NOVEXX SOLUTIONS

USER MANUAL

XPU

Pallet labeler

Edition 1 - 5/2018

Contents

Please note

GENERAL NOTES

Validity of this manual and required compliance

Contents

The complete operating manual for the pallet labeler XPU consists of the following parts:

Manual	Target group	Medium	Availability
User manual XPU	Operating personnel	Printed	Lieferung mit der Maschine
User manual ALX 92x		PDF file	Novexx Partner-Portal
Installation/Service manual	Service personnel		
Spare parts catalog			

Tab. 1: Elements of the complete documentation.

This user manual refers exclusively to the machine type 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 section “Information and qualification” on page 7.

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

For technical questions not covered in this operating manual::

➔ Follow the instructions of the service manual

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: 4/2018

Software version printer: 7.72

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

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

Notes about hazards and risks

Important instructions that must absolutely be followed are specially highlighted::

WARNING!

A warning symbol refers 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!

A caution symbol refers 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.

FOR YOUR SAFETY

Intended use

The XPU palett labeler is intended for printing on self-adhesive DIN A5 labels in portrait format and to apply two identical labels at two sides of a loaded palett (see fig. below).

Printing method: The labels are printed and dispensed by the integrated print & apply system using the thermal transfer procedure

Application: The dispensed label is moved by the applicator to the palett, covering a distance of about 50 cm. Aferwards, the label is pressed onto the palett by the applicator.

Consumables: Thermal transfer ribbon and label material must be supplied as rolls. The label material that is used must be punched, i.e. the self-adhesive labels adhere individually, separately by punchings, on a carrier material. The labels must only adhere strongly enough so that they will come loose when the material is deflected over a sharp edge.

Palett: As a rule, the - loaded - palett will be moved on a conveyor up to the labeling position in front of the XPU, where it will be stopped. The palett must stand still during the labeling.

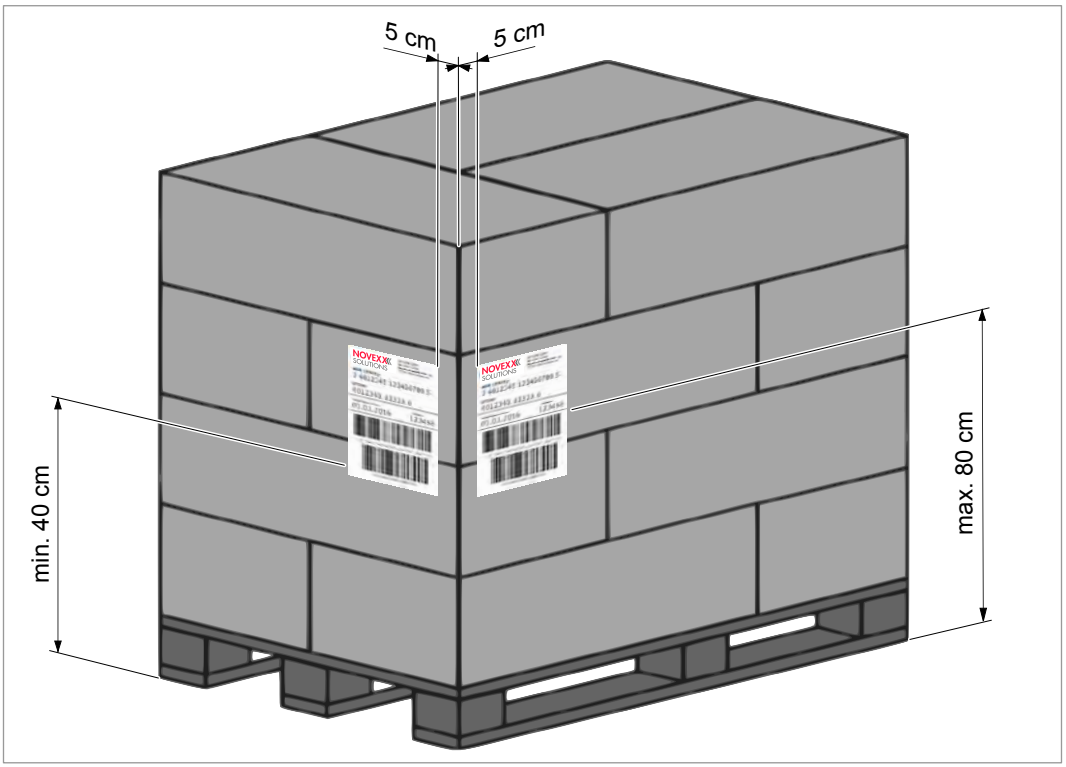


Fig. 1: Position of the transport labels on the palett, according to the standard GS1.

Information and qualification

Ensuring the necessary qualification

➔ Only fully trained and authorised personnel are permitted to operate, adjust and maintain the machine.

➔ Service work must only be performed by qualified and appropriately trained technical specialists (service technicians) or the customer service department.

➔ Areas of responsibilities for operating and servicing the machine must be clearly defined and consistently observed.

➔ Personnel must also be regularly instructed in on-the-job safety and environmental protection.

Qualification for operation

The instruction provided for the operating personnel must ensure,

- that the operating personnel can use the machine independently and without danger.
- that the operating personnel can rectify minor operating faults (for example a paper jam) independently.

Therefore:

➔ At least 2 persons should be instructed in operation.

➔ Have a sufficient quantity of label materials available for tests and instruction.

Qualification for system integrators and service technicians

Knowledge required to install the Print & Apply system and perform service work must be demonstrated through appropriate qualification. Only service personnel with technical train-ing are able to assess the tasks to be performed and recognise potential dangers.

- Knowledge acquired through technical training in mechanics and electronics (for example in Germany the training to become a mechatronics engineer)
- Participation in a technical training course for the corresponding label dispenser offered by the manufacturer
- The service personnel must be acquainted with the functionality of the label dispenser
- The system integrator must be acquainted with the functionality of the of the system into which the XPU is being integrated

Tasks	System integrator	Operator	Service technician
Mount the machine	X		
Connect the machine	X		
Make settings	X		
Switch on/off	X	X	X
Insert/change material/ribbon	X	X	X
Application-related settings	X	X	X
Rectify minor operating faults[1]	X	X	X
Clean the machine		X	X
Rectify major operating faults[2]			X
Settings to the electronics/ mechanics			X
Repairs			X
Manual:	Service manual, Installation manual	Operating Manual	Service manual, spare parts catalog

Tab. 2: An example of the distribution of tasks among different qualified personnel.

Making note of information

WARNING!

The machine can only be operated safely and efficiently by complying with all of the requisite information

➔ Before beginning operation, read this operating manual and follow all of the instructions.

➔ Observe all additional safety and warning information given on the label dispenser..

➔ Only technically knowledgeable persons are permitted to operate the label dispenser and make settings on it.

Any product liability and warranty claims will not be valid unless the machine is operated according to the instructions in the operating manual.

1) For example faults when detecting labels
2) For example incorrect labelling

Keep product information at hand

This user manual

➔ must remain readily available for operating personnel at a location near to the machine.

➔ must be kept in legible condition.

➔ If the machine is sold, it must be made available to the new owner..

➔ The safety and warning symbols and messages on the machine must be kept in a clean and legible state. Replace any signs that are damaged or missing.

Operating safety of the machine

Intended use

➔ The machine must only be used in accordance with the specifications in section “Intended use” on page 6 .

Warning of injuries due to electrical shock

WARNING!
Hazard of electrical shocks and burns!
This unit operates at mains voltage! Contacting electrically live components can cause lethal electrical shocks and burns..

➔ Be sure to observe the precautions in this section!

➔ In case of danger, switch off the machine with the emergency stop switch and pull out the main plug.

Installation:

➔ Only operate the machine when the enclosure is properly installed.

➔ The machine must only be connected by an authorised technician who is acquainted with the associated dangers.

➔ The machine must only be connected with other machines if they meet the requirements of a SELV circuit (Safety Extra-Low Voltage circuit) in accordance with EN60950.

➔ Keep the machine's On/Off switch accessible.

Cleaning:

➔ Before cleaning and maintenance, switch off the machine and pull out the main plug.

➔ Keep the machine dry.

➔ If a liquid gets into the machine, switch off the machine immediately and pull out the main plug. Notify a service technician.

Schutz vor Verletzungen durch mechanische Einwirkung

WARNING!
Danger of crushing between dispensing edge and applicator pressure plate due to applicator movement!
➔ If the machine is running or ready for operation, never reach between the applicator and the dispensing edge.
➔ Never remove or bypass the protective equipment to prevent reaching in while the machine is in operation.

WARNING!
Danger of injury caused by falling label roll!
➔ Wear safety shoes.

WARNING!
Tripping hazard!
➔ Lay the connection cable and pneumatic hoses (if fitted) so that no one can trip over them.

Every time before starting production

Due diligence of the operator and service personnel

➔ Ensure that the following requirements are met in accordance with details specified in the service manual:

- The machine must be set up and configured to meet applicable requirements
- All necessary safety equipment must be installed
- The machine must have successfully completed at least one test run
- The machine must be connected to the energy supply

➔ Make the requisite personal protective equipment available to the operating personnel, for example hair nets. Ensure that the protective equipment is used properly.

Due diligence of the operating personnel

➔ Check the safety equipment to ensure it is working correctly.

➔ Check the machine for visible damage. Report defects that are discovered immediately.

➔ Use personal protective equipment properly, for example wearing a hair net.

➔ Remove material and objects that are not required from the working area of the machine.

➔ Ensure that only authorised persons remain in the working area of the machine.

➔ Ensure that no one can be endangered by the machine starting up.

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 printer.

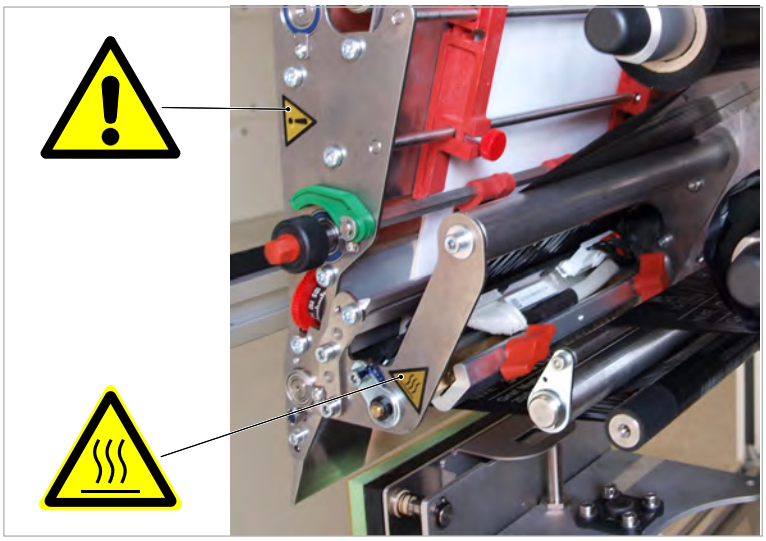


Fig. 3: Warning notes on the print head of the printer.

Warning note	Meaning	Article no.
	The „Pinch point“ warning note warns you 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 device to cool off before touching it.	A5640
	Warning note „Hazard area“	A7368
	The blue label „Read manual“ demands that operators read the user manual.	A5331

Tab. 3: Meaning of the warning notes.

Product description

OVERVIEW

Designs

The XPU is available in a righthand (RH) and lefthand (LH) version.

Irrespective of wether it is a RH or LH XPU, the operator stands always on the same side of the machine (see fig. below).

If the application has to be in accordance with the GS1 standard, a RH machine has to be applied.

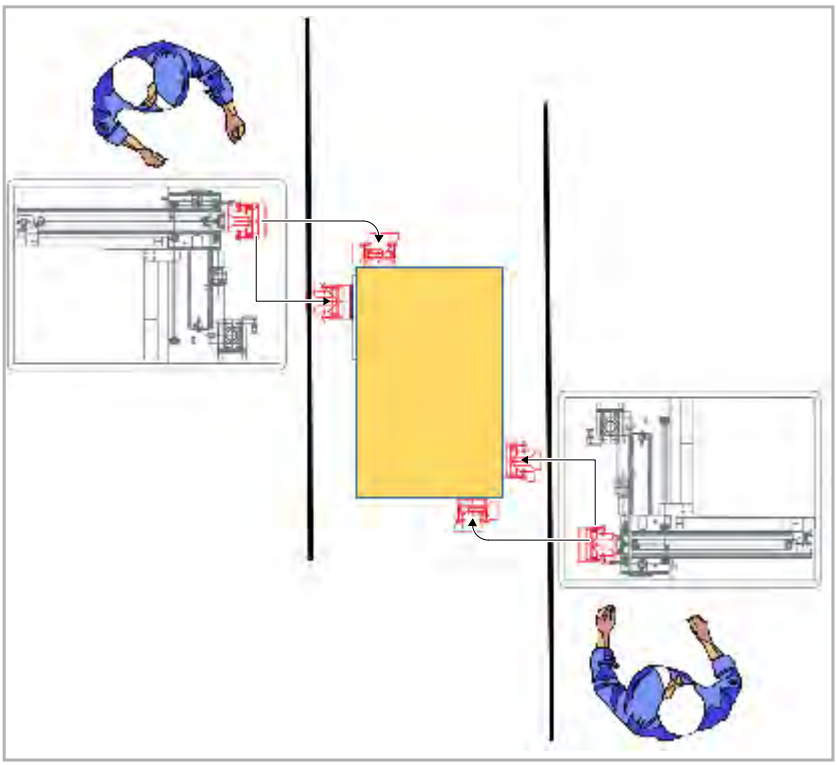


Fig. 4: XPU RH: The applicator slews to the *right* to apply the frontal label, what matches the GS1 standard.

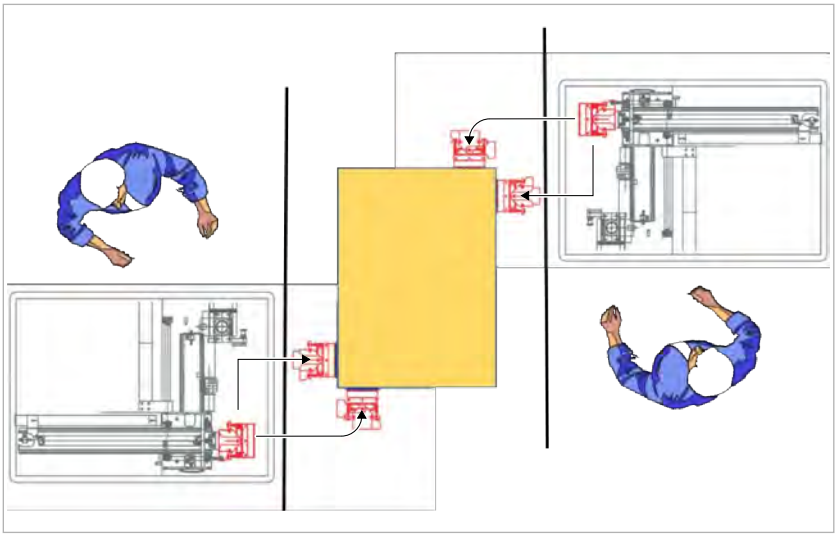


Fig. 5: XPU LH: The applicator slews to the *left* to apply the frontal label.

Functionality

The main function of the XPU palett labeler is printing on DIN A5 labels in portrait format and to apply two identical labels at two sides of a loaded palett.

‖ Optionally, the XPU can be set up to apply only one label. ‖

Print-apply sequence:

1. A print job is transferred via data interface to the printer and is interpreted. Afterwards, the machine is ready to print.
2. A start signal provided by the conveyor line tells the XPU that a palett has arrived. Thereupon, the printer in the XPU prints a label and dispenses it onto the applicator pressure plate.

