NOVEXX
SOLUTIONS

USER MANUAL

XLP 514/516

Label printer

Contents

Please note!

GENERAL NOTES

Validity of this manual and required compliance

Contents

The complete operating manual for the label printers XLP 514 and XLP 516 (also referred to in the following as "XLP 51x", "machine" or "printer") consists of the following parts:

Manual	Target group	Medium	Availability
Quick reference guide, Safety notes	Operating personnel	Printed	Comes with machine
User manual		PDF file	NOVEXX Solutions web page www.novexx.com
Service manual	Service personnel		NOVEXX Solutions Partner Portal www.partner.novexx.com
Spare parts catalog			

This user manual refers exclusively to the machine types named above. It is used for proper operation and adjustment of the machine.

The machine must be properly installed and configured to allow for operation and settings.

• For information about the required qualification, see chapter Qualifications required on page 8.

• For information about installation and configuration, refer to the service manual.

For technical questions not covered in this user manual:

► Follow the instructions of the service manual for the machine

or

► Request a service technician from our sales partner.

Our sales partner's customer service department is available especially for configuration settings and malfunctions.

Technical release

Technical release: 2/2023

Software version: MAR-V6.0

User manual version: 7 - 9/2023

Liability

Novexx Solutions reserves the right:

• to make changes in design, parts and software and to use equivalent parts instead of those specified for the purpose of technological progress.

• to change information in this manual.

Any obligation to extend these changes to machines previously delivered is excluded.

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How information is represented

Explanation of symbols

To enhance readability and make information easier to find, different types of information are identified:

► Instruction with no order of tasks assigned

1. Numbered instructions introduced by preceding text

2. The specified order must be followed!

‖ Special note for action that must be performed. ‖

• Enumeration of features

• Other feature

EXPERTS The Experts symbol identifies activities that are reserved exclusively for qualified and specially trained personnel.

Warning Notes

Warning notes are specially highlighted::

⚠ WARNING!
Warning notes with the signal word WARNING refer to risks that can result in severe or fatal injuries! The note contains safety measures to protect affected persons.
► Instructions must be followed without exception.

‖ CAUTION!
Warning notes with the signal word CAUTION refer to risks that can result in property damage or personal injury (minor injuries). The note contains instructions for preventing damage.

► Instructions must be followed without exception. ‖

Illustrations

Illustrations appear in the text where required. References to the illustrations are shown in brackets, if necessary (see table).

Reference to illustration	Application
none	• Only one illustration • Reference to the illustration is obvious • No position number in the illustration
(A)	• Only one illustration • Reference to the illustration is obvious • Position number in the illustration
(see fig. above)	• Several illustrations • No position number in the illustration
(see fig. above, pos. A)	• Several illustrations • Position number(s) in the illustration

Table 1: Different references to illustrations.

Parameters

Parameters in the parameter menu are represented in the format Menu name > Parameter name in grey type.

FOR YOUR SAFETY

Intended use

The label printers of the XLP 51x series are designed for printing label material, using the thermal or thermal transfer printing process. In addition, the dispenser version of the printers can dispense self-adhesive labels and can rewind the remaining backing paper (or alternatively the complete label material). It is possible to use a wide range of label materials and thermal transfer ribbons. Label stock must be in roll shape or fan-folded. The label web can optionally be pulled-in from outside the printer through the slots in the rear side or bottom plate.

Observe the technical specifications of the printer, see chapter Technical Data on page 12. Any other type of or more extensive application will be considered *abnormal use*.

Operating position: The XLP 51x is a desktop printer. The intended use position is as shown standing on a firm, flat, horizontal surface (e.g. on a table).
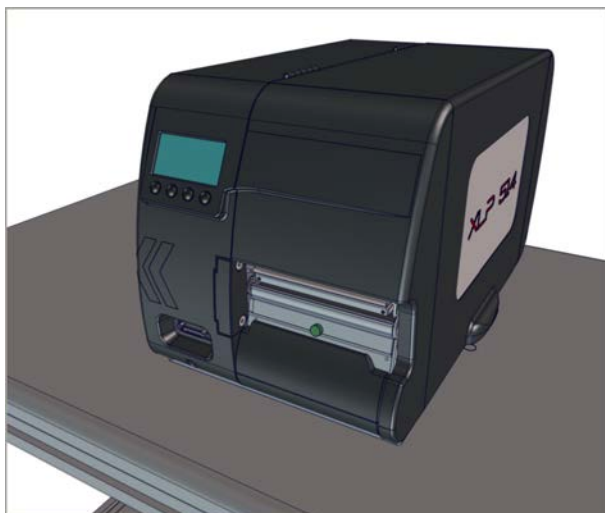
Fig. 1: Operating position of the XLP 51x.

NOVEXX Solutions shall assume no liability for damage resulting from non-intended use of the machine.

Safety notes

Follow the instructions

Safe and efficient operation of the printer can only be guaranteed if you observe all necessary information.

• Before operating the printer, read the operating instructions and all other notes carefully.

• Observe the additional safety and warning notes on the printer.

Qualifications required

• Trained staff is required for inserting and changing foils and material.

• Users need to be instructed in the use of the printer so they can work safely and independently.

• Users should be able to resolve minor operational issues and faults by themselves.

• At least two users should be instructed.

Requirements for safe operation

• Only use the printer in enclosed areas with environmental conditions matching the values given in the technical specifications!

• Only operate the printer on a plane, solid support.

• Make sure that the power supply socket for the printer is readily accessible!

• Only trained and authorized personnel should operate the printer!

• During operation, the print head can become hot! Care should be taken when touching the print head!

• Do not make any modifications or any additional casing for the printer!

• Do not allow any liquids to enter into the printer!

- Repairs to the printer may only be performed by authorized specialists who are aware of the risks involved!

- Lay the power supply cable, data cables and compressed air hoses (if applicable) in a way that nobody can stumble over it.

- In case of emergency, switch off the printer and disconnect the power supply cable!

- Only use original accessories!

Protection against injuries by electrical current

- Only operate the printer using the system voltage indicated on the rating plate!

- Only connect the printer to a grounded power socket fitted to authorized standards!

- Connect only devices to the interfaces at the printer that fulfil ES1 circuit requirements according to EN 62368-1!

Protection against injuries by mechanical action

- Only operate the printer when the cover is closed!

- Don´t wear *loose* long hair (if necessary, wear a hairnet).

- Keep loose jewellery, long sleeves, etc. away from rotating parts of the printer!

- Be careful when sliding on/removing the ribbon rolls! There are *sharp-edged clamping plates* on the ribbon mandrels. Danger of cuts!

Warning notes on the machine

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

► Do not remove warning notes.
► Replace missing or illegible warning notes.
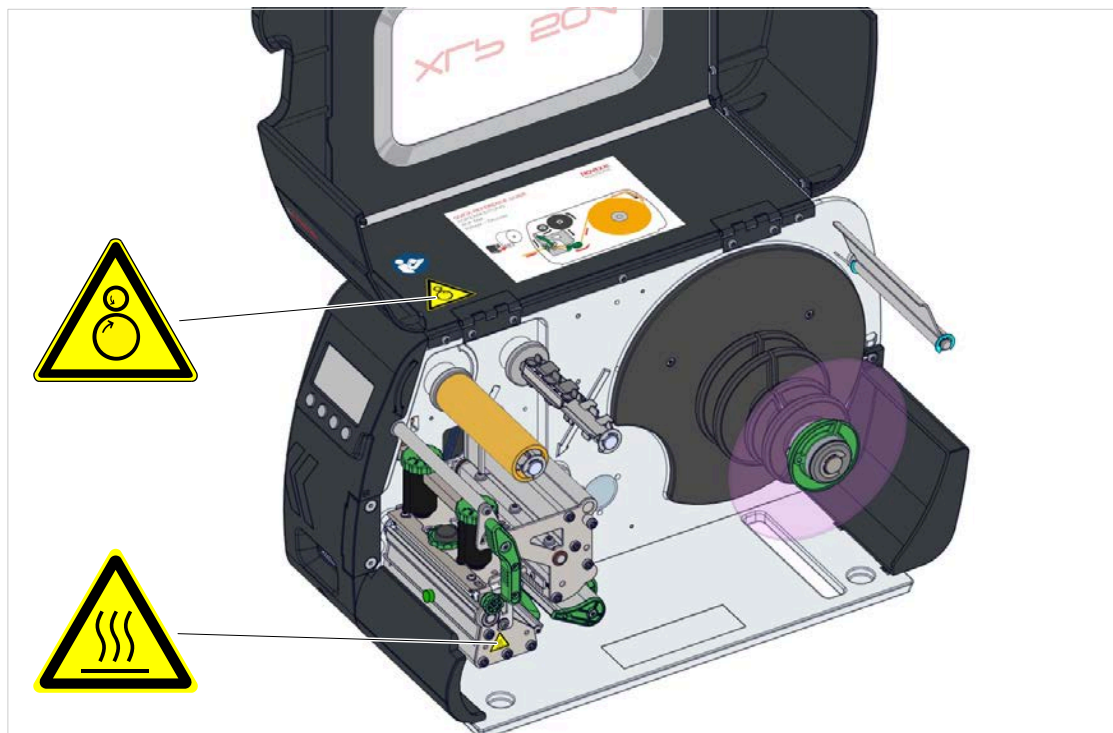
Fig. 2: Warning notes on the XLP 51x.

Warning note	Meaning	Article no.
	The "Pinch point" warning note warns of the danger posed by the machine´s rotating parts; they can trap items and draw them in.	A5346
	The "Hot surface" symbol warns of a burn hazard if the surface is touched. Allow the machine to cool off before touching it.	A5640
	The blue label "Read manual" demands that operators read the user manual.	A5331

Product Description

TECHNICAL DATA

Dimensions | Connection Data | Ambient Conditions

Dimensions

- Measures:
  - *XLP 514*: 272 x 260 x 462 mm (H x B x T)
  - *XLP 516*: 272 x 330 x 462 mm (H x B x T)
- Weight:

Printer	Weight (kg)
XLP 514 basic / peripheral	12,3
XLP 514 basic dispenser / peripheral dispenser	13,3
XLP 516 basic / peripheral	14,3
XLP 516 basic dispenser / peripheral dispenser	15,4
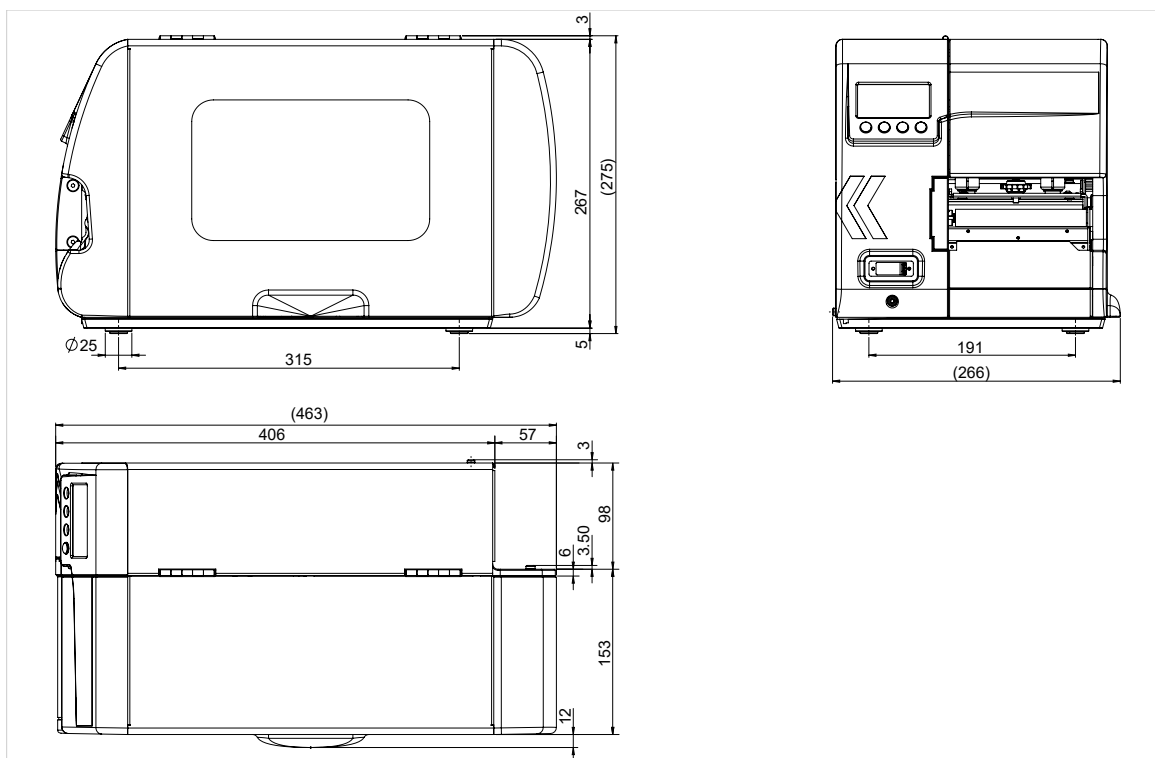
Fig. 3: Measures of the XLP 514.

Connection data

Protection category	I
Mains voltage	100 -240 V (AC)
Input current	3.0 - 1.5 A
Mains frequency	60 /50 Hz

Ambient conditions

Installation location	• Inside buildings • Protected from wind and spray water • Dry • Not in areas with potentially explosive atmosphere
Operating Temperature	+5 to +40°C
Storage Temperature	-20 to +70°C
Relative Humidity	20 to 85%, non-condensing
Protection category	IP 20
Noise	< 70 dB(A)
Sea level	Operation to max. 2000 m above sea level

Label Material

Material types

Self-adhesive, card and synthetic materials, suitable for printing in thermal direct process and thermal transfer process. Use of roll material or leporello possible.

For details refer to Appendix > "Types of label material".

Material weight

- *Self-adhesive labels*: 60-160 g/m^2
- *Card material (tags)*:
  - XLP 514: max. 240 g/m^2
  - XLP 516: max. 190 g/m^2

Material measures
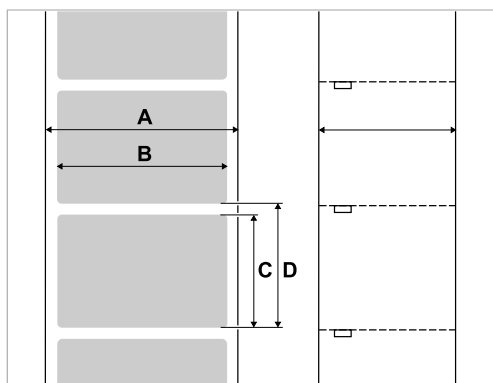
Fig. 4: Material measures (**A** Material width, **B** Label width, **C** Label length)

Machine	Material width	Label length
XLP 514 203 dpi XLP 514 300 dpi XLP 514 600 dpi	15-120	5-2000 5-2000 5-1000
XLP 514 Dispenser	30-110 [1]	30-500 [2]
XLP 514 Dispenser with optional label sensor for short labels		5-200
XLP 516 300 dpi	50-185	5-2000
XLP 516 Dispenser	50-170 [1]	30-500 [2]
XLP 516 Dispenser with optional label sensor for short labels		5-200

Table 2: Label measures.

Label roll

Max outer-Ø	Standard printer	max. 210 mm
	Dispensing operation with 100 mm core-Ø	max. 190 mm
Inner-Ø		38.1 / 76.2 / 101.6 mm (1.5 / 3 / 4") [3]

Backing paper

Outer Ø of backing paper roll	max. 120 mm

---

1   The material passage width is limited by the dispensing sensor, which is mounted at the side. If a dispensing edge without a sensor is applied (foot switch operation), the passage width is as large as at the standard printer.

2   For label length less than 35 mm, the optional label sensor for short labels is recommended

3   101.6 mm (4") adapters are optional available.

Punch measures
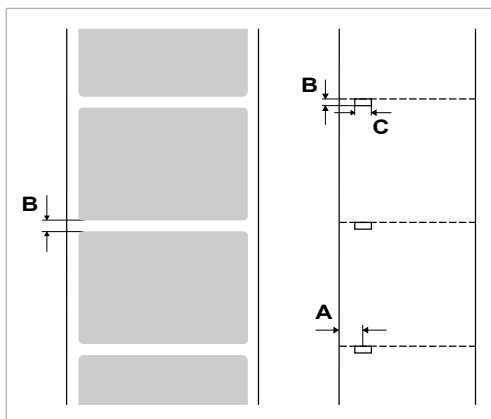
Fig. 5: Punches at different material types (**A** Punch position, **B** Punch length, **C** Punch width).

Light sensor type	Position (A)	Length (B)	Width (C)
Light transmission (standard)	0-60 mm	0.8-14 mm	min. 4 mm
Light transm. for short labels (opt.)	11 mm		
Reflex (optional)	6-66 mm	4 mm (recomm.)	12 mm (recomm.)

Table 3: Dimensions and adjustment range of the punch/reflex marks.

The start of the label is considered to be the dark/light change of the reflex mark (= end of the reflex mark).

Related concepts

Label material types on page 117
What to look for when selecting label stock for the XLP 51x.

Thermal transfer ribbon

Ribbon type

Regarding thermotransfer ribbon, the following is recommended:

• the reverse side of the ribbon must have an antistatic, friction-reducing coating (backcoating)

• ribbons must be specified for "flat head" type print heads

• ribbons should be suitable for the following print speeds:

– XLP 514: 250 mm/s (10 Inch/s)

– XLP 516: 200 mm/s (8 Inch/s)

Ribbon roll

Variable	Dimension
Outer Ø	max. 80 mm [4]
Core inside Ø	25.4 mm (1")
Width [5]	XLP 514: 25 -110 mm XLP 516: 54 -172 mm
Winding direction	Colour side facing inside or outside

Table 4: Dimensions of usable ribbon rolls.

Perfomance Data

Print head

- *Print technology*: Thermal direct or thermal transfer printing

- *Print head type*: "Flat Head"

- *Print head characteristics*:

Machine	Resolution (Dot/mm)	Resolution (dpi)	Print speed (mm/s)	Print speed (Inch/s)	Max. print width (mm)
XLP 514	8.0	203	50-250	2-10	104
	11.8	300	50-250	2-10	105,7
	23.6	600	50-150	2-6	105,6
XLP 516	11.8	300	50-150	2-6	168 [6]

Impression accuracy

- In printing (y-) direction:

  The impression accuracy depends on the print position. With the printout starting directly at the punch position, the accuracy is ±0.5 mm. A distance between punch (that is label start) and print position will add ±1% of this distance to the accuracy fault (fig. below)

- X-direction: ± 0.5 mm

---

4 Equals 450 m standard ribbon of the type Novexx 4903.

5 As a general rule, the thermal transfer ribbon must overlap the label being printed on both sides by 2 mm.

6 CAUTION! - Mind the print width limitations, see (XLP 516) Print width limitations on page 118.
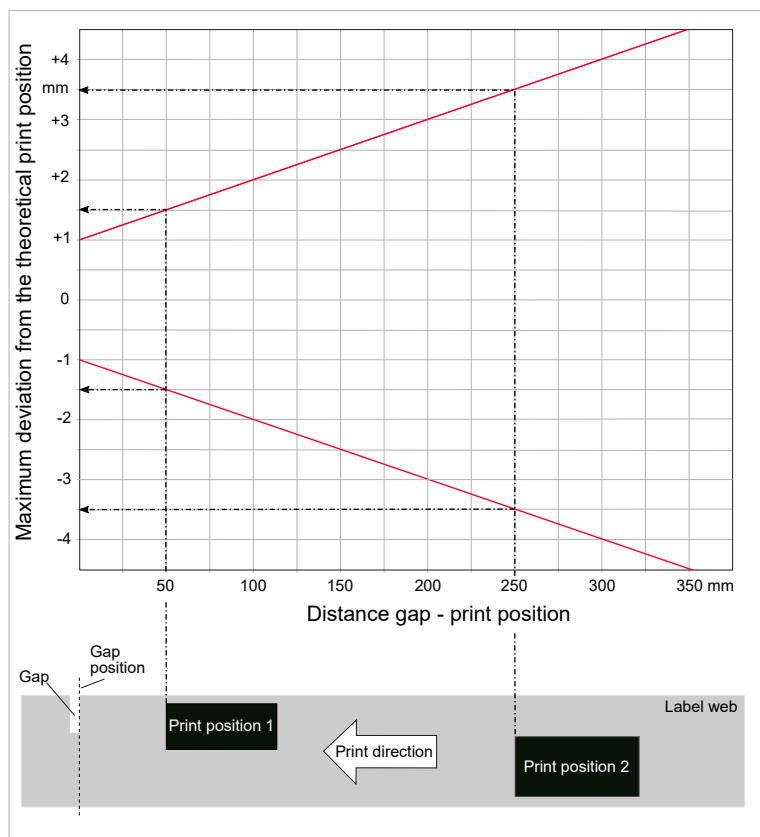
Fig. 6: Impression accuracy in printing direction, depending on the printing position.

Label sensor

• Standard: *Light-transmission* sensor for punched label material.

• Option: *Reflex sensor* for label material with black marks on the bottom side

Setting range:

Light sensor type	Setting range (mm)
Transmission	0-60
Reflex	6-66

Punch position and size see chapter "Punch measures" on page 15.
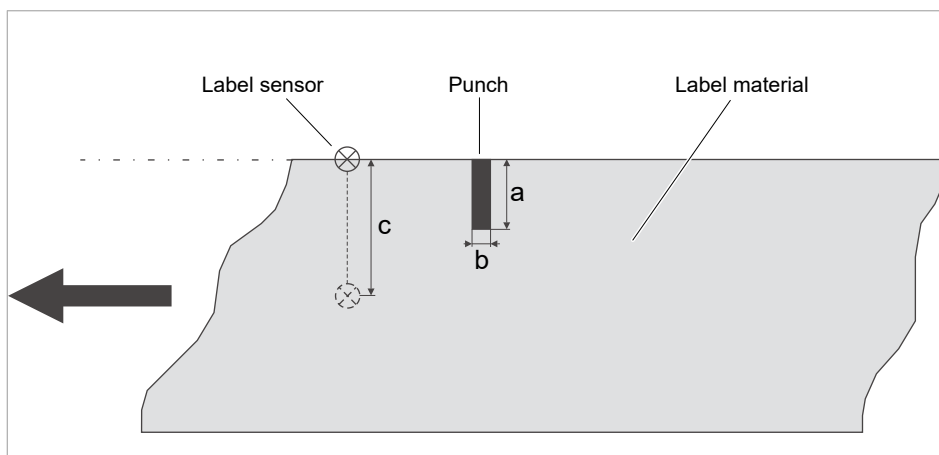
Fig. 7: Adjustment range of the label sensor.

Output modes

1:1 and 100% printable.

Non-printable areas:

• 1 mm from the front label edge (1st edge in feed direction)

• 1 mm from the left band border (right border in feed direction)

Interpreter

Easy Plug, Line Printer, Hex Dump, ZPL

Character sets

• 17 character sets with fixed size (fixedfonts) including OCR-A and OCR-B

• 3 Scalable character set (speedo fonts)

• TrueType character sets are supported (in Unicode as well)

• TrueType, speedo and fixed size fonts can be optionally stored on a memory card.

Character modification

• Scaling in X/Y direction

   – Fixfonts up to factor 16

   – Speedo fonts up to 6000 pt

• Rotation:

   – Resident fonts, bar codes, lines and graphics: 0, 90, 180, 270 degrees

   – Truetype fonts: 0 to 359.9 degrees

Bar codes

Codabar	Code 128 A, B, C
Code 128	Code 128 UPS
Code 128 Pharmacy	ITF
Code 2/5 Matrix	MSI
Code 2/5 Interleaved	EAN 8
Code 2/5 5-line	EAN 13 add-on 2
Code 2/5 Interleaved ratio 1:3	EAN 13 add-on 5
Code 2/5 Matrix ratio 1:2,5	EAN 128
Code 2/5 Matrix ratio 1:3	Postcode (guide and identity code)
Code 39	UPC A
Code 39 extended	UPC E
Code 39 ratio 2,5:1	Code 93
Code 39 ratio 3:1	

All bar codes scalable in 30 different width and in the height

2-dimensional bar codes

Data Matrix Code (code according to ECC200)
Maxi Code
PDF 417
Codablock F
Code 49
QR Matrix Code

GS1 Databar & CC bar codes

Reduced Space Symbology (GS1 Databar) and Composite Component (CC) bar codes:

GS1 Databar-14	UPC-A + CC-A/CC-B
GS1 Databar-14 truncated	UPC-E + CC-A/CC-B
GS1 Databar-14 stacked	EAN 13 + CC-A/CC-B
GS1 Databar-14 stacked omnidirectional	EAN 8 + CC-A/CC-B
GS1 Databar limited	UCC/EAN 128 + CC-A/CC-B
GS1 Databar expanded	UCC/EAN 128 + CC-C

Interfaces & Electronics

Interfaces

- Data interfaces:

  – *Network*: Ethernet 10/100

  – *USB host* (Typ A): USB 2.0

  – *USB device* (Typ B): USB 2.0, 2x

  – Serial: RS232, DSub 9

- Signal interfaces:

  – *BasicIO board* (optional): 3 M12 connections with 4 inputs, 4 outputs, PNP configuration, 24 VDC, JSON configurable, 20 W max. output power

  – *Basic-USI board* (optional): Sub-D15 connector with 4 inputs, 7 outputs, NPN configuration, 24/5 VDC, 20 W max. output power

Electronics

Characteristic	Details
Processor	32-bit ARM Cortex-A9 CPU (NXP)
RAM	1 GB DDR3-RAM
eMMC	2 GB pSLC
Realtime clock	Standard
Operating panel	• 4 buttons • LC graphics display with 128x64 pixels • RGB illuminated background

Certificates and Markings

CE, TÜV-Mark, $_C$TÜV$_{US}$ -Mark, FCC

The regulation EN 55032 demands for class A devices the following text to be printed in the manual:

„WARNING: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.“

DESIGN MODELS

Printer versions

The XLP 51x is available as "Basic" and as "Peripheral" version.

