



Flag Applicator

4712

Made in Germany

2 Service Manual for the following product

2

Family	Type
Flag Applicator	4712L-300

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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.

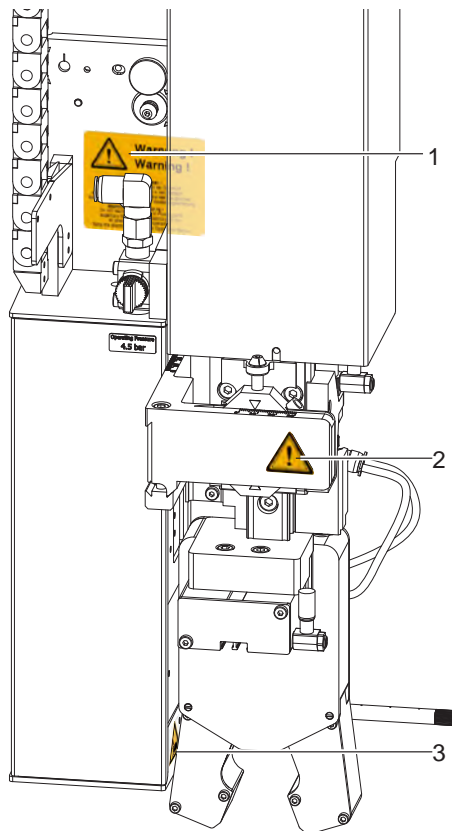


Warning!

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



Risk of injuries 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 it in case of damage!

Fig. 1 Safety marking

1.5 Environment



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

- Send to suitable collection points, separately from residual waste.

The modular construction of the applicator 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 impulses 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

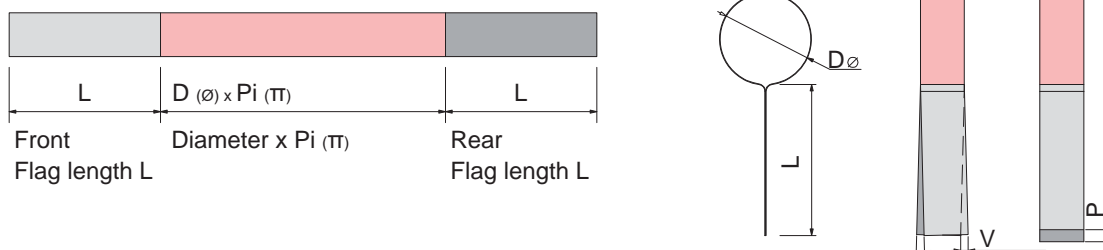


Fig. 2 Applicator parameters

Label transfer		Label type	
		4712 L 300	
Label width Hermes+4	mm	60 -100	
Label height	mm	10 - 50	
Diameter Ø	mm	3 - 20	
Working pressure	MPa	0,45 (4,5 bar)	
Sound pressure levels		unter 74 dB(A)	
Product during labeling	fixed	■	
Labeling of the product	from above	■	
	from below	■	
	from the side	■	
Product height	fixed	■	
Product to the lower edge			
at the cylinder stroke 300	up to mm	260	
Immersion depth of tongs	mm	55	
Offset P	mm	max. 0,5 - 1	
Lateral displacement	mm	max. 0,2	
Cycle time approx. cycles/min. 15	~/min	15	