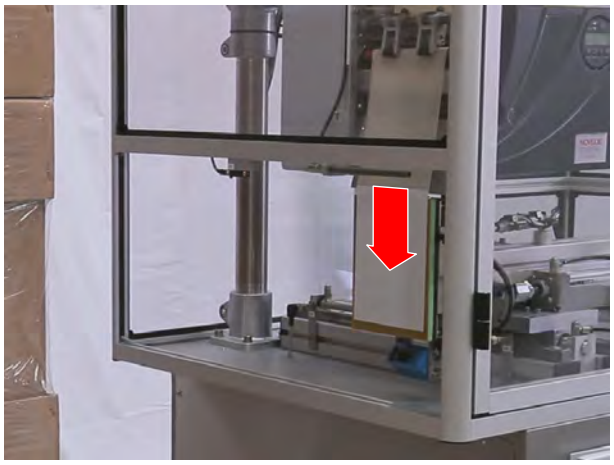


Fig. 6: A label is dispensed onto the applicator pressure plate (arrow).

3. The applicator extends completely. While doing so, the applicator foot passes the front side of the palett.
4. The applicator foot slews 90° towards the palett.

5. The applicator moves laterally towards the palett and applies the label.

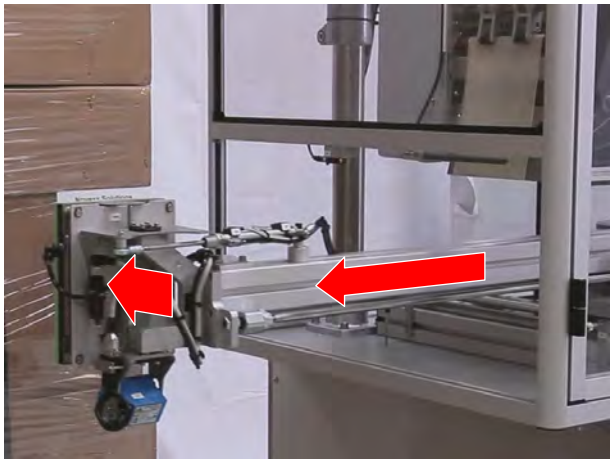


Fig. 7: The first label is attached to the front side of the palett.

6. As soon as the touch down sensors at the applicator foot signal that the label is pressed on, the applicator moves back to the printer dispensing edge.
7. The second label is printed and dispensed onto the applicator foot.
8. The applicator arm moves sideways towards the middle of the palett.
9. The applicator extends and presses the label onto the side of the palett.

Fig. 8: The applicator presses the second label onto the side of the palett.

10. As soon as the touch down sensors at the applicator foot signal that the label is pressed on, the applicator moves back to the printer dispensing edge.

Components of the XPU

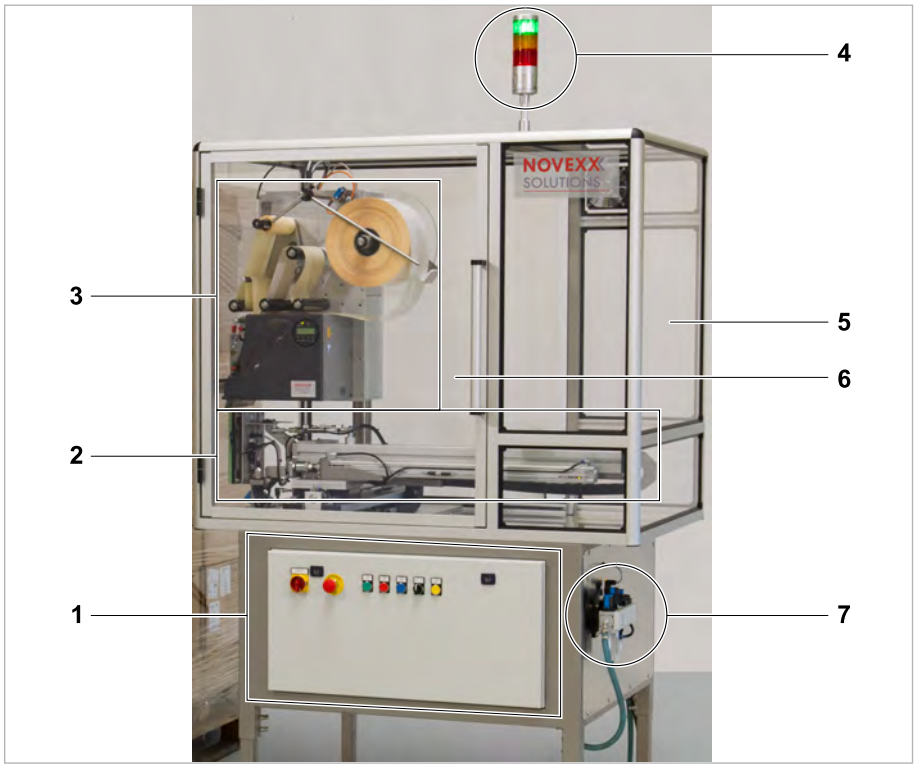


Fig. 9: Components of the XPU.

Pos.	Name	Description
1	Electrical cabinet (with XPU operating controls)	
2	Applicator	
3	Printer	See “Operating components at the printer” on page 18
4	Signal beacon	
5	Dust protection cabin	
6	Cabin door	
7	Pneumatic service unit	

Operating controls XPU

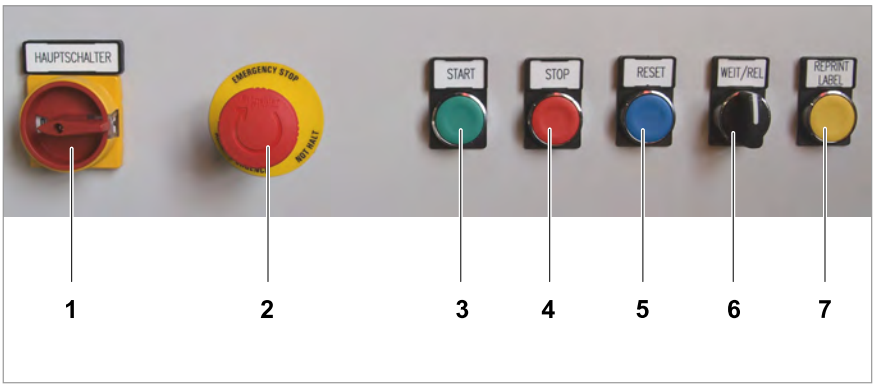


Fig. 10: Operating controls at the XPU

Pos.	Name	Function
1	Main switch	Switches the power supply of the machine on/off. See chapter “Switching on the machine” on page 33.
2	Emergency stop button	Stops the machine in an emergency case. See chapter “Emergency stop ” on page 34.
3	START button	Makes the machine ready to operate. After pressing the start button, the machine waits for a start signal.
4	STOP button	Stops the machine. The current application cycle is finished bevor stopping. See chapter “Stopping the machine” on page 34.
5	RESET button	Resets the error status. See chapter “Display of errors and warnings” on page 56.
6	WEIT/REL button	In combination with the start button happens one of the following after an error: • a new application cycle is started (german: WEITerma-chen = continue) • the palett is RELeased See chapter “Function of the WEIT/REL switch” on page 57.
7	REPRINT LABEL button	Prints a label without starting an application cycle (e. g. for setting purposes at the printer). The machine must be stopped.

Operating components at the printer

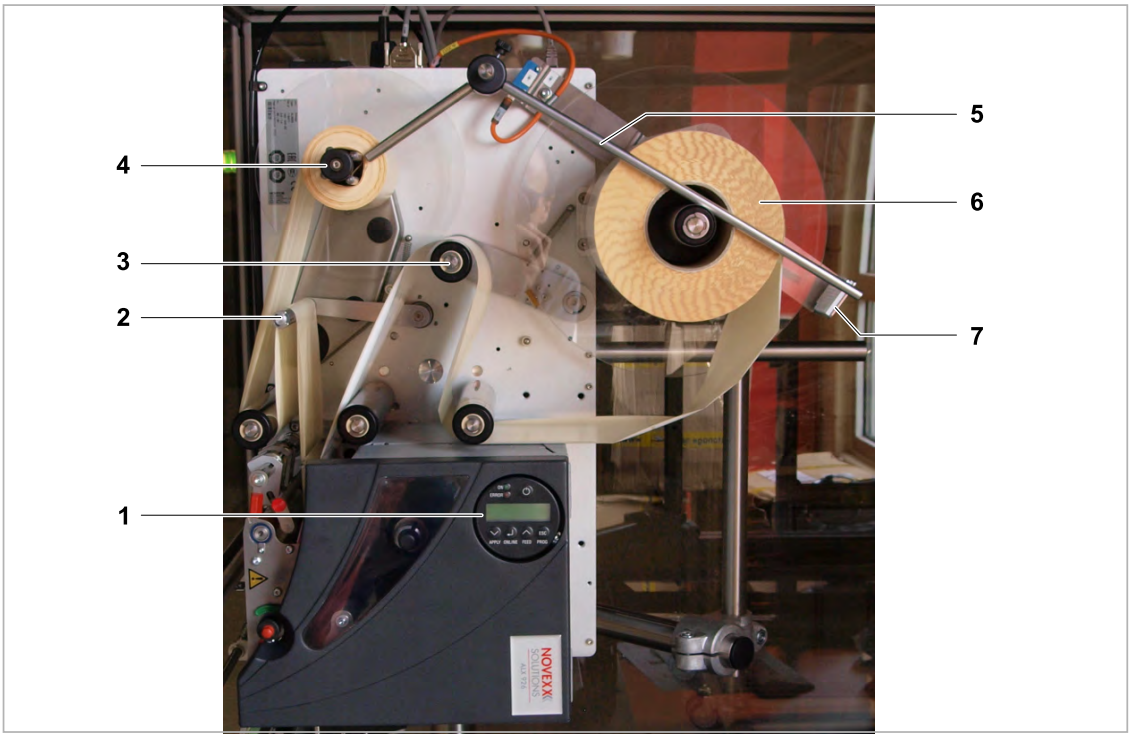


Fig. 11: Operating components at the printer.

Pos.	Name	Function
1	Control panel	See description on the following page.
2	Backing paper dancer lever	Holds the backing paper evenly under tension. Controls the rewinding speed.
3	Material web dancer lever	Holds the label material evenly under tension. Brakes the rotation of the material roll if the material tension drops.
4	Backing paper rewinder	Rewinds the remaining backing paper.
5	Guiding rod	Holds the rolls on material unwinder and backing paper rewinder.
6	Material unwinder	The unwinding mandrel receives the material roll (fitting the core diameter with removable adapter rings)
7	Outer diameter light barrier	Triggers a warning, if the label roll has been used till the set diameter

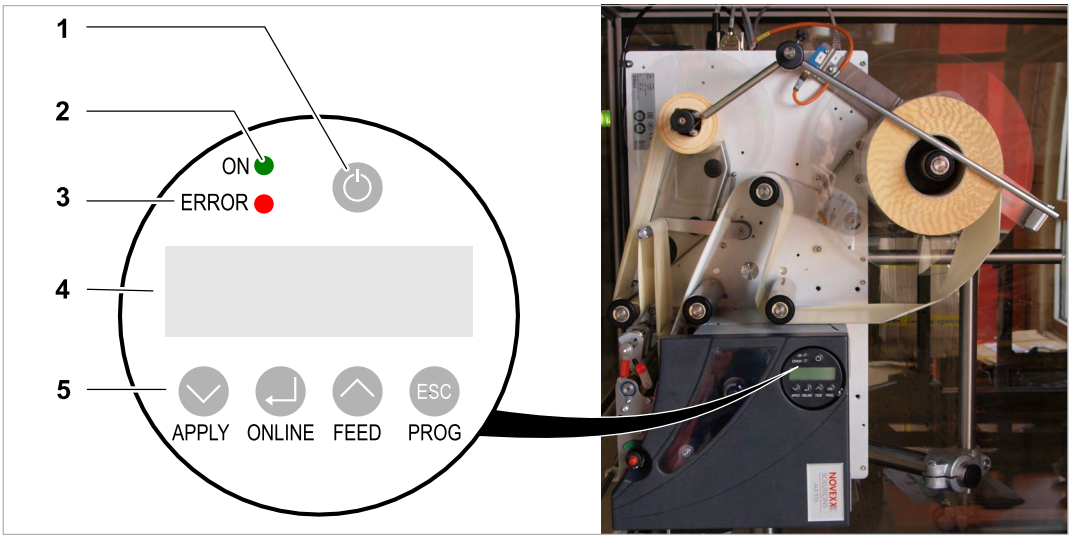


Fig. 12: The control panel at the printer.

Pos.	Name	Function
1	On/Off switch	Switches the printer on and off. To do this, press this button for longer than 2 seconds. Require-ment: The mains power switch is turned on (position “I”).
2	Operating LED	Lights up green when the printer is turned on.
3	Error LED	Lights up red when an error has occurred.
4	Screen	Display of operating states, parameters, setting values and error messages. The displays depend on the operating state of the printer.
5	Buttons	The functions of the keys depend on the operating state of the printer.

Connections

WARNING!

Danger of electrocution.

➔ Only connect the printer to devices that fulfil the SELV (safety extra-low voltage) circuit requirements in accordance with EN60950.

➔ The machine must only be connected by an authorised technician who is acquainted with the associated dangers.

Electrical connection

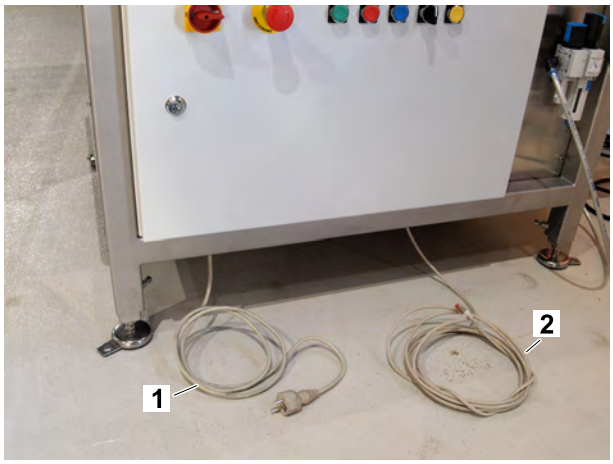


Fig. 13: Power cable (1) and data cable (2) are led out of the electrical cabinet at its bottom side.

Compressed air connection

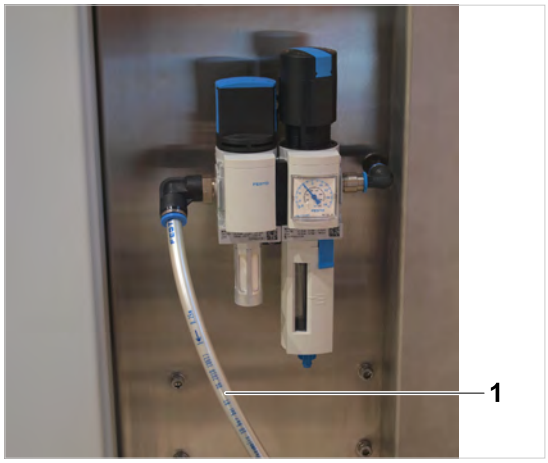


Fig. 14: Connect a „PUN 10 x 1,5“ pneumatic hose to the service unit at the XPU (1) and to the compressed air supply.