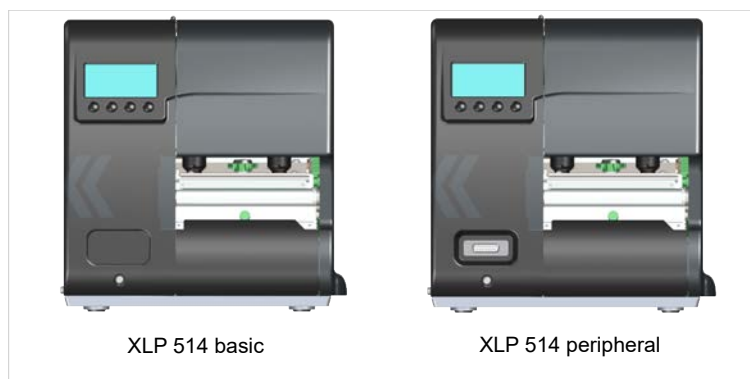XLP 514 basic   XLP 514 peripheral

Fig. 8: External distinguishing feature: the "Peripheral" version has a D-Sub connector on the front, below the control panel.

Version	Features
XLP 51x "Basic"	The printed labels can be torn off at the standard tear-off edge. An up-grade to the "Peripheral" version is possible.
XLP 51x "Peripheral"	Equipment like version "Basic". In addition, it is possible to operate the following options for further processing of the printed labels: • External rewinder "Rewinder XLP" • Cutter "Cutter 2000" • Applicator LTMA • Textile Cutter-Stacker TCS

Options and accessories

Internal Options

…should be factory-fitted or installed by a service technician:

• *Internal rewinder kit*: To retrofit the internal rewinder

• *Internal rewinder + dispenser kit*: To retrofit the internal rewinder and the dispensing edge

• *Reflex sensor kit*: Light barrier fitting that apart from the transmission sensor, also contains a reflex sensor (detects reflex marks on the material bottom side).

• *Label sensor for short labels* (for XLP 51x Dispenser only) . Recommended for label length < 30 mm.

• *BasicIO board*: Signal interface (24 V, PNP, M12)

• *Basic-USI board*: Signal interface (24/5 V, NPN, D-Sub 15)

External Options

…do not require any special alterations to the printer:

- *Cutter* (prerequisite: printer version "Peripheral")
- *External rewinder* "Rewinder XLP" for material rolls with 38 mm (1.5"), 75 mm (3") or 100 mm (4") cores (prerequisite: printer version "Peripheral")
- *Dispensing edge* (prerequisite: Internal rewinder installed)
- *Applicator* LTMA (for XLP 514 only, requires special preparation of the printer, see operating manual LTMA)
- *Cutter-Stacker* TCS (for XLP 514 only, requires special preparation of the printer, see operating manual TCS)

Accessories

...require no conversion work but are simply plugged in:

- *Foot switch* for foot-operated single label printing (prerequisite: BasicIO board or Basic-USI board installed)
- *Core adapter set* for label rolls with 100 mm (4") core diameter
- *Wi-Fi USB dongle* for using the web panel via a Wi-Fi connection
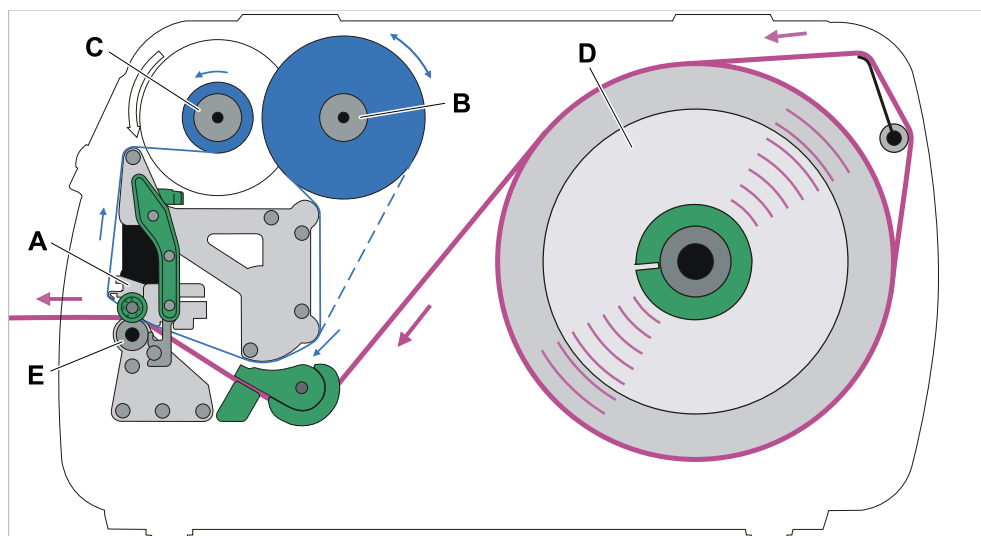
FUNCTIONALITY

XLP 51x

Fig. 9: Material and foil path inside the XLP 51x. **A**: print head, **B**: ribbon unwind mandrel, **C**: ribbbon rewind mandrel, **D**: material unwinder, **E**: print roller

The printing principle is based on the thermal print head (A). The core piece of the print head, the thermal edge, consists of a row of dot elements, which can be controlled and heated separately. Each heated dot element leaves a black dot on the label material.

With *thermal direct printing*, the black dot results from the reaction of the thermosensitive label material. With *thermal transfer printing*, the black colour is transferred from the thermal transfer ribbon to the label material.

In order to add the dot lines to an image, the label material has to be passed underneath the print head during printing. This material feeding is accomplished by the print roller (E), which is motor driven. By moving the label material, it is unwound from the label roll (C).

When using thermal transfer printing, the thermal transfer ribbon ("ribbon") is fed together with the label material underneath the print head. The ribbon position is between label material and print head, the colour side facing the label material. The full ribbon roll is plugged on the ribbon unwinder (B). After passing the print head, the used ribbon is wound onto the ribbon rewinder (C), which is motor driven. If the ribbon roll is completely rewound, a new roll has to be inserted.

Material end and ribbon end are detected by sensors and are displayed on the operation panel.

The label beginning is detected by a light transmission sensor with punched label material and by a reflex sensor (option) with continuous material.

XLP 51x dispenser

The dispenser version of the printer allows freshly printed labels to be dispensed or rewound in the printer enclosure.

- When used as a *dispenser*, the label material is drawn around the dispensing edge and only the backing paper is rewound (Prerequisites: Dispensing edge + internal rewinder).

- When used as a *rewinder*, the printed label is guided across a baffle plate and rewound together with the backing paper (Prerequisites: Baffle plate + internal rewinder).

The electronic components in the rewinder control the tensile force on the release paper so that the same force is applied for all winding diameters. This is controlled independently of the material width and printing speed.

After switching on the printer, the rewinder is initialised and the backing paper is tightened.

Once a print job is received, the printer searches for the first label start marking at reduced printing speed. To do this, the label material is moved by at least the distance between the label sensor and the printhead (70 mm). This distance is used by the rewinder controller to calculate the diameter of the previously wound backing paper. To allow the controller to calculate the diameter even with endless material, in this case printing also does not start until the material has moved 70 mm. The print job is carried out at the speed that has been set in the parameter menu or as specified by the print job.

If a fault occurs during operation, the rewinder shuts off automatically.

Once the maximum diameter of the backing paper has been reached, a message appears on the display and the rewinder shuts off automatically.

The following operating modes are available for the dispenser:

- *Dispenser mode with dispenser sensor:*

  The material feed ends at the dispensing edge, i.e., the label to be dispensed remains hanging on the dispensing edge (set dispensing position). The printer waits until the label is removed before moving the next empty label beneath the print head and then printing and dispensing it.

- *Dispenser mode with foot switch:*

  Pressing the foot switch releases the label for printing and dispensing. Afterwards, the next empty label is positioned beneath the printhead.

OPERATING COMPONENTS
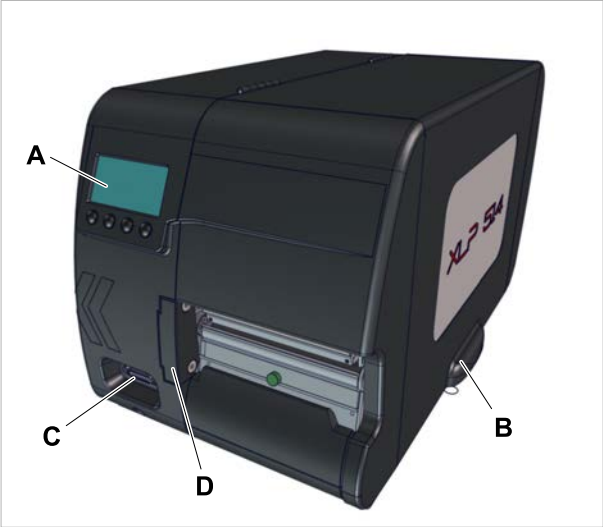
Operating components on the XLP 51x

Fig. 10: Operating controls outside at the XLP 51x "Peripheral".

A	*Operation panel* Displays the operating status of the machine; for defining settings in the parameter menu
B	*Front cover* Open this to insert label material and ribbon
C	(At version "Peripheral" only) *Connector* for additional devices ("Options")
D	*Monting flange* for options
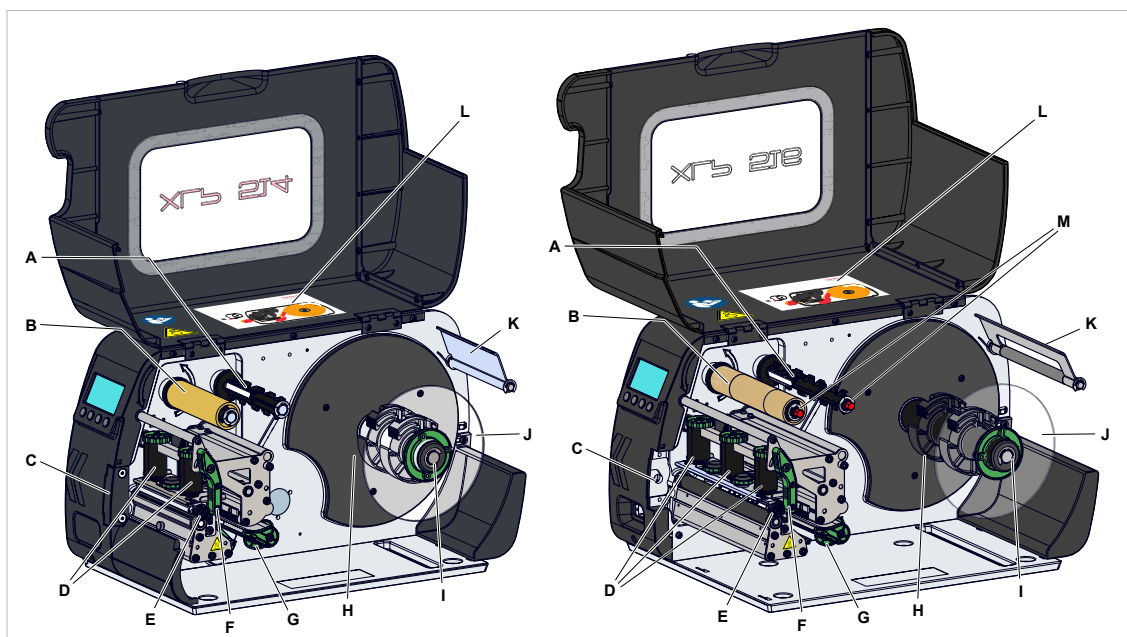
Fig. 11: Operating controls of the XLP 514 (left) and the XLP 516 (right).

A	*Ribbon unwinding mandrel*: Holds the ribbon roll
B	*Ribbon winding mandrel*: Winds up the used ribbon
C	*Mounting flange for options*: here can be mounted an option like a cutter or a rewinder, for example.
D	*Pressure elements*: Set the printhead contact pressure by rotating the green dial
E	*Setting dial for printhead support*: When using narrow labeling material, the printhead has to besupported to get a uniform printing result
F	*Print head pressure lever*: Opening the pressure lever lifts the printhead. You do this to insert material/ribbon or to clean the printhead/print roller
G	*Material guiding*
H	*Adapter rings*: For adapting unwinder to core diameter of material roll
I	*Material unwinder*: This is where you install the roll with the label material
J	*Guiding disk*: Prevents material roll from sliding out sideways
K	*Material strain relief*: Allows the label material to unroll evenly
L	*Quick reference guide*: Booklet with the most important operating steps, inserted into a pocket in the cover. Insertion diagram on the front page
M	(XLP 516) Adjusting knobs for the ribbon tension

Importance of the colours of machine parts:

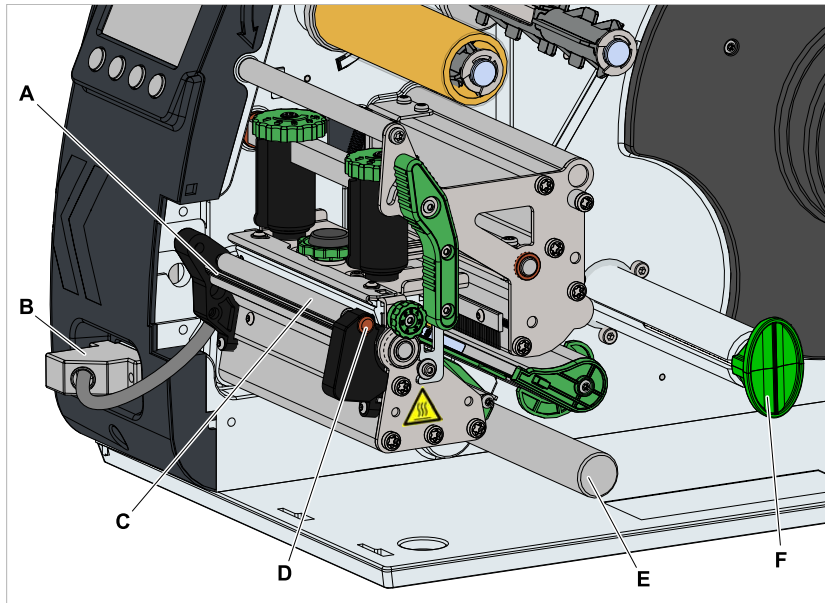|	
Green	Operating component, which may be touched by the machine operator
Yellow	Parts that touch the label web
Black	Parts that touch the ribbon web

Operating controls on the XLP 51x with dispenser option

Fig. 12: Additional operating controls of the XLP 514 with dispenser option.

A	*Dispensing edge*: This is where the labels are separated from the backing paper
B	*Plugs*: Connector for dispensing edge sensor
C	*Dispensing roll*: Holds the material ribbon taut over the dispensing edge
D	*Button for dispensing roll*: Press the red button to remove the dispensing roll
E	*Deflecting shaft*: Deflects the backing paper
F	*Internal rewinder*: Rewinds the backing paper

Operating controls on the XLP 51x with rewinding option
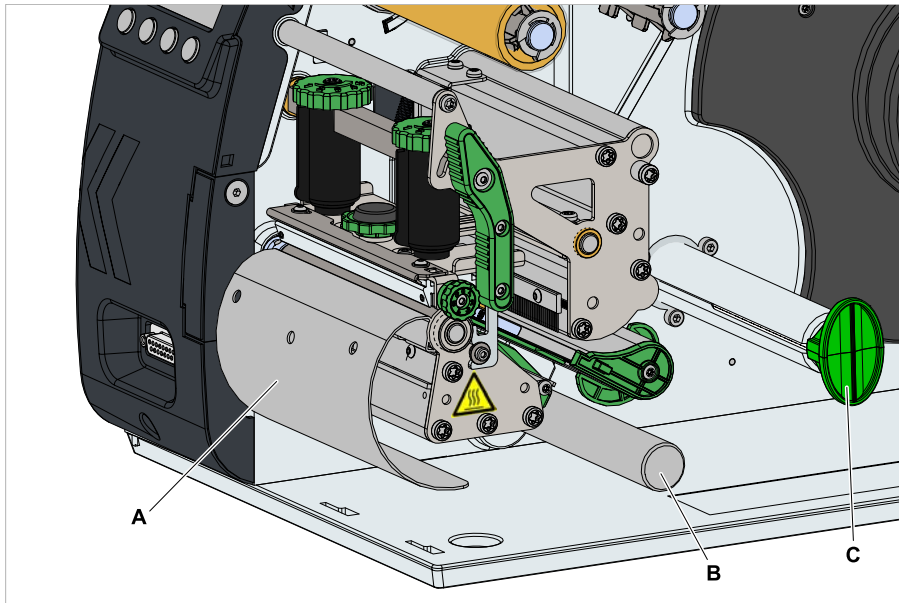
Fig. 13: Additional controls of the XLP 51x with rewind option.

A	*Baffle plate*: Deflects the printed labels without dispensing any of them
B	*Deflecting shaft*: This deflects the labels
C	*Rewinder*: Rewinds the label web

OPERATING PANEL

Operating Controls

The operation panel of the XLP 51x consists of a graphic display and four keys below the display. The current functions of the keys are displayed by icons (B) above the keys.
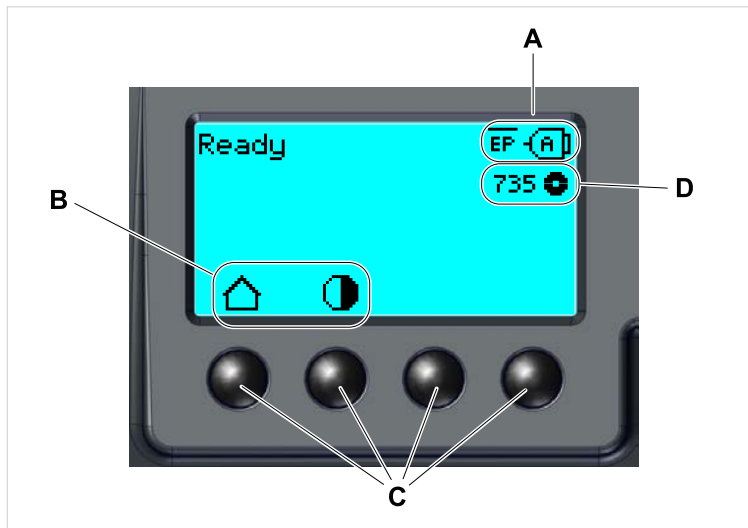
Fig. 14: Operation panel of the XLP 51x: **A** Icons that inform about the interface assignment, **B** Icons that show the key assignment, **C** Keys, **D** Remaining ribbon stock.

Operating Principle
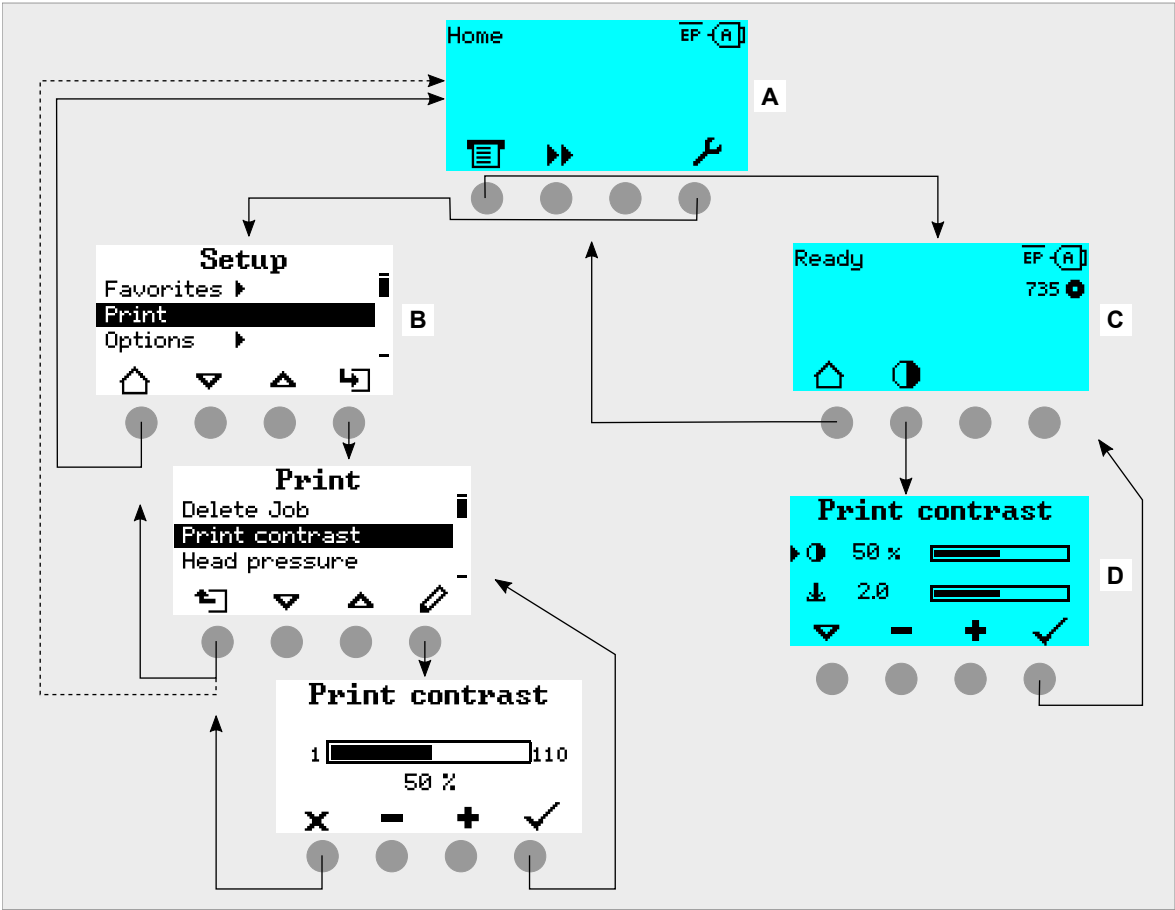
The figure shows, how to toggle between the screens:

Fig. 15: How to toggle between the screens: **A** "Home" (cyan), **B** "Setup" (white), **C** "Ready" (cyan).

The displayed texts and icons are largely selfexplanatory. Based on the different background colors of the display, the state of the printer can be identified quickly:

Color	State	
Green	Printing	Normal operation, labels are being printed and applied
	Waiting for a start signal	• A print job has been transferred and interpreted *or* • The current print job was stopped In both cases, the machine is waiting for a start signal
Cyan	Home	Generally counts: Cyan => Need for action by the operator • The printer is *not* ready to receive print data • The interpreter has stopped • Error messages or warnings can *not* be displayed
	Stopped	• The current print job was stopped • The printer is ready to receive print data • The commands in the received print job are processed by the interpreter • Errors or warnings can be displayed

Color	State	
	Ready	• The printer is ready to receive print data • The commands in the received print job are processed by the interpreter • Errors or warnings can be displayed
White	Standalone	• Selection of a file on a storage medium • The printer works in the background, without updating the display • Selecting an input field and text input into the input field • Start printing; Errors caused by the print job are displayed
	Setup	• Settings in the parameter menu can be done • The printer is *not* ready to receive print data • The interpreter has stopped • Error messages or warnings can *not* be displayed
Red	Error	• An error occured during the printing • The current print job is stopped • A status message is displayed with red background • The status message only dissappears after pressing the acknowledgement key • The printer remains ready to receive print data if it was able to do so before the error occurred (exception: errors that prevent data communication) • The commands in the received print job are processed by the interpreter • Further errors can occur and, if so, are queued
Yellow	Warning	Same as "Error", with the following differences: • The current print job is *not* stopped • The warning is displayed with yellow background • The warning dissappears after some seconds

Table 5: Display colors and corresponding states

Icons

⌂	*Home*: Toggle to the "Home" screen	▶	*Start*: To start an operation, e. g. printing
◑	*Contrast*: Setting the print contrast during printing; Hidden, if only operator access rights exist	ⅠⅠ	*Halt*: To stop an operation, e. g. printing
目	*Printing*: Toggle to the „Ready" screen	1	*Keys 1-4*: For typing in of key codes, the keys are numbered from left to right
⮐	*Out*: Jump to the next higher menu level; Hold the button pressed: jump to the highest menu level	2	
→Ⅰ	*In*: Opening a menu	3	
▬	*Applicator*: Triggers one stroke of the applicator, if present	4	
✓	*Acknowledgement*: Acknowledgement, e. g. of an input or an error message	✕	*Cancel*: Leaving the dialog without applying the setting
< >	*Left/Right*: Move the marker in the text input dialog to the left or right	△ ▽	*Up/Down*: Move the selection bar upwards or downwards
目	*Reprint*: Triggers the reprint of the preceding label, if the function is activated	⤒	*Up to first*: Moves the bar in the selection list to the first position
⌫	*Delete*: Deletes the character left of the marker in the text input dialog	✎	*Parameter:* Call parameter
⤓	*Character selection*: Selecting a character in the text input dialog	▶▶	*Feed:* Trigger material feeding
⊤	*Start signal*: Input of a start signal by hand in single start mode	ⓘ	*Info*: Call a purely informative menu item
⚲	*Setting*: Toggle to the „Setting" screen	➕	*Plus/Minus*: Increase/decrease a value in an input field
→	*Right*: Move one input field further to the right (when typing in values that consist of several fields, e. g. time)	➖	
		⤓	Setting of the *print head pressure*
⌇	Jump to the *Dispense Settings* screen; Hidden, if only operator access rights exist	⌇	*Dispense position*: Quick access to parameter Dispenser > Dispenseposition
⏶	*Start Offset*: Quick access to parameter Dispenser > Start Signal > Start offset	‖‖‖	*Bar code*: appears for frequently occurring error messages; Press the key to call up the QR code that refers to the quick troubleshooting guide
⏵	Rewinder start: To start the internal or external rewinder	⏹	*Rewinder halt*: To stop the internal or external rewinder

Table 6: Those icons inform about the function of the key below the icon

⊹	*Ethernet active*: The network interface is selected for data transfer and a connection could be established [7]	⊻	*Ethernet inactive*: The network interface is selected for data transfer and a connection could *not* be established
⟷	*USB*: The USB interface is selected for data transfer [7]	{A}	*Auto interface*: The data interface is selected automatically [7]
▭	*Serial*: The serial interface is selected for data transfer [7]	⚠	*Caution*: Warning sign which marks error messages
⚲	*Filter*: The filter function for file names is active (standalone mode)	●	*Ribbon stock*: Shows together with the number left of it the remaining ribbon length in meters.
EP	*Print interpreter* setting: Parameter Printer Language > Print Interpret. is set to "Easy-plug" [8]	EPIZ	*Print interpreter* setting: Parameter Printer Language > Print Interpret. is set to "Easy-Plug/ZPL Emu" [8]
ZPL	*Print interpreter* setting: Parameter Printer Language > Print Interpret. is set to "ZPL Emulation" [8]	LP	*Print interpreter* setting: Parameter Printer Language > Print Interpret. is set to "Lineprinter" [8]
HD	*Print interpreter* setting: Parameter Printer Language > Print Interpret. is set to "Hex-dump" [8]	[USB]	*USB thumb drive*: A USB thumb drive is connected and assigned to drive C:

Table 7: Those icons inform about printer states

Key Combinations

Printer state	Key combination	Function
"Home" screen	1+3+4	Enter access code
	3+4	Measuring the label pitch automatically, see chapter Label pitch on page 79
	2+3	Slow material feed
	1+2	Eject material (backwards)
Always	1+2+3	Reset
	2+4	Standalone mode, see chapter "Standalone Operation" on page 90

Table 8: Special key combinations.