Table 1 Technical data

2.3 Product Overview without Cover

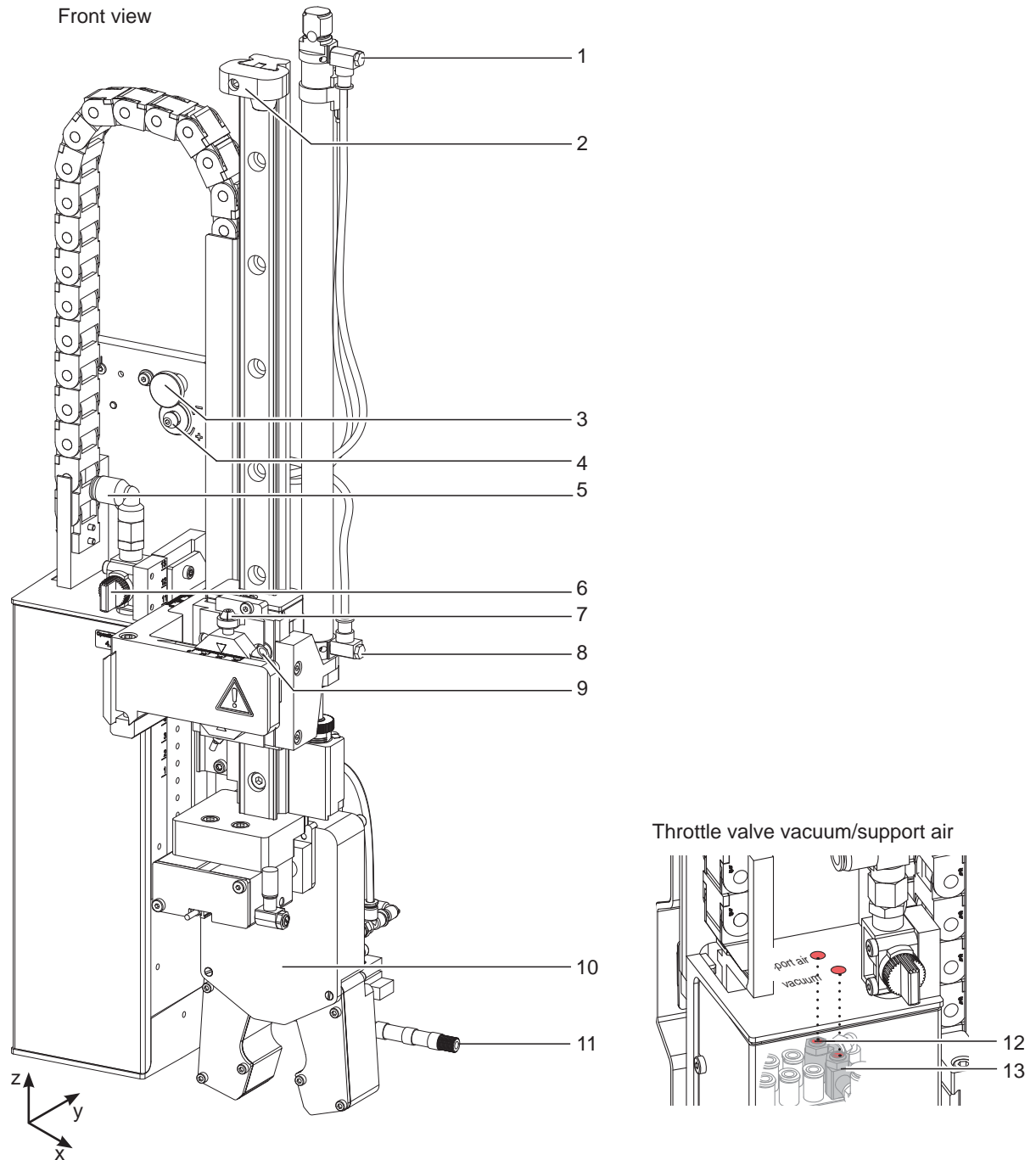


Fig. 3 Product overview - front view

- | | |
|--|--|
| 1 Throttle valve cylinder - retraction motion z-direction | 9 Setting crew for the sideways stamp position |
| 2 Stopper for blowing mode and transportation | 10 Stamp group |
| 3 Thumb screw for fixing the applicator to the printer | 11 Blow tube |
| 4 Setting screw for the angle between the printer and the applicator | 12 Throttle valve for pressure |
| 5 Compressed air connector | 13 Throttle valve for vacuum |
| 6 Shutoff valve | |
| 7 Setting screw for the height of the cylinder group | |
| 8 Throttle valve cylinder - extends in z-direction | |

