Service Manual

cab
we identify more

Applicator

A3200

Service Manual
for the following products

Family
A3200

Edition:: 03/2016 - Part.-No. 9009561

Table of Contents

1 Introduction

1.1 Instructions

Important information and instructions in this documentation are designated as follows:

Danger!
Draws your attention to an exceptionally grave, impending danger to your health or life.

Warning!
Indicates a hazardous situation that could lead to injuries or material damage.

Attention!
Draws attention to possible dangers, material damage or loss of quality.

Notice!
Gives you tips. They make a working sequence easier or draw attention to important working processes.

Environment!
Gives you tips on protecting the environment.

▶ Handling instruction

▷ Reference to section, position, illustration number or document.

∗ Option (accessories, peripheral equipment, special fittings).

Time Information in the display.

1.2 Intended Use

- The device is manufactured in accordance with the current technological status and the recognized safety rules. However, danger to the life and limb of the user or third parties and/or damage to the device and other tangible assets can arise during use.
- The device may only be used for its intended purpose and if it is in perfect working order, and it must be used with regard to safety and dangers as stated in the operating manual.
- The device applicator mounted on a cab printer of the Hermes+ series is intended exclusively for applying suitable materials that have been approved by the manufacturer. Any other use or use going beyond this shall be regarded as improper use. The manufacturer/supplier shall not be liable for damage resulting from unauthorized use; the user shall bear the risk alone.
- Usage for the intended purpose also includes complying with the operating manual, including the manufacturer's maintenance recommendations and specifications.

Notice!
The complete documentation can currently be found in the Internet.

1.3 Safety Instruction

Attention!
Initiation, adjustments and changing of parts is only for qualified service personal only.
▷ Initiation/ Service Manual Applicators

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

- Before mounting the delivered components disconnect the printer from the power supply and close the shutoff valve at the applicator.
- Only connect the device to other devices which have a protective low voltage.
- Switch off all affected devices (computer, printer, accessories) before connecting or disconnecting.
- In operation, moving parts are easily accessible.
  This applies especially for the zone, where the pad is moved between the starting and the labelling position. During operation do not reach into that zone and keep long hair, loose clothes, and jewelry distant. Before any manipulations in those areas, close the shutoff valve.

- The device may only be used in a dry environment, do not expose it to moisture (sprays of water, mists, etc.)
- Do not use the device in an explosive atmosphere.
- Do not use the device close to high-voltage power lines.
- Perform only those actions described in this operating manual.
  Work going beyond this may only be performed by trained personnel or service technicians.
- Unauthorized interference with electronic modules or their software can cause malfunctions.
- Other unauthorized work on or modifications to the device can also endanger operational safety.
- Always have service work done in a qualified workshop, where the personnel have the technical knowledge and tools required to do the necessary work.
- There are various warning stickers on the device. They draw your attention to dangers. Warning stickers must therefore not be removed, as then you and other people cannot be aware of dangers and may be injured.

1.4 Safety Marking

1:   Danger of crushing to hand and fingers by the moving pad !

2:   Cylinder is under pressure, also is it switched off

Possibility of remain energy!

> **Attention!**
> **Never remove or cover safety markings!**
> **Replace it in case of damage!**
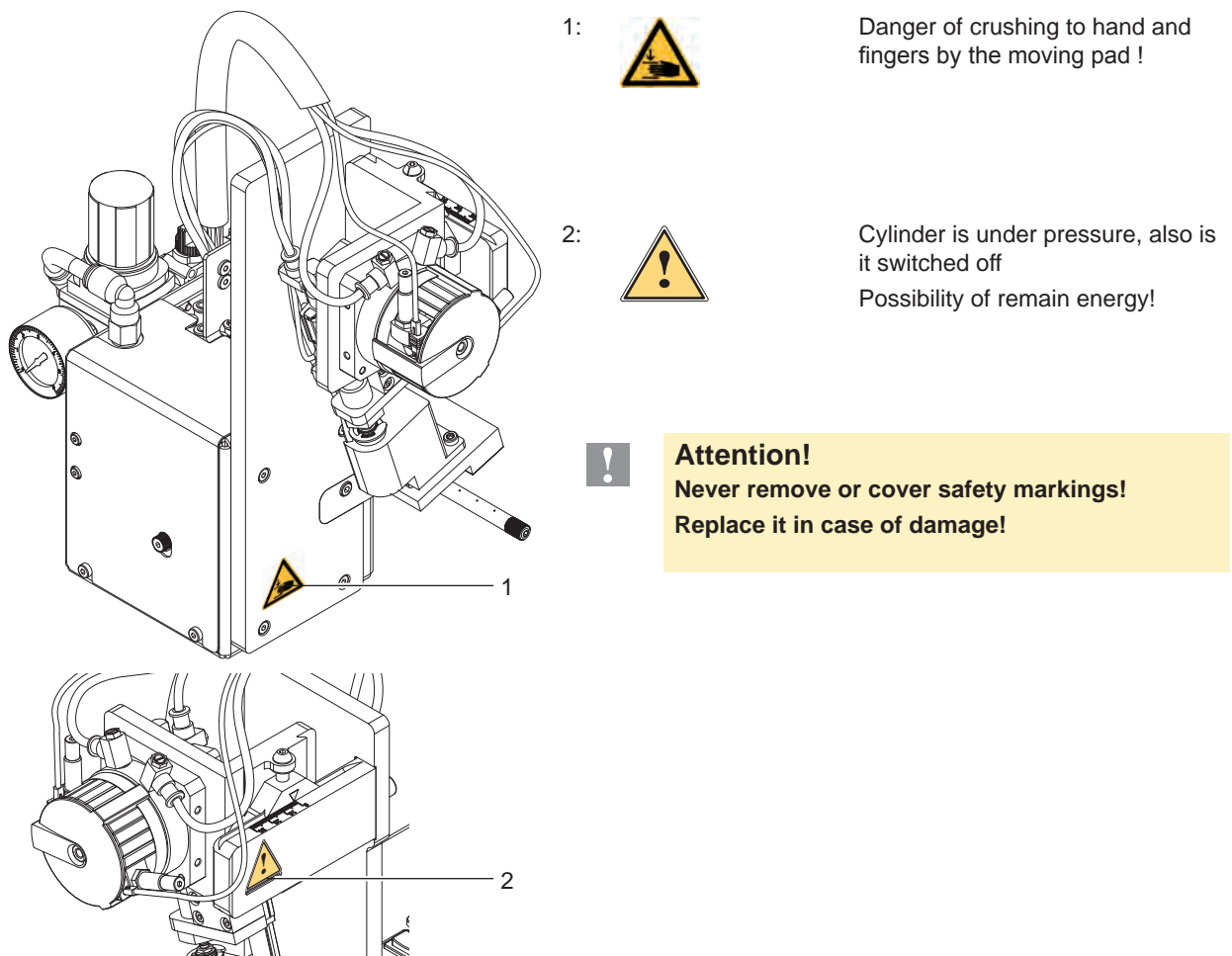
Fig. 1   Safety marking

1.5 Environment

Obsolete devices contain valuable recyclable materials that should be sent for recycling.

▶ Send to suitable collection points, separately from residual waste.
The modular construction of the print module enables it to be easily disassembled into its component parts.
▶ Send the parts for recycling.

2 Product Description

2.1 Important Features

- The supporting air and the vacuum as well as the speed of the cylinder are adjustable. That way the applicator can be adapted to different label materials and sizes.
- To avoid contamination within the vacuum channels they are cleaned by air pressure impulse at the end of each application..
- For operation in a system the 15 pin or 25 pin I/O interface of the applicator can be used.

2.2 Technical Data

	Stamp on		Blow on	
Using	A2$^+$	A4$^+$	A2$^+$	A4$^+$
Label width in mm	4-63	20-116	10-63	20-116
Label height in mm	5-80		10-80	
Possible application angle of the pad (to the vertical line)	45°-95°			
Compressed air pressure	4,5 bar			
Product surface	flat			
Product in the labelling procedure	fixed			
Cylinder strok of the fift cylinder in mm	30			
Retraction depth of the stamp till in mm	5			
Cycle time about pulse/min.	25			
Distance product to dispense edge of the printer in mm	240-270			
Mounting	stand			

Table 1   Technical Data

2.3 Overview

Front view

Rear view
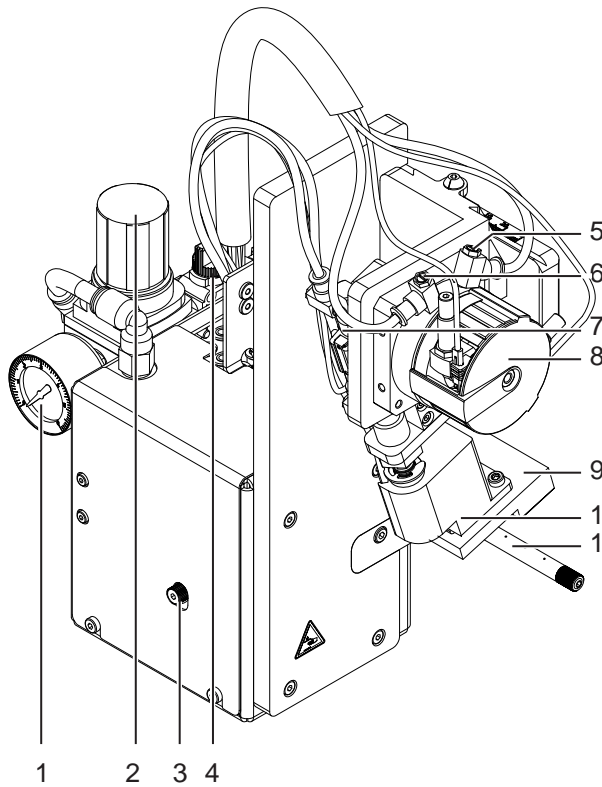
Fig. 2 Device overview - front view

1 Manometer on the pressure air support unit
2 Setting valve on pressure air support unit
3 Knurled screw for attaching the applicator to the printer
4 Shutoff valve
5 Throttle valve swing cylinder - swing in
6 Throttle valve swing cylinder - swing out
7 Lift cylinder
8 Swing cylinder
9 Pad (customized)
10 Pad holder
11 Blow tube for supporting air
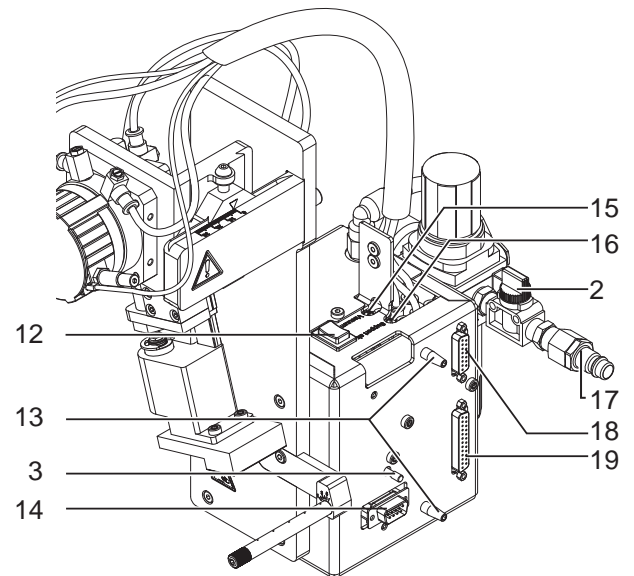
Fig. 3 Device overview - rear view

12 Pre dispense key
13 Pins for a locking position to the printer
14 SUB-D 9 interface to the printer
15 Vacuum throttle valve
16 Support air throttle valve
17 Compressed air connector
18 PLC interface 15 pin
19 PLC interface 25 pin
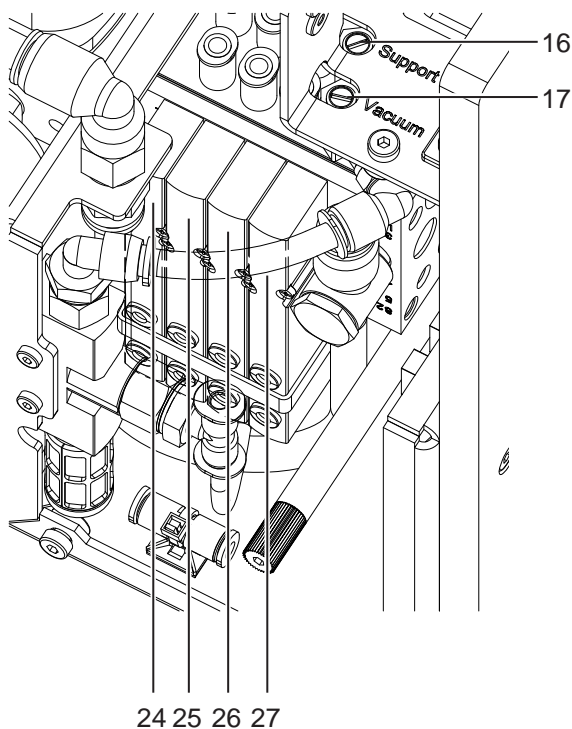
Fig. 4   Device overview - magnetic valves
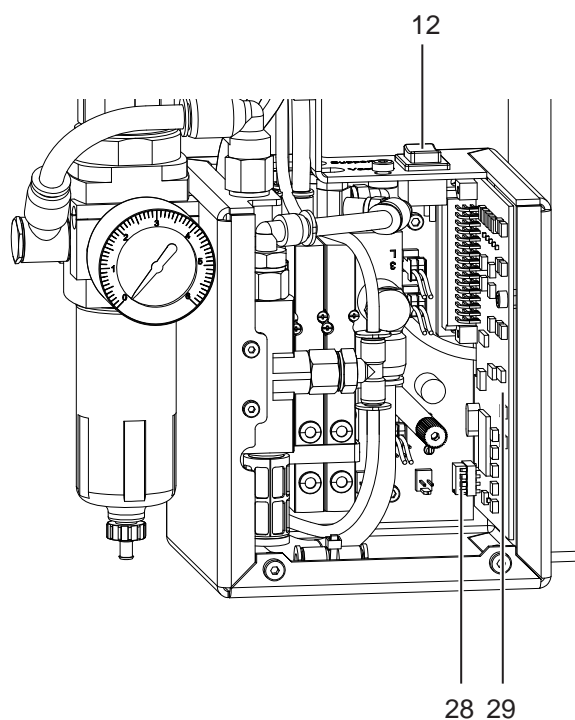
Fig. 5   Device overview - EEPROM / PCB applicator control

12 Pre dispense key

16 Support air throttle valve

17 Support air throttle vacuum

24 Magnetic valve swing cylinder

25 Magnetic valve lift cylinder

26 Magnetic valve blow air

27 Magnetic valve support air / vacuum

28 EEPROM

29 PCB Applicator Interfaces

2.4   Contents of Delivery
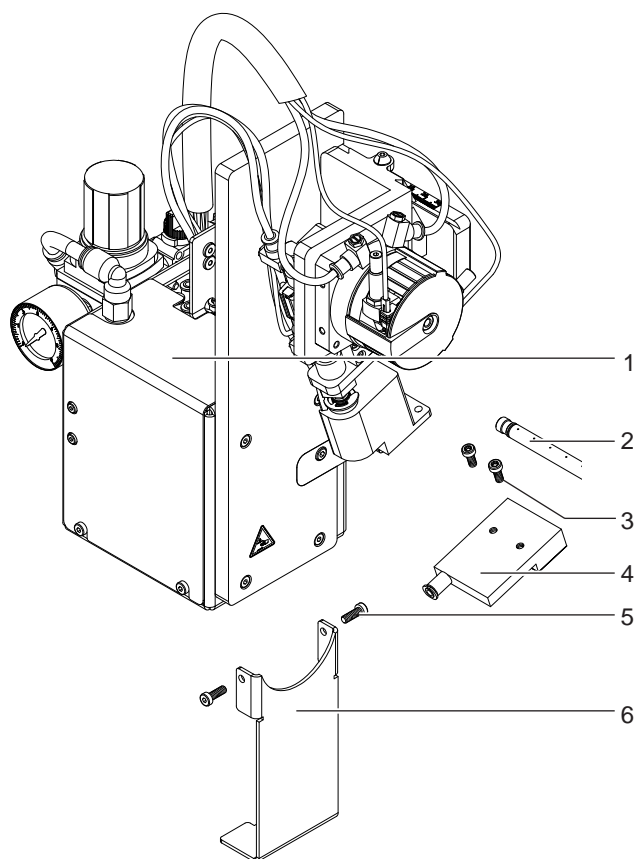
1   Applicator
2   Blow tube (as ordered)
3   Screws (part of the pad)
4   Pad (as ordered)
5   Screws to mount the transport locking system
6   Transport locking system
7   Documentation

Fig. 6   Contents of delivery

Notice!
Please keep the original packaging in case the applicator must be returned.