TECHNICAL DATA

Performance data	• *Label rate*: 180 Paletts/hour • Application *cycle time*: min. 16 s (w/o palett transport)
Labels	• *Name*: Transport label or palett label • *Size*: A5 (210 mm x 150 mm) • *Material*: Paper (min. weight: 80 g/m^2), self-adhesive • *Core-Ø*: 76 mm • *Roll-Ø*: max. 300 mm
Palett	The palett must be able to withstand a lateral force up to 100 N, otherwise the touchdown sensors of the applicator won´t be triggered.
Printer	• *Type*: NOVEXX Solutions ALX 926 • *Print technology*: Thermal transfer printing • *Print head type*: Corner Edge • *Resolution*: 12 Dot/mm (300 dpi) • *Print width*: max. 160 mm • *Aperture width*: max. 184 mm • *Print- and dispense speed*: max. 300 mm/s • *Ribbon stock*: max. 1000 m
Applicator	• *Application accuracy*: ± 5 mm • *Stroke length*: see fig. below
Electrical interfaces	*Inputs*: • Emergency stop • Palett-in-position (start signal) • Data input at the printer (Ethernet 10/100 Base T) *Outputs*: • Normal operation (running) • Warning • Error • Busy • Emergency stop

Connection	*Mains power supply*: • Mains voltage: 230 V (AC) • Input current: 10 A *Compressed air supply*: • 5 bar • 100 l/min
Control	PLC Siemens S7-1200
Dimensions	*Weight*: 200 kg *Measures*: See fig. below

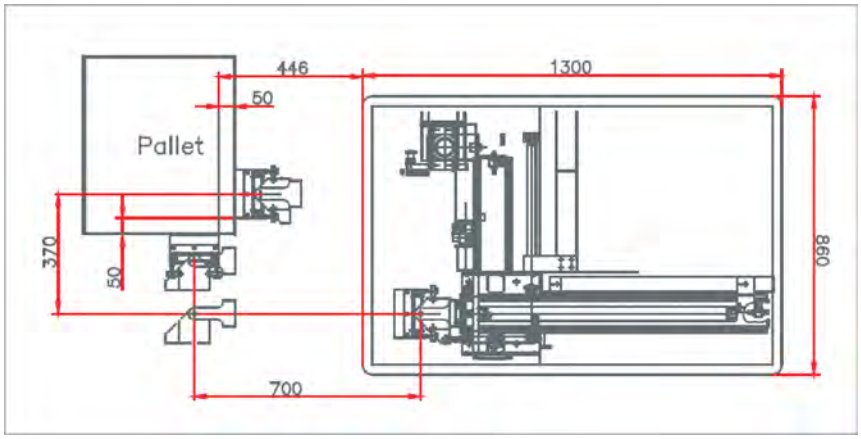


Fig. 15: Dimensions and stroke length of XPU RH.

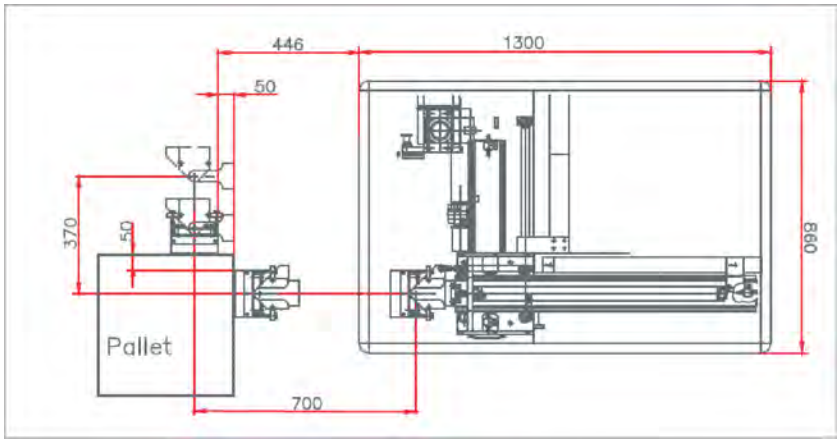


Fig. 16: Dimensions and stroke length of XPU LH.

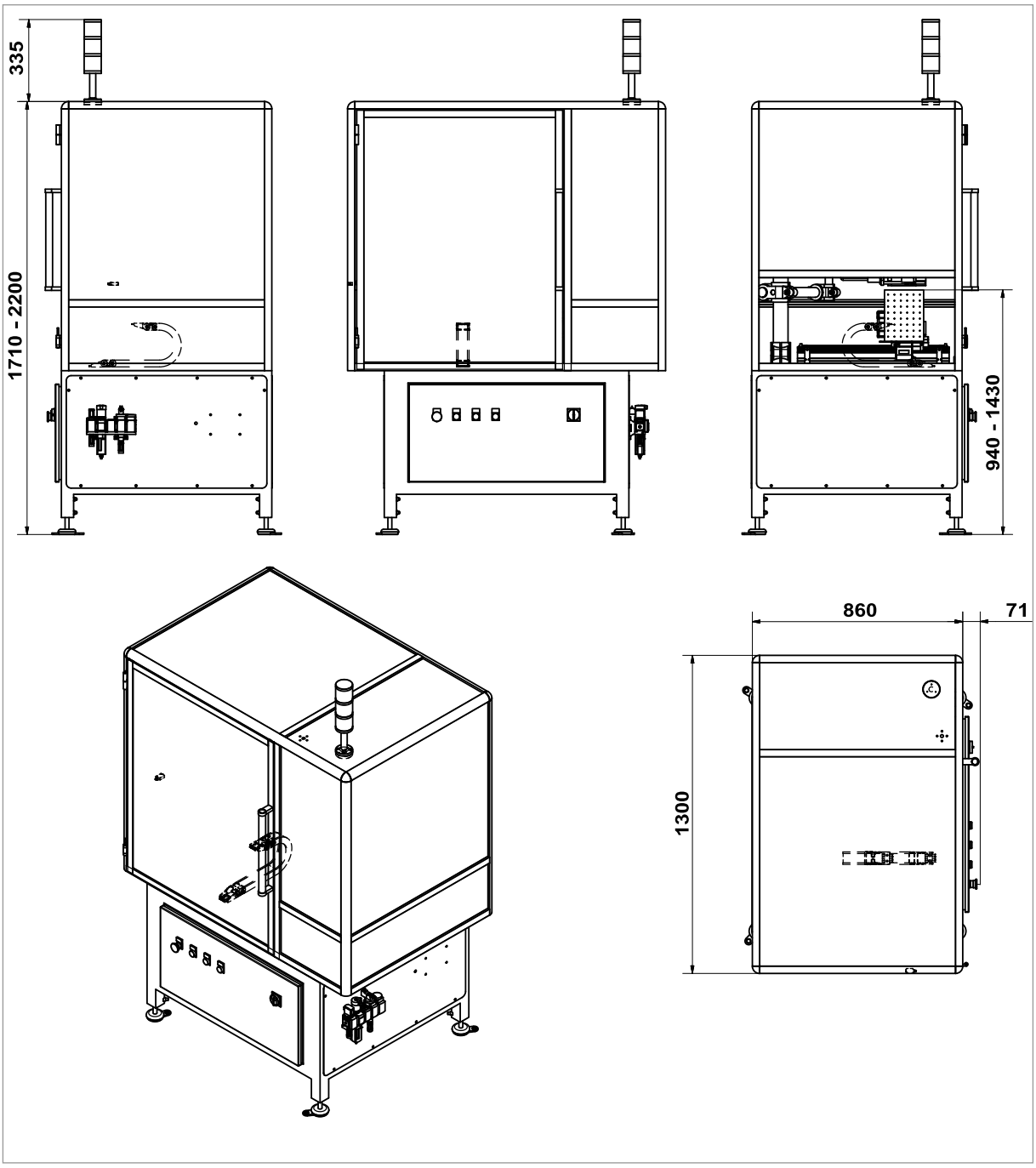


Fig. 17: Dimension drawing XPU.

OPTIONS

Scanner

Article number: N101069

The scanner option is mounted underneath the applicator pressure plate (fig.). The scanner reads the barcode on the label which was attached just before, during the backwards movement of the applicator foot. The scanner verifies the barcode on the label respectively if any label was attached at all.

> For the scanner to be able to read the barcode, it is necessary that the label layout has the barcodes in the lower half of the label.
>
> The scanner must be mounted in the correct angle; otherwise it will not be able to read the barcode, what causes an error after several unsucessful retries.

Fig. 18: The scanner option is mounted underneath the applicator pressure plate.

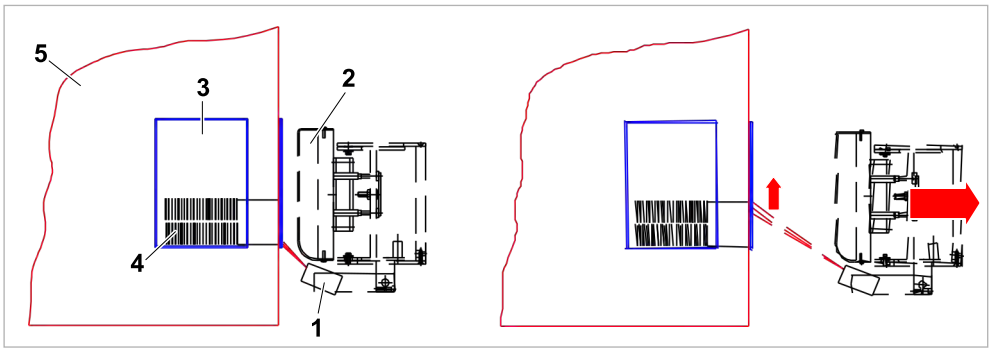


Fig. 19: After the label has been attached to the product, and the applicator (2) retracts from the palett (5), the scanner light beam (1) will pass and read the label barcodes (4).

Swing-out function for the printer

Article number: N101070

This functionality allows the printer to swing out and giving better access to the dispensing edge.

Fig. 20: XPU swing-out option.

Additional home position switch

Article number: N101071

The additional home position switch can be mounted on the applicator arm, to make sure that the applicator is in home position when a pallet is arriving. The switch has to be controlled from the line PLC system (Line/pallet must not move when switch is not activated).

Fig. 21: Additional home position switch in the XPU.

Enhancement of the XPU for 3-label-cycle

Article number: N101072

This optional system allows the applicator head to turn in both ways (right and left). Thus, labels can be applied on both short sides and the long side of a pallet. The pallet must stop in 2 positions for this.

O-ring applicator

Article number: N101073

When using PP/PE labels or very thin labels, it can be difficult to dispense the labels onto the applicator pad. For those cases, an applicator with O-rings is available. The O-rings move with the labels during dispensing.

Fig. 22: O-ring applicator foot at the XPU.

Shelf and tilt-out mini keyboard

Article number: N101074

When data is not send directly to the printer from a central host, this shelf and tilt-out mini keyboard prepared for use at a PC can be applied. The PC is not included.

Fig. 23: XPU with separate PC and keyboard.

PARAMETER MENU PRINTER

Overview of parameter menu

PRINT INFO	PRINT PARAMETERS	INTERFACE PARA	SYSTEM PARAMETER	(DP INTERFACE)
...	Print speed	...	…	...
	Feed speed		Label sens. type	
	Material type		…	
	Material length		Ribbon autoe-con.	
	Material width		Ribb. eco. limit	
	Print direction		…	
	…		Print contrast	
	X - Printadjust		…	
	Y - Printadjust			
	…			

Tab. 4: Parameter menu part 1

(ZPL PARAME-TERS)	(I/O BOARD)	SPECIAL FUNC-TION	SERVICE FUNC-TIONS	SERVICE DATA
...	...	…	…	...
		Delete Job	Head dot test	
		Delete Spooler	…	
		…	Print test	
		Store Parame-ters		
		Store diagnosis		
		…		

Tab. 5: Parameter menu part 2

- Menu title in brackets: Configuration of the printer determines whether the menu is visible.
- „…“: Place holders for one or more parameters which are not described below.

EXPERTS Settings to parameters that are not described here require specialist knowledge and must only be made by qualified service personnel. These parameters are described in the Assembly/Service manual ALX 926.

Information about the parameter description

- The setting range or the individual settings of a parameter are shown in square brackets.
- For parameters with individual setting values, the preset value is shown in italic type.

PRINT PARAMETERS Menu

Print speed

The print speed (material feed) can be adapted to the combination of ribbon and material in use to optimise the contrast intensity and the degree of blackening of the print image.

Setting range: [2…16] Inch/s; presetting: 8 Inch/s

Feed speed

The feed speed can be increased in areas with no print. This reduces the overall print time, especially for long labels with very little printed surface.

> When the print speed is changed, the feed speed is set equal to the print speed. If a different feed speed is preferred, it must be set again.

Setting range: [2…12] Inch/s; presetting: 8 Inch/s

Material type

Definition of the label material in use.

Settings: [Endless, *Punched*]

- Endless: Das Etikettenmaterial weist keine Stanzungen oder Reflexmarken auf. Der Etikettenanfang wird über die eingestellte Etikettenlänge (PRINT PARAMETERS > Material length) berechnet.
- Punched: Verwendung von Etikettenmaterial, bei dem die einzelnen Etiketten mit Stanzungen oder Reflexmarken versehen sind, die vom Etikettensensor erkannt werden können.

Material length

Label length, measured from the front (beginning) of a label to the front of the next label.

Setting range: [5…max. length[3]] mm; presetting: 100 mm

Material width

Width of the label belt (including backing paper in the case of self-adhesive material).

Setting range: [min. width[4]…max. width[5]] mm; Voreinstellung: 100 mm

Print direction

Settings: [*„Foot first“*, „Head first“]

- „Foot first“: Alignment of the print image as shown in (A).
- „Head first“: Alignment of the print image as shown in (B). Note the following:

3) „Max length": depends on the printhead width and memory configuration.
4) „Min. width": depends on the type of printer
5) „Max. width": depends on the printhead width and memory configuration of the printer

> Define the "true" label length (without label gaps) in parameter PRINT PARAMETERS > Material length. If the label gap is longer than 5 mm parameter SYSTEM PARAMETER > Miss. label tol. must also be set to a value greater than zero.

> The distance between the material zero line and the first printable dot is 1mm. To maintain this distance in head first mode, calculate the material using the following formula:

$b_{Mat} = b_{Tr} - 2\ mm$, where

b_{Mat}: Material width

b_{Tr}: Carrier material width

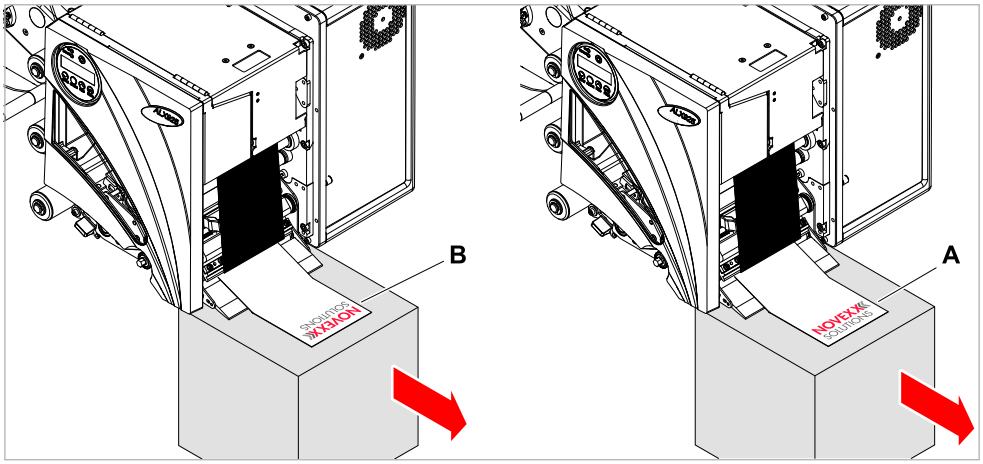


Fig. 24: Alignment of the print image "Foot first" (A) or "Head first" (B).

X - Printadjust

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

> If the setting is changed while a print job is stopped, the printer recalculates the format with the modified values.

Setting range: [-15,0…+15,0] mm; presetting: 0 mm

- Maximum adjust (offset) away from the edge of the label: +5,0 mm
- No offset: 0,0 mm
- Maximum offset toward the edge of the label: -5,0 mm

Y - Printadjust

The zero point of the mask is shifted in relation to the punch position on the Y-axis, i.e. in the direction of feed.

> If the setting is changed while a print job is stopped, the printer recalculates the format with the modified values.

Setting range: [-15,0…+15,0] mm; presetting: 0 mm

- Maximum offset in feed direction: +5,0 mm
- No offset: 0,0 mm
- Maximum offset opposite to feed direction: -5,0 mm

SYSTEM PARAMETER menu

Label sens. type

Label sensor type

Select the sensor type or the type of mark for beginning of the label (reflex marking or punch).

Settings: [„Reflex“, *„Punched“*]

- Reflex: Reflex sensor (detects reflex markings)
- Punched: Transmission sensor (detects reflex punches)

Ribbon autoecon.

Ribbon saving (ribbon autoeconomisation)

Ribbon saving can be used to interrupt ribbon feed through areas of the label that are not printed. This saves ribbon, especially for long labels with very little printed surface.

Compared to the „normal“ ribbon saving function can the label throuput be considerably increased by setting the „turbo“ ribbonsaving mode (On Turbo). This mode allows setting the feed speed in print free areas independent from the print speed via PRINT PARAMETERS > Feed speed.