Rear view

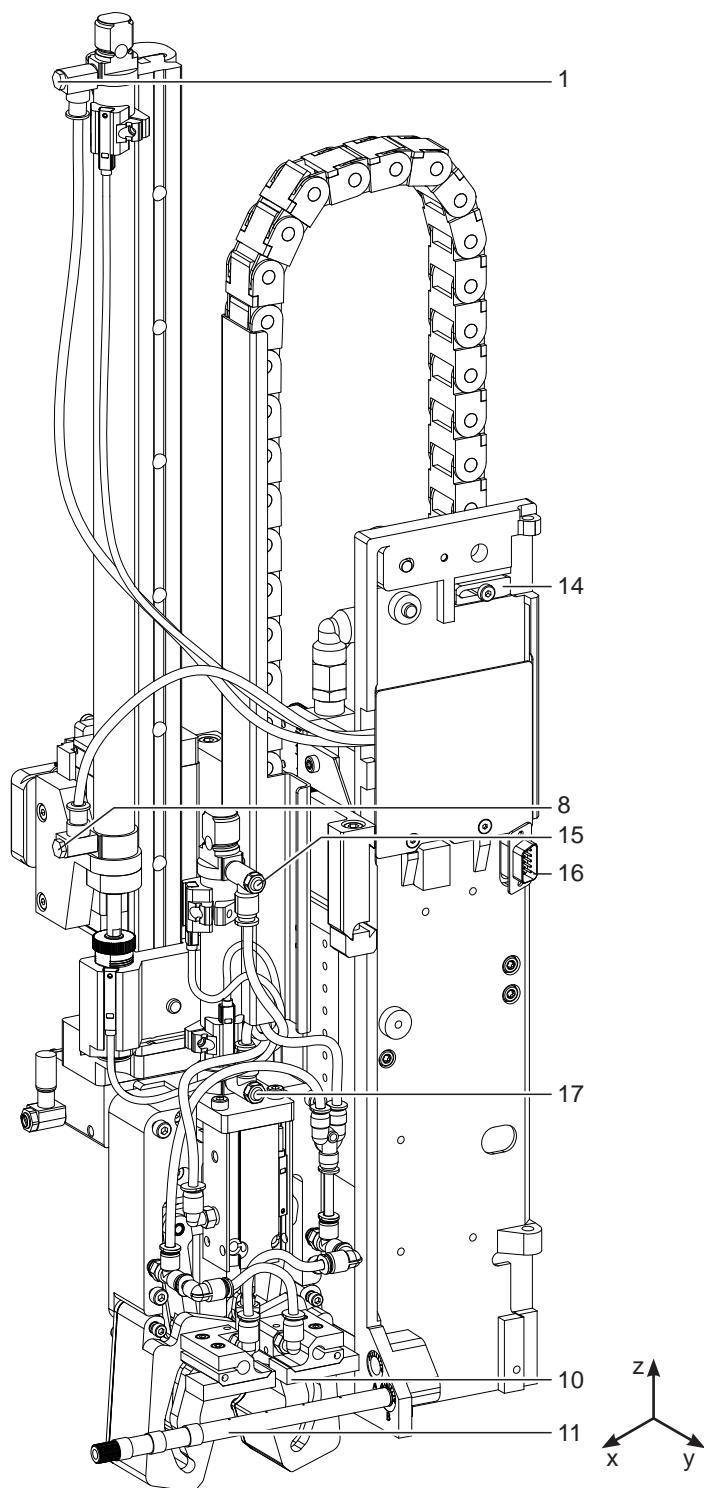


Fig. 4 Product overview - rear view

- 1 Throttle valve cylinder - retraction motion z-direction
- 8 Throttle valve cylinder - extension motion z-direction
- 10 Stamp (user defined)
- 11 Blow tube for pressure
- 14 Safety for hinge
- 15 Throttle valve cylinder - retraction lock
- 16 Printer connector
- 17 Throttle valve cylinder - extension lock

