

## Swing-Stroke Applicator

# 4514

Made in Germany

Family	Type
Swing-Stroke Applicator	4514-200
	4514-300
	4514-400

**Edition:** 03/2016 - Part.-No. 9009527

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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.

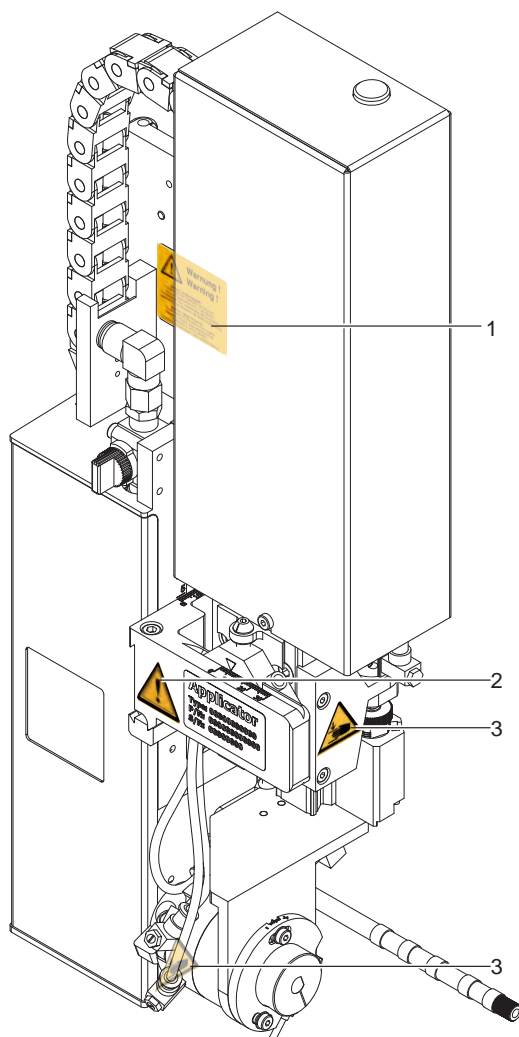


### **Warning!**

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 away. Before any alterations are undertaken in those areas, close the compressed air shutoff valve.
- The device may only be used in a dry environment, do not expose it to moisture (water splashes, sprays and mist)
- 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 service 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 by 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 danger. Warning stickers may therefore not be removed.

## 1.4 Safety Marking



Risk of injury by moving parts!



The cylinder is under pressure  
also if the printer is switched off.  
Possibility of residual energy!



Danger of crushing hands and  
fingers by the moving pad!



**Attention!**  
**Never remove or cover safety markings!**  
**Replace them in case of damage!**

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 print module enables it to be easily disassembled into its component parts.
- Send the parts for recycling.

## 2.1 Important Features

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

## 2.2 Technical Data

Label transfer method		Blow pad
		4514 L/R 2100
Label width in mm for Hermes+2		10 - 58
for Hermes+4		10 - 80
Label height in mm		10 - 60
Compressed air pressure		0,45 MPa (4,5 bar)
Sound pressure level		under 74 dB(A)
Product during labeling	fixed	■
Labeling onto the product	from the top	■
	from below	■
	sideways	■
Product height	fix	-
Product distance to lower edge at cylinder stroke	200 mm up to mm	150 <sup>2)</sup>
	300 mm up to mm	250 <sup>2)</sup>
	400 mm up to mm	350 <sup>2)</sup>
Cycle time about frequency/min. <sup>1)</sup>		25

<sup>1)</sup> Determined at 100 mm stroke below device / smallest label height / print speed 100 mm/s .

<sup>2)</sup> depended on label height

Table 1 Technical Data

## 2.3 Overview Without Cover

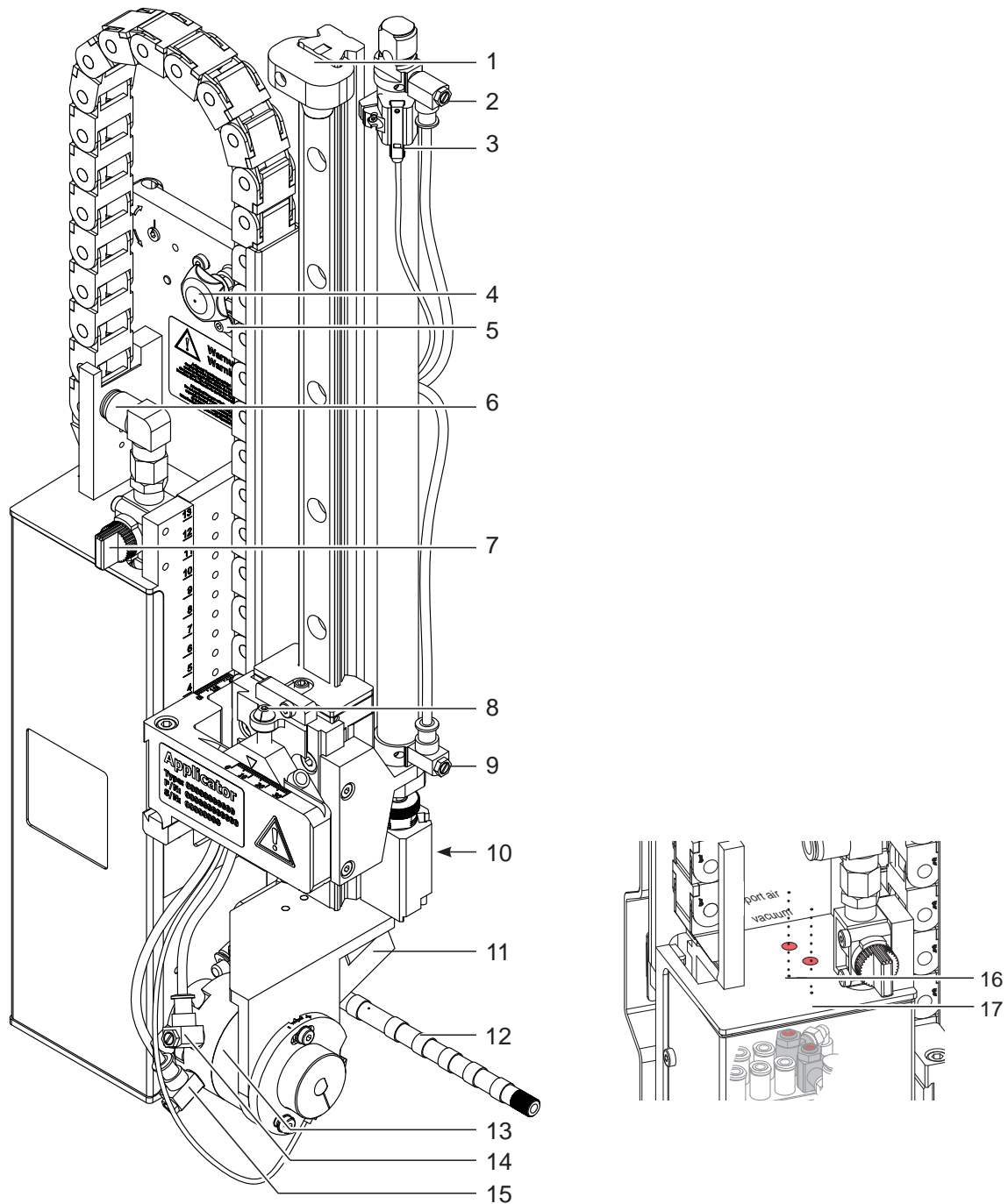


Fig. 2 Device overview - Front view

- |  |  |
|--|--|
| 1 Stopper for the operation mode "Blow on" transport lock          | 9 Throttle valve cylinder - move out Z-direction |
| 2 Throttle valve cylinder - move in Z-direction                    | 10 Sensor "end position" cyl. Z                  |
| 3 Sensor "start position" Cyl. Z                                   | 11 Pad (customized)                              |
| 4 Knurled screw for attaching the applicator to the printer        | 12 Blow tube for supporting air                  |
| 5 Setting screw to adjust the angle between applicator and printer | 13 Cylinder R (rotation)                         |
| 6 Compressed air connector   | 14 Throttle valve cylinder R- move in            |
| 7 Shutoff valve  | 15 Throttle valve cylinder R- move out           |
| 8 Setting screw for vertical adjustment cylinder assembly          | 16 Support air throttle valve                    |
|  | 17 Vacuum throttle valve                         |



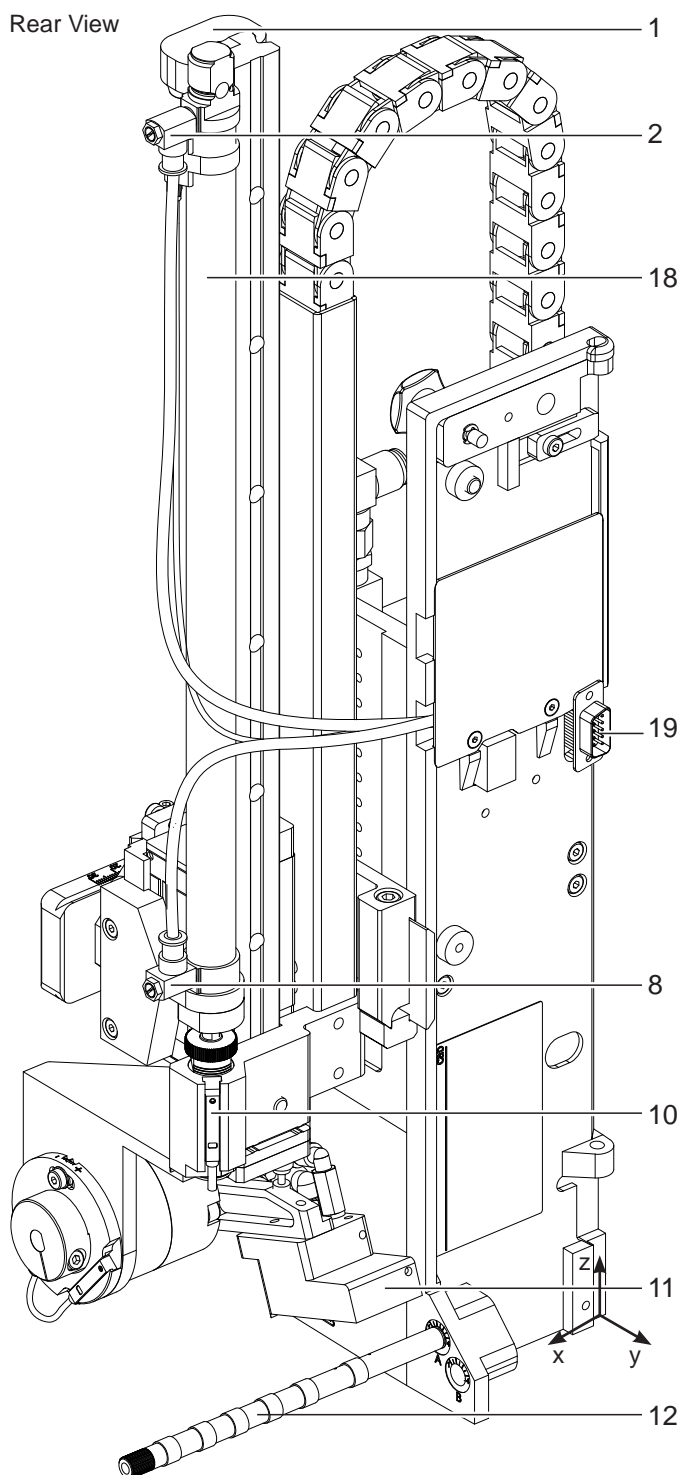


Fig. 3 Device overview - Rear view

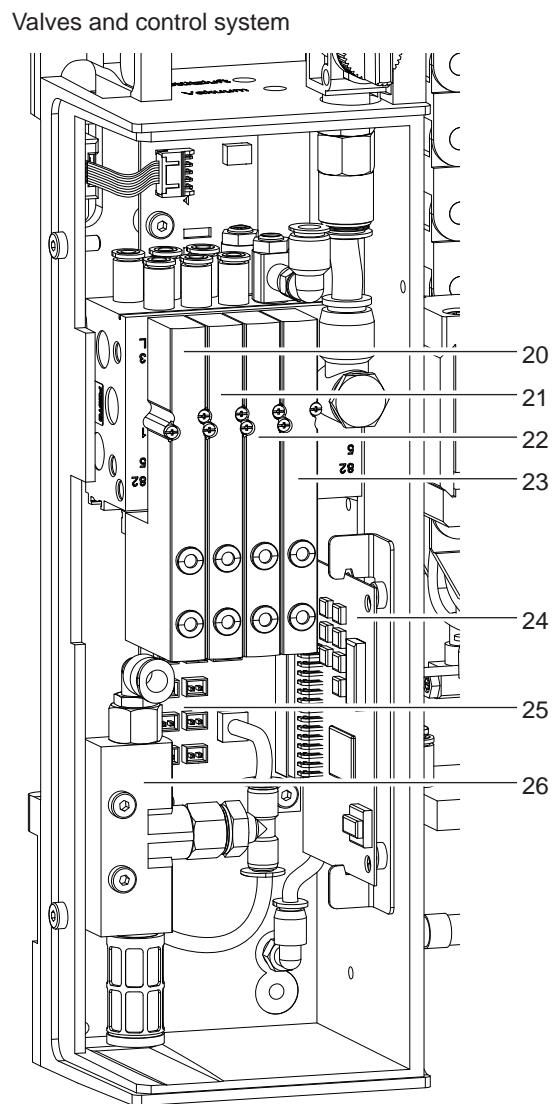


Fig. 4 Device overview - Control system

- 1 Stopper for the operation mode "Blow on", transport lock
- 2 Throttle valve cylinder - move in Z-direction
- 9 Throttle valve cylinder - move out Z-direction
- 10 Sensor "end position" cyl. Z
- 11 Pad (customized)
- 12 Blow tube for supporting air
- 18 Cylinder Z
- 19 Interface to the printer

