

# Operator's Manual



**Applicator**

**S1000**

Made in Germany

Family	Type
Applicator	S1000-220
	S1000-300
	S1000-400

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## 1.1 Instructions

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



### **Danger!**

Draws attention to an exceptionally great, imminent danger to your health or life due to hazardous voltages.



### **Danger!**

Draws attention to a danger with high risk which, if not avoided, may result in death or serious injury.



### **Warning!**

Draws attention to a danger with medium risk which, if not avoided, may result in death or serious injury.



### **Caution!**

Draws attention to a danger with low risk which, if not avoided, may result in minor or moderate injury.



### **Attention!**

Draws attention to potential risks of property damage or loss of quality.



### **Note!**

Advice to make work routine easier or on important steps to be carried out.



### **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 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.



### **Note!**

The complete and current version of the documentation can be found in the Internet.

## 1.3 Safety Instructions



### **Attention!**

Initiation, adjustments and changing of parts are to be performed by qualified service personnel only.



### **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 of 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 Markings

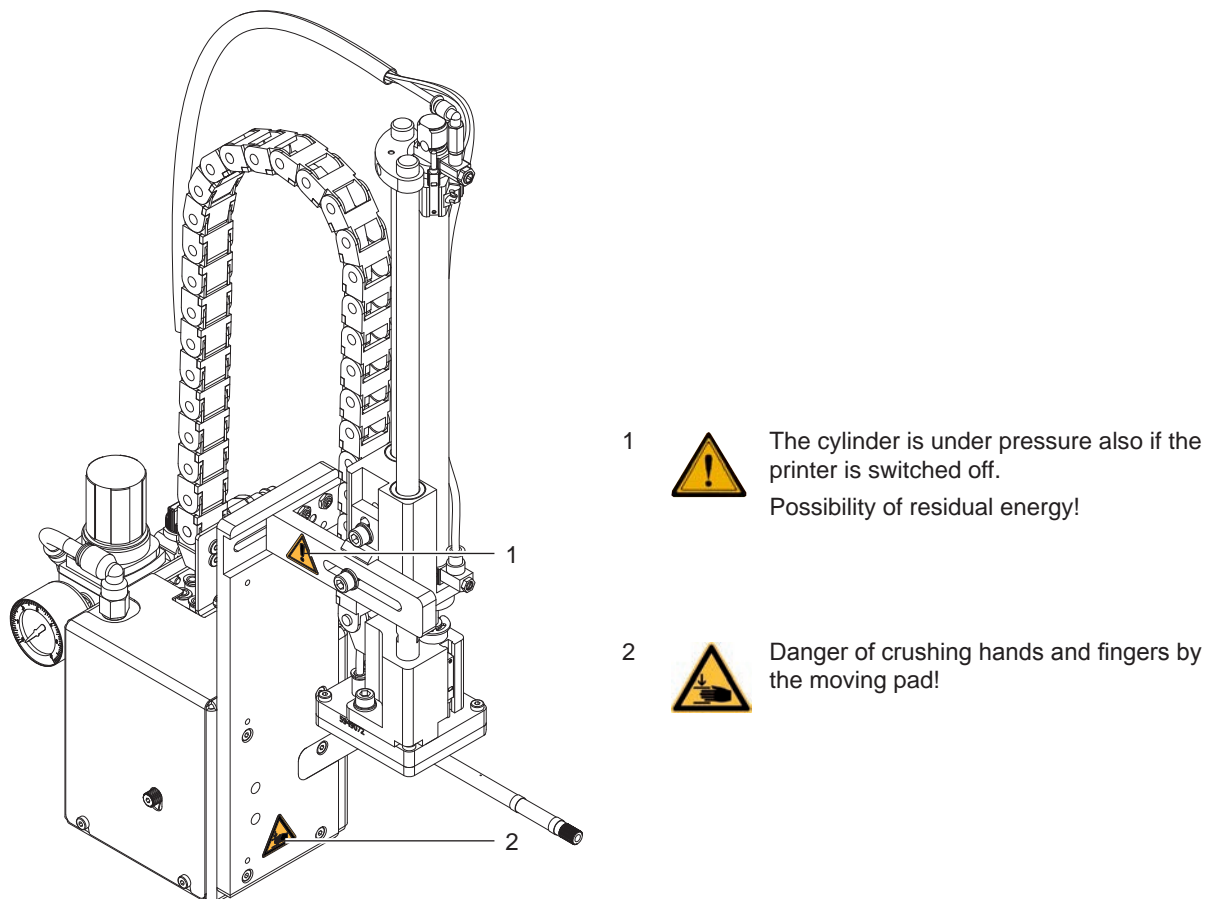


Fig. 1 Safety Markings

## 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 applicator enables it to be easily disassembled into its component parts.

- Send the parts for recycling.

## 2.1 Important Features

The applicator S1000 is an additional module for the label printer of the SQUIX series and is used for the automatic transfer of labels, printed in real-time, onto a product. The transfer of labels is carried out via a pad with a pneumatic cylinder moving between starting- and labeling-position.

- In the starting position the labels are taken up from the printer.
- The positioning of the pad in the starting position is registered by a sensor on the cylinder of the applicator.
- The label is peeled of the backing by the dispensing plate of the printer and sucked onto the pad. The label is held onto the pad by a vacuum generated through the holes in the pad.
- The label transfer is supported by air blowing from underneath through the blowpipe pushing the label against the pad (support air).
- The vacuum sensor checks if the label has reached the pad correctly.
- Thereafter the pad, with the label, is moved into the labeling position.
- The impact sensor notifies the system that the pad has reached the labeling position.
- In this position the label is applied to the product.
- While the pad moves back to the starting position the vacuum sensor checks to see if the label has been successfully applied to the product.

The transfer of the label to the product can occur via three methods:

- **Stamp on**  
The label is applied to the resting product by the stamp on pad.
- **Blow on**  
The blow on pad is moved into a predefined position of max 10mm from the product. The label is blown onto the moving or stationary product.
- **Roll on**  
The label is moved from the printer along the pad to the roller. In the labeling position the label is pulled from the pad and rolled onto the moving 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 pulses at the end of each application.
- For operation within a system the I/O interface of the printer can be used.

## 2.3 Technical Data

Applicator		S1000-220	S1000-300	S1000-400
Cylinder lift	mm	220	300	400
Pad lift below the device	mm	64	144	244
Air pressure	bar	4,5		

Table 1 Technical data

## Pad

Type	Universal tamp pads		Tamp pad	
	A1021 70x60	A1021 90x90	A1021	M1021
Material guide	Left aligned Centered	Left aligned Centered	Left aligned	Centered
Tamp surface W x H	mm	70 x 60	90 x 90	min. 72 x 60
Label width	mm	25 - 70	25 - 90	25 - 116
Label height	mm	25 - 60	25 - 90	25 - 200
Product surface	Flat			
Product height	Variable			
Product during labeling	Not moving			

Table 2 Universal tamp pad/tamp pad

Type	Universal tamp pads		Tamp pad	
	A1321 116x102	A1321 116x152	A1321	M1321
Material guide	Left aligned/ Centered	Left aligned / Centered	Left aligned	Centered
Tamp surface W x H	mm	116 x 102	116 x 152	min. 86 x 92
Label width	mm	25 - 116	25 - 116	25 - 116
Label height	mm	25 - 102	25 - 152	25 - 200
Product surface	Flat			
Product height	Variable			
Product during labeling	Not moving			

Table 3 Spring-mounted tamps

Blow pad		A2021	M2021
Material guide		Left aligned	Centered
Tamp surface W x H	mm	72 x 60	
Label width	mm	25 - 116	
Label height	mm	25 - 100	
Product surface		Eben	
Product height		Fest	
Product during labeling		Not moving or in motion	

