

# Operator's Manual



**Applicator**

**A1000**

Made in Germany

Family
A1000

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## 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).

Zeit 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 A+ or A 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 manuals of applicator and printer, including the manufacturer's maintenance recommendations and specifications.



### **Notice!**

**The complete documentation can also currently be found in the Internet.**

## 1.3 Safety Instructions



### **Attention!**

**Initiation, adjustments and changing of parts is only for qualified service personal only.**

▷ Initiation/ Service Manual Applicators



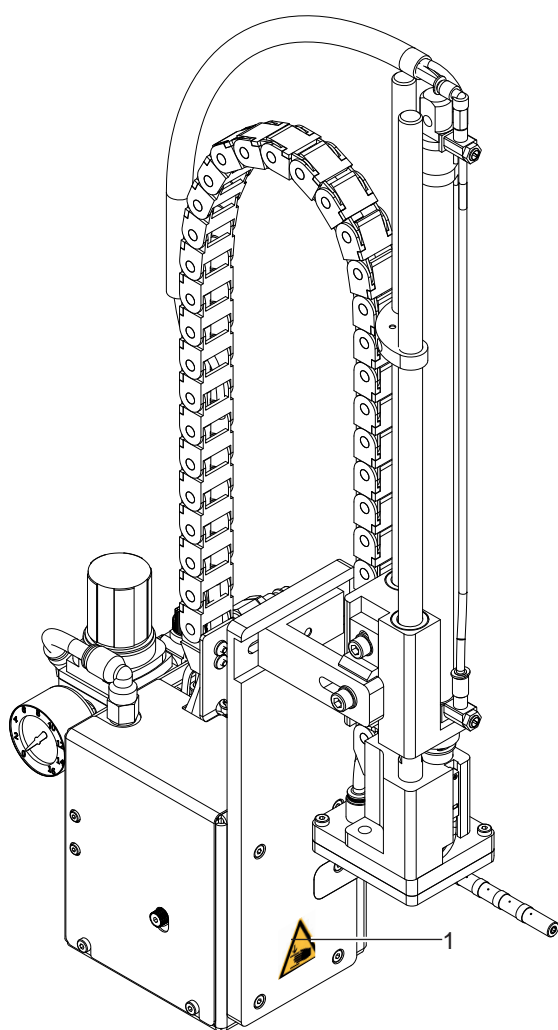
### **Warning!**

**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 !
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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 printer enables it to be easily disassembled into its component parts.

- Send the parts for recycling.

## 2.1 Function

The Applicator A1000 is an optional device to use with cab printers of the A+ or A series for automatically applying the printed label onto the product. The labels are transferred with a pad, which moves between the two positions, starting position and labelling position, by a compressed-air driven pneumatic cylinder.

- In the starting position, the label is picked up from the printer.
- A sensor at the cylinder signals when the pad is in the starting position.
- The label is removed from the carrier ribbon directly at the dispense edge of the printer. It is sucked on the pad by a vacuum via drillings at the bottom of the pad.
- For support, the label is also blown against the pad with an air current coming from a blow tube.
- The correct transfer of the label is controlled by a vacuum sensor.
- Next, the pad is moved down into the labelling position.
- Reaching the labelling position is confirmed by another sensor (labelling position sensor).
- In the labelling position the label is transferred onto the product.
- While the pad is moving back into the starting position, the vacuum sensor checks whether the label has been removed from the pad.

The label can be applied with three different methods :

- **Stamp on**  
The label is pressed directly onto the product.
- **Blow on**  
The pad moves to a pre-adjusted position approximately 10mm away from the product. The label is blown onto the product by an air stream.
- **Roll on**  
In the starting position the label is forwarded until touching the roller of the roll on pad. At the labelling position the roller is pressed onto the product. Then the label is applied and rolled on by the movement of the product.

## 2.2 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 networked system the 15-pin or 25-pin applicator's PLC (programmable logic control) interface with potential free inputs and outputs can be used.

## 2.3 Technical Data

Label transfer method		Stamp on	Roll on	Blow on
Label width in mm			25 - 176	
Label height in mm		25 - 200	80 - 200	25 - 100
Cylinder stroke in mm			220 / 300 / 400	
Pad stroke below printer in mm			70 / 150	
Compressed air pressure			0,5 MPa (5 bar)	
Sound pressure level			max. 79 dB(A)	
Product surface			flat	
Product height	variable	■	■	-
	fixed	-	-	■
Product	fixed	■	-	■
	linear movement	-	■	■