Attention!
The device and printing materials will be damaged by moisture and wetness.
▶ **Set up label printer with applicator only in dry locations protected from splash water.**

3 Operation

3.1 Standard Operation

▶ Check all external connections.

▶ Load the material. Ensure that the locking system is locked ▷ "Operator's Manual" of the printer.

▶ Open the shutoff valve.

> **! Attention!**
> ▶ **Ensure that the pad is not covered by a label when switching on the printer-applicator system. Otherwise the vacuum sensor may be calibrated faultily.**

▶ Switch on the printer.

> **i Notice!**
> **In case the pad is outside the start position in the moment of switching on it will interrupted the procedure and give notice an error message on the display of the printer.**
>
> **If you push the button pause on the printer is receipt the error and the applicator will move into the start position.**
> **The Applicator is ready for work.**

▶ Press the **feed** key at the printer.
 A synchronization feed is released. The processed labels have to be removed manually. After a few seconds the printer carries out a short backfeed to position the front edge of the next label at the printing line.

> **i Notice!**
> **This synchronizing also has to be carried out when the print job has been interrupted with the cancel key.**
>
> **Synchronizing is not necessary when the print head was not lifted between print jobs. This also applies if the printer was powered off between print jobs.**

▶ Start a print job

▶ Start the labelling process via PLC interface.

Error messages during labelling process are shown in the display of the printer ▷ 4 Error Messages.

3.2 Cleaning

> **! Attention!**
> **Never use solvent and abrasive.**

Fig. 7   Cleaning pad with slide foil
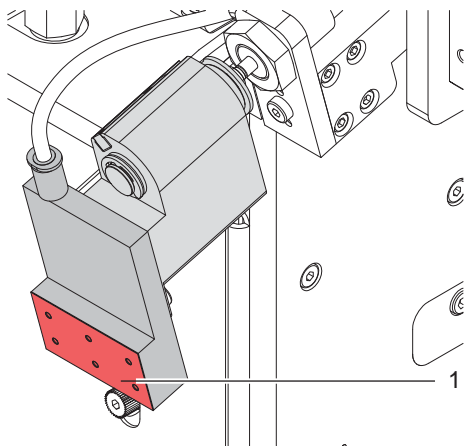
▶ Clean the outside surfaces with multi purpose cleaner.

▶ In regularly function it's possible that accrue dust particles and label splits. Remove that by a soft brush or/and a vacuum cleaner.

▶ Especially at slide foil (1) it's possible that fouling deposit. To receive an ideal takeover and handling of the label it's necessary to clean the surface of slide foil at regular intervals.

4.1   Error Messages of the Printer

For detailed information about printer errors (e.g. 'Paper out', 'Ribbon out', etc.) ▷ Operator's manual of the printer

Error treatment :

▶ Clear the error results

▶ Press the **feed** key to synchronize the label feed, remove the peeled labels manually

▶ Press the **pause** key to quit the error state.

After error correction, the print of the label causing the error will be repeated.

4.2   Error Messages of the Applicator

The following table contains an overview of error messages and their possible causes. It also suggests methods to resolve the problem :

Error Message	Possible Cause	Solution
`Air pressure ins.`	Compressed air is switched off	Check the shutoff valve
`Host stop/ error`	Labelling process has been Interrupted by an stop signal via PLC interface	Label the product manually if necessary
`Label not depos.`	Label has not been placed onto the product; after the pad has moved back the label still sticks on the pad	Label the product manually if possible
`Lower position`	Pad has not reached the labelling position within 2s after the movement of the pad was started	Check the pneumatic adjustments (esp. the lower throttle valve of the cylinder); Check the applicator for heaviness of its mechanics; Check the labelling position sensor (service); Label the product manually
`Refl. sensor blk.`	There has been no change of the switch state at the upper sensor at the cylinder between the start of the labelling process and the signal from the labelling position sensor	Check the sensor (service)
`Upper position`	Pad has not reached the starting position within 2s after the pad has left the labelling position; or pad has left the starting position unauthorized	Check the pneumatic adjustments (esp. the upper throttle valve of the cylinder); Label the product manually
`Vac. plate empty`	Label has not been picked up properly by the pad; or label fell off the pad before it could be placed onto the product	If possible, place the 'lost' label onto the product manually; Otherwise stop print job and start again with adapted parameters (e.g. count) If the error recurs check the pad alignment, the adjustment of vacuum and supporting air and the setting of the peel position

Table 2   Error messages of the applicator

Error treatment :

▶ Clear the error results

▶ Press the **pause** key to quit the error state.

> **!**   **Attention!**
> **The pad will immediately be moved in the starting position !**
> **Danger of crushing to hand and fingers by the moving pad !**
> ▶ **Do not reach into the zone of the moving pad and keep long hair, loose clothes, and jewelry distant.**

After error correction, the print of the label causing the error cannot be repeated without re-start of the print job.

▶ In the application mode "Apply/Print" send the signal "Print first label" or press the pre-dispense key before starting the cyclic operation.

5.1   Declaration of Incorporation

cab Produkttechnik
GmbH & Co KG
Wilhelm-Schickard-Str. 14
D-76131 Karlsruhe
Deutschland

Declaration of Incorporation

We declare herewith that the following „partly completed machinery" as a result of design, construction and the version put in circulation complies with the essential requirements of the **Directive 2006/42/EC on machinery** :

Annex I, Article 1.1.2, 1.1.3, 1.1.5, 1.1.6, 1.2.1, 1.3.2, 1.5.2, 1.5.8, 1.6.3, 1.7

In the event of any alteration which has not been approved by us being made to any device as designated below, this statement shall thereby be made invalid.

Device:	**Applicator**
Type:	**A3200**
Applied EU Regulations and Norms:	
Directive 2006/42/EC on machinery	• **EN ISO 12100:2010**
	• **EN ISO 13849-1:2008**
	• **EN 60950-1:2006 +A11:2009+A12:2011+A1:2010+A2:2013**
Person authorised to compile the technical file :	**Erwin Fascher Am Unterwege 18/20 99610 Sömmerda**
Signed for, and on behalf of the Manufacturer : **cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda**	**Sömmerda, 01.03.2016** **Erwin Fascher** **Managing Director**

The product must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive on machinery

The documents according annex VII part B from the incomplete machinery are created and will commit to state agencies on request in electronic kinds.

5.2   EU Declaration of Conformity

cab Produkttechnik
GmbH & Co KG
Wilhelm-Schickard-Str. 14
D-76131 Karlsruhe
Deutschland

EU Declaration of Conformity

We declare herewith that as a result of the manner in which the device designated below was designed, the type of construction and the devices which, as a result have been brought on to the general market comply with the relevant fundamental regulations of the EU Rules for Safety and Health. In the event of any alteration which has not been approved by us being made to any device as designated below, this statement shall thereby be made invalid.

Device:	**Applicator**	
Type:	**A3200**	
Applied EU Regulations and Norms:		
Directive 2014/30/EU relating to electromagnetic compatibility	•	**EN 55022:2010**
	•	**EN 55024:2010**
	•	**EN 61000-6-2:2005**
Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment	•	**EN 50581:2012**
Signed for, and on behalf of the Manufacturer : **cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda**	**Sömmerda, 01.03.2016** **Erwin Fascher** **Managing Director**	

6.1 Transport lock A3200

The transport lock of the applicator A3200 adjust the movable parts of the applicator on a transport to avoid damages and accidents.

> ⚠️ **Warning!**
> **Attend that the printer power supply is disconnected and the compressed air supply is closed before starts the mounting works.**

> ⚠️ **Warning!**
> **Risk of injury and of damage the applicator in case of incorrect using and operation.**
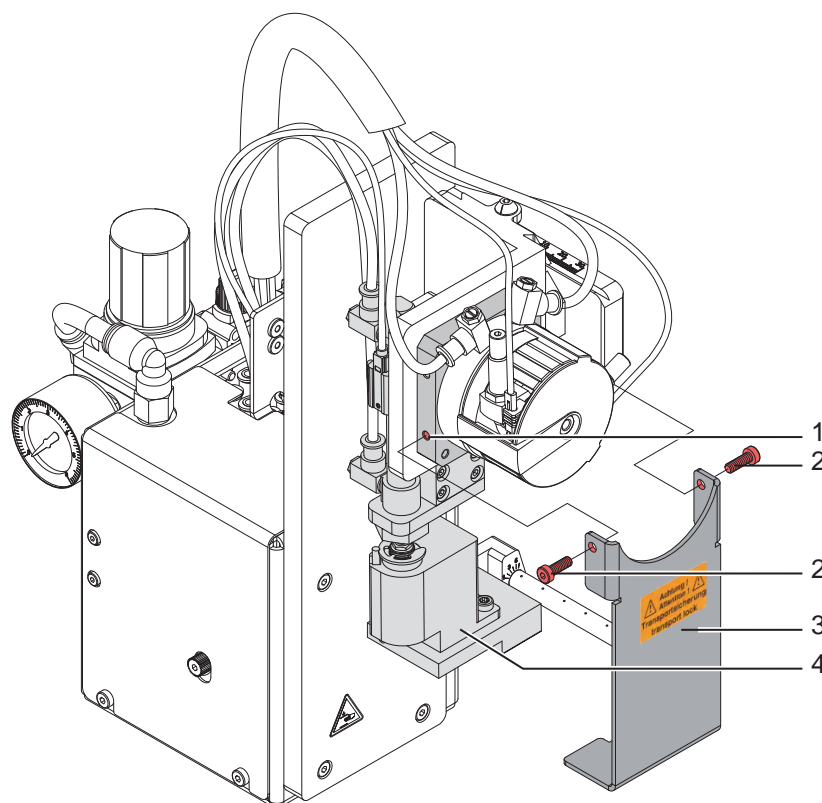> **The applicator is to use only on e printer of the cab A+ series.**

Fig. 8   Transport lock

Remove the transport lock

1. Loosen screws (2) of the transport lock (3) .
2. Remove the transport lock (3).

> ⚠️ **Attention!**
> **Mount the transport every time in case of a transport.**
> **Keep the transport lock and the screws.**

Mount the transport lock

1. Turn the swing arm (4) so that the pad holder is right in the cut-out of the transport lock (3) .
   That is perhaps in a vertical position.
2. Put on the transport lock (3) so that the holes in the transport lock (3) are over the holes (1) on both sides of the swing cylinder socket.
3. Tighten screws (2).

6.2   Mounting the Applicator to the Printer

⚠️ **Warning!**
Attend that the printer power supply is disconnected and the compressed air supply is closed before starts the mounting works.

1. Insert the pins on the back of the applicator (1) into the holes (3) of the printer.
2. Press the applicator against the printer. That way the plug of the applicator will be connected to the peripheral port (4) of the printer.
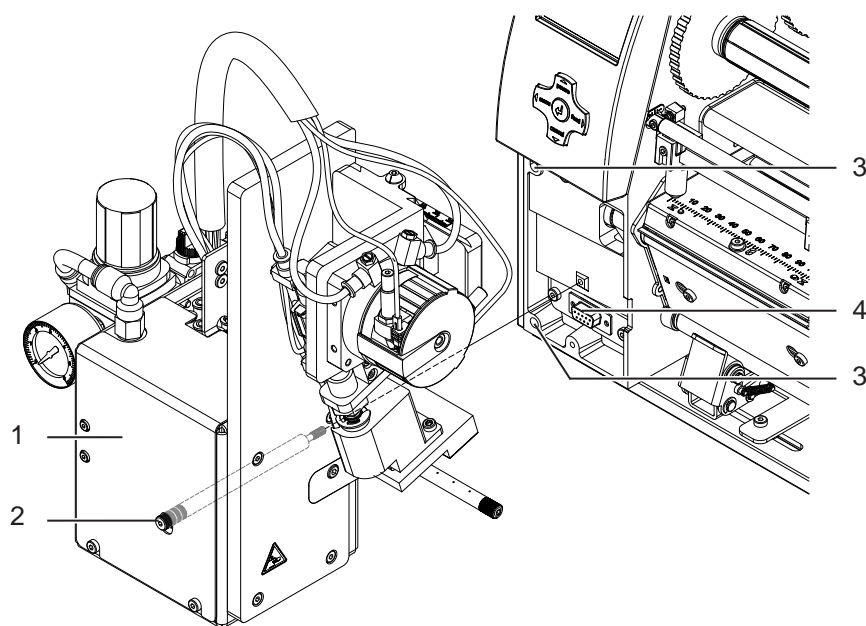3. Fix the applicator (1) with the screw (2).