Valves and settings

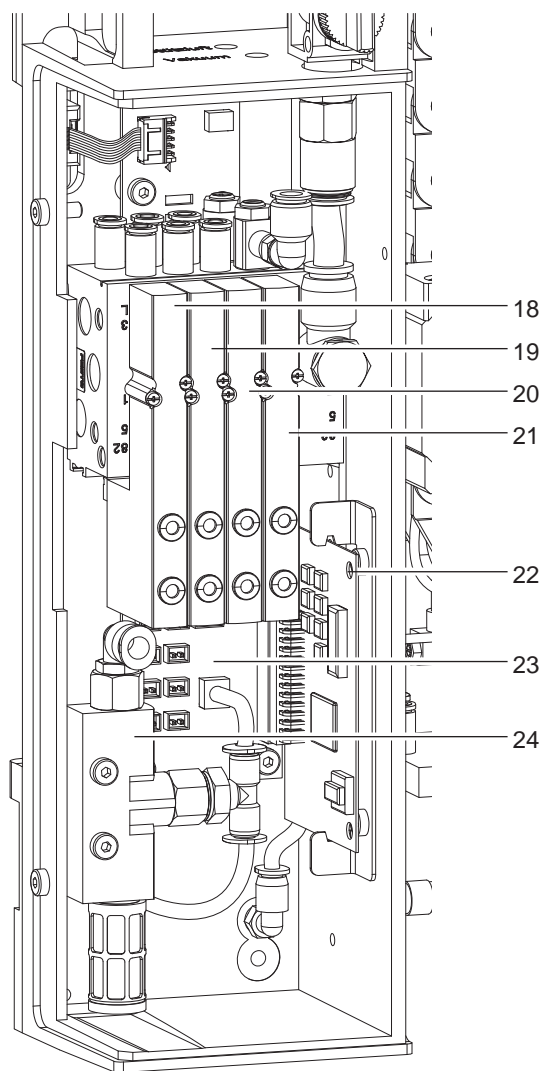


Fig. 5 Product Overview - Control Unit

- 18 Magnetic valve cylinder z
- 19 Magnetic valve cylinder lock
- 20 Magnetic valve compressed air
- 21 Magnetic valve vacuum and pressure
- 22 Circuit board - applicator control
- 23 Circuit board - applicator connections
- 24 Vacuum valve

