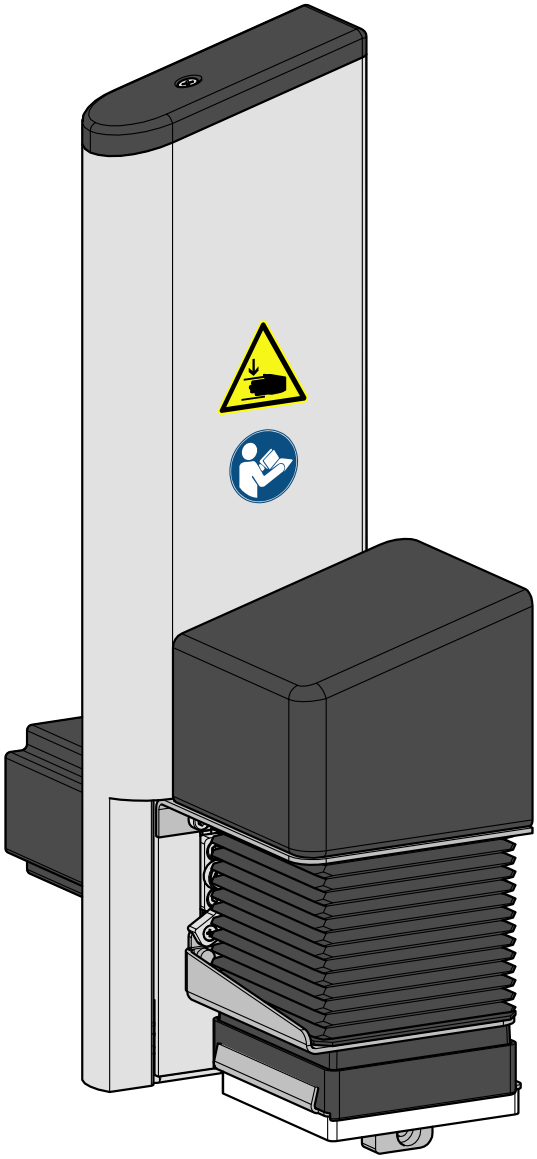
NOVEXX SOLUTIONS

OPERATING MANUAL

LTSA

Applicator



Edition 01 - 4/2018

Contents

Please note!

GENERAL INFORMATION

Validity of this manual and required compliance

Contents

This Operating manual refers exclusively to the Applicator LTSA. It is intended to help in proper installation, operation and adjustment of the applicator.

For technical questions that are not addressed in this Operating manual, please contact the manufacturer, NOVEXX Solutions.

NOVEXX Solutions customer service department is available especially for configuration settings and malfunctions.

Liability

NOVEXX Solutions reserves the right:

- To make changes in design and components, and to use equivalent other parts than those specified in line with technological progress.
- To change information in this manual.

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

Copyright

Printed in Germany

Manufacturer

Novexx Solutions GmbH

Ohmstrasse 3

D-85386 Eching, Germany

Tel.: +49-8165-925-0

Fax: +49-8165-925-231

www.novexx.com

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 spe-cially 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.

SAFETY INSTRUCTIONS

WARNING!

Shearing movement between applicator and dispensing edge!
Risk of crushing of the fingers between applicator and dispensing edge and between the moving parts of the applicator!

➔ During operation: Keep your hands away from the applicator!

➔ Operate the applicator only when it is firmly installed on the printer.

➔ Before starting and work on the applicator, switch off the printer and remove the mains plug (e.g. installing or cleaning the applicator)

CAUTION!

Risk of damage to the applicator!

➔ Do not use the applicator as a carrying handle for the printer.

The safety instructions above apply in particular to the applicator LTSA. For safe operation of the printer XLP 504 with connected applicator LTSA it is essential to also read and observe the safety instructions in the Operating manual of the printer.

WARNING SYMBOLS ON THE MACHINE

CAUTION!

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

➔ Do not remove warning symbols.

➔ Replace missing or illegible warning symbols.

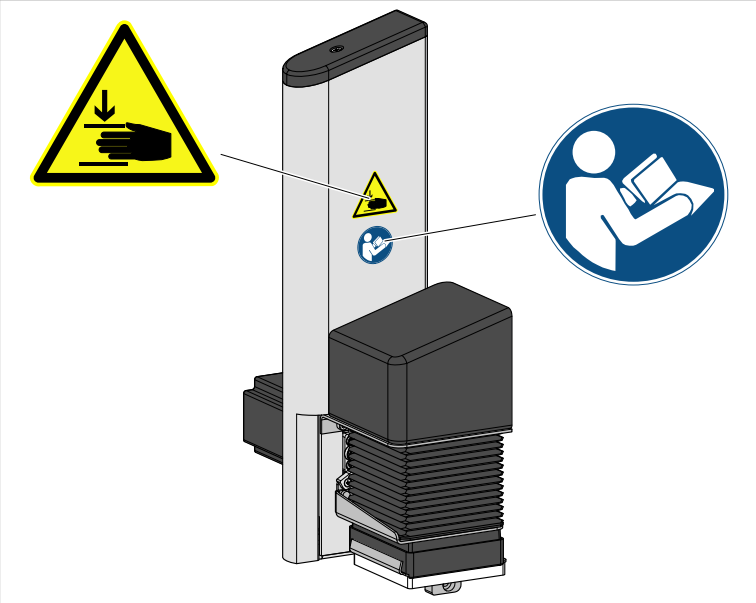


Fig. 1: Warning signs on LTSA.

Warning symbol	Meaning	Order No.
	The warning symbol "Danger of crushing" warns of dangerous movements of the device that could lead to crushing.	A103530
	The "Read manual" symbol prompts the user to read the Operating manual.	A5331

Tab. 1: Meaning of the warning symbols.