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7 Icon flashes during print data transfer

8 Icon flashes during print interpreter activity.

WEB PANEL

Web panel - what´s that?

The web panel is a comfortable external control panel, which can be operated on mobile or stationary computing devices. The web panel is supported by the following machines:

• Print & Apply Systems XPA 93x, XDM 94x, XPM 94x

• Label printers XLP 60x, XLP 51x
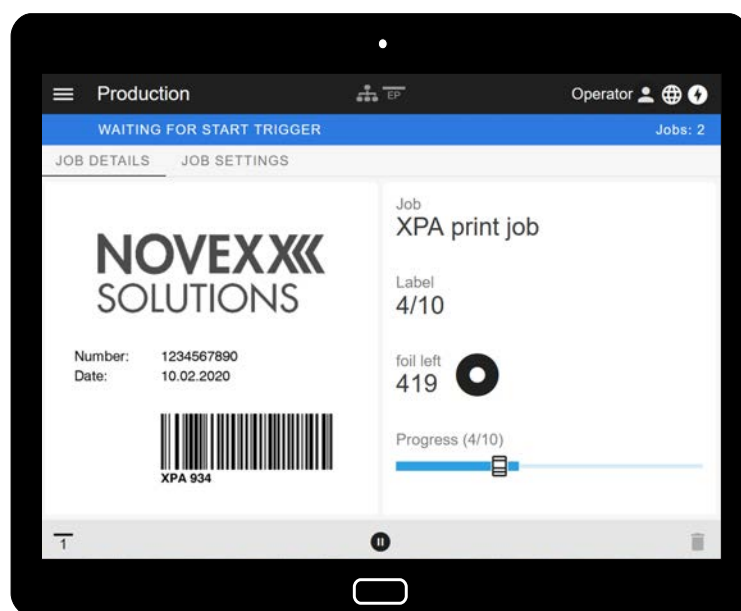
Fig. 16: Display of a print job in process with the web panel on a tablet computer.

Prerequisites

• Display device, e.g. smartphone, tablet computer, PC

• Web browser on the display device

• Connection to the same network to which the machine is connected

• Web server of the machine is activated: Interface > Network > Services > WEB server = "On"

Functions

• *Production monitoring*: Display of running print jobs (see figure above)

• *Machine settings*: Settings in the parameter menu

• *Administration*: Save machine settings; save support data; update firmware; etc.

> *Login*: In order to use the functions of the web panel, the user must log in - with one of the roles Operator, Supervisor or Service. Depending on the role selected, more or less functions are accessible.
>
> The same machine can be accessed from multiple web panels, and the web panels can have different language settings.

Starting the web panel

Procedure

1. Determine the IP address of the machine.

    The IP address is displayed on the operation panel during machine startup. Alternatively, se-
    lect the following parameter from the menu: Interface > Network > IP address.

2. Switch on the display device and open the web browser.

3. Enter the IP address in the URL input line of the web browser.
    The following display appears:
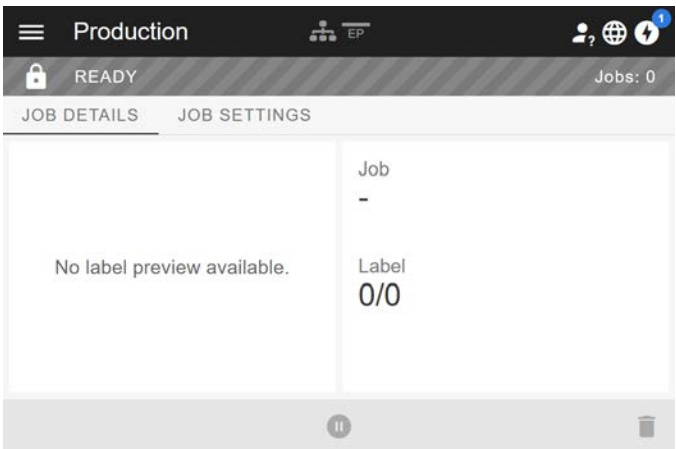
Display after the start
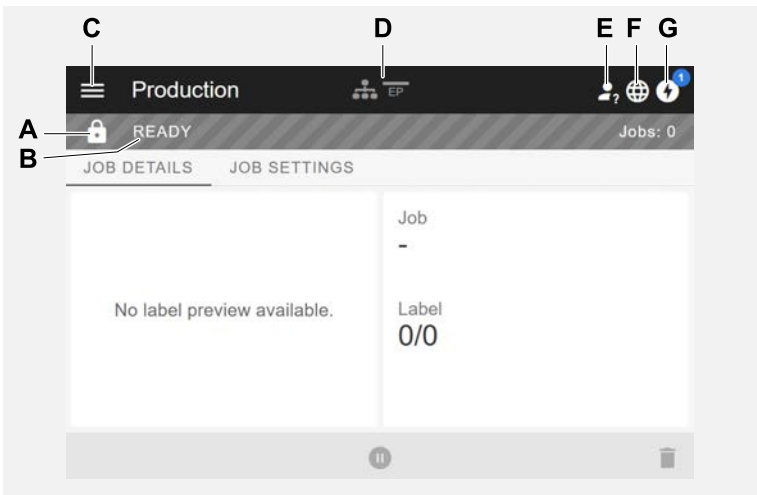
Pos. no.	Function
A	*Lock symbol*: No one has logged in yet (pos. E), so most functions are locked. Only the print job details display (middle area of the window with light background) and the message display (pos. G) are accessible.

Pos. no.	Function
B	*Infotext*: Display of different operating states of the machine with different background colours • READY: Appears when the control panel on the machine displays "Ready". • USER AT MACHINE: Appears when the control panel on the machine displays "Home". At the same time the lock symbol (pos. A) appears and the web panel is locked. This prevents the machine from being started from the web panel while someone is working on the machine (safety function). • ERROR: An unconfirmed error message is present. • WAITING FOR START TRIGGER: The machine is waiting for a start signal . • PRINTING…: The machine is printing
C	*Menu*: Choose here between the views "Production", "Machine settings" and "Administration". More details are given in the following chapters.
D	*Icons* that inform about the status of the machine, for more details see link to chapter "Icons" below. The figure above shows, for example, the icons for network connection and Easy Plug emulation.
E	*Login*: In order to use the functions of the web panel, the user must log in - with one of the roles Operator, Supervisor or Service. Depending on the role selected, more or less functions are accessible. ‖ Preset key code for the role Operator: 1-1-3-2 ‖
F	*Language selection*: The language set on the machine is preset. By clicking on the icon, another language can be selected for the web panel.
G	*Notifications*: Display notifications, such as error messages and warnings. See the following chapters for more details.

Related reference

Icons on page 31

"Notifications" view

On the web panel 3 types of notifications are displayed: Error messages, warnings and information.

Error messages
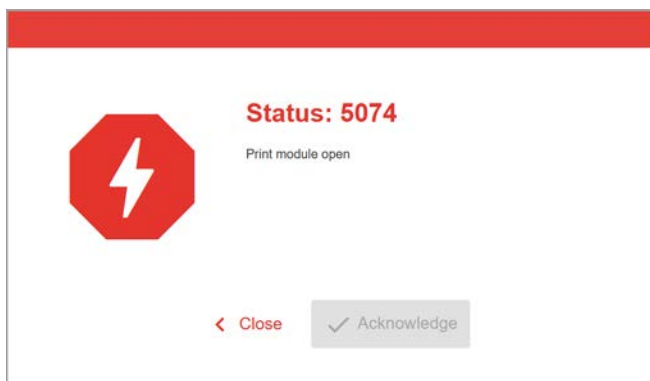
Fig. 17: Error messages that require a reaction from the operator are displayed in full. Status number and status text match the display on the machine operating panel. The message can be confirmed either on the web panel or the machine operating panel.

The Notification View
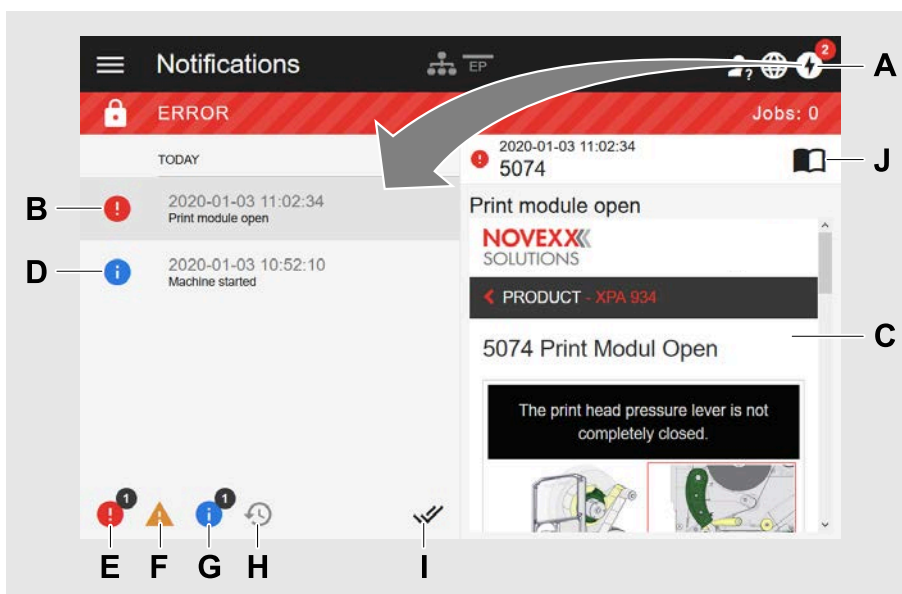
Fig. 18: After clicking on the notification icon (A), the notification view opens. The left half shows the notification history, the right half shows an explanation of the selected entry in the history.

Pos. no.	Function
A	*Notification icon*: Click on the icon to open the notification view. The superscript number indicates the number of unconfirmed notifications.

Pos. no.	Function
B	*Error message* in the history with timestamp. An explanation of the selected entry appears on the right. If there is a quick guide to correct the error message, it is displayed (C).
C	*Quick guide* to the error message, if available (Corresponds to the quick guide that can be accessed via a QR code from the machine operating panel)..
D	*Info message* in the history with time stamp.
E	*Filter for error messages*: Click on the icon to hide error messages from the list
F	*Filter for warnings*: Click on the icon to hide warnings from the list
G	*Filter for info messages*: Click on the icon to hide info messages from the list
H	*History*: Click on the icon to display the notification history. The history shows all notifications that have already been confirmed.
I	*Confirm everything*: Click on the icon to confirm all unconfirmed notifications. Confirmed notifications only appear in the history.
J	Manual symbol: Click on the icon to access the detailed user manual of the machine.
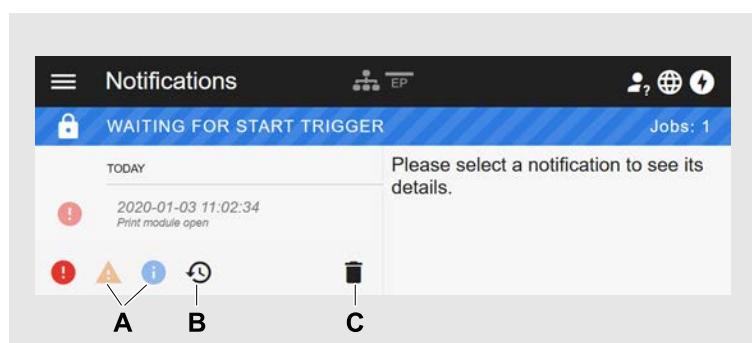
Fig. 19: Notification view with history.

Pos. no.	Function
A	The filters for warnings and info messages are set. The icons are displayed pale and all warnings and info messages are hidden.
B	History is displayed (symbol is black, otherwise grey).
C	Trashcan icon: Only appears when history is displayed. Clicking on the icon deletes the history.

Exiting the notification view:

► Click on "Notifications" in the header.

The web panel switches to the production view.

"Production" view

In the production view, the print job in progress can be monitored and settings can be made for the print job.

"Job details" view
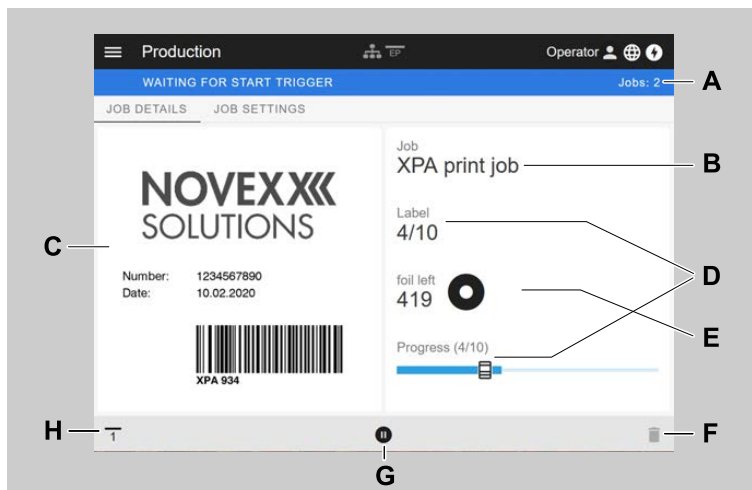
Fig. 20: "Job details" view of a print job in the web panel.

Pos. no.	Function
A	Number of compiled print jobs
B	Name of the current print job (defined in the Easy Plug command #ER)
C	Label layout of the current print job
D	Progress display of the current print job (4 of 10 labels were printed)
E	Display of the remaining ribbon in meters
F	*Trashcan icon*: Click to delete the print job (requires at least supervisor role, in the figure the icon is grayed out, i.e. the function is not available with the current role)
G	*Stop or Start icon*: Click to stop or start the print job
H	*Start signal icon*: Click to print and dispense a label

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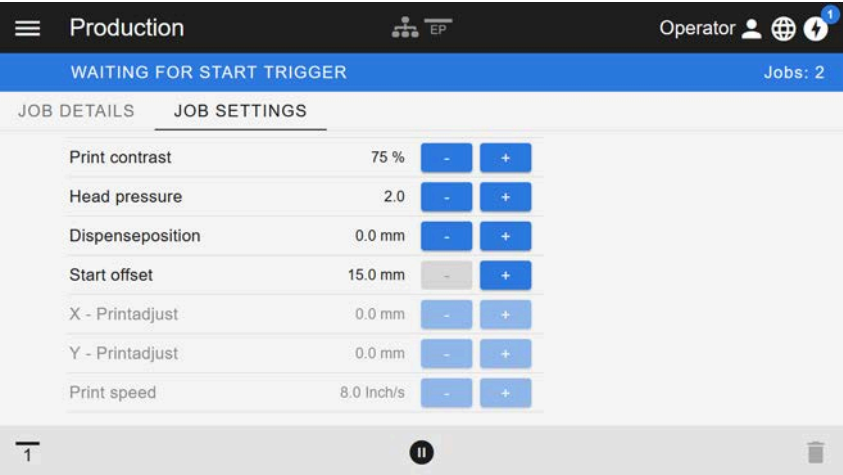
"Job Settings" view

Fig. 21: View "Job Settings" of a print job in the web panel. Settings not accessible with the active role (here: "Operator") are greyed out. The other settings can be changed by clicking on "+" or "-".

"Machine settings" view

Main menu
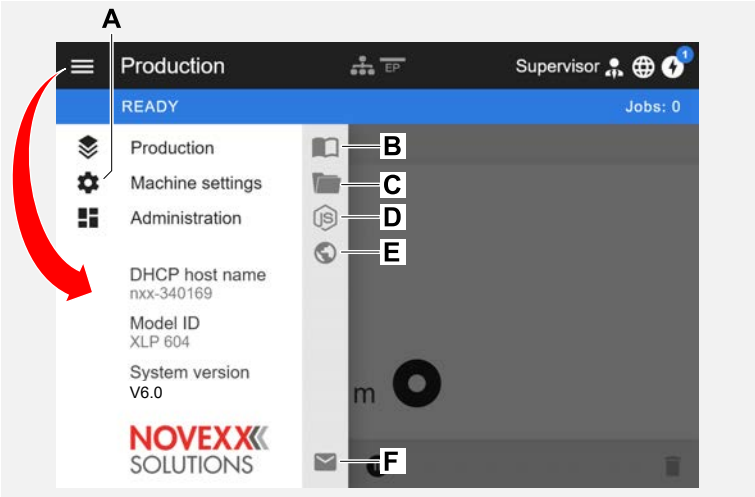
Fig. 22: View after clicking on the menu icon in the upper left corner.

Pos. no.	Function
A	Open machine settings (see following chapter)
B	Opens the user manual
C	**EXPERTS** Opens the file manager
D	**EXPERTS** Opens the documentation of the nxmi API interface

Pos. no.	Function
E	Opens the NOVEXX Solutions web page
F	Opens an e-mail to the NOVEXX Solutions service hotline

Machine settings

After clicking on "Machine settings", the parameter menu familiar from the machine operating panel opens.

More or less parameters are displayed depending on the permissions given by the login role. As "Operator" only the parameters of the Info menu can be accessed.

In order to make machine settings, two conditions must be met:

• Login at least as Supervisor (key sequence 2-2-3-1-2-2)

• The machine must be *stopped*, otherwise the window will appear "greyed out"

  ► To *stop*, click the button at the bottom centre of the window:
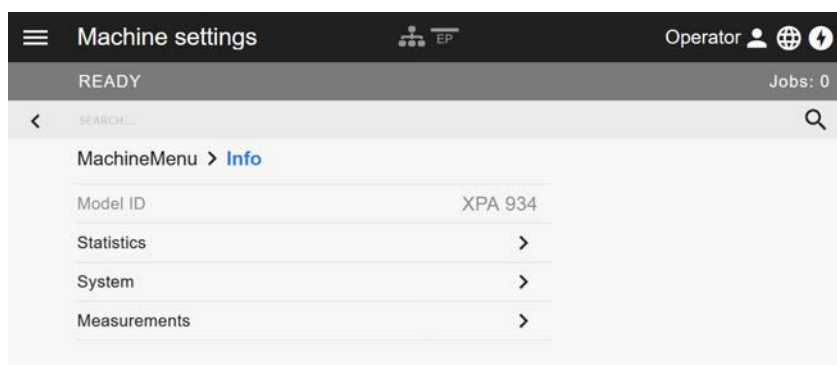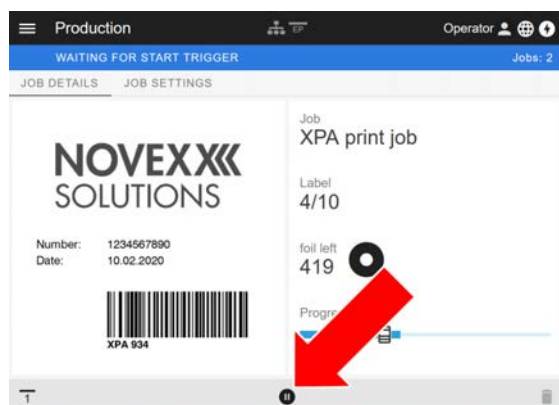
Fig. 23: Machine settings view with the operator role.
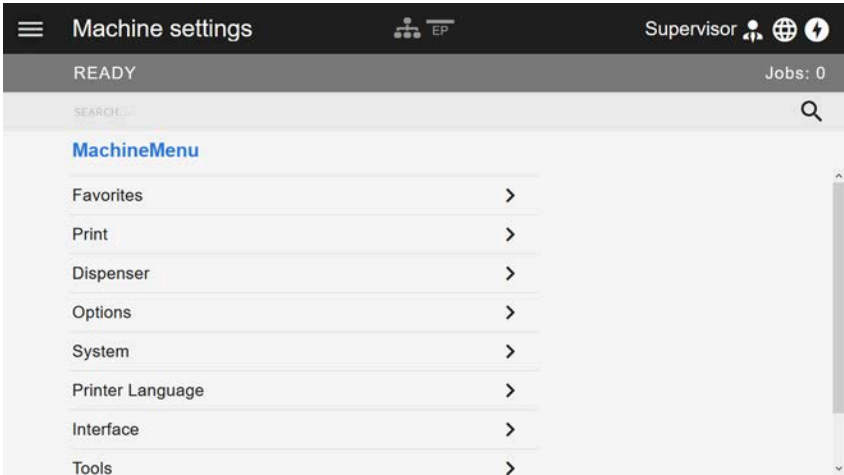
Fig. 24: Machine settings view with the supervisor role.
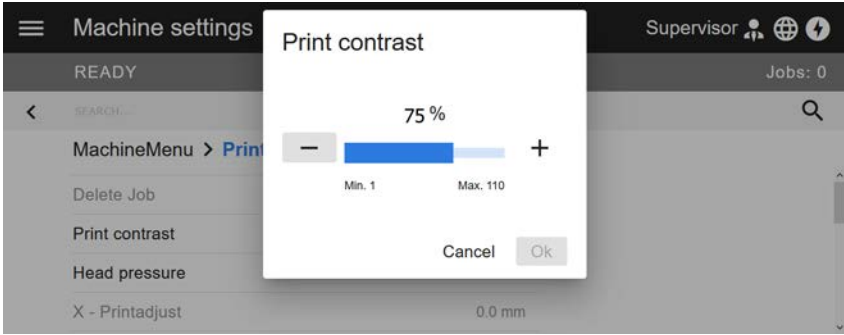
Fig. 25: Example: setting of Print > Print contrast.

Search function:

If you do not know in which menu the parameter you are looking for can be found, but know at least part of the name, the search function will help you find it quickly:

► Enter the search term in the search field (A) - only parameters containing the search term will appear (B).
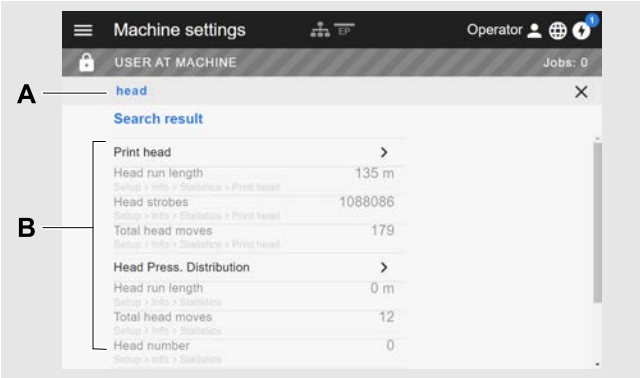
Fig. 26: After entering the search term "head" (A), only parameters containing "head" in the name are displayed (B).

"Administration" view

EXPERTS With the login roles "Supervisor" and "Service", the "Verwaltung" view appears in the menu additionally. This view provides special functions for qualified and authorized personnel. For more information, refer to the service manual.
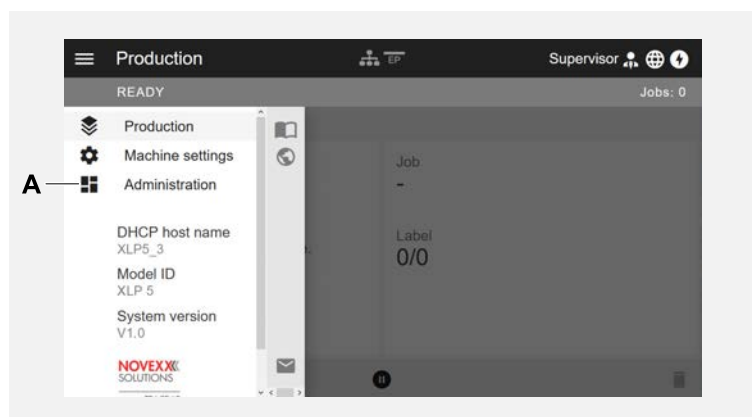
Fig. 27: After logging in as supervisor or service, the "Verwaltung" entry (A) appears in the menu.
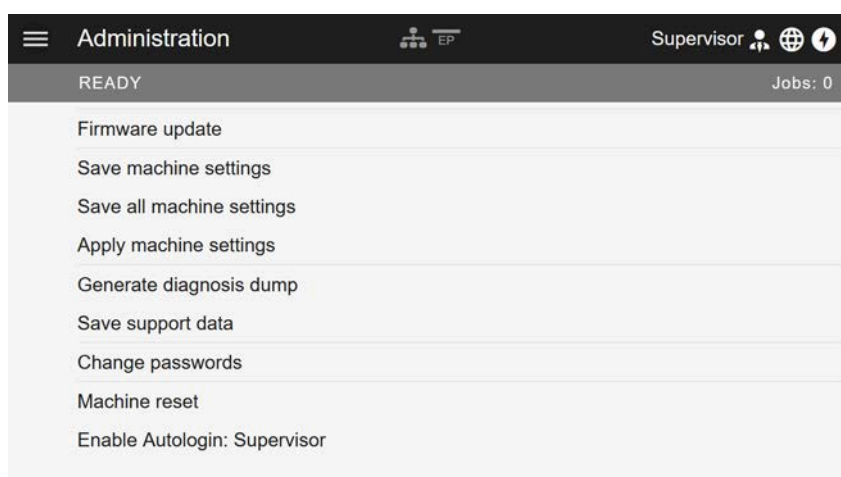
Fig. 28: Administration view (only with "Supervisor" or "Service" rights).

PARAMETER MENU

Overview parameter menu

The table below gives an overview of the structure of the parameter menu and the parameters it contains.

> Only the parameters printed in *red* are described here. The parameters printed in *black* are only relevant for service personnel and are therefore described in the Service Manual.

► Click on the respective link (red text) in the table to get to the parameter description.