- 20 Valve cylinder Z
- 21 Valve cylinder R
- 22 Valve blow air
- 23 Valve vacuum and support air
- 24 PCB applicator control
- 25 PCB applicator interfaces
- 26 Vacuum generator



### 2.4 Contents of Delivery

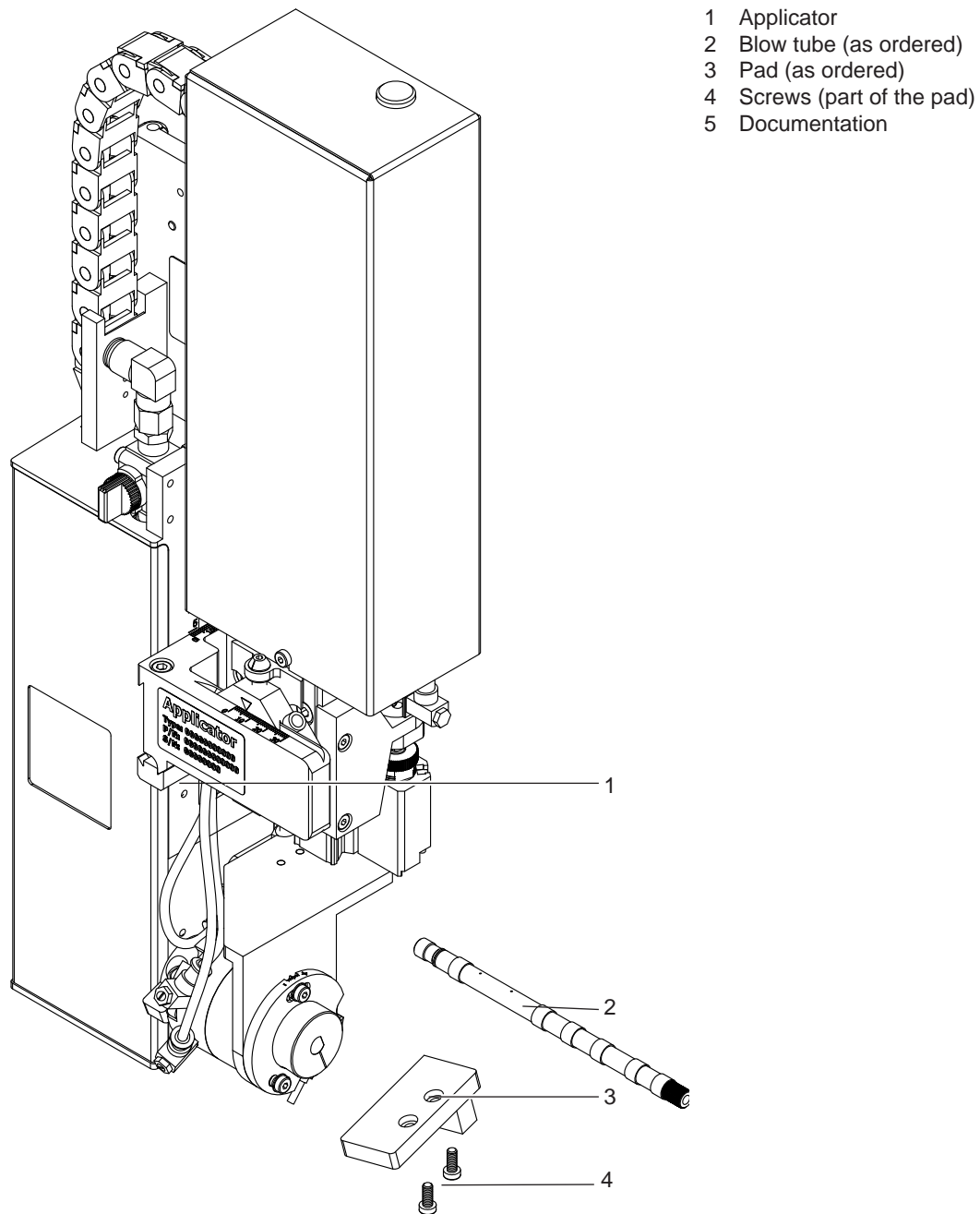


Fig. 5 Contents of delivery



**Note!**

Please keep the original packaging in case the applicator needs to be returned.



**Attention!**

The device and printing materials will be damaged by moisture and wetness.

► Only set up the label printer and applicator in dry locations protected from moisture and splashes.

### 3.1 Standard Operation

- ▶ Check all external connections.
- ▶ Load the material. Ensure that the locking system is locked ▷ "Operator's Manual" of the printer.
- ▶ Open the shutoff valve.



#### Attention!

- ▶ Ensure that the pad is not covered by a label when switching on the printer-applicator system. Otherwise the vacuum sensor may be calibrated 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 pause button on the printer.

The applicator will move into the start position and is ready for work.

- ▶ Press the **feed** button on the printer.  
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 off between print jobs.

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

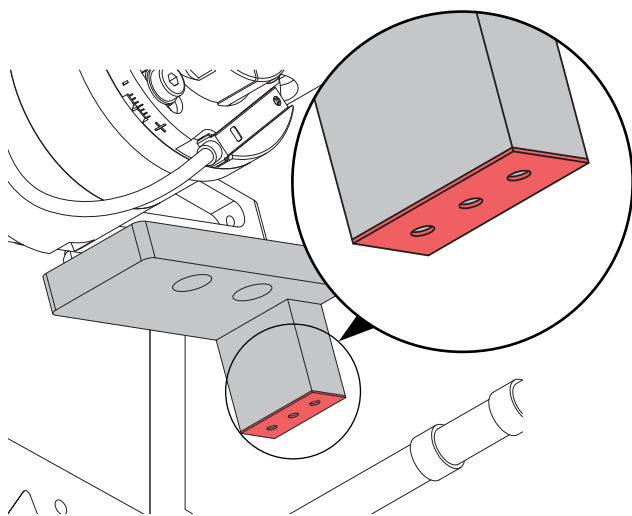
Error messages during labelling process are shown in the display of the printer ▷ „4 Error Messages“

### 3.2 Cleaning



#### Attention!

Never use solvent and abrasive.



- ▶ Clean the outside surfaces with multi purpose cleaner.
- ▶ Remove dust particles and leftover label pieces with a soft brush and/or vacuum cleaner.
- ▶ The slide foil (1) requires regular cleaning as most of the dirt will accumulate here.

Fig. 6 Cleaning the pad with slide foil

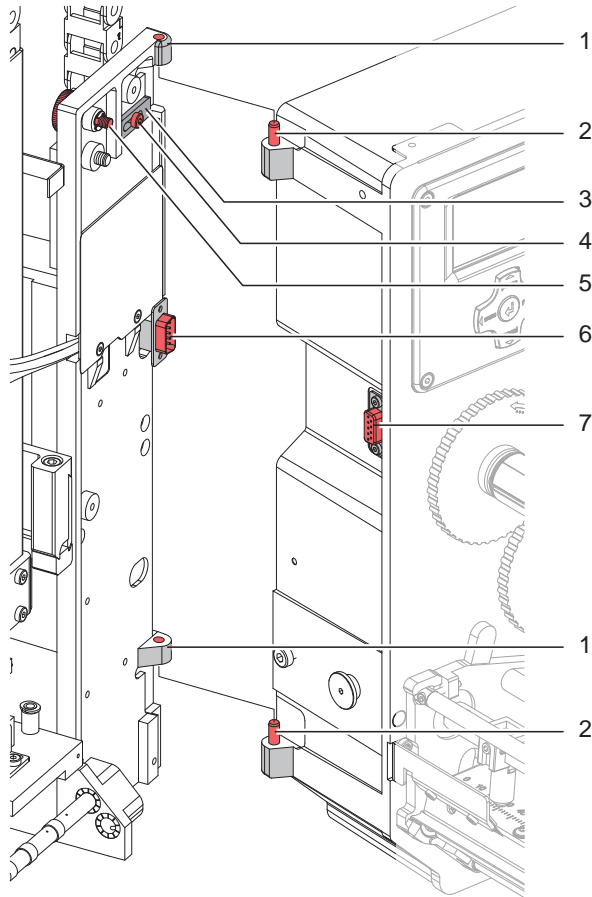


Fig. 7 Mounting the applicator to the printer



### Attention!

Initiation, adjustments and changing of parts is to be performed by qualified service personal only.

▷ Initiation/Service Manual Applicators



### Attention!

- ▶ Disconnect the printer from the power supply before mounting the applicator!
- ▶ Ensure a stable positioning of the printer!
- ▶ Connect the compressed air only after mounting the applicator to the printer!

To clean the applicator and printer it is sometimes necessary to turn away or even dismount the applicator from the printer.

Take care not to adjust the setting screws, throttle valves or other alignment elements. This will enable use of the applicator directly after cleaning.

### Pivot Away/Dismount the applicator

1. Loosen thumbscrew (5) and swing the applicator away.
2. Disconnect SUB-D 15 male connector (6) from the female connector (7) of the printer.
3. Loosen screw (4) and remove the locking plate (3) from the hinges.
4. Lift the applicator from the hinges.

### Mount the applicator

5. Hang the applicator to the printer via the female hinges part (1) to the male hinges part (2).
6. Connect the SUB-D 15 male connector (6) to the female connector (7) of the printer.
7. To secure the applicator from slipping out of hinges, loosen screw (4), move metal part (3) under the hinge and tighten screw (4).
8. Swing the applicator to the printer and tighten the thumbscrew (5).

## 4.1 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 and 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.

## 4.2 Error Messages of the Applicator

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

Error Message	Possible Cause
Air pressure ins.	Compressed air is switched off
	Pressure too low < 4 bar
	Pressure too high > 6 bar
Label not depos.	Label has not been placed onto the product; after the pad has moved back the label is still sticking to the pad.
Lower 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 without authorization.
Process Error	Process of labeling was interrupted via the I/O interface of the printer with the STP signal.
Refl. sensor blk.	There has been no change of state of the upper sensor of the cylinder from the start of the labelling process and the signal of the labelling position sensor.
Upper position	Pad is not in the starting position when the printer was switched on.
	Pad has not reached the labelling position within 2s after the movement of the pad was started.
	Pad has left the printing position without authorization.
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.

Table 2 Error messages of the applicator

Error treatment:

- ▶ Clear the error results.
- ▶ Press the **pause** key to quit the error state.



### Note!

In the case of errors check the **Service Manual** for adjustments and settings.



### 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.**

After error correction, the printing of the label causing the error cannot be repeated without restarting the print job except the error "Vac. plate empty". In this case, the last label will be reprinted after the error resolution via the **pause** key and then pressing the Enter button ↵.

- ▶ The application mode "Apply/Print" sends the signal "Print first label" alternatively press the enter button ↵ to send a printed label to the tamp.

## 5.1 Declaration of Incorporation




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## Declaration of Incorporation

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

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

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

Device:	Applicator
Type:	4514
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 13849-1:2008</li> <li>• EN 60950-1:2006 +A11:2009+A12:2011+A1:2010+A2:2013</li> </ul>
Person authorised to compile the technical file:	Erwin Fascher Am Unterwege 18/20 99610 Sömmerda
Signed for, and on behalf of the Manufacturer:	Sömmerda, 01.03.2016
<b>cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda</b>	 <b>Erwin Fascher Managing Director</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.