Table 1 Technical Data

### 2.4 Device Overview

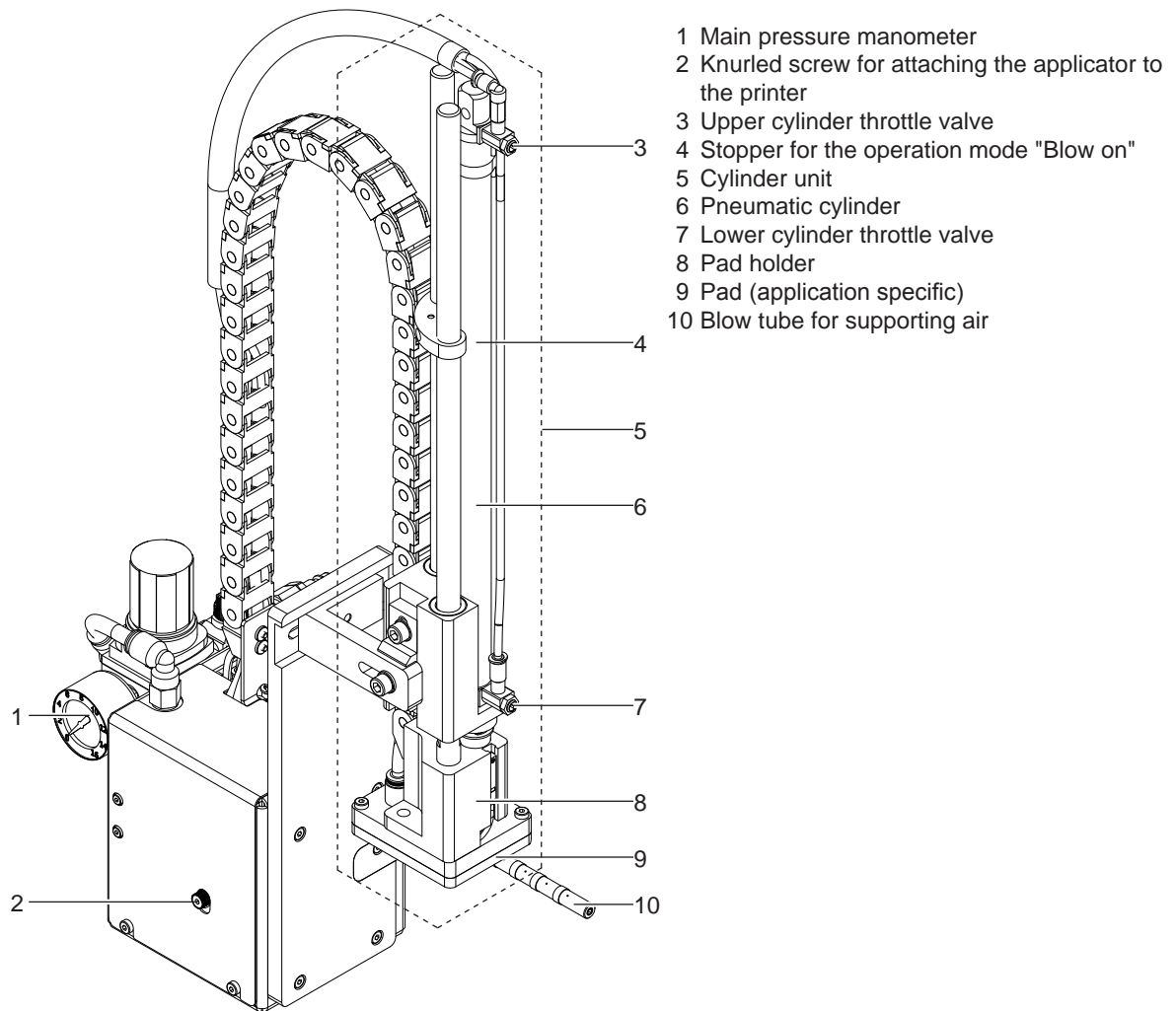


Fig. 2 Front view

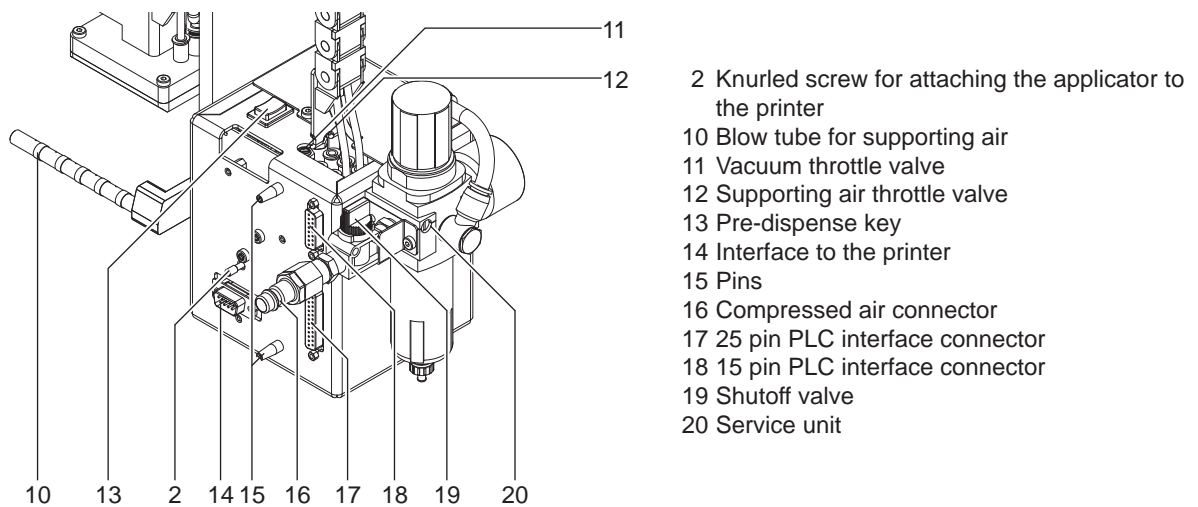


Fig. 3 Rear view



## 2.5 Pads

### 2.5.1 Tamp Pads

#### Universal tamp pad A1021

Standard sizes : 70x60, 90x90

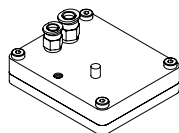


Fig. 4 Universal tamp pad A1021 70x60

#### Universal tamp pad A1321

Standard sizes : 116x102, 116x152

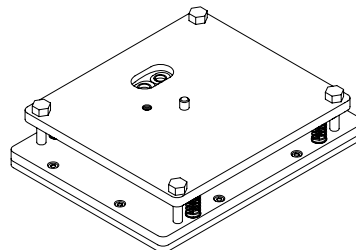


Fig. 5 Universal tamp pad A1321 116x152

Universal tamp pads (Type A1112 or Type A1312) are available in different standard sizes. According to the size of the label the holes may be pierced by the customer. For that purpose a piercing pin is included in the delivery contents.

On request, tamp pads customized to the label sized are delivered.

### 2.5.2 Roll-on Pads

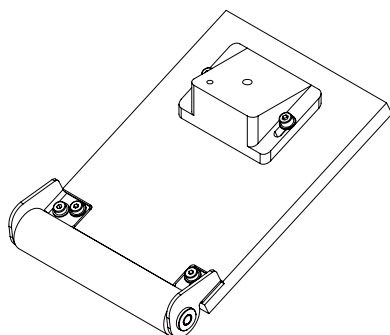


Fig. 6 Roll-on pad A1411 b x h

Roll-on pads (Type A1411) are only produced on request customized to the label size.

### 2.5.3 Blow Pads

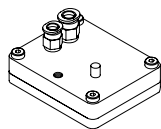


Fig. 7 Blow pad A2021 b x h

Blow pads (Type A2111) are only produced on request customized to the label size.



## 3.1 Contents of Delivery

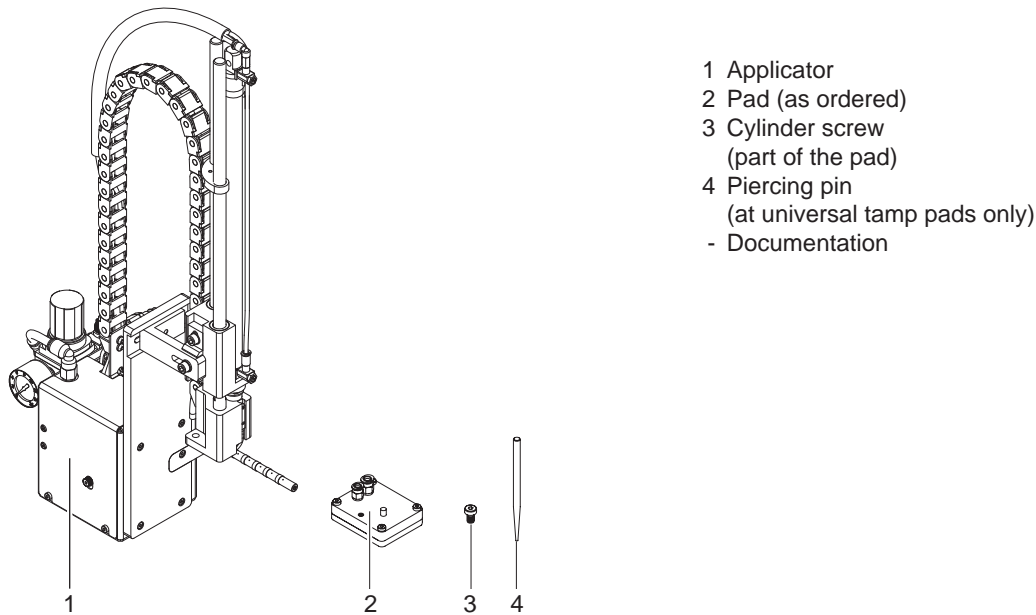


Fig. 8 Contents of delivery



### 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.

## 3.2 Mounting the Applicator to the Printer



### Attention!

► Disconnect the printer from the power supply before mounting the applicator !

► Ensure a stable standing of the printer !

► Connect the compressed air only after mounting the applicator to the printer !

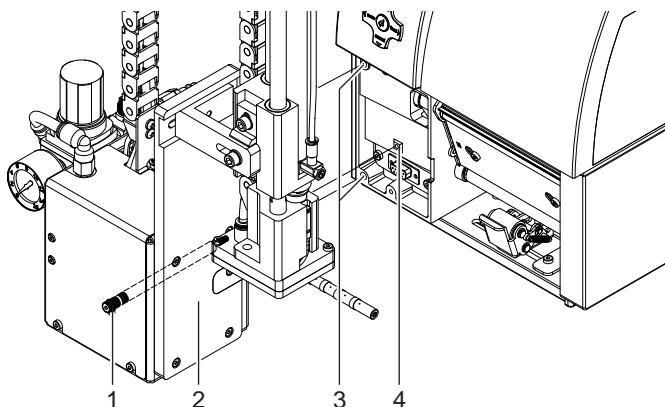


Fig. 9 Mounting the applicator

1. Insert the pins (15 / fig. 3) on the back of the applicator (2) 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 (2) with the screw (1).