Product description

INTENDED USE

The Applicator LTSA is an additional device for XLP 504 label printers from NOVEXX Solutions. It takes over self-adhesive labels from the printer's dispensing unit and applies them to moving or stationary products. (For details of the printer prerequisites, see chapter "System requirements" on page 11).

The LTSA is bolted to the XLP 504 by means of a rigid connecting plate. It requires no separate power supply; it is connected to the printer by means of a plug connector and is supplied with power via the printer.

The controller of the LTSA is integrated into the firmware of the XLP 504. The application process is triggered by one of the following 4 possibilities:

- Press a button on the printer operation panel
- Easy Plug immediate command (#!D) at the data interface
- Press an *optional* foot switch (connected to the printer)
- External start signal received via the *optional* signal interface (e.g. from a product sensor)

Working position: The LTSA is an attachment for a tabletop printer. The application direction is therefore vertically from top to bottom.

Any other type of or more extensive application will be considered non-intended use. This includes in particular installation of the XLP 504 with LTSA in any other than the working position described above.

NOVEXX Solutions assumes no liability for damage resulting from any form of non-intended use of the printer.

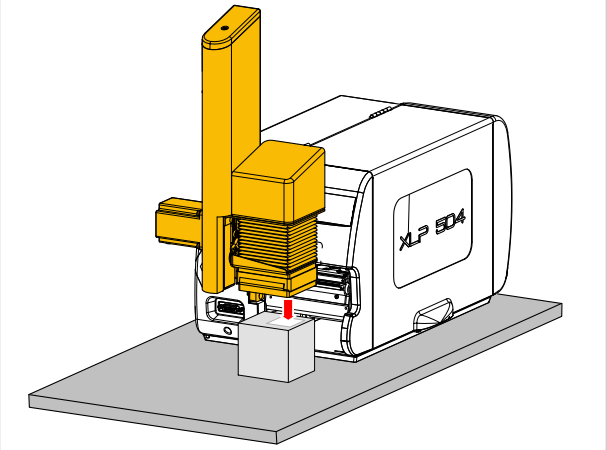


Fig. 2: Semi-automatic operation of the LTSA on a tabletop. The products are positioned by hand, the application process is triggered via a switch (e.g. foot switch).

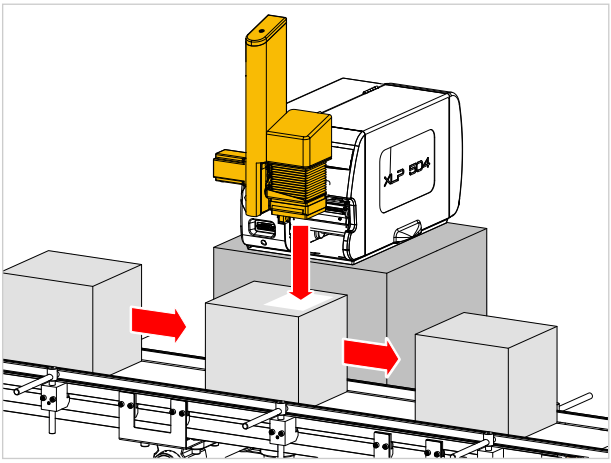


Fig. 3: Automatic operation of the LTSA on a conveyor. The application process is triggered by a start sensor (e.g. light barrier).

DESIGNATION & VIEW

LTSA stands for Light Touch Stepper Applicator

- *Light Touch* means that the label is only pressed on lightly because the applicator immediately starts its return stroke as soon as it contacts the product. This allows products with varying heights to be labelled.
- *Stepper* means that the applicator is driven by a stepper motor.

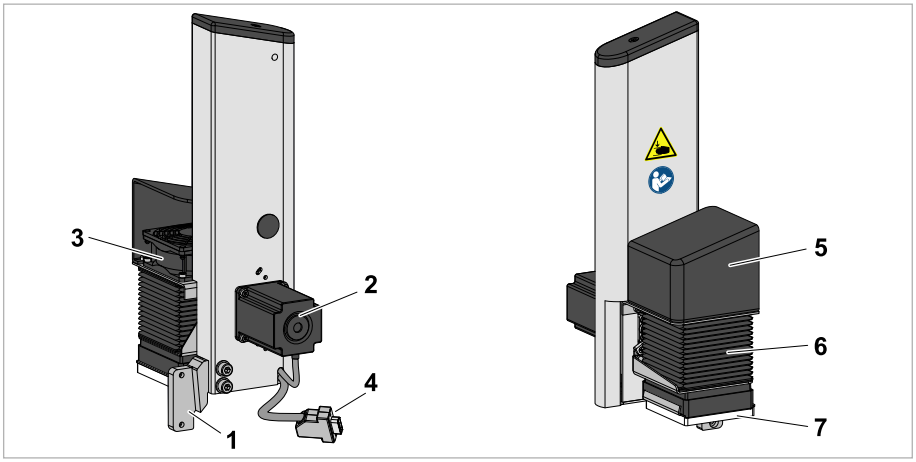


Fig. 4: Elements of the LTSA.

Item	Description
1	Adapter plate
2	Stepper motor
3	Fan
4	Connector cable
5	Fan cover
6	Bellows

Item	Description
7	Pressure plate

FUNCTIONALITY

The LTSA waits in home position in front of the dispensing edge and draws the label onto the foam pad on its underside as soon as it has been dispensed. The vacuum necessary for this is generated by a fan.

After the start signal, the LTSA moves its pressure plate down until it contacts a resistance (product), applies the label firmly to the product and immediately starts its return stroke. This automatic reversing function (“Light Touch”) allows products with different heights to be labelled. Any minor unevenness in the product surface is compensated by the foam pad of the applicator.