## 5.2 EU Declaration of Conformity



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Wilhelm-Schickard-Str. 14  
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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:	<b>Applicator</b>
Type:	<b>4514</b>
Applied EC Regulations and Norms:	Applied Norms:
<b>Directive 2014/30/EU relating to electromagnetic compatibility:</b>	<ul style="list-style-type: none"> <li>• <b>EN 55022:2010</b></li> <li>• <b>EN 55024:2010</b></li> <li>• <b>EN 61000-6-2:2005</b></li> </ul>
<b>Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment</b>	<ul style="list-style-type: none"> <li>• <b>EN 50581:2012</b></li> </ul>
Signed for, and on behalf of the Manufacturer:	<b>Sömmerda, 01.03.2016</b>
<b>cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda</b>	 <b>Erwin Fascher Managing Director</b>

## 6.1 Factory default Settings

**Note!**

The applicators default factory settings guarantee reliable operation within the same configuration.

## 6.2 Tools






Screwdriver with parallel blade	2.5		<ul style="list-style-type: none"> <li>To adjust the throttle valves and product sensor</li> </ul>
Hexagon key L-wrench	0.8		<ul style="list-style-type: none"> <li>To adjust the sensors (in contents of delivery)</li> </ul>
	2.5		<ul style="list-style-type: none"> <li>For matched norm parts (in contents of delivery)</li> </ul>
	4		<ul style="list-style-type: none"> <li>Pad adjustments</li> <li>Changing pad</li> </ul>
Flat-round nose - straight - angled			<ul style="list-style-type: none"> <li>To mount/dismount tubes</li> </ul>
Open spanner	SW 8		<ul style="list-style-type: none"> <li>To change the throttle valves</li> </ul>
	SW 13		<ul style="list-style-type: none"> <li>Setting the spring strength of the adapter bolt</li> </ul>
	SW20		<ul style="list-style-type: none"> <li>Changing the cylinder</li> </ul>
Manometer	± 7 bar		<ul style="list-style-type: none"> <li>Air pressure control</li> </ul>

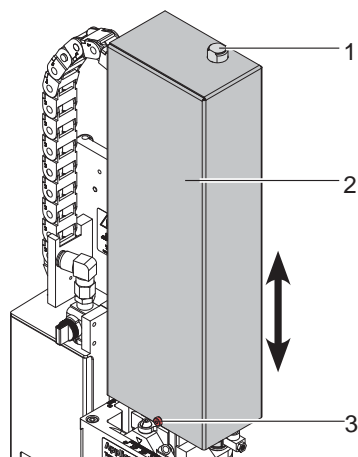
Table 3 Tools

## 6.3 Mounting and Dismounting the Cover

To initiate the applicator or for adjustments it is necessary to dismount the cover (2). After these adjustments have been completed remount the cover.

**Warning!**

- ▶ Do not operate the applicator without cover (2).
- ▶ Dismount the cover only for service and/or adjustment purposes.

**Dismount**

1. Loosen screw (3).
2. Lift cover (2).

**Mount**

3. Move the cover (2) over the cylinder assembly.
4. Put in the cylinder (1) into the hole in the cover (2).
5. Tighten screw (3) to fix cover (2).

Fig. 8 Cover

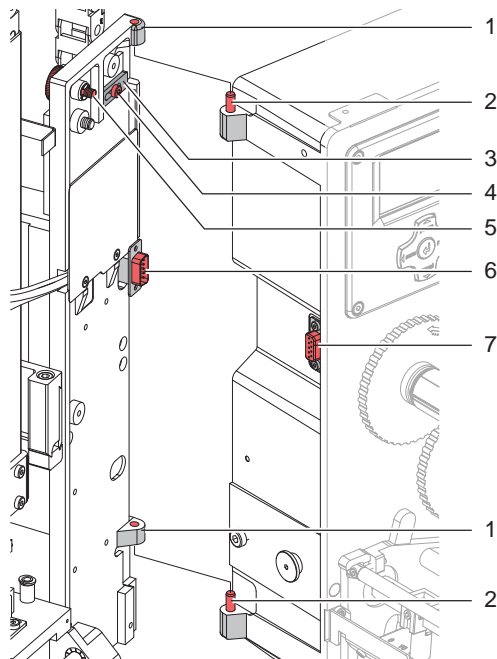


## 6.4 Mounting the applicator



### Attention!

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



1. Hang the applicator to the printer via the female hinges (1) to the male hinges (2) of the printer.
2. Connect the SUB-D 15 male connector (6) to the female connector (7) of the printer.
3. To ensure the applicator does not slip out of the hinges, loosen screw (4), move the locking plate (3) to secure the applicator and tighten screw (4) again.
4. When pivoting the applicator toward the printer ensure that the cable is not caught between the two units.
5. Tighten the thumbscrew (5).
6. Raise the stopper on the rail to enable movement of the lifting cylinder. ▷ „6.5 Transportation Lock“

Fig. 9 Mounting the applicator to the printer

## 6.5 Transportation Lock

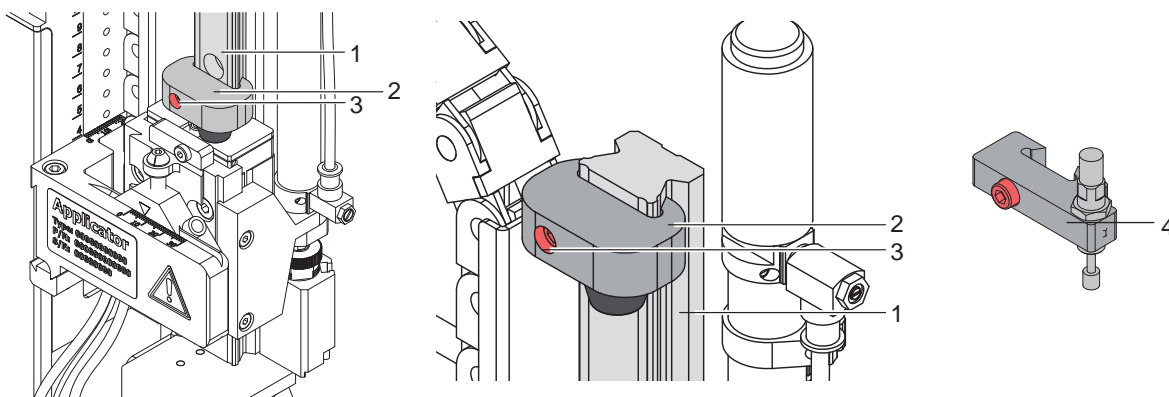


Fig. 10 Stopper as transportation lock

When the applicator is delivered, the stopper (2) is mounted on the rod (1). With this stopper (2) the labelling position for the operation mode "Blow on" can be adjusted.

During transit the stopper (2) is used as a transport lock.



### Note!

To reduce the impact energy it is possible to use a stopper with cushioning (4).

### Releasing the transportation lock

1. Loosen screw (3) of the stopper (2).
2. Move the stopper (2) along the rod (1) into the position as in operation mode:
  - Operation mode "Blow on": ▷ „7.4 Adjustment of the Stopper for Blow Mode“
  - Operation mode "Stamp on": Move the stopper (2) upward to the end of the rod (1).
3. Tighten screw (3) to fix the stopper (2) in position.

## 6.6 Mounting the Pad

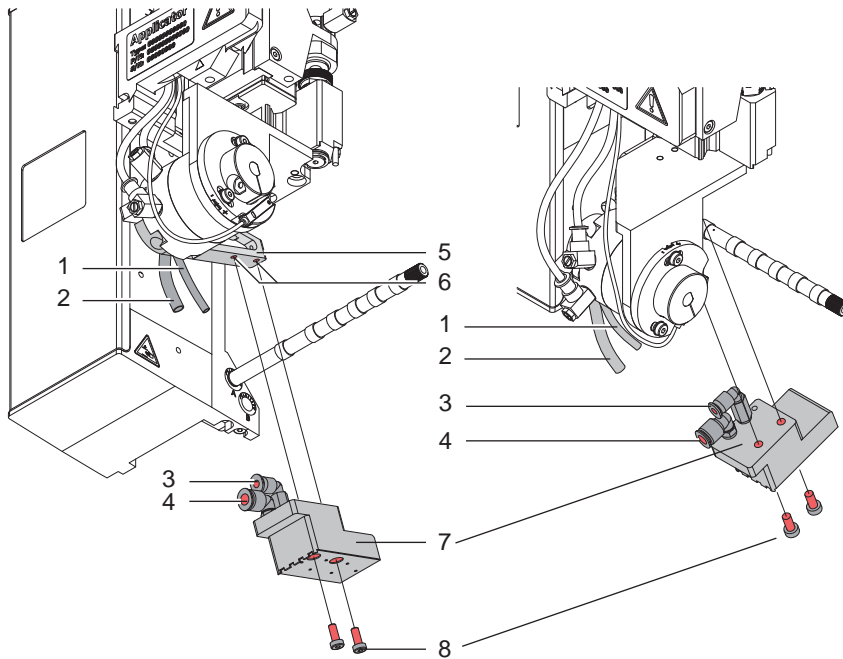


Fig. 11 Mounting the pad

1. Hold the tamper (7) with the holes on the drilling holes (6) on the bottom side of the tamper holder (5).
2. Mount the tamper (7) with the screws (8) on the tamper holder (5) and tighten it
3. Put in the tube (1) into the fitting (3) and the tube (2) into the fitting (4) of the tamper (7).

**Attention!**

- To avoid possible collisions of the pad with other parts of the printer-applicator system, please roughly align the pad in all directions (► „7 Adjustments“) before connecting the applicator to the compressed air supply!

## 6.7 Mounting the blow tube

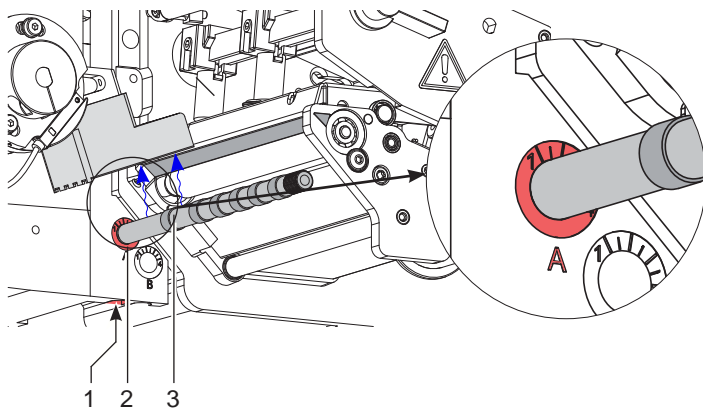


Fig. 12 Mounting the blow tube

It is possible to rotate the blow tube to optimize the direction of the support air for the take over procedure of the label from printer to applicator.

1. Loosen screw (1).
2. Put in the blow tube (3) into the hole A (2).
3. Tighten screw (1). ► „7.3 Adjusting the Blow Tube (Supporting Air)“

## 6.8 Connecting the Compressed Air



### Attention!

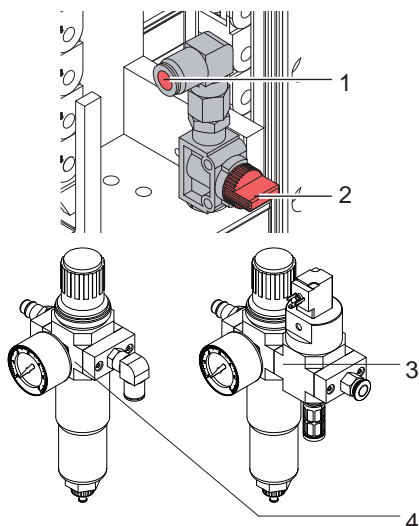
Adjustments and functionality tests where done with a compressed air value of 4,5 bar.  
The applicator's operating range is between 4,0 and 6,0 bar.



### Warning!

When connecting the applicator to compressed air it is considered "IN USE!" Cylinder motion is possible!

► Do not reach into the zone of the moving pad and keep long hair, loose clothes, and jewelry away.



1. Check that the stop valve (2) is closed as illustrated.
2. Attach compressed air to the connector (1).
3. Open the stop valve (2) by turning it into the direction of air flow.
4. Switch on the printer via the power switch.

It is possible to use an air pressure regulation unit.

cab offers two versions of air pressure regulators.

- Air pressure regulation unit with included magnetic valve (3)  
Controlling via printer  
▷ Interface description of the printer
- Standard version (4)

Fig. 13 Compressed air connection



### 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.



### Note!

Only mount the air pressure regulation unit as illustrated otherwise the functionality of the air-water separator cannot be guaranteed.

## 7.1 Tamp Adjustments

For optimal functionality it is necessary to place the pad exactly over the label for the takeover procedure.