### 3.3 Piercing the Universal Tamp Pad

On the bottom of the pads there are holes for sucking and holding the labels by vacuum. When an universal tamp pad is delivered these holes are covered by the sliding foil and must be opened according to the label size. For that purpose a piercing pin is included in the contents of delivery.

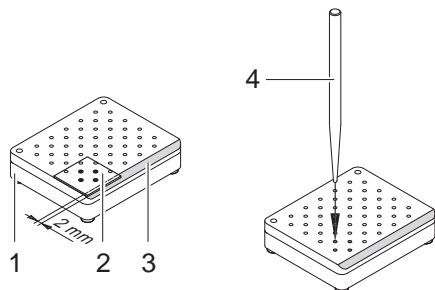


Fig. 10 Piercing the universal tamp pad

1. Place a label (1) to be operated on the bottom side of the pad (2). Note the position of the slanted edge (3).
2. Align the label to the side edge in such a way that it reaches over the rear edge of the pad by 2 mm.
3. Open all the holes, which are certainly covered by the label. Open the holes completely by turning the piercing pin (4) inside the holes.



#### Attention!

Do not open holes, which are located less than 1 mm from a label edge.

### 3.4 Preparing the Applicator for Using a Tamp Pad Type 1312

The cylinder unit (6) can be mounted on the bracket (1) in two different positions.

When the applicator is delivered, the cylinder unit is mounted on the bracket using the upper threaded hole (4). That position is suitable for the most pads.

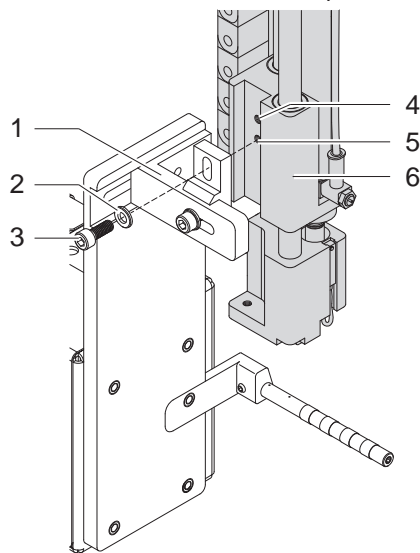


Fig. 11 Changing the attachment of the cylinder unit

► For using an universal tamp pad type A1312 the fitting of the cylinder unit must be changed :

1. Loosen the screw (3) with washer (2) and remove the cylinder unit from the bracket (1).
2. Fix the cylinder unit with screw (3) and washer (2) by using the lower threaded hole (5).

## 3.5 Mounting the Pad

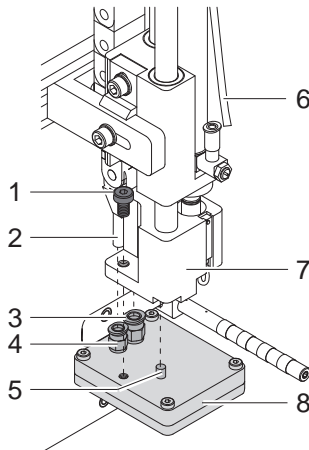


Fig. 12 Mounting the pad

1. Pull the tube (6) out of the push-in-fitting
2. Insert the pin (5) on the pad (8) into the hole on the bottom side of the pad holder (7).
3. Fix the pad (8) with the screw (1) at the pad holder (7) and make a rough adjustment of the pad to the printer dispense plate.
4. Insert the vacuum tube (2) and the blowing air tube into the appropriate push-in-fittings (3,4) of the pad.
5. Insert the tube (6) into the appropriate push-in-fitting on the cylinder.



### Attention!

- To avoid possible collisions of the pad with other parts of the printer-applicator system, please roughly align the pad in all directions (► "Mechanical Adjustments") before connecting the applicator to the compressed air supply !

## 3.6 Mounting the Stopper

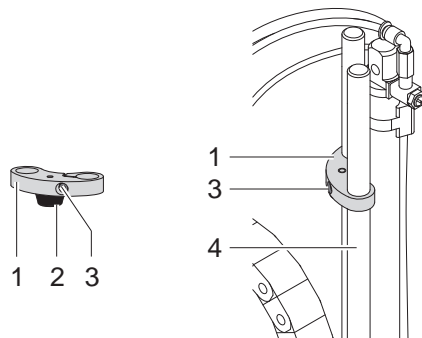


Fig. 13 Mounting the stopper

When the applicator is delivered, the stopper (1) is mounted on the rods (4). With this stopper the labelling position for the operation mode "Blow on" can be adjusted.

In the operation modes "Stamp on" and "Roll on" the stopper is not needed.

### Operation modes "Stamp on" and "Roll on"

- Loosen the screw (3) at the stopper (1).
- Slide the stopper (1) as far as possible upwards and tighten the screw (3). The stopper must not limit the pad movement.
- or
- Remove the stopper (1) upwards from the rods (4).

### Operation mode "Blow on"

- If necessary, slide the stopper (1) with the rubber buffer (2) down onto the rods (4).
- Adjust the stopper (1) ► "Adjusting the Stopper".

## 3.7 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 !

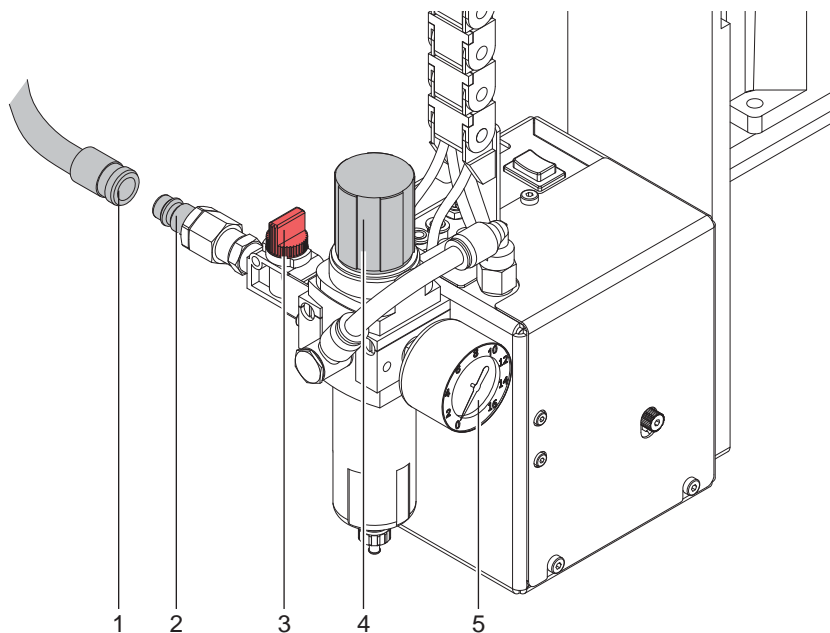


Fig. 14 Compressed air connection

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.

The tamp applicator can be operated in different ways. While the original process stays the same, the operation mode can be chosen within the printer setup.

The most important setting is the selection between the operation modes "Stamp on", "Blow on" and "Roll on".