Settings: [„Thermal/headlift“, „Thermal printing“, „On“, *„Off“*, „On Turbo“]

- „Thermal/headlift“: Thermal direct printing with automatic head lifting over unprinted areas (pro-tects the printhead)
- „Thermal printing“: Thermal direct printing (ribbon end sensor shut off)
- „On“: Thermal transfer printing with ribbon saving
- „Off“: Thermal transfer printing without ribbon saving
- „On Turbo“: Thermal transfer printing with „turbo“ ribbon saving

Ribb. eco. limit

The ribbon economisation limit corresponds to the length of the no-print zone on the label at the point where ribbon autoeconomisation will be activated.

> Only with SYSTEM PARAMETER > Ribbon autoecon. = „On“ or „On Turbo“ or „Thermal/headlift“

> Do not activate ribbon autoeconomisation for unprinted areas unless they are more than about 10mm in length.

Setting range: [2,0…100,0] mm; Presettings: 10,0 mm

Print contrast

The setting for print contrast, i.e. the degree of blackening in the printout.

> CAUTION!
>
> The Print contrast parameter directly affects the service life of the printhead. In general, the higher the setting of Print contrast, the shorter the service life of the printhead. This applies especially to settings over 100%. Therefore note the following recommendation:
>
> ➔ Always select the lowest setting that will still produce acceptable printing results.

Setting range: [1…110%]; Presettings: 60%

SPECIAL FUNCTION menu

Delete Job

Deletes the active print job.

When the online key is pressed, the printer interrupts processing of the active print job.

```
Delete Job
Clearing ...
```

Delete Spooler

Deletes the print job wait queue (spooler).

When the online key is pressed, all print jobs in the print spooler are deleted.

```
Delete Spooler
Clearing ...
```

Store Parameters

Save settings in the parameter menu.

Parameter settings are saved in a text file on memory card (directory FORMATS\). Also takes into consideration parameters belonging to uninstalled options.

Settings: [*„Without adj. par“*, „With adjust para“]

- „Without adj. par“: Parameters containing device-specific settings are *not* saved.

  Application: Transfer of settings to other devices (device-specific settings such as heat resistance or sensor settings should not be overwritten).

  Pre-set filename: `SETUP.FOR`
- With adjust para

  Parameters containing device-specific settings are saved as well. The relevant parameter names are marked in the text file with a „*“.

  Application: Service

  Pre-set filename: `SETUPALL.FOR`

Store diagnosis

Saves diagnostic data to memory card.

Pre-set filename: `Diagnose ALX 924 RH A662105104002453.log` where…

- „ALX 924 RH“: Printer type
- „A662105104002453“: Serial number of the CPU board; corresponds to the entry in SERVICE DATA > >CPU BOARD DATEN > Serial number

SERVICE FUNCTIONS menu

Head dot test

Checks the printhead for faulty dots. The check ends with a status report (see fig.) containing a list of faulty dots. This printout is generated even if no faulty dots were found.

> CAUTION!
>
> Danger of damage to the printhead.
>
> ➔ Do not switch off the printer under any circumstances during the dot check! Failure to observe this instruction may cause dots to be destroyed.

The following screen appears during the check:

```
Head dot test
Please wait ...
```

> Required label material: 200 x 100mm (length x width).

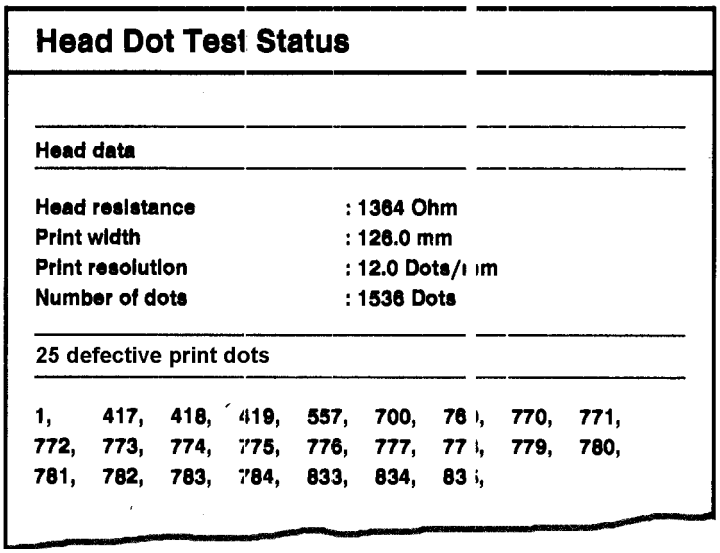


Fig. 25: Status report after the dot check has been successfully completed. Top section: Technical data for the printhead; bottom section: faulty dots.

> The dot check can also be started in offline mode by pressing the APPLY + FEED keys. There is no status report in this case, however.

Print test

A general print test; prints the set printer type and the number of the firmware version in different fonts arranged by line with material settings such as material type, length and width also taken into consideration.

➔ To exit the print test press the ONLINE key.

Startup

SWITCHING THE MACHINE ON/OFF

Switching on the machine

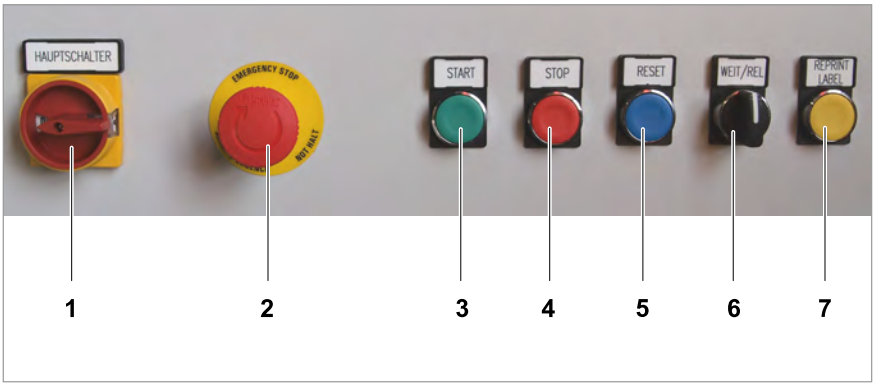


Fig. 26: Operating elements at the XPU.

1. Turn the main switch (1) 90° to the right (position „1“).

   The red signal lamp flashes, because the printer is not yet switched on.
2. Open the cabin door.
3. Keep the on/off switch (A) at the printer operation panel pressed for approx. 2 seconds.

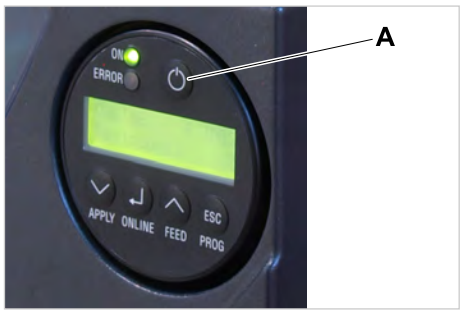


Fig. 27: Printer operation panel.

   The printer starts up and initializes the material rewinder. The rewinder dancer arm moves a couple of times back and forth. If no label material is inserted, an error message will show up. Afterwards, the printer is in online mode. Display:

```
ONLINE X JOBS
```

4. Close the cabin door.
5. Press the RESET button (5).

   The signal beacon lights red. Next step: Starting the machine.

Starting/stopping/switching off the machine

Starting the machine

> The procedure described below concerns the XPU after switching it on or after stopping it, not after an emergency stop or an error.

Prerequisites:

- Machine is switched on
- Consumables are inserted
- Printer is ready for operation
- The signal beacon lights red.

➔ Press the START button (3).

The XPU is now ready for operation and is waiting for a start signal. The signal beacon switches to green.

Starting after an emergency stop

After an preceding emergency stop, the XPU has to be started as follows:

1. Ensure that
   – the emergency stop button is unlocked (pulled out)
   – the cabin door is closed
2. Press the RESET button (5).
3. Press the START button (3).

Stopping the machine

Prerequisites:

- Machine is operating
- Signal beacon lights green

➔ Press the STOP button (4).

After having finished the current application cycle, the XPU stops. The signal beacon switches to red.

Emergency stop

➔ Press the EMERGENCY STOP button (2).

> Alternatively, the emergency stop is triggered by opening the cabin door during operation.

All movements of the XPU are stopped immediately. The signal beacon switches to red.

Switching off the machine

Prerequisites:

- Machine is operating
- Signal beacon lights green

➔ Stop the machine.

➔ Turn the main switch (1) 90° to the left (position „0“).

MECHANICAL SETTINGS AT THE PRINTER

Position the label sensor

The printer is equipped with a transmission sensor.

By moving the red thumb wheel, you can adjust the sensor within a range of 100 mm perpendicular to the material (see fig. below).

Reading the value

Set value = punch position – 2 mm

…where:

Punch position	Distance of punch from (inner) edge of material
Set value	Dial value to be set by turning the red wheel.

Example: Punch centre = 11mm from left edge, subtract 2mm leaving 9mm as the setting.

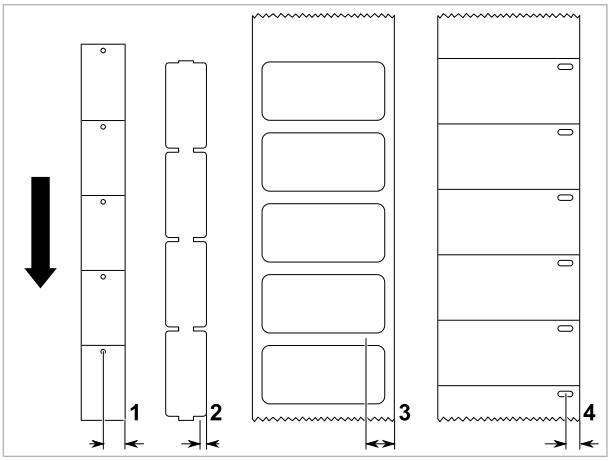


Fig. 28: Measuring the punch position (RH machine). C: arbitrary sensor position with centre die cut label material.

Setting the sensor

➔ Adjust the wheel (2) until the required setting faces the marking (3).

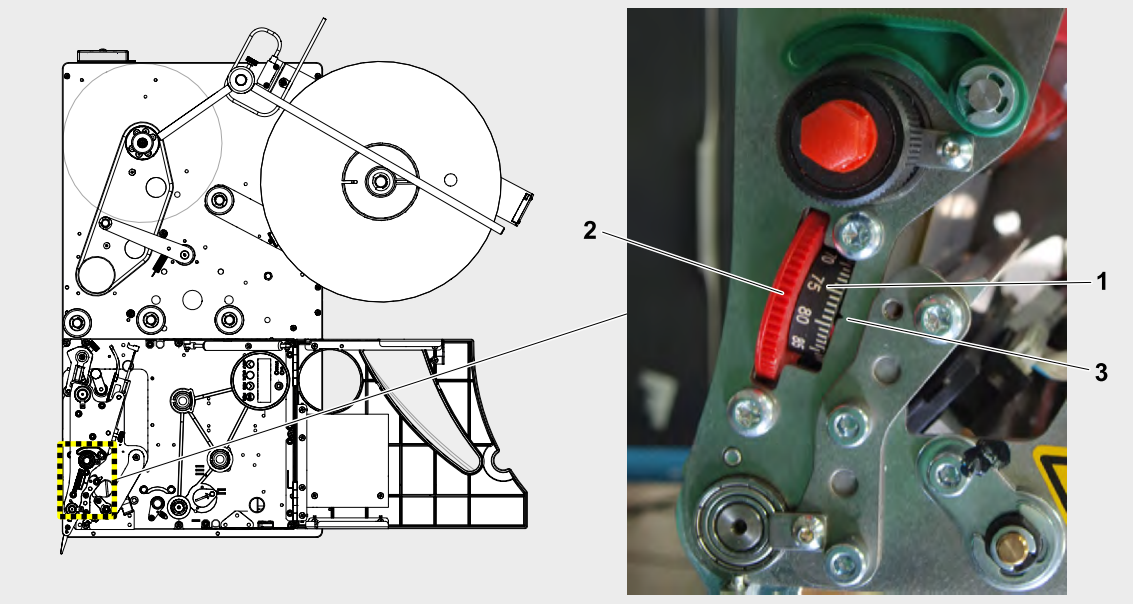


Fig. 29: Thumb wheel (2) of the label sensor.

Setting the ribbon tension

For optimum printing results, the ribbon must run without creases. This can be achieved by correctly setting the torque on the rewinding mandrel and the braking torque on the unwinding mandrel.

The factory settings cover a wide range of different ribbon widths. It may be necessary to readjust the ribbon tension for very narrow or very wide ribbons.

The braking torque of the ribbon mandrels can be ad-justed using the red plastic hex bolts (1) on the rib-bon mandrels. Turning clockwise increases the torque. The caps (2) are used to lock the bolts into place so that they are not adjusted unintentionally

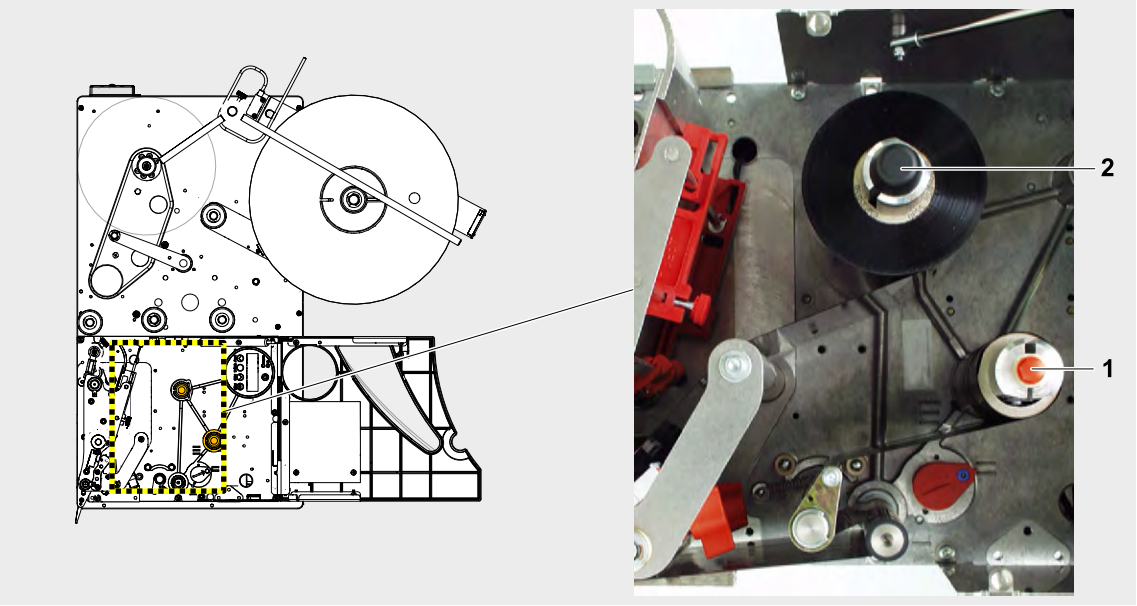


Fig. 30: Ribbon mandrels on the printer.

The entire length of ribbon must run evenly and crease-free between the mandrels. The following parameters are helpful for adjustments:

The ribbon…

- is slack or has creases
- is wound too loosely

➔ Increase unwinding/winding torque (turn bolt clockwise).

The ribbon…

- stretches visibly or tears during the printing process
- is not being transported properly

➔ Reduce unwinding/winding torque (turn bolt anti-clockwise).

Setting the printhead pressure

Different material widths and thicknesses affect the contact pressure of the print head on the print roller.

> CAUTION!
>
> Shortened service life of print head.
>
> ➔ Always set the weakest printhead pressure that will produce acceptable printing results.

The contact pressure can be set with an adjusting knob (A) in 3 stages:

- Stage "I": position for very thin and/or narrow material
- Stage "II": (pre-setting) position for material of medium width/thickness
- Stage "III": position for very thick and/or wide material

Tools: coin or large screwdriver

Setting:

➔ Turn the adjusting knob until the arrow of the knob (A) is positioned over the mark for the desired stage.

> The adjustment knob locks in 3 positions.