TECHNICAL DATA

Type of material	Self-adhesive labels
Label size (W x L)	min: 30 x 30 mm max: 80 x 80 mm
Stroke	max. 190 mm
Minimum required stroke (distance between home position and product contact)	30 mm
Application speed	max. 50 labels/minute
Product speed	max. 35 m/min
Application angle	90° ± 3°
Application direction	From top to bottom
Application precision	± 1 mm (on non-moving products)
Application force	10 N (with 90° application angle)
Air current source	Blowers
Weight	3.2 kg
Dimensions (W x H x D)	218 x 391 x 120 mm
Noise level	< 70 dB(A)
Ambient conditions	Closed rooms
	Working temperature: 5-40°C
	Storage temperature: 0-70°C
	Relative humidity: 30-80%, no water condensation

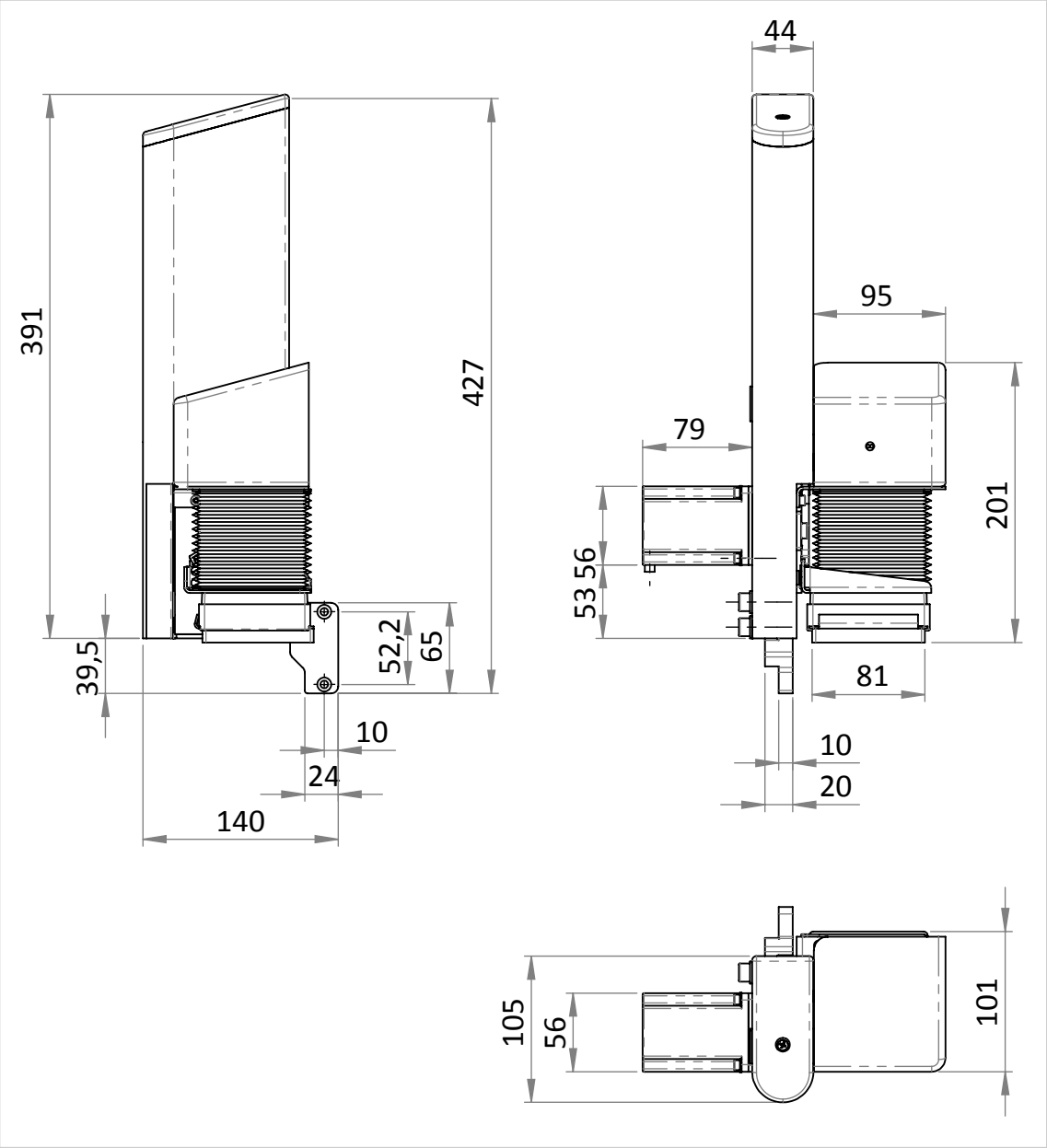


Fig. 5: Measures of the LTSA.

SYSTEM REQUIREMENTS

The XLP 504 must be equipped not only with the necessary firmware version, but also with a few special parts in order to be able to be operated together with a LTSA. This “XLP 504 for LTSA“ can be ordered ready for operation or retrofitted.