2.4 Contents of Delivery

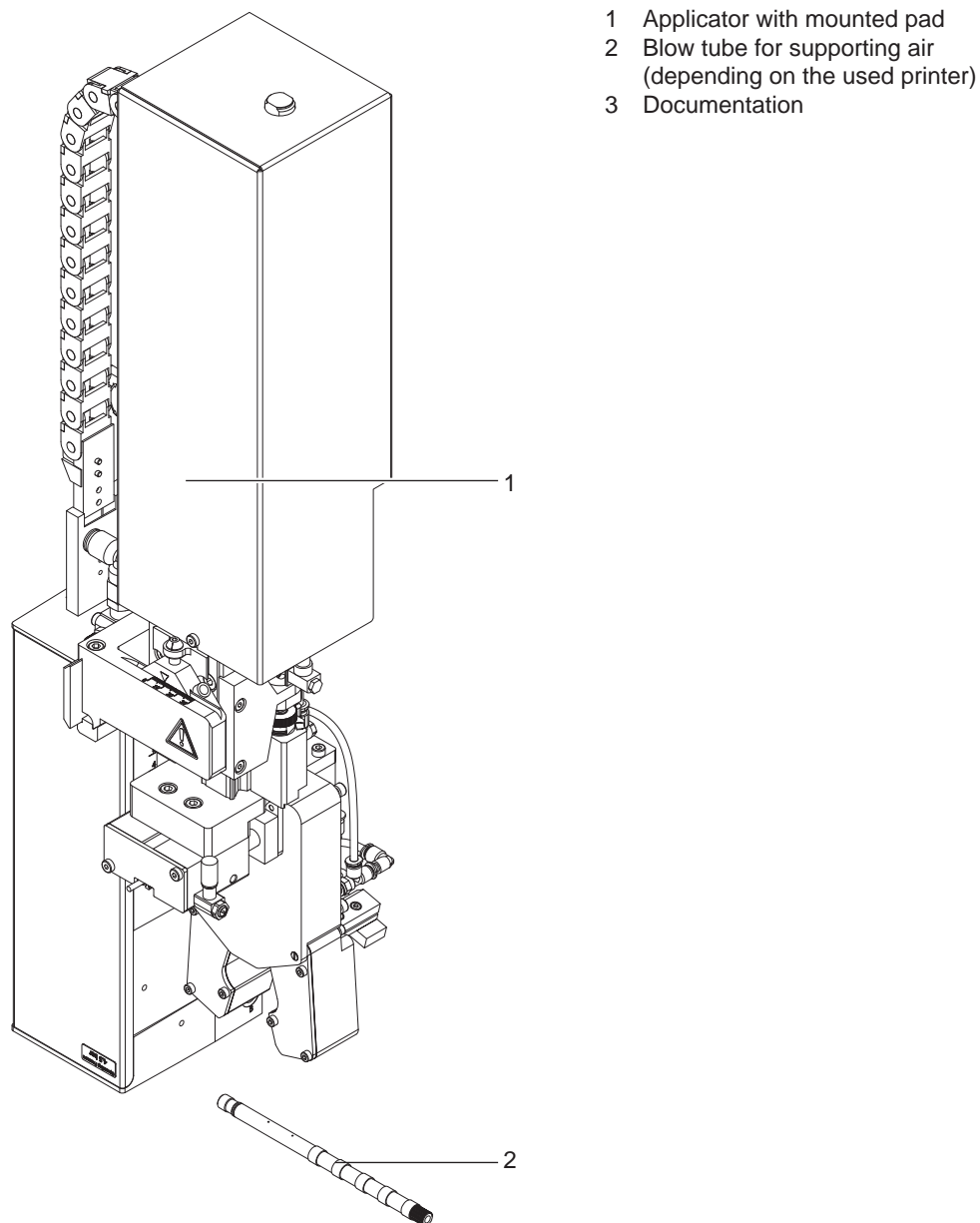


Fig. 6 Contents of delivery



Note!

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



Attention!

The device as well as the 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 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 of the air pressure.



Attention!

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

- ▶ Switch on the printer.



Note!

In the case of the tamp being outside the start position when switching on the printer the print process will be interrupted and an error message will be shown on the display.

If you push the pause button on the printer the applicator will move into the start position.
The Applicator is ready for work.

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



Note!

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

- ▶ Start a print job
- ▶ Start the labelling process via I/O interface.

Error messages during labelling process are shown in the display of the printer

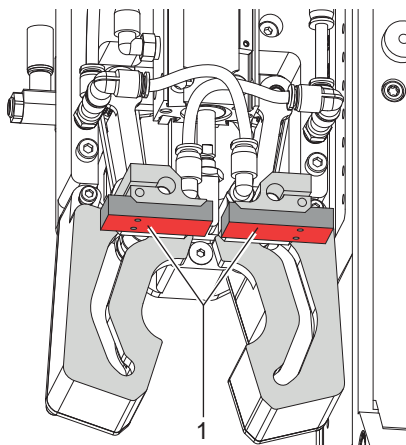
▷ 4 Error Messages.

3.2 Cleaning



Attention!

- ▶ Never use solvent or abrasive.