Additionally the applicator has different application modes concerning the order of printing and applying within one labelling cycle.

	Stamp on	Roll on	Blow on
Print/Apply	x	x	x
Apply/Print Waiting position up	x	x	x
Apply/Print Waiting position down	-	-	x

Table 2 Operation and application modes

Additionally all operating modes can be adjusted by setting different time delays.



#### 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) or ▷ Operator's manual of the printer (A series).  
 Die following description apply to the printers of the A+ series. For printers of the A series there are marginal differences in the key functions.

## 4.1 Method for Changing the Printer Setup

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

## 4.2 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.



#### 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.

### 4.3 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	<b>only at Mode of oper. Blow on and Mode of appl. Apply-Print</b> 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	<b>only at Mode of oper. Blow on</b> Switch-on time (max. 2,5 s) of the blowing air for the label transfer	0 ms
 > Roll-on time	<b>only at Mode of oper. Roll on</b> Dwell time (max. 5 s) of the pad in the labelling position	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 3 Applicator parameters

## 5.1 Mechanical Adjustments

Perform the mechanical adjustments in two steps :

- Roughly align the pad in all directions to avoid collisions of the pad with other parts when switching on the compressed air.
- Perform the fine adjustment with compressed air switched on to optimize the labelling process.

### 5.1.1 Aligning the Pad

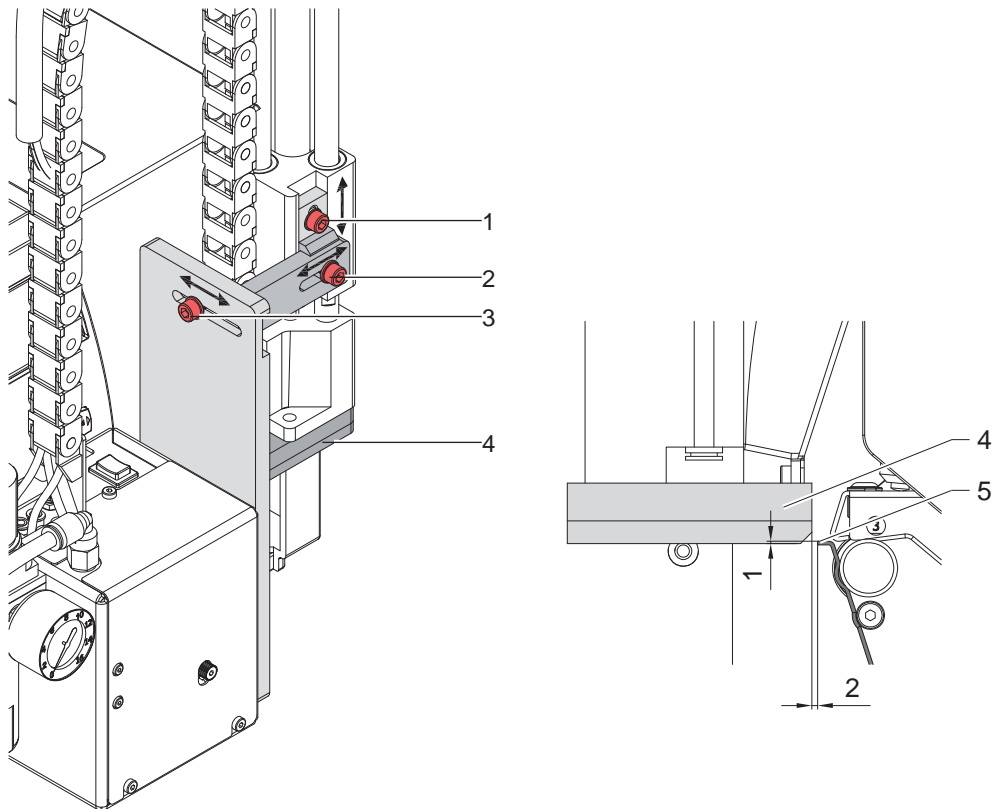


Fig. 15 Aligning the pad

#### Adjustment in print direction

1. Loosen screw (3).
2. Shift the cylinder unit including the pad (4) inside the elongated hole in such a way, that the distance between the pad and the dispense edge is about 2 mm.
3. Tighten screw (3).

#### Height adjustment

1. Loosen screw (1).
2. Shift the cylinder unit including the pad (4) inside the elongated hole in such a way, that the lower rear edge of the pad is located about 1 mm below the dispense edge of the printer.
3. Tighten screw (1).

#### Side adjustment

1. Loosen screw (2).
2. Shift the cylinder unit including the pad (4) inside the elongated hole in such a way, that the dispensed label is aligned centrally to the pad respectively to the open holes in an universal pad.
3. Tighten screw (2).

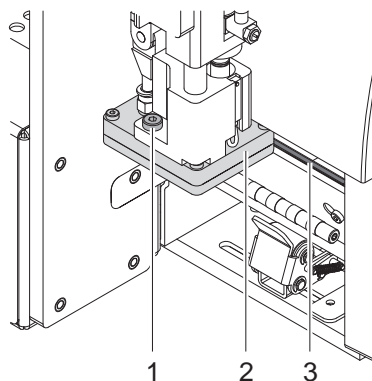


#### Notice !

- Check the adjustments with compressed air switched on.



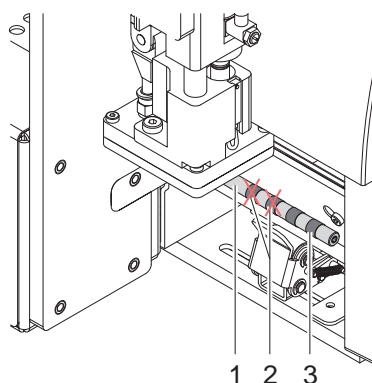
### 5.1.2 Adjusting the Parallelism between Pad and Dispense Edge



1. Loosen screw (1).
2. Adjust the parallelism between the rear edge of the pad (2) and the dispense edge (3) by turning the pad.
3. Tighten screw (1).

Fig. 16 Adjustment of parallelism

### 5.1.3 Opening the Holes on the Blow Tube



The blow tube (1) has holes for the supporting air in regular distances of 15 mm.

When the applicator is delivered only the two inner holes are open. The other holes are closed by plastic rings (3).

To adjust the supporting air to the label width, the plastic rings (2) can be removed from the holes.

- Open all holes, which affect certainly the area of the label.

Fig. 17 Opening the holes on the blow tube

### 5.1.4 Aligning the Blow Tube

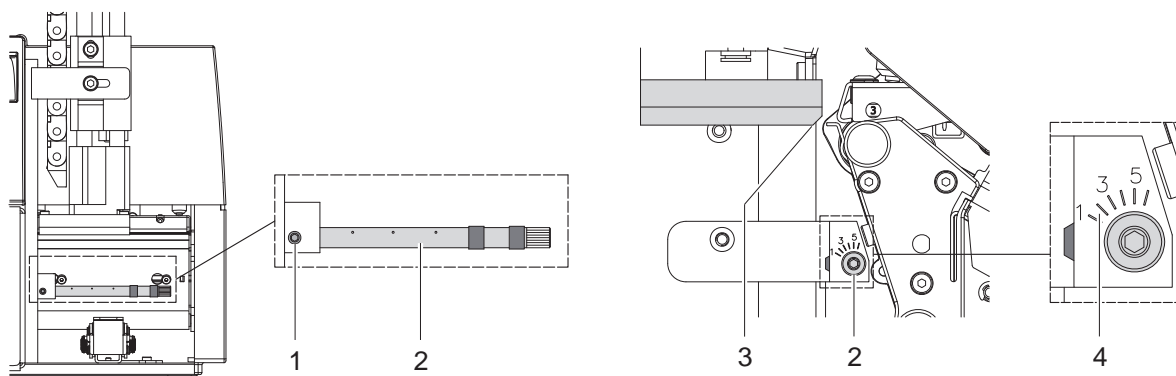


Fig. 18 Alignment of the blow tube

The blow tube (2) 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 by the pad.
  - For small labels direct the air current to the dispense edge (3) of the printer (setting 3 or 4 at the scale).
  - For larger labels direct the air current away from the dispense edge (3) (setting 1).
3. Tighten screw (1).