Favorites [9]	Print		Print (continued)
Parameter 1	Printcontrast	└	Ribbon
Parameter 2	X - Printadjust	├	Ribbonlength
...	Y - Printadjust	├	Outer ribbon Ø
Parameter n	Printspeed	└	Inner ribbon Ø
	DeleteJob		Format
	DeleteSpooler	├	Bar codemultip.
	Material	├	Tradit. Imaging
	├ Label	├	UPC plain-copy
	├ Detectlabellength	├	EAN Readline
	├ Print method	├	EAN sep.lines
	├ Punchoffset	├	Rotatedbarcodes
	├ Materialtype	└	Printdirection
	├ Materiallength		Feedspeed
	├ Materialwidth		Voltageoffset
	├ Punch mode		Thin line emphas
	├ Punch level [10]		
	├ Labelsens.type		
	└ Mat. end detect.		

Table 9: Parameter menu part 1 (parameters in brackets are only visible with "service mode" access rights)

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[9] Parameter selection defined by the operator, see chapter Definition of Favorites on page 54.

[10] Only with Print > Material > Label > Punch mode = "Manual"

Options	Options (continued)	Options (continued)
Selection	├ Dispensecounter	├ Appl.Waitpos.
├ Periph. device	├ Disp. Cnt. Reset	├ Applicatorspeed
└ BasicIO [11]	├ Apply mode	└ Restartdelay
├ Status signals	├ Startsource	BasicIO [11]
└ Input signals	├ Start offset	├ Start Sensor
Cutter [12]	├ Start error stop	├ Start print mode
├ Cut mode	├ Product length	├ Start error stop
├ Cut speed	└ Rewinder Tension	└ Start Signal
├ Cut width	Internal Rewinder [13]	├ Reprint input [14]
├ Cut position	├ Rewinder Tension	├ Pause input [14]
├ Doublecut	└ Rewind direction	└ Material OD Sensor [15]
└ Restposition	Tear-off edge [16]	├ Mat. OD Sensor 1
Rewinder [17]	└ Dispenseposition	├ Mat. OD Sensor 2
├ Rewinder Tension	TCS [18]	├ Materialend error [19]
├ Rewinddirection	├ ChangelabelMode	├ Materialend warning [19]
├ RewinderValues	├ ChangelabelPrint	└ Ext. OD sensor [20]
└ Rewinderadjust	├ ChangelabelLength	BasicUSI [21]
Dispenser [22]	└ LabelEject Mode	├ Start Sensor
├ DispenseMode	LTMA [23]	├ Start print mode
├ Dispenseposition	├ ApplyMode	├ Start error stop
├ Displaymode	├ Strokelength	└ Start Signal

Table 10: Parameter menu part 2 (parameters in brackets are only visible with "service mode" access rights)

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[11] Only with installed BasicIO board

[12] Only with Options > Selection > Periph. device = "Cutter"

[13] Only with Options > Selection > Periph. device = "Internal Rewinder"

[14] Nur mit Options > Selection > BasicIO > Input signals = "reprint/pause input"

[15] Nur mit Options > Selection > BasicIO > Input signals = "OD1/OD2 input"

[16] Only with Options > Selection > Periph. device = "Tear-off edge"

[17] Only with Options > Selection > Periph. device = "Rewinder"

[18] Only with Options > Selection > Periph. device = "TCS"

[19] Only with Options > BasicIO > Material OD Sensor > Mat. OD Sensor 1 = "Rotation pulse" or ... > Mat. OD Sensor 2 = "Rotation pulse"

[20] Only with ... > Mat. OD Sensor 1 = "Level high active" or "Level low active" or ... > Mat. OD Sensor 2 = "Level high active" or "Level low active"

[21] Only with installed Basic-USI board

[22] Only with Options > Selection > Periph. device = "Dispenser"

[23] Only with Options > Selection > Periph. device = "LTMA"

Options (continued)	System	Printer Language
├ Cycle mode	Language	PrintInterpret.
├ Cycle end delay [24]	Accessauthoriz.	EasyPlug Setting
├ Cycle end pulse width [25]	Factorysettings	├ Characterfilter
├ Ribbon low signaling	Customdefaults	├ Charactersets
├ Material low signaling	SetupWizards	├ EasyPlugerrors
├ Machine status level	(Run SetupWizard?)	├ Spoolermode
├ Error signal level	Turn-onmode	├ StandAloneInput
├ Warning signal level	Hardware Setup	├ #VW/IInterface
├ Reprint input	├ (Printhead type seq.)	├ PrinterIDno.
├ Feed input	└ (Printhead type)	├ (Commandsequence)
└ Pause input	├ (Printertype)	└ (Ignore#IM cmd.)
Tastatur	├ Headresistance	ZPL Setting [26]
	├ RealtimeClock	├ Manualcalibrate
	└ Head-sensor dist	├ Darkness
	Print Control	├ Labeltop
	├ Miss.labeltol.	├ LeftPosition
	├ Gap detect.mode	├ ErrorIndication
	├ Singlestartquant	├ ErrorChecking
	├ Reprintfunction	├ Resolution
	├ Ribbonendwarn.	├ ImageSavePath
	├ Ribbonwarnstop	├ LabelInvert
	├ Errorreprint	└ Commands
	├ Single-jobmode	├ FormatPrefix
	├ Temperaturreduz.	├ ControlPrefix
	└ Printinfomode	├ DelimiterChar
		├ Command^PR
		├ Command^MT
		├ Command^JM
		└ Command^MD/^SD

Table 11: Parameter menu part 3 (parameters in brackets are only visible with "service mode" access rights)

Interface	Tools		Tools (continued)	
Print interface	Diagnostic		Internal Flash	
Network	├	(Usermodified) [27]	├	Copyfrom USB.
├ IP Addressassign		├ Parameter 1	└	DeleteDir
├ IP address		├ ...		
├ Net mask		└ Parameter n		
├ Gatewayaddress	├	Store Parameters		
├ Portaddress	├	Gen.SupportData		
├ DHCPhostname	├	EasyPl.file log [28]		
└ Services	├	Log filesdelete [28]		
├ WEB server	├	EasyPlugMonitor		
├ FTP server	└	EP MonitorMode		
├ WLAN	Test			
├ (MQTT broker)	├	Sensortest		
├ (MQTT broker IP)	├	Printtest		
├ Timeclient	└	Cutter test		
├ Time zone [29]	(Service)			
├ Sync. interval [29] [30]	├	(Servicedone)		
└ Time server IP [30]	├	(Headexchange)		
Serial Port 1	├	(Rollerexchange)		
├ Baudrate	└	(Serv.datareset)		
├ No. ofdatabits	(Adjustment)			
├ Parity	├	(SensorAdjust)		
├ Stopbits	├	(Matend adjust)		
├ Datensynchro.	├	(Matendtolerance)		
└ Frameerror	├	(Feedadjustlabel)		
Drives	├	(Feedadjust)		
├ DriveC	├	(Punch y calibr.)		
├ DriveD				
└ DriveE				

Table 12: Parameter menu part 4 (parameters in brackets are only visible with "service mode" access rights)

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27 Parameters, whose settings differs from the factory setting.

28 Only visible with Interface > Drives > Drive C ≠ "None"

29 Only visible with Interface > Network > Services > Time client = "Automatic"

30 Only visible with Interface > Network > Services > Time client = "Time server IP"

Info		Info (continued)		Info (continued)	
Status Printouts		System		└ Display Data	
├	Demo label	└ Module FW. Vers.		├	Display Version
├	Printer Status	├	Systemversion	└	Display serialNr
├	Memory Status	├	System revision	└ BasicIO	
├	Font Status	├	Systemdate	├	Module name
├	Textile Care Sym	├	BasicIO	├	Module part numb.
├	Service Status	├	Dispenser	├	Serial number
├	Dottest endless	└	Material rewind	├	Production date
├	Dottest punched	└ Memory Data		├	CAN MAC address
└	Reference label	├	RAM memorysize	└	Module type
Statistics		├	Space for RAM disc	└ Cutter [31]	
├	Head run length	├	Storage media	├	Module name
├	Roll run length	├	Internal Flash	├	Module part numb.
├	Cuts on knife [31]	├	USB1 [32]	├	Serial number
├	Service operations	├	USB2 [32]	├	Production date
├	Head number	├	Spooler size	├	CAN MAC address
├	Roll number	├	SpaceforJobs	└	Module type
├	Cutter number [31]	├	Max.Labellength	└ Dispenser [33]	
├	Total cuts [31]	└	Customdefaults	├	Module name
├	Material feed	└ CPU board data		├	Module part numb.
├	Tot. ribb. length	├	CPU identifier	├	Serial number
├	Head strobes	├	FPGAversion	├	Production date
├	Operation time	├	Module name	├	CAN MAC address
└	Total Operation	├	MAC Address	└	Module type
		├	Module part numb.	└ Print head	
		├	PCB partnumber	├	Module type
		├	Serialnumber	├	Resolution
		├	Productiondate	├	Width
		└	Moduletype	└	Resistance

Table 13: Parameter menu part 5 (parameters in brackets are only visible with "service mode" access rights)

---

[31] Only visible with Options > Selection > Periph. device = "Cutter"

[32] If any external flash memory is connected.

[33] Only visible with Options > Selection > Periph. device = "Dispenser".

Info (continued)		
∟ Material rewind [34]		
	├	Module name
	├	Module part numb.
	├	Serial number
	├	Production date
	├	CAN MAC address
	∟	Module type
Measurements		
├ Ribb.rest length		
├ Ribbondiameter		
├ Mat. rewinder Ø		
∟ Headtemperature		

Table 14: Parameter menu part 6 (parameters in brackets are only visible with "service mode" access rights)

---

[34] Only visible with Options > Selection > Periph. device = "Internal Rewinder".

Parameter Reference

Print contrast

Setting range	Default setting	Step width	Easy Plug
[1...105] %	50%	1	#!H, #PC2045

> CAUTION!
>
> The parameter Print contrast affects directly the life durance of the print head. It counts: „The higher the setting of Print contrast is, the lower is the life durance of the print head". This counts even more for settings above 100%. Therefore mind:
>
> ► Always choose the lowest possible setting necessary to produce an acceptable print result.

Head pressure

Setting range	Default setting	Step width	Easy Plug
[1.0...3.0]	2.0	0.1	#PC2045

Setting of the pressure that presses the print head at the print roller (1=low pressure, 3=high pressure).

> The setting corresponds to the adjustment-knob settings "I" to "III" at older machine types.

X - Printadjust

Setting range	Default setting	Step width	Easy Plug
[-15...15] mm	0.0 mm	0.1 mm	#PC1020

The zero point of the mask is moved in relation to the edge of the label on the X axis, i. e. lengthways to the material.

• Maximum offset away from the edge of the label: +15.0 mm

• No offset: 0.0mm

• Maximum offset towards the edge of the label: -15.0 mm

> If the setting is changed, while the print job is stopped, the printer recalculates the format using the changed values.
>
> Caution with graphics, which are generated via one of the Easy Plug commands #YI, #YIR or #YIB! If the graphics is shifted beyond the label border as a consequence of changing the parameter X - Printadjust, the part of the graphics which "juts out" will get lost.

Y - Printadjust

Setting range	Default setting	Step width	Easy Plug
[-15...15] mm	0.0 mm	0.1 mm	#PC1021

The zero point of the mask is moved in relation to the edge of the label on the Y axis, i. e. in the feed direction.

• Maximum offset in feed direction: +15.0 mm

• No offset: 0.0mm

• Maximum offset against feed direction: -15.0 mm

> If the setting is changed, while the print job is stopped, the printer recalculates the format using the changed values.
>
> Caution with graphics, which are generated via one of the Easy Plug commands #YI, #YIR or #YIB! If the graphics is shifted beyond the label border as a consequence of changing the parameter X - Printadjust, the part of the graphics which "juts out" will get lost.

Print speed

Setting range	Default setting	Step width	Easy Plug
XLP 514 203 dpi: [2..10] Inch/s XLP 514 300 dpi: [2..10] Inch/s XLP 514 600 dpi: [2..6] Inch/s XLP 516: [2..6] Inch/s	4 Inch/s	1 Inch/s	#PC1003, #PR

The print speed (material feed) can be adjusted according to the ribbon and material combination being used in order to optimise the contrast depth and the density of the print image.

Delete Job

Setting range	Default setting	Step width	Easy Plug
--	--	--	#!CA

After activating the function, the printer cancels the processing of the active print job.

Delete Spooler

Setting range	Default setting	Step width	Easy Plug
--	--	--	#!CA

After activating the function, all print jobs in the printer spooler are deleted..

Print method

Settings	Default setting	Step width	Easy Plug
Thermo transfer, Thermal printing	Thermo transfer	--	#PC2018, #ER

• *Thermo transfer*: Thermo transfer printing (ribbon end sensor is switched on)

• *Thermal printing*: Thermo direct printing (ribbon end sensor is switched off)

Detect label length

‖ Only works if label material is inserted. ‖

Measures the label length and writes the value to parameter Material length. During the measurement, the label material is fed approx. 2 label lengths.

Material type

Settings	Default setting	Step width	Easy Plug
Endless, Punched	Punched	--	#PC1005, #IM

Definition of the used label material. A distinction is made between endless material and gapped material (hole gaps, self-adhesive material with register gaps). The detected gap position corresponds to the start of the label.

• *Endless*: If material is to be used without gaps

• *Punched*: If material is to be used with gaps

‖ The value is overwritten by the appropriate Easy Plug command when sending label formats. ‖

Material length

Settings	Default setting	Step width	Easy Plug
[5...max. label length [35]]	100 mm	0.1 mm	#PC1006, #IM

The material length (label length) is the distance between the gaps, measured from the front edge (beginning) of a label to the front edge of the next label.

‖ The value is overwritten by the appropriate Easy Plug command when sending label formats. ‖

Material width

Settings	Default setting	Step width	Easy Plug
6,0...max. width [36]	100 mm	0.1 mm	#PC1007, #IM

Zero position of the left border. If the printer is working in line-printer mode, alterations can be made in millimetre units.

Label sens. type

(Label sensor type)

Settings	Default setting	Step width	Easy Plug
Punched, Reflex	Punched	--	#PC2015, #IM

• *Punched*: Light transmission sensor for labels with transparent or register gaps (self-adhesive labels)

• *Reflex*: Reflex sensor for detection of black marks on the bottom side of the label material

‖ The setting "Reflex" appears only when

– the optional combined sensor is installed ‖

---

35 The max. label length depends on several factors, e. g. the memory configuration.

36 The max. width depends on several factors, e. g. the memory configuration.

‖ – the combined sensor is activated (Options > Sensor type = "Combined sensor") ‖

Ribbon length

Setting range	Default setting	Step width	Easy Plug
[300.0...500.0] m	450.0 m	0.1 m	#PC1038

Ribbon length of the applied ribbon roll. The ribbon length is marked on the packaging of the new ribbon roll. This setting is important for proper functioning of the ribbon-end warning.

Outer ribbon Ø

(Outer ribbon roll diameter)

Setting range	Default setting	Step width	Easy Plug
[50.0...100.0] mm	80.0 mm	0.1 mm	#PC1039

Outer Ø of the applied ribbon roll. This setting is important for proper functioning of the ribbon-end warning.

Inner ribbon Ø

(Inner ribbon roll diameter)

Setting range	Default setting	Step width	Easy Plug
[28.0...40.0] mm	33.0 mm	0.1 mm	#PC1040

Inner Ø of the applied ribbon roll. This setting is important for proper functioning of the ribbon-end warning.

‖ Inner Ø of the ribbon roll = Outer Ø of the ribbon core! ‖

Ribbon end warn.

Setting range	Default setting	Step width	Easy Plug
[5...300] m	25 m	5 m	#PC2083

Setting of a limit length for the remaining ribbon. If the remaining ribbon length falls below the set value, appears a…

• Warning, if System > Print Control > Ribbon warn stop = "Off"

• Error message, if System > Print Control > Ribbon warn stop = "On"; Furthermore, the printer stops

Also refer to parameter Ribbon diameter.

Ribbon warn stop

Settings	Default setting	Step width	Easy Plug
Off, On	Off	--	#PC2060

- *Off*: Display shows ribbon warning; printer does *not* stop

- *On*: Display shows status message (see below); printer stops after the current label

```
Status: 5110
Ribbon low
```

Temp. reduction

(Reduction in the print head temperature)

Setting range	Default setting	Step width	Easy Plug
[0...100]%	20%	5%	#PC2026

Reduces the power supply in the event of an increase in the print head temperature, there-by ensuring an evenly good print image.

The following setting alternatives are available:

- 0%: No temperature reduction.

- xx%: Up to xx% temperature reduction with a hot print head.

For details refer to chapter Temperature Compensation on page 80.

Thin line emphas

(Thin line emphasis)

Settings	Default setting	Step width	Easy Plug
On, Off	On	--	#PC2066

Print emphasis for thin lines in order to get a better print result.

- *On*: Print emphasis for thin lines is switched on.
  Thin lines in the printout, which run crossways to the printing direction, are printed approx. 1.5 times wider. This may have the effect, that small white patches are closed with color (e.g. in the „e" with very small fonts)

- *Off*: Print emphasis for thin lines is switched off

Sensor type

Determines the installed sensor type.

Settings	Default setting	Step width	Easy Plug
Standard, Combined sensor	Standard	--	#PC5006

- *Standard*: Light transmission sensor.

  ‖ With this setting, only the "Punched" setting is available for selection in the Print > Material > La-
  bel > Label sens. type parameter. ‖

- *Combined sensor*: Combination of light transmission and reflex sensor.

  ‖ With this setting, the "Punched" and "Reflex" settings are available for selection in the Print > Ma-
  terial > Label > Label sens. type parameter. ‖

Batch reprint len

Only with...

•   Options > Periph. device = "Cutter" or "TCS"

•   Options > Cutter > Cut mode = "Batch mode"

Setting range	Default setting	Step width	Easy Plug
[0.0...5.0] mm	0.0	0.1	#PC3307

Due to the printing process in "Batch mode", a thin line remains unprinted in the printout. This can be avoided by activating this parameter. Before the second half of the printout is printed after the stop, the label material moves back by the specified value. This causes the unprinted line to be reprinted.

Definition of Favorites

It is possible to create a Favorites menu item containing a selection of parameters as required.

Selecting favorites in the web panel

EXPERTS   Favorites are set in the web panel in the machine settings view. To do this, the operator must be logged in to the web panel with the service role.
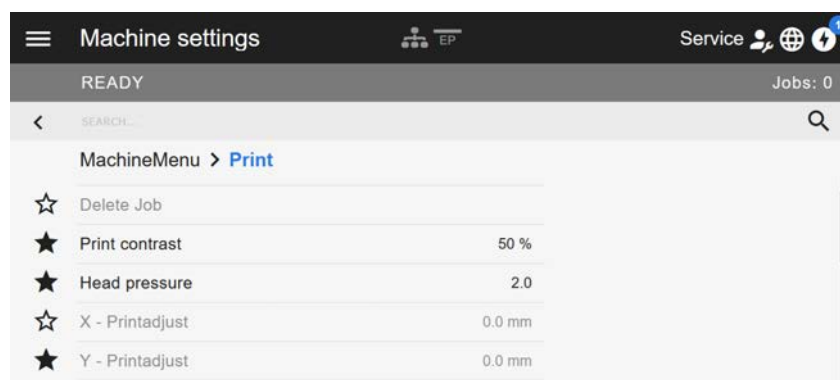

Fig. 29: Machine settings view in the web panel. The stars to the left of the parameters mark the favorites. Filled star = parameter selected for favorites menu.

► Click on the star next to the parameter to select it as favorite (see figure above).

Related reference

"Machine settings" view on page 39

CONNECTIONS

> **WARNING!**
> This machine operates using mains voltage! Touching live electrical parts may expose you to hazardous electrical currents and may lead to burns.
> ► Make sure that the machine is switched off before connecting the power cable.
> ► Only connect the machine to a grounded power socket fitted to authorised standards.
> ► Only link the machine to devices that fulfil the ES1 circuit requirements specified in EN 62368-1.

> **CAUTION!**
> Risk of machine damage due to defective accessories.
> ► Only connect original accessories.

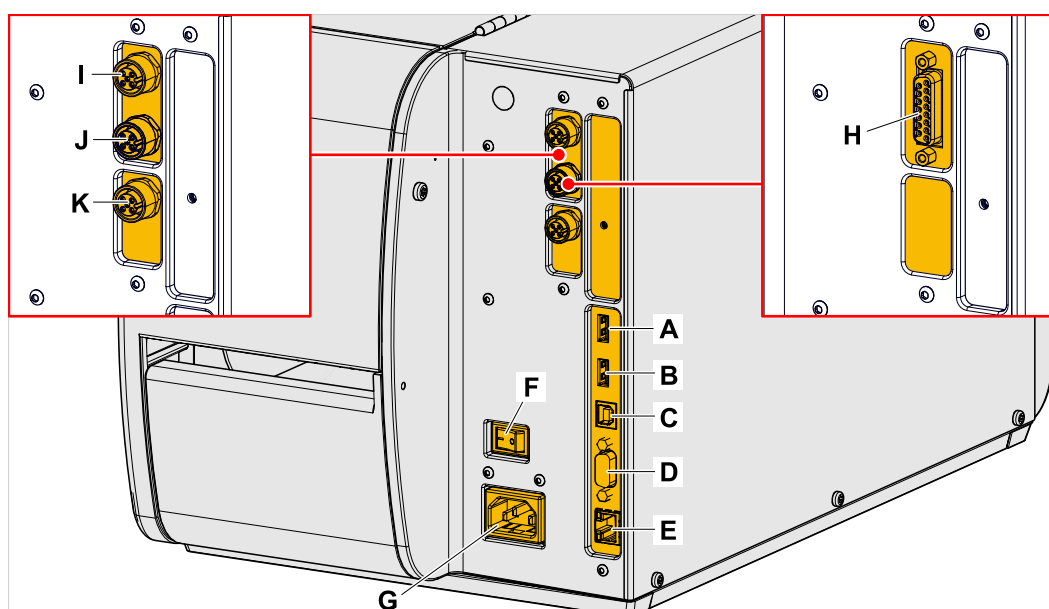

Fig. 30: Connections at a XLP 51x. Left side: optional BasicIO board; Right side: optional Basic USI board.

Pos.	Connection	Application
A B	USB interfaces type A (host) (2x)	Used to connect devices, for example keyboard or scanner or external memory media
C	USB interface type B (device)	Used to transfer print jobs from a host (for example a PC); transfer firmware; read service data
D	Serial interface (RS232)	Used to transfer print jobs from a host (for example a PC); transfer firmware; read service data
E	Network connection (Ethernet 10/100/1000)	Used to transfer print jobs from a host (for example a PC); transfer firmware; read service data; operation via web server
F	Power switch	Switches the printer on/off
G	Connection to the mains power supply	Power supply

Pos.	Connection	Application
H	(Optional) Signal interface (Sub-D 15)	Status signals (5/24 V signal level, switchable, NPN)
I	(Optional) Start sensor (M12)	Triggers the print-dispense (-apply) cycle; suitable for a standard industrial sensor, e.g. Novexx N102106 or N102109
J	(Optional) Signal interface (M12)	Status signals (24 V signal level, configurable, PNP)
K		

Related tasks

Related reference

Before Operation

ELECTRICAL CONNECTIONS

Connecting to the mains power supply

| ⚠	WARNING! This machine operates at mains voltage! Contacting electrically live components can cause lethal electrical shocks and burns. ► Make sure that the machine is switched off before connecting the power cable. ► Only operate the machine at the mains voltage given on the type plate. ► Only connect the machine to a grounded power socket fitted to authorised standards.

Procedure

Connecting the mains connection cable:

1. Ensure that the machine is switched off (mains power switch (A) in position "O").
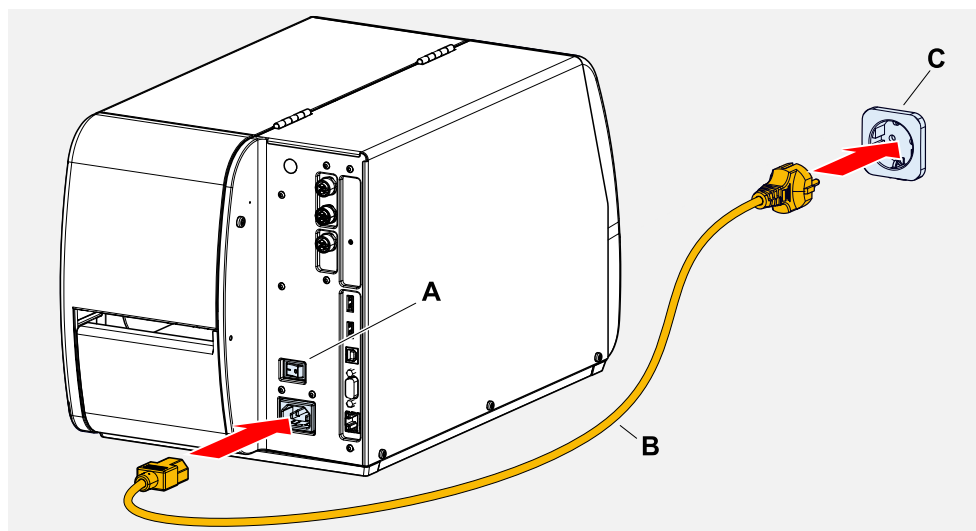
2. Connect the machine to a mains power socket (picture above, C) using the provided mains connection cable (picture above, B).

> Depending on the country of delivery, the mains connection cable may have a different plug for the public power supply than the one shown.

Disconnecting the mains connection cable:

3. Pull off the cable at the plug.

Connecting to a data host

The print data can alternatively be transmitted via one of the data interfaces:

• Ethernet

- USB

- Serial interface

The desired data interface is prompted by the setup wizard the first time you switch on the machine. The default setting is automatic recognition of the data interface.

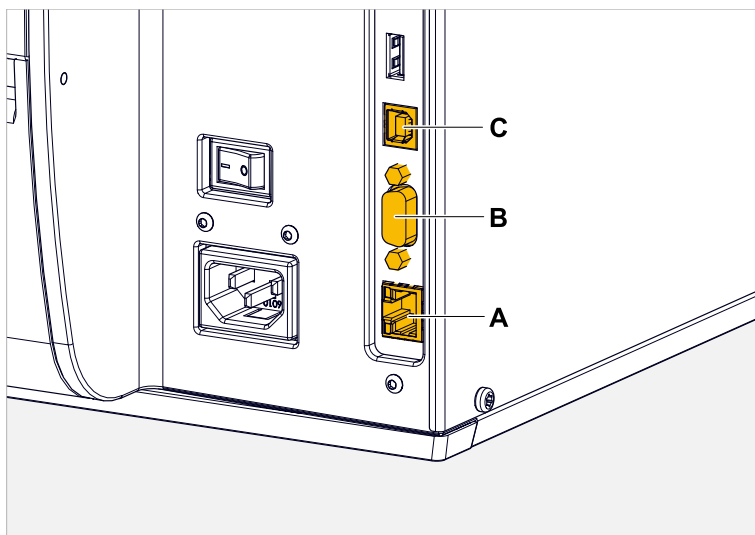Without using the setup wizard, the interface type can be selected with the parameter Interface > Print interface.