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

Fig. 7 Cleaning of the tamp

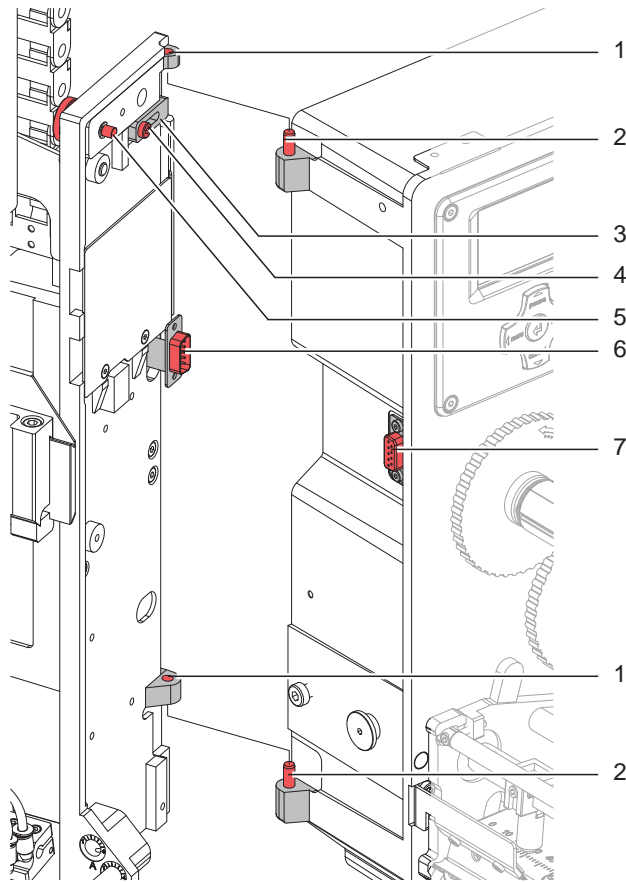


Fig. 8 Mounting/demounting the applicator on/from the printer



Attention!

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

► **Service Manual Applicator**



Attention!

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

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

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

Turning away & Demounting the applicator

1. To turn away the applicator loosen thumbscrew (5) and swing the applicator to the side.
2. Disconnect SUB-D 15 male connector (6) from the female connector (7) of the printer.
3. Loosen screw (4) and move the locking plate (3) from the hinges.
4. Lift the applicator upward and off the printer.

Remounting the applicator

1. Hang the applicator via the female part (1) of hinges to the male printer mounted hinges parts (2).
2. Connect SUB-D 15 male connector (6) to the female connector (7) of the printer.
3. To secure the applicator slide the locking plate (3) under the hinge and tighten the screw (4).
4. 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, 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 applicator specific error messages and their possible causes. It also suggests methods to resolve the problems:

Error Message	Possible Cause
Air pressure ins.	Compressed air is switched off
	Pressure too low < 4 bar
	Pressure is 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 its has left the labelling position; or pad has left the starting position unauthorized
Process Error	Process of labeling was interrupted via the I/O interface of the printer with the XSTP signal.
Refl. sensor blk.	There has been no change of the switch state at the upper sensor at the cylinder between the start of the labelling process and the signal from the labelling position sensor.
Upper position	Pad is not in the starting position when the printer is 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 adjustment and settings.



Warning!

After the error has been resolved the application array will immediately move back to the starting position! Danger of crushing hands and fingers by the moving parts!

- ▶ Do not reach into the zone of the moving parts and keep long hair, loose clothes, and jewelry away.

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

- ▶ In the application mode "Apply/Print" sends the signal "Print first label" or press the button ↵ to send a printed label to the stamp.

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:	Flag Applicator
Type:	4712
Applied EU Regulations	Applied Standards
Directive 2006/42/EC on machinery	<ul style="list-style-type: none"> • EN ISO 12100:2010 • EN ISO 13849-1:2008 • EN 60950-1:2006 +A11:2009+A12:2011+A1:2010+A2:2013
Person authorised to compile the technical file:	Erwin Fascher Am Unterwege 18/20 99610 Sömmerda
Signed for, and on behalf of the Manufacturer:	Sömmerda, 18.10.2016  Erwin Fascher Managing Director
cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda	

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
D-76131 Karlsruhe
Germany

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:	Flag Applicator
Type:	4712
Applied EU Regulations	Applied Standards
Directive 2014/30/EU relating to electromagnetic compatibility	<ul style="list-style-type: none"> • EN 55022:2010 • EN 55024:2010 • EN 61000-6-2:2005
Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment	<ul style="list-style-type: none"> • EN 50581:2012
Signed for, and on behalf of the Manufacturer :	Sömmerda, 18.10.2016
cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda	 Erwin Fascher Managing Director

6.1 Default Factory Values.

**Note!**

The applicators are set up with default parameters. Keeping these settings will guarantee frictionless usability.