### 5.1.5 Adjusting the Stopper

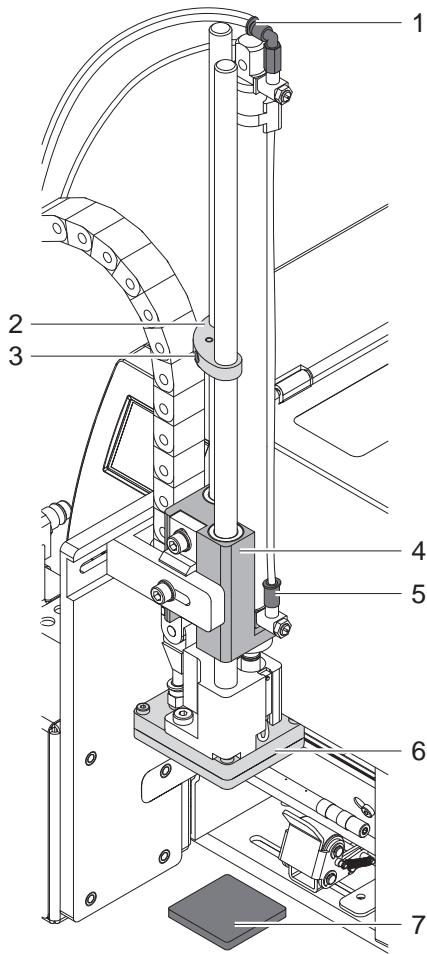


Fig. 19 Adjusting the stopper



**Notice!**  
For operation mode "Blow on" only !



#### Attention!

► Switch off the printer and close the shutoff valve for the compressed air at the service unit !

1. Place a product sample (7) at the labelling point.
2. Pull the tubes out of the push-in-fittings (1,5).
3. Loosen the screw (3) in the stopper (2).
4. Move the pad manually in the required labelling position. The distance between the blow pad (6) in the labelling position and the product surface (7) must not exceed 10 mm.
5. Move the stopper (2) against the guide block (4) and tighten the screw (3).
6. Insert the tubes into the appropriate push-in-fittings (1,5).
7. Open the shutoff valve and switch on the printer.

## 5.2 Pneumatic Adjustments

### 5.2.1 Control Valves

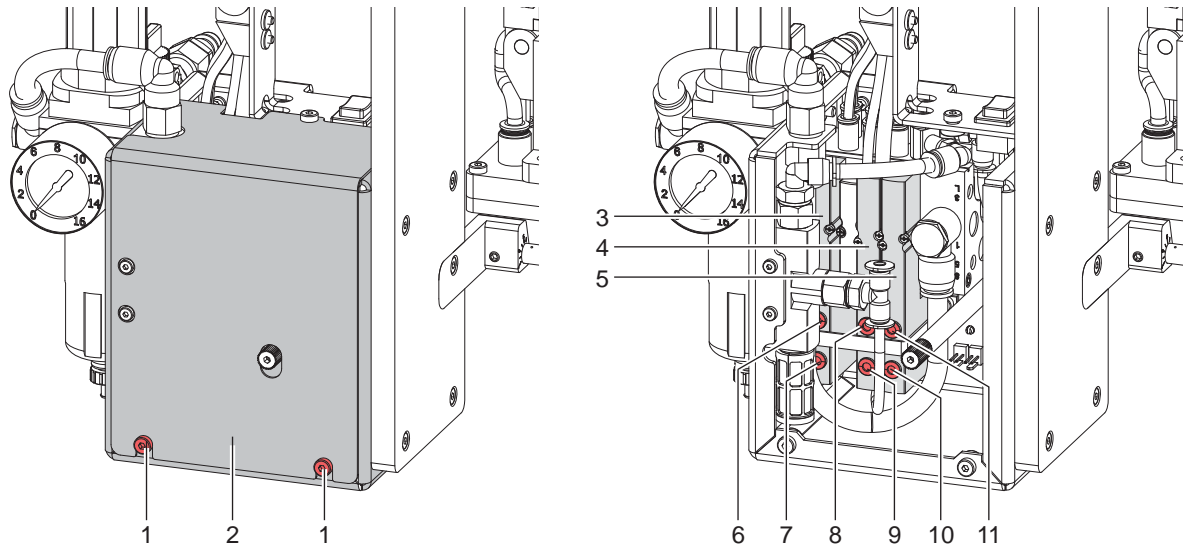


Fig. 20 Control valves

For adjustments of special applicator functions it's possible to switch the control valves direct by hand. .

► Loosen screws (1) and remove cover (2).

It's possible to initiate the valves via integrated switches.

#### 3-way valve (3) 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.



#### Notice!

**The switching by hand of this valve has only a result in case of a switched off printer.**

When you switch the valve by hand over switch (6) the tamp will move down.

When you switch the valve by hand over switch (6) the tamp will move up.

#### Double 2-way valve (4) for blow air

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

In the operation mode "tamp" and "roll" 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 8 or 9 will switch on the blow air only over one of the both internal valves.

#### Double 2-way valve (5) 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 10 you can switch the vacuum and with switch 11 you can switch the support air.