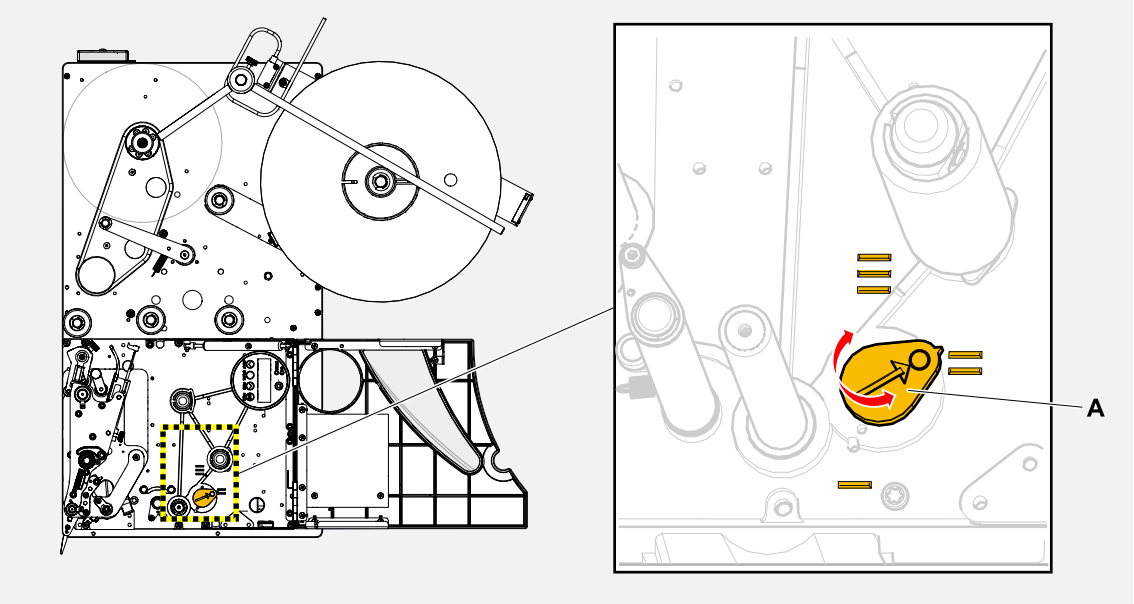


Fig. 31: Move the adjustment knob (A) to one of the three locking positions.

SETTING AND MONITORING THE MACHINE

Printer 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.

For further details on setting options in the parameter menu, see section “Parameter menu printer” on page 27.

Label pitch

➔ Switch to offline mode.

To measure label pitch automatically:

➔ Press the FEED + PROG keys.

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 and transferred to parameter PRINT PARAMETERS > Material length. Parameter PRINT PARAMETERS > Material type is set to "Punched"

Display of the measured label pitch:

```
OFFLINE          X    JOBS
xxx.x mm
```

To enter the label pitch manually:

1. Measure label pitch (C).
2. Navigate to PRINT PARAMETERS > Material length and enter the measured value in millimetres.

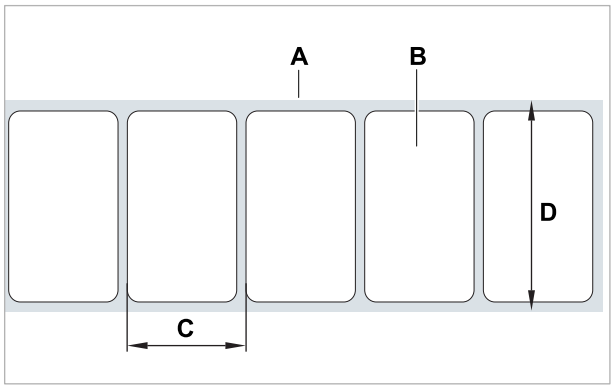


Fig. 32: Label material (self-adhesive labels)

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. Enter the measured value in millimetres.

Material type

1. PRINT PARAMETERS > Material type = „Punched“.
2. SYSTEM PARAMETER > Label sens. type = „Punched“.

Print process

Direct thermal:

➔ SYSTEM PARAMETER > Ribbon autoecon. = „Thermal printing“.

Thermal transfer:

➔ SYSTEM PARAMETER > Ribbon autoecon. = „Off“.

Reducing use of the printhead

Use of the printhead can be reduced in the thermal direct print process by raising it for extended sections with no printing.

➔ SYSTEM PARAMETER > Ribbon autoecon. = „Thermal/headlift“.

Ribbon saving

➔ SYSTEM PARAMETER > Ribbon autoecon. = „On“ or „.On Turbo“.

For details about the ribbon saving function, refer to the „User manual ALX 92x“, chapter „Technical data“ > „Automatic ribbon economy“.

Monitoring functions

Missing labels

Normally a missing label on the label belt 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 PARAMETER > Miss. label tol. is set, an error message can be generated after one, or not until after several missing labels.

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

At the same time the machine stops.

Ribbon reserve

To monitor the ribbon reserve, a critical diameter can be set for the ribbon roll. If the diameter falls below this level, the following - flashing - message appears:

```
FOLIEØ       X  JOBS
```

➔ Set SYSTEM PARAMETER > Foil end warning to the preferred ribbon roll diameter in millimetres

Material end / roll diameter

(OD = outer roll diameter)

To facilitate quick and smooth changing of the material roll, the machine can send an alarm to operating personnel in advance before the end of the material roll. The optional OD sensor is used for this purpose.

Depending on the configuration and setting of the machine, different behaviour occurs at material end or when a critical roll diameter is reached:

- No OD sensor

  Message at material end:

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

  The machine stops.

- With OD sensor / connected to USI (standard in XPU)

  Requirements:

  – OD sensor is installed

  – DP INTERFACE > Material signal = „On“

  Depending on the machine setting, a warning signal or an error message appears:

  A) Warning signal

  With the setting DP INTERFACE > Mat. signal stop = „Off“, if the critical OD is reached, a warning signal is activated at the USI, which can for example switch a signal lamp. The machine *doesn´t* stop.

  B) Error message

With the setting DP INTERFACE > Mat. signal stop = „On“, if the critical OD is reached, an error signal is activated at the USI. The machine stops and the following message appears:

```
Status num:     5123
USI Material low
```

Operation

SWITCHING ON THE MACHINE

See chapter“Switching on the machine” on page 33.

INSERTING/REPLACING LABEL MATERIAL

WARNING!
Danger of injury caused by falling label roll.
➔ Wear safety shoes.

WARNING!
During operation, the printhead can become hot!
➔ Be careful when touching the print head!.

Inserting a label roll

Prerequisitions

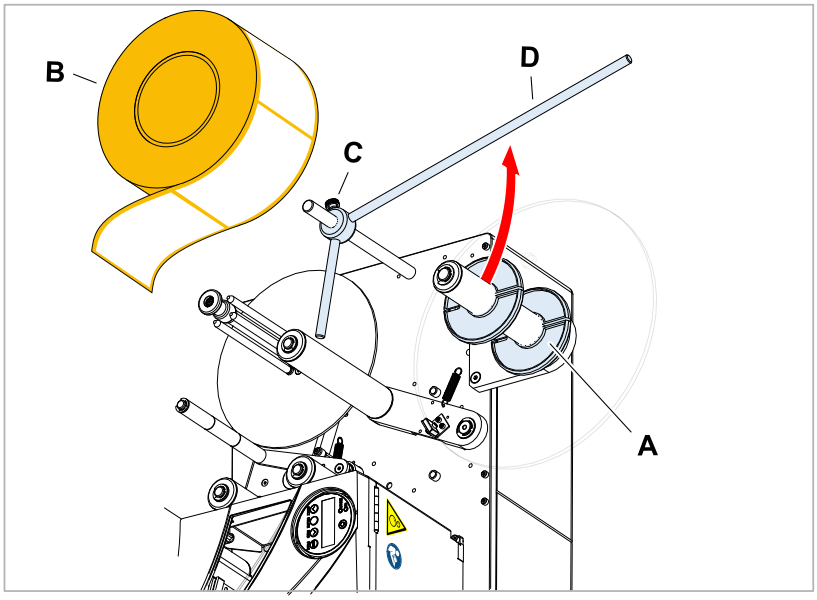
- XPU ist stopped
- Cabin door is opened

All the following steps are done at the printer within the cabin.

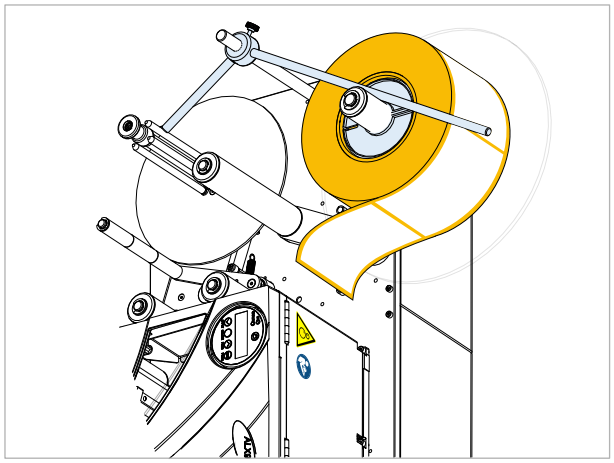
Procedure

1. If necessary, adjust the diameter of the unwinding mandrel to the core diameter of the material roll using the provided adapter rings (A).
2. Loosen thumb screw (C) and swivel guide rod (D) aside.

3. Push the material roll onto the unwinder (C) until it stops.



4. Swivel guide rod to the unwinder axle and shift it close to the material roll. Tighten the thumb screw:



Threading in the label web

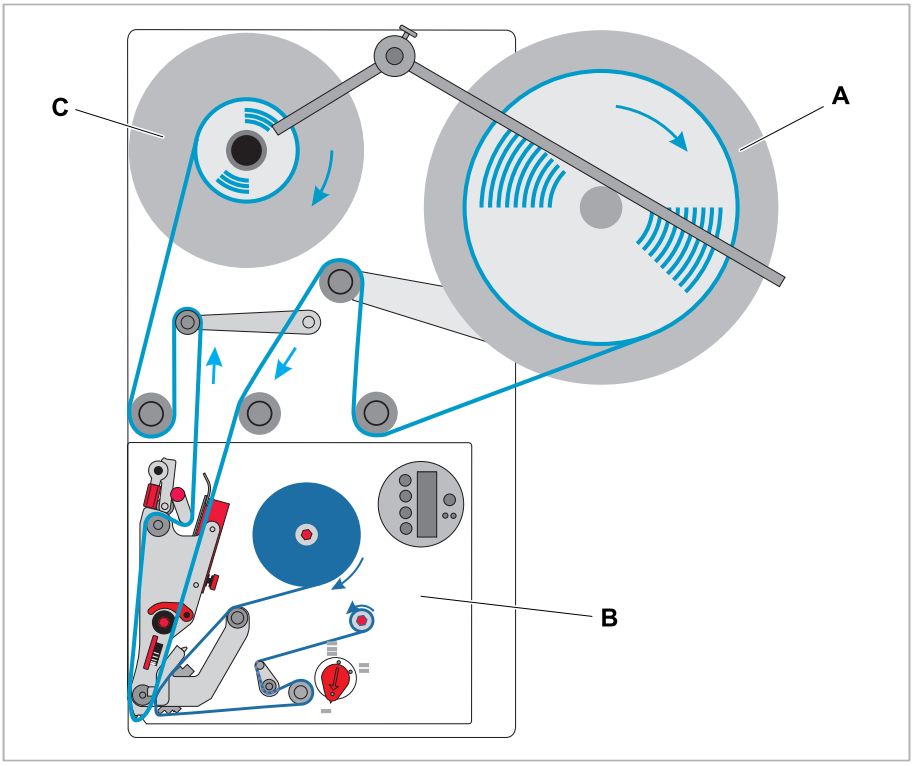


Fig. 33: The threading diagram shows the path of label material and ribbon through the printer (A = unwinder; B = print module; C = rewinder).

Prerequisitions

- XPU ist stopped
- Cabin door is opened

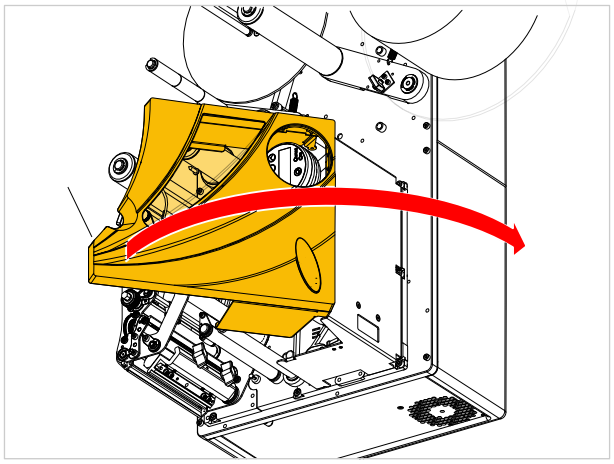
All the following steps are done at the printer within the cabin.

Procedure

Threading the label web into the print module

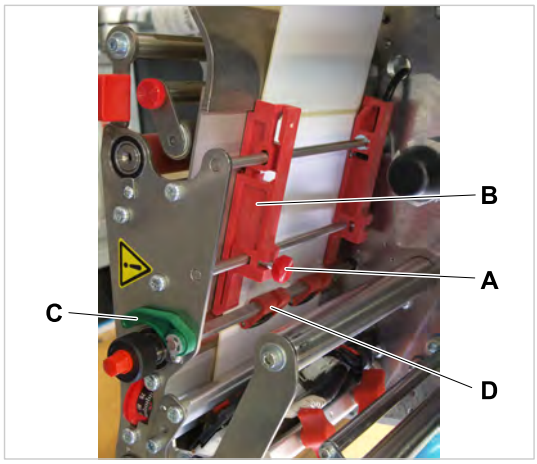
1. Open the printer cover:

   To to so, hold the cover on the bottom left corner (A).



2. Adjust the material guide to the width of the label web. To do this, release the thumb screw (A) on the outer material guide (B), push the material guide up to the edge of the label material and screw in the thumb screw again until it is tight.

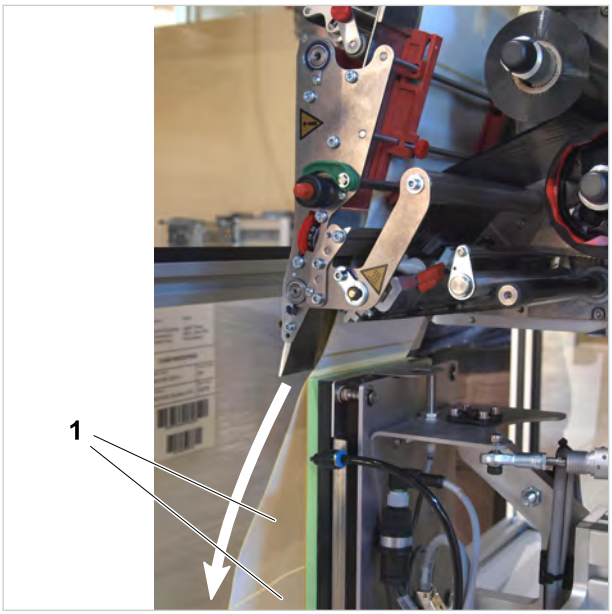
   The label material should move easily between the guides.



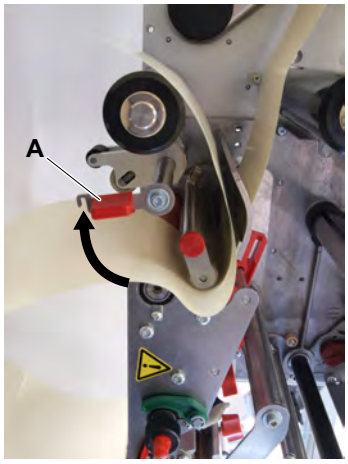
3. Push the label material through the material guide and up under the pressure rollers.
4. Press the green lever (C) to lift up the contact rollers (D). Hold the lever pressed and push approx. 50 cm of label material through under pressure rollers and printhead.
5. Press down the green lever and position the contact rollers on the label web while doing so.

   The contact rollers should press down the material evenly.