Fig. 9   Mounting the applicator

6.3 Connections

> **Attention!**
> **The pad will immediately be moved in the starting position !**
> **Danger of crushing to hand and fingers by the moving pad !**
> **▶ Do not reach into the zone of the moving pad and keep long hair, loose clothes, and jewelry distant.**
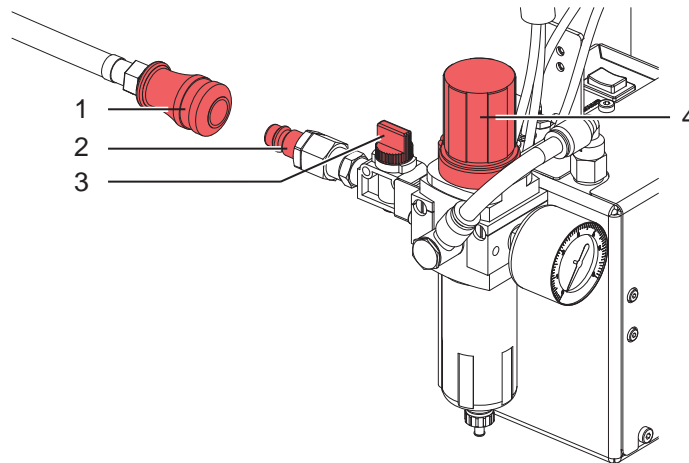> **Danger of striking by the moving rods !**

Fig. 10   Compressed air connection

1. Prepare the printer connections to the power supply and to the computer ▷ Operator's manual of the printer.

2. Connect the PLC interface using the 15-pin or 25-pin connector ▷ "PLC Interface".

3. Close the shutoff valve (3 / lever at the valve is turned across the air flow direction).

4. Connect the applicator to the compressed air supply.
   The connector (2) for the compressed air supply is located at the service unit. The connector is suitable for a 1/4" coupling plug (1).

5. The air pressure for operating the applicator is pre-adjusted to 0.5 MPa (5 bar).
   Check the pressure at the manometer of the service unit. Correct the adjustment if necessary :
   - Pull knurled knob (4) up.
   - Turn knob to tune required operating pressure of 5 bar.
   - Push knob down.

6. Open the shutoff valve. (3 / lever is turned in the air flow direction)

7. Switch on the power supply of the printer.

> 🛈 **Notice!**
> **In case the pad is outside the start position in the moment of switching on it will interrupted the procedure and give notice an error message on the display of the printer.**
> **If you push the button PAUSE on the printer is receipt the error and the applicator will move into the start position.**
> **The Applicator is ready for work.**

7.1   Mechanical and electronic adjustments

The mechanical adjustments must be in two steps.

Adjust the pad coarse in all directions to avoid a collision with the printer after switched on the pressure air.

To finish the fine adjustment it's necessary the pressure air switch on.

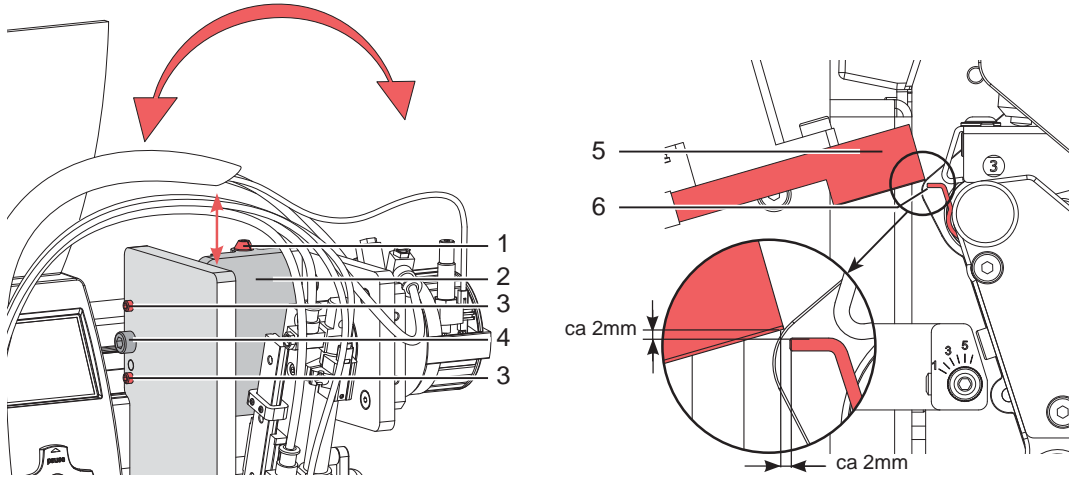### 7.1.1   Setting the pad position - High / Distance to the dispense plate

Fig. 11   Adjustment take over position; pad on dispense plate

The pad (**5**) is in an angular position to the dispense plate(**6**). So it's necessary to set all parameters to find the right pad position.

You can see the right position of the pad (**5**) in the right picture.
The dimensions are approximate values and are depend of used label material.
The end of the linear lift on the top is defined from the end of the cylinder stroke in this direction.

Adjust the vertical position
1. Loosen screw (**7**).
2. Turn screw (**1**) to change the pad assembly against the base plate (**2**) in the high.
3. Tighten screw (**7**) to fix this position.
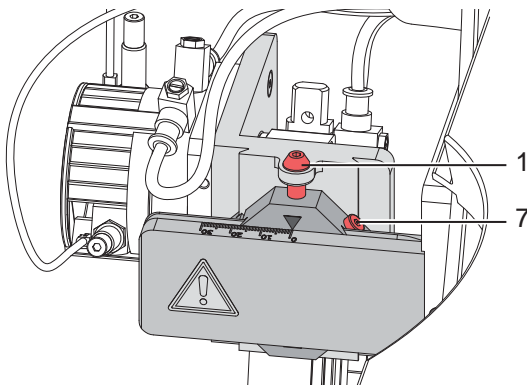
Adjust the horizontal position

Fig. 12   Setting of the horizontal position

4. Loosen screw (**7**)to chang the horizontal position of the pad assembly.
5. Move it so that the middle of the pad is direct over the middle of the label.
6. Tighten screw (**7**) to fix this position.

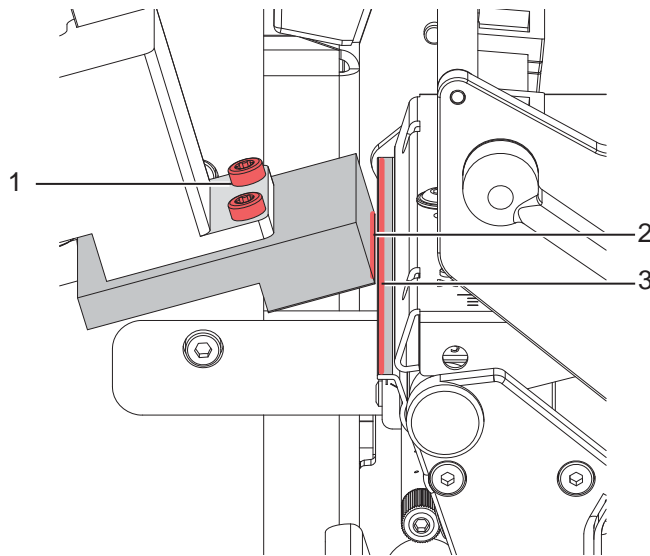### 7.1.2 Adjusting the Parallelism between Pad and Dispense Edge

Fig. 13   Adjusting the Parallelism between Pad and Dispense Edge

The edge of the tamp must be parallel to the dispense edge of the printer to place the label exact on the tamp.

1. Loosen screws (**1**) .
2. Turn the pad (**2**) parallel to the dispense edge (**3**) .
   Front side pad to the the dispense edge.
3. Tighten screws (**1**) .
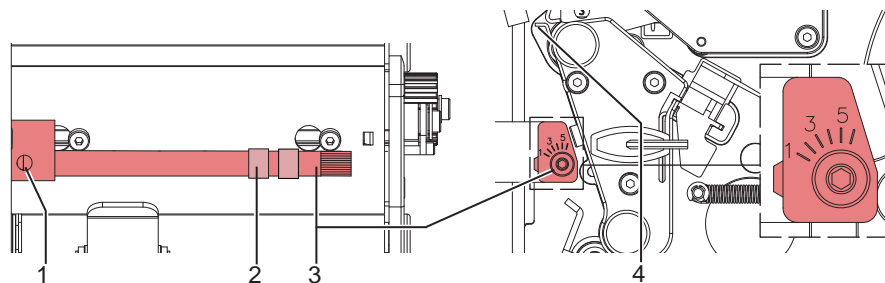
7.1.3 Blow Tube (Support Air) Adjustments

Fig. 14   Adjust the blow tube

The blow tube (3) for the supporting air can be rotated around its axis. That way the direction of the supporting air can be optimized.

1. Loosen screw (1).
2. Turn the blow tube (2) in that direction, that the air current supports the sucking of the label from the dispense edge by the pad (4)

Notice!
- For small labels direct the air current to the dispense edge (4) of the printer.
- For larger labels direct the air current away from the dispense edge (4)

3. Tighten screw (1).
4. Move the rings (2) on the blow tube (3) so, thats the hole are free on the lengths of the pad and the label.

7.1.4   Labelling position of the pad
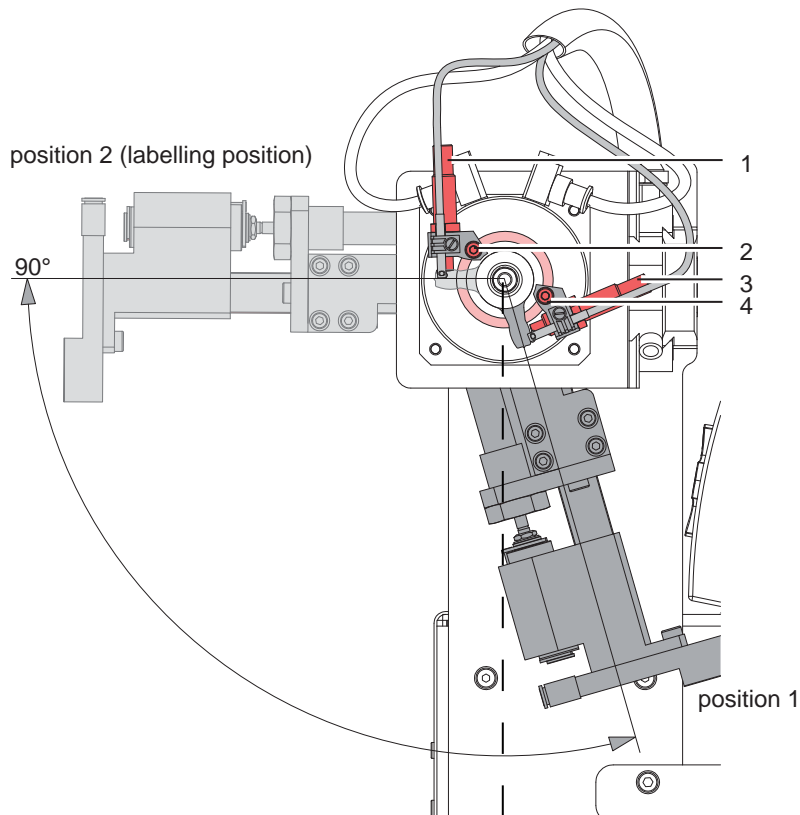

Fig. 15   Adjustment the angle of the labelling position

1. Loose screw (2). Stopper (3) with screw (4) defined the angel and the distance between pad and dispense edge of the printer. that is in a fix setting. Don't change it!
2. Set the labelling position with moving the stopper (1) into the guiding of the swing cylinder.
3. Tighten screw (2).
4. Fine adjustments via turning stopper (1).

The maximal Distance between printer with applicator A3200 is 260-280 mm , front side printer base plate and product, labelling side.
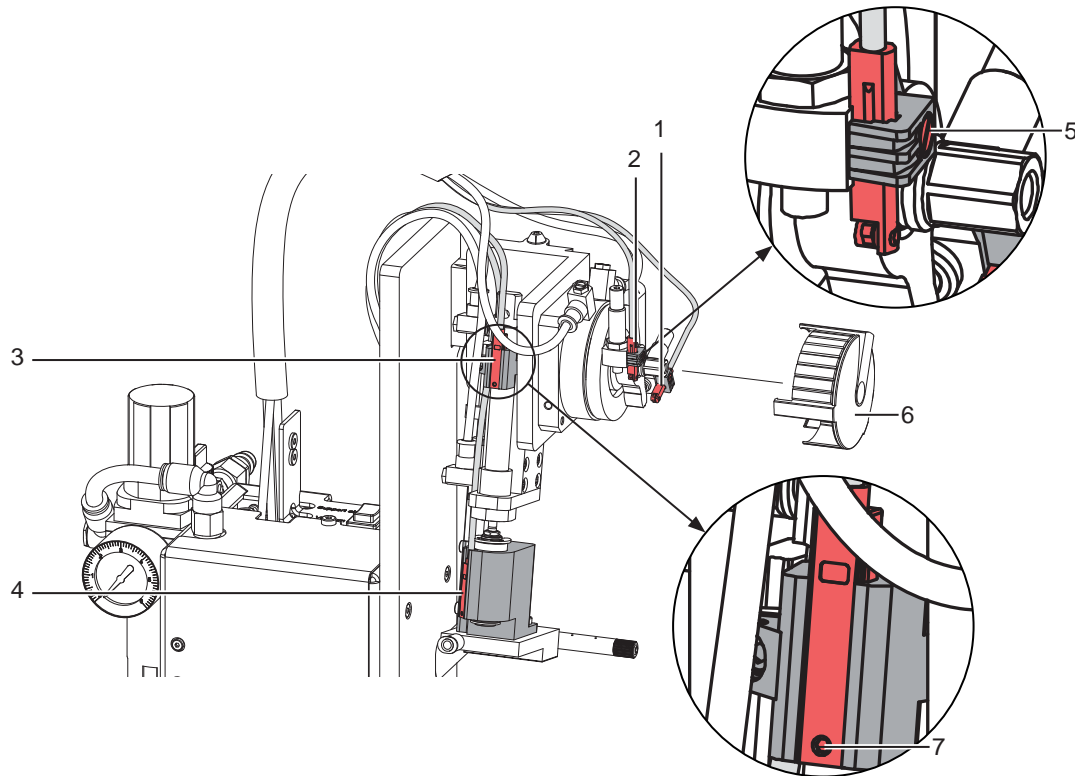
7.1.5   Sensors

Fig. 16   Sensors

All sensors are ready adjusted ex factory. Only in case of a replacement of parts with sensor or sensors is a new adjustment necessary.

As sign of detecting shine a LED on sensor.

Sensor 1 - Start position of the lift cylinders

Sensor 2 - End position of the lift cylinders

Sensor 3 - Start position of the swing cylinders

Sensor 3 - End position of the swing cylinders

ℹ️ **Notice!**
The sensors must be secure switched in the several detecting position - LED on sensor shine
If leave the switch element the detecting position must the sensor switch-off - LED on sensor will go out
To move or change the sensors (3 and 4) loose the screws (7) on the sensors and for the sensors (1 and 2) loose the screws (5) on the sensor holder.

- Sensor 1 and sensor 3 detect the start position of both cylinder. The pad is now in the take over position over the dispense plate of the printer.
- Sensor 2 is switching in case of got the stopper of the end position - swing cylinder.
- For settings on sensors (1 and 2) on the swing cylinder must removed the cover (6).
- Sensor 4 is switching if the pad is in contact with the product and by the pressure of the pad on the product or after stop the movement of the lift cylinder by the stopper on the guide rail.
▶ Loosen screw (7) and move sensor (4).
- to the pad > lower sensitive
- from the pad > higher sensitive (fast switch)
▶ Tighten screw (7) .