## 5.2.2 Adjusting the Pad Movement Speed

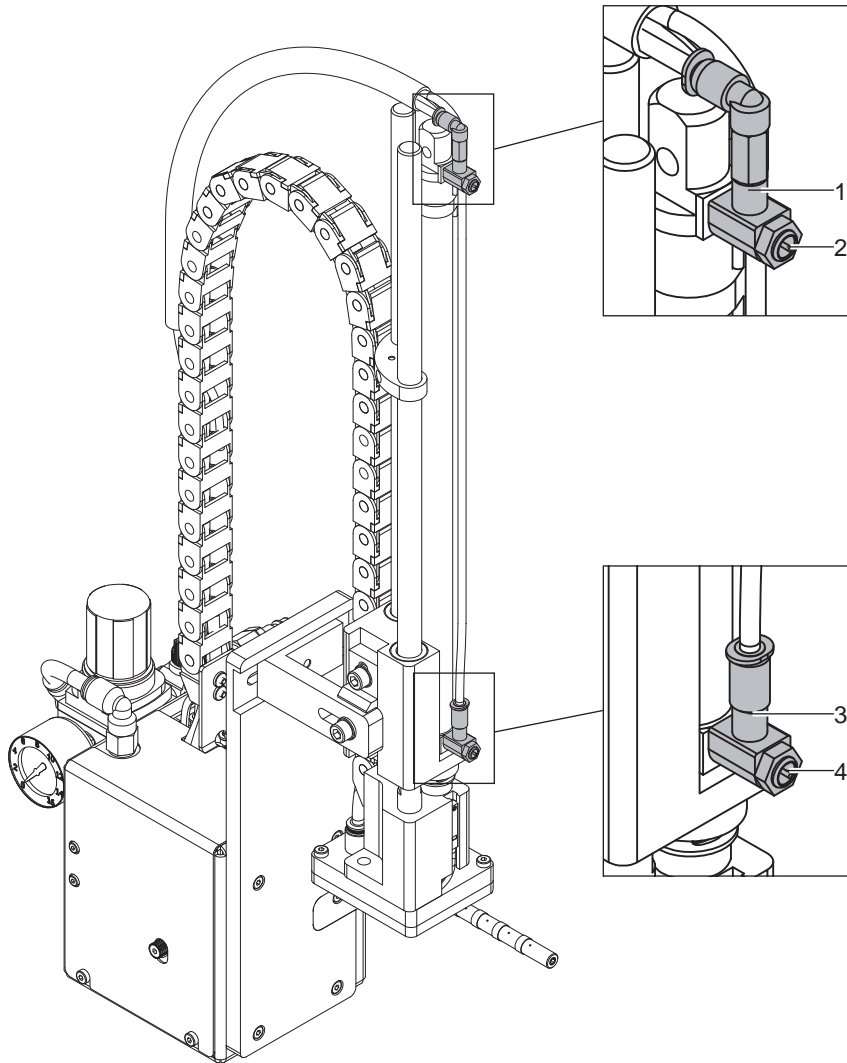


Fig. 21 Throttle valves on the cylinder

The speed of the pad movement can be regulated via two throttle valves (1, 3).

- Adjust the pad movement speed as necessary.
- To increase the downward speed turn counterclockwise the screw (4) at the lower valve (3).
- To increase the upward speed turn counterclockwise the screw (2) at the upper valve (1).

**Notice!**

The application pressure of the pad is mainly dependent on the downward speed of the pad.

- In order to reduce the application pressure turn clockwise the screw (4).

**Attention!**

The time for the downward movement of the pad may not exceed 2 seconds  
Otherwise the error message "Lower position" will appear.

### 5.2.3 Adjusting Vacuum and Supporting Air

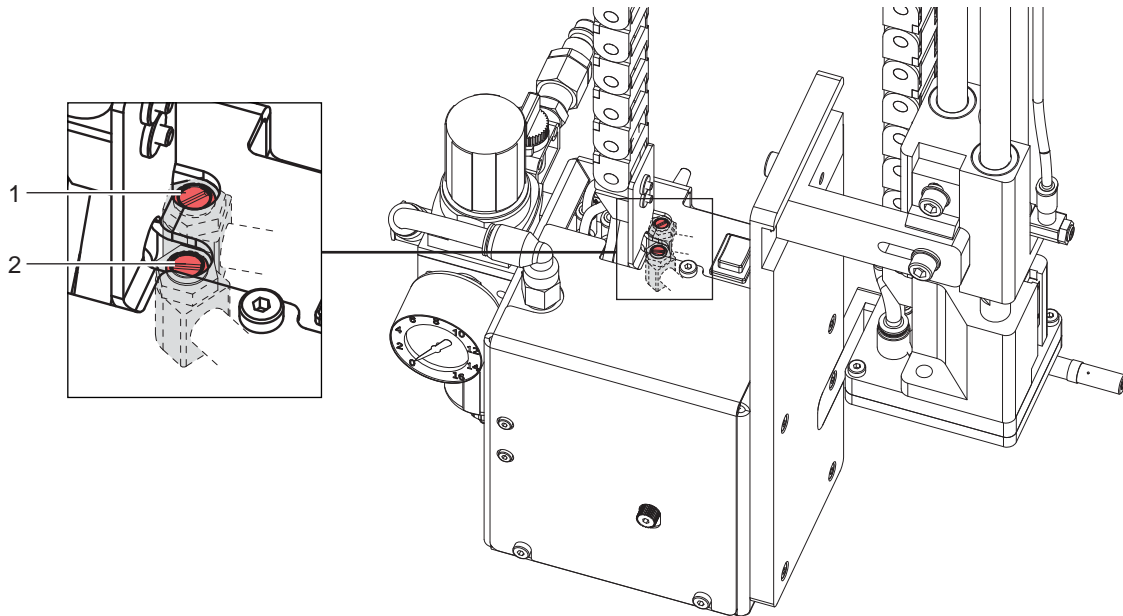


Fig. 22 Throttle valves on the manifold

#### Adjusting the supporting air

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 counterclockwise the screw at the valve (1).
- If necessary adjust the direction of the air current ► "Aligning the Blow Tube".

#### Adjusting the vacuum

With the valve (2) the vacuum to suck the label onto the pad can be adjusted.

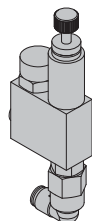
- Adjust the vacuum in such a way, that the label is properly sucked by the pad.
- To increase the vacuum turn counterclockwise the screw at the valve (2).



#### Notice!

With the vacuum setting the final position of the label on the pad can be adjusted. If the vacuum is too high the label feeding may early be stopped.

### 5.2.4 Option Pressure Reduction Valve



The pressure reduction valve will be used in case of labelling pressure-sensitive products or generally safety aspects to reduce the pressure into the cylinder in Z-direction.

The setting standard value is 2,5 bar.

Fig. 23 Pressure reduction valve Cylinder Z

## 6.1 Loading Labels and Transfer Ribbon

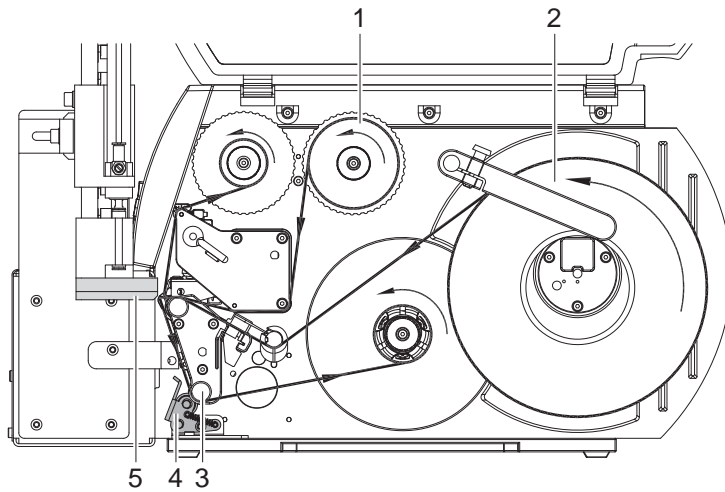


Fig. 24 Label and transfer ribbon feed path

- ▶ Insert transfer ribbon (1).
- ▶ Insert labels (2) for operation in peel-off mode

Detailed information ▶ Operator's manual of the printer.

**Attention!**

- ▶ Swivel the locking system (4) against the rewind assist roller (3). Otherwise the pad (5) would collide with the locking system (4) during operation.

## 6.2 Activation of Peel-off Mode

**Notice!**

- ▶ For labelling operation activate the peel-off mode in the software.
- For direct programming use the P command ▶ Programming manual.

## 6.3 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.

## 6.4 Test Mode Using the Pre-dispense Key without Print Job

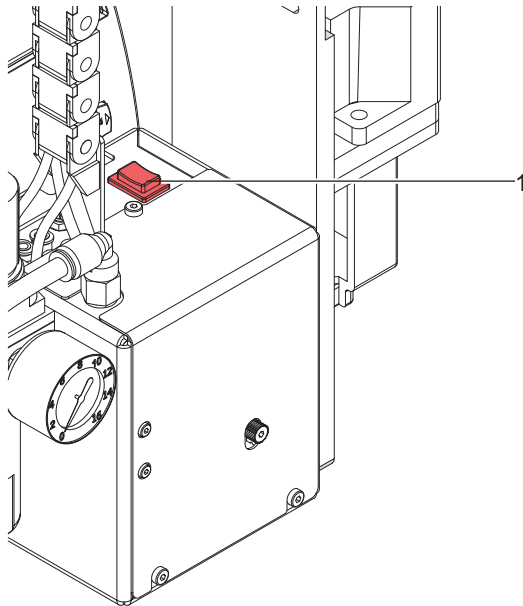


Fig. 25 Pre-dispense key

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.