Necessary firmware version

7.75

Necessary parts

The following parts must be available for operation of a XLP 504 with LTSA:

Item	Name	Note
A	Applicator LTSA	
B	Enclosure part	
C	Dispensing edge	
D	Sub-D cable harness	Different part than in “XLP 504 peripheral”
E	Internal rewinder	
F	BLDC output stage	
G	M5A output stage	Different part than in “XLP 504 peripheral”; minimum required firmware version for output stage: 4.48

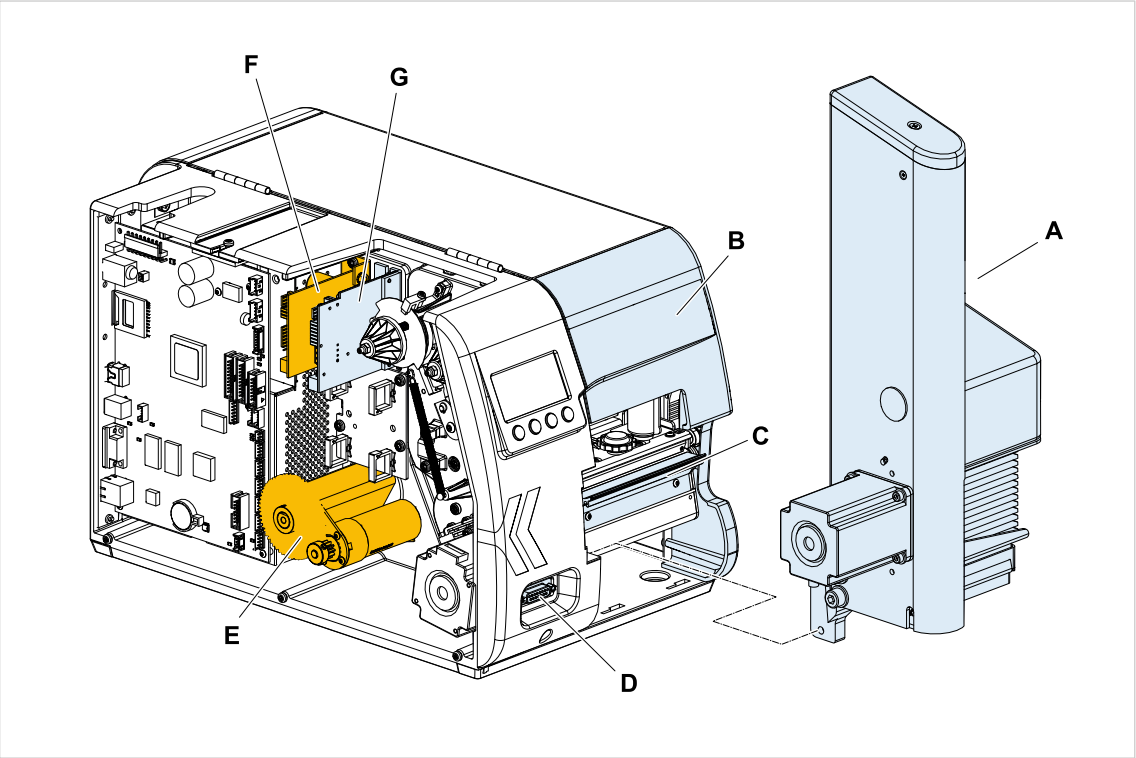


Fig. 6: The parts marked in colour are required for operation of a XLP 504 with LTSA (blue = included in retrofit kit LTSA).

Retrofit/conversion kits for the XLP 504

(Output) printer	Rewinder retrofit kit	Conversion kit LTSA	Remaining parts
XLP 504 basic	N100522[1]	N101196	Enclosure part
XLP 504 peripheral	N100524[1]		M4A output stage, wiring harness, enclosure part
XLP 504 basic with rewinder	--		Enclosure part
XLP 504 peripheral with rewinder	--		M4A output stage, wiring harness, enclosure part
XLP 504 basic with rewinder & dispenser	--		Dispensing edge, enclosure part
XLP 504 peripheral with rewinder & dispenser	--		M4A output stage, wiring harness, dispensing edge, enclosure part

The most economical solution is to retrofit a “XLP 504 basic” or “XLP 504 basic with rewinder”, as then less parts are left over after retrofitting.

1) ATTENTION! - If both kits are retrofitted, install the cable harness from the “conversion kit LTSA” directly!

Commissioning

INSTALLING CONVERSION KIT LTSA IN XLP 504

Describes how a “XLP 504 basic with rewinder” is converted into a “XLP 504 for LTSA“ by installing the “conversion kit LTSA“.

WARNING!

This machine operates at mains voltage. Contacting electrically live components can cause lethal electrical shocks and burns!

➔ Only authorised technicians who are familiar with the associated hazards are permitted to carry out conversion work on the printer!

➔ After assembly, check the machine according to the applicable regulations of the relevant country (for Germany: DIN VDE 701-702 "Recurrent test and test after repair and modification of electrical equipment").

Prerequisitions

Printer: XLP 504 basic with rewinder

Conversion kit LTSA (N101196)

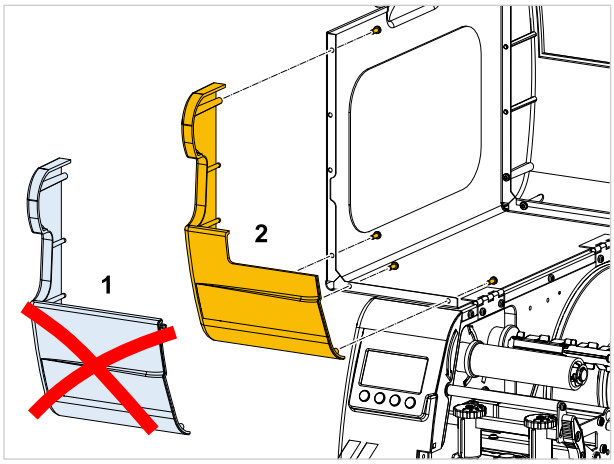
Tools:

- Torx screwdriver T10, T20
- Open-ended spanner, size 5

Procedure

1. Replace enclosure part (1) with enclosure part (2).

   (4 screws Torx DG 40 x 10)



2. Replace sub-D cable harness:

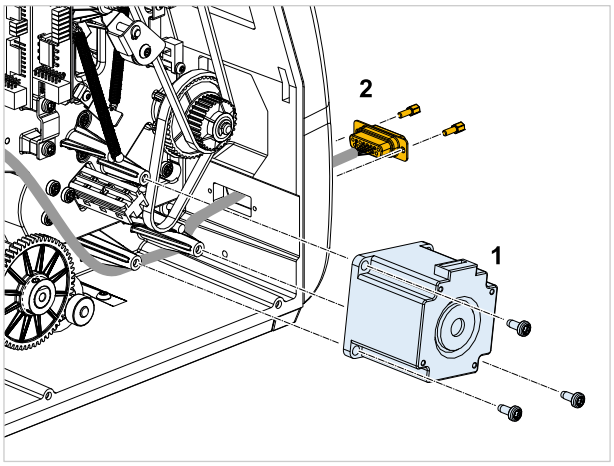
   > This step is only necessary if the right cable harness (N101134) was not already installed during retrofitting of the rewinder.

   a) Remove the motor (1).

   b) Replace sub-D cable harness (2).