ℹ️ **Notice!**
Adjust sensor (4) so that the sensor only switch from contact - pad to the product or from stop via stopper on the guide rail. In case of a to sensitive adjustment it's possible that the sensor will switch by mechanical shocks.

Take over position   Middle position   Labelling position
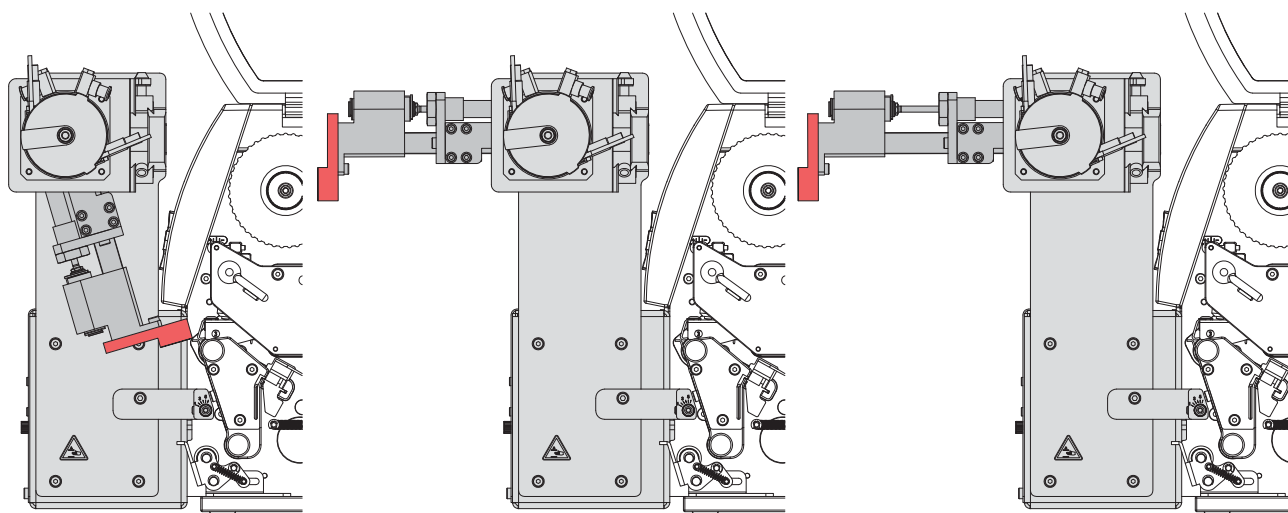

Fig. 17   Pad and cylinder position

Switching of the sensors is depend of the pad- and cylinder position	Take over position	Middle position	Labelling position
Sensor 1 Start position swing cylinder	X	—	—
Sensor 2 End position swing cylinder	—	X	X
Sensor 3 Start position lift cylinder	X	X	—
Sensor 4 End position lift cylinder	—	—	X

Table 3   Switch position of sensors depend of cylinder condition

7.1.6 Stopper for operation mode "Blow on"

To label a product in no touch mode it#s possible to use the operation mode "Blow on". The applicator need a setting in the machine parameters. In this mode, the stopper hold on the move out movement of the lift cylinder.
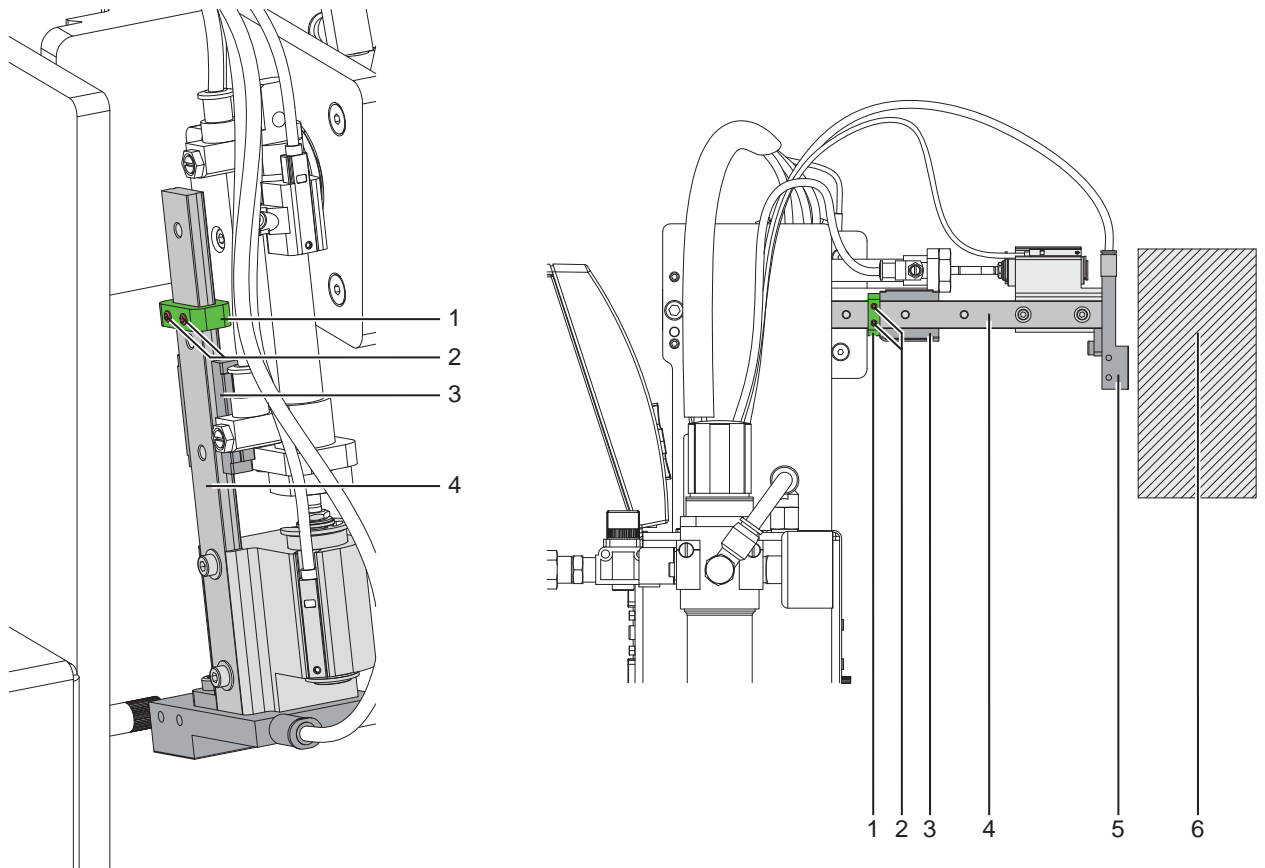
Fig. 18   Adjust the stopper in the operation mode "Blow"

1. Shut down the pressure air.
2. Pull out the tubes from the throttle valves move out swing cylinder and throttle valves move out lift cylinder.
3. Loosen screws (2) on the stopper (1).
4. Place the product (6) in a later labelling position.
5. Swing the pivot arm to the product by hand up to the stopper, which adjusted like chapter 4.1.5 .
6. Pull the pad assembly (5) to the product to a distance between pad (5) and product (6) of 10 mm maximum.
7. Move the stopper (1) on the rod (4) to the carriage (3) and tighten screws (2) .
8. Put in the tubes into the throttle valves move out swing cylinder and throttle valves move out lift cylinder again.

7.2 Pneumatic adjustments
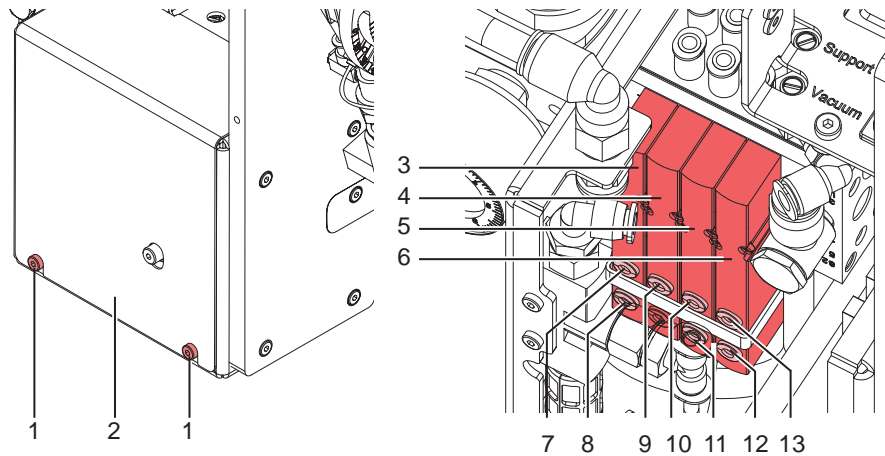
7.2.1 Control valves

Fig. 19   Control valves

For settings and adjustments it's possible to switch some applicator functions over the control valves direct by hand.

To remove the cover (2) loosen screws (1).

To switch the control valves (3-6) by hand use the integrated switches (7-13).

> **ⓘ Notice!**
> **The switching by hand of the control valves is possible , if the printer switched of !**

3-way valve (3) to control the swing cylinder

If the printer is switched on the valve will controlled by electronics and the tamp will hold in the upper end position (take over position). If the valve switched the pad will move in the labeling position of the swing cylinder. In normal operation the movement back in the upper end position will start by a signal from labelling sensor - lift cylinder.

When you switch the valve by hand over switch (7) the tamp will move to the labelling position (move out).

When you switch the valve by hand over switch (8) the tamp will move to the start position (move in).

3-way valve (4) to control the lift cylinder

If the printer is switched on the valve will controlled by electronics and the tamp will hold in the upper end position (take over position). If the valve switched the tamp will move in the labeling position. In normal operation the movement back in the upper end position will start by a signal from labeling sensor.

When you switch the valve by hand over switch (9) the tamp will move out.

Double 2-way valve (5) for blow air

In the operation mode "blow" the label will blow up to the product.

n the operation mode "tamp" will switch on the blow air for a short time in the back movement to clear the tamp.

For all described Function both valves will controlled parallel.

In case of switching by hand via switch (10 or 11) will switch on the blow air only over one of the both internal valves.

Double 2-way valve (6) for vacuum / support air

The both internal valves switch on the vacuum generator to create a vacuum on the tamp and intended of this to switch on the support air over the support air tube for a perfect label take over procedure..

With switch 12 you can switch the vacuum and with switch 13 you can switch the support air.
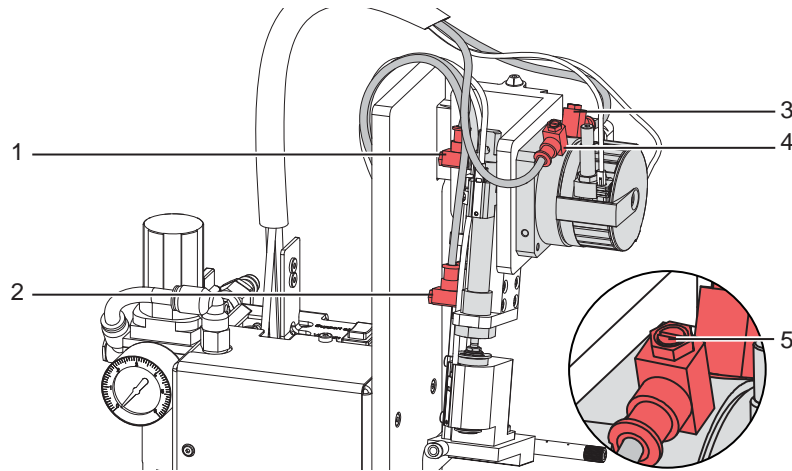
7.2.2 Throttle valves on the cylinders

Fig. 20   Throttle valves on the cylinders

To adjust the speed of the cylinder movements use the throttle valves 1 and 2 for the lift cylinder and 3 and 4 for the swing cylinder. Over the throttle valves will controlled the outflow of the pressure air. A closed valve reduced the speed and a open valve produced a higher speed.

Valve 1 - Lift cylinder in direction start position
Valve 2 - Lift cylinder in direction labelling position
Valve 3 - Swing cylinder in turn direction labelling position
Valve 4 - Swing cylinder in turn direction start position

To open the valves turn the throttle screws (5) counterclockwise

To close the valves turn the throttle screws (5) clockwise

7.2.3 Throttle valves on the valve block
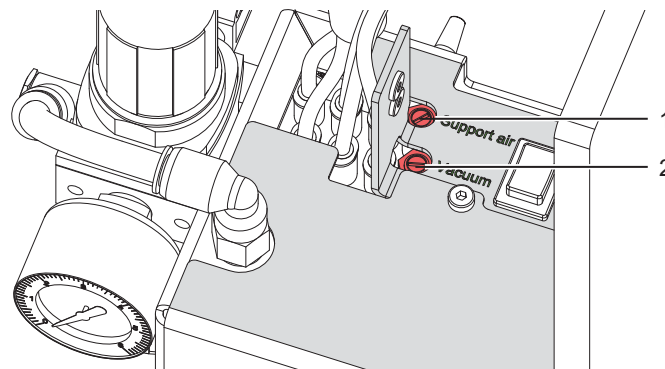
Fig. 21   Throttle valves on the valve block

Throttle valve vacuum (1)

With the valve (2) the vacuum to suck the label onto the pad can be adjusted. Adjust the vacuum in such a way, that the label is properly sucked by the pad. To increase the vacuum turn counterclockwise the screw at the valve (1).

Throttle valve support air (2)

With the valve (1) the supporting air to blow the label against the pad can be adjusted. Adjust the supporting air in such a way, that it will be blown against the label without swirling. To increase the supporting air turn counter-clockwise the screw at the valve (2). If necessary adjust the direction of the air current ▷ "Aligning the Blow Tube".

The applicator A3200 is designed for the operation modes „stamp" and "blow on"

	stamp on	blow on	roll on
print / apply	x	x	no
apply / print wait position on top	x	x	no
apply / print wait position down		x	no

Table 4   Applicator operation modes

This modes you can modify with some delay times.

8.1   Method for Changing the Printer Setup

ℹ️ **Notice!**
For more information about the printer configuration and the function of the keys in the navigator pad
▷ **Configuration manual of the printer (A+ series) .**

1. Press **menu** key.
2. Select `Setup > Machine param. > Applicator`.
3. Select and adjust the needed parameters.
4. Return to the "Ready" mode.

8.2   Quick Mode for Setting the Delay Times

Beside the standard method for the printer configuration there is a quick mode to adjust the delay times available.

ℹ️ **Notice !**
The quick mode settings can be made during operation . The changes affect directly the current print job.

1. Press the **menu** key for at least 2 seconds.
   The first delay time appears on the display.
2. Adjust the delay time by pressing the ⏶ key and ⏷ key.
3. To switch between the different delay times press the ▶ key.
4. To leave the quick setup mode press the ◀ key.
   The selected delay times are stored in the printer.