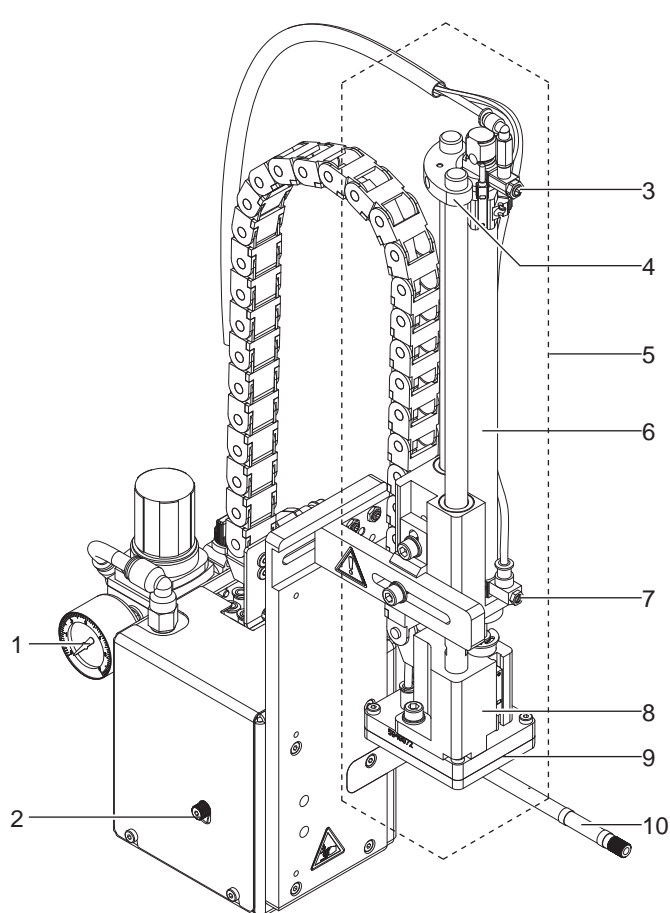
Table 4 Blow pad

Roll-on pad		A1411
Material guide		Left aligned/centered
Tamp surface W x H	mm	120 x 80
Label width	mm	25 - 116
Label height	mm	80 - 200
Product surface		Flat
Product height		Variable
Product during labeling		In motion

Table 5 Roll-on pad

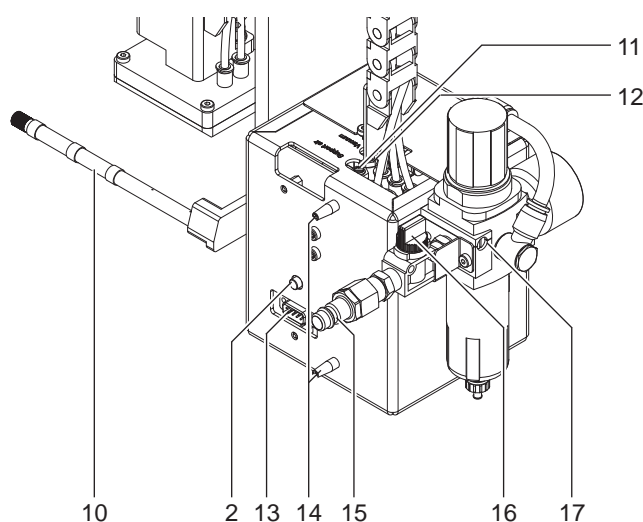
All-around labeler		A1021	M1021
Material guide		Linksbündig	Zentriert
Tamp surface W x H	mm	min. 72 x 60	
Label width	mm	25 - 116	
Label height	mm	25 - 140	
Product diameter	mm	12 - 40	
Product surface		Cylindrical	

Table 6 All-around labeler



- 1 Manometer for working pressure
- 2 Knurled screw for fastening the applicator to the printer
- 3 top throttle valve cylinder
- 4 Stopper for "blow on" mode
- 5 Cylinder assembly group
- 6 Pneumatic cylinder
- 7 bottom throttle valve
- 8 Tamp retainer
- 9 pad (application specific)
- 10 Blowpipe for supporting air

Fig. 2 Front view



- 2 Knurled screw for fastening the applicator to the printer
- 10 Blowpipe for supporting air
- 11 Throttle valve supporting air
- 12 Throttle valve vacuum
- 13 Interface of the printer
- 14 Pin
- 15 Compressed air connector
- 16 Block valve
- 17 Air pressure maintenance unit

Fig. 3 Rear view



### 2.4 Pad

#### 2.4.1 Tamp Pad

##### Universal Tamp Pad A1021

Standard sizes: 70x60, 90x90

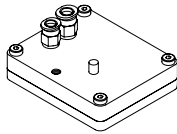


Fig. 4 Universal tamp pad A1021 70x60

##### Spring-Mounted Tamps A1321

Standard sizes: 116x102, 116x152

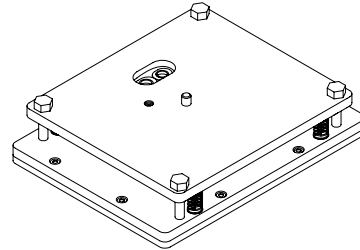


Fig. 5 Spring-mounted tamps A1321 116x152

Universal tamp pads (Typ A1021 oder Typ A1321) are available in a number of sizes. These pads can be altered to fit different labels by opening the drilled holes of the pad with the piercing pin included in the delivery.

Custom tamps are also available to the client on request.

#### 2.4.2 Roll-on Pad

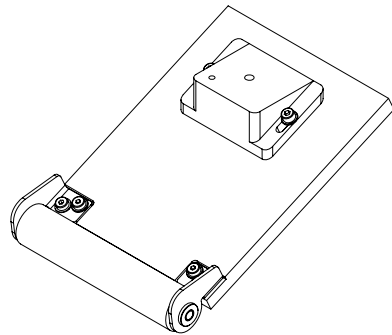


Fig. 6 Roll-on pad A1411

Roll-on pads (Type A1411) are only customized to specific label sizes on a clients demand.

#### 2.4.3 Blow-on Pad

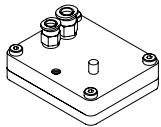
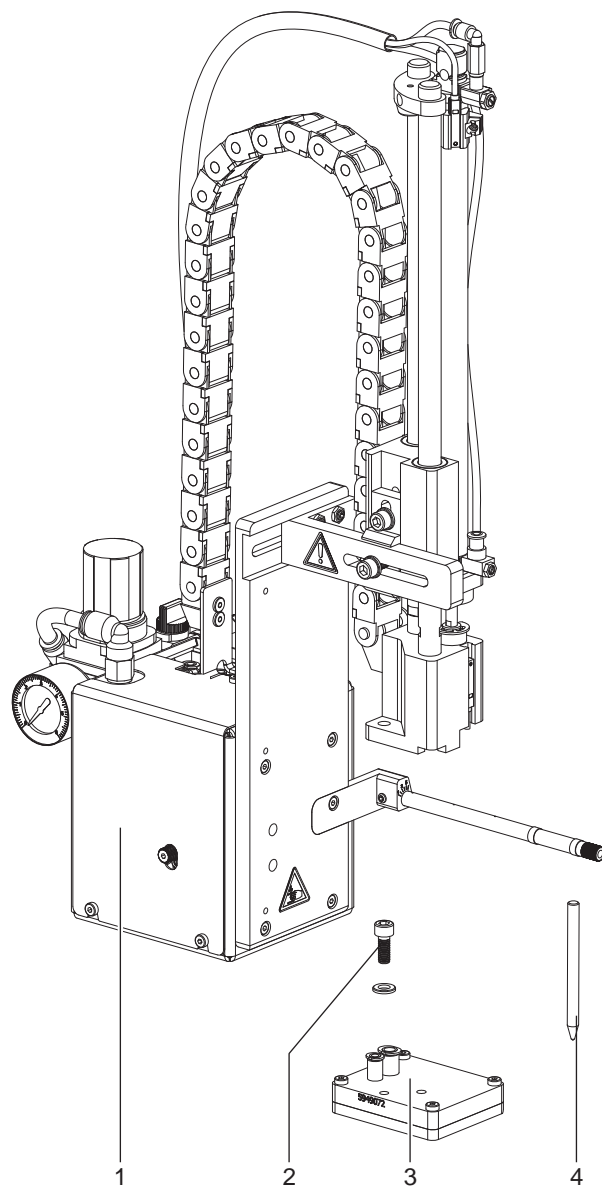


Fig. 7 Blow-on pad A2021

Blow-on pad (Type A2021) are only customized to specific label sizes on a clients demand.