### Moving the tamp in X-, Y- and Z-Direction

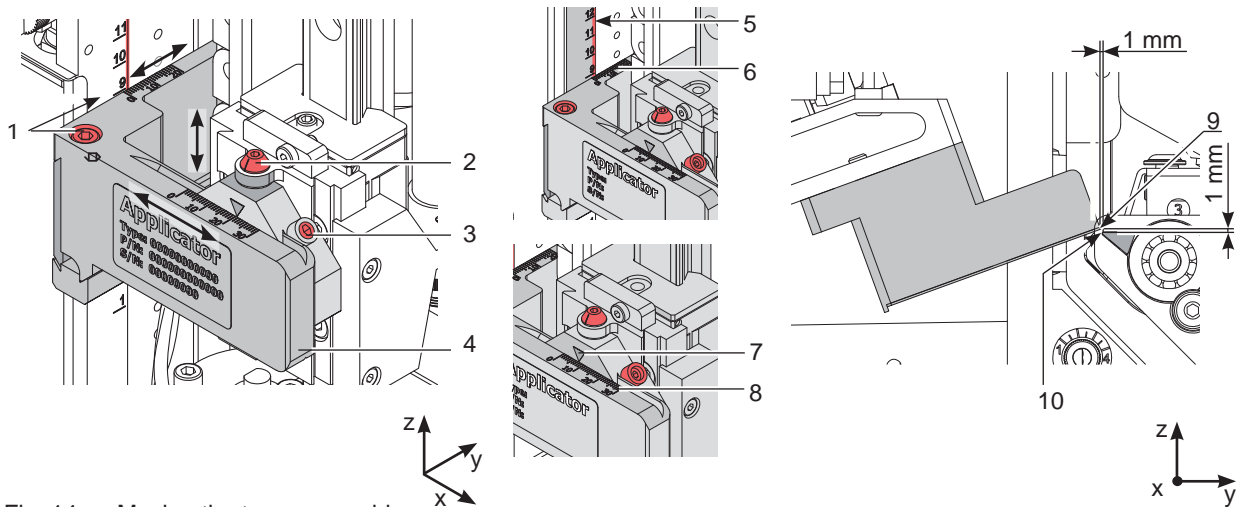


Fig. 14 Moving the tamp assembly

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

1. Loosen screw (3).
2. Move cylinder assembly (5) with pad along the cross beam (4) so that the dispensed label is aligned centrally to the pad. Use the graduation on the cross beam as a reference.  
Orientation: Graduation (8) and Marking (7)
3. Tighten screw (3).

#### Adjustment in Y-Direction (Print Direction)

1. Loosen screw (1).
2. Move cylinder assembly (4) with pad along the guide rail so that the distance from the edge of the pad (9) to the edge of the dispense plate (10) of the printer is approximately 1 mm. Orientation: Graduation (6) and Edge (5).
3. Tighten screws (1).

#### Adjustment in Z-Direction (Height Adjustment)

1. Loosen screw (3).
2. Turn setting screw (2) so that the bottom side of the pad is 1 mm over the top side of the dispensing plate (6) of the printer.
3. Tighten screw (3).

#### Orientating the Pad parallel to the Dispensing Edge

The edge of the tamp must be parallel to the dispensing edge of the printer to place the label centrally on the tamp.

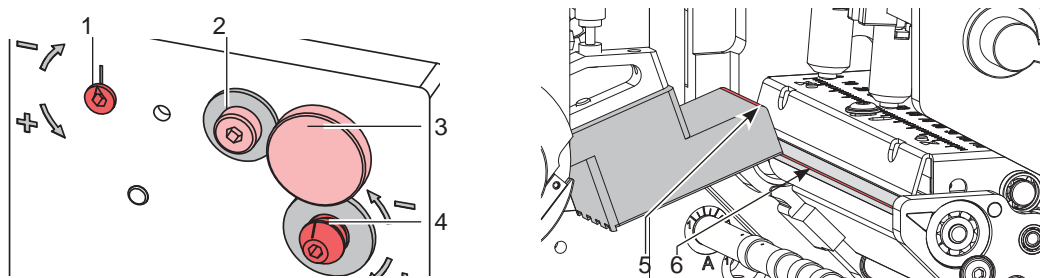


Fig. 15 Adjusting the tamp to the dispensing edge

1. Loosen knurled screw (3) and screw (2).
2. Press the applicator against the printer and adjust the angle between applicator pad edge (5) and printer dispensing plate (6) via the setting screw (4) and the eccentric (1).
3. Tighten screw (2) and fix the applicator again via knurled screw (3) on the printer.

## 7.2 Vacuum Adjustments

The label will be held to the pad by a vacuum.

The vacuum needs to be set up in such a way that the label covers all the suction holes and is not hindered before it reaches its intended position on the pad.

The default Value of the Vacuum is -0.6 bar.



### Note!

By setting the vacuum the label transportation can be manipulated. If the vacuum is too strong the label transportation can be hindered.

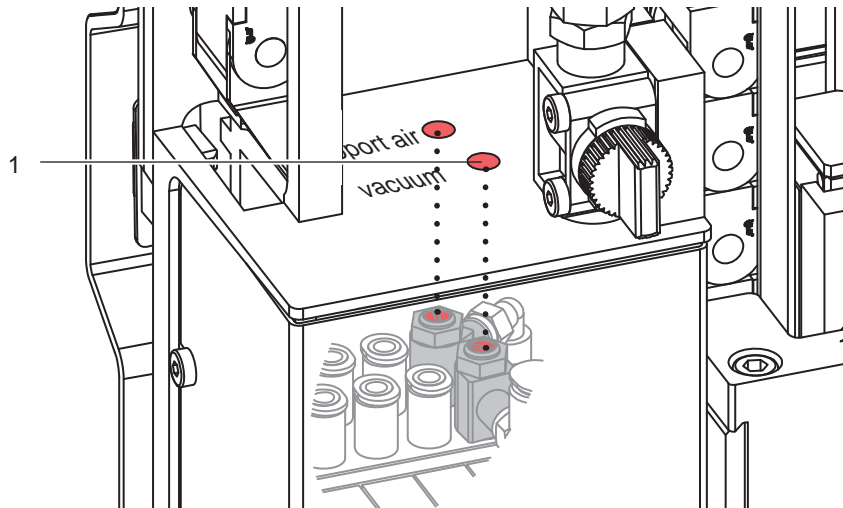


Fig. 16 Throttle valve "vacuum"

- ▶ Adjust the vacuum via the throttle valve "vacuum" (1) so that the label will be sucked on over its entire area.
- ▶ To increase the vacuum turn the setting screw on the throttle valve (1) counterclockwise.

### Measuring Point Vacuum (MP V)

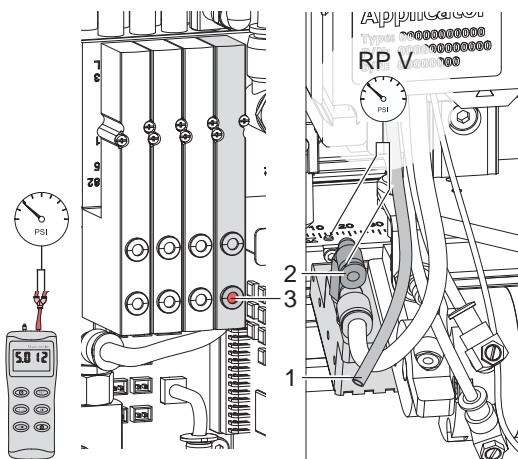


Fig. 17 Measuring points of the vacuum

Use a manometer with a measurement area -7 to 7 bar for measurement the pressure.

### MP V : Vacuum (standard value -0,6 bar)

1. Remove cover.
2. Cover suction plate hermetically.
3. Attach manometer between measurement points MP V.
  - Tube (1) at the energy chain.
  - Connector (2) from the tamp.
4. Activate the magnetic valve manually by pressing the micro switch (3) with an active air supply to measure the pressure.
5. Adjust the pressure with the vacuum throttle valve "vacuum".
6. Remount the cover.



### Attention!

After pressure measurements, reconnect all components correctly.

### 7.3 Blow Tube (Support Air) Adjustments

The blow tube must be adjusted in such a way that the label takeover is unhindered by turbulence and the supporting air blows the label evenly against the pad.

The default factory value is 2 bar.



**Note!**

When changing the label size (2", 4" or 6") the appropriate blow tube is to be used. When changing the label size check the number of holes needed to support the entire label and set the supporting air respectively.

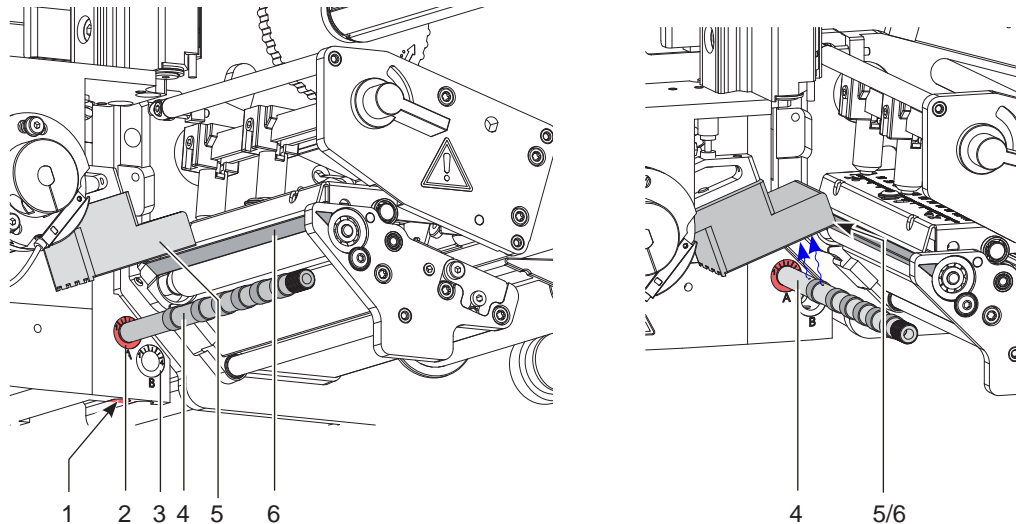


Fig. 18 Adjust the blow tube

The blow tube (4) supplying 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. Put in the blow tube (4) into the tube adapter A (2).  
Turn the blow tube (4) in the direction, that the air current supports the take up of the label from the dispensing edge (6) by the pad (5).
  - For small labels direct the air current toward the dispensing edge (4) of the printer.
  - For larger labels direct the air current away from the dispense edge (4).
 Use the graduation to orientation.
3. Tighten screw (1).

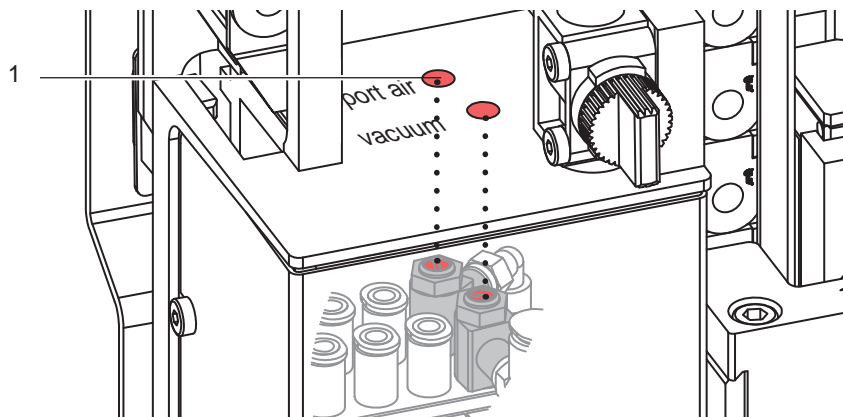
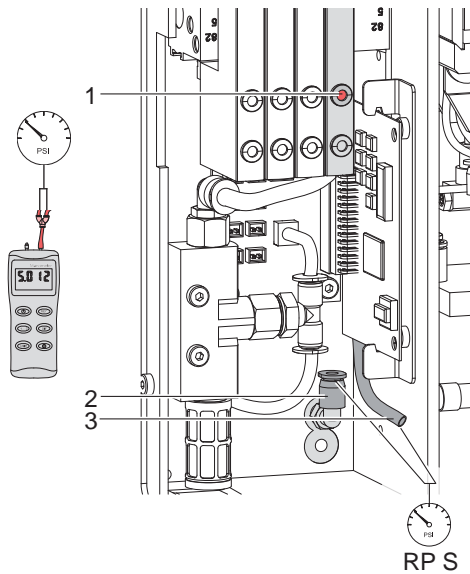


Fig. 19 Throttle valve "support air"

With the valve "support air" (1) the strength of the supporting air can be varied.

- To increase the supporting air turn the screw of the valve (1) counterclockwise.

### Measuring point (MP S) of the Supporting Air



Use a manometer with a measuring range of -7 to 7 bar to measure the pressure.

#### MP S: Supporting Air (reference value 2 Bar)

1. Dismount cover and connect the manometer to the MP S.
  - Tube (3) from valve block to blow tube connector.
  - Fitting (2) on the blow tube.
2. Activate the valve manually by pressing the micro switch (1) to measure the pressure.
3. If needed adjust the pressure using the throttle valve "support air".
4. Mount cover.