6. Peel off the labels (1) between the printhead and the end of the label web.

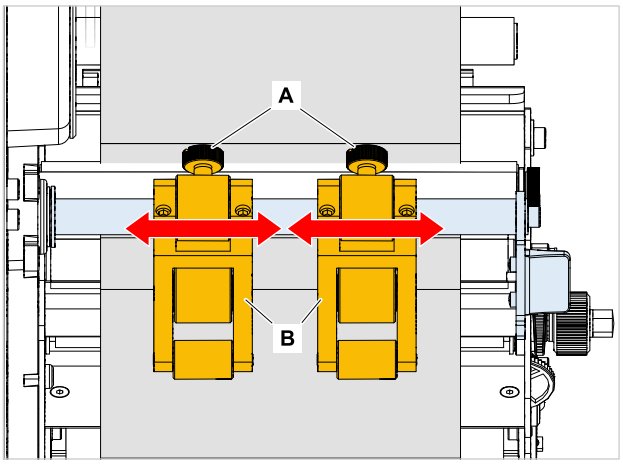


7. Open the pressure roller lever (A) by pressing it downwards.



8. Pull the backing paper backwards underneath the printing module and insert it as illustrated.

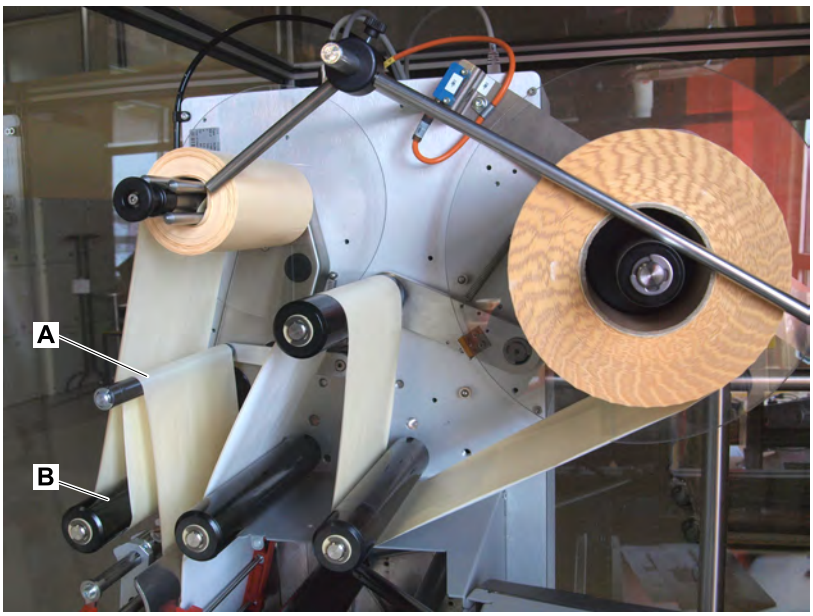
9. Loosen the two thumb screws (A) at the spring-suspended blocks. Position the spring-suspended blocks (B) in a way that the contact rolls press symmetrically on the backing paper. Retighten the thumb screws.



10. Tighten the backing paper backwards and close the lever.

Threading the label web onto the rewinder

11. Guide the backing paper around the dancer lever (A) and the deflection roller (B).



12. Insert the end of the backing paper into the rewinder:

13. Turn the rewinder manually clockwise, until the backing paper is tightened.

Replacing a label roll

To keep downtimes during production as short as pos-sible, the roll should be changed as quickly as possible.

Threading the label material through the entire machine is relatively time consuming. Threading in can be avoid-ed by connecting the beginning of the new material roll to the end of the old material roll (= splicing). This means that the material end must be detected before it is too late.

Various functions are provided for detecting the materi-al end; see section Monitoring functions on page 40.

> CAUTION!
>
> Hazard of material jam. This can damage the machine.
> The backing paper rewinder can exactly rewind the amount of backing paper remaining from a material roll with 300 mm diameter. A backing paper roll exceeding the diameter limit can stall and damage the machine.
>
> ➔ Always remove the backing paper from the rewinder if you insert a new material roll.

Prerequisitions

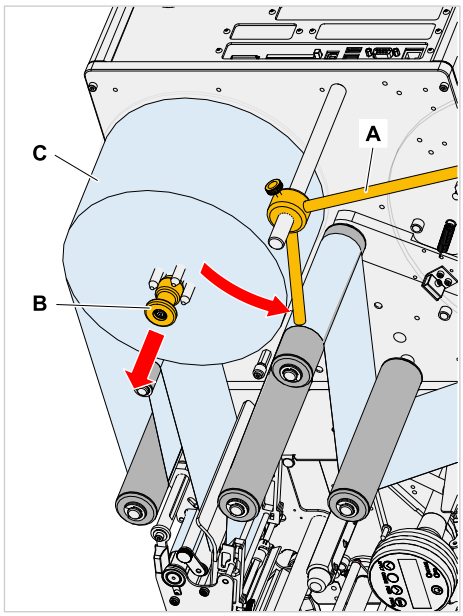
- XPU is stopped
- Cabin door is opened

All the following steps are done at the printer within the cabin.

Procedure

Remove wound carrier material

1. Turn thumb screw loose and swivel guide rod (A) aside.



2. Pull out the release button (B).
   The rewider's spreading mechanism is loosened.
3. Remove wound backing paper (C).
4. Swivel guide rod to the unwinder axle and shift it close to the material roll. Tighten the thumb screw.

Insert a new label roll

5. Remove the empty label roll and the rest of the label web.
6. If necessary, clean rollers, material guides and printhead, see chapter „Cleaning the printer“.
7. Insert a label roll; see section Inserting a label roll on page 42.

INSERTING/REPLACING RIBBON

> WARNING!
> The printhead can become hot during operation!
> ➔ Be careful whenever touching the printer.

Inserting ribbon

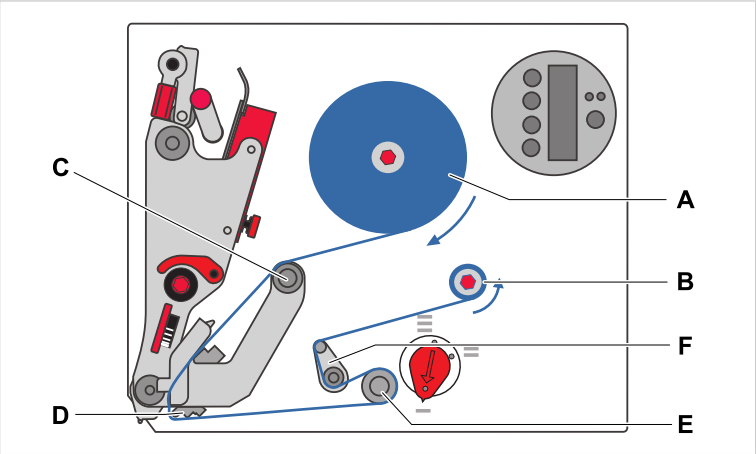


Fig. 34: Threading diagram for ribbon (A = ribbon unwind mandrel, B = ribbon rewind mandrel, C = deflection, D = print head, E = ribbon roller, F = strain relief).

Prerequisitions

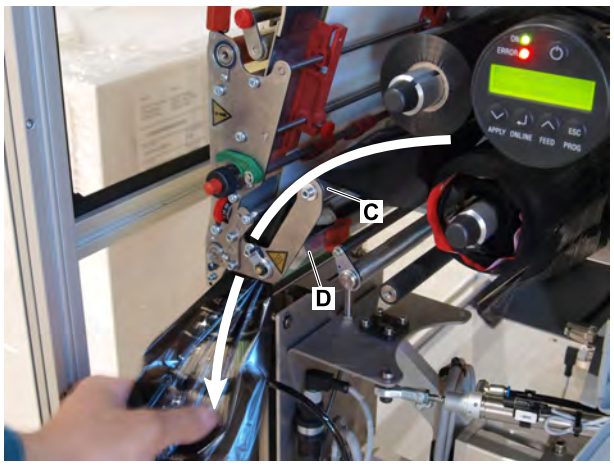
- XPU is stopped
- Cabin door is opened

All the following steps are done at the printer within the cabin.

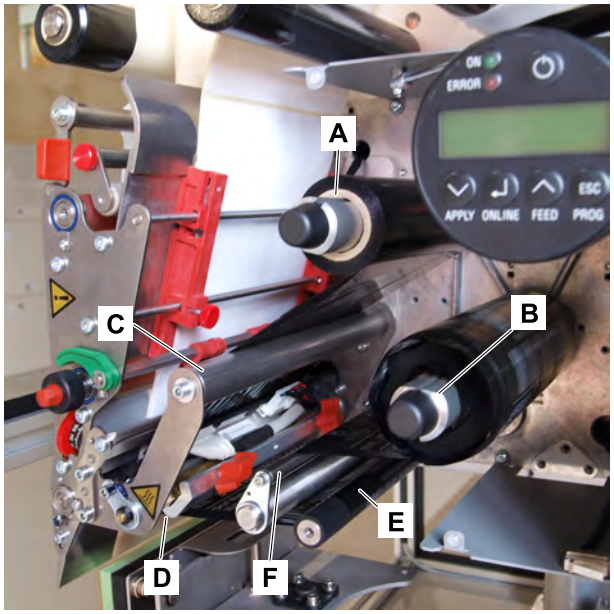
Procedure

1. Open the cover.
2. If necessary remove used ribbon.
3. Place a new ribbon roll on the ribbon unwinding mandrel (A). Insert an empty take-up roll onto the ribbon rewinding mandrel (B).

4. Insert the end of the ribbon below the ribbon deflector (C) and thread through to side of printhead.



5. Pull the ribbon rearwards under the printhead. Next, unwind some ribbon and smoothen it out.
6. Pull the ribbon to the right and, as shown, pass it around the ribbon roller (E), ribbon deflection roller and strain relief (F).



7. Fasten the end of the ribbon to the take-up roll mandrel.
8. Close the cabin door.
9. Start the XPU.

Changing ribbon

This section describes changing ribbon at a printer with activated roll diameter monitoring (standard with XPU), see chapter Monitoring functions on page 40.

Prerequisitions

- XPU is stopped
- Cabin door is opened

All the following steps are done at the printer within the cabin.

About this task

As soon as the critical diameter is reached, the message appears:

```
FOILØ       X  JOBS
```

Follow these steps:

Procedure

1. Open the front cover.

   Display:

   ```
   PrintStatus: 5103
   Cover open
   ```

2. Change the ribbon roll.
3. Close the front cover.

   The status message is confirmed automatically.
4. Press the FEED key.

   The printer switches back to online mode.
5. Close the cabin door.
6. Start the XPU.

PRINTING

Creating print jobs

There are two ways to create a print job:

- Layout software + printer driver

  Requirement: A printer driver must be installed on the PC.

  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[6].

- Text file + Easy Plug

EXPERTS The label layout is described by a sequence of Easy Plug commands saved in a text file.

Installing the printer driver

You can find a driver for the ALX 926 and one of the following Windows operating systems on our documentation CD or on the Novexx web page[7]: Vista / Windows 7 / Windows 8 / Windows 8.1 / Windows 10 / Windows Server 2008 / Windows Server 2008 R2 / Windows Server 2012 / Windows Server 2012 R2 (the driver works also with Windows XP, but without support).

CD installation:

1. Insert the documentation CD in the CD drive of the host PC.

   The CD starts automatically. It contains printer drivers for commonly used Windows operating systems.

2. In the "Printer Documentation" window, click on *Printer Drivers and Label Software* > *Install* > *Printer Drivers*.

   The installation wizard is launched.

3. Follow the instructions of the installation wizard.

Transferring a print job by data cable

Prerequisite:

- The database interfaces of the host PC and printer must be connected with a suitable data cable.
- The database interface must be set accordingly in the printer's parameter menu.

To use layout software:

1. Select a suitable database interface in the layout program.
2. Start printing.

Sending a command file directly:

➔ Open the Windows command prompt.

To send via serial interface (COM1):

➔ `copy testjob.txt com1.`

EXPERTS To send via USB or Ethernet interface:

➔ `copy testjob.txt \\ComputerName\ShareName` , where…

- *ComputerName*: can be found under Windows 7 as follows:

6) www.nicelabel.de
7) www.novexx.com

1. Click START.
2. Type „System Information“ into the search field. A window opens.
3. In the right part of the window, seek the entry „System Name“. The string right of it is the ComputerName.

- *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:

1. Open START > „Devices and Printers“.
2. Right click on the ALX 926 symbol, then left click on „Printer Properties“.
3. Open the „Sharing“ tab (see fig.)
4. Enter a „Share name“.
5. Click OK.

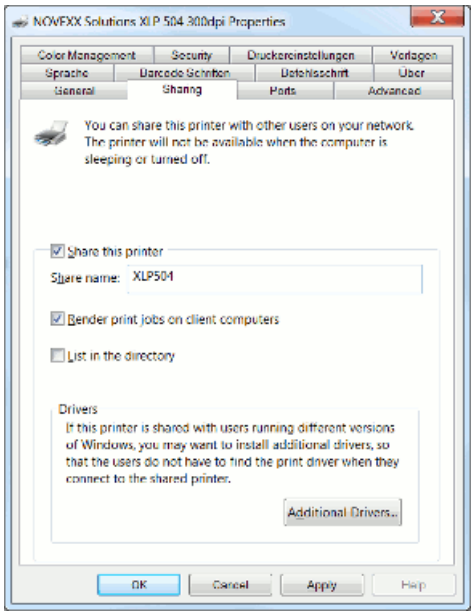


Fig. 35: Entering a share name under Windows 7.

Transferring a print job using a memory medium

Prerequisite:

- The printjob is stored on an external storage medium (SD card or USB thumb drive) in folder `\formats`.

  ‖ Due to the higher data transfer speed, it is recommended to use a SD card. ‖

- The file has the ending `.for`.
- Drive letter `C:` must be assigned to the storage medium (that is, INTERFACE PARA > >DRIVEASSIGNMENT > Drive C must be set to that storage medium on which the file with the printjob is stored, that is „SD card“ or „USB thumb drive“).

Starting the print job:

1. Switch off the printer.
2. Connect the storage medium to the printer..

3. Switch on the printer.
4. Switch to standalone mode.
5. Select and start a print job.

For details refer to „User manual ALX 92x“, chapter „Operating modes“ > „Standalone mode“.

Error messages

STATES OF THE SIGNAL BEACON

Fig. 36: The signal beacon on the cabin of the XPU lights green, yellow or red.

Meaning of the colors

Green	The XPU is switched on and *ready for operation*.
Yellow	*Warning*: The label material starts to run out
Ret	An *error* occured or the XPU was *stopped*

Display of errors and warnings

Red, flashing fast

Status: Machine stopped, applicator in home position.

Cause: Scanner failed reading barcode for several times.

Remedy:

1. Check scanner and label (check especially the correct mounting angle of the scanner).
2. Press RESET.
3. Press WEIT(er) or RE(lease) and simultaneously START (for details see below).

Red, flashing

Status: Machine stopped, applicator extended.

Cause: Applicator was stopped by an obstacle or it didn´t reach the pallet.

Remedy:

1. Check applicator, pallet and compressed air supply.
2. Press RESET.
3. Press WEIT(er) or RE(lease) and simultaneously START (for details see below).

Red, flashing

Status: Machine stopped, applicator in home position.

Cause: Printer error.

Remedy:

1. Check printer.
2. Press RESET.

3. Press WEIT(er) or RE(lease) and simultaneously START (for details see below).

Red

Status: Machine stopped, applicator extended or in home position.

Cause: Cabin door is opened or emergency stop button is pressed or emergency stop circuit is not reset.

Remedy:

1. Check cabin door and emergency stop button.
2. Press RESET.
3. Press WEIT(er) or RE(lease) and simultaneously START (for details see below).

Yellow, flashing

Status: Normal operation

Cause: Label material is close to end.

Remedy:

➔ Check printer.

➔ Check label stock and, if necessary, renew it.

Function of the WEIT/REL switch

After an error there are 2 possible ways to restart the XPU. The selection is done by turning the WEIT/REL switch in the appropriate direction and simultaneously pressing the START button.

WEIT The XPU starts a new application cycle (german „WEITer“ means „continue“).

REL The XPU releases the pallet (RELease).

> Operation with scanner option: After a scanner error, the barcode on the applied label was not checked for readability. It is recommended to reprint the last printed label (press LABEL button) and to attach the label manually.