## 2.5 Contents of Delivery



- 1 Applicator with lifting cylinder
  - 2 Cylinder screw
  - 3 Pad (as ordered)
  - 4 Piercing pin  
(only delivered with universal tamp pads)
- Documentation

Fig. 8 Contents of delivery

**Note!**

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 moisture and splashes.

## 3.1 Mounting the Applicator to the Printer

**Attention!**

- ▶ Disconnect the printer from the power supply before mounting the applicator!
- ▶ Ensure the printer is in a stable secure position!
- ▶ Connect the compressed air only after mounting the applicator to the printer!

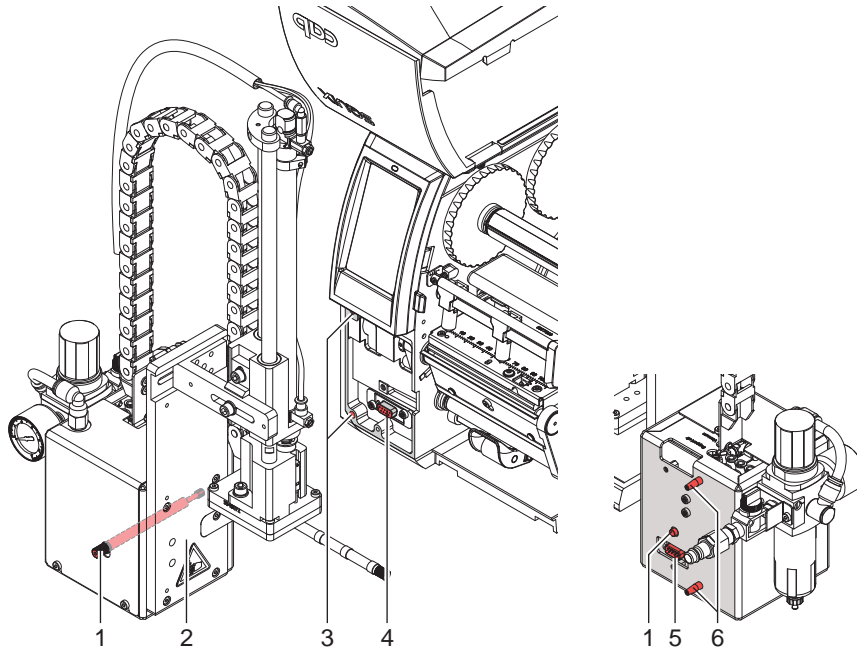


Fig. 9 Mounting the applicator

1. Slide the applicator (2) with the pins (6) situated on the rear, into the provided holes (3) of the printer.
2. Push the applicator (2) against the printer. This will cause the connector (5) to connect to its counterpart (4) on the printer.
3. Fasten the applicator (2) to the printer with the knurled screw.

### 3.2 Piercing the Foil of the Universal Tamp Pad

The universal tamp pad has holes drilled into it which enable the labels to be sucked and held onto the pad. When the pad is delivered these holes are covered by a sliding foil. A number of these holes need to be pierced with the piercing pin provided. Depending on label type and size holes need to be made into the sliding foil.

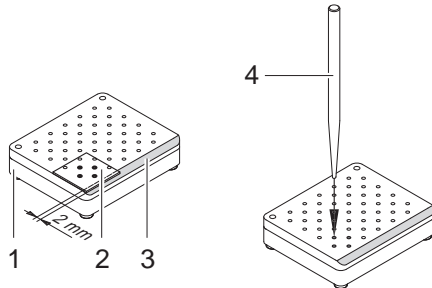


Fig. 10 Piercing the foil of the universal tamp pad.

1. Place the label (2) on the bottom surface of the pad (1). Note the slanted edge (3) of the pad.
2. Ensure that the label protrudes approx. 2mm over the slanted edge of the pad.
3. All holes that are completely covered by the label need to be pierced. Puncture the holes and twist the piercing pen to free the holes in their entirety.



#### Attention!

Do not pierce holes into the foil that are less than 1 mm from the edge of the label.

### 3.3 Preparing for the use of Pad Type A1321

The assembly group (6) can be mounted in two different positions mounted to the connection angle (1). By factory default the assembly group is fastened to the top hole (4). This setup is used for most pad types.

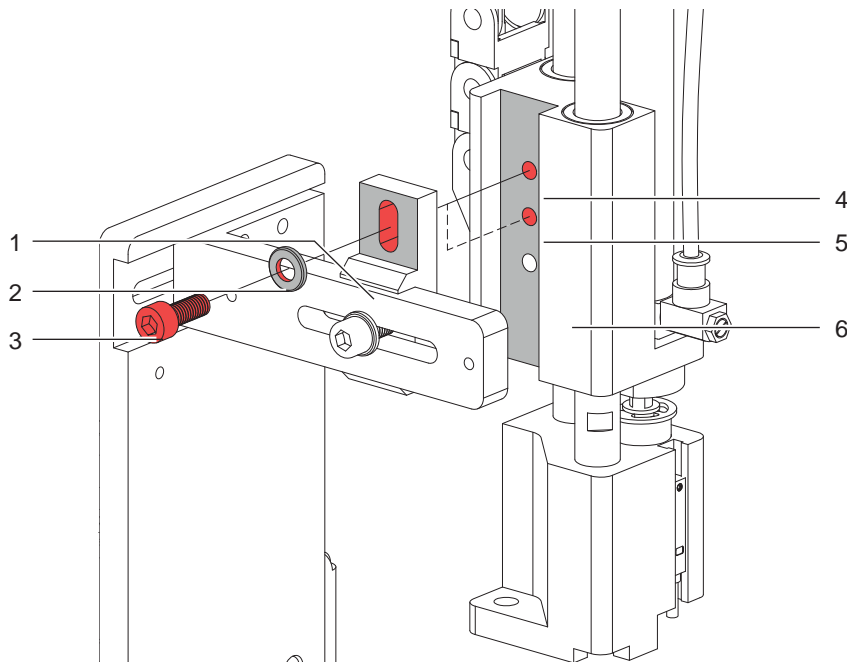


Fig. 11 Implementation of pad A1321

► In order to use a tamp pad of type A1321 the cylinder assembly group needs to be prepared:

1. Loosen screw (3) incl. washer (2) and demount the assembly group from the connection angle.
2. Fasten the cylinder assembly group (6) to the hole (5) with the screw (3) of the connection angle.

## 3.4 Mounting the Pad

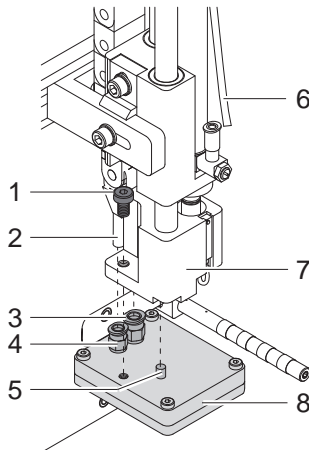


Fig. 12 Mounting the pad

1. Pull tube (6) out of the push-in fitting.
2. Push the pin (5) of pad (8) into the provided hole on the bottom of the tamp retainer (7).
3. Fasten the pad (8) to the tamp retainer (7) with cylinder screw (1) and roughly align the pad to the dispensing plate.
4. Connect the vacuum pipe (2) and the blow pipe to the corresponding push-in fittings (3,4) of the pad.
5. Push tube (6) into the threaded push-in fitting of the cylinder.



### Attention!

- ▶ To avoid collisions of the pad with other parts of the printer-applicator solution align the pad in all directions before connecting the compressed air to the applicator. (▶ „5.1 Mechanical Adjustments“).

## 3.5 Mounting the Stopper

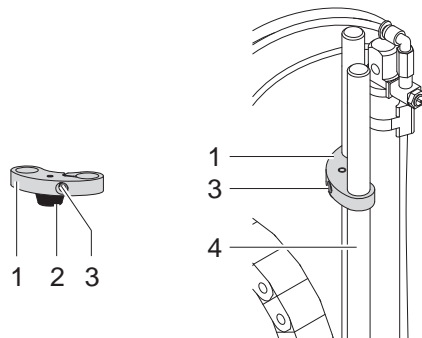


Fig. 13 Mounting the stopper

When delivered the stopper (1) is mounted on the guiding rail (4). The stopper is used to establish a clear bottom end for the pad assembly when using the "blow on" mode.