Fig. 20 Reading points to measure the pressure



#### Attention!

After the pressure has been measured ensure that all connections are properly reestablished.



## 7.4 Lifting Speed of Cylinder Z

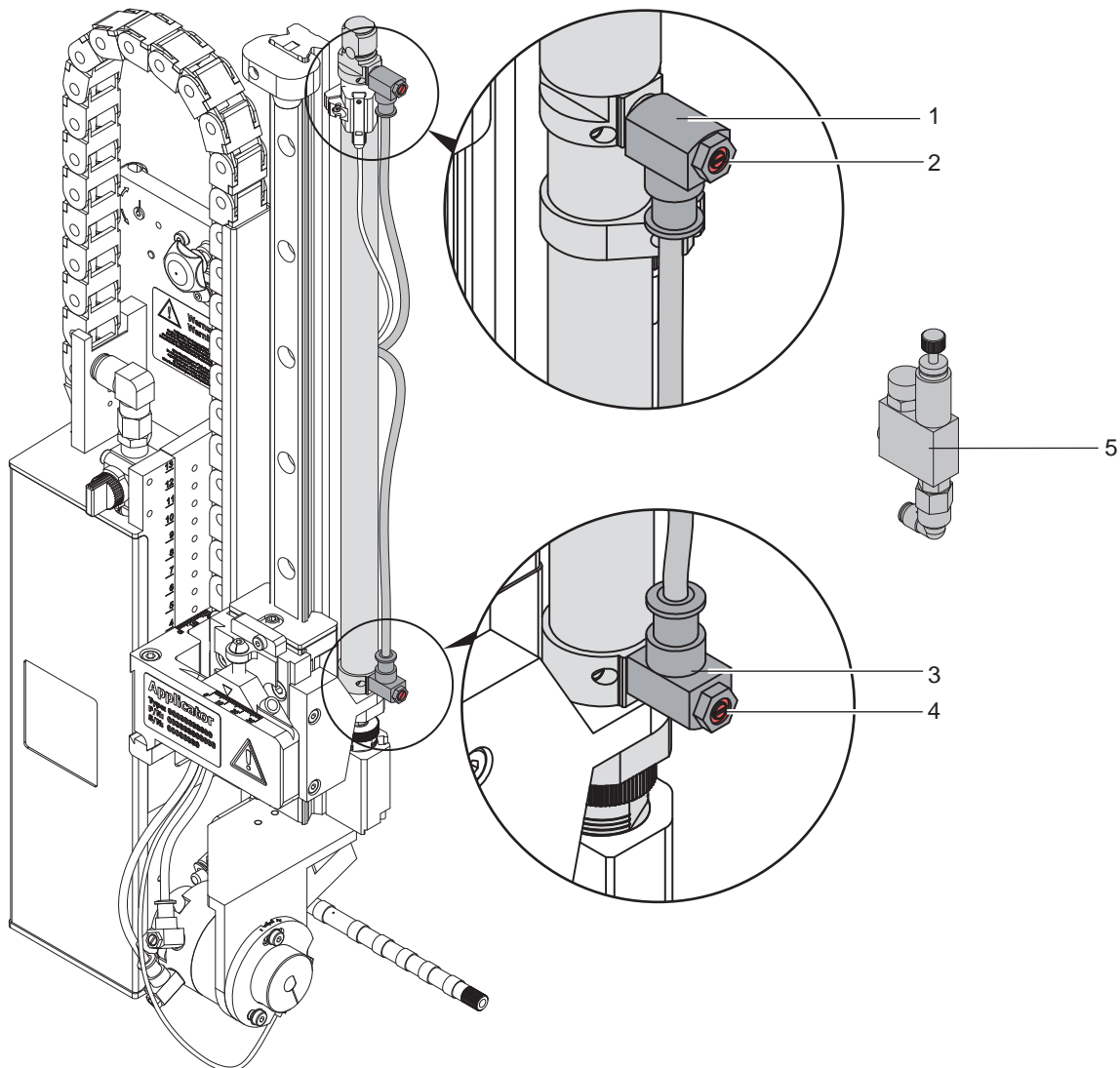


Fig. 21 Throttle valves on the cylinder Z

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

- Adjust the pad movement speed as necessary.
- 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 is mainly dependent on the downward speed of the pad.

- In order to reduce the application pressure turn the 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.

**Note!**

To reduce the air pressure in Z-direction it's possible to use an optional pressure reduction valve (5).

- ▷ „7.7 Adjusting the Options for Z-Direction Movement“

## 7.5 Sensors on Cylinder Z

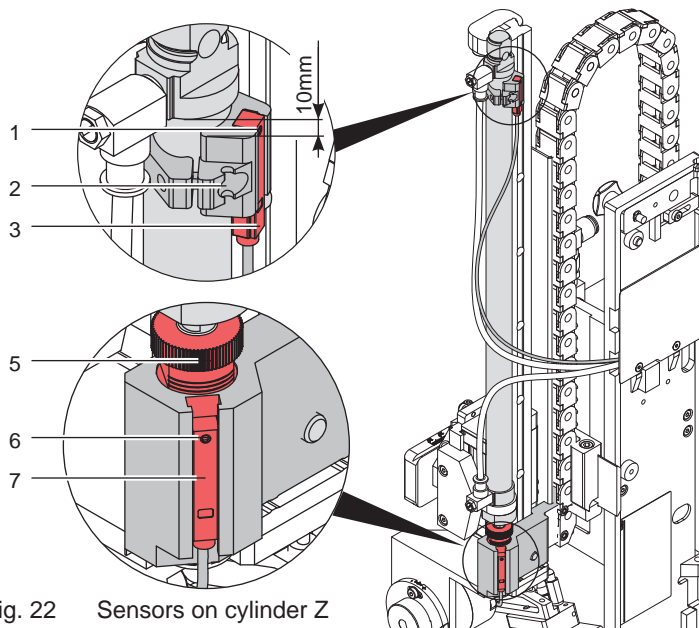


Fig. 22 Sensors on cylinder Z

### Sensor Start Position 1

1. Loosen screw (1) of sensor "start position Z" (3) and move the sensor so that the top edge of the sensor sits comfortably in the sensor holder.
2. Remove the compressed air tubes of the cylinder Z and power up the printer with connection to the applicator.
3. Move the pad toward the stopper manually.
4. Loosen screw (2) of the sensor holder.
5. Position the sensor so that it triggers securely, with lit up LED, when cylinder Z is completely contracted. This is achieved with the top edge of the sensor being about 10 mm from the top edge of the connection ring. (Fig. 31)
6. Tighten screw (2).

### Labelling Sensor 2

The position of the labelling sensor (6) is dependant on the pad assembly's weight and the mounting position. The spring tension on the adapter bolt is dependant on these parameters and must be adjusted so that the sensor cannot trigger unintentionally. The triggering magnet is integrated in the adapter bolt and changes position with the tension spring.

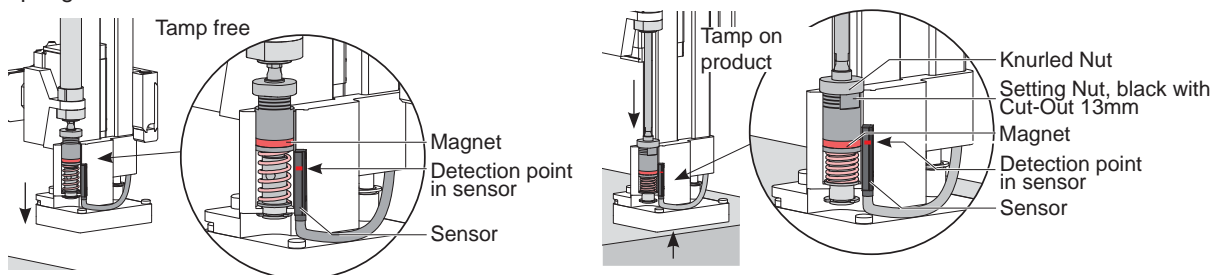


Fig. 23 Labelling Sensor Principle

1. Getting the printer and applicator into the final orientation.
2. Adjust the spring tension on the adapter bolt (4) via the black setting nut so that:
  - The adapter bolt is not pushed into the stamp assembly group during motion.
  - The sensor triggers when the pad has reached the labeling position.
3. Turn the setting nut with an open spanner 13 mm and fix the knurled nut by holding it.
  - Turning the setting nut clockwise will increase the spring tension.
  - Turning the setting nut counterclockwise will decrease the spring tension.
4. Loosen screw (5) and move the sensor (6) so that the LED lights up when the adapter bold is pushed into the pad assembly.
5. Tighten screw (5).

## 7.6 End Position Cushioning



### Note!

The end position cushioning of the cylinder is set up to client specifications and does usually not need to be adjusted.

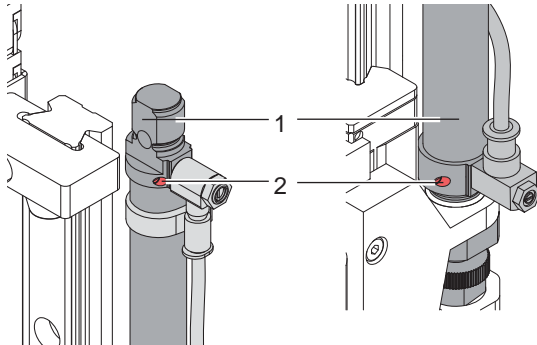


Fig. 24 End Position Cushioning

The end position cushioning of the main cylinder reduces the impact energy when the applicator is operating at high speeds and/or masses.

Adjust the end position cushioning so that the piston arrives the end position definitively but does not strike it to hard.

A higher level of end position cushioning will reduce the lift speed.

- To increase the value of the end position cushioning turn the setting screw (2) clockwise on cylinder (1).
- To reduce the value of the end position cushioning turn the setting screw (2) counterclockwise on cylinder (1).

## 7.7 Adjusting the Options for Z-Direction Movement

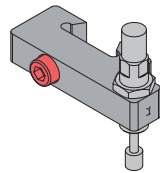


Fig. 25 Stopper with cushioning (guide rail)

The stopper with cushioning (guide rail) reduces the speed of the cylinder Z shortly before impact when the applicator is operated at higher speeds and/or with larger pads.

Adjustments like chapter ► „7.4 Adjustment of the Stopper for Blow on Mode“

Adjust the stopper with maximum compressed spring.  
► „6.5 Transportation Lock“

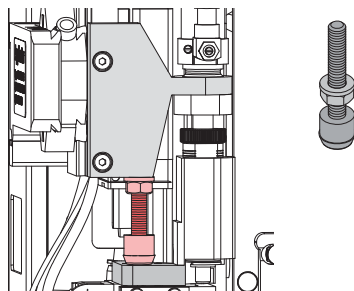


Fig. 26 Stopper (pad assembly)

The stopper avoids the triggering of the labelling sensor by the weight of the pad assembly during the inward motion of an installation turned 90° or 180°.

The setting occurs during the take-up of the label from the printer.

1. Loosen the counter nut of the stopper.
2. Turn the stopper until it touches the pad retainer lightly.  
Do not change the take over position of the pad by via stopper.
3. Tighten the counter nut to fix the stopper.

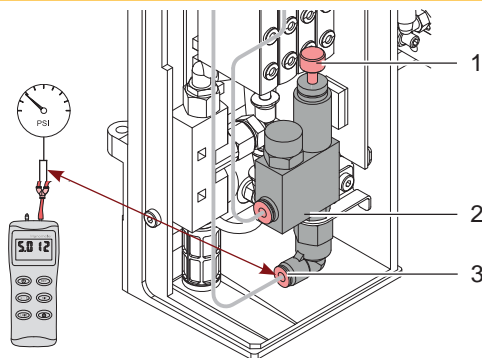


Fig. 27 Pressure reduction valve cylinder Z

The pressure reduction valve (2) can be used when labelling pressure-sensitive products or considering general safety aspects to reduce the pressure of the cylinder in the Z-direction.

The standard value is 2.5 bar.

- Connect the manometer between tube and exit (3) and adjust the pressure to 2.5 bar with the knurled screw (1).

It is possible to order an upgraded set with a pressure reduction valve.

Instructions are provided with the upgraded set.