PRINTER STATUS MESSAGES

Error messages

When a fault occurs, the printer shows an error message on the control panel.

Error messages are based on the following outline:

```
PrintStatus: 5144
Rewinder init
```

where:

PrintStatus: Depending on the cause of the error, "PrintStatus:" (message generated by the print control) or "QueueStatus:" (message generated by the Easy Plug interpreter) appears here.

5144 The status number. This number is an easy way to identify the message.

Rewinder init Status text; brief description of the error

To delete an error message:

- Rectify the cause of the fault. For further details see section “List of the most frequent error messages” on page 58.
- Press the ONLINE key to delete the message.

Error messages that are *not* described below can only be rectified by qualified service personnel.

If an error that is not described here occurs:

- Press the ONLINE key to delete the message.
- Switch off the device, wait for 30 seconds and switch it on again.

If the error occurs repeatedly:

➔ Call in a service technician.

EXPERTS Error messages not mentioned here are described in the service manual of the printer („Service manual ALX 92x“).

‖ While an error message is being displayed, the "Error" signal output is active. ‖

List of the most frequent error messages

5001

No gap found

Status: The label sensor has not detected a label starting mark (punch or reflex marking).

Causes and remedies:

Incorrect setting of the material type.

➔ Check to ensure the setting of PRINT PARAMETERS > Material type matches the label material you are using.

Incorrect sensor type set (SYSTEM PARAMETER > Label sens. type).

➔ Check to ensure the set sensor type matches the label material (punches or reflex markings).

Incorrect label material inserted (material does not match the setting in PRINT PARAMETERS > Material type)

➔ Check the label material.

Incorrect position of label sensor.

➔ Check/correct position of label sensor.

Material guide not set correctly - the label starting marks are running past to the side of the label sensor.

➔ Check/correct the material guide setting.

Label sensor is dirty.

➔ Clean the label sensor.

The sensitivity of the label sensor is set too low. Materials with weak contrast between the ma-terial and backing paper or between the reflex marking and the material require increased sensor sensitivity.

➔ Increase the sensitivity.

Punch definition, material type and/or material length are specified incorrectly in the print job.

EXPERTS ➔ Check the print job (for details refer to the „Easy Plug manual“).

After confirmation with the online key, the material is automatically fed forward and the system searches for the next punch.

5002

Material end

Status: There is no more material in the material end sensor.

Causes and remedies:

Label roll is used up.

➔ Insert a new label roll.

Material guide not set correctly - the label are running past to the side of the material end sensor.

➔ Check/correct the material guide setting.

5003

Cover open

Status: The front cover of the printer is open.

➔ Close the front cover.

Closing the front cover automatically deletes the error message.

5008

Foil end

Status: Ribbon roll is used up.

➔ Insert a new ribbon roll..

The core of the ribbon roll is resting loosely on the dispenser.

➔ Use a ribbon roll with a suitable core diameter.

EXPERTS ➔ Adjust the spring plate on the ribbon unwinding mandrel so that the ribbon core is firmly seated (for details read „Service manual ALX 92x“).

5063

Press roll

Status: The lever of the backing paper feed roller (red lever) is open.

➔ Close the lever.

Closing the pressure roller automatically deletes the error message.

5110

Foil low

The diameter of the ribbon roll has reached the value set under SYSTEM PARAMETER > Foil end warning.

➔ Prepare to change the ribbon roll.

5123

USI Material low

Status: The outer diameter of the material roll has reached the set minimum value.

➔ Insert a new material roll.

➔ Prepare to change the label roll.

> If this message appears, the printer is not set correctly (for use in a XPU). Correct would be that a warning appears that doesn´t stop the printer but activates the yellow signal lamp.

Check the following setting in the parameter menu: DP INTERFACE > Mat. signal stop = „Off“.

Maintenance and cleaning

CLEANING INSTRUCTIONS

Safety

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 device before cleaning or maintenance!

➔ 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	Order No.
(Printer:) Print head	Cleaning stylus	95327
	Cleaning paper	5030
(Printer:) Rubber rollers (print roller, pressure roller, etc.)	Roller cleaner	98925
(Printer:) Deviator rollers	Cleaning solvent, alcohol, isopropyl alcohol	--
	Label release spray	A103198
(Applicator:) Pressure plate	Alcohol	--
Housing	Standard commercial neutral cleaning agent	--

Tab. 6: 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

CLEANING THE PRINTER

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.

Notes about cleaning the print head

Preventive measures

The thermal head (A) and its holder (C) are referred to together as the print head.

> CAUTION!
>
> Electrostatic discharge or contact with sharp edges can damage the printhead!
>
> ➔ Always protect the printhead against electrostatic discharge when performing maintenance and cleaning work!
>
> ➔ Never touch the thermal strip (B) with bare hands!
>
> ➔ Never contact the thermal strip with sharp objects!

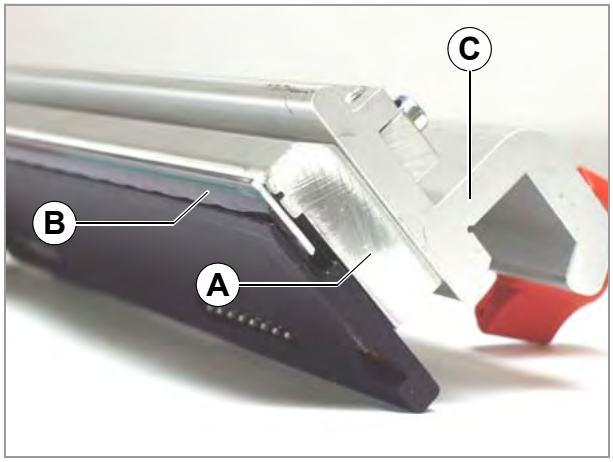
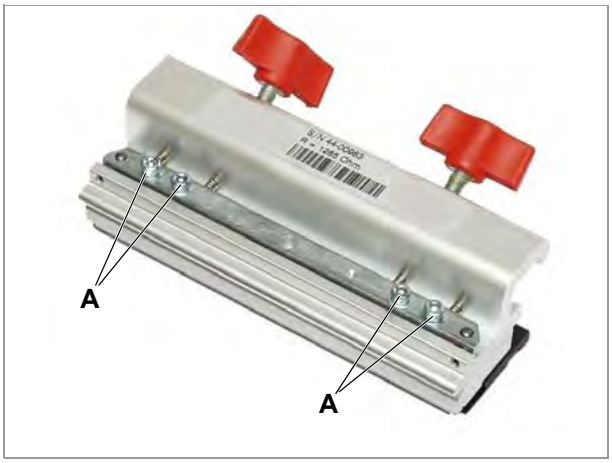


Fig. 37: Print head (A = Thermal head, B = Thermal strip, C = Holder for thermal head).

> CAUTION!
>
> Danger of irreversible adjustment of the print head position.
>
> ➔ Never loosen the screws (fig. below, pos. A) on the printhead.
>
> ➔ If a print head ever becomes misaligned, remove the entire printhead and send it in to us for realigning.



If you do not have suitable ESD protective gear (ESD arm band, ESD shoes, etc.), touch a grounded object (e.g. radiator) to discharge any static electricity before touching the print head!

Cleaning interval

- *Thermal transfer* print: every time the ribbon roll is changed
- *Direct thermal* print: every time the label roll is changed

Cleaning the printhead

Paper dust and coloured particles from the thermal transfer ribbon may collect on the printhead during printing. Over time, this can significantly impair the printing quality in the following ways:

- Contrast differences in label
- Bright strips in printing direction

WARNING!
Burn hazard!
The printhead can become hot during operation.

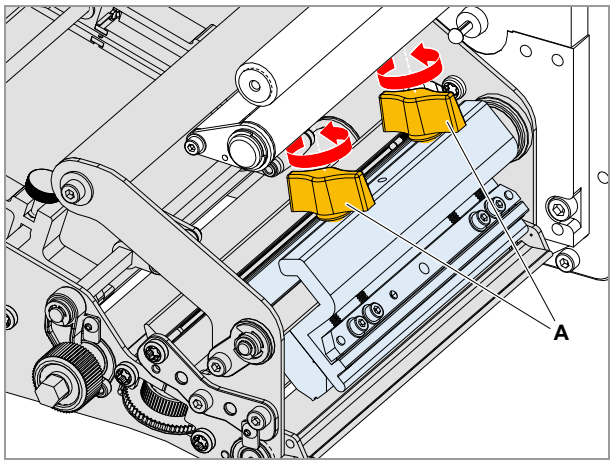
➔ Be careful whenever touching the printer.

Procedure

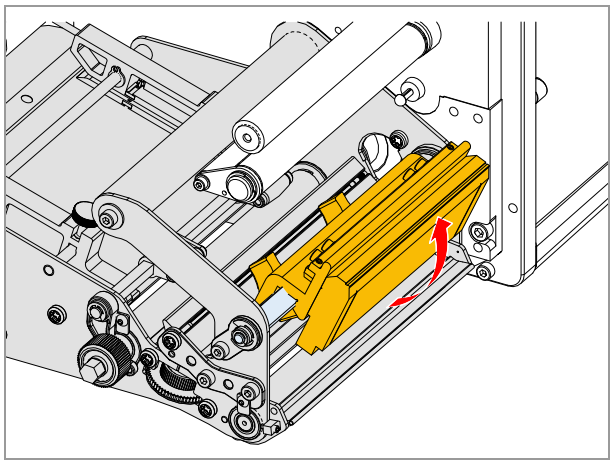
1. Switch off the XPU.
2. Remove the label material and ribbon.

3. Remove both wing bolts (A) until the printhead can be swivelled up.

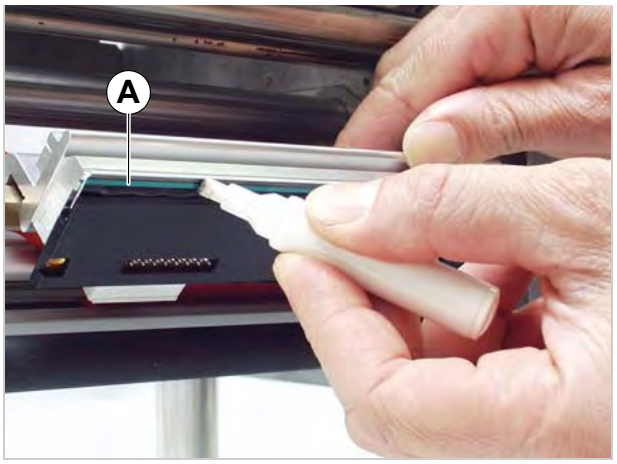
> Before swivelling the printhead up, shift it about 1cm towards the middle of the axle.
> If the printhead is not at the limit stop on the side, mark the position on the axle in advance.



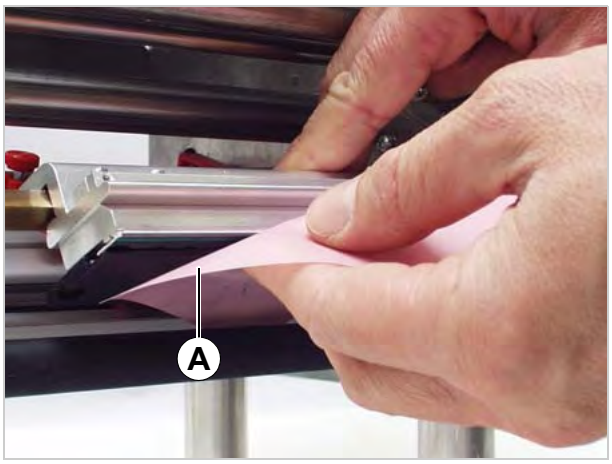
4. Rotate the printhead up (fig. below).



5. Wipe the thermal strip (A) - there are 3 different ways to do that:
   - Run the stylus some times back and forth across the thermal strip (A) of the printhead.



   - (Alternatively:) Rub the rough side of the *cleaning strip* (A) many times back and forth across the thermal strip of the printhead. As you do so lightly press the cleaning strip with your hand.



   - (Alternatively:) Moisten a *lint-free cloth with alcohol* and wipe the cloth across the thermal strip of the print head (fig. below).

6. After cleaning, move the printhead holder back to its former position and retighten the wing bolts.

   The wing bolts must press against the chamfer of the square axle.

   nsure that the printhead is properly positioned relative to the label edges (Factory set printhead position: at the limit stop on the inside of the black plastic bushing).

7. Before turning on the unit, always check whether the printhead cable has been properly plugged. If not, be sure to plug it in correctly.

Print head replacement

WARNING!
Burn hazard!
The printhead can become hot during operation.

➔ Be careful whenever touching the printer.

Procedure

1. Switch off the machine.
2. Remove the ribbon.
3. Pull out both plugs on the print head (fig. below).

   After switching off machine, wait at least 3 minutes before unplugging the printhead cable.

4. Remove both wing bolts until the entire printhead can be removed from the pressure shaft.

   If the printhead is not at the limit stop on the side, mark the position on the axle in advance.

5. Install the new printhead at the former position and retighten the wing bolts.

   Factory set printhead position: at the limit stop on the inside (black plastic bushing).

   The wing bolts must press against the chamfer of the square axle.

   Pay close attention to the position of the print head in relation to the edge of the label (to the marking or up to the limit stop).

6. Plug the printhead cables back into the printhead.

   The cables must not touch the ribbon!

7. The resistance of the new print head can be entered using the SYSTEM PARAMETER > Head resistance parameter.

The resistance is given on the printhead sticker (B).

CAUTION!

Entering the wrong resistance can damage the printhead!

➔ Enter the resistance that is printed on the installed printhead.

Testing the print head

The printer is equipped with a test function that checks the functionality of each single dot.

Dot check with status report

➔ Call SERVICE FUNCTIONS > Head dot test.

A status report is generated after the dot check to pro-vide information about the number and position of any dots that may be faulty.

Dot check with display message

➔ Press the APPLY + FEED keys.

Message indicating a faulty dot:

```
Status num: 5103
Dot defect
```

If all dots are fault-free, no message appears.

If an error message occurs, the current print job is stopped.

Duration of the dot check

The entire check can last from 10 s to several minutes depending on the printhead (the wider the print head and the more defective dots, the longer the duration) of the check.

Interrupting the dot check

CAUTION!

Danger of destroying individual dots on the printhead.

➔ Never quit a dot check by turning off the unit!

➔ Press the FEED + CUT+ ONLINE keys.

To cancel the dot check in situations where it is absolutely necessary, reset the unit!

Rubber rollers

Cleaning the rubber rollers at the printer.

About this task

The rubber rollers on the printer can be cleaned from the bottom of the machine without any additional assembly work. The ribbon roller is freely accessible while the cover is open and the ribbon is removed (fig. below).

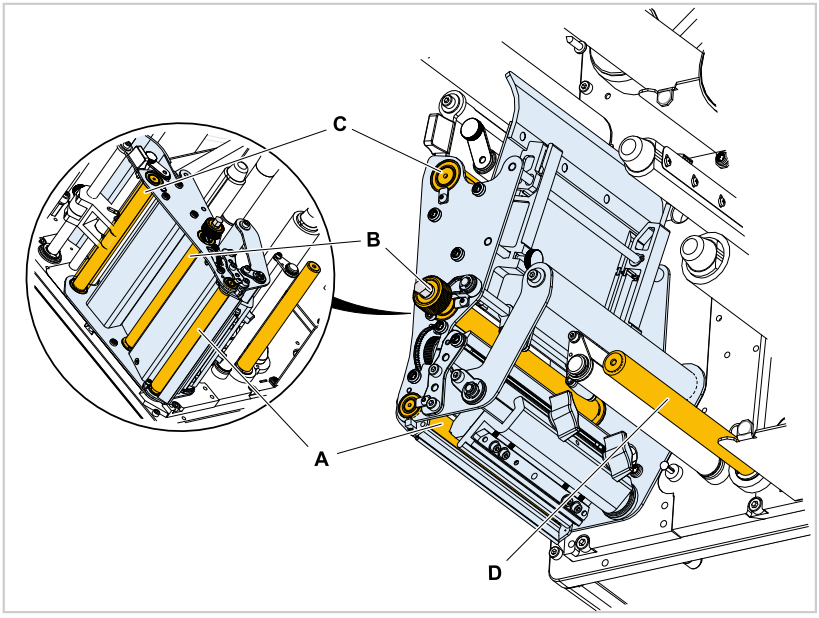


Fig. 38: Positions of the rubber rollers (A = Print roller, B = Brake roller, C = Feed roller, D = Ribbon feed roller)

Procedure

1. Switch off the XPU.
2. Remove the material and/or ribbon.
3. CAUTION!

   Danger of damaging the roller.