8.3 Configuration Parameters of the Applicator

The configuration parameters of the applicator can be found in the menu `Setup > Machine param.`

Parameter		Meaning	Default
	Applicator	Configuration parameters of the applicator	
	> Mode of oper.	Setting the operation mode `Stamp on, Roll on, Blow on`	Stamp on

	> Mode of appl.	Setting the application mode `Print-Apply / Apply-Print`
		`Print-Apply:`
		An external start signal releases the print of a label and following the application of the label. After a cycle is complete, the pad without label waits in the start position.
		`Apply-Print:`
		An extra signal starts the print of the first label and the transfer of the label to the pad. The external start signal releases the application of the label and following the print and transfer of the next label.
		After a cycle is complete, the pad with a label is in the waiting position.
			Print-Apply

	> Waiting position	**only at Mode of oper. `Blow on` and Mode of appl. `Apply-Print`** `up` : Pad waits in the start position for the start signal `down` : Pad waits in the labelling position for the start signal	up
	> Blow time	**only at Mode of oper. `Blow on`** Switch-on time (max. 2,5 s) of the blowing air for the label transfer	0 ms
	> Support delay on	Setting the switch-on delay (max. 2,5 s) for the supporting air between print start and switching on the supporting air. The delay prevents swirling at the front of the label and, consequently, avoids faults when the label is being picked up from the printer.	0 ms
	> Support del. off	Setting the switch-off delay (max. 2,5 s) for the supporting air between the end of label forwarding and switching on the supporting air. The delay can be useful to separate the rear edge of the label from the carrier to avoid errors and to improve the accuracy of label positioning	270 ms
	> Delay time	Delay (max. 2,5 s) between start signal and the start of an labelling cycle. Allows e.g. the use of product sensors at conveyors.	0 ms
	> Lock time	All start signals coming in following the first start signal are ignored when they arrive within the lock time.	0 ms
	> Peel position	Shift the position of the dispensed label relatively to the dispense edge. In the software an extra peel offset value is available. The offset values from "Peel position" and from software are added together for execution. ▷ "Setting the Peel Position".	0,0 mm
	> Vacuum control	Setting the label transfer check from printer to pad and from pad to product by the vacuum sensor	On

Table 5   Applikatorparameter
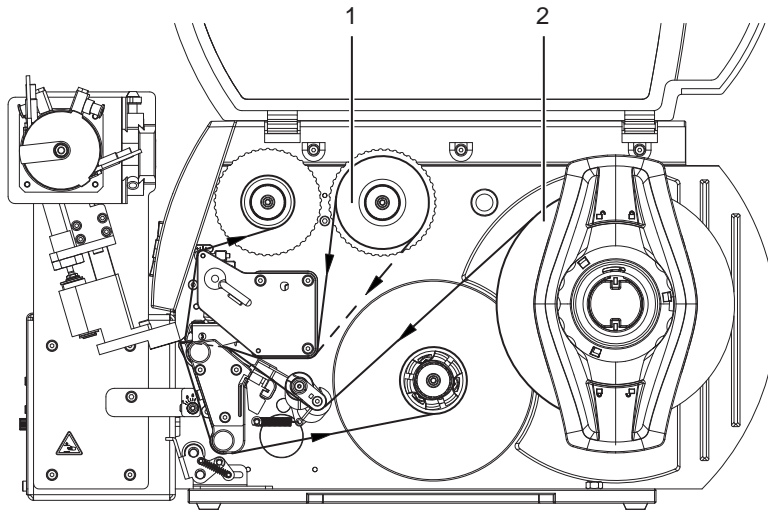
9.1 Loading Labels and Transfer Ribbon

Fig. 22   Label and transfer ribbon feed path

▶ Insert transfer ribbon (1).

▶ Insert labels (2) for operation in peel-off mode

Detailed information ▷ Operator's manual of the printer.

ℹ **Notice!**

▶ **For labelling operation activate the peel-off mode in the software.**

For direct programming use the P command ▷ Programming manual

9.2 Test Mode Using the Pre-dispense Key without Print Job

The whole labelling process can be simulated without the need of a print job or a connection to a computer by alternately pressing the ⌈FEED⌉ key and the pre-dispense key (1) :

▶ Press the ⌈FEED⌉ key.
A blank label is fed. The vacuum at the pad as well as the supporting air (blow tube) are switched on. After the label has been picked up by the pad, the supporting air is switched off.

▶ Press the pre-dispense key (1).
The pad is moved to the labelling position. A sensor signals when the labelling position is reached. The vacuum is switched off and the label is placed onto the product. Then, the pad is moved back into the starting position.

ℹ **Notice!**

▶ **Please use that test mode to adjust the parameter "Peel position" in the printer configuration.**
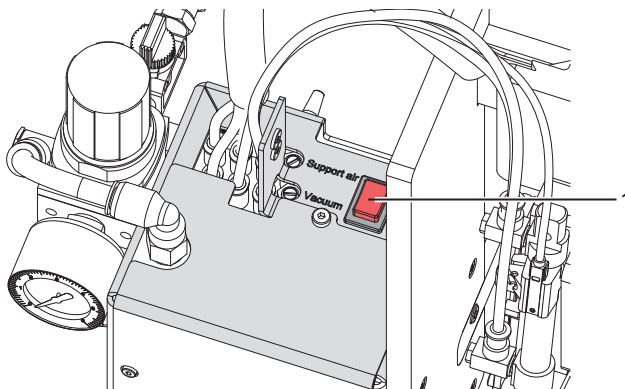

Fig. 23   Pre-dispense key

9.3   Test Mode Using the Pre-dispense Key with Print Job

That method allows to check labelling process with the real print data using the pre-dispense key (1).

▶ Send a print job.

The test mode is executed in two half cycles :

▶ Press the pre-dispense key (1).
Half cycle 1
A label is printed. The vacuum at the pad as well as the supporting air (blow tube) are switched on. After the label has been picked up by the pad, the supporting air is switched off.

▶ Press the pre-dispense-key (1) again.
Half cycle 2
The pad is moved to the labelling position. A sensor signals when the labelling position is reached. The vacuum is switched off and the label is placed onto the product. Then, the pad is moved back into the starting position.

If the label is manually removed from the pad after the first half cycle, the half cycle 1 will be repeated when the pre-dispense key is pressed again.

i   **Notice!**
If you take the label out by hand after end of half cycle 1 will in case of using the Pre-dispense Key repeat the half cycle 1 .

9.4   Setting the Peel Position

To optimize the transfer of the labels from the printer to the pad there two different parameters are available for adjusting the peel position.

!   **Attention!**
▶ **First adjust the parameter "Peel Position" in the printer configuration.**
▶ **Following adjust the additional peel-off offset in the software.**
It is very important to follow that procedure for a certain start after label loading and for the re-start after error treatment.

Parameter "Peel Position" in the printer configuration

▶ Check the basic setting in the printer setup. Perform labelling cycles by alternately pressing the **feed** key and the pre-dispense key ▷ "Test Mode Using the Pre-dispense Key without Print Job".

▶ Adjust the "Peel Position" in such a way, that the blank labels are peeled-off completely from the liner ▷ "Configuration Parameters of the Applicator".

Peel-off offset in the software

▶ Check the setting in the software. Perform labelling cycles by repeatedly pressing the the pre-dispense key ▷ "Test Mode Using the Pre-dispense Key with Print Job".

▶ Adjust the peel-off offset in such a way, that the printed labels are peeled-off completely from the liner ▷ Programming manual or software documentation.

i   **Notice!**
Before you optimize the software parameter adjust all basic settings.

9.5   Standard Operation

1. Check all external connections.
2. Load the material. Ensure that the locking system is locked ▷ "Loading Labels and Transfer Ribbon".
3. Open the shutoff valve.

> **! Attention!**
> ▶ **Ensure that the pad is not covered by a label when switching on the printer-applicator system.**
> **Otherwise the vacuum sensor may be calibrated faultily.**

4. Switch on the printer.

> **i Notice!**
> **In case the pad is outside the start position in the moment of switching on it will interupted the procedure and give notice an error message on the display of the printer.**
> **If you push the button PAUSE on the printer is receipt the error and the applicator will move into the start position.**
> **The Applicator is ready for work.**

5. Press the **feed** key at the printer.
   A synchronization feed is released. The processed labels have to be removed manually. After a few seconds the printer carries out a short backfeed to position the front edge of the next label at the printing line.

> **i Notice!**
> **This synchronizing also has to be carried out when the print job has been interrupted with the cancel key.**
> **Synchronizing is not necessary when the printhead was not lifted between print jobs. This also applies if the printer was powered off between print jobs.**

6. Start a print job
7. Start the labelling process via PLC interface.

Error messages during labelling process are shown in the display of the printer ▷ "Error Messages".

For use in a networked system the applicator is equipped with a PLC interface to start and interrupt the labelling process. It also passes on state information as well as error messages of the applicator to the system control.

The interface is placed at the backside of the applicator and has a 15 pin (1) as well as a 25 pin (2) SUB-D connector.

ℹ️ **Notice!**
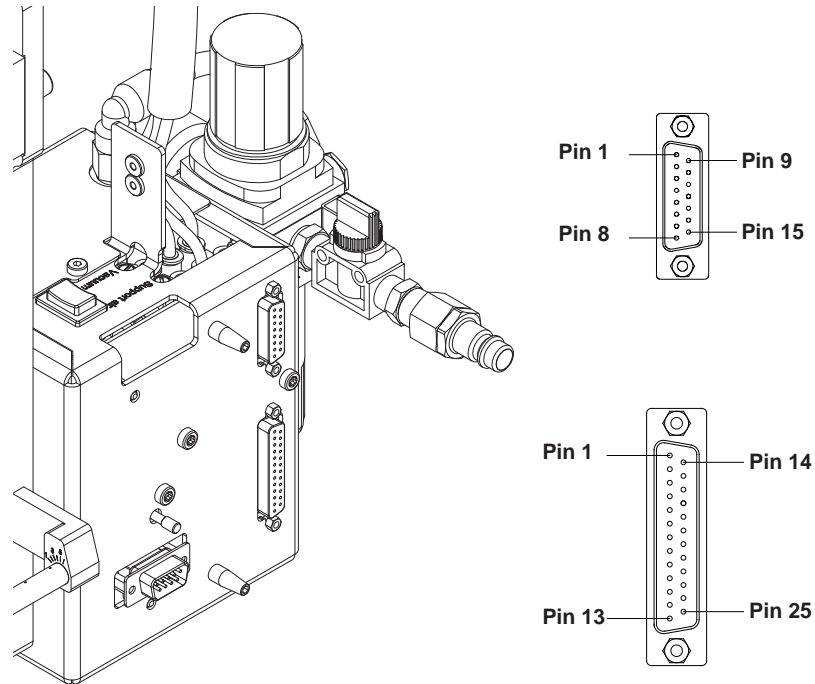**The 15 pin connector has the identical pin assignment as the PLC interface of the cab Hermes applicators**

Fig. 24   Connectors of the PLC interface

Pin 25 pin	Pin 25 pin	Signal	Signal old *	Direction	Function
1	1	E0.1 (+)	XSTRT	incomming	Start signal
2	2	E0.2 (+)	XSTP	incomming	Stop signal (external failure)
3	3	E0.3 (+)	XDREE	incomming	Print first label
4	4	A0.1	XDNB	outcome	Printer not ready
5	5	A0.2	XEDG	outcome	No existing print job
6	6	A0.3	XSAA	outcome	General error message
7	7	A0.4	XSOE	outcome	Pad in starting position
8	8	GND	GND	outcome	Ground (0V) printer
9		A0.5	XEDST	outcome	Special signal x command
10					not connected
11		E0.5 (-)	XRSR	incomming	External RESET (return line)
12					do not use
13					do not use
14	9	E0.1 (-)	XSTRTR	incomming	Start signal (return line)
15	10	E0.2 (-)	XSTPR	incomming	Stop signal (return line)
16	11	E0.3 (-)	XDREER	incomming	Print first label (return line)
17	12	A0.7	XSUE	outcome	Labelling position arrive
18	13	A0.8	XETF	outcome	Labbelling error
19	14	COM	RÜL	outcome	Line with common potential for all output
20	15	24V (Out)	24V (Out)	outcome	Operating voltage +24V, Si T 100mA
21		A0.9		outcome	Special signal x command
22					not connected
23		E0.5 (+)		incomming	External RESET
24					do not use
25		A0.10		outcome	Pad in starting position (inverted)

Table 6   Pin configuration of the PLC interface

   * Signal names for Apollo and Hermes Applicators

i Notice!

The numbers in the brackets apply to the 15 pin connector !

| Pin 25 pin	Pin 15 pin	Signal	Description	Activation / Active state
1	1	E0.1 (+)	Start signal for the cyclic labelling process.	Switch on +24V between Pin 1 and Pin 14 (9)
2	2	E0.2 (+)	Stop signal (external error) The following functions are released : • the print of a label and its picking-up by the pad will be finished • the labelling process is interrupted • the pad returns into the starting position • all following start signals are ignored • if activated during the labelling phase, the display will show the message 'Host stop/ error'. (no message during print process)	Switch on +24V between Pin 2 and Pin 15 (10)
3	3	E0.3 (+)	Print first label **for application mode "Apply/Print" only :** releases the print of the first label and its picking-up by the pad	Switch on +24V between Pin 3 and Pin 16 (11)
4	4	A0.1	Printer not ready Error message of the printer. The error type is shown on the display. After error correction, the print of the last label will be repeated.	Contact between Pin 4 and Pin 19 (14) is open
5	5	A0.2	No existing print job. State message. There is no print job currently available.	Contact between Pin 5 and Pin 19 (14) is open
6	6	A0.3	General error message General error message of both, printer and applicator. This message is shown when one of the two errors either XDNB or XETF occurs. Important in case that only one error signal of the applicator can be analyzed from the system control.	Contact between Pin 6 and Pin 19 (14) is open
7	7	A0.4	Pad in starting position The pad is in the starting position where it picks up the label from the printer.	Contact between Pin 7 and Pin 19 (14) is open
8	8	GND	Ground (0V) **Attention !** ▶ Do not connect Pin 8 with the ground of the PLC. Otherwise the galvanic separation would be lost.	
9		A0.5	Special signal x command (bit 0) is controlled by the X command in the direct programming for detailed description of the X command ▷ Programming manual	if Bit 0 is set : Contact between Pin 9 and Pin 19 is closed
10			not connected	
11		E0.5 (-)	External reset (reverse line)	
12			▶ do not use	
13			▶ do not use	

Table 7   PLC signals

Pin 25 pin	Pin 15 pin	Signal	Description	Activation / Active state
14	9	E0.1 (-)	Start signal (reverse line)	
15	10	E0.2 (-)	Stop signal (reverse line)	
16	11	E0.3 (-)	Print first label (reverse line)	
17	12	A0.7	Pad in labelling position The pad is in the position where the label is applied to the product	Contact between Pin 7 (12) and Pin 19 (14) is open
18	13	A0.8	Applicator fault Error message of the applicator The error type is shown on the display. After error correction, the print of the last label **cannot be repeated**.	Contact between Pin 18 (13) and Pin 19 (14) is open
19	14	COM	Line with common potential for all output signals, may be connected with 24V or GND	
20	15	24V(Out)	Operating voltage +24V, Si T 100mA provided by the applicator. Example : To generate the start signal by a foot switch. **Attention !** ▶ Do not connect an external voltage to Pin 20 (15) !	
21		A0.9	Special signal x command (bit 0) is controlled by the X command in the direct programming for detailed description of the X command ▷ Programming manual	if Bit 3 is set : Contact between Pin 21 and Pin 19 is closed
22			not connected	
23		E0.5 (+)	External Reset Error state in the printer will be quit, the applicator will be reset (comparable to pressing the **pause** key)	Switch on +24V between Pin 23 and Pin 11
24			▶ do not use	
25		A0.10	Pad in starting position (inverted) The pad is in the starting position where it picks up the label from the printer.	Contact between Pin 25 and Pin 19 is closed

Table 7   PLC signals

Inputs

The inputs are optocouplers with a current limiting resistor of 2,4 kΩ in the input circuit for an operating voltage of 24V.