When the modes "stamp on" or "roll on" are active the stopper is not needed.

### Application Mode "Stamp On" or "Roll On"

- ▶ Loosen screw (3) of the stopper.
- ▶ Push the stopper (1) as far up along the guiding rail as possible and tighten screw (3). The stopper may not limit the motion of the pad assembly group.
- or
- ▶ Pull the stopper off the top of the guiding rail (4).

### Application Mode "Blow On"

- ▶ If necessary slide the stopper (1) with cushioning (2) onto the guiding rail (4).
- ▶ Adjust stopper (1) ▶ "Adjusting the Stopper".

The applicator can be set up to use different a modes and different settings within these modes.

The most important choice is the selection of the mode: "Stamp on", "roll on" or "blow on".

Additionally the device can use different sequences within a labeling cycle in each mode.

	Stamp on	Roll on	Blow on
Print/Apply	x	x	x
Apply/print Waiting position top	x	x	x
Apply/pring Waiting position bottom	-	-	x

Table 7 Application modes

The application modes can be further adjusted by setting up the delay times of various elements.



#### Note!

For further information on the printer configuration and functionality of the operation buttons see  
 ▷ "Configuration Manual" and/or the ▷ "Operators Manual" of the printer

#### Method for changing the Configuration

1. Push the **menu** button.
2. Menu selection



Setup >



Labeling >

3. Set the desired parameters.
4. Return to the status "ready."












Parameter	Meaning	Default
 <i>Transfer mode</i>	Selecting the operation mode <i>Stamp on, Roll on, Blow on</i>	<i>Stamp on</i>
 <i>Cycle sequence</i>	Setting the application mode <i>Print-Apply / Apply-Print</i> <i>Print-Apply:</i> An external start signal causes the printing of a label and its application. After the cycle is complete, the pad waits in the start position without a label. <i>Apply-Print:</i> An extra signal causes the first label to be printed and transferred to the pad. The external start signal has that label applied followed by the printing of the next label. At the end of the cycle a printed label is on the pad.	<i>Print-Apply</i>
 <i>Waiting position</i>	<i>top:</i> Pad waits in the starting position for the start signal <i>bottom:</i> Pad waits in the labeling position for the start signal Only for <i>Transfer mode = Blow on</i> and <i>Cycle sequence = Apply-Print</i>	<i>up</i>
 <i>Blow time</i>	The duration (max. 2.5 s) the supporting air is active for the label transfer. Only for <i>Transfer mode = Blow on</i>	<i>1000 ms</i>
 <i>Roll-on time</i>	The time (max. 5 s) the pad waits in the in labeling position. Only for <i>Transfer mode = Roll on</i>	<i>1000 ms</i>
 <i>Support delay on</i>	This setting adjusts the activation delay (max. 2.5 s) of supporting air. By default the supporting air starts with the printing of a label. A delay prevents turbulence at the front end of the label and thus improves the label transfer process from the printer to the pad.	<i>0 ms</i>
 <i>Support delay off</i>	The duration (Max 2.5 s) the supporting air stays active once the label has been transported to the pad. The settings assists in the separation of the rear end of the label from the backing and improves label positioning accuracy on the pad.	<i>0 ms</i>
 <i>Start delay</i>	Delay (max. 2.5 s) between start signal and the start of the next labeling cycle. This is useful when using product sensors and conveyors.	<i>0 ms</i>
 <i>Vacuum delay</i>	<i>On</i> - The vacuum will be switched on after the label feed is completed. <i>Off</i> - The vacuum will be switched on when the label feed starts.	<i>Off</i>
 <i>Vacuum control</i>	Control of the label take up procedure via the vacuum sensor.	<i>On</i>
 <i>Peel-off position</i>	Shift the position of the dispensed label relative to the dispensing edge. The setting can also be adjusted by the software. The values of the configuration and the software are added together.	<i>0.0 mm</i>

Table 8 Parameters of the *Setup > Labelling* menu

## 5.1 Mechanical Adjustments

Undertaking mechanical adjustments in two steps:

- After mounting the pad roughly align it in all directions to avoid collisions when switching on the compressed air.
- Subtle adjustments to optimize the labeling process can mostly be undertaken while the compressed air is switched on.

### 5.1.1 Adjusting the Pad

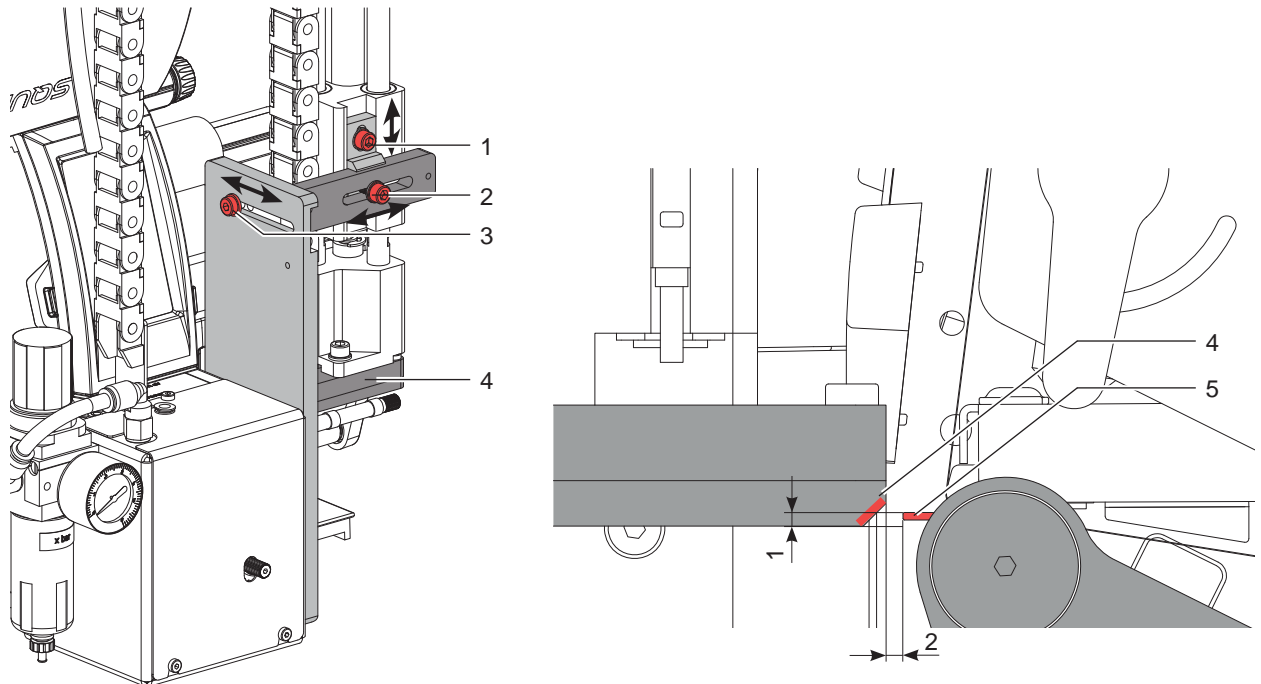


Fig. 14 Moving the pad

#### Adjusting in the Y-Direction - Printing Direction

1. Loosen the cylinder screw (3).
2. Move the pad assembly group (4) in the oblong hole so that the distance of the dispensing plate (5) to the pad is approx. 2 mm.
3. Tighten the cylinder screw (3).

#### Adjusting in the Z-Direction - Height Adjustment

1. Loosen cylinder screw (1).
2. Move the pad assembly group (4) in the oblong hole so that the bottom of the pad is approx. 1 mm from the dispensing plate (5).
3. Tighten the cylinder screw (1).

#### Adjusting in the X-Direction - Sideways Adjustment

1. Loosen cylinder screw (2)
2. Move the pad assembly group (4) in the oblong hole so that the label to be dispensed is aligned left toward the pad. When using universal pads the label should be aligned to be taken up by the middle of the pad via the suction holes.
3. Tighten the cylinder screw (2).

