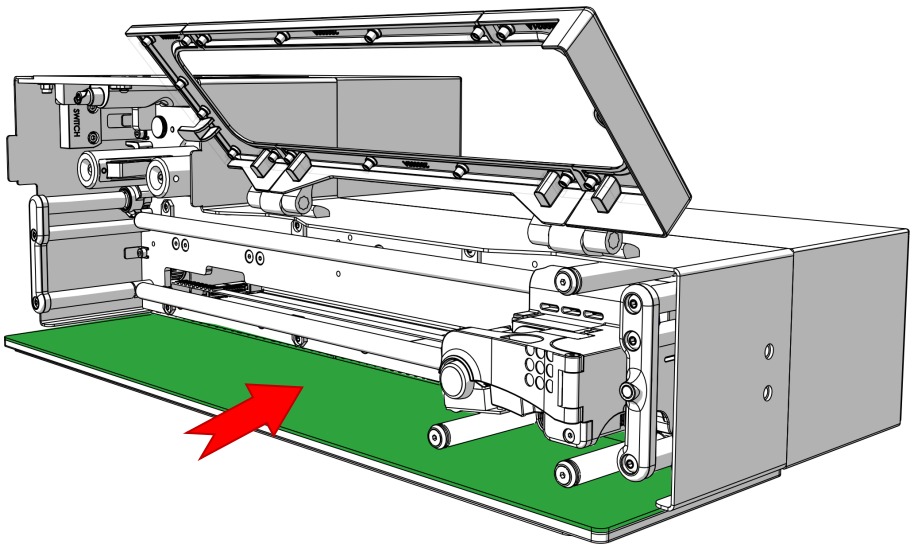


Figure 81: cleaning the printing plate

CLEANING ROLLS AND RIBBON PASSAGES

Check the status of rubber coated roll **[R1]**. Verify that the surface of the roll is smooth and even. Check every single roll turn without jamming and is not crooked.

> **Note:** It is very important to clean the rubber coated roll and to check sometimes that it rotates freely, to avoid print overposition on the ribbon with bad print quality or missing parts in print.

How to operate

1. Use a jet of low-pressure air to clean the dust off the printing unit.
2. Use a tissue or a paper tissue soaked in isopropyl alcohol to clean all the rolls and ribbon passages.
3. If necessary, lubricate the bushes with Ballistol oil.

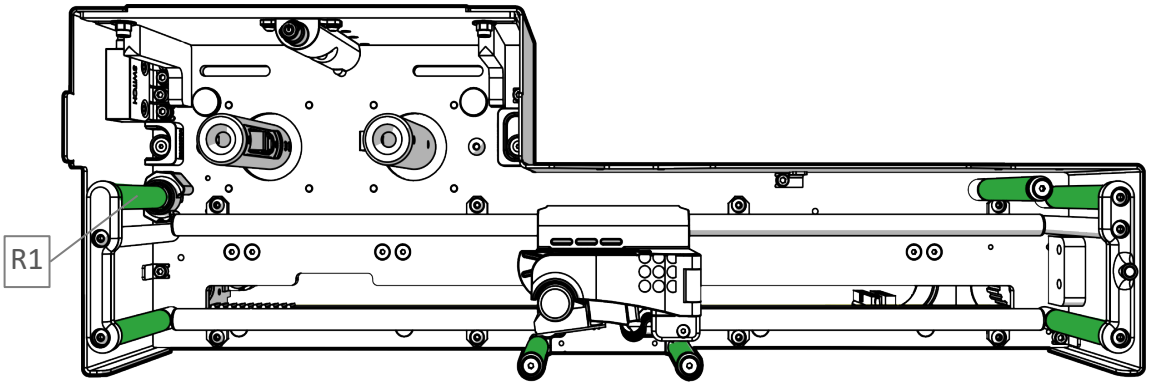


Figure 82: cleaning rolls

> **Pay attention**: do not dirty with oil the surface of rolls.
> On no account use jets of water or steam to clean the printer.

CLEANING THE CARRIAGE SLIDING GUIDE

How to operate

1. It is advised to use BALLISTOLL oil for cleaning and lubrication.
2. Move carriage manually for its entire path forwards/backwards three or four times and clean guides with clean cloth to dry any excess oil.