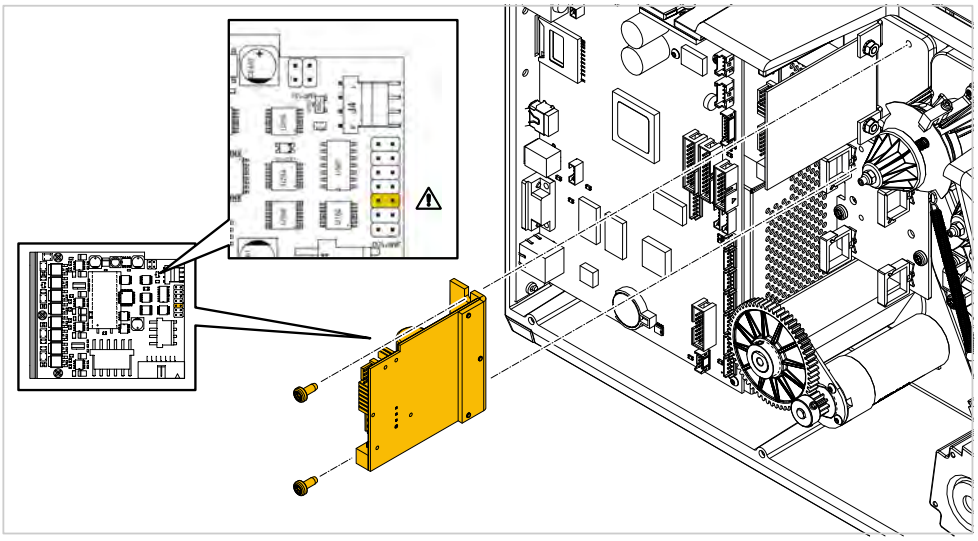
   c) Install the motor.

   For further details, see Service manual XLP 50x, chapter “Servicing of mechanical components” > „Internal rewinder / dispenser” > “Retrofitting internal rewinder” > “Installing cable harness”.



3. Install output stage board M5A.

   (2 screws Torx DG 40 x 10)

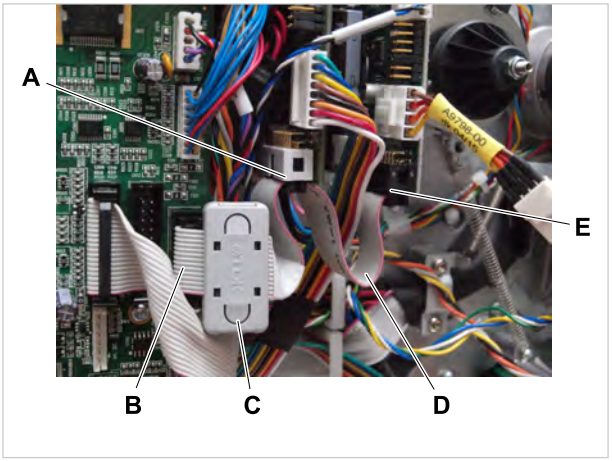


4. Connect sub-D cable harness to the output stage board M5A as shown in the table:

Connect cable with mark	to connector	on printed circuit board
motor	J3 motor	M5A output stage
sensor 1	J4 sensor 1	
aux	CN910 aux	CPU Board
power	CN1202	

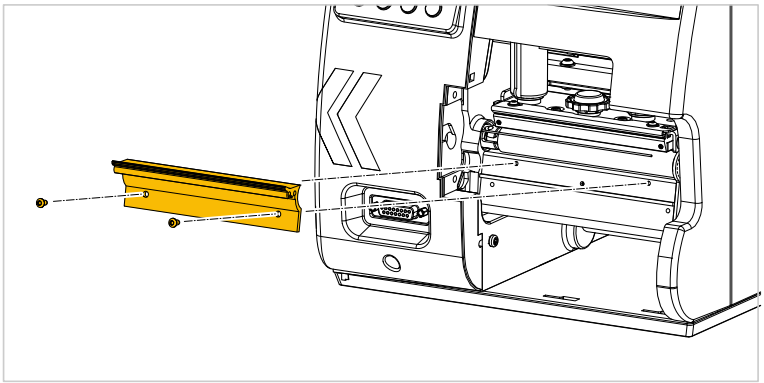
For further details, see Service manual XLP 50x, chapter “Appendix” > “Wiring diagrams” > “XLP 50x peripheral”.

5. Connect ribbon cable (D) to CPU board (B, CN602) and the two output stages (A, E). Fit hinged ferrite core (C) to the cable as illustrated.



6. Installing the dispensing edge.

(2 screws Torx M3 x 6)



7. Close the printer enclosure again.

LTSA INSTALLATION

Describes how the LTSA is installed on the “XLP 504 for LTSA”.