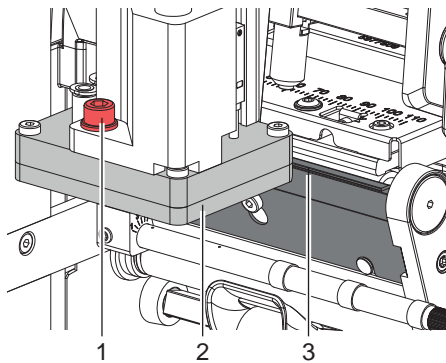


#### Note!

- Check the adjustments when the compressed air is switched on.



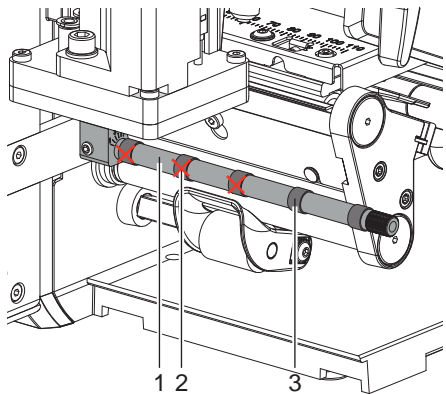
### 5.1.2 Aligning the Pad to the Dispensing Plate



1. Loosen the screw (1).
2. Adjust the pad (2) to the dispensing plate (3) by turning it lightly.
3. Tighten screw (1).

Fig. 15 Aligning the pad to the dispensing plate

### 5.1.3 Uncovering the Holes of the Blowpipe



- The blowpipe (1) has predrilled holes at 15 mm intervals for applying the supporting air.
- By factory default only the two inner holes are open. The remaining holes are closed by synthetic rings (3).
- In order to cater for larger labels the synthetic rings (2) can be removed from holes in the blow pipe.
- Remove as many rings as are needed to cover the width of the used labels.

Fig. 16 Uncovering the holes of the blowpipe

### 5.1.4 Orientation of the Blow Pipe

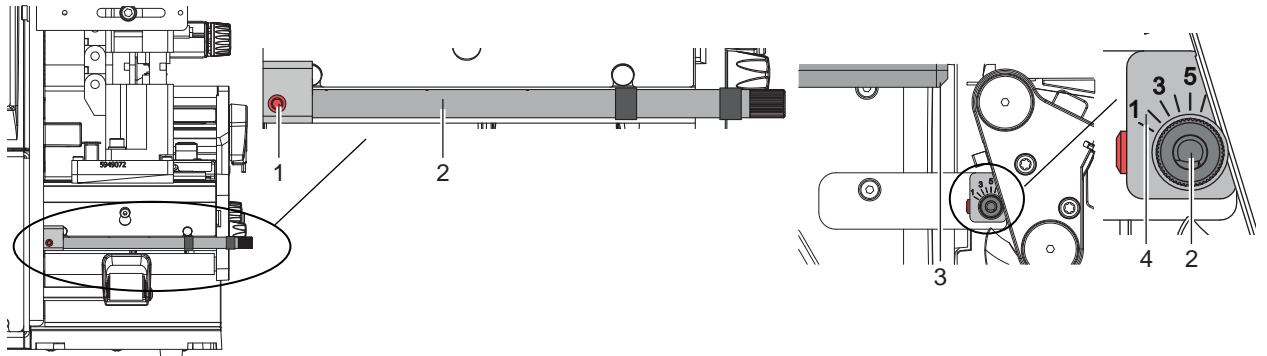


Fig. 17 Orientation of the blow pipe

The blow pipe (2) can turn on its own axes. This allows the supporting air to be adjusted to optimize for the label take over procedure.

1. Loosen screw (1).
2. Turn the blow pipe (2) so that the air current supports the take up of the label from the dispensing plate to the pad.
  - For small labels turn the holes of the blow pipe more into the direction of the dispensing plate (3). (Direction 3 to 4 on the graduation(4)).
  - For larger labels turn the air current away from the dispensing plate (3). (Direction 1 on the graduation (4)).
3. Tighten screw (1).

## 5.1.5 Adjusting the Stopper

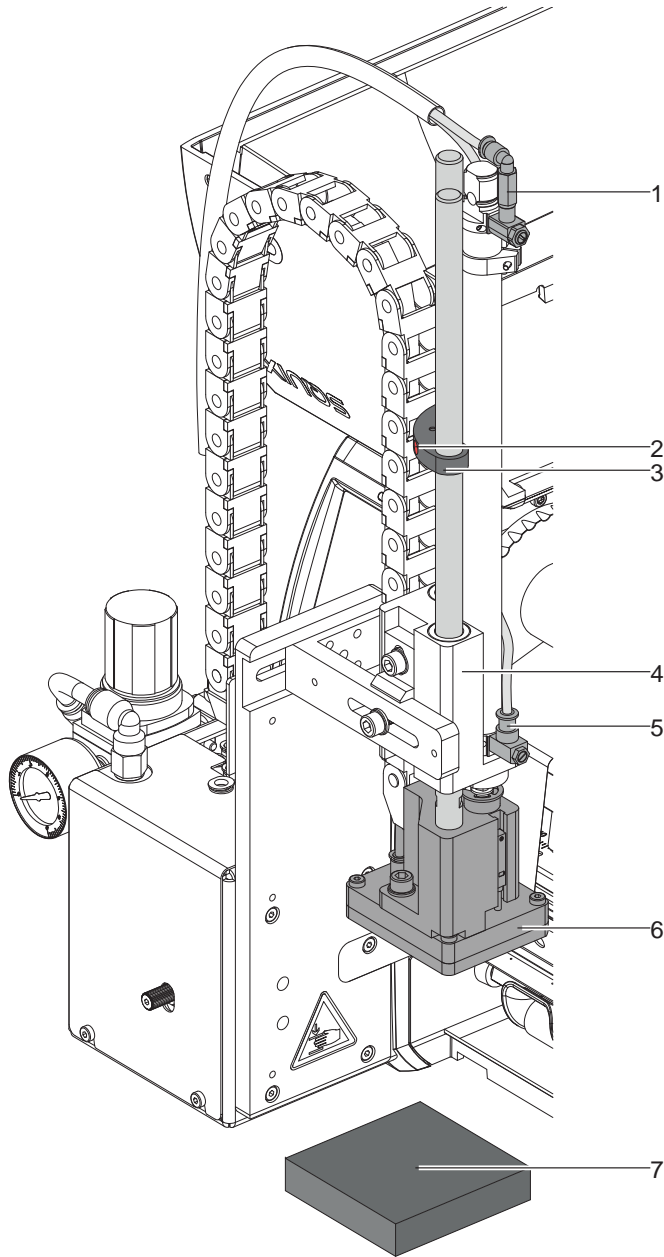


Fig. 18 Adjusting the stopper



**Note!**  
Only for the mode "blow on"!

**Attention!**

Power down the printer and switch off the compressed air before adjusting the stopper!

1. Place the sample (7) in the labeling position.
2. Remove tubes from the push-in fittings (1, 5).
3. Loosen screw (3) from stopper (2).
4. Move the pad manually to the desired labeling position.  
The distance of the bottom of the blow on pad (6) to the top of the sample product (7) may not exceed 10 mm.
5. Push the stopper (2) against the guide block (4) and tighten the screw (3).
6. Place tubes (1, 5) back into the push-in fittings.
7. Open the block valve for the compressed air and switch on the printer.