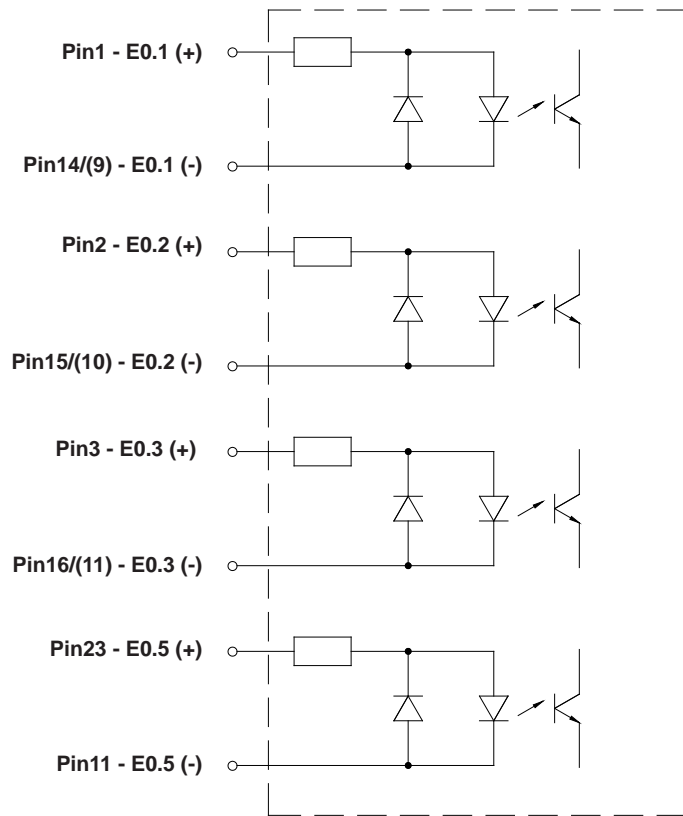For each signal [IN (+)] there is a separate reverse line [IN (-)] at the plug connector.

Fig. 25   Circuit of the inputs

Examples for external signals

ℹ **Notice!**
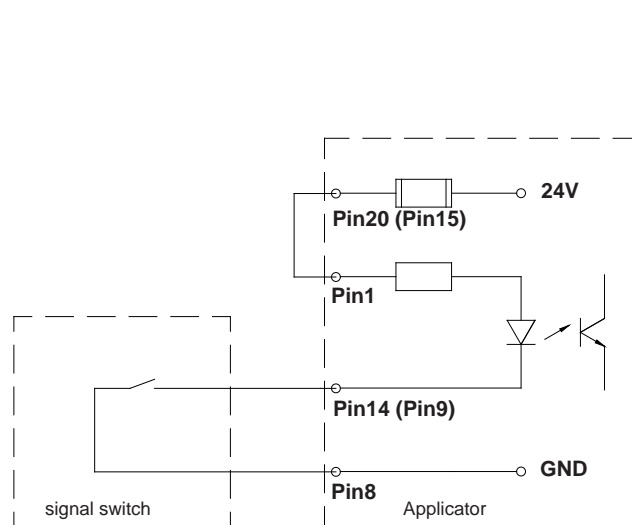
The numbers in the brackets apply to the 15 pin connector !
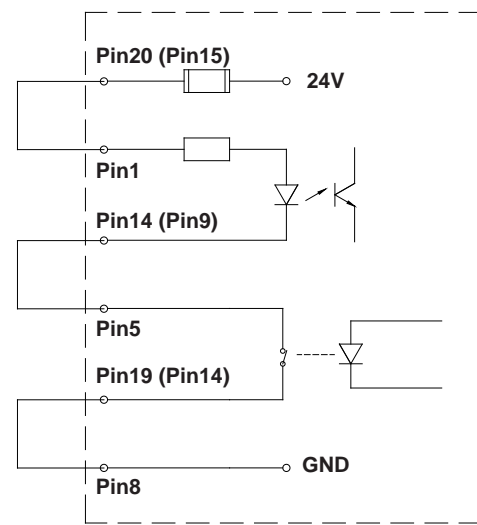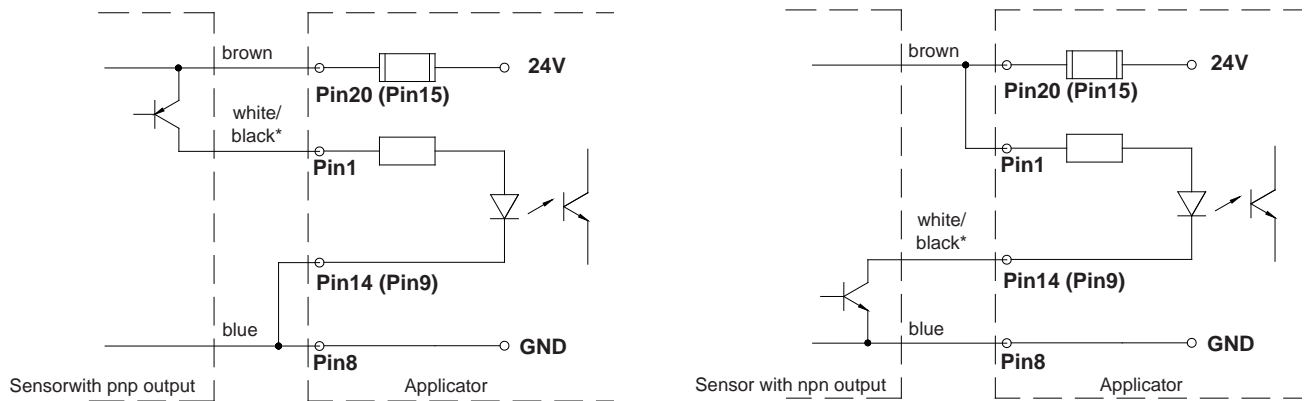

Fig. 26   Signal switch to create the start signal

Fig. 27   Example for automatic creation of a start signal after receiving a print job (for jobs with label amount = 1 only)

* depend of used sensor

Fig. 28   Optical sensor with pnp-output (left) Optical sensor with npn-output (right) to create the start signa l

Outputs

All outputs are realized with solid state relays. The outputs are connected among one another one-sided. The common line is lead to the plug connector as COM signal.

The switch function of the outputs is to open or close the contact between the common line COM and the respective output.

Electrical requirements : $U_{max} = \pm 42$ V, $I_{max} = 100$ mA

Resistance of the closed contact :   R <= 25 Ω
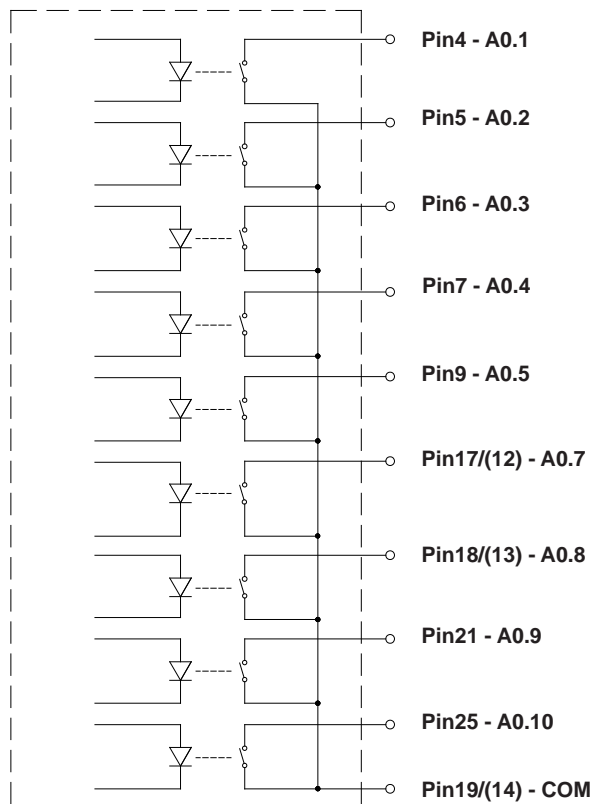
Fig. 29   Circuit of the outputs

to Serial number 34755
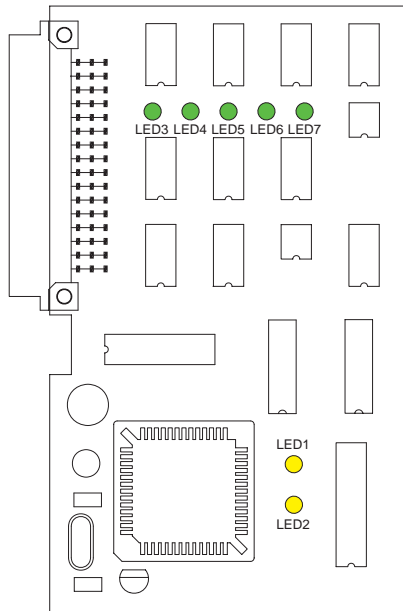
LED-No.	Color	Description	Active Condition
1	yellow	Label on pad	ON
2	yellow	operation voltage 5 V	ON
3	green	PLC-Signal XSTRT	ON
4	green	PLC-Signal XSTP	ON
5	green	PLC-Signal XDREE	ON
6	green	PLC-Signal XRS	ON
7	green	no function	

Table 8   LED on the PCB applicator control to SN 3475

Fig. 30   LED on the PCB applicator control to SN 3475

from Serial number 3476
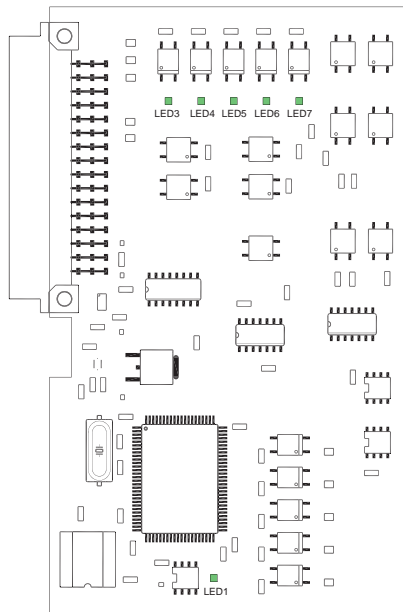
LED-No.	Color	Description	Active Condition
1	green	Label on pad	ON
3	green	PLC-Signal XSTART	ON
4	green	PLC-Signal XSTOP	ON
5	green	PLC-Signal XDREE	ON
6	green	PLC-Signal XRST	ON
7	green	no function	

Table 9   LED on the PCB applicator control from SN 3476

Fig. 31   LED on the PCB applicator control from SN 3476

12   Spare Parts

12.1   Control unit

No.	Part-No.	Description	PU	Serial No. from	to		No.	Part-No.	Description	PU	Serial No. from	to
1	5949410.001	Service Unit	1				16	5902358.001	Screw DIN7984-M4x6	10		
2	5906913.001	Push-in L-Connector	1				17	5949408.001	Cover	1		
3	5902858.001	Screw DIN84-M4x45	10				18	5949097.001	Knurled Screw	1		
4	5906912.001	Filter Regulator	1				19	5902168.001	Screw DIN912-M3x5	10		
5	5902501.001	Nut DIN934-M4	10				20	5964045.001	Bracket	1		
6	5906192.001	Sealing Ring	10				21	5955585.001	PCB Valve Block	1		
7	5905457.001	Manometer	1				23	5955573.001	EEPROM	1		
8	5966465.001	Tube	2m				24	5955572.001	PCB Applicator Control	1		
9	5949409.001	Bracket	1				25	5949058.001	Distance Bolt M3x7.5	1		
10	5902489.001	Screw DIN7984-M4x8	10				26	5905667.001	Push-in/threaded Fitting	1		
11	5905284.001	Block Valve	1				26	5949417.001	LP Applicator Connectors	1		
12	5906887.001	Reducing Coupling	1				27	5949144.001	Center Pin	1		
13	5906521.001	Coupling Plug	1				28	5902484.001	Bolt with Nut M3	10		
14	5905285.001	Push-in L-Connector	1				29	5949406.001	Frame	1		
15	5949046.001	Key	1									