**Note!**

When using the applicator for client specified jobs a custom configuration is installed.

Thus the performance will be measured by the values of the commissioning certificate and not the standard values.

The standard values for the default settings are as follows:

- standing connection to a cab Hermes+ printer
- continuous air pressure of 0,45 MPa (4,5 bar)

6.2 Required Space

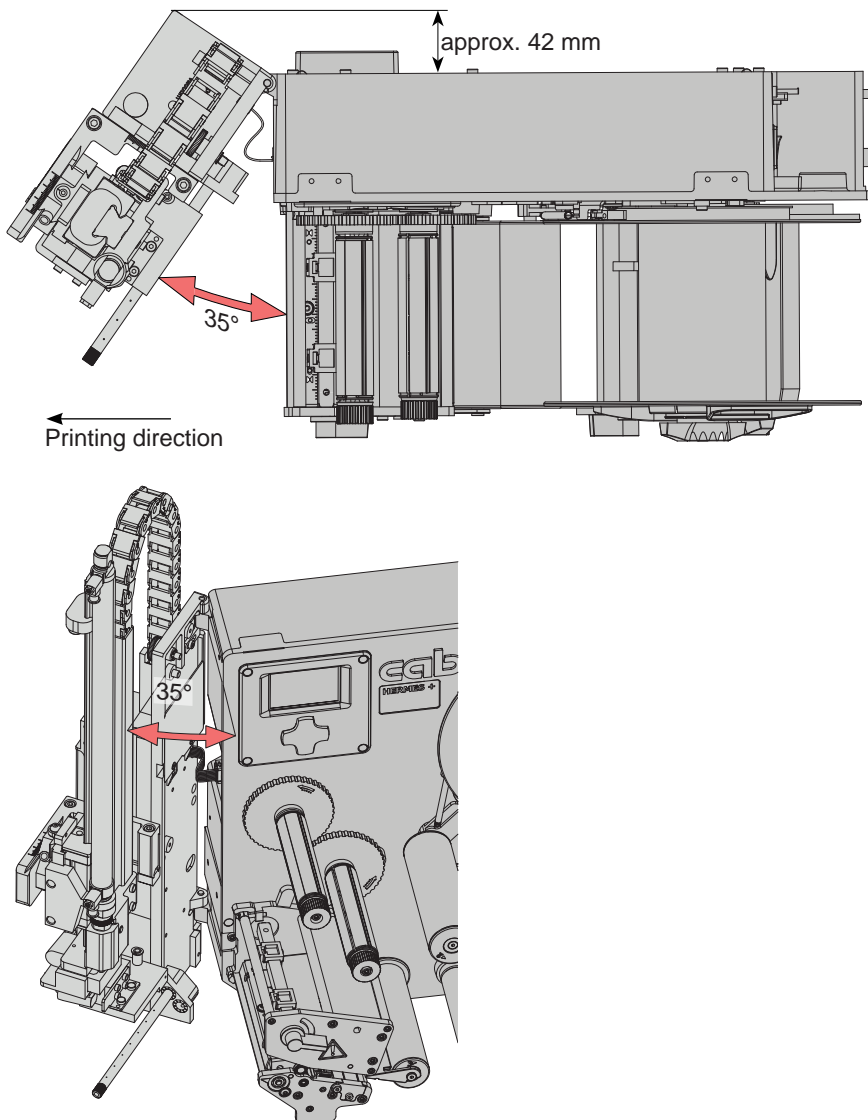


Fig. 9 Disengaging or pivoting the applicator

For maintenance or disassembly the applicator needs to be pivoted a minimum of 35°.

Thus a minimum of 42 mm on the hinge side of the applicator is needed.

The required space needed by the applicator in the direction of printing is dependent on the tamp.