### 7.8 Lifting Speed of Cylinder R

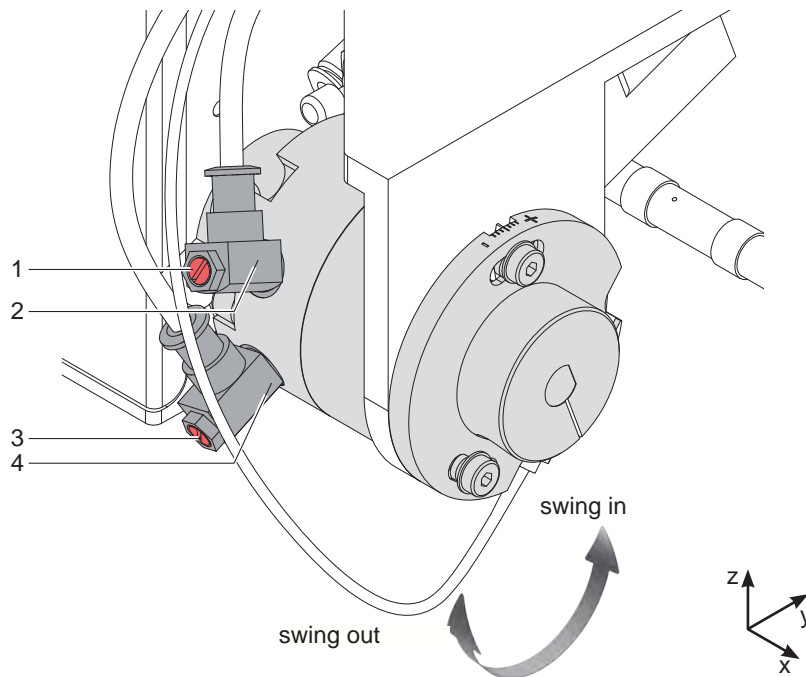


Fig. 28 One-Way Flow Control Valve on Cylinder R

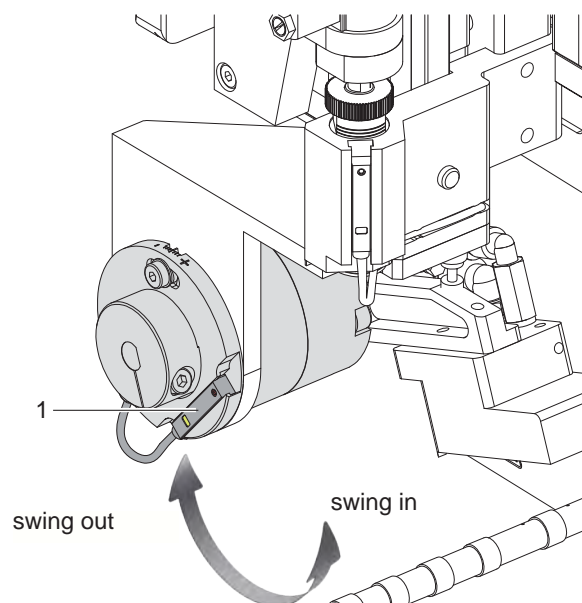
- ▶ Adjust the rotation speed as necessary..
- ▶ To increase the outward movement of the cylinder R turn the throttle screw (1) of valve (2) counterclockwise.
- ▶ To increase the inward motion of cylinder Z turn the throttle screw (3) of valve (4) counterclockwise.



#### Attention!

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

### 7.9 Sensor on Cylinder R



- Sensor (1) on cylinder R shows the position of the cylinder at label takeover.
- Place sensor (1) start position of cylinder R so that it triggers securely when the cylinder is in the label takeover position (swung in) and releases when the cylinder leaves this position.

Fig. 29 Sensor on cylinder R

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" and "Blow on".

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

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

Table 4 Operation and application modes

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



**Note!**

For more information about the printer configuration and the function of the keys in the navigator pad  
 ▷ Configuration manual of the printer or ▷ Operator's manual of the printer

## 8.1 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.

## 8.2 Quick Mode for Setting the Delay Times

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



**Note!**

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

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

### 8.3 Configuration Parameters of the Applicator

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















Parameter	Meaning	Default
 Applicator	Configuration parameters of the applicator	
 > Mode of oper.	Setting the operation mode Stamp on, Roll on, Blow on	Stamp on
 > Mode of appl.	Setting the application mode Print-Apply/Apply-Print Print-Apply: An external start signal begins the printing of a label followed by the application of that label. After the cycle is complete, the pad waits in the start position without a label. Apply-Print: A separate signal starts the printing of the first label and the transfer of that label to the pad. The start signal applies that label and the next label is printed. The cycle ends with a printed label on the pad.	Print-Apply
 > Waiting position	<b>only for 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 for Mode of oper. Blow on</b> The length of time (max. 2.5 s) air is blown for the label transfer	0 ms
 > Support delay on	Sets the delay (max. 2.5 s) for the supporting air after printing start and switching on the supporting air. The delay prevents turbulence at the front of the label and, consequently, prevents issues 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 end of the label from the backing to avoid flaws and to improve the accuracy of label positioning	270 ms
 > Delay time	Delay (max. 2.5 s) between start signal and the start of a labelling cycle. Allows the use of product sensors within conveyors systems for example	0 ms
 > Lock time	All start signals coming in after the first start signal are ignored when they arrive within the lock time.	0 ms
 > Peel position	Shift the position of the dispensed label relative to the dispensing 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
 > Hand-over up	Take over the label directly from the dispensing edge with contact between pad and dispensing edge. Not applicable for Type 4014/4016	Off
 > Cleaning blow	Activate/Deactivate - air pressure pulses to clean the pad	On
 > Vacuum delay	On - The vacuum will switched on after the end of the label transport. Off - The vacuum will switched on with the start of the label transport.	Off

Table 5 Applicator parameters

### 8.4 Setting the Peel Position

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



#### Attention!

- ▶ First adjust the parameter "Peel Position" in the printer configuration.
- ▶ Then 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 settings in the printer setup. Perform labelling cycles by alternately pressing the **feed** button and Enter button ↵. ▷ „9.1 Test Mode without Print Job“
- ▶ Adjust the "Peel Position" in such a way, that the blank labels are peeled-off completely from the liner  
▷ „8.3 Configuration Parameters of the Applicator“

#### Peel-off offset in the software

- ▶ Check the setting in the software. Perform labelling cycles by repeatedly pressing the Enter button ↵.
- ▶ 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.

### 8.5 Activation of Peel-off Mode



#### Note!

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



## 9.1 Test Mode without a Print Job



### Warning!

The pad will be moved to the starting position immediately!

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

► Do not reach into the zone of the moving pad and keep long hair, loose clothes, and jewelry away.

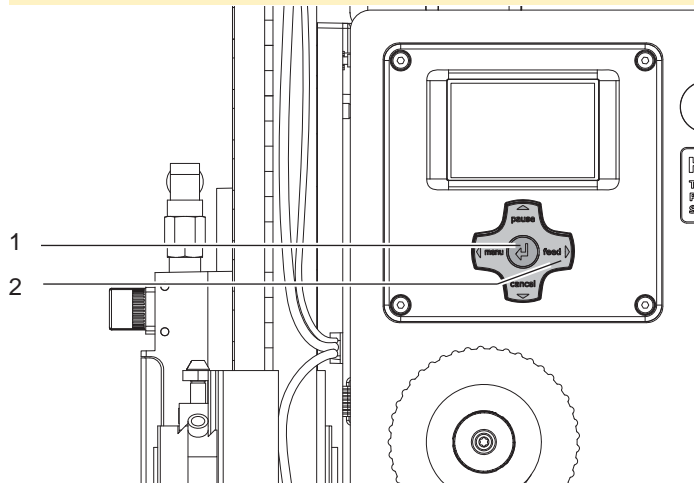


Fig. 30 Test mode with the enter button ◀ (1)



### Note!

► Please use this test mode to adjust the parameter "peel position" in the printer configuration.

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** button (2) and the Enter button ◀ (1):

- Press the **feed** button (2).  
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 Enter button ◀ (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.

## 9.2 Test Mode with Print Job



### Note!

► Please use this test mode to adjust the peel-off offset in the software.

This method allows to check labelling processes with the real print data using the Enter button ◀ (1).

- Send a print job.

The test mode is executed in two half cycles:

- Press the Enter button ◀ (1).

#### Half cycle 1

A label is printed. The vacuum of 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 Enter button ◀ (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.

## 10.1 Retainer Assembly

No.	Part-No.	Description	PU	Serial No.	
				from	to
1	5902489.001	Screw DIN7984-M4x8	10		
2	5964129.001	Cover	1		
3	5964367.001	Knurled Screw	1		
4	5965963.001	Set Screw	1		
5	5904544.001	Spring	10		
6.1	5964036.001	Base Plate	L	1	
6.2	5964036.001	Base Plate	R	1	
7	5966530.001	Eccentric	1		
8.1	5966529.001	Hinges	L	1	
8.2	5966529.001	Hinges	R	1	
9	5964090.001	Bar	1		

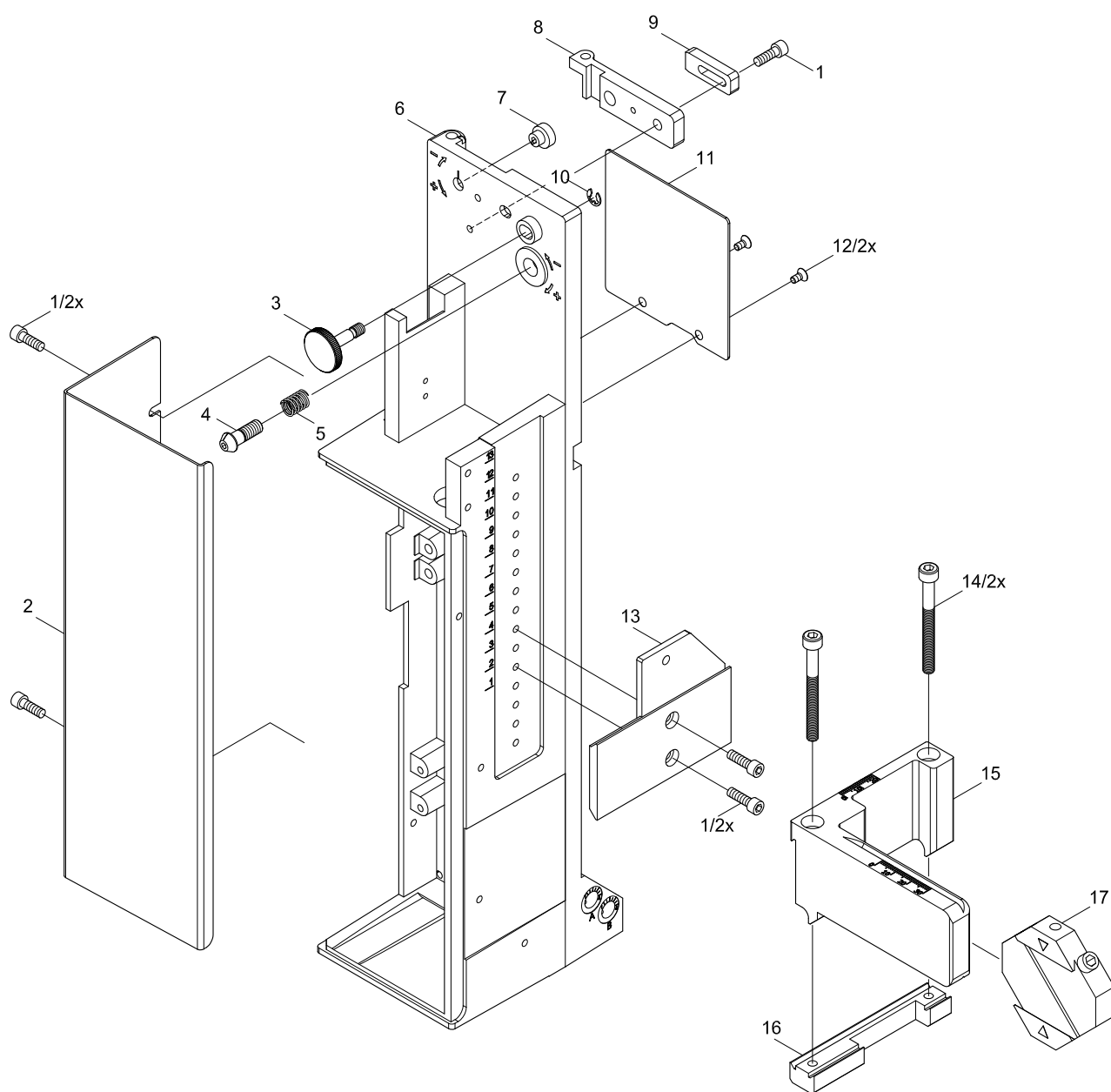


Fig. 31 Retainer Assembly - Spare Parts

## 10.2 Pneumatics Retainer Assembly

No.	Part-No.	Description	PU	Serial No.	
				from	to
1	5902489.001	Screw DIN7984-M4x8	10		
18	5905285.001	Push-in L-Connector	1		
19	5902863.001	Screw DIN7984 M4x25	10		
20	5905284.001	Block Valve	1		
21	5966414.001	Pressure Reduce Valve	1		
22	5906656.001	Push-in/threaded Fitting	1		
23	5966460.001	Tube	2m		
24	5966463.001	Tube	2m		
25	5966464.001	Tube	2m		
26	5966465.001	Tube	2m		
27	5966466.001	Tube	2m		
28	5905972.001	Push-in Y-Fitting	1		