Fig. 31: Data interfaces at the XLP 51x (**A** Ethernet, **B** USB, **C** RS 232).

► Connect the data interface to the data host using a commercially available data cable..

You might have to set other parameters as well, depending on the interface chosen:

- Settings for the serial interface: Interface > Serial Port 1

- Settings for the Ethernet interface: Interface > Network

    ► Call the network setup wizard System > Setup Wizards = "Network" to call all relevant parameters automatically.

As an alternative to transmission via a data line, print jobs can also be stored on an external storage medium and called up from there.

SWITCHING ON/OFF

Switching on

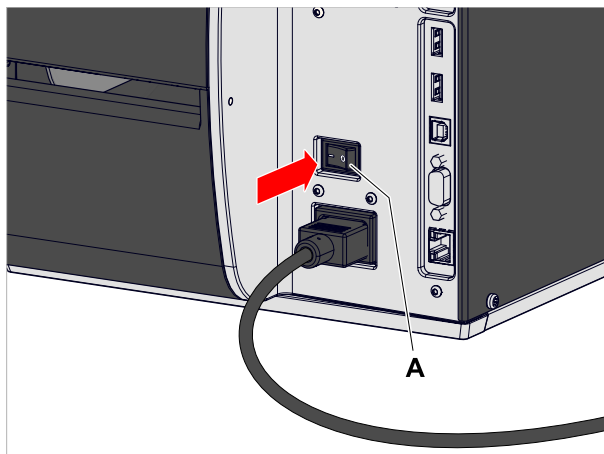► Set the mains switch (A) of the machine to "I" (On).

Fig. 32: Mains switch at the XLP 51x.

Shortly after switching on the printer, during startup, the following informations show up on the screen:
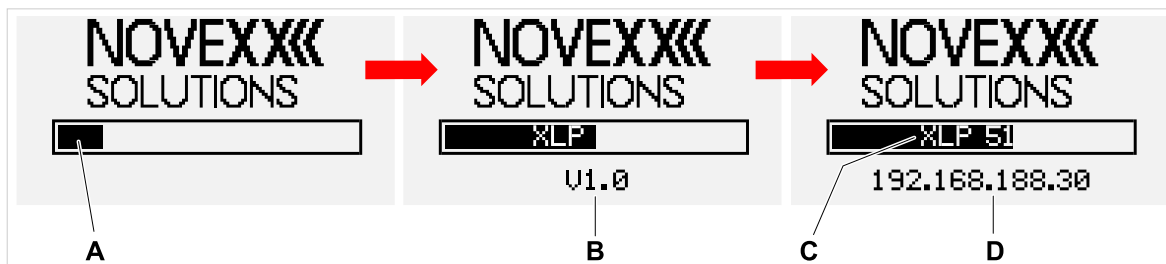

Fig. 33: Changing informations on the screen during startup: **A** Progress bar, **B** Firmware version, **C** Printer type, **D** (Optional) IP address (if Ethernet is selected as data interface).
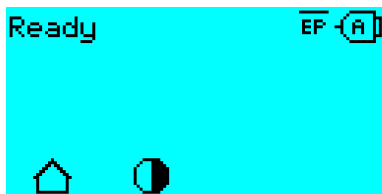
After startup, the "Ready" display appears:

Fig. 34: Display "Ready" on the machine ready for operation.

Switching off

► Set the mains switch (A, figure obove) of the machine to "O" (Off).

Restart

A restart is faster than switching the machine on and off completely, as only part of the firmware is restarted.

► Press the keys 1 + 2 + 3 simultaneously. Display:

► Press the ✓ key to confirm and to trigger the restart.

BASIC SETTINGS WITH THE SETUP WIZARD

The setup wizard controls the automatic retrieval of basic settings in the parameter menu that are essential for the operation of the printer.

After the first starting-up of the printer, the display shows the query „Run Setup Wizard?".

After selecting "Yes", the parameters for the most important basic settings are queried in several groups. The relevant parameters are automatically called up for this purpose. After the basic settings, e.g. for the language or the printer interface, the network and dispense settings are optionally queried (yes/no query in each case).

Which parameters are called also depends on the selection in the preceding parameter. The last step is to display a summary of the settings made (fig. below), which must be confirmed by pressing a key.
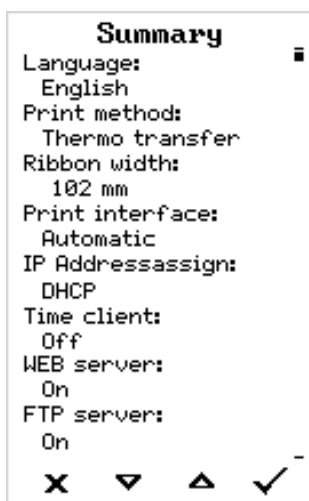

Fig. 35: Summary of the settings done by the wizard (Example, merged by image processing, in fact it must be scrolled to see all lines).

Execute settings:

► Press the ✓ key.

A restart takes place and the settings are made.

Discard settings:

► Press the ✖ key.

The setup wizard then starts again until either the settings are made or "Run Setup Wizard?" is answered with "No".

If "No" is selected in response to the initial question, the setup wizard will not start and the prompt "Run Setup Wizard?" will not appear even after a restart. There are then two possibilities to carry out the basic settings:

• ◤◥ EXPERTS ◣◢   Call up and set the corresponding parameters manually

• Start the setup wizard manually (parameter System > Setup Wizards)

Operation

INSERTION DIAGRAMS

These diagrams display how the material and ribbon moves through the printer under the following conditions:

- Label material must be wound with printed side facing outwards

- Thermal transfer ribbon:

  – Solid line = printed side wound inwards

  – Dashed line = printed side wound outwards
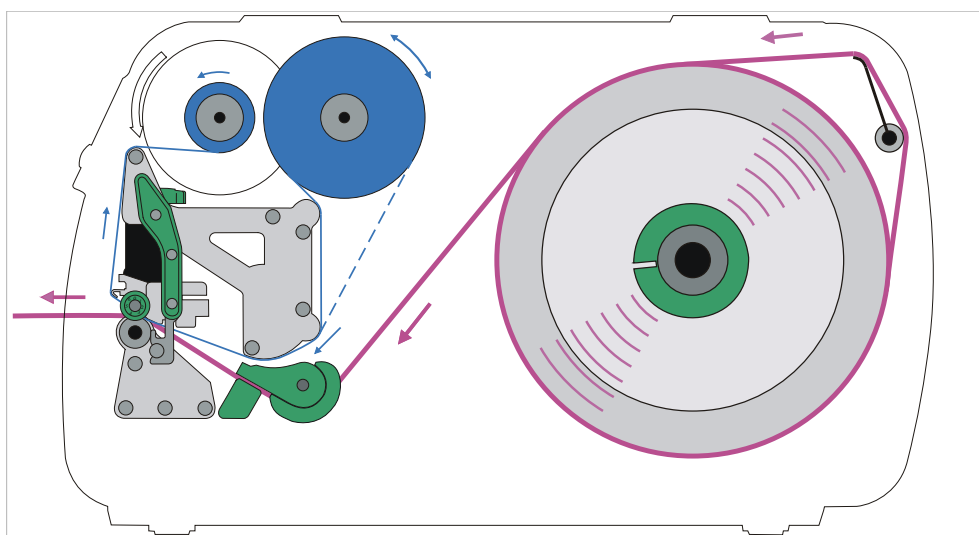
XLP 51x Standard

Fig. 36: Threading diagram for label material and thermal transfer ribbon on XLP 51x (label side facing *out*).
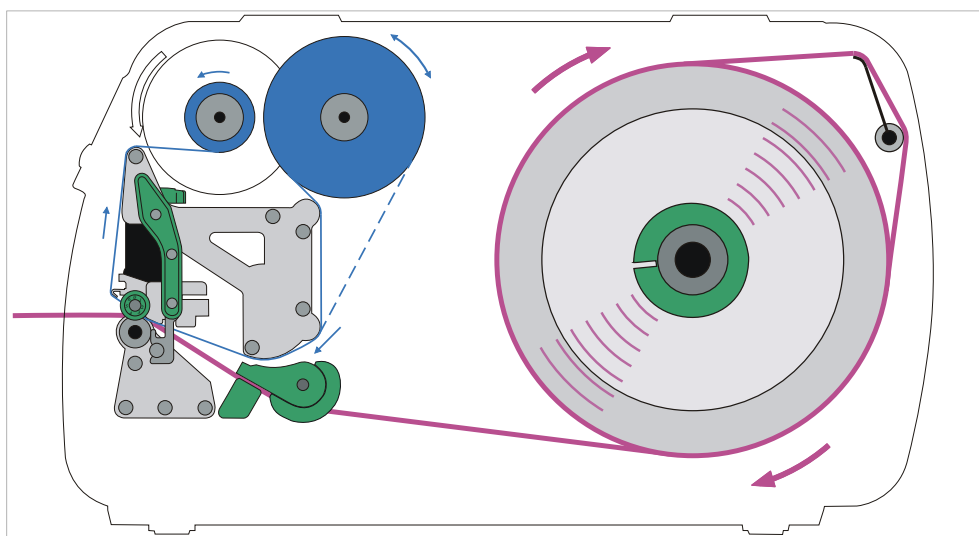

Fig. 37: Threading diagram for label material and thermal transfer ribbon on XLP 51x (label side facing *in*).
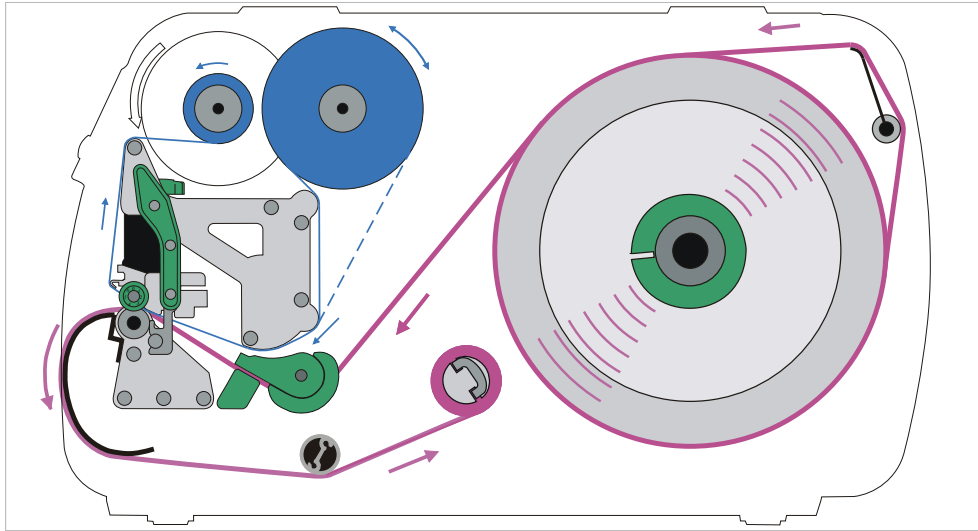
XLP 51x with internal rewinder

Fig. 38: Threading diagram for label material and thermal transfer ribbon on XLP 51x with internal rewinder.
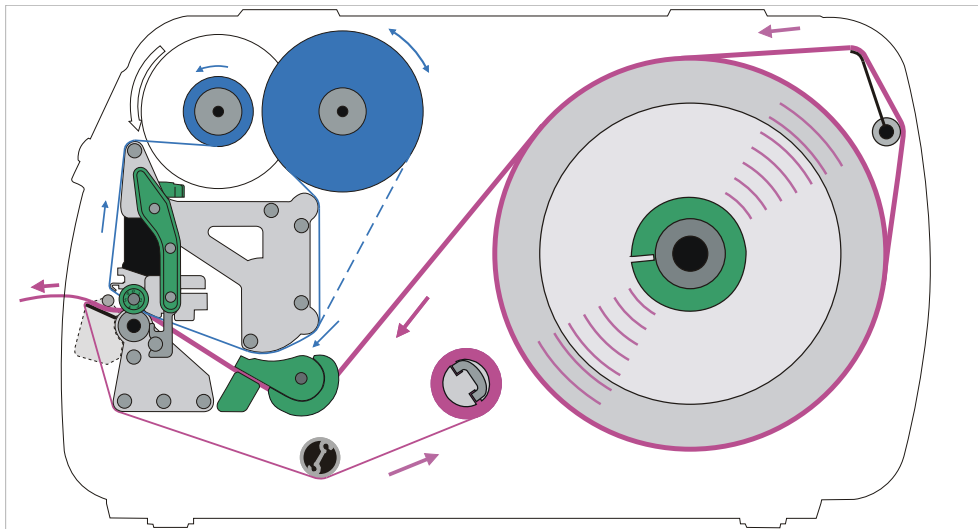
XLP 51x with internal rewinder and dispensing edge

Fig. 39: Threading diagram for label material and thermal transfer ribbon on XLP 51x with internal rewinder and dispensing edge.

Related tasks

Inserting ribbon on page 64
XLP 51x standard: Inserting roll material on page 70

INSERTING AND REMOVING RIBBON

> ⚠ **WARNING!**
> Sharp-edged clamping plates on the ribbon mandrels!
> Danger of cuts on the hands.
> ► Be careful when sliding on/removing the ribbon roll.

> ⚠ **WARNING!**
> During operation, the print head can become hot!
> ► Be careful when touching the print head.

> ⚠ **WARNING!**
> Danger of injury due to moving and rapidly rotating parts.
> ► When working on the machine, do not wear loose jewellery, long sleeves, long hair, and similar.
> ► Before inserting the label roll ensure that the machine is in offline mode (Home screen).
> ► Close the devices cover before printing.

Inserting ribbon

Describes how to load thermal transfer ribbon for thermal transfer printing. No ribbon may be loaded for direct thermal printing.

> The illustrations in this chapter show a XLP 514. In case that the operation of the XLP 516 differs in some points, this is indicated at the relevant point in the text

**Before you begin**

- Printer is stopped ("Home" screen)

- Used ribbon has been removed

- New ribbon roll is at hand (ribbon must match the technical data)

- At first time loading: Empty cardboard sleeve is at hand

- The warning notes about inserting ribbon have been read and understood (see "Inserting and removing ribbon" on page 64)

Procedure

1. Open the front hood.

2. Open the print head pressure lever (C).
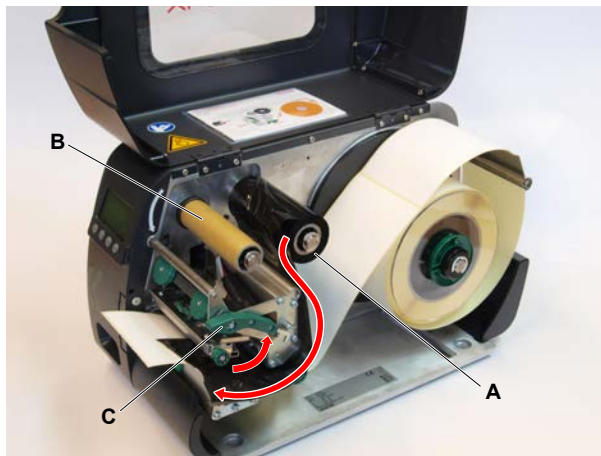
3. Push the empty cardboard sleeve onto the rewinding mandrel until it stops (B, figure above).

4. Push the ribbon roll onto the unwinding mandrel until it stops (A, figure above).

> Depending on the winding direction of the ribbon (color side inside or outside), the roll must be inserted differently:
>
> –   Colour side inside: *counterclockwise* rotation (pictures)
>
> –   Colour side outside: *clockwise* rotation

5. Insert the ribbon into the printer as shown (fig. above, fig. below). Fasten the end of the ribbon with adhesive tape to the empty ribbon sleeve
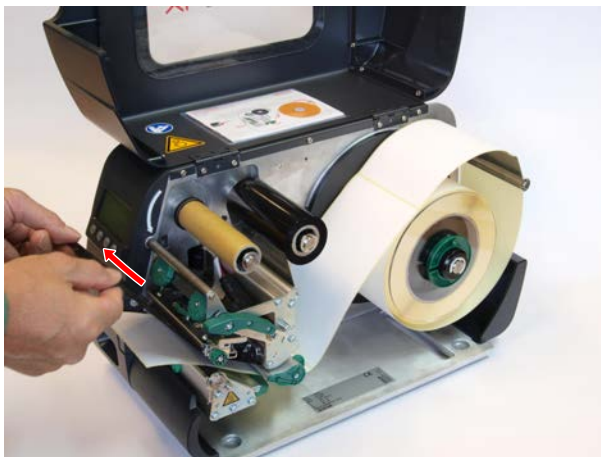
6. Rotate the rewinding mandrel a few turns in a counter- clockwise direction until the ribbon is free of folds (fig.).
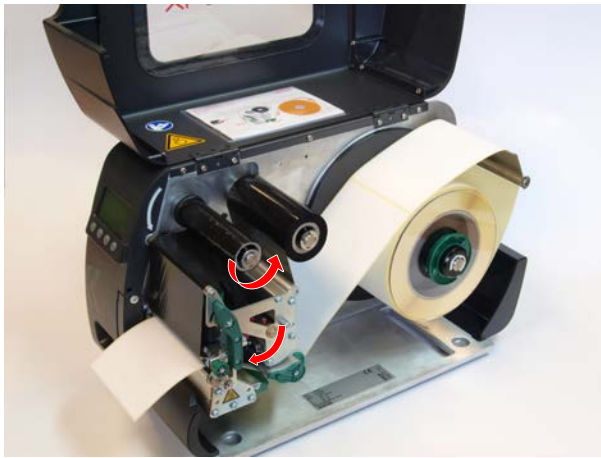
7. Close the pressure lever and the front hood.

8. (Optional) If the ribbon type is used for the first time: Make the following parameter settings in the menu Druck > Material > Folie:

    – Ribbon length on page 52

    – Outer ribbon Ø on page 52

    – Inner ribbon Ø on page 52

Related reference

Insertion Diagrams on page 62

Removing the used up ribbon

Before you begin

- Machine ist stopped ("Home" screen).

- The warning notes about inserting ribbon have been read and understood (see "Inserting and removing ribbon" on page 64)

About this task

If a ribbon roll is used up, the used ribbon is all wound up on the rewinding mandrel and has to be removed from there. The ribbon end is signaled by the appropriate status message or warning on the operation panel of the machine. If a signal beacon is connected, the lamps light up.

Procedure

1. Open the front hood.

2. Open the print head pressure lever.

3. Pull the roll of used ribbon from the rewinding mandrel:

4. Remove the empty cardboard sleeve from the *unwinding* mandrel and push it onto the *rewinding* mandrel.

5. Clean the print head.

What to do next

Inserting a new ribbon roll.

Alternating use of different sorts of ribbon

Before you begin

The warning notes about inserting ribbon have been read and understood (see "Inserting and removing ribbon" on page 64)
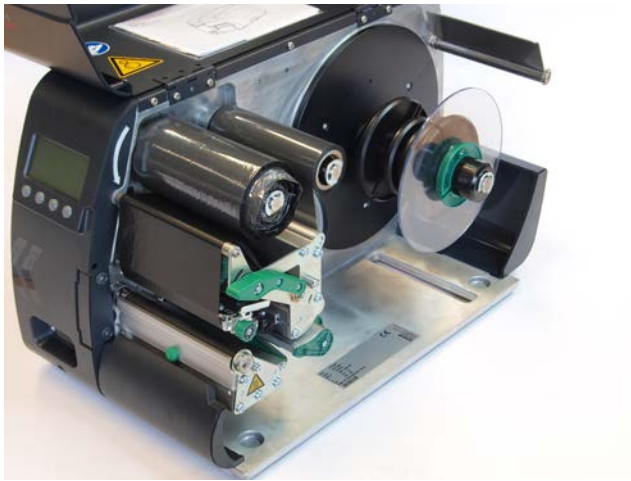
About this task

To switch between *different types of ribbons*, there is no need to cut off the ribbon each time and then insert it and fasten it to the ribbon rewinder.
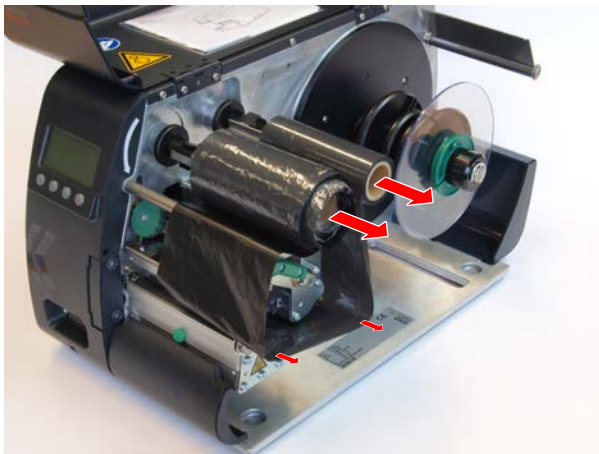
Procedure
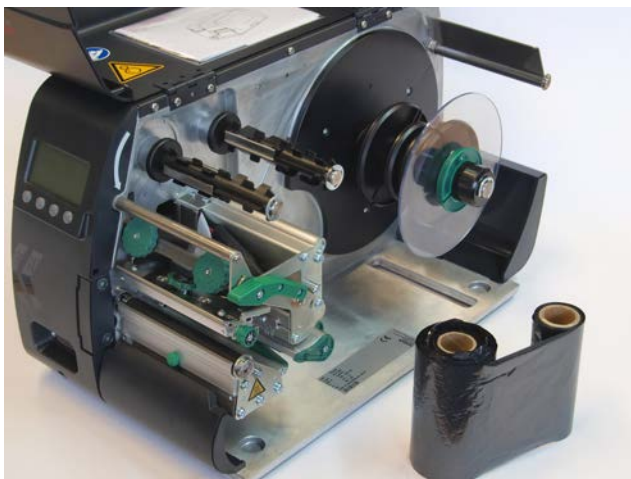
It's easier as follows:

1. Open the print head pressure lever:

2. Loosen the ribbon between the mandrels.

3. Remove both rolls of ribbon simultaneously from the mandrels. Pull away the ribbon sideways from the print head:

‖ Store your frequently used ribbons as pairs of rolls (fig. below).   ‖

You can insert another pair of rolls as follows:

4. Push the ribbon between the rolls sideways below the printhead.

5. Push the ribbon rolls onto the mandrels and tighten the ribbon.

INSERTING LABEL MATERIAL

⚠	**WARNING!** During operation, the print head can become hot! ► Be careful when touching the print head.

⚠	**WARNING!** Danger of injury due to moving and rapidly rotating parts. ► When working on the machine, do not wear loose jewellery, long sleeves, long hair, and similar. ► Before inserting the label roll ensure that the machine is in offline mode (Home screen). ► Close the devices cover before printing.

⚠	**WARNING!** Danger of injury caused by falling label roll. ► Wear safety shoes.

XLP 51x standard: Inserting roll material

‖ The illustrations in this chapter show a XLP 514. In case that the operation of the XLP 516 differs in some points, this is indicated at the relevant point in the text ‖

Before you begin

- Printer is stopped ("Home" screen)

- The label material is in roll form and is wound with the label side facing outwards (if this is not the case, please note the deviating threading diagram)

    ‖ Adapter rings for 100 mm (4") core diameter: article number N103045 (2 pieces) ‖

- The warnings for loading label material have been read and understood (see "Inserting label material" on page 70)

**Procedure**

1. Open the front hood (A).
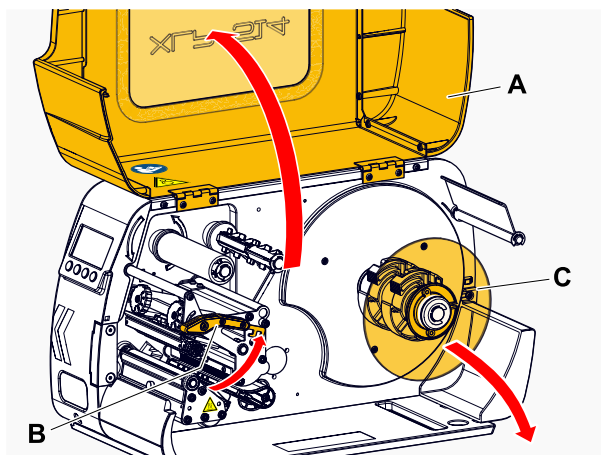
2. Open the print head pressure lever (picture above, B).

3. Remove the guide disc (picture above, C) of the material unwinder.

4. (Optional) If the inner diameter of the material roll is larger than the diameter of the unwinder mandrel: Attach *adapter rings* (picture). To do this, press the adapter rings together at the grip surfaces, push them to the desired position and release the grips again.