### Notice!

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

## 6.5 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.



### Notice!

- ▶ Please use that test mode to adjust the peel-off offset in the software.



## 6.6 Standard Operation

- ▶ Check all external connections.
- ▶ Load the material. Ensure that the locking system is locked ▷ "Loading Labels and Transfer Ribbon".
- ▶ 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.

**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.

**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.

- ▶ Start a print job
- ▶ Start the labelling process via PLC interface.

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

## 7 PLC Interface

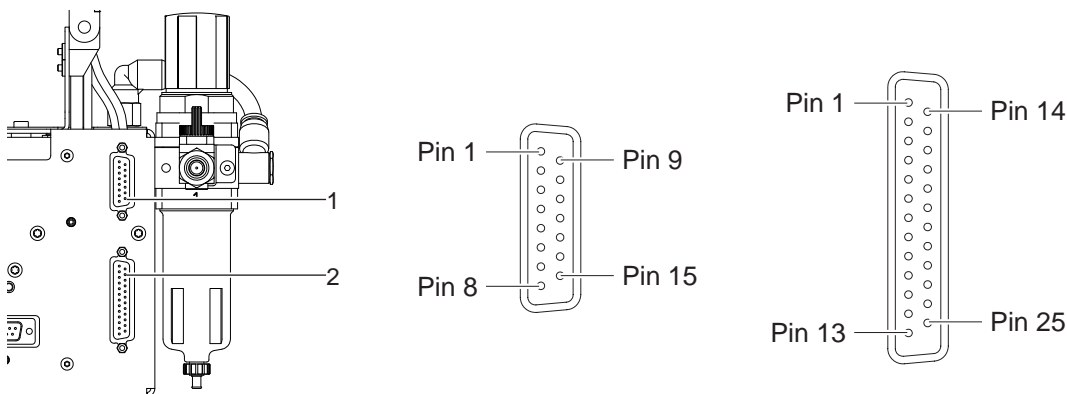


Fig. 26 PLC interface connectors

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.

**Notice!**

The 15 pin connector has the identical pin assignment as the PLC interface of the cab Hermes applicators.

## 7.1 Pin Assignment and Signal Description



### Notice!

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

Pin 25 pin	Pin 15 pin	Signal A1000	Signal Hermes Appl.	Description	Activation / Active state
1	1	E0.1 (+) 	XSTART	Start signal for the cyclic labelling process.	Switch on +24V between Pin 1 and Pin 14 (9)
2	2	E0.2 (+) 	XSTOP	Stop signal (external error) The following functions are released : <ul style="list-style-type: none"> <li>the print of a label and its picking-up by the pad will be finished</li> <li>the labelling process is interrupted</li> <li>the pad returns into the starting position</li> <li>all following start signals are ignored</li> <li>if activated during the labelling phase, the display will show the message 'Host stop/ error'. (no message during print process)</li> </ul>	Switch on +24V between Pin 2 and Pin 15 (10)
3	3	E0.3 (+) 	XDREE	Print first label <b>for application mode "Apply/Print" only :</b> 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 	XDNB	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 	XEDG	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 	XSAA	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 	XSOE	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	GND	Ground (0V) <b>Attention !</b> ▶ 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)	











Pin 25 pin	Pin 15 pin	Signal A1000	Signal Hermes Appl.	Description	Activation / Active state
12				► do not use	
13				► do not use	
14	9	E0.1 (-) 	XSTARTR	Start signal (reverse line)	
15	10	E0.2 (-) 	XSTOPR	Stop signal (reverse line)	
16	11	E0.3 (-) 	XDREER	Print first label (reverse line)	
17	12	A0.7 	XSUE	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 	XETF	Applicator fault Error message of the applicator The error type is shown on the display. After error correction, the print of the last label <b>cannot be repeated</b> .	Contact between Pin 18 (13) and Pin 19 (14) is open
19	14	COM 	RÜL	Line with common potential for all output signals, may be connected with 24V or GND	
20	15	24V (Out) 	24P	Operating voltage +24V, Si T 100mA provided by the applicator. Example : To generate the start signal by a foot switch. <b>Attention !</b> ► 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 (+) 	XRST	External Reset Error state in the printer will be quit, the applicator will be reset (comparable to pressing the <b>pause</b> key)	Switch on +24V between Pin 23 and Pin 11
24				► do not use	
25		A0.10 	/XSOE	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 4 PLC signals

## 7.2 Circuit Diagrams of Inputs and Outputs



### Notice!

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

### Inputs

The inputs are optocouplers with a current limiting resistor of 2,4 k $\Omega$  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.

### 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 :

$$U_{\max} = \pm 42 \text{ V}, I_{\max} = 100 \text{ mA}$$

Resistance of the closed contact :

$$R \leq 25 \Omega$$

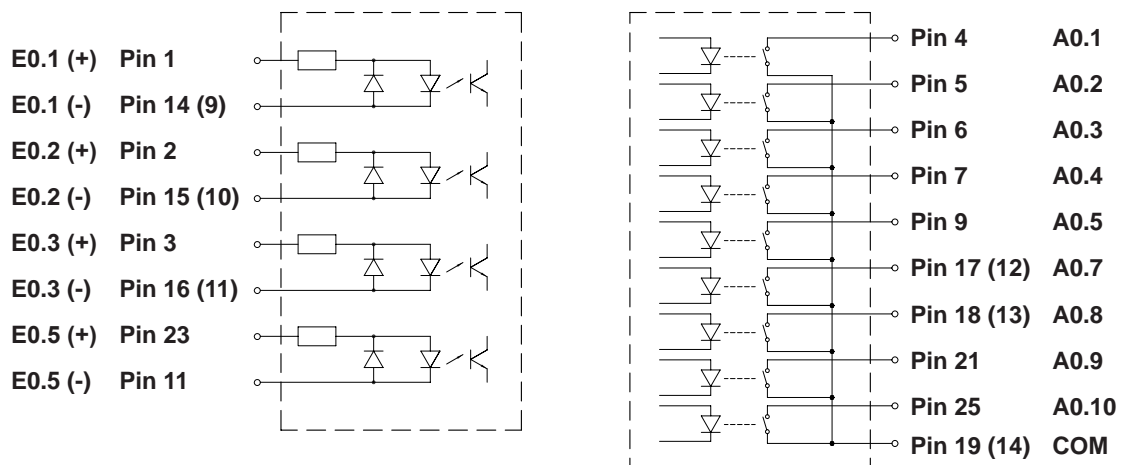


Fig. 27 Circuit of the inputs (left) and outputs (right)