   ➔ Never use knives or sharp objects to clean the rollers!

   Wipe off the rollers with a dust-free cloth and roller cleaner.

   Rotate the roller step for step until it is completely clean.

Deviator rollers

Glue from the label material may adhere to the deviator rollers.

➔ Moisten a clean cloth with cleaning solvent and wipe off the dirty deviator rollers (fig.) with it.

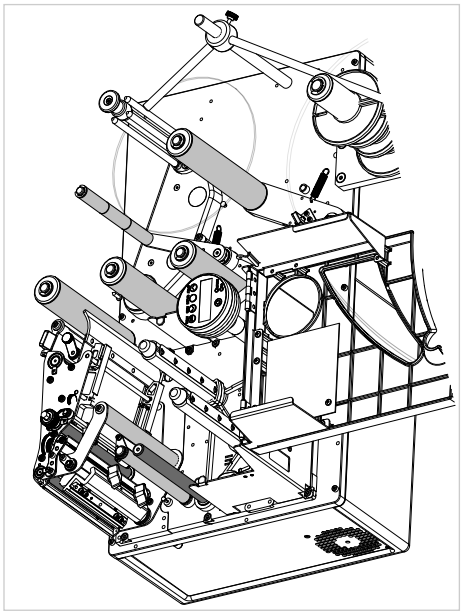


Fig. 39: Rubber rollers (dark grey) and deviator rollers (light grey) on the printer.

Backing paper deviator roller

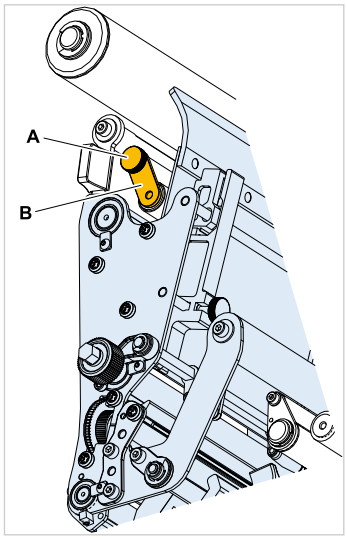
About this task

Clean the material deviator roller, if it is dirty with resi-dues of adhesive, labels or something similar:

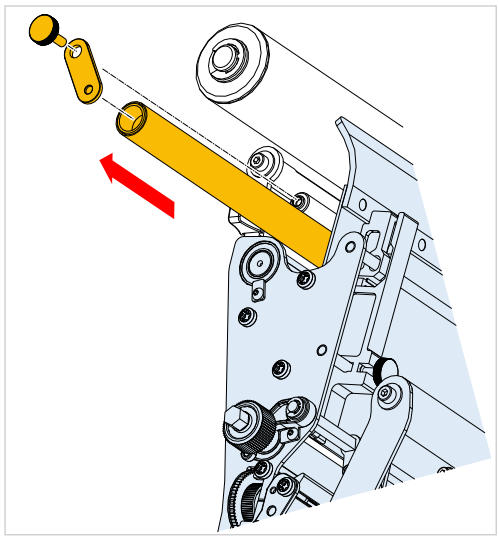
Procedure

1. Switch off the XPU.
2. Remove the label material.

3. Screw out the thumb screw (A) and take off the locking plate (B).



4. Pull the deviator roller off its axle:



5. Clean the deviator roller using cleaning fuel or adhesive removing solvent, depending on the degree of pollution.
6. Put the deviator roller back on the axle; apply locking plate and thumb screw.

Photo sensors

Clean the photo sensors regularly to remove any material residue and dust. The cleaning intervals depend on the materials in use.

Cleaning the punch sensor

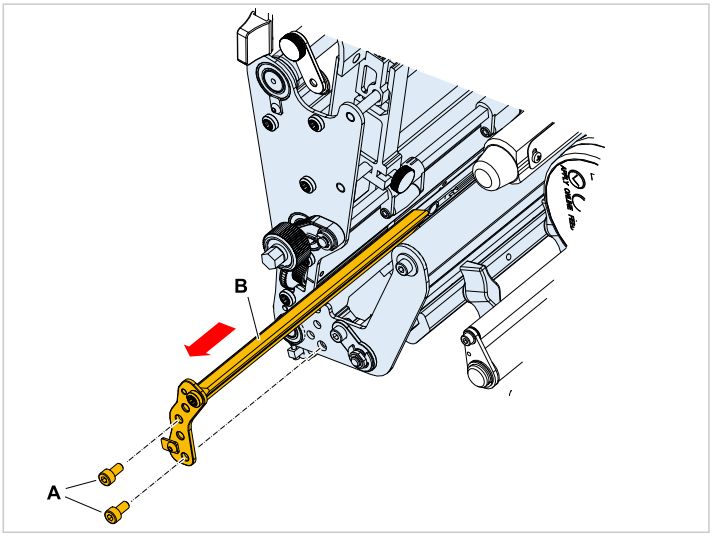
Prerequisitions

Tools: Hex socket screwdriver, 3 mm

To access the punch sensor, first remove the guiding section.

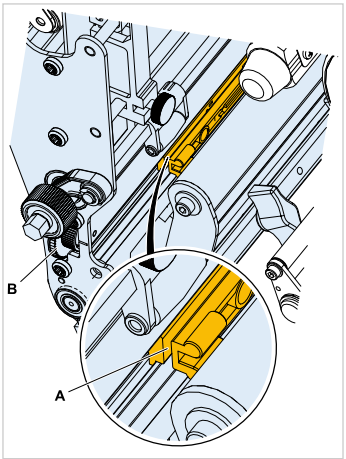
Procedure

1. Switch off the XPU.
2. Remove material and ribbon.
3. Remove the bolts (A).
4. Remove guide section (B) from side.



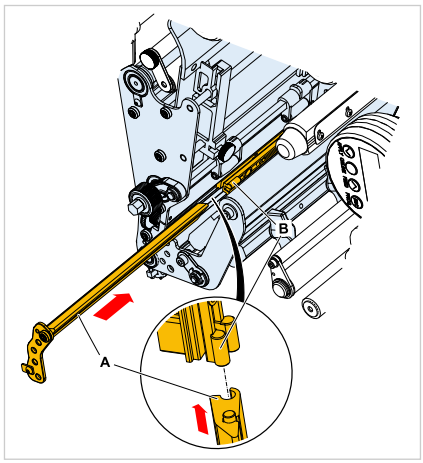
5. Write down the position of the sensor thumb wheel (B).
6. Turn the thumb wheel to move the sensor fork all the way to the outside.
7. Using compressed air, blow out the gap (A) in the sensor arm (canned air is available as an accessory).

> If the sensor is heavily contaminated, use cleaning solvent and a lint-free cloth to clean the sensor.



8. Reinstall the guiding section and fasten it with the bolts.

Push the guiding section with the groove (A) over the rear guide tab on the sensor fork (B).



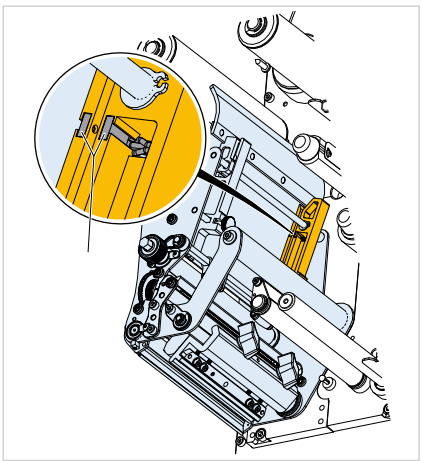
9. Move the sensor back to its original position.

Cleaning the material end sensor

The material end sensor (A) is located inside the material guide. The sensor must be cleaned of material and dust residue regularly. The cleaning intervals depend on the material in use.

➔ Clean the sensor arm using compressed air (canned air is available as an accessory).

If the sensor is heavily contaminated, use cleaning solvent and a lint-free cloth to clean the sensor.



Cleaning the ribbon path

All parts which come into contact with the ribbon must be cleaned on a regular basis. The following minimum intervals apply, whichever happens first:

- weekly
- after 5000 m ribbon

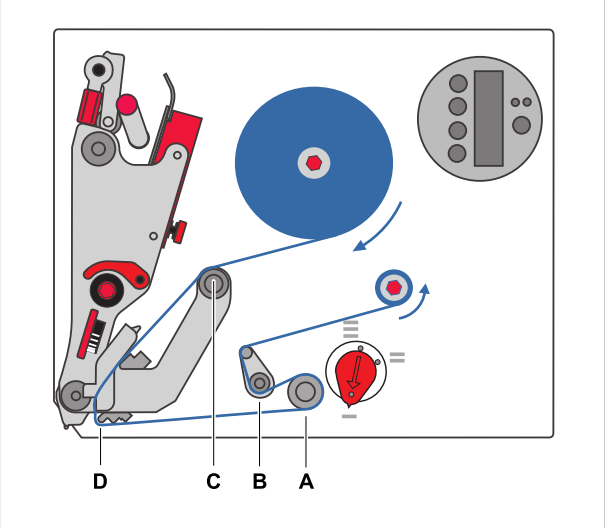


Fig. 40: Parts where ribbon residue gathers: A = Ribbon roller, B = Deflector roller with stress relief, C = Deflector, D = Deflector tab on print head

MAINTENANCE

Maintenance plan

The tasks listed in the table below have to be performed regularly, but *at least yearly*.

Subject	Weekly	Every 1000 hours	Task
Cleaning	X		Determine the degree of soiling of the machine: • Glue deposits at applicator plate or rollers? • Dust deposits in the printer? • Ribbon deposits at the print head? ➔ If necessary, clean the machine.
Compressed air service unit	X		➔ Drain the condensate vessel, see chapter “Draining condensate” on page 76.
EXPERTS Grease the applicator		X	➔ Lubricate the linear guiding.
EXPERTS Tighten screws		X	➔ Check, and if necessary tighten, all screws after the first week of operation and afterwards regularly all 1000 operating hours.

Subject	Weekly	Every 1000 hours	Task
Replacing filter liner		X	➔ Replace the filter liner at the printer blower, see chapter Replacing the filter liner at the printer on page 74. ➔ Replace the filter liner at the cabin blower, see chapter Replacing the filter liner at the cabin blower on page 75.
EXPERTS Optical check		X	➔ All visible cables and air hoses should be checked and found free of damage. ➔ The springs holding the applicator in position should be inspected to see if any is broken. ➔ Other irregularities must be repaired.

Tab. 7: Maintenance plan

Replacing the filter liner at the printer

> CAUTION!
>
> A clogged dust filter can result in overheating, thereby causing a machine failure.
>
> ➔ Replace the filter liner on the fan regularly.

The filter liner can be cleaned by blowing it out with compressed air or by washing it out.

Prerequisitions

Tool: Screw driver, medium size

About this task

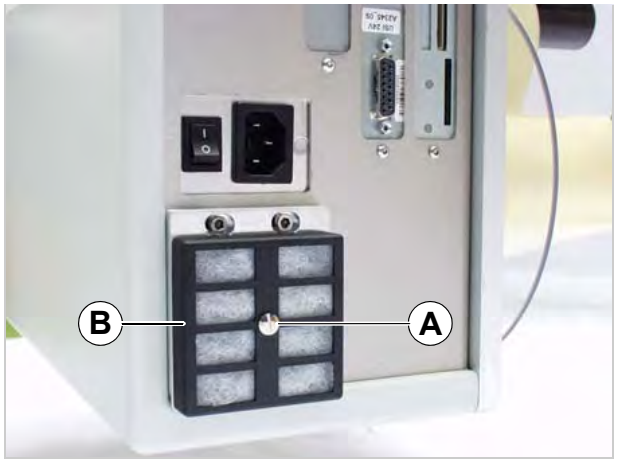
The replacement interval for the filter liner must be defined according to the specific circumstances. The following factors determine the frequency:

- Dust content of the air
- Operating duration

Procedure

To change the filter liner:

1. Turn the screw (A) by a quarter-turn. Remove the cover (B).



2. Replace the liner (part number for 5 liners: A2581).
3. Reassemble the filter housing cover. Turn the screw (A, fig. above) by a quarter-turn.

Replacing the filter liner at the cabin blower

About this task

The replacement interval for the filter liner must be defined according to the specific circumstances. The following factors determine the frequency:

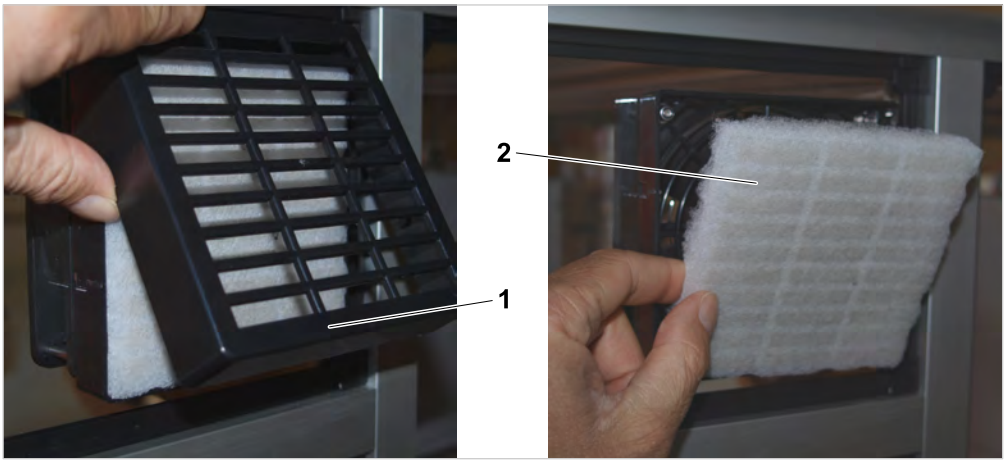
- Dust content of the air
- Operating duration

Approximate replacement interval: after *1000 hours* operation.

The filter liner can be cleaned by blowing it out with compressed air or by washing it out.

Procedure

1. Remove the cover (1) from the liner holder. To do so, lift the cover at both sides simultaneously.



2. Replace the filter liner (2).
3. Put the cover back on the liner holder and press it on evenly on both sides.

Draining condensate

About this task

The condensate gathering in the vessel at the compressed air service unit must be drained on a regularly.

Recommended interval: weekly.

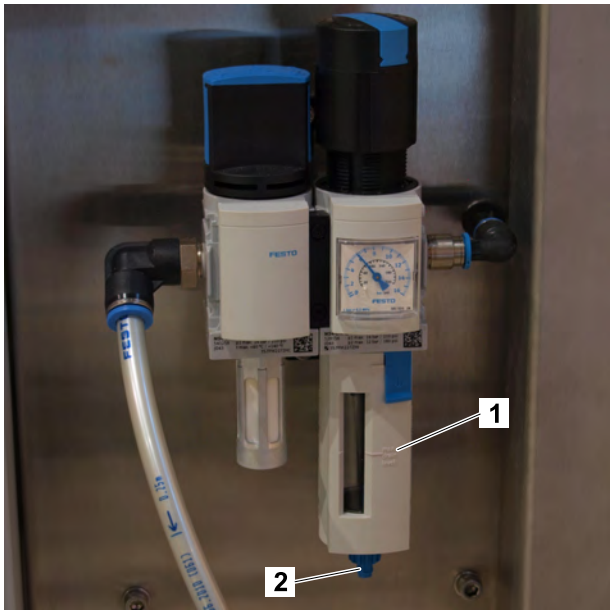


Fig. 41: Compressed air service unit at the XPU.

Procedure

1. Check, if the condensate level has reached the „Max.“ mark (1).
2. If the „Max.“ mark is reached, open the drain screw (2) at the bottom end of the condensate vessel and catch the condensate in a bucket.
3. Retighten the drain screw.

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