> The adapter rings must fit into the core of the material roll with as little play as possible (A).
> Push the inner adapter ring onto the dispenser as far as it will go. Adjust the outer adapter ring to the width (X) of the material roll.
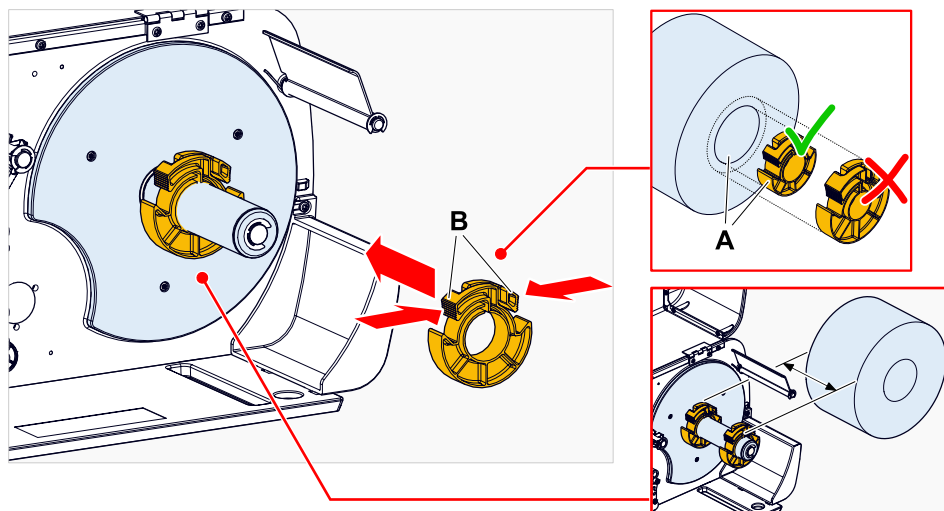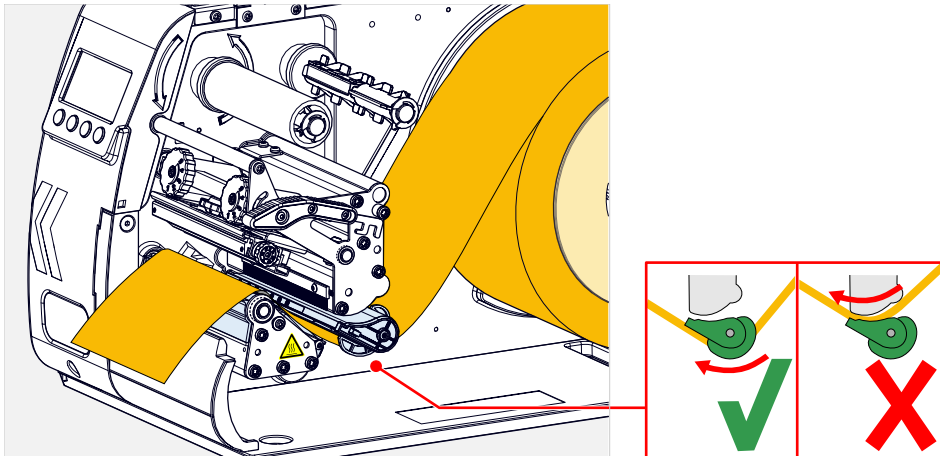

5. Push the label roll onto the unwinder as far as it will go (picture left). Lay the material web around the strain relief (A).
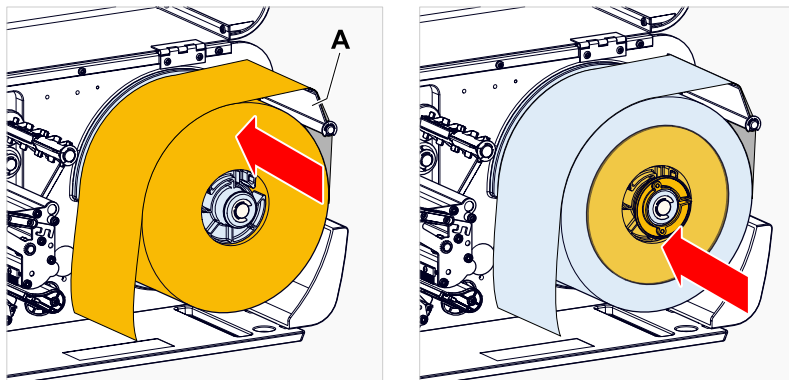
6. Push the guide disc against the material roll as far as it will go (picture top right).

7. Feed the material as shown through the print module:

8. Push the material guiding (A) up to the outer edge of the material without clamping the material:
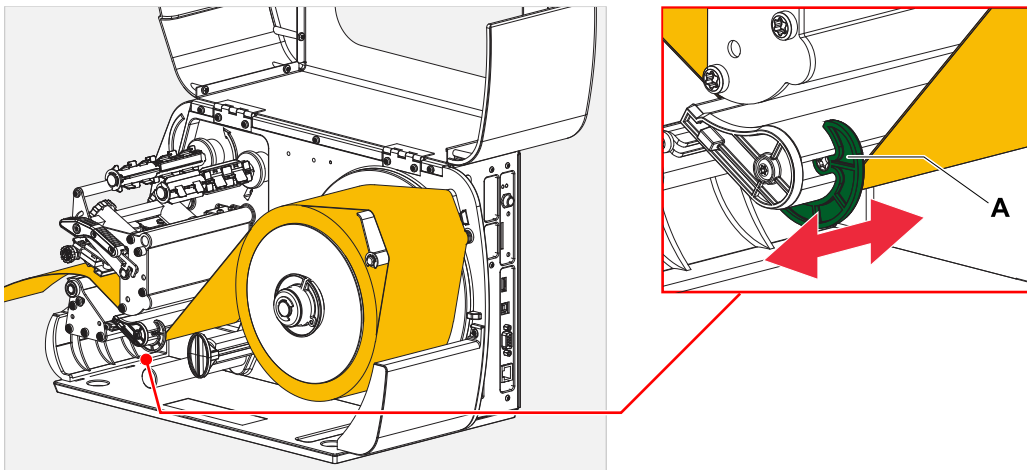
9. Close the print head pressure lever.

What to do next

If the label material is different from the one previously used: Adjust the label sensor.

Related tasks

Positioning the label sensor on page 77

Related reference

Insertion Diagrams on page 62

XLP 51x standard: Inserting leporello material

The illustrations in this chapter show a XLP 514. In case that the operation of the XLP 516 differs in some points, this is indicated at the relevant point in the text

Before you begin

• Printer is stopped ("Home" screen)

• The label material is available as leporello

• The warnings for loading label material have been read and understood (see "Inserting label material" on page 70)

Procedure

1. Open the front hood.

2. Open the print head pressure lever.

3. Place label material (A) behind the printer.

4. Push the material over the material unwinder. Push the guiding disk up to the edge of the material without clamping the material.

    The side of the label material to be printed faces upwards. Alternatively, the material can be fed from below through the slot in the printer base (picture above, B).

5. Continue as described in step 6 in XLP 51x standard: Inserting roll material on page 70.

What to do next

If the label material is different from the one previously used: Adjust the label sensor.

Related tasks

Positioning the label sensor on page 77

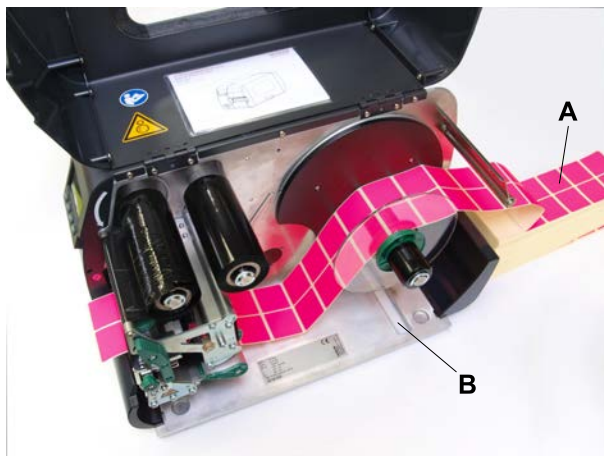## XLP 51x with internal rewinder: Inserting roll material

‖ The illustrations in this chapter show a XLP 514. In case that the operation of the XLP 516 differs in ‖
some points, this is indicated at the relevant point in the text

Before you begin

• Printer with internal rewinder and baffle plate

• Rewound backing paper has been removed

• Internal rewinder is activated (Options > Selection > Periph. device = "Intern. rewinder")

• Printer is stopped ("Home" display)

• The label material is in roll form and is wound with the label side facing outwards (if this is not the case, please note the deviating threading diagram)

• The warnings for loading label material have been read and understood (see "Inserting label material" on page 70)

Procedure

1. Insert the label web, see XLP 51x standard: Inserting roll material on page 70.

2. As shown, move the end of the label strip around the baffle plate towards the rewinder and fasten it to the clasp (A).

    ‖ Observe, that the inner material edge must contact the inner wall on its way to the rewinder. ‖
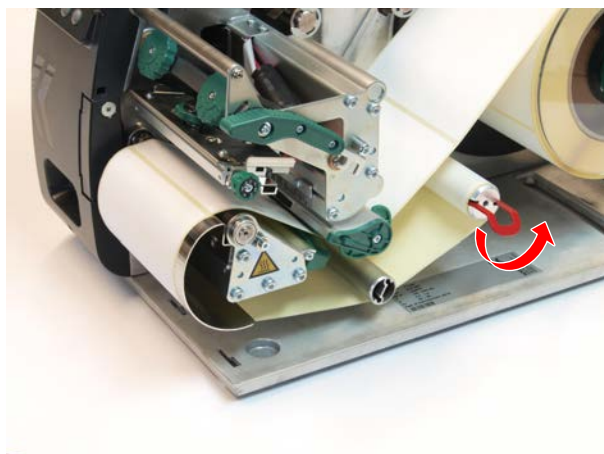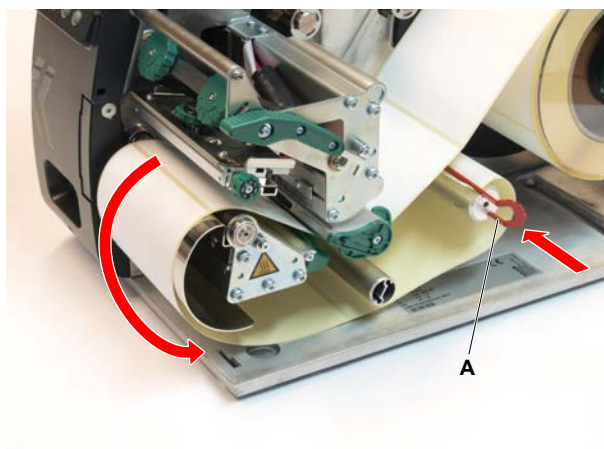
3. Push the material guiding (A) up to the outer edge of the material without clamping the material:

4. Fit the guide disc on the unwinder and push it up to the stop on the roll of material.

5. Close the print head pressure lever.

What to do next

If the label material is different from the one previously used: Adjust the label sensor.

Related tasks

Positioning the label sensor on page 77

## XLP 51x with internal rewinder and dispensing edge: Inserting roll material

‖ The illustrations in this chapter show a XLP 514. In case that the operation of the XLP 516 differs in ‖
some points, this is indicated at the relevant point in the text

Before you begin

• Printer with internal rewinder and dispensing edge

• Rewound backing paper has been removed

• Internal rewinder is activated (Options > Selection > Periph. device = "Dispenser")

• Printer is stopped ("Home" display)

• The label material is in roll form and is wound with the label side facing outwards (if this is not the case, please note the deviating threading diagram)

• The warnings for loading label material have been read and understood (see "Inserting label material" on page 70)

Procedure

1. Press the red button (A) on the dispensing edge to unlock the dispensing roll. Remove the dispensing roll (B).
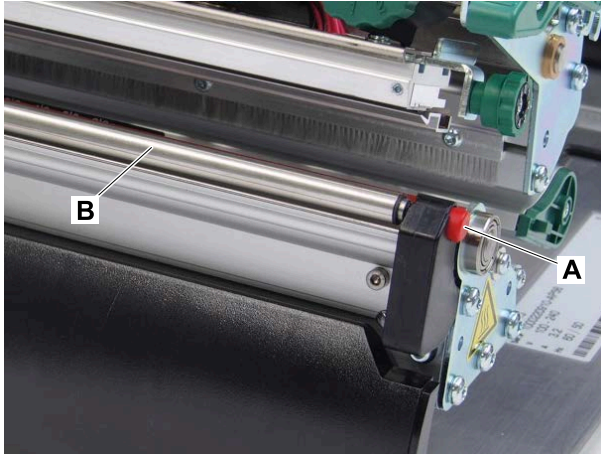
2. Insert the label web, see XLP 51x standard: Inserting roll material on page 70.

3. Remove the labels from the backing paper on a length of approx. 30 cm from the end of the label web.

4. Move the backing paper to the rewinder as shown and fasten the end of the backing paper strip to the clasp (A).
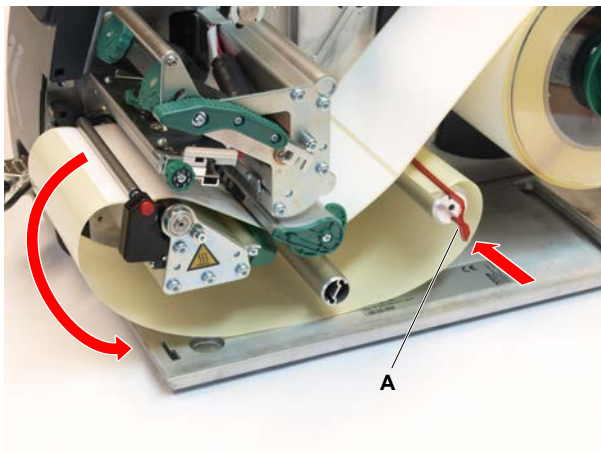
5. Put the dispensing roll back in place. To do this, first insert the axle of the roller into the bearing on the left, then press it into the spring-loaded bearing from above on the right side.

6. Close the print head pressure lever.

Results

After switching to ready mode (display `Ready`), the rewinder pulls the backing paper taut and the printer is ready for use.

> After 3 failed initialisation attempts of the internal rewinder, the rewinder is switched off and the printer starts without rewinder. This allows settings in the parameter menu to be corrected.
>
> Restarting the internal rewinder:

► Press key 🔁 on the operation panel.

What to do next

If the label material is different from the one previously used: Adjust the label sensor.

Related tasks

SETTING AND MONITORING

## Positioning the label sensor

About this task

Adjusting the label sensor position is necessary, if

- the machine is put into operation for the first time

- a material change takes place on wider or narrower material or on material with different punching form/type

Procedure

1. Open the print head pressure lever.

2. Push the sensor arm using the handle (A) until the indicator (B) is above the punches on the material:

    The optional *reflex sensor* is located 6 mm to the right of the indicator. That means, that the indicator has to be placed 6 mm left of the middle of the reflex mark.
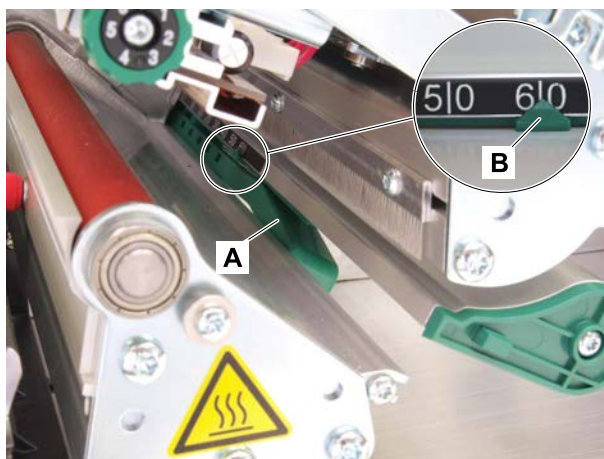
3. Close the print head pressure lever.

Related tasks

Settings in the Parameter Menu

The settings described below are generally included in the print job, in which case they do not need to be made. Manual settings that were made before a print job was transferred will be overwritten by the settings in the print job.

- Label pitch on page 79
- Material width on page 80
- Material type on page 80
- Print process on page 80
- Temperature Compensation on page 80

Label pitch

► Toggle to the "Home" screen.

A) To measure label pitch automatically:

► Press the keys 3 + 4.
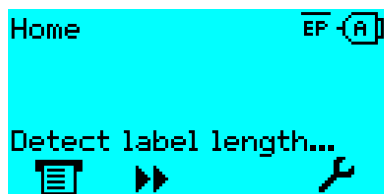
Fig. 40: The label pitch is being measured.

The printer moves the label material forward until the two label starting marks have moved through the label sensor. The label pitch determined in this way is displayed (see fig. below) and transferred to parameter Print > Material > Label > Material length. Parameter Print > Material > Label > Material type is set to "Punched".

Fig. 41: Dispay of the measured label pitch.

B) To enter the label pitch manually:

1. Measure label pitch (C).

2. Call Print > Material > Label > Material length and enter the measured value in millimetres.

Fig. 42: Label material (self-adhesive labels) (**A**: Label web (backing paper), **B**: Label, **C**: Label pitch, **D**: Material width)
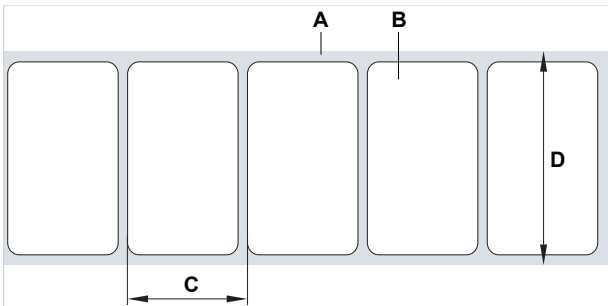
Material width

1. Measure the width of the material web (D) (including backing paper).

2. Call Print > Material > Label > Material width and enter the measured value in millimetres.

Material type

> If the automatic material length measurement function is used, the material type is automatically set to "Punched".

▶ Set Print > Material > Label > Material type to "Punched" or "Endless", depending on the used material.

Print process

Printing without ribbon (direct thermal):

▶ Print > Material > Label > Print method = "Thermal printing".

Printing with ribbon (thermal transfer):

▶ Print > Material > Label > Print method = "Thermo transfer".

Temperature Compensation

The print contrast is heavily dependent on the temperature of the print head. This can be set using the parameter Print > Print contrast or, during printing, after pressing key 2.

When the printer is being used for a big print job, the temperature of the print head and the print contrast increase during printing. This increase is greater, the larger the print job and the larger the amount of black to be printed.

In extreme cases, this rise in temperature can lead to smearing in fine structures when printed, e.g. barcodes arranged crosswise to the printing direction. To avoid this, the firmware constantly checks and corrects the print head temperature. The precondition for this is that the parameter System > Print Control > Temp. reduction is set to a value > 0 (Default: 20%).

> The temperature compensation is the greater, the higher the setting of the parameter System > Print Control > Temp. reduction is (see fig. below).

Parameter	Function
Print > Print contrast	Sets the print contrast, i.e. indirectly, the print head temperature (actually adjusts the driving power of the print head).

Parameter	Function
System > Print Control > Temp. reduction	Sets the correction factor for the temperature compensation. The higher the selected setting, the greater the reduction of the driving power when the print head temperature rises.

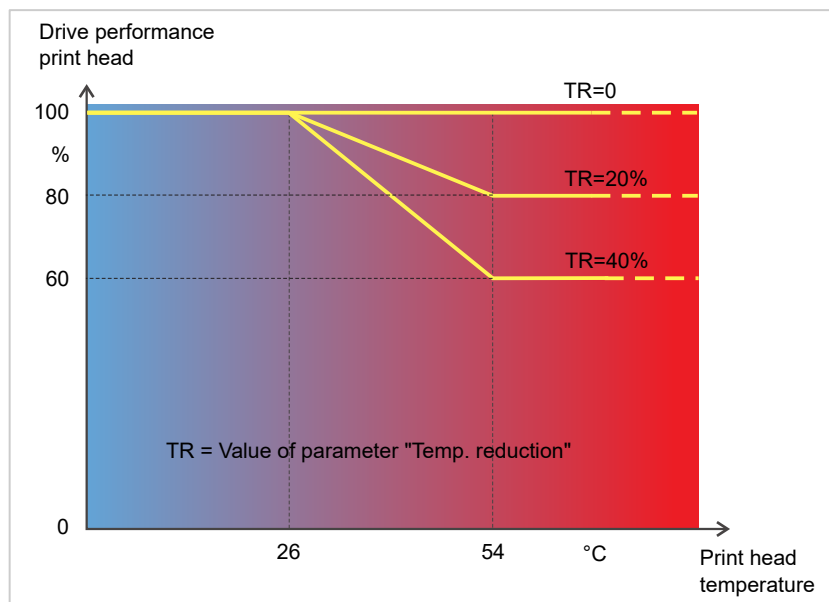Table 15: Parameters for setting the temperature compensation.

Fig. 43: With the parameter System > Print Control > Temp. reduction activated, the driving power of the print head – and therefore indirectly the print contrast – are reduced. Reduction starts at a temperature of 26°C. The maximum value is maintained at 54°C and above.

Readout example:

The printing layout contains a lot of black areas. For this reason, the temperature reduction is activated with 40%.

► System > Print Control > Temp. reduction = 40%.

Now, if the print head temperature rises above 26°C, the driving power will be reduced automatically.

Reading out the diagram results in: With a given print head temperature of approx. 40 °C, the driving power is reduced to approx. 80%; with a supposed print head temperature of 54 °C or above, it is reduced to 60%.

Monitoring functions

The following functions monitor machine operation:

- Missing labels on page 82
- Ribbon reserve on page 82
- Ribbon end on page 83
- Material end on page 83

Missing labels

Normally a missing label on the label web does not interfere with print operation. Label feed continues running until the start of a label has moved up under the label sensor again.

It may be necessary in some cases, however, to report the missing labels. When function System > Print Control > Miss. label tol. is set, an error message can be generated after one, or after several missing labels:

```
Status num:     5001
No gap found
```

At the same time the printer stops.

Ribbon reserve

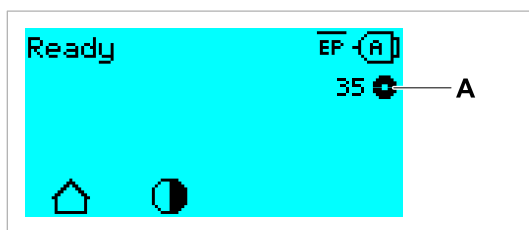The ribbon reserve is displayed during printing as remaining length in meter (A):

Fig. 44: Display of the remaining ribbon length (A, here: 35 m).

‖ The display of the ribbon reserve only begins after some rotations of the ribbon roll. ‖

To be able to display the value of the remaining ribbon length as exact as possible, some characteristics of the ribbon roll have to be set:

► Set Print > Material > Ribbon > Ribbon length to the ribbon length in meters.

► Set Print > Material > Ribbon > Outer ribbon Ø to the outer-Ø (D) of the ribbon roll in millimeters.

► Set Print > Material > Ribbon > Inner ribbon Ø to the inner-Ø (d) of the ribbon roll in millimeters.

‖ Inner-Ø ribbon roll = Outer-Ø ribbon core!

The default setting matches the NOVEXX Solutions standard ribbon 10287-600-xxx. ‖
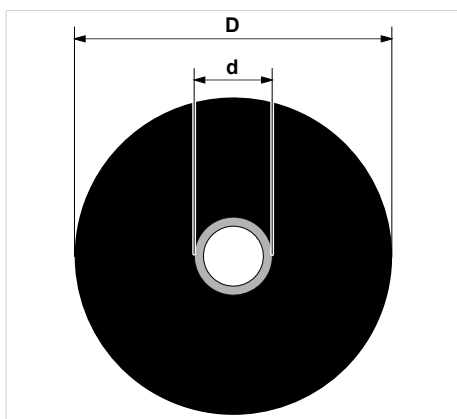
Fig. 45: Outer (D) and inner (d) diameter of the ribbon roll.

To monitor the ribbon reserve, a critical ribbon length can be set. If the remaining length falls below this level, a warning or an error message appears - depending on the setting.

► Set System > Print Control > Ribbon end warn. to the desired critical ribbon length in millimetres.

► Set System > Print Control > Ribbon warn stop to the desired behavior:

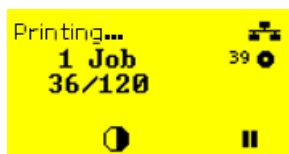• *Off*: Printer shows ribbon warning and does *not* stop:

Fig. 46: Ribbon warning during a print job: yellow background, the ribbon icon flashes.

• *On*: Printer shows ribbon warning and shorty afterwards an error message and stops after the current label:

```
Status num: 5110
Ribbon low
```

Ribbon end

Once the end of the ribbon has been wound away and the unwinding mandrel no longer rotates, the following message will appear:

```
Status num: 5008
Ribbon end
```

► Proceed as described under .

‖ End-of-ribbon detection can be shut off when required, e.g. for direct thermal printing: ‖

► To do this, set Print > Material > Label > Print method to "Thermal printing".

Material end

After the end of the material roll passes by the punch sensor, the following status message appears:

```
Status num: 5002
Material end
```

► Open the pressure lever and pull the end of the material forwards out of the printer.

PRINTING

Creating Print Jobs

There are two ways to create a print job:

- Using *layout software*

Layout software may include any type of software that has a print function (for example text processing). Special label layout software is more suitable, for example NiceLabel [37]. Prerequisite is an installed printer driver.

Find the appropriate *printer driver* and an installation instruction on our web page [38]. The driver supports the following Windows operation systems:

Windows 7 / Windows 8 / Windows 8.1 / Windows 10 / Windows 11 / Windows Server 2008 / Windows Server 2008 R2 / Windows Server 2012 / Windows Server 2012 R2 / Windows Server 2016 / Windows Server 2019 / Windows Server 2022.

- *Coding print jobs with Easy Plug*

EXPERTS   The label layout is described by a sequence of Easy Plug commands saved in a text file. This method requires good knowledge of the command language Easy Plug.

Transferring a Print Job from a Host by Means of Layout Software

Describes how to tranfer a print job from a host using a data cable and layout software.

Before you begin

- The data interfaces of host and printer are connected with a suitable data cable
- The data interface is set accordingly in the printer's parameter menu
- Layout software and a suitable driver are installed on the host

Procedure

1. Select a suitable data interface in the layout program.

2. Open an stored label layout or create a new layout.

3. Start printing in the layout program.

---

37   www.nicelabel.com

38   www.novexx.com

Transferring a Print Job from a Host by Means of a Command file

Describes how to tranfer a print job from a host using a data cable and a text file containing Easy Plug commands ("command file").

Before you begin

• The data interfaces of host and printer are connected with a suitable data cable

• The data interface is set accordingly in the printer's parameter menu

Procedure

1. At the host: open the Windows command prompt window.

2. Open the folder that contains the command file.

3. (Optional) Serial interface: `copy testjob.txt com1`

4. (Optional) Ethernet/USB interface: `copy testjob.txt \\ComputerName\ShareName`

   – *ComputerName*: can be found under Windows 10 as follows:

   a. Press the ▓▓ key. The start menu opens.

   b. Type "System Information" into the search field. The window "System Informations" opens.

   c. In the right part of the window, seek the entry "System Name". The string right of it is the Computer Name.