## 7.3 Examples for External Circuits



### Notice!

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

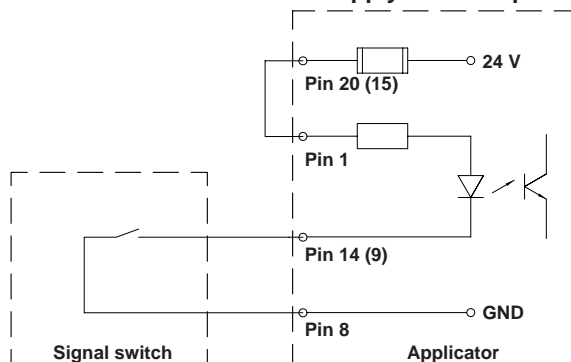


Fig. 28 Optical sensor with pnp output to create the start signal

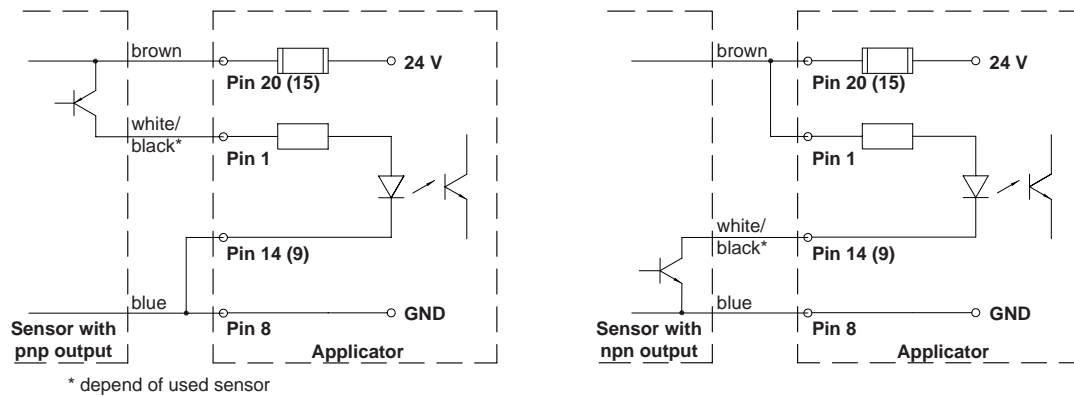


Fig. 29 Optical sensor with pnp-output (left) Optical sensor with npn-output (right) to create the start signal

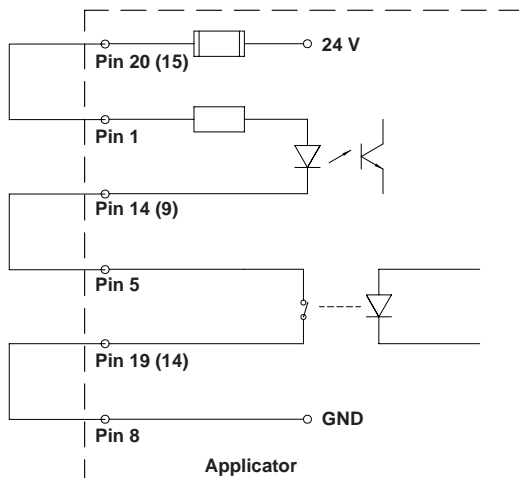


Fig. 30 Example for automatic creation of a start signal after receiving a print job (for jobs with label amount = 1 only)

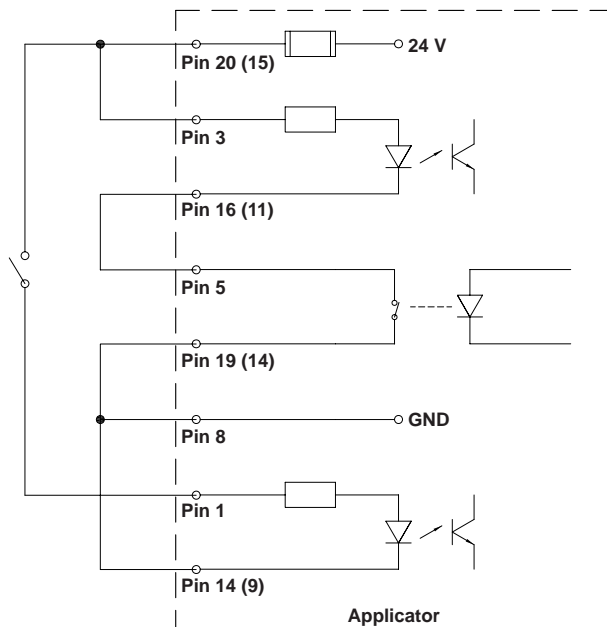


Fig. 31 Example for automatic creation of the signal "Print first label" after receiving a print job and release of the cyclic labelling by a trigger switch in the application mode "Apply/Print"



### Attention!

When using the examples of the figures 30 or 31 and connecting additional output signals to a PLC, the galvanic separation on the applicator side will be lost !

► Realize the galvanic separation on the PLC side !

## 8.1 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.

## 8.2 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 5 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.

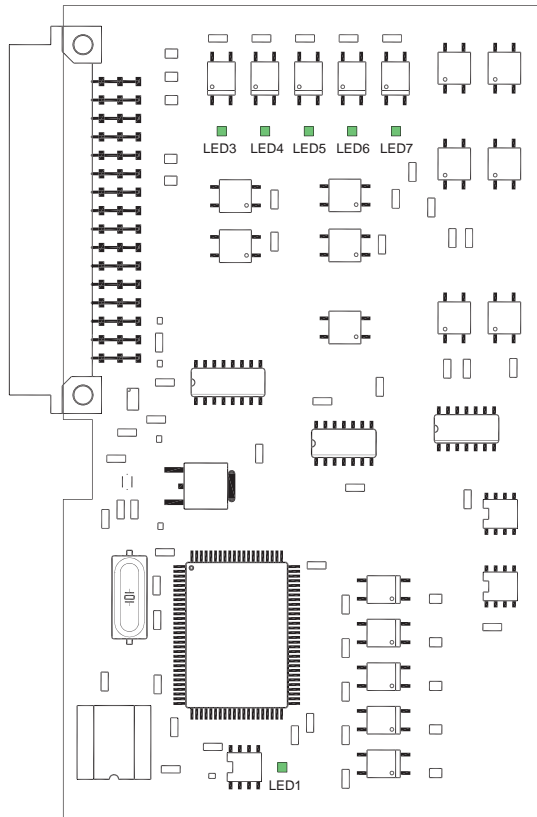


Fig. 32 LED on the PCB applicator control

LED-No.	Color	Function	active value
1	green	VAK Label on tamp	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	not implement	

Table 6 LED on the PCB applicator control



## 10.1 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:	<b>Applicator</b>
Type:	<b>A1000</b>
Applied EU Regulations and Norms:	
<b>Directive 2006/42/EC on machinery</b>	<ul style="list-style-type: none"> <li>• EN ISO 12100:2010</li> <li>• EN ISO 13849-1:2015</li> <li>• EN 60950-1:2006 +A11:2009+A12:2011+A1:2010+A2:2013</li> </ul>
Person authorised to compile the technical file :	<b>Erwin Fascher</b> <b>Am Unterwege 18/20</b> <b>99610 Sömmerda</b>
Signed for, and on behalf of the Manufacturer :	<b>Sömmerda, 04.10.2017</b>  <b>Erwin Fascher</b> <b>Managing Director</b>
<b>cab Produkttechnik Sömmerda</b> <b>Gesellschaft für Computer-</b> <b>und Automationsbausteine mbH</b> <b>99610 Sömmerda</b>	

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.


## 10.2 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:	A1000
Applied EU Regulations and Norms:	
Directive 2014/30/EU relating to electromagnetic compatibility	<ul style="list-style-type: none"> <li>• EN 55032:2012</li> <li>• EN 55024:2010</li> <li>• EN 61000-6-2:2005</li> </ul>
Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment	<ul style="list-style-type: none"> <li>• EN 50581:2012</li> </ul>
Signed for, and on behalf of the Manufacturer :	Sömmerda, 04.10.2017
cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda	 Erwin Fascher Managing Director

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