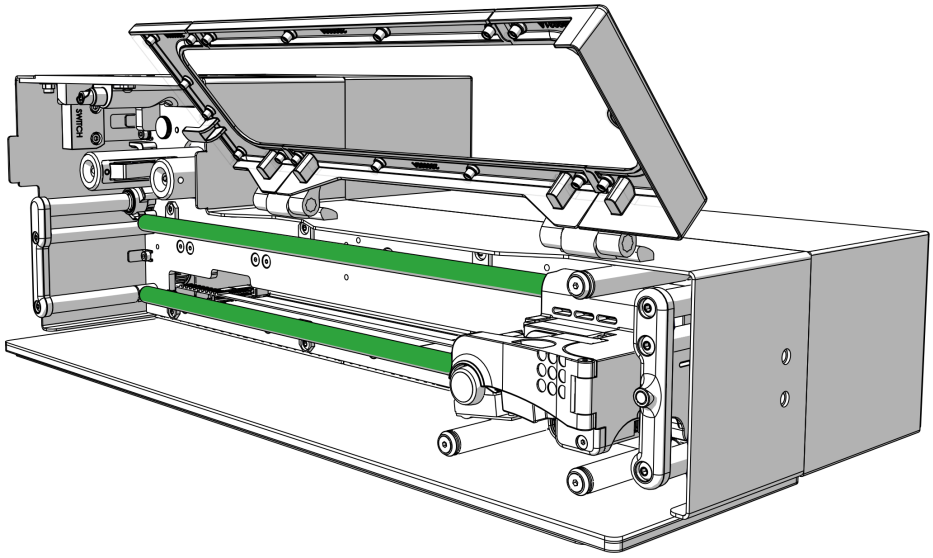


Figure 83: cleaning the sliding guide

WARNING!
DO NOT use other lubricants or grease as they clog the bushes with the guides and compromise carriage movement.

Any maintenance or repair tasks that are not prescribed in this manual must be performed only by EIDOS or by an Authorized Service Centre.

Appendix 1

EC DECLARATION OF CONFORMITY

Manufacturer:

EIDOS Srl – via dell'Industria,11 - 10023 Chieri (TO) ITALY – www.eidos.eu

Person authorised to compile the technical file:

Paolo Bori – via dell'Industria, 11 – 10023 Chieri (TO)

Declares regarding the following supply

Generic Denomination and Function: Intermittent Thermal Transfer Overprinter (TTO)

Commercial name: **XTO Intermittent**

System Models: **7XTO2I20-1; 7XTO2I20-2; 7XTO2I20-3; 7XTO2I20-4**
7XTO2I40-1; 7XTO2I40-2; 7XTO2I40-3; 7XTO2I40-4
7XTO2I60-1; 7XTO2I60-2; 7XTO2I60-3; 7XTO2I60-4
7XTO2I20-1TR; 7XTO2I40-1TR; 7XTO2I60-1TR
7XTO2I20-1IP; 7XTO2I40-1IP; 7XTO2I60-1IP
7XTO22I40-1; 7XTO22I40-2; 7XTO22I40-3; 7XTO22I40-4
7XTO22I60-1; 7XTO22I60-2; 7XTO22I60-3; 7XTO22I60-4
7XTO22I90-1; 7XTO22I90-2; 7XTO22I90-3; 7XTO22I90-4
7XTO22I40-1TR; 7XTO22I60-1TR; 7XTO22I90-1TR
7XTO22I40-1IP; 7XTO22I60-1IP; 7XTO22I90-1IP

that the product complies with the provisions of the following relevant Community directives:

- Machinery Directive 2006/42/EC
  Applied standards:
  UNI EN ISO 13857:2020 safety distances
  CEI EN 60204-1:2006 on the safety of electrical equipment

- Electromagnetic compatibility standard (EMC) 2014/30/EC
  Applied standards
  EN 55032:2015
  Electromagnetic compatibility of multimedia equipment. Emission Requirement
  EN IEC 61000-6-2:2019 Electromagnetic compatibility (EMC)
  Part 6-2: Generic standards - Immunity for industrial environments
  EN 61000-3-2:2014 Electromagnetic compatibility (EMC)
  Part 3-2: Limits - Limits for harmonic current emissions
  EN 61000-3-3:2013 Electromagnetic compatibility (EMC)
  Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems.

Chieri, 15/10/2021
Place and Date of Declaration

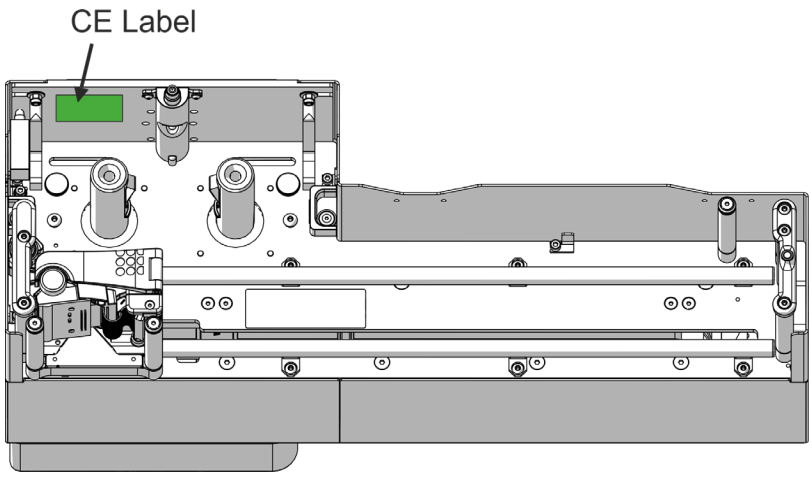
Paolo Bori (Managing Director)

Appendix 2

CE LABEL

1) System model 2) Mechanical unit 3) Electronic unit
4) Serial number 5) Production date

CE Label position on Mechanical Unit



Thank you for taking the time to read this manual
we recommend you keep it for future reference.

Via dell'Industria, 11
Z.I. Fontaneto 10023 Chieri (TO)
ITALY
e-mail: eidos@eidos.eu
web: www.eidos.eu