   – *ShareName* represents the share name for a printer connected to a specific port, such as the USB port or the TCP/IP port. Enter the ShareName as follows:

   a. Press the ▓▓ key. The start menu opens.

   b. Type "Printers & scanners". Acknowledge with the Enter key. The window "Settings > Printers & scanners" opens.

   c. Click on the desired printer name.

   d. Click "Manage".

   e. Click "Printer properties".

   f. Open the "Sharing" tab (fig. below).

   g. Enter a name into the field "Share name" and check "Share this printer".
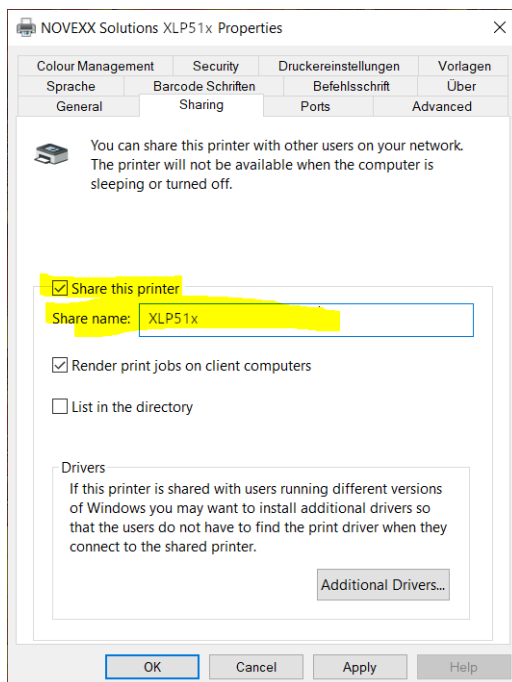
   h. Click "OK".

Fig. 47: Entering a share name under Windows 10.

Starting a Print Job from an External Memory Medium

Before you begin

- The print job is stored on an external storage medium (e. g. USB thumb drive) in folder `\Formats.`

- The name of the print job file ends with `.for`

- Drive letter `C:` must be assigned to the storage medium (that is, Interface > Drives > Drive C must be set to that storage medium on which the file with the print job is stored, that is "USB1" or "USB2")

Procedure

1. Switch off the printer.

2. Connect the memory medium to the printer.

3. Switch on the printer.
   The printer shows the "Ready" screen (cyan).

4. Press the keys 2+4 to switch to standalone mode.
   A file selection dialog for memory media appears:

   ‖ If an external storage medium is not displayed: Press key 1. This updates the list. ‖

5. Select a memory medium and confirm the selection.
   A file selection dialog appears, which shows the printjobs stored on the selected memory medium:

6. Select a print job with the keys 2 and 3. Press key 4 to load the print job.
   Another selection dialog appears. It offers to change the print amount, which is initially defined in the print job (fig. left). Depending on the print job, there can be more input fields (fig. right).
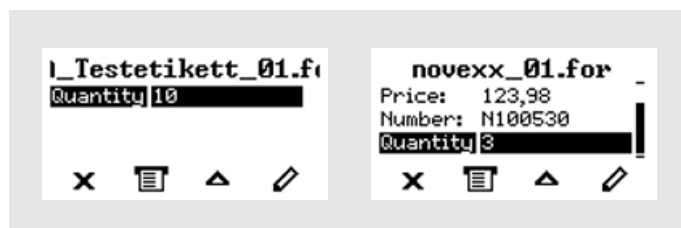

   Fig. 48: File selection in standalone mode (left: standard field for querying the print amount; right: additional data input fields)

7. Press key 2 to start the print job without changing the print amount.

> To change the print amount or other input fields, see figure below.
>
> If the printer showed the "Ready" screen before it was toggled into standalone mode, the printing starts immediately.

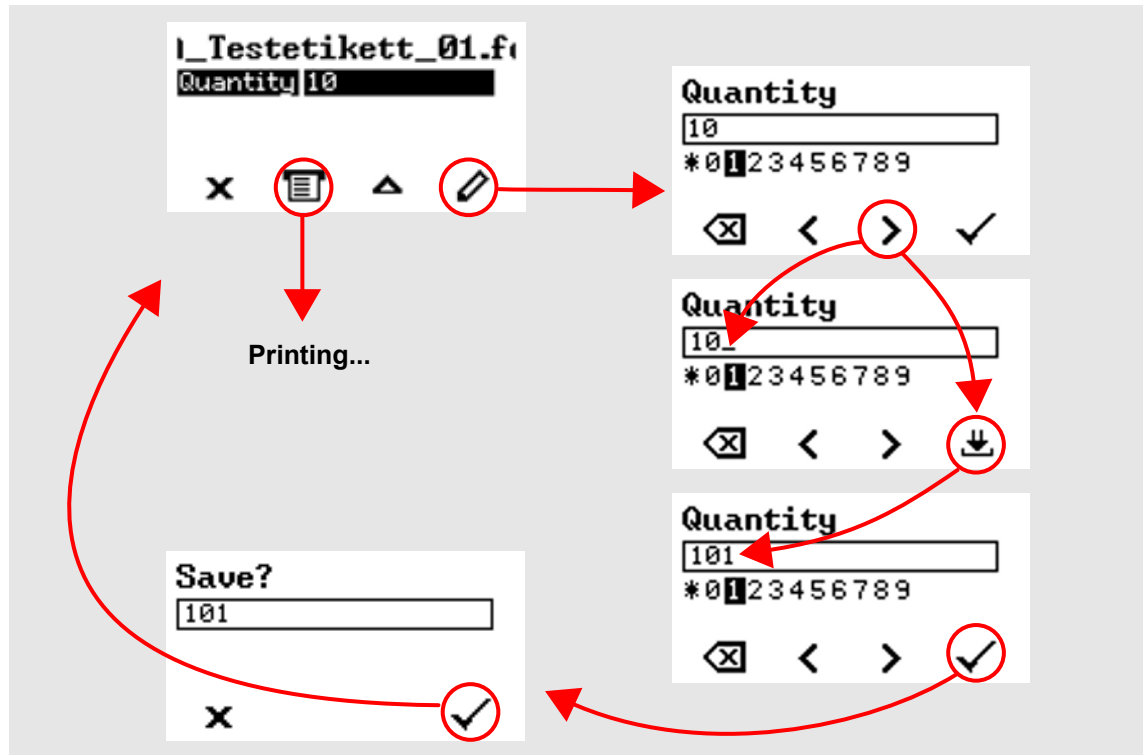8. Press the keys 2+4 to toggle to the "Ready" screen.

Fig. 49: Changing the print amount in standalone mode.

Starting and Monitoring a Print Job

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

• The printer is switched on

• The display shows the "Ready" screen

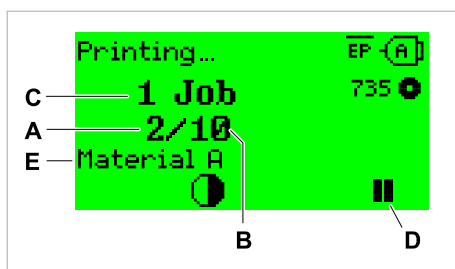• A print job has been transmitted and interpreted

Fig. 50: Display during the printing (**A**: Already printed labels of the current print job, **B**: Labels to be printed of the current print job, **C**: Amount of queued printjobs, **D**: Pause key, stops the printing).

If the printer shows the "Home" screen:

► Press the 📋 key, to toggle to the "Ready" screen, to start printing.

Display examples:

Fig. 51: Print job with endless print amount.

Fig. 52: Stopped print job. Press key 4 to continue printing.

STANDALONE OPERATION

Requirements and Functions

Requirements

- *External memory medium* (USB thumb drive)
- *Computer*, to write on the memory medium
- (Optional) *Keyboard*, simplifies entry of variable data (see chapter)

Functional Description

Standalone operation means the printer can be operated without it needing to be connected to a host computer. For this purpose, a computer is used to store the print job on a memory medium. After the memory medium is connected to the printer, the operator can start the print jobs on demand. For this, he uses the printer control panel or a keyboard connected to the printer. Variable data can also be entered via the control panel or the external keyboard.

The standalone mode can always be accessed from the „normal" printer operation.

► Press the keys 2+4 simultaneously.

It is helpful to imagine two consoles, between which can be switched by pressing the keys 2+4.

Console „Normal operation"	⟷	Console „Standalone operation"
„Ready" screen		Selecting print jobs
„Home" screen		Inserting field contents
Message mode	Keys 2 + 4	Inserting print amounts
„Settings" screen		Starting print jobs
		Error messages are faded in

Table 16: Functions and display texts in normal and in standalone operation mode.

Standalone operation in brief:

- Printing without computer connection
- Data entry via control panel or keyboard
- Reading print job from an external memory medium
- Entry or selection of field content
- Updating Firmware from an external memory medium

Selecting Files from an External Memory Medium

Before you begin

- The file is stored on an external memory medium (e. g. USB thumb drive) in folder `\FORMATS`
- The file has one of the extentions `.for` (print job or setup file) or `.tar` (firmware)

- Drive letter C: must be assigned to the storage medium (that is, Print interface > Drives > Drive C must be set to that storage medium on which the file with the print job is stored).

Procedure

1. Switch off the printer.

2. Connect the memory medium to the printer.

3. Switch on the printer.
   The printer shows the "Ready" screen (cyan)

4. Press the keys 2+4 to switch to standalone mode.
   A file selection dialog for memory media appears:

5. Select a memory medium and confirm the selection.
   A file selection dialog appears, which shows the printjobs stored on the selected memory medium:

6. Select a print job with key 2 and 3. Press key 4 to load the print job.
   Another selection dialog appears. As a standard, the print amount can be changed, which is defined as default in the print job (fig. left). Depending on the print job, there can be more than one input fields (fig. right).
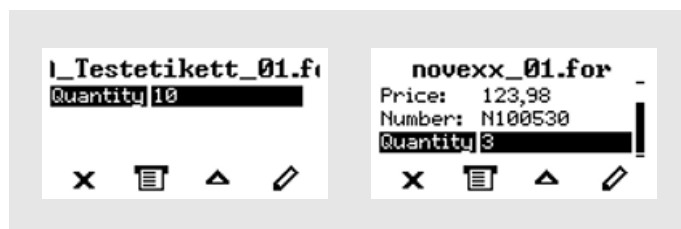
7. Press key 2 to start the print job without changing the amount.

   > For change of the print amount or of other input values, see fig. below.
   >
   > If the printer showed the "Ready" screen before switching into standalone mode, the printing starts immediately.

8. Press keys 2+4 to switch to the "Ready" screen.

Functions with external keyboard

Suitable keyboards

Keyboards with USB connection are suitable.

Before first use, check if the intended keyboard really works with the printer.

The matching keyboard layout is set with parameter Options > Keyboard.

Key assignment

The keys on the operation panel are assigned to function keys on the external keyboard according to the table below. The function keys and the two additionally listed key combinations work in normal operating mode *and* in standalone mode.

Keyboard key(s)	Printer key	Function
F5	1	Depends on context
F6	2	
F7	3	
F8	4	
Strg + Entf	none	Delete the current print job
Strg + Einfg	2 + 4	Toggle between normal and standalone mode

Table 17: Assignment of operation panel keys to keyboard keys

The following keys and key combinations on the external keyboard work only in standalone mode:

Keyboard key	Function
	Delete the character left of the cursor
	Confirm a modification
Esc	Discard a modification
	Move the cursor to the left
	Move the cursor to the right
Einfg	Insert the selected character into the string
Pos1	Jump to the beginning (e. g. of a selection list)
Ende	Jump to the end (e. g. of a selection list)

Quick selection

If an external keyboard is connected, files can be selected from a list by typing in the first letter of the file name.

Example:

After changing to the standalone mode and selecting the memory medium, the following is displayed:

```
Select file
A_Testetikett_01.for
B_Testetikett_02.for
C_Testetikett_03.for
  ▼   ▽   △   ✓
```

A file named `novexx.for.` is supposed to be started.

1. On the keyboard, press the key for the first letter of the wanted file name , e. g. „n". Display:

```
  🔍 n
  navexx.for
  novexx.for
  novexx_01.for
  ⤺    ▽    △    ✓
```

The filter icon 🔍 stands for the activated filter function. Through the filter appear only those file names that start with „n" (see fig. above). If another character is typed in, e. g. „o", only file names that start with „no" are listed (see fig. below).

```
  🔍 no
  novexx.for
  novexx_01.for

  ⤺    ▽    △    ✓
```

‖ The filter is case sensitive! ‖

Deactivating the filter: press the Esc or Backspace key.

2. Press the enter key (or F8) to select the file.

Executing Different File Types

Executing print jobs

Files with the extention `.FOR` are interpreted as print jobs.

All input fields are polled, which are defined as such in the print job. Next, the print quantity is requested. As soon as the print quantity is confirmed, the print job is executed. From now on, all information about the job is displayed in the "Normal operation" console. While the print job is processed, it is started newly in the "Standalone operation" console. The input fields are polled again, with the previous entries as default.

‖ Each print job file may contain *only one* print job. If any print job file contains more than one print-jobs, only the first print job is executed.

‖ The new start of the print job can be avoided by setting the parameter System > Print > Single-job mode = "Off".

‖ It's also possible to enter a single "*" for the print quantity. This makes the print quantity "endless".

Executing firmware files

Files with the extention `.tar` are interpreted as printjobs.

EXPERTS Selecting a firmware file means starting a firmware download. As this is a fundamental intervention to the system, firmware files are not executed immediately.

–

Automatic file execution

If a file named `DEFAULT.FOR` [39] exists on the memory medium in the folder `\FORMATS`, it is executed automatically at system start.

> If a file `\AUTOSTRT.FOR` [40] is also existing in the root directory, it will be executed first. But be aware that standalone print jobs are only executed properly, if the relevant file is stored in the folder `\FORMATS`, as described above.

---

[39] All letters lower case or all upper case; „Default.for" doesn´t work

[40] Not case-sensitive

Disturbances

GENERAL INFORMATION ABOUT STATUS REPORTS

Display of 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.

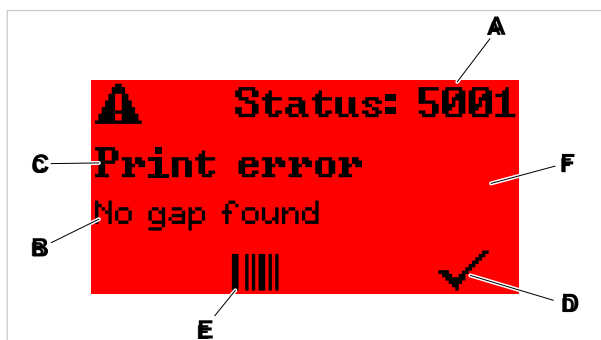The status report shown on the display is structured as follows:

Fig. 53: Example for the appearance of status reports

A	*Status number* The status number can be used to find a description of the error that occurred in the chapter Reference of status reports on page 101: In the example it is the message 5001 No gap found on page 101.
B	*Status text* Each status number has a status text in the language of the control panel.
C	*Category* Possible categories include among others "print error" and "format error".
D	*Check mark* icon Press the key below the symbol to confirm the status message. If this symbol is missing, the machine must be restarted.
E	*Bar code* icon After pressing the key below the symbol, a QR code is displayed that refers to a quick troubleshooting guide (see chapter Access troubleshooting instructions with your smartphone on page 100).
F	*Background color* Possible background colors are: Red (error) and yellow (warning)

Warnings

Background color = yellow

Warnings inform the operator about the occurance of a certain event at the printer. The message is only displayed for a short time. The printer continues operating without intervention from the user.
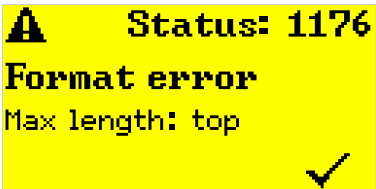

Fig. 54: Example of a warning

‖ A warning when the ribbon supply is running low can be optionally activated, see chapter . ‖

USI warnings

There are also warnings that are triggered by the signal interface. These appear as an additional line of text on the display "Ready" (picture).

Fig. 55: Example of an USI warning: "Productstartwarn" .

Warning text	Cause
Productstartwarn	A new start signal has arrived during the previous print-dispensing process

Table 18: Possible warnings triggered by input signals.

USI warnings are only shown in the "Ready" display and can only be acknowledged there.

If several warnings occur simultaneously, they are saved in a queue.

Acknowledging USI warnings:

► Press keys 2+3.

USI status messages

These status messages are triggered by the signal interface. They provide information on whether certain signals are present.

Fig. 56: Example of a USI status message .

Status message	Cause
USI pause	Signal `usi.pause` is active
USI feed	Signal `usi.feed` is active

Table 19: These USI status messages may occur.

USI status messages are only shown in the "Ready" display.

USI status messages may occur at the same time as USI status messages (see above). If this happens, warnings are displayed with priority.

Error messages

Background color = red

Error messages must be acknowledged by the operator as the triggering event or fault endangers normal operation. A checkmark symbol can be seen in the bottom right corner of the message window above key 4. The message appears in the display until the fault has been rectified and acknowledged with key 4.

Blocking error messages are messages that occur as a result of serious errors. There is no checkmark symbol in the message window, i.e. the message cannot simply be acknowledged by pressing a key. The error state can only be terminated by a "warm start" (press keys 1+2+3) or by switching off the printer.

General software errors

Errors in the firmware can never be completely ruled out. Such errors are described in the error directory as "General software errors". They can only be corrected by the manufacturer.

► Switch the printer off and, after 30 seconds, on again. If the fault repeatedly occurs, please contact our technical service.

Easy Plug errors

Errors in the Easy Plug code can be detected much easier with the following setting:

Printer Language > EasyPlug Setting > EasyPlug errors = "Strict handling"

The Easy Plug command, which caused the error, is displayed after approx. 2 seconds in the lower display line. The displayed text is up to 30 characters long and is scrolled automatically.

If a single character caused the error, this character is marked with ">> <<" in the display text, to facilitate the detection.

By pressing the ⓘ key, the display can be toggled between error message and Easy Plug command text.

Unspecific errors

Some errors can have more than one cause. To be able to find the specific reason for such an error, it is important that it can be reproduced.

► Send the following items of information as complete as possible to the manufacturer – preferably as files:

• Layout and/or print job, which makes the status message appear

• Parameter configuration of the printer, when the error occurs

• Log file of the print job until the error occurs

► Use parameter Tools > Diagnostic > Store Parameters, to save the current parameter configuration.

► Use parameter Tools > Diagnostic > EasyPlug Monitor, to send the received Easy Plug data to a serial interface. Alternatively, with some printer types, log files of the print job can be saved on an external memory medium (Tools > Diagnostic > EasyPl. file log).

Our Technical Support will try hard to find a solution by reproducing the situation which caused the error.

Not listed status reports

EXPERTS The messages not listed in the following reference concern malfunctions that cannot be rectified by the operating personnel.

► Call a service technician.

ACCESS TROUBLESHOOTING INSTRUCTIONS WITH YOUR SMARTPHONE

Fig. 57: If the error message has a barcode symbol (A), a QR code (B) can be used to call up troubleshooting instructions (C) on the smartphone.

> This function is currently only available for the most important error messages relevant to the machine operator. Further descriptions will follow with future firmware versions.

Procedure

1. Press the key below the barcode symbol. (A).
   A QR code is displayed. (B).

2. Scan the QR code with the smartphone.
   A webpage with one or more troubleshooting instructions appears on your phone (C).

   > If several error solutions are displayed, they are sorted by relevance, i.e. the solution for the most probable error is at the top.
   >
   > For the time being, only English texts are displayed. Future firmware versions will also support other languages.

3. Touch one of the fault solutions.
   A troubleshooting guide is displayed.

REFERENCE OF STATUS REPORTS

5001 No gap found

No gap found or several blank labels fed.

Illustrated description for troubleshooting:
Click here or scan the QR code:

The error can have several causes:

Cause	Measure
Label sensor at the wrong position.	► Setting the position of the label light barrier correctly (refer to user manual, chap. „Operation" > „Setting and Monitoring" > „Positioning the label sensor").
Unsuitable material inserted. No punch available or recognizable.	► Use punched or die cut label material.
Material incorrectly inserted. Punch on the wrong side.	► Insert material the right way round.
Wrong label length set.	**EXPERTS** ► Checking the punch definition in the print job (Easy Plug: #IM). ► Checking the label length setting in the parameter menu (Print > Material > Label > Material type)
Label sensor is dirty.	► Cleaning the label sensor.
Ribbon inserted incorrectly. Ribbon runs under the label light barrier.	► Insert ribbon correctly.
Label sensor is not sensitive enough.	**EXPERTS** ► Check the sensitivity setting of the label sensor.
Label sensor is defective.	**EXPERTS** ► Replacing the label sensor.

After acknowledgement with key 4, the material is automatically advanced and the next punch is searched for.

5002 Material end

There is no label web in the rear material guide that contains the material end sensor.

Illustrated description for troubleshooting:
Click here or scan the QR code:

Possible causes	Solution
The label material is finished, i.e. the rear end of the material web has reached the yellow material guide in the printing module	► Load new roll of label stock
The label web runs outside of the rear material guide, which contains the material end sensor	► Insert the label material correctly into the material guide. Check the width adjustment of the material guides.

5005 Cutter

Fault on the cutter. The knife does not reach its home position.

► Check whether the cutter is soiled. If necessary, clean the knife.

◣◥ EXPERTS ► Check the function of the knife. If necessary, readjust the knife.

5008 Ribbon end

The ribbon unwinding mandrel no longer rotates. This can have various causes:

Illustrated description for troubleshooting:
Click here or scan the QR code:

Possible causes	Solution
Ribbon roll is used up.	► Insert new ribbon roll.
Ribbon was inserted incorrectly.	► Remove the ribbon completely and insert it according to the winding diagram. The ink side of the ribbon must be on the label side, not on the print head side. If the ribbon was inserted the wrong way round: ► Clean the print head before reloading the ribbon.
Ribbon roll is loosely seated on the unwinding mandrel.	► Check that the core of the ribbon roll has the correct inner diameter. If not, use another ribbon roll with a suitable diameter. ► Check that the core of the ribbon roll is seated on the ribbon mandrel without slipping. If not: ◣◥ EXPERTS ► Adjust the spring plates on the ribbon unwinding mandrel so that the ribbon core is firmly seated. ◣◥ EXPERTS ► (Alternatively) Replace the ribbon core adapters.
Ribbon sticks to the print head.	1. Remove the ribbon. 2. Clean the print head. 3. Insert the ribbon newly.

Possible causes	Solution
Ribbon is torn.	► Insert the ribbon newly.
The braking torque of the ribbon mandrel is set too weak.	If the error always occurs when the ribbon roll on the unwinding mandrel is almost empty: ◢◣ EXPERTS ◥◤ ► Adjust the braking torque of the ribbon mandrels.

5076 Lever open

The print head pressure lever is not closed.

Illustrated description for troubleshooting: Click here or scan the QR code:

► Close the print head pressure lever.

5110 Ribbon low

The diameter of the ribbon roll fell below the set warning diameter (see System > Print Control > Ribbon end warn.).

The message is triggered by the occurrence of a ribbon warning if the following setting is active at the same time: System > Print Control > Ribbon warn stop = "On".

► Acknowledge by pressing the ✔ key, then press the ▶ key to continue printing.

5140 Rewinder control

The (backing paper) rewinder rotates against expectation.

Possible cause	Solution
• No backing paper attached to the rewinder • End of backing paper not properly attached	► Insert material correctly
Backing paper is sagging in front of the rewinder to such an extent that it cannot be tensioned by the rewinder within 10 seconds	► Insert material correctly ► Turn the rewinder by hand until the backing paper is taut
Backing paper tear during printing	► Reattach the backing paper to the rewinder

5145 Rewinder full

The rewound backing paper has reached the maximum admissible diameter.

► Empty the rewinder.

6033 Print Head not supp.

(Print head is not supported)

The print head is not plugged in properly or the cable is defective.

► Check whether the print head cable is firmly connected to the print head. After previous service work, also check the plug connection on the CPU side.

9028 System Exception

General software error

► Please read the notes in section .

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SOLUTIONS

Cleaning

CLEANING INSTRUCTIONS

> ⚠ **WARNING!**
> Dangerous situations may arise during maintenance and cleaning work. Accidents may occur due to mechanical or electrical effects 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!
>
> ► Do not spray the machine with spray bottles or sprays! Use a cloth wetted with cleaning agent!
>
> ► 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 any scouring cleaning agents or any cleaning agents that could dissolve plastic!
>
> ► Do not use acid or alkaline solutions!

Part to be cleaned	Cleaning agent	Article number
Print head	Cleaning pen	95327
	Methylated spirit, isopropyl alcohol, white gas for cleaning purposes	--
Rubber rollers (print roller, draw roller, ...)	Roller cleaner	98925
Deflection rollers	Methylated spirit, isopropyl alcohol, white gas for cleaning purposes	--
	Label release spray	A103198
Housing	Standard commercial neutral cleaning agent, methylated spirit, isopropyl alcohol	--

Table 20: Recommended cleaning agents

Cleaning interval

► Clean machine regularly.

The frequency depends on the following factors:

• Operating conditions

• Daily operating duration

• Label material/ribbon combination used

General cleaning

Dust particles are especially likely to accumulate in the area of the print mechanics.

► Remove dust particles with a soft brush or a vacuum cleaner.

► Clean the housing with a cloth and a standard commercial neutral cleaner.
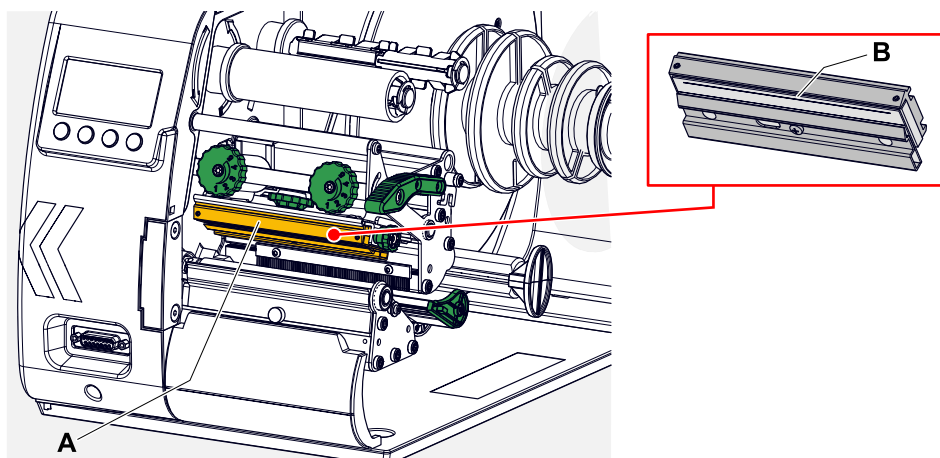
CLEANING THE PRINT HEAD

Fig. 58: **A**: Print head, **B**: Thermal strip at the print head

> ⚠ WARNING!
> Burn hazard. The print head becomes hot during operation.
> ► Allow print head to cool before touching.
> ► Be careful whenever touching the print head.