Prerequisitions

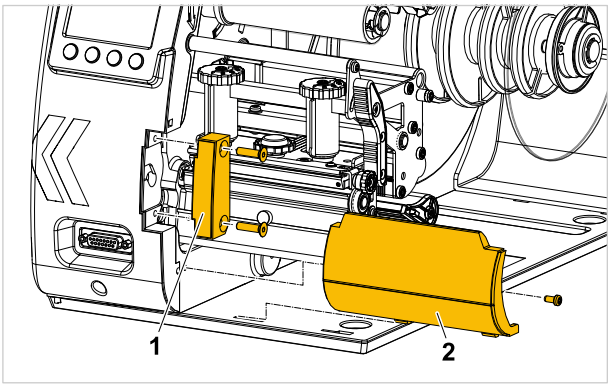
- XLP 504 for LTSA is available
- LTSA is available

Tools:

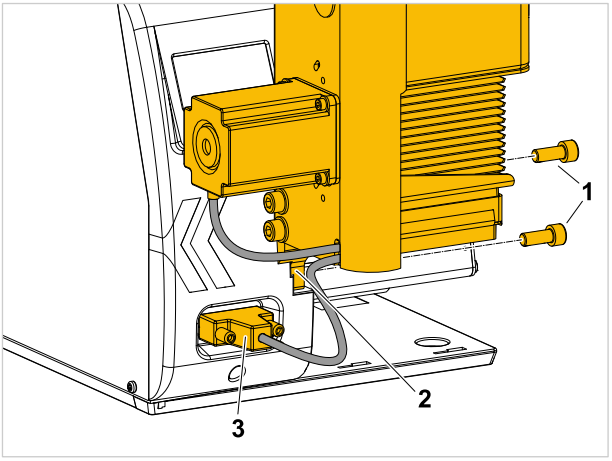
- Hex socket driver 4 and 6 mm

Procedure

1. (If available) Unscrew cover (1) of the mounting flange.
2. (If available) Unscrew enclosure part (2) at front bottom.



3. LTSA bolt with adapter plate (2) to the flange of the printer.
   (2 screws DIN 912 M8 x 20 from the scope of supply of the LTSA)



4. Connect sub-D connector (3) to the printer.

CONNECTING A SIGNAL SOURCE

Foot switch

A foot switch is available as an accessory for the XLP 504 and is supplied ready for operation.

Item no.: A4053

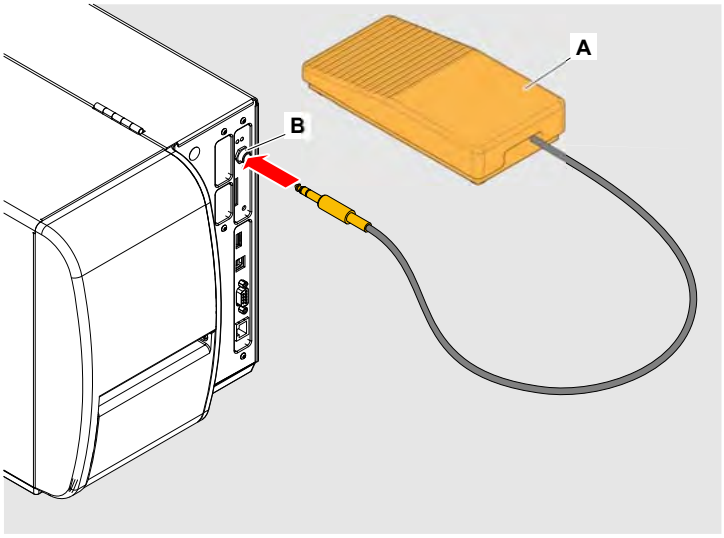


Fig. 7: Connect foot switch (A) to single start port (B).

External signal source

The optionally available I/O board has a signal interface in the form of a sub-D connector (A). A signal source for a start signal can be connected to this interface. A product light barrier is generally used as signal source. The connecting cable has to be made up by the user.

EXPERTS For further details of the connection configuration, see XLP 50x Service manual, topic section “Service Electronics”, chapter “I/O board” > “Signal interface” > “Wiring of signal inputs”.

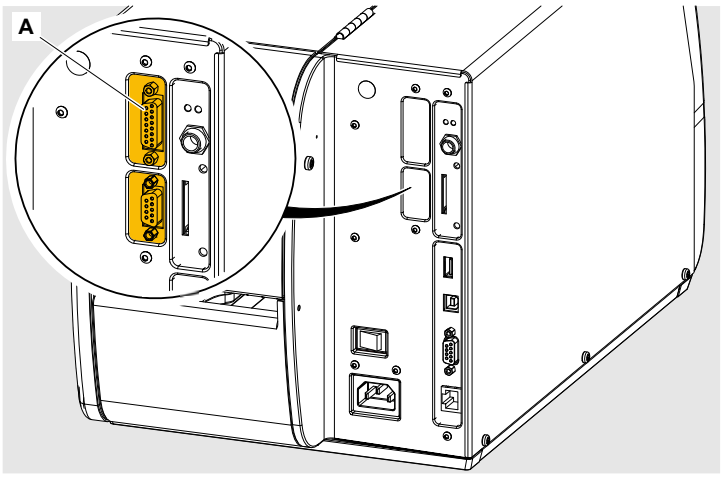


Fig. 8: Signal interface (A) at the optional I/O board.

SETTINGS IN THE PARAMETER MENU

Describes the settings necessary in the parameter menu of the XLP 504 for operation of the applicator.

Overview of parameter settings

As soon as “LTSA” is selected as peripheral device, the submenus Options > Dispenser and Options > LTSA with parameters for setting the dispensing and applicator functions are also displayed.

The submenu Options > I/O Board appears only if the optional I/O board is installed.