## 5.2 Pneumatic Adjustments

## 5.2.1 Controlling Valve

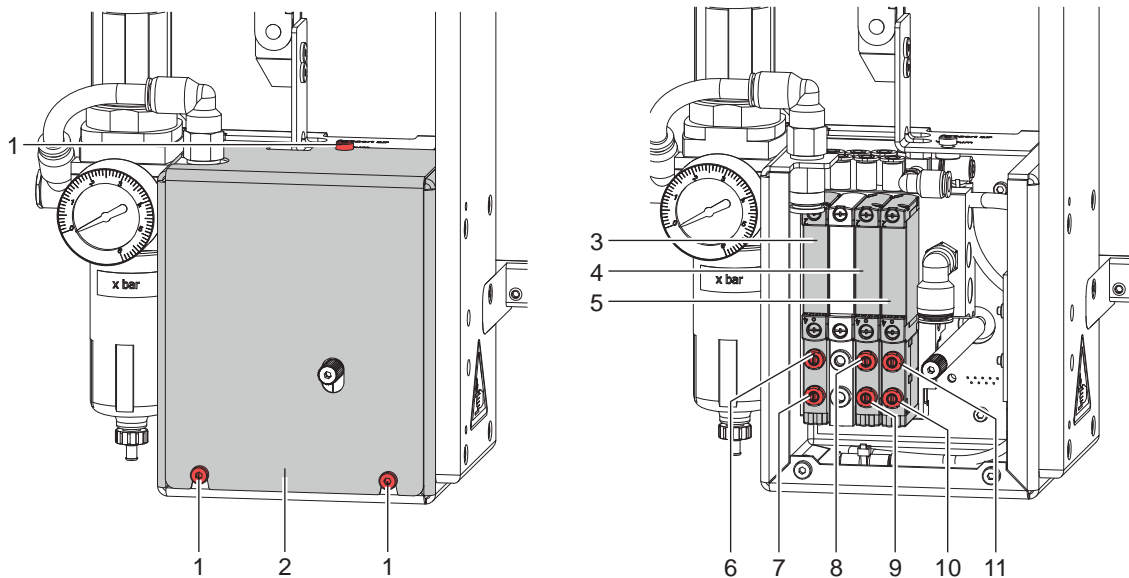


Fig. 19 Controlling valve

Certain applicator functions can be directly tested by pushing the controlling valves of the pneumatic system.

► Loosen cylinder screw (1) and remove the skirting (2) of the applicator.

The air pressure control valves can be triggered manually by pushing on the integrated buttons.

**Three-way Valve (3) for Controlling the Lift**

When the printer is switched on the valve is controlled electronically and holds the pad in the starting position. By triggering the valve the pad is moved into the labeling position. In the case of normal labeling the impact sensor triggers this valve.

**Note!**

**The manual triggering of this valve only works if the printer is switched off.**

Triggering button 6 will move the pad as far downward as possible as not signal is received by the impact sensor. Manually triggering button 7 will move the pad upwards.

**Double Two-way Valve (4) Controlling the Blow Air**

In the mode "blow on" the label is blown onto the product but an air burst.

In the mode "stamp on" and "roll on" an air burst is applied as the cylinder moves back into the starting position to clear any dirt or debris off the pad.

For all described functions both valves are triggered simultaneously.

When manually triggering buttons 8 or 9 only the one valve is triggered.

**Double Two-way Valve (5) for Vacuum/Support Air**

Both the internal valves serve as triggers for activating the vacuum nozzle and thus creating the negative pressure on the pad and independent thereof the triggering of the support air for the blow pipe for the label transfer process.

Button 10 is for the vacuum and button 11 for the the support air.

### 5.2.2 Adjusting the Lifting Speed of Cylinder holZ

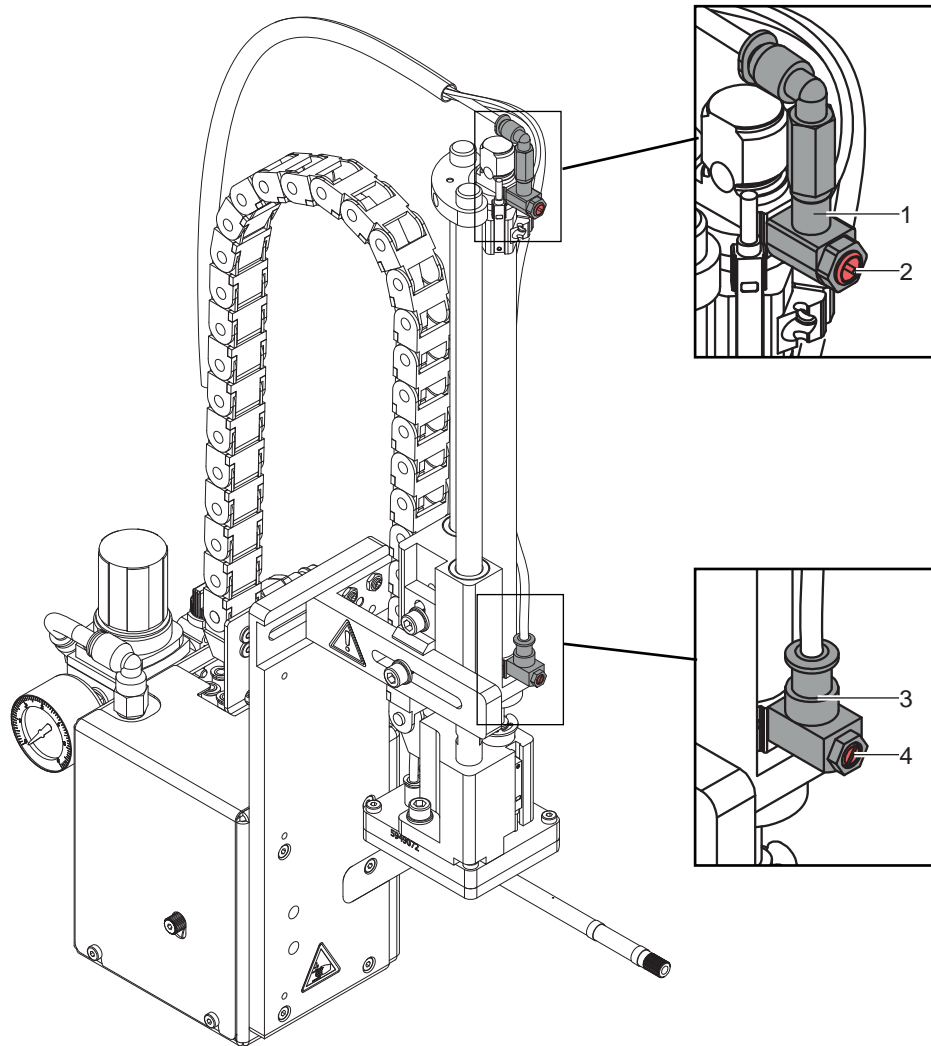


Fig. 20 Throttle valves of the cylinder

The adjustment of the lifting speed is undertaken by the adjustment of two throttle valves (1, 3).

- Set the lifting speed as required.
- To increase the downward speed turn the screw (4) at the lower valve (3) counterclockwise.
- To increase the upward speed turn the screw (2) of the upper valve (1) counterclockwise.



**Note!**

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

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



**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 the Vacuum and Support Air

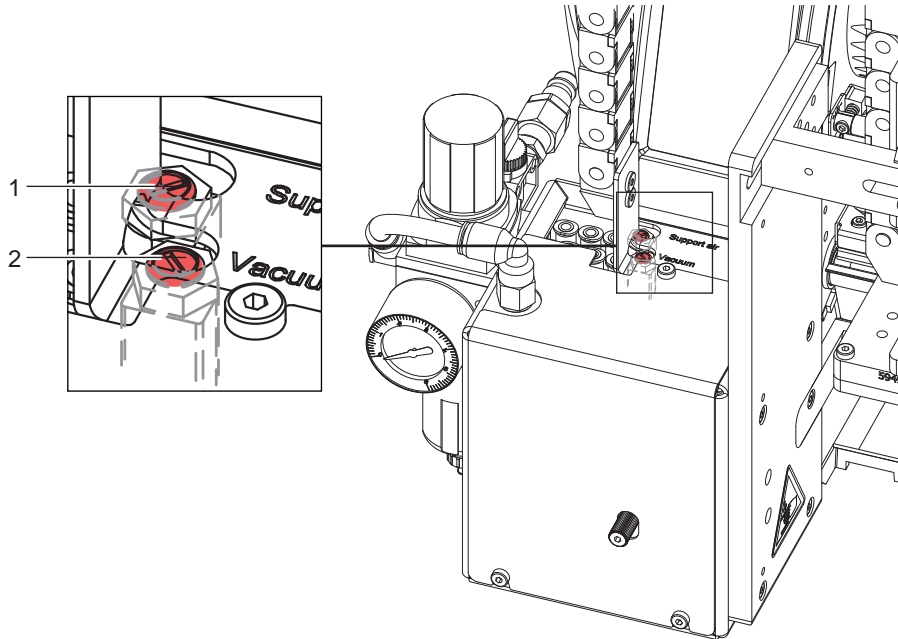


Fig. 21 Throttle valve of the valve block

#### Adjusting the Support Air

With valve (1) the support air for blowing on the label onto the pad can be varied.