23, 24 : If it is necessary to replace a Controller or a PCB Applicator Control at devices **with serial number up to 3475** , order and replace both EEPROM (23) and PCB Applicator Control 24).
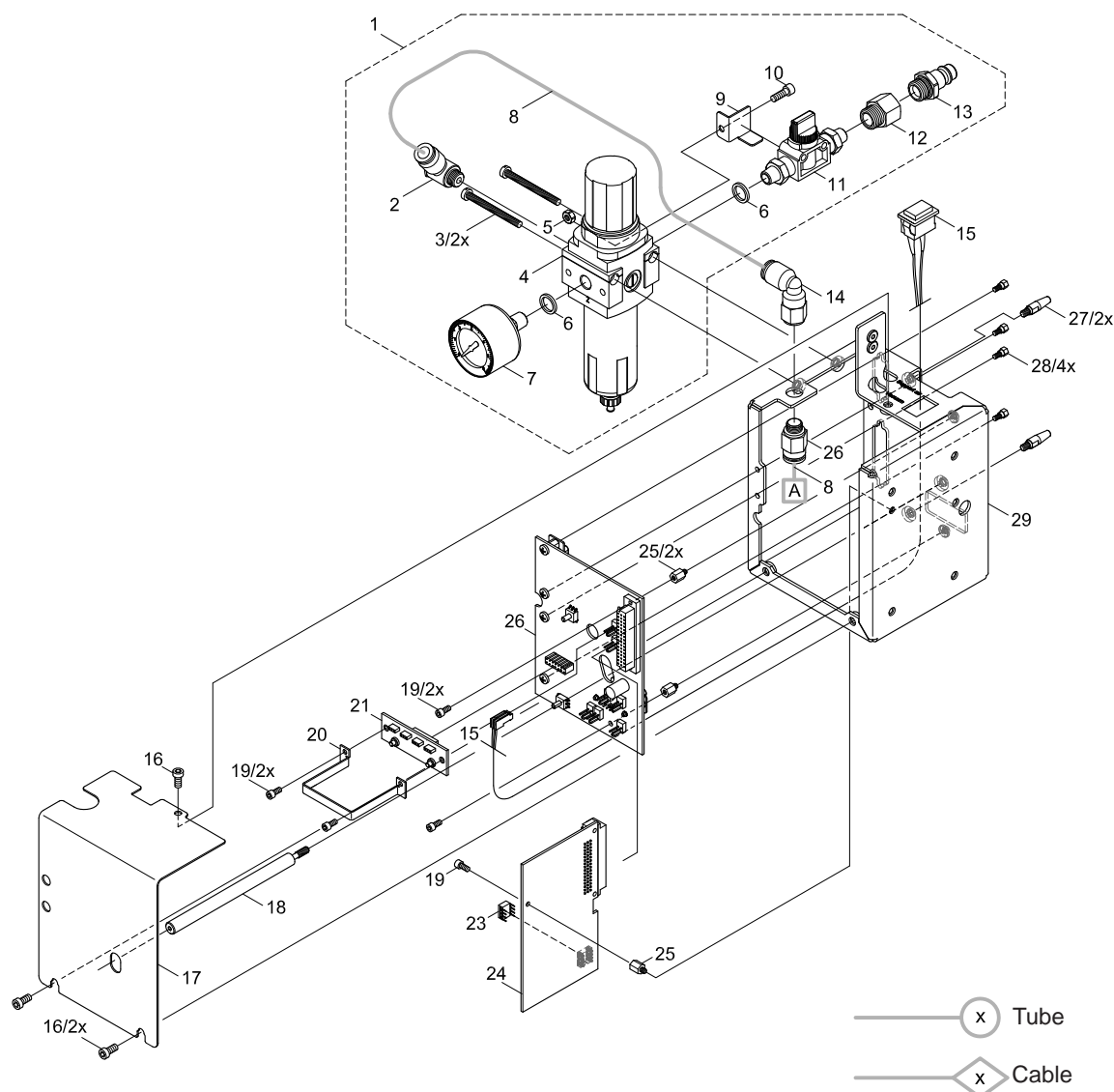

Fig. 32   Control unit - Spare Parts

12.2   Valve block

No.	Part-No.	Description	PU	Serial No. from	to
8	5966465.001	Tube	2m		
30	5902860.001	Screw DIN7984-M3x20	10		
31	5906914.001	Push-in L-Connector	1		
32	5966464.001	Tube	2m		
33	5902602.001	Press Nut M3	10		
34	5906844.001	Vacuum Generator	1		
35	5905257.001	Silencer	1		
36	5966460.001	Tube	2m		
37	5906915.001	Push-in T-Connector	1		
38	5906016.001	Tube	1		
39	5906852.001	Valve Block	1		

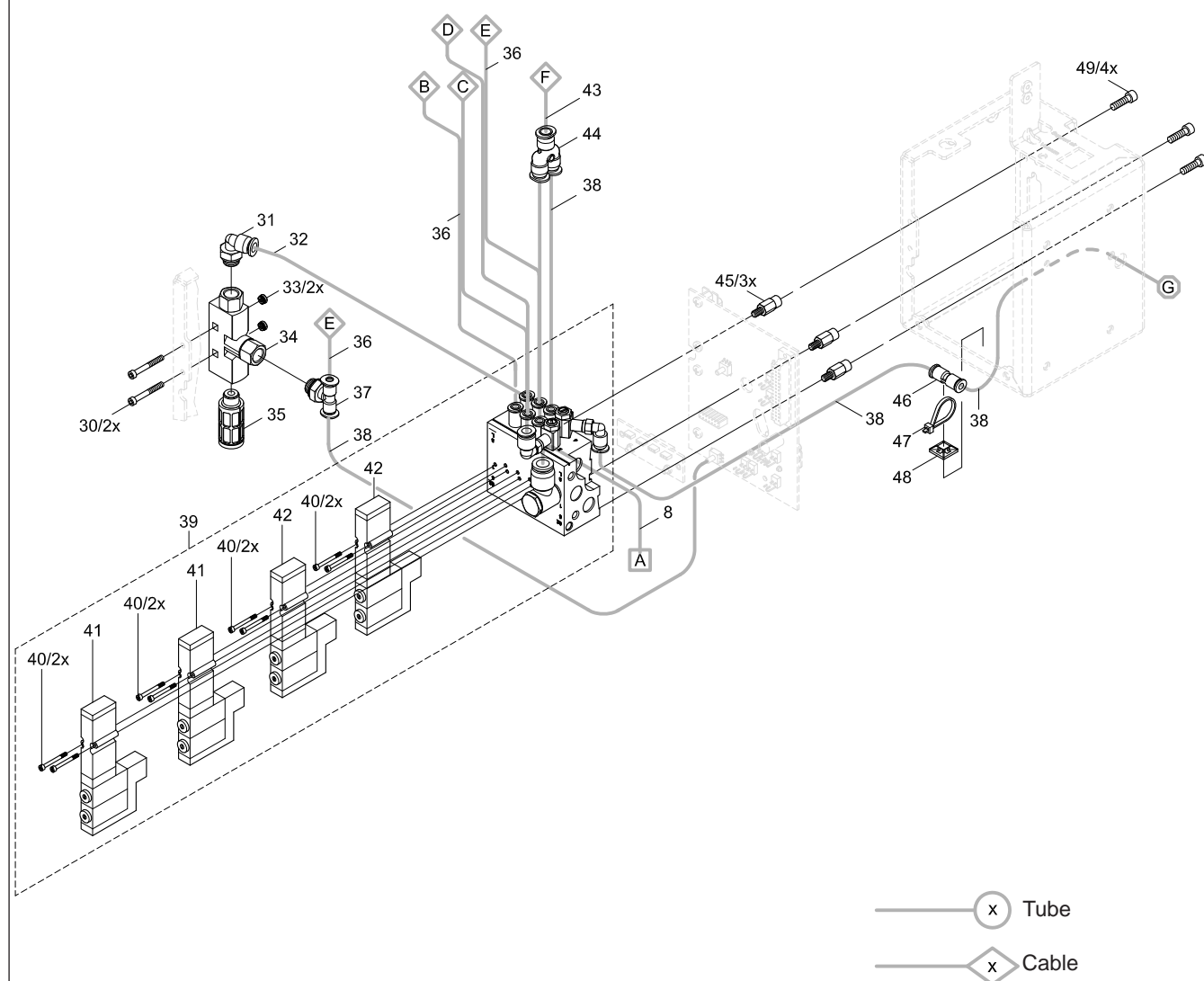| No.	Part-No.	Description	PU	Serial No. from	to
40	5906507.001	Screw M2x20	10		
41	5906022.001	Valve	1		
42	5906021.001	Valve	1		
43	5966461.001	Tube	2m		
44	5905972.001	Push-in Y-Fitting	1		
45	5949415.001	Distance Bolt M4x14	1		
46	5905603.001	Push-in/threaded Fitting	1		
47	5901505.001	Cable Clamp L=102	10		
48	5905124.001	Adhesive Plate 12.7x12.7	10		
49	5902565.001	Screw DIN7984-M4x10	10		

Fig. 33   Valve block - Spare Parts
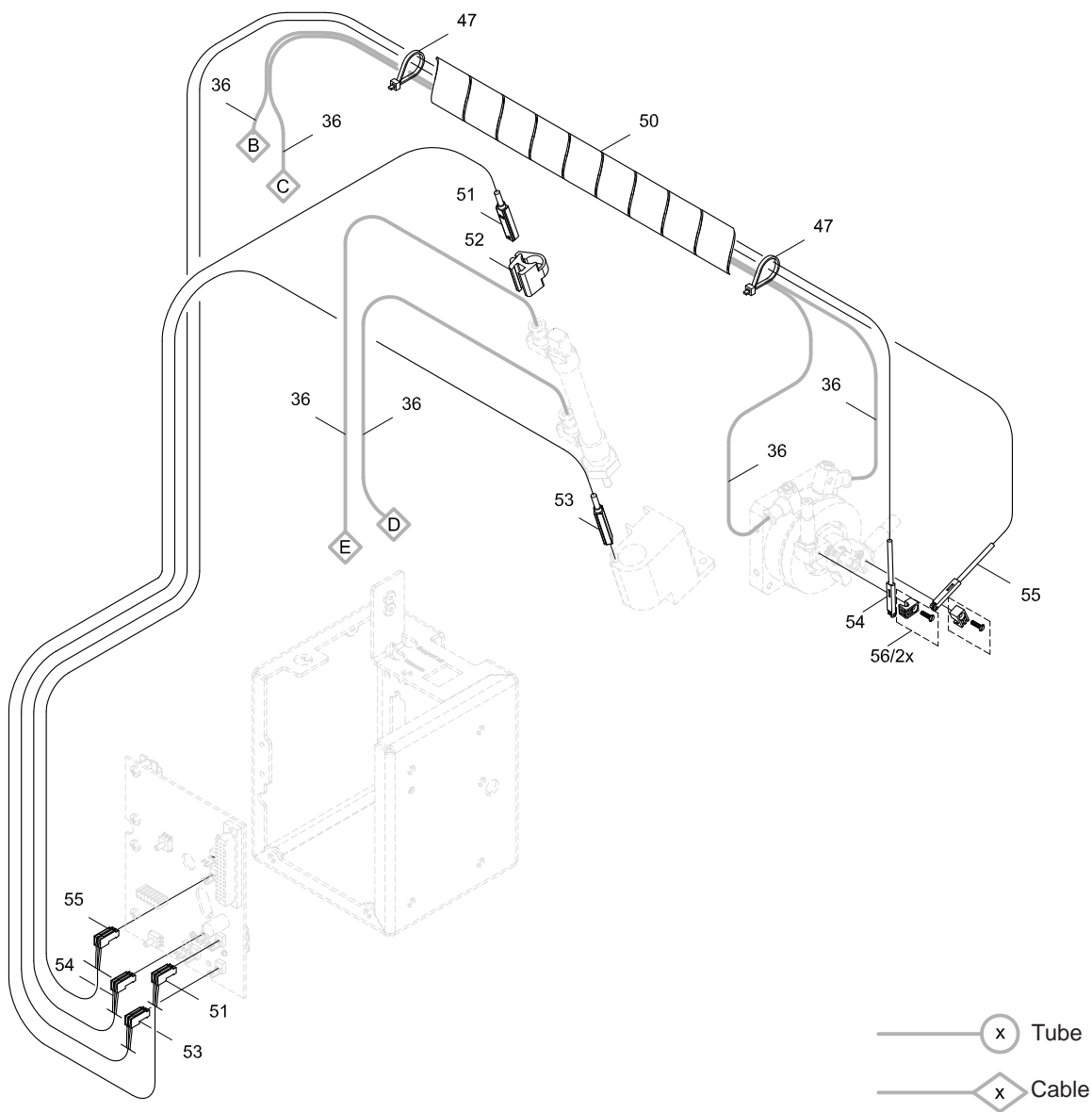
12.3 Sensors

No.	Part-No.	Description		PU	Serial No.	
					from	to
36	5966460.001	Tube		2m		
47	5901505.001	Cable Clamp L=102		10		
50	5966584.001	Spiral Tube		1		
51	5976063.001	Sensor	LC Start	1		
52	5906646.001	Mounting Clip		1		
53	5976062.001	Sensor	LC End	1		
54	5976064.001	Sensor	SC End	1		
55	5976065.001	Sensor	SC Start	1		
56	5907061.001	Sensor Retainer		1		

LC - Lift Cylinder

SC - Swing Cylinder



Fig. 34   Sensors - Spare Parts

12.4   Swing cylinder

No.	Part-No.	Description		PU	Serial No.	
					from	to
49	5902565.001	Screw DIN7984-M4x10		10		
54	5976064.001	Sensor	SC End	1		
55	5976065.001	Sensor	SC Start	1		
56	5907061.001	Sensor Retainer		1		
57	5902124.001	Screw DIN912 M6x16		10		
58	5904568.001	Set Screw DIN916-M5x12		10		
59	5976038.001	Mounting Plate		1		
60	5976045.001	Crossbeam		1		
61	5964061.001	Setting Screw		1		

No.	Part-No.	Description	PU	Serial No.	
				from	to
62	5903505.001	E-Ring DIN6799-5	10		
63	5964062.001	Binder	1		
64	5902143.001	Screw DIN7991-M4x16	10		
65	5976043.001	Adjusting Bracket	1		
66	5906636.001	One-way Flow Control Valve	1		
67	5966923.001	Swing Drive	1		
68	5907066.001	Cover	1		
69	5902010.001	Screw DIN912-M3x10	10		
70	5966985.001	Transport Locking	1		

SC - Swing Cylinder
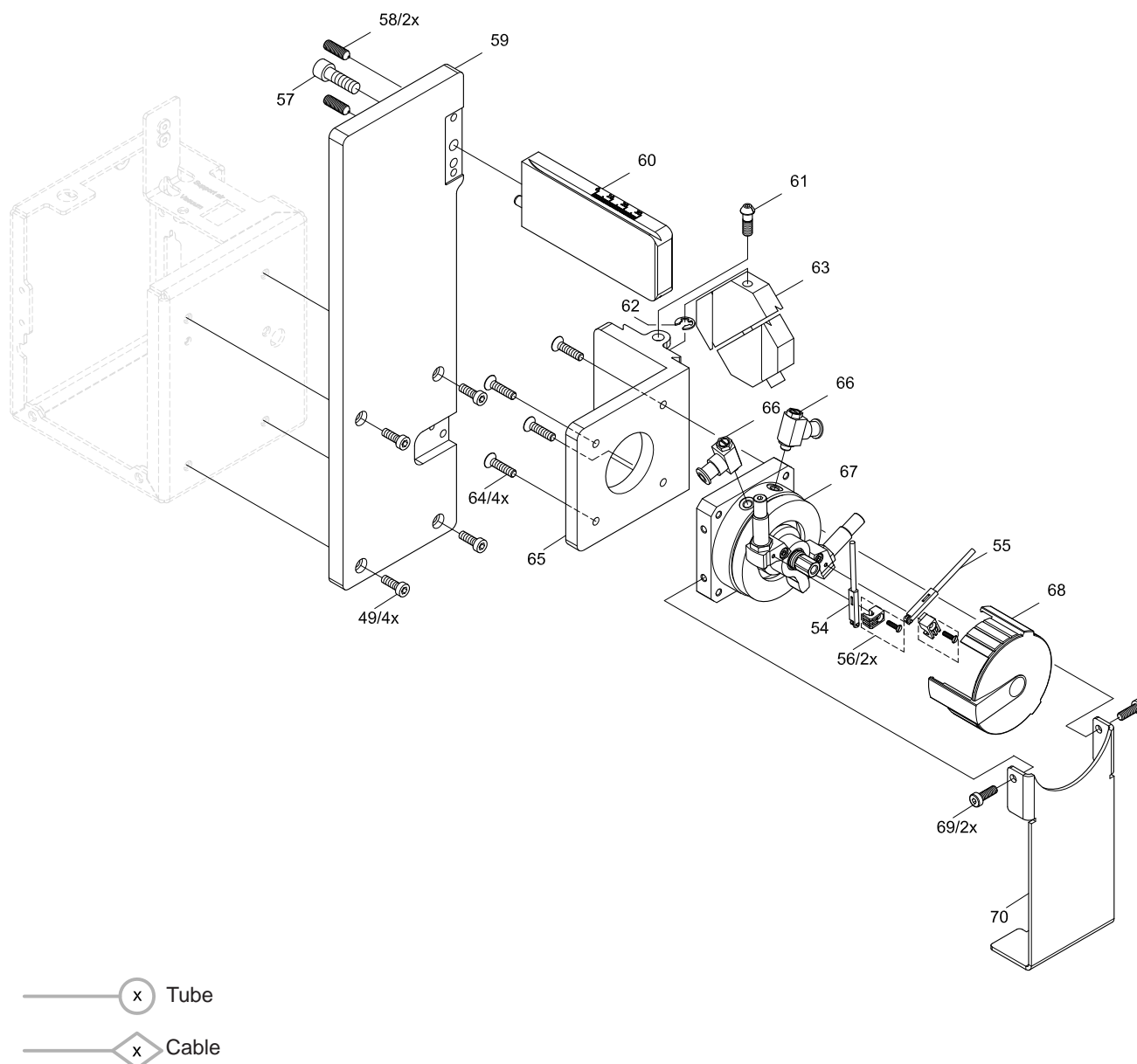
Fig. 35   Swing cylinder - Spare Parts