Submenu	Parameter	Setting	Mandatory
Options	External signal	Singlestart	X
Options > Selection	Periph. device	LTSA	X
Options > I/O Board	Start print mode[2]	“Pulse rising” or “Pulse falling”	X
Options > Dispenser	Start source	Foot switch	X
	Dispenseposition	0 mm	
	Dispense Mode	Real 1:1 mode	X
	Application mode	Immediate mode	
Options > LTSA	Apply mode	After start sig.	
	Stroke length	190 mm	
	Appl. waitpos.	0 mm	
	Applicator speed	350 mm/s	
	Restart delay	0 ms	

Tab. 2: List of the most important parameters for applicator operation. The parameters marked “Mandatory” must be set as shown in order that the applicator functions. The settings for the other parameters are given as recommendations and can be changed, depending on the application.

> Further parameters for integration of the printer into an application with product conveyor and product sensor are available in submenu “Dispenser”. In addition, the optional signal interface (I/O board) is necessary for automatic applications for the processing of external start signals.

> For further information on parameter settings, refer to the Operating manual XLP 504, chapter “Parameter menu”.

Setting the dispensing position

For operation of the LTSA, the dispensing position should be set so that the label is just dispensed and no longer adheres to the backing material. Advancing of the backing material too far can result in threads of the adhesive pulling the label down.

Setting:

➔ Set parameter Options > Dispenser > Dispenseposition to the desired value.

> For further details, refer to the Operating manual XLP 504 or Service manual XLP 504, chapter “Parameter menu”.

2) Only with installed I/O board (option). This parameter also influences a connected foot switch.

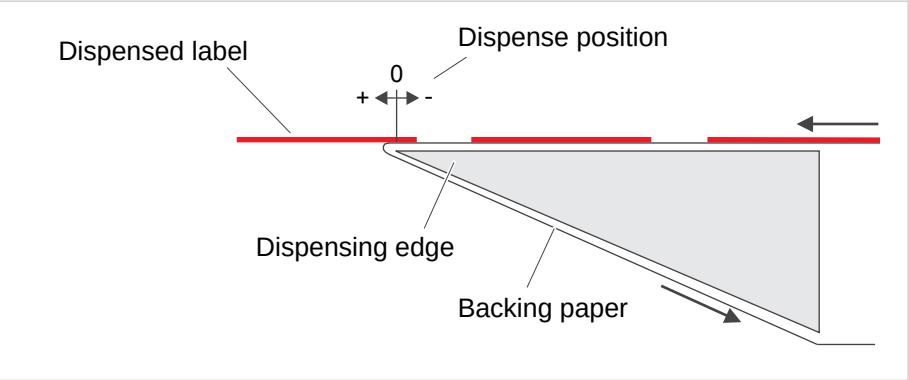


Fig. 9: Schematic view of the dispensing position.

SETTING THE APPLICATOR HOME POSITION

Describes how the home position of the applicator pressure plate is set.

WARNING!
Risk of crushing between the applicator and dispensing edge and between the moving parts of the applicator!
➔ Carry out adjustments only with the printer switched off.
➔ Hold or fix the applicator foot in extended position, otherwise it will fly back at high speed into the home position - Risk of crushing!
➔ During trial operation: Keep your hands away from the applicator!

Prerequisitions

- XLP 504 with LTSA
- The settings have been carried out in the parameter menu of the XLP 504 (see chapter “Settings in the parameter menu” on page 18)

About this task

In order for the labels to slide smoothly onto the applicator pressure plate after dispensing, the home position of the applicator pressure plate must be checked and adjusted, if necessary, after installation of the LTSA. When viewed from the side, the pressure plate must be slightly above the dispensed label (distance B) and slightly ahead of the dispensing edge (distance A).

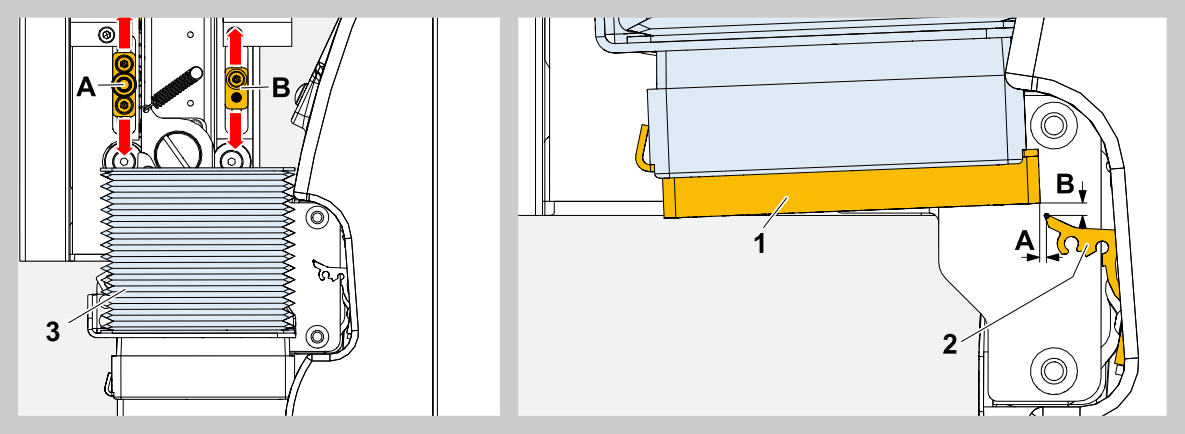


Fig. 10: Setting the home position of the pressure plate (1). A = Horizontal distance (setpoint: 1 mm), B = Vertical distance (setpoint: 0.5 mm).

Triggering the applicator without printing/dispensing: press the key below the icon.

Procedure

1. Switch on printer.

   After booting of the printer and initialisation of the applicator (brief up-and-down movement), the pressure plate is in home position.

2. Check the position of the pressure plate (1) relative to the dispensing edge (2). If adjustment is necessary, determine and note the necessary adjustment distance (horizontal and vertical).