- Set up the support air so that the label is blown onto the pad with as little as possible turbulence.
- To increase the strength of the support air turn the throttle valve screw of valve (1) counterclockwise.
- If needed alter the direction of the air flow ▷ „5.1.4 Orientation of the Blow Pipe“

#### Adjusting the Vacuum

With valve (2) the suction strength of the vacuum can be adjusted for sucking the label onto the pad.

- Adjust the vacuum so that the label is sucked onto the pad securely.
- To increase the strength of the vacuum turn the throttle screw of the valve (2) counterclockwise.



#### Note!

**The setting of the vacuum influences the take-up of the label by the pad. If the vacuum is too strong the take-up of the label can be stopped prematurely.**

### 5.2.4 Optional Pressure Reduction Valve

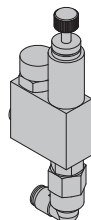


Fig. 22 Pressure reduction valve of cylinder Z's (extension motion)

The pressure reduction valve is recommended when labeling sensitive products that would normally be damaged by the impact of the pad. Additionally the valve can be implemented for safety reasons.

The output value of the valve is 2.5 bar.

## 6.1 Inserting Materials

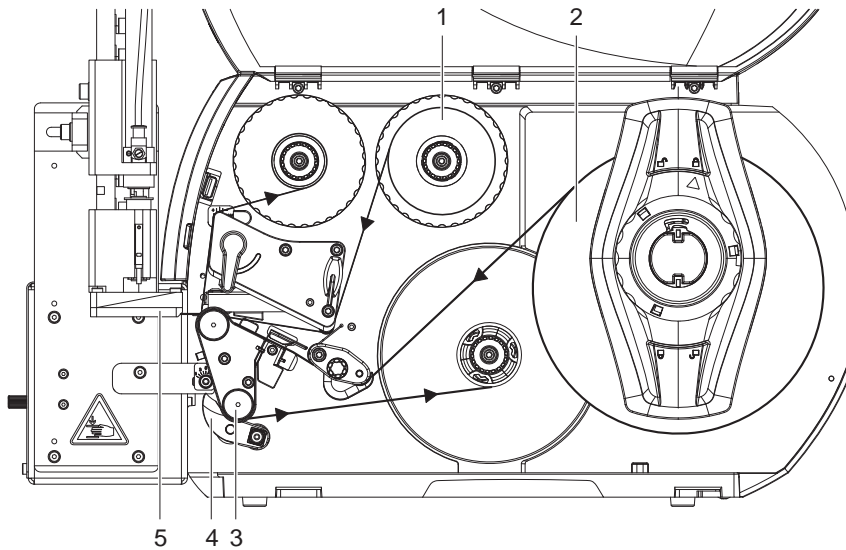


Fig. 23 Inserting material

- ▶ Load the ribbon (1) into the printer.
- ▶ Insert the label material (2) into the printer. The labels are used in the dispensing mode. For detailed information on material implementation ▷ Operators manual.



### Attention!

- ▶ Ensure that the locking system (4) is raised to the roller (3) otherwise a collision between pad (5) and locking system (4) will occur.

## 6.2 Activating Peel-off Mode



### Note!

- ▶ For labeling activate the peel-off mode in the software.

When programming directly this is achieved with the P-command ▷ Programming manual

## 6.3 Adjusting the Peel-off Position

For optimization of the label take-up from the printer there are two separate possibilities for adjustment.





### Attention!


- ▶ First, optimize the peel-off position offset in the configuration.
- ▶ Then, adjust the peel-off offset via the software.

This method is particularly important for a problem-free start after material has been inserted or when dealing with errors.



### Peel-off Offset in the Printer Configuration



- ▶ Check the standard settings of the dispensing offset of the printer. Test the labeling cycles by alternating between buttons  and . ▷ „6.4 Test Mode without a Print Job“.
- ▶ In the submenu labeling peel-off offset in printer configuration ensure the settings allow for a complete detachment of the labels from the liner ▷ "Configuration Parameters of the Printer".

### Peel-off Offset in the Software

- ▶ Test the settings of the peel-off offset in the software. Check the labeling cycles by repeatedly pushing button  ▷ „6.5 Test Mode with a Print Job“.
- ▶ Set the peel-off offset in the Software so that the printed labels are detached from the liner reliably ▷ "Programming Manual" respectively "Software Documentation".

## 6.4 Test Mode without a Print Job

By alternating between buttons  and  on the display it is possible to simulate the labeling process without an active printing job.

- ▶ Push button .  
This causes the feed of an empty label. Simultaneously the vacuum of the pad as well as the supporting air are activated. As soon as the label has securely arrived at the pad the supporting air is switched off.
- ▶ Push button .  
When pushing this button the cylinder Z is extended into the labeling position. Reaching the labeling position is signaled by the triggering of the impact sensor. With that signal the vacuum is stopped and the label is applied to the product. With the application of the label the cylinder is contracted back into the starting position.



### Note!

- ▶ Use the printer configuration to find the best peel-off offset for the initiation.

## 6.5 Test Mode with a Print Job

This method allows testing of the labeling process with actual printing data by using the  button.

- ▶ Send a print job.

The test mode is executed in two half cycles:

- ▶ Push the  button.


### Half cycle 1

A label is printed. The vacuum of the pad as well as the supporting air (blow tube) are switched on. When the label has been picked up by the pad, the supporting air is switched off.

- ▶ Push the  button.

### Half cycle 2

The pad is moved to the labelling position. The triggered impact sensor signals when the labelling position is reached. The vacuum is switched off as soon as the label is placed onto the product. Then, the pad is moved back into the starting position.

If the label is removed by hand after **half cycle 1** has been completed and the  button is pressed, **half cycle 1** will be repeated with the next label in the printing line.



### Note!

- ▶ Use the software to find the best peel-off offset for the initiation.

## 6.6 Standard Operation

- ▶ Before starting the labeling process ensure that all connections are securely established.
- ▶ Load printing and labeling material. Ensure that the locking system is closed. ▷ „6.1 Inserting Materials“.
- ▶ Open the compressed air shut-off valve.



### Attention!

- ▶ **Before switching on the printer ensure that the pad is not blocked by a label as this may cause the vacuum sensor to be configured incorrectly.**

- ▶ Switch on the printer.



### Note!

If the pad is not in the starting position when the printer is switched on an error message will appear on the display.

Press the pause button on the printer to cancel the error state. The applicator will move into the start position and is ready for work.

- ▶ Push button  in the printer menu.

A synchronization feed is initiated. 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.



### Note!

This synchronization also has to be carried out when the print job has been interrupted with the cancel button. 

Synchronizing is not necessary when the print head was not lifted between print jobs. This also applies if the printer was powered down 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"

qqqqqqqqqqqqqqqqqq




## 7.1 Error Messages of the Printer

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

Error treatment:

► Clearing the error results.

► Press the **feed**  key to synchronize the label feed, remove the left over labels manually.

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

After error correction, the label causing the error will be reprinted.

<i>Continue</i>	After rectification of the cause of the error the print job commences with the next label of the printing job.
<i>Repeat</i>	After rectification of the cause of the error the print job commences with the last label of the printing job.
<i>Cancel</i>	The current print job will be canceled.