No.	Part-No.	Description	PU	Serial No.	
				from	to
29	5902862.001	Screw DIN7984 M4x20	10		
30.1	5966651.001	Valve Block L	1		
30.2	5966655.001	Valve Block R	1		
31	5906021.001	Valve	1		
32	5906022.001	Valve	1		
33	5905317.001	Push-in L-Connector	1		
34	5906844.001	Vacuum Generator	1		
35	5905257.001	Silencer	1		
36	5905338.001	Push-in T-Connector	1		
37	5905283.001	Push-in/threaded Fitting	1		
38.1	5964277.001	Blow Tube 2"	1		
38.2	5964095.001	Blow Tube 4"	1		

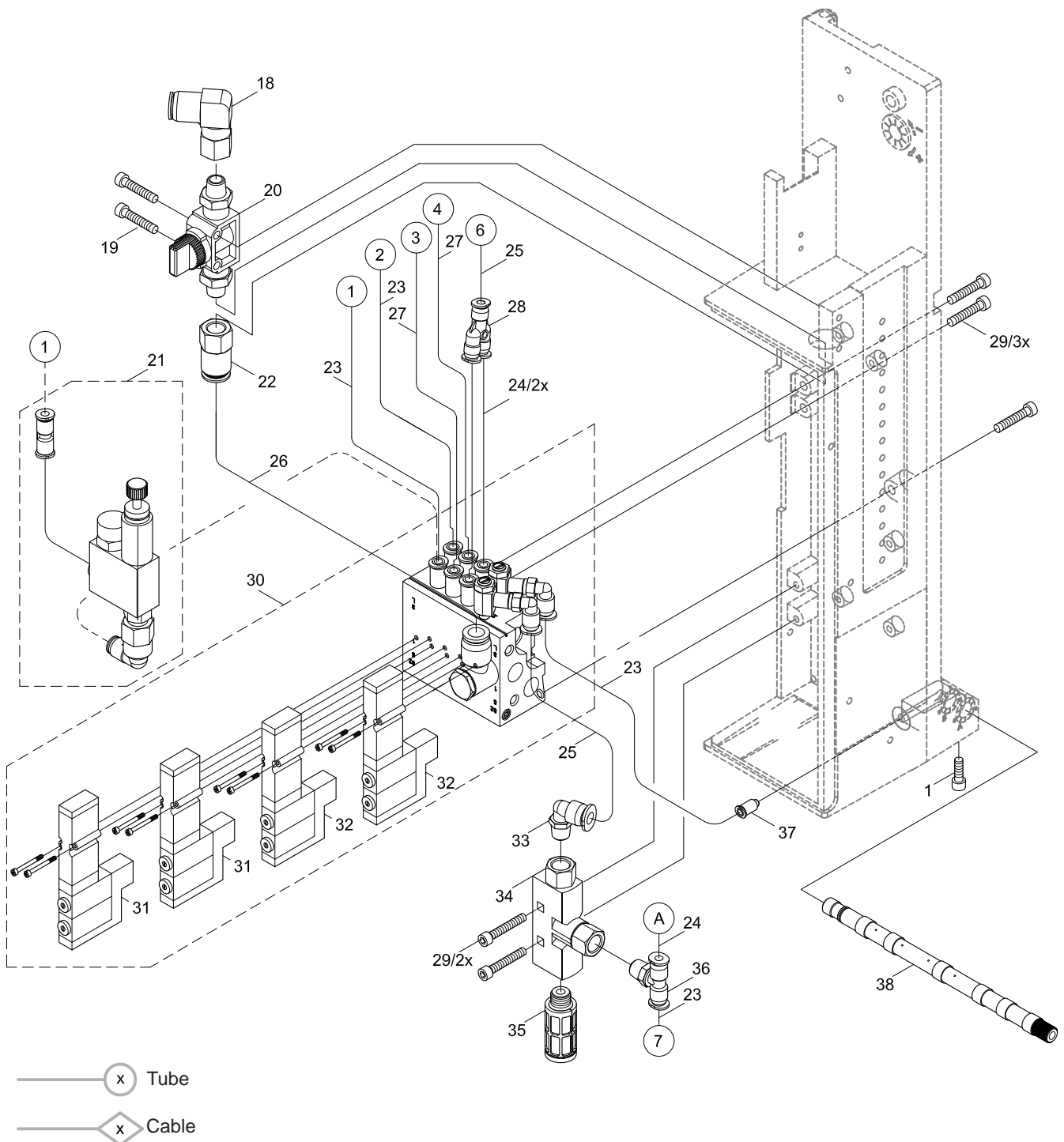


Fig. 32 Pneumatics Retainer Assembly - Spare Parts

## 10.3 Electronics Retainer Assembly

No.	Part-No.	Description	PU	Serial No.	
				from	to
24	5966463.001	Tube	2m		
39	5902144.001	Screw DIN7984-M3x5	10		
40	5964045.001	Bracket	1		
41.1	5964454.001	Sensor	200	1	
41.2	5964494.001	Sensor	300	1	
42.1	5964490.001	Sensor	200	1	
42.2	5964594.001	Sensor	300	1	
43.1	5964416.001	Sensor	200	1	
43.2	5964496.001	Sensor	300	1	
44	5902571.001	Screw DIN7984-M4x6	10		
45	5955586.001	Cable	1		

No.	Part-No.	Description	PU	Serial No.	
				from	to
46.1	5964590.001	Cable	200	1	
46.2	5964591.001	Cable	300	1	
47.1	5955579.001	Applicator Interfaces	L	1	6123
47.1	5971416.001	Applicator Interfaces	L	1	6124
47.2	5964188.001	Applicator Interfaces	R	1	6123
47.2	5971417.001	Applicator Interfaces	R	1	6124
48	5906943.001	Sealing Ring	10		
49	5955585.001	PCB Valve Block	1		
50	5966514.001	EEPROM	1		
51	5955575.001	Applicator Contro	1		
52	5966417.001	Retainer	1		

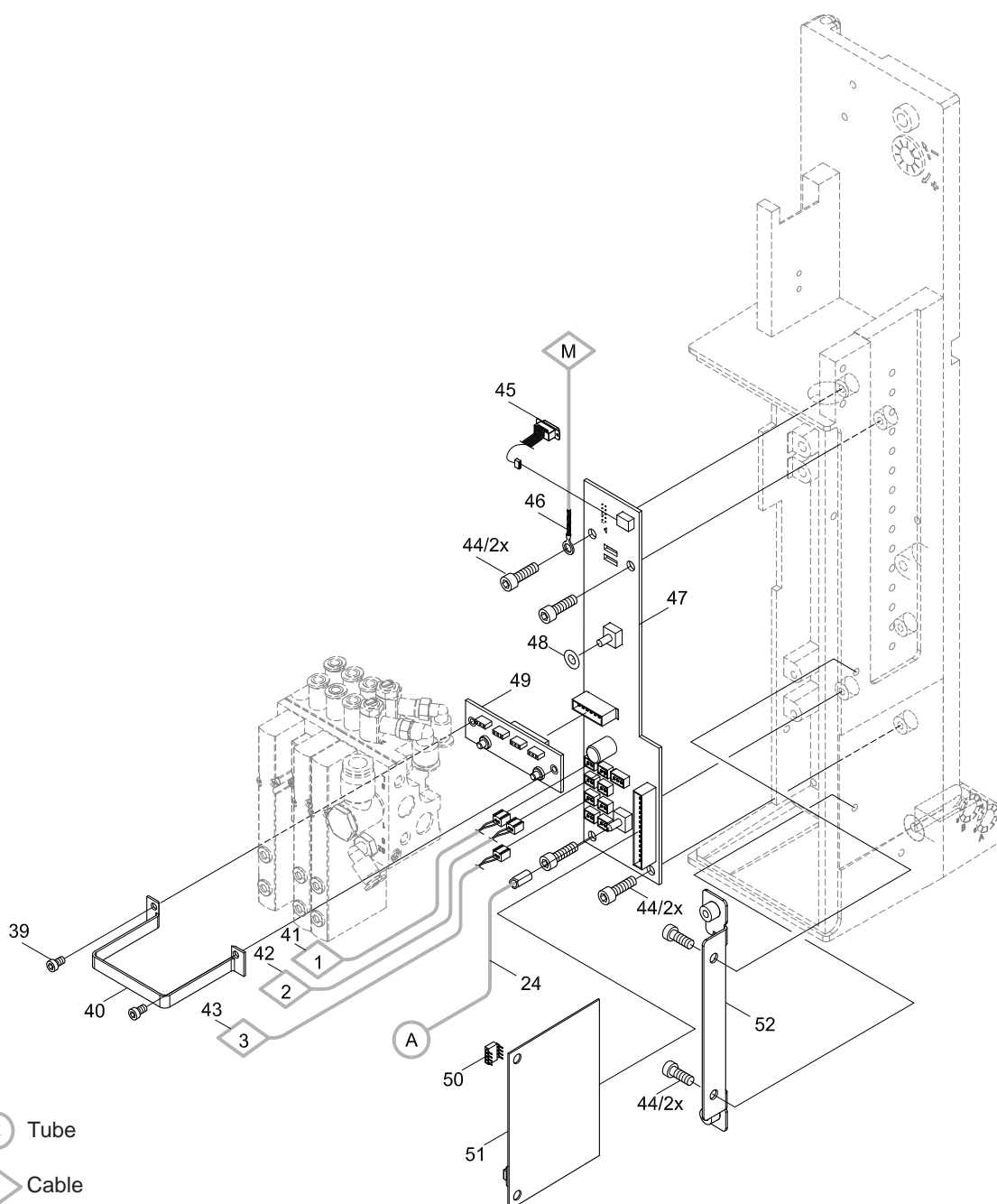


Fig. 33 Electronics Retainer Assembly- Spare Parts

## 10.4 Cylinder Assembly R

No.	Part-No.	Description	PU	Serial No.	
				from	to
1	5902489.001	Screw DIN7984-M4x8	10		
42.1	5964490.001	Sensor	200	1	
42.2	5964594.001	Sensor	300	1	
43.1	5964416.001	Sensor	200	1	
43.2	5964496.001	Sensor	300	1	
53	5964061.001	Setting Screw	1		
54.1	5964302.001	Plate	L	1	
54.2	5964337.001	Plate	R	1	
55	5903505.001	E-Ring DIN6799-5	10		
56	5965966.001	Sliding Carriage	1		
57.1	5964301.001	Holder	1		
57.2	5964336.001	Holder	1		
58	5902562.001	Screw DIN7984-M4x14	10		
59	5521159.001	Nut	1		
60	5964351.001	Stopper	1		
61	5906636.001	One-way Flow Control Valve	1		
62	5905395.001	Swing Drive	1		

No.	Part-No.	Description	PU	Serial No.	
				from	to
63.1	5966516.001	Bracket	L	1	
63.2	5966958.001	Bracket	R	1	
64	5902476.001	Screw DIN7984 M5x12	10		
65.1	5966520.001	Swing Plate	L	1	
65.2	5966961.001	Swing Plate	R	1	
66.1	5964236.001	Tamp Retainer	L	1	
66.2	5964241.001	Tamp Retainer	R	1	
67	5964311.001	Adapter Bolt	1		
68	5905069.001	Spring	1		
69	5521157.001	Washer	1		
70	5521158.001	Washer	1		
71	5903501.001	E-Ring DIN6799-7	10		
72	5964343.001	Stopper	1		
73	5964364.001	Stopper	1		
90	5902017.001	Screw DIN912-M4x16	10		
91	5966522.001	Stopper Plate	1		
92	5903089.001	Washer DIN988-4x8x1,0	10		
93	5902358.001	Screw DIN7984-M4x6	10		