If necessary, carry out the adjustment as follows:

3. Switch off the printer.
4. Carefully loosen the bellows (3) at the upper end (Velcro fastener).
5. Pull the applicator foot down so that the two motion links (A and B) are accessible.

> Hold or fix the applicator foot in extended position, otherwise it will fly back at high speed into the home position!

Adjusting the horizontal position:

6. Unscrew motion link (A), adjust according to the table and screw tight again.

Moving motion link A towards	--> moves the pressure plate towards
top	front (distance A becomes larger)
bottom	rear (distance A becomes smaller)

Adjusting the vertical position:

7. Unscrew motion link (B), adjust according to the table and screw tight again.

Moving motion link B towards	--> moves the pressure plate towards
top	top
bottom	bottom

8. Switch on printer.
9. After initialisation of the applicator, check the home position. If necessary, repeat steps 3 and 9 until the home position is correctly adjusted.

> In home position , the applicator must not reach the upper limit!

10. Secure the bellows again.
11. Switch on the printer and apply a test label.

Operation / Malfunctions / Cleaning

OPERATION

The LTSA is ready for operation when it has been installed, connected and activated. The label dispensing process can be started from one of the following sources as soon as a print job has been transmitted and interpreted:

- Press a button on the printer operation panel
- Easy Plug immediate command (#!D) at the data interface
- Press an *optional* foot switch (connected to the printer)
- External start signal received via the *optional* signal interface (e.g. from a product sensor)

Manual starting signal by pressing a button

1. Switch to the “Home” display.
2. Press the button under the symbol  .

A label from the print job is printed, dispensed and applied.

> Alternatively, a start signal can be given by pressing the optional foot switch.

Automatic start signal at the signal interface

When a start signal from an external signal source is received at the signal input of the optional I/O board, a label from the print job is printed, dispensed and applied.

For further details of the connection configuration, see XLP 50x Service manual, topic section “Service Electronics”, chapter “I/O board” > “Signal interface” > “Wiring of signal inputs”.

REPLACING THE PRESSURE PLATE

About this task

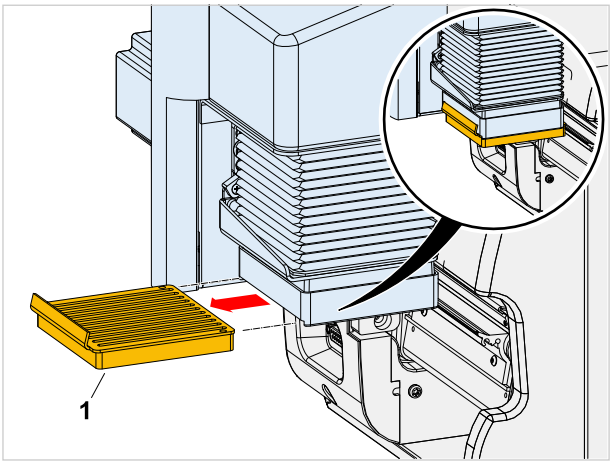
When the foam pad on the pressure plate has become so worn that the function of the applicator is impaired, the pressure plate has to be replaced.

> Application of labels to moving products places a greater burden on the pressure plate than application to stationary products.

Procedure

1. Switch off the printer.

2. Push pressure plate (1) forwards out of the applicator foot.



3. Insert a new pressure plate.

   Item no.: A4487

REMEDYING MALFUNCTIONS

Status messages

Malfunctions in the applicator generally have one of the following causes:

- The applicator is prevented from moving
- The sensors that limit the movement of the applicator are defective, soiled or not correctly connected
- The printer is not correctly adjusted

Status message	Cause	Measure
5200 Home position	The applicator has not reached its home position within the assigned time period.	*For all status messages*: ➔ Check whether the applicator can move unhindered. If necessary, remove any obstacles. EXPERTS ➔ Check whether the cable(s) is/are correctly connected. EXPERTS ➔ Check whether the sensor(s) is/are soiled. EXPERTS ➔ Check whether the sensor(s) is/are defective. *For 5203 Touch down sens.*: ➔ Check, if a product was available. ➔ Check, if the applicator has hit the product.
5201 Touch down	The applicator has not reached the product (touch down position) within the set stroke length[3].	
5203 Touch down sens.	The touchdown sensor(s) was/were already actuated before the application process.	

Tab. 3: Overview: Status messages possibly caused by an applicator malfunction.

3) Setable by Options > LTSA > Stroke length

CLEANING

Safety

WARNING!

Shearing movement between applicator and dispensing edge!
Risk of crushing of the fingers between applicator and dispensing edge and between the moving parts of the applicator!

➔ Before cleaning the applicator, switch off the printer and remove the mains plug

Cleaning interval

➔ Clean the machine regularly.

The frequency depends on the following factors:

- Operating conditions
- Daily operating duration

Cleaning

CAUTION!

Using sharp cleaning materials may cause damage.

➔ Do not use any cleaning agents or materials that could damage or destroy the paint finish, labelling, 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.

Cleaning agent:

- Compressed air, vacuum cleaner (if available)
- Methylated spirits (ethanol) or isopropyl alcohol

To perform:

➔ Blow off dust and abrasion with compressed air or remove using a vacuum cleaner (if compressed air or vacuum cleaner is available)

➔ Dampen a cloth with methylated spirits or isopropyl alcohol and wipe down the machine.

NOVEXX SOLUTIONS

Telephone: +49-8165-925-0 | www.novexx.com

Novexx Solutions GmbH

Ohmstraße 3
85386 Eching
Germany

NOVEXX SOLUTIONS

Telephone: +49-8165-925-0 | www.novexx.com

Novexx Solutions GmbH

Ohmstraße 3
85386 Eching
Germany