## 7.2 Error Messages of the Applicator

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

Error Message	Possible Cause	Possible Solution
<i>Air pressure ins.</i>	Compressed air is switched off	Check the compressed air switch.
<i>Label not depos.</i>	Label has not been placed onto the product; while the pad is moving back the label is still sticking to the pad.	Manually label the product.
<i>Upper position</i>	Pad is not in the starting position when the printer was switched on; Pad has not reached the labelling position within 2 s after the movement of the pad was started; pad has left the printing position without authorization.	Check the air pressure configuration (particularly the upper throttle valve). Manually label the product.
<i>Ext. I/O error</i>	Labeling process was interrupted by the PLC interface with a STOP signal.	If necessary label the product by hand.
<i>Sensor error</i>	The sensor for the labeling position was not triggered from the start of the labeling process until reaching the labeling position.	Check the sensor (Service).
<i>Vac. plate empty</i>	Label has not been picked up properly by the pad; label fell off the pad before it could be placed onto the product.	If possible place the "lost" label onto the product manually. Otherwise cancel the print job and restart it with edited parameters (e.g. Numbers). If this error is repeated check the alignment of the pad as well as settings for vacuum and supporting air as well as peel-off offsets.
<i>Lower position</i>	Pad has not reached the starting position within 2 s after the pad has left the labelling position; or pad has left the starting position without authorization.	Check the compressed air settings (especially the bottom throttle valve). Verify that the mechanics of the applicator are in order. Ensure the impact sensor is working correctly. Label the product by hand.

Table 9 Error messages of the applicator

Error Treatment:

- ▶ Clear the error state.
- ▶ In order to clear the error state press **continue**, **repeat** or **cancel**.  
**Continue** with the next label in the printing queue.  
**Repeat** the print of the label causing the error. Only applicable with error *Vac. plate empty*.  
**Cancel** the current print job.




### Warning!

After the error has been resolved the pad will immediately move back to the starting position!

**Danger of injury to hands and fingers by the moving pad!**

- ▶ **Do not reach into the area of the moving pad and keep long hair, loose clothes, and jewelry away.**

Reprinting a label, interrupted by an error, is not possible without a new printing job.

- ▶ In the mode "apply/print" before the standard cyclic operation can commence the signal "print first label" must be sent or push the  key to send a printed label to the pad.

## 8

## External Control via the I/O Interface of the Printer

The I/O Interface serves as an integration opportunity for the printer into system.

### 8.1 Pin Configuration

The interface has a 25-pole SUB-D connector

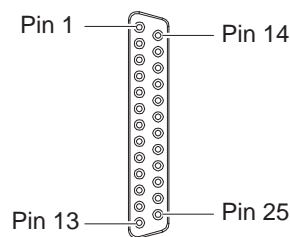


Fig. 24 I/O-Interface



#### Note!

The function of the outputs on the pins 4, 9 10 and 21 can be re-defined temporarily by direct programming e.g. to control external devices with the user bits 0 to 3 ▶ **Programming Manual**.

















Pin	Signal	Name	Description	Activation/active status
1		FSTLBL	Print first label only for <i>Cycle sequence = Apply-Print</i>	+24 V between Pin 1 and Pin 25
2	-	-	Do not use	
3		ENDPOS	Applicator is in the position of transferring the label onto the product.	+24 V on Pin 3
4		FEEDON	Media transport ON Labels are fed by the printer	+24 V on Pin 4
		Bit 0	User Bit 0 is set	
5		HOMEPOS	Applicator is in the position where the label is taken up from the printer.	+24 V on Pin 5
6		GND_INT	Ground (0 V) for sensors or trigger switches	
7	-	-	Do not use	
8	-	-	Do not use	
9		JOBRDY	Print job ready Print jobs are stored in the print module.	+24 V on Pin 9
		Bit 1	User bit 1 is set	
10		READY	Printer is ready	+24 V on Pin 10
		Bit 2	User Bit 2 is set	
11	-	-	Do not use	
12		REPRINT	The last printed label will be repeated.	+24 V between Pin 12 and Pin 25
13		START	Print start signal only for <i>Print on demand = On</i>	+24 V between Pin 13 and Pin 25
14		PAUSE	Pause ON/OFF	Pause ON when +24 V between Pin 14 and Pin 25
15		RIBWARN	Warning end of ribbon The ribbon supply roll diameter has undershot a predefined level	0 V on Pin 15
16		LBLREM	Label removed For peel-off mode only. Confirmation of the superior control that the label has been taken from the peel-off position. Required for the validity of a new start signal.	Switch on +24 V between Pin 16 and Pin 25
17		JOBDEL	Cancel print job The current print job is canceled and deleted from the print buffer.	Switch on +24 V between Pin 17 and Pin 25
18		RSTERR	Reset Error state of the printer will be reset.	Switch on +24 V between Pin 18 and Pin 25
19		P24_INT	Internal operating voltage +24 V, Si T 100mA for external consumers e.g. sensors, trigger switches	
20		P24_EXT	External operating voltage +24 V	
21		PEELPOS	Label in peel-off position For peel-off mode only. A label is in peel-off position.	+24 V on Pin 21
		Bit 3	User Bit 3 is set	
22		ERROR	General error message The operation will be stopped and the error type will be displayed.	0 V on Pin 22
23		STOP	Stop signal to interrupt the operation	Switch on +24 V between Pin 23 and Pin 25
24	-	-	Do not use	
25		GND_EXT	Ground of the external 24 V	

Table 10 Pin assignment of the I/O interface

8.2 Circuit Diagram of Inputs and Outputs

Digital Inputs

- conform to IEC/EN 61131-2 (Type 3)
- Operating voltage: 24 V DC (9,6..35 V)
- Switching logic: PNP switching
- Low level „0“: < 7 V DC
- High level „1“: > 11 V DC
- Input current per channel: 1,5..2,5 mA (at 24 V DC)
- Reverse polarity protection: yes
- ESD protection: conform to IEC/EN 6100-4-4

Digital Outputs

- conform to IEC/EN 61131-2
- Operating voltage: 24 V DC (11..35 V)
- Switching logic: PNP switching
- Output current per channel: 625 mA (overload protection)
- Short-circuit protection: yes
- Reverse polarity protection: yes
- ESD protection: conform to IEC/EN 6100-4-4

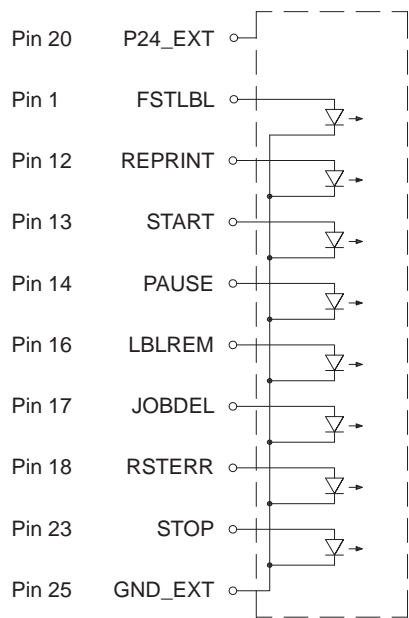


Table 11 Connecting inputs

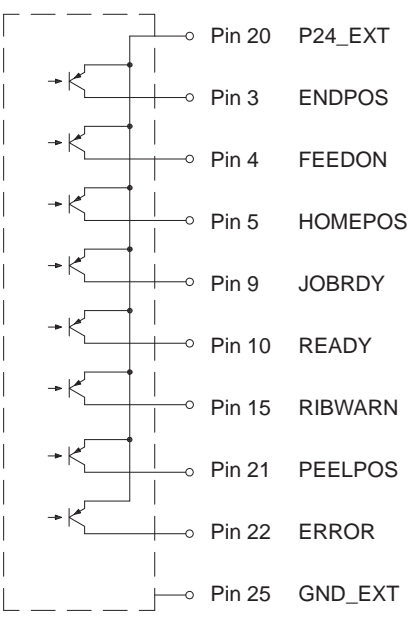


Table 12 Connecting outputs

## 9.1 Declaration of Incorporation




## 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>S1000</b>
Applied EU Regulations:	Applied Standards:
<b>Directive 2006/42/EC on machinery:</b>	<ul style="list-style-type: none"> <li>• <b>EN ISO 12100:2010</b></li> <li>• <b>EN ISO 13849-1:2015</b></li> <li>• <b>EN 60950-1:2006+A11:2009+A12:2011+A1:2010+A2:2013</b></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.

## 9.2 EU Declaration of Conformity



## EU Declaration of Conformity

We declare herewith that the following device as a result of design, construction and the version put in circulation complies 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:	S1000
Applied EU Regulations:	Applied Standards:
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