12.5   Lift cylinder

No.	Part-No.	Description		PU	Serial No.	
					from	to
51	5976063.001	Sensor	LC Start	1		
53	5976062.001	Sensor	LC End	1		
66	5906636.001	One-way Flow Control Valve		1		
69	5902010.001	Screw DIN912-M3x10		10		
71	5966918.001	Stopper		1		
72	5917932.001	Guiding Rail		1		
73	5906645.001	Cylinder		1		
74	5902112.001	Screw DIN7984-M3x25		10		
75	5966924.001	Pivot Arm		1		
76	5918135.001	Sliding Carriage		1		
77	5903004.001	Washer DIN125-A3.2		10		
78	5966538.001	Retainer		1		

No.	Part-No.	Description	PU	Serial No.	
				from	to
79	5902562.001	Screw DIN7984-M4x14	10		
80	5902011.001	Screw DIN912-M3x20	10		
81	5966534.001	Tamp Retainer	1		
82	5521158.001	Washer	1		
83	5521157.001	Washer	1		
84	5903510.001	E-Ring DIN6799-9	10		
84	5903501.001	E-Ring DIN6799-7	10		
85	5941808.001	Bushing	1		
86	5905602.001	Ring Magnet	1		
87	5949191.001	Adapter Bolt	1		
88	5905096.001	Spring	5		
90	5904528.001	Set Screw DIN913-M3x4	10		

LC - Lift Cylinder
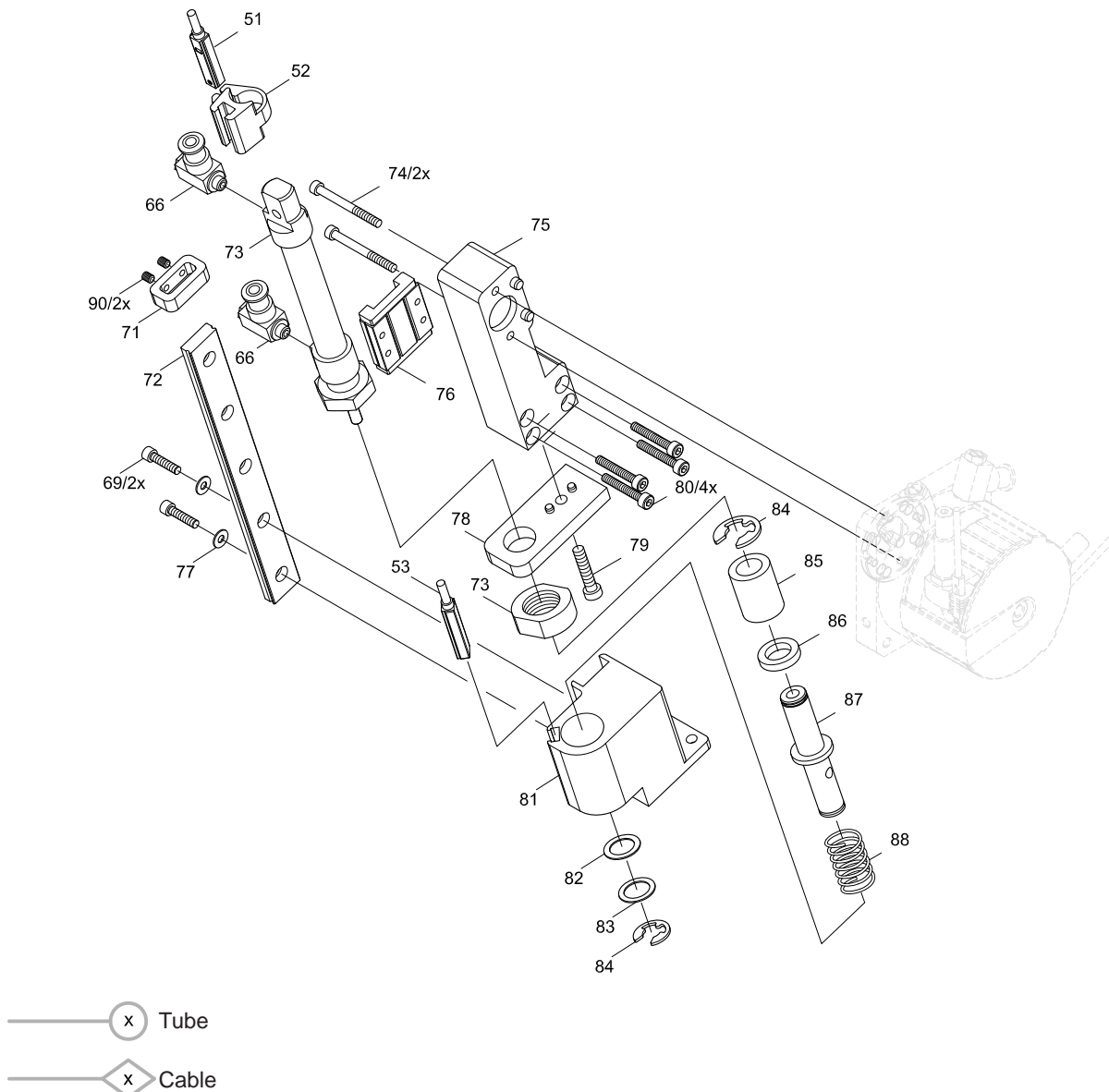
Fig. 36   Lift cylinder - Spare Parts

13.1   Block Diagram Type A3200
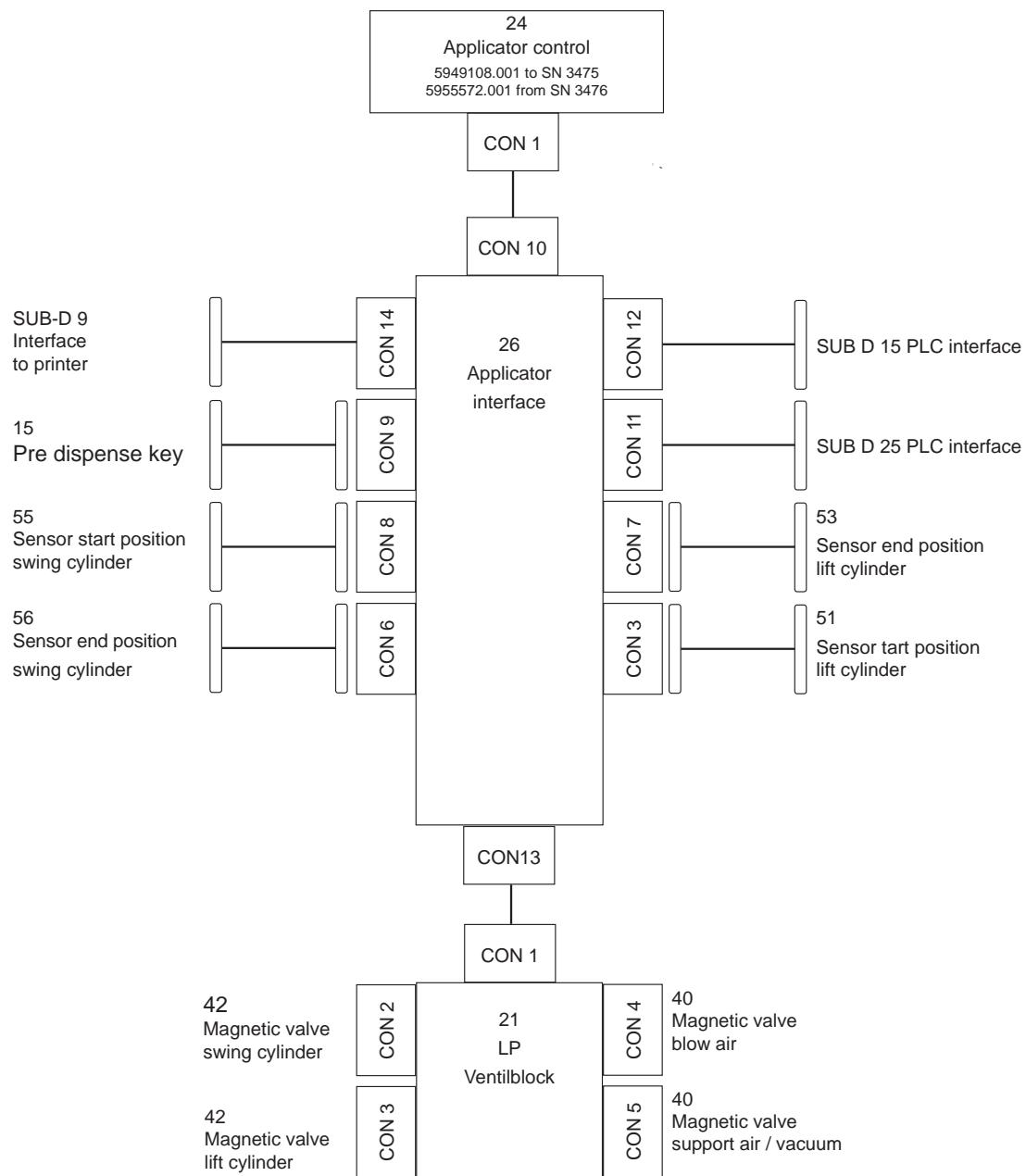
Fig. 37   Block diagram Type A3200
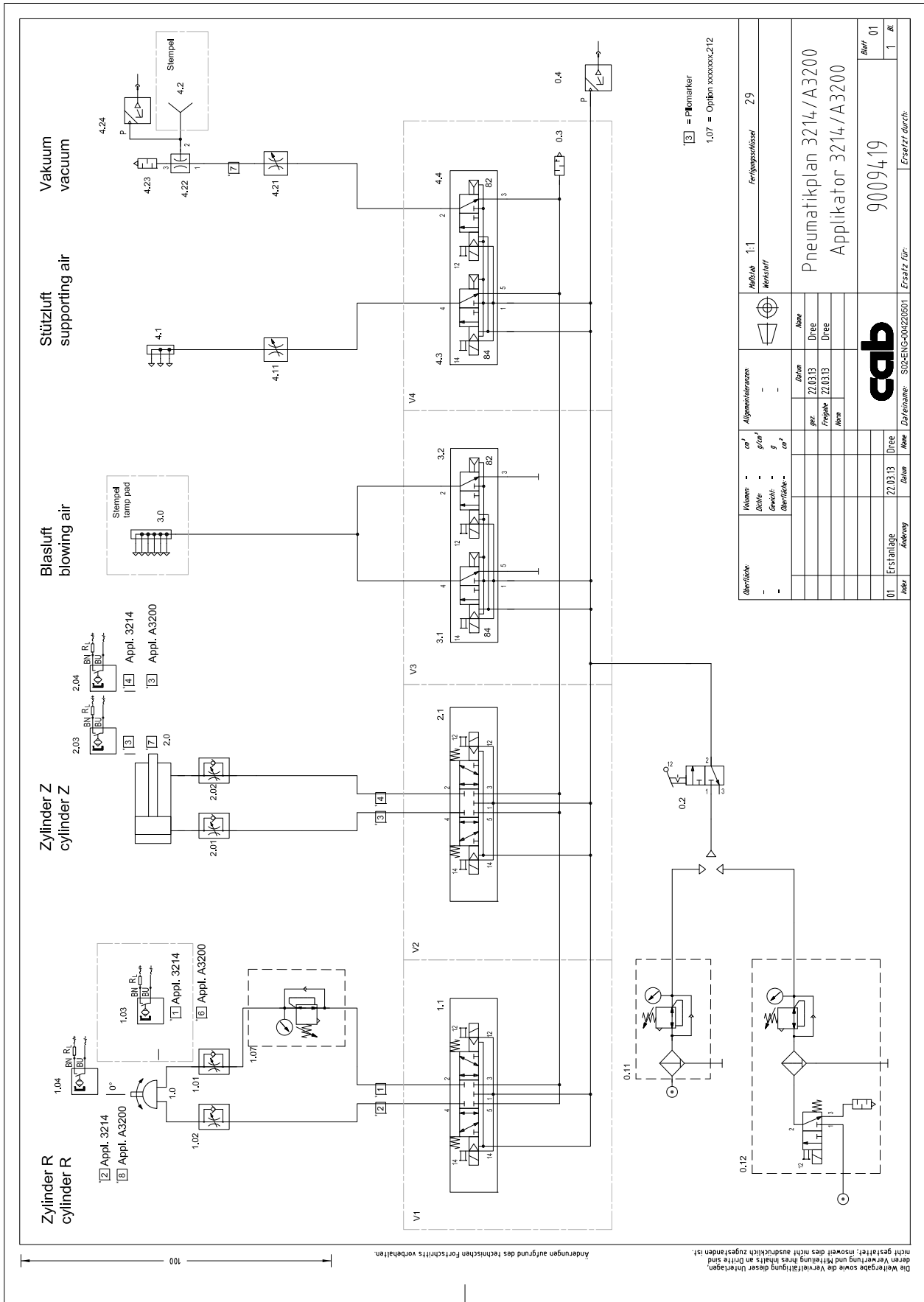
13.2   Pneumatic drawing Type A3200

Fig. 38   Pneumatics Type A3200