> CAUTION!
> Possible damage to the print head due to electrostatic discharge or contact with sharp edges.
> ► Always protect the print head against electrostatic discharge when performing maintenance and cleaning work! Use ESD protective equipment!
> ► Never touch the thermal strip with bare hands!
> ► Never contact the thermal strip with sharp objects!

If no professional ESD protective equipment (ESD wristband, ESD shoes, ...) is available:

► Discharge your own body before touching the print head, e.g. by touching an earthed object (e.g. radiator) in your vicinity!

About this task

Impurities such as lint and color particles from the thermal transfer ribbon may collect on the print head during printing. This can lead to a noticeable detrimental effect on the printed image, shown by:

• Differing contrast on the labels

• Light stripes in the printing direction

Clean print head regularly to ensure optimal print head condition.

Cleaning intervals:

- *Thermal transfer printing*: after each used up ribbon roll

- *Thermal direct printing*: after each used up label roll

Procedure

1. Switch off the printer.

2. Open the front cover.

3. Open the print head pressure lever.
    The print head flips up.

4. Remove material and ribbon from the printer.

Cleaning with a cleaning pen

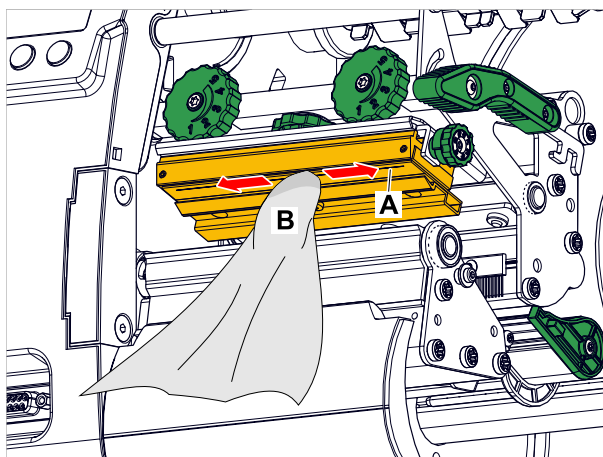5. Applying light pressure, go over the thermal edge (B) a few times with the cleaning pen (A).
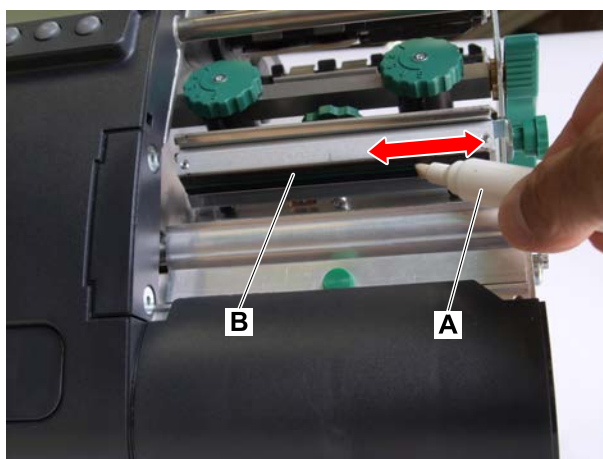
Cleaning with alcohol

6.

CAUTION!
Risk of fire due to a flammable liquid
► Observe the safety instructions on the detergent bottle!

Moisten a lint-free cloth with detergent and wipe off the thermo strip (A, B).

7. Allow the print head to dry for several minutes.

Related reference

CLEANING THE PRINT ROLLER

| ⚠	WARNING! Risk of burning injuries from a hot print head ► Ensure that the print head has cooled down before cleaning it.

About this task

Clean the print roller regularly. Contamination on the print roller can degrade the quality of the print and the transport of the material.
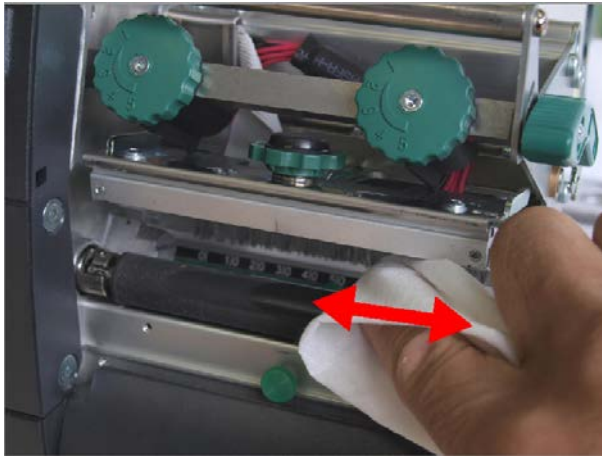
Procedure

1. Switch off the printer and disconnect from the power.

2. Remove material from the printer.

3. Loosen the knurled screw (A) in the middle of the tear-off edge:
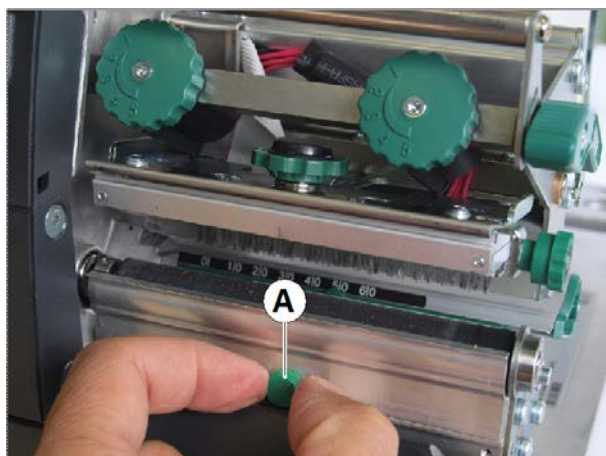
4. Remove the tear-off edge:
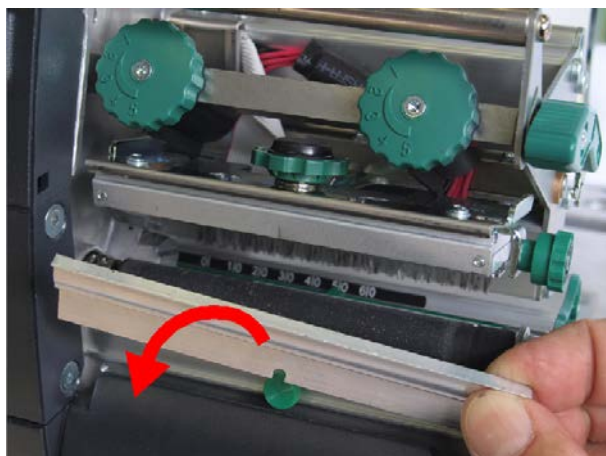
5. Moisten a lint-free cloth with roller cleaner and wipe the printer roller. Gradually rotate the roller until it is completely clean:

6. Refit the tear-off edge.
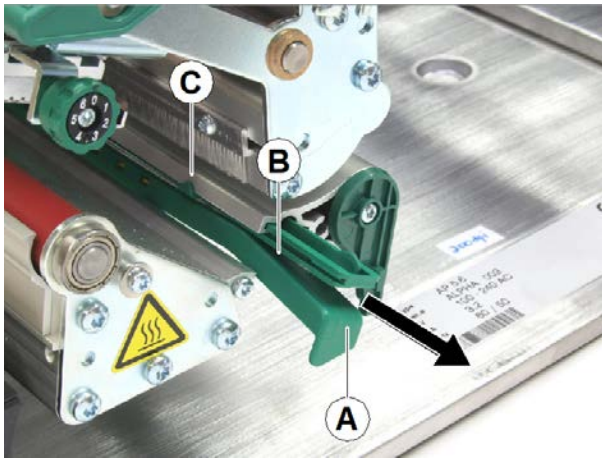
CLEANING THE LABEL SENSOR

About this task

During printing the punch sensor can become contaminated with lint. Large amounts of dirt can lead to problems with perforation recognition.

Procedure

1. Remove the cover (A) gently and swivel downwards.

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2. Remove the sensor arm (A).

3.

CAUTION!

Label sensor can be damaged

► Do not use sharp or hard objects or solvents to clean the label sensors!

Clean the opening (picture above, B) with compressed air.

The light transmission sensor is situated in the upper and the lower part of the sensor arm on a level with the indicator (picture above, C). The reflex sensor is situated about 5 mm further out in the lower part.

Maintenance

PRINT ROLLER REPLACEMENT

⚠	WARNING! Risk of burning injuries from a hot print head. ► Ensure that the print head has cooled down before cleaning it.

The print roller is held in plase by a bayonet coupling and can be replaced without any tool.

Procedure

Disassembly

1. Switch off the printer and disconnect from the power.

2. Open the print head pressure lever.

3. Remove material from the printer.

4. Unfasten the knurled screw (A) in the middle of the tear-off edge (B). Remove the tear-off edge
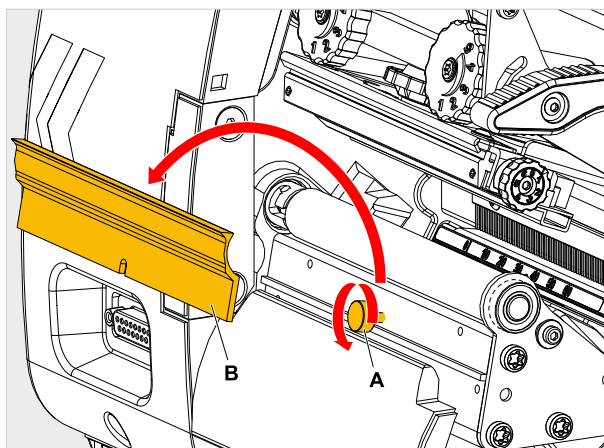
5. Rotate the print roller (A) until the bayonet coupling is visible (picture below, detail).
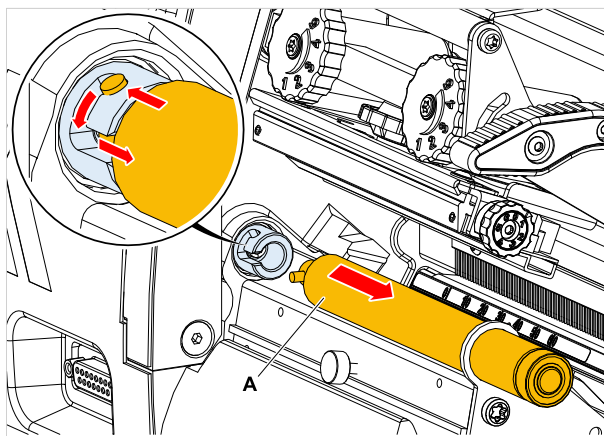
6. Press the print roller firmly in up to the stop, then turn it to the left and pull it out (picture above, A).

Fitting

7. Push the print roller through the external bearing plate.

8. Turn the print roller so that the steel pin at its end engages in the opening of the bayonet coupling.

9. Push the print roller firmly in up to the stop, then turn it to the right up to the stop.

PRINT HEAD REPLACEMENT

Replacement may be necessary if the print head is defective or if it is to be exchanged for a print head with a different resolution.

XLP 51x printers can be fitted with 203, 300 or 600 dpi resolution print heads. No conversion is necessary. The print head is automatically detected during start-up.

‖ In the predecessor model XLP 50x, the change was not easily possible! ‖
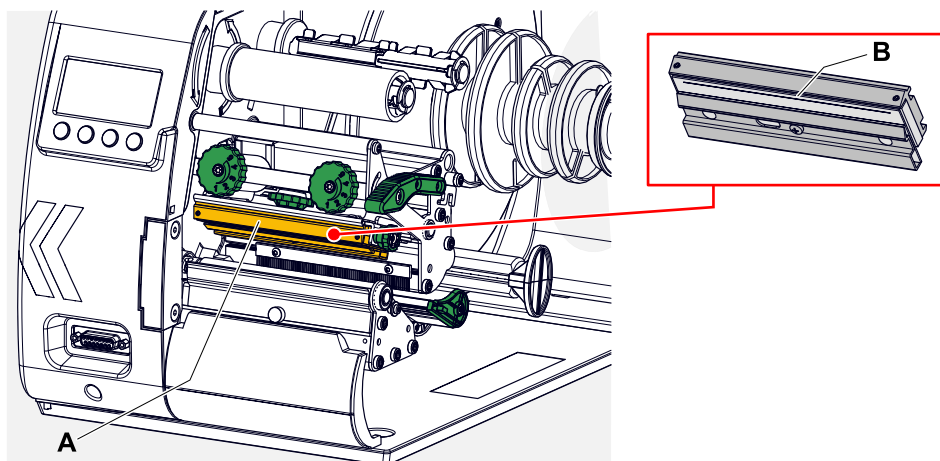
Fig. 59: **A**: Print head, **B**: Thermal strip at the print head

⚠ WARNING!
Burn hazard. The print head becomes hot during operation.
► Allow print head to cool before touching.
► Be careful whenever touching the print head.

‖ CAUTION!
Possible damage to the print head due to electrostatic discharge or contact with sharp edges.

► Always protect the print head against electrostatic discharge when performing maintenance and cleaning work! Use ESD protective equipment!
► Never touch the thermal strip with bare hands!
► Never contact the thermal strip with sharp objects! ‖

‖ CAUTION!
Risk, that the print head misaligns, what most probably downgrades the print quality considerably

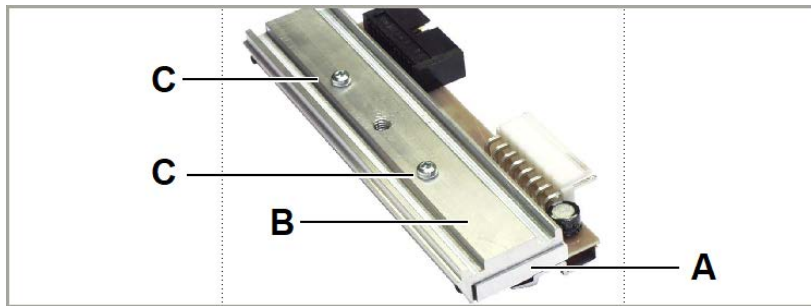► Never loosen the screws (C) fixing the print head on the bracket. ‖

Fig. 60: Print head (A) and bracket (B) were adjusted exactly by means of special positioning tools.

If no professional ESD protective equipment (ESD wristband, ESD shoes, ...) is available:

► Discharge your own body before touching the print head, e.g. by touching an earthed object (e.g. radiator) in your vicinity!
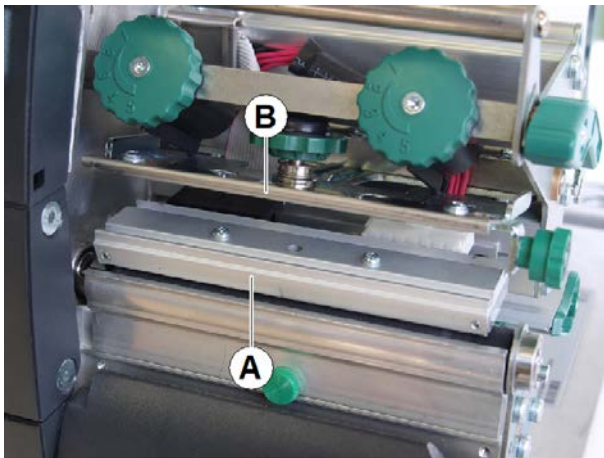
Procedure

Dismantling the print head:

1. Switch off the printer.

2. Open the front cover.

3. Open the print head pressure lever.
   The print head flips up.

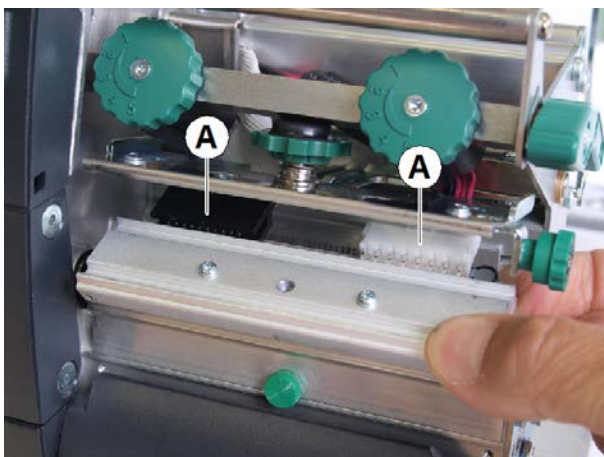4. Remove the ribbon from the printer.

5. Press the print head onto the print roller. At the same time remove the knurled screw (A).
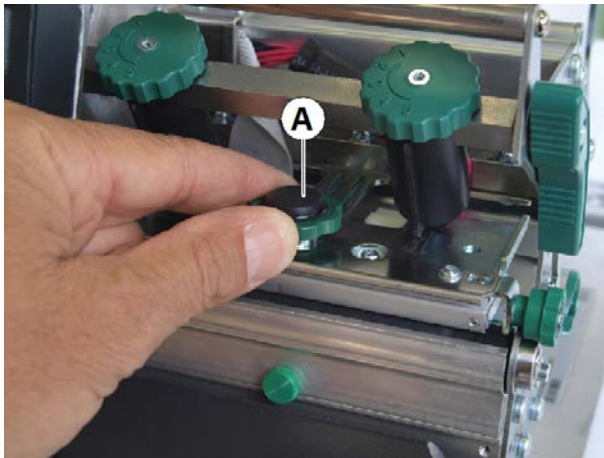
The print head (A) is released from the fastener and remains on the print roller:

6. Remove both print head cables (A) from the print head:

7. Remove the print head.

Fitting the print head:

8. Note the resistance of the new print head. You can read this on a sticker directly on the print head.

9.   Affix the print head cable.

10. Press the print head against the fastener from below and tighten the knurled screw.
    ‖ Don´t touch the thermal bar while doing so! ‖

11. Switch on the printer.

12. Call up the parameter System > Hardware Setup > Head resistance and enter the print head resistance you noted earlier.

MATERIAL GUIDING: SETTING THE MOVABILITY

Before you begin

Tool: Torx screwdriver Tx10

About this task

If the material guiding (A) shifts during the printing, the sliding friction has to be increased.
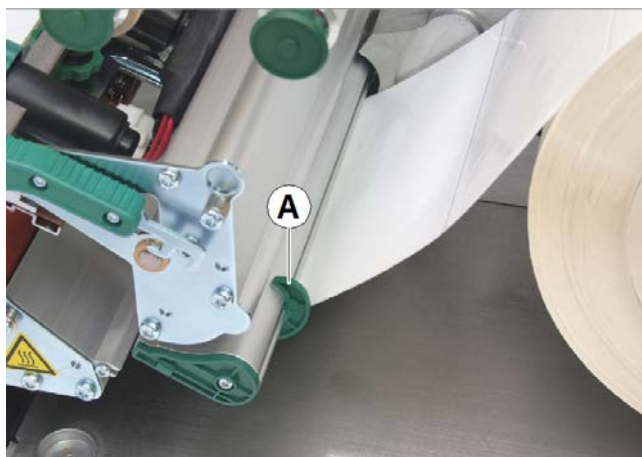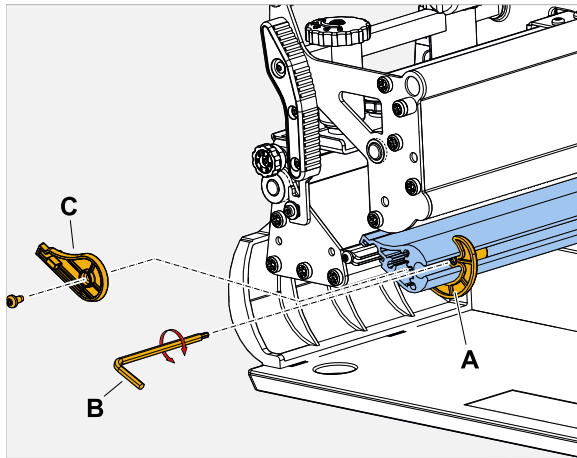

Fig. 61: Outer material guiding (A).

EXPERTS   Adjusting the friction according to the factory settings: see service manual.

Procedure

1. Unscrew the cover (C).

2. Tighten the set screw (picture above, A) in the material guide to increase the driving force.

3. Check the movability of the material guide. If necessary, repeat step 2.

4. Reassemble the cover.

Appendix

LABEL MATERIAL TYPES

What to look for when selecting label stock for the XLP 51x.

Material specification

The XLP 51x can process rolls as well as leporello fold (= fold-out or accordion fold material).

For more information on the material specifications, refer to Label Material on page 13.

Punches/reflex marks

In general, one distinguishes between converted and unconverted material:

• *Converted material*: The start of each label is usually marked. With self-adhesive labels, this can be a gap (A) between the labels or, with cardboard labels, a small punch (B) on the edge. If the printer is equipped with the optional reflex sensor, it will be able to detect reflex markings (C) on the rolls.

• *Unconverted material* is referred to as "continuous form material" and does not have any label markings. The length of the label is determined through the length setting in the parameter menu.
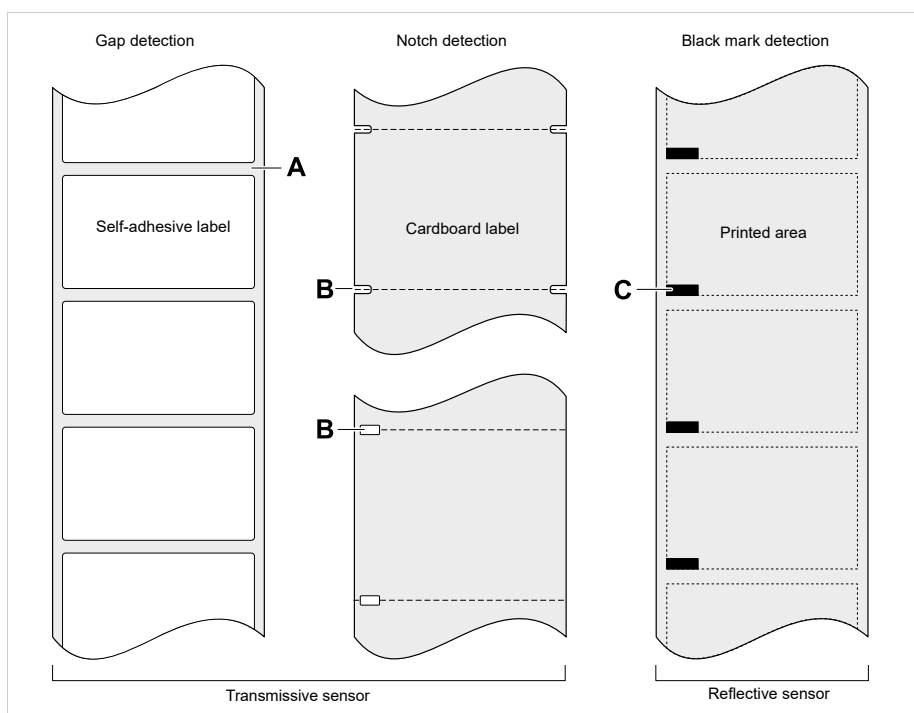

Fig. 62: Various types and positions of "start of label" markings.

Quality criteria

Pay attention to the following 3 factors when selecting the quality of label material:

• The abrasive behaviour of the surface structure of the material

• The chemical properties of the material that affect how ink is printed

• Temperature required for ink transfer

Abrasiveness

If the material is very rough (= strong sanding effect), the printhead will wear down more quickly than with smooth material. This is an important aspect of thermal printing. With thermal transfer printing, this does not pose much of a problem because you can select a ribbon that is wider than the material.

Print head temperature

Similarly, excessively high printhead temperatures can also cause problems. The material and the ribbon require more time to cool down, the printing quality becomes more critical and the printhead will wear down more quickly.

Related reference

Label Material on page 13

(XLP 516) PRINT WIDTH LIMITATIONS

If the max. values given in the following tables are exceeded, malfunction of the power supply will be most probably the consequence, followed by a restart of the printer.

Print speed		Limitation
mm/s	Inch/s	
51/76	2/3	Max. admissible print contrast: 120%
102	4	Max. admissible print contrast at print width > 100 mm: 105% Max. admissible print width at print contrast > 105%: 100 mm
127	5	Max. admissible print contrast at print width > 75 mm: 88% Max. admissible print width at print contrast > 88%: 75 mm
152	6	Max. admissible print contrast at print width > 65 mm: 74% Max. admissible print width at print contrast > 74%: 65 mm

Table 21: XLP 516: Print width limitations for 300 dpi print heads.
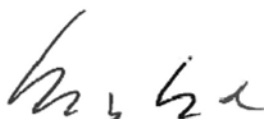
EU DECLARATION OF CONFORMITY

(Translation of original version)

We,

> Novexx Solutions GmbH
> Ohmstraße 3
> D-85386 Eching
> Germany

hereby declare that we have designed and built the machine designated below so that it is in conformity with the basic safety and health protection requirements of the directive named below:

Model	XLP 514 / XLP 516
General designation	Label Printer
Applicable EU directives	2014/30/EU (EMC) 2006/42/EG (Machinery) 2011/65/EU (RoHS)
Applied harmonized standards, especially	EN ISO 12100 : 2010 EN 62368-1 : 2014/A11 : 2017 EN 55032 : 2015 EN IEC 61000-6-2 : 2019 EN 61000-3-2 : 2014 EN 61000-3-3 : 2013
The person authorized to compile technical documents	Novexx Solutions GmbH (for address see above)

Eching, 9.8.2021   Manfred Borbe (Director)

APPLIED LICENCES

Open Source Software

This printer uses open source software. A directory of the used software libraries and licenses is stored in the machine and can be downloaded via web browser.

Enter the following address in the web browser:

```
http://<hostname>/licenses.zip
```

> \<hostname\> = Hostname or IP address of the machine
>
> The web server must be activated (Interface > Network > Services > WEB server = "On").

The file `licenses.zip` contains a number of subdirectories, each named after a used software library. Each subdirectory contains the open source license relevant for the respective software.

Index of parameter names and error messages

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