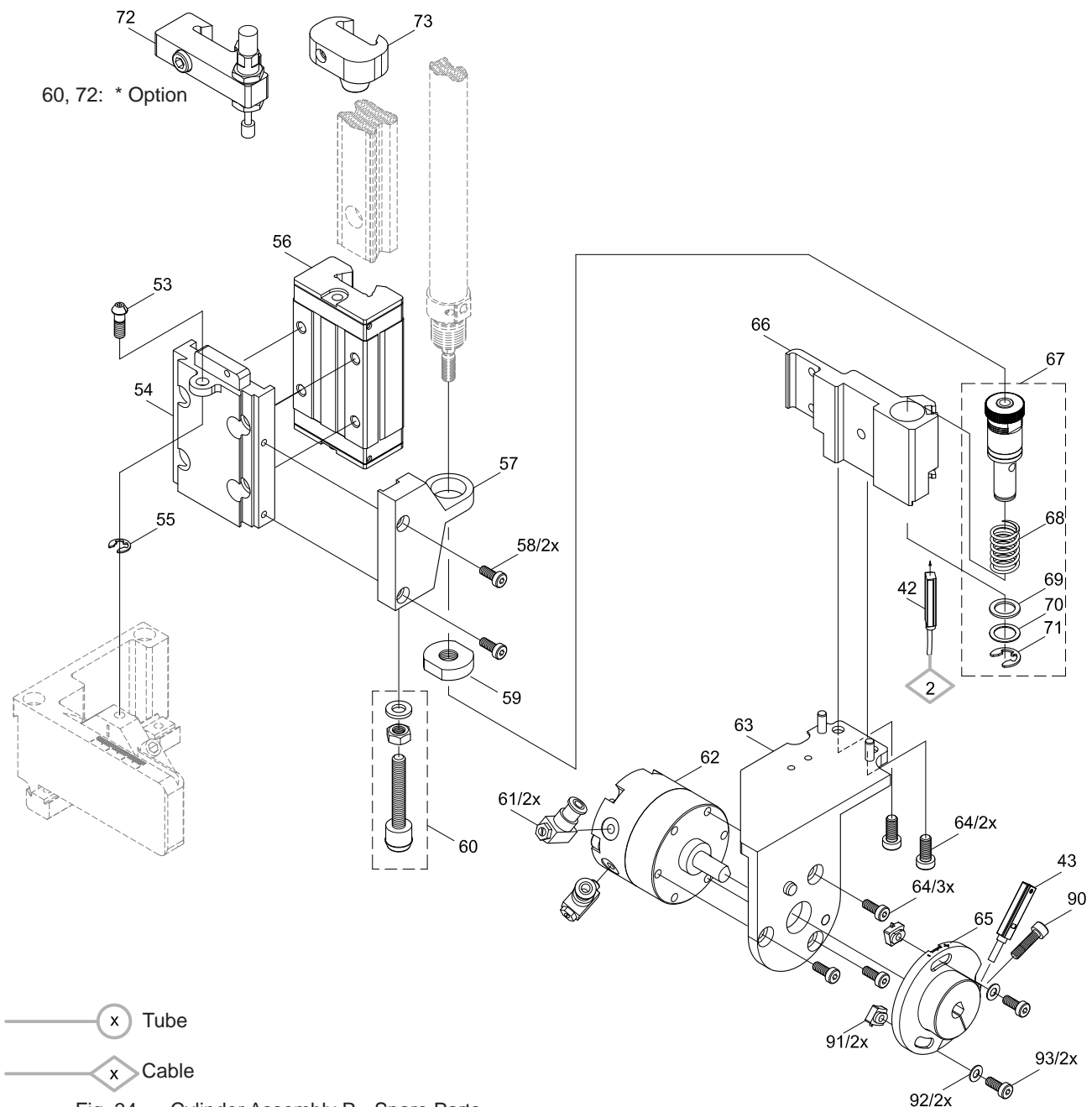


Fig. 34 Cylinder Assembly R - Spare Parts

## 10.5 Cylinder Assembly Z

No.	Part-No.	Description	PU	Serial No.	
				from	to
1	5902489.001	Screw DIN7984-M4x8	10		
23	5966460.001	Tube	2m		
41.1	5964454.001	Sensor	200	1	
41.2	5964494.001	Sensor	300	1	
46.1	5964590.001	Cable	200	1	
46.2	5964591.001	Cable	300	1	
61	5906636.001	One-way Flow Control Valve	1		
74.1	5964373.001	Energy Track	200	1	
74.2	5964374.001	Energy Track	300	1	
75	5902047.001	Screw DIN7991-M3x5	10		
76.1	5964347.001	Bracket	L200	1	
76.2	5964357.001	Bracket	L300	1	
76.3	5964398.001	Bracket	R300	1	
77.1	5964306.001	Guide Rail	200	1	
77.2	5964307.001	Guide Rail	300	1	
78	5964489.001	Knurled Nut	1		

No.	Part-No.	Description	PU	Serial No.	
				from	to
79	5964443.001	Bolt	1		
80	5905593.001	Mounting Clip	1		
81.1	5906938.001	Cylinder	200	1	
81.2	5905973.001	Cylinder	300	1	
82.1	5964440.001	Cover	L200	1	
82.2	5964483.001	Cover	L300	1	
82.3	5964483.001	Cover	R300	1	
83	5902852.001	Nut DIN934 M8x1	10		
84	5906664.001	Shock Absorber	1		
85.1	5966521.001	Holder	L	1	
85.2	5966959.001	Holder	R	1	
86	5966518.001	Pivot Arm	1		
87	5902837.001	Screw DIN7984-M4x8	10		
88		Pad			
89	5902335.001	Screw DIN7984-M6x25	10		
90	5902017.001	Screw DIN912-M4x16	10		

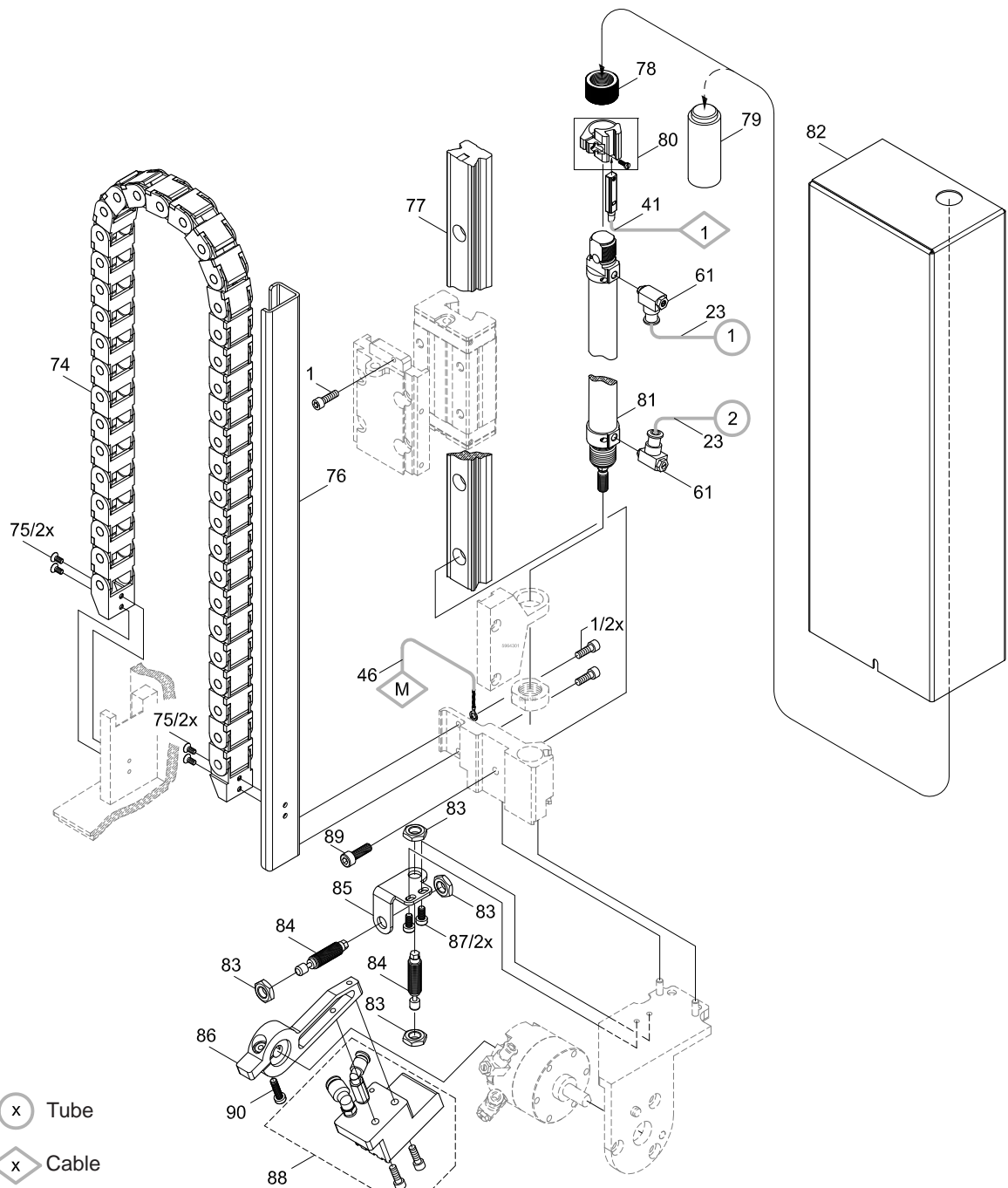


Fig. 35 Cylinder Assembly Z - Spare Parts

11.1    Block Diagram

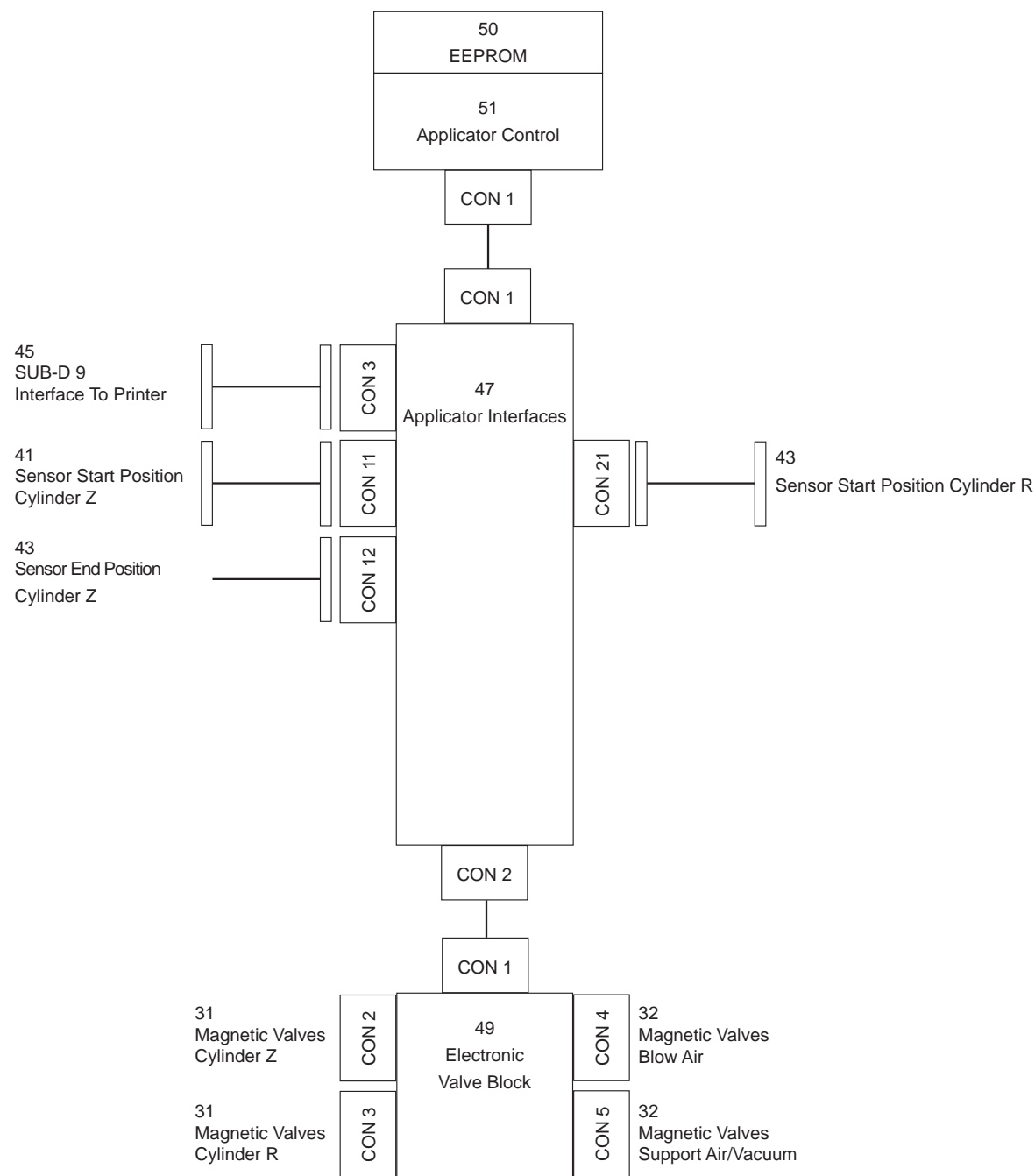


Fig. 36    Block diagram





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**B**

Block diagram.....36

Block Diagram .....36

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EC Declaration of Incorporation .....13

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Transport Lock.....16

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