6.3 Tools






Screwdriver with parallel blade	2,5		<ul style="list-style-type: none"> Adjust the throttle valves
Hexagon key L-wrench	0,8		<ul style="list-style-type: none"> Adjust the sensors (included in the delivery of the applicator)
	2,5		<ul style="list-style-type: none"> For standardized parts (included in the delivery of the applicator)
	4		<ul style="list-style-type: none"> Stamp adjustments Stamp exchange
Flat-round nose pliers - straight - angled			<ul style="list-style-type: none"> Fitting/removing tubes
Open Spanner	SW 8		<ul style="list-style-type: none"> Changing the throttle valves
	SW 13		<ul style="list-style-type: none"> Setting the spring power on the adapter bolt
	SW20		<ul style="list-style-type: none"> Changing the cylinder
Manometer	± 7 bar		<ul style="list-style-type: none"> Measuring air pressure

Table 3 Tools

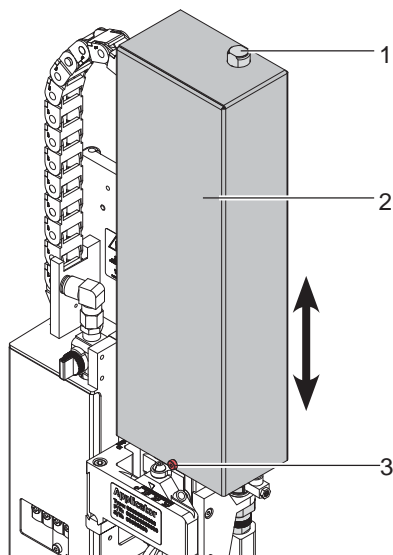
6.4 Mounting and Demounting the Cover

To initialize the applicator or perform adjustments it is required to remove the cover. Once content with the changes reattach the cover.

**Warning!**

It is only permitted to use the applicator with a mounted cover (2).

Only in the case of servicing and maintenance may the cover be removed



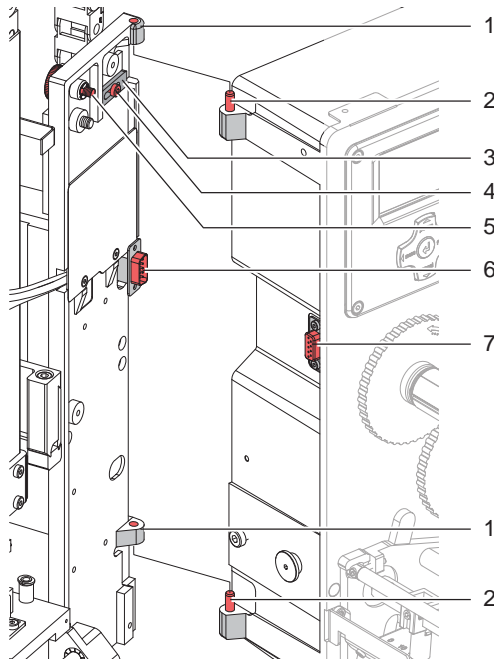
1. Loosen the screw (3).
2. Lift off the cover upward (2).
3. Once the service or maintenance has been completed lower the cover over the cylinders.
4. Guide cylinder (1) through the hole in the cover (2).
5. Tighten the screw (3) to fix the cover (2) in place.

Fig. 10 Cover

6.5 Mounting the Applicator

**Attention!**

- ▶ Disconnect the printer from the power supply before mounting/demounting the applicator!
- ▶ Ensure the printer is in a stable position
- ▶ Only when the applicator is securely mounted on the printer connect the compressed air.



1. Lower the applicator hinges (1) into the printers hinges (2) effectively attaching the two components.
2. Pull out the SUB-D 15 plug (6) a little from the applicator to insert in into its counterpart on the printer (7).
3. To secure the applicator lock it in place by loosening the hinge screw (4), slide the hinge lock (3) under the hinge and tighten the screw again.
4. Pivot the applicator towards the printer making sure that the cable of the plug (6) does not get jammed between the components.
5. Use the turn-wheel screw (6) to to fix the applicator to the printer.
6. Raise the transportation lock to ensure the unhindered movement of the lift cylinder.

Fig. 11 Mounting the applicator to the printer

6.6 Releasing the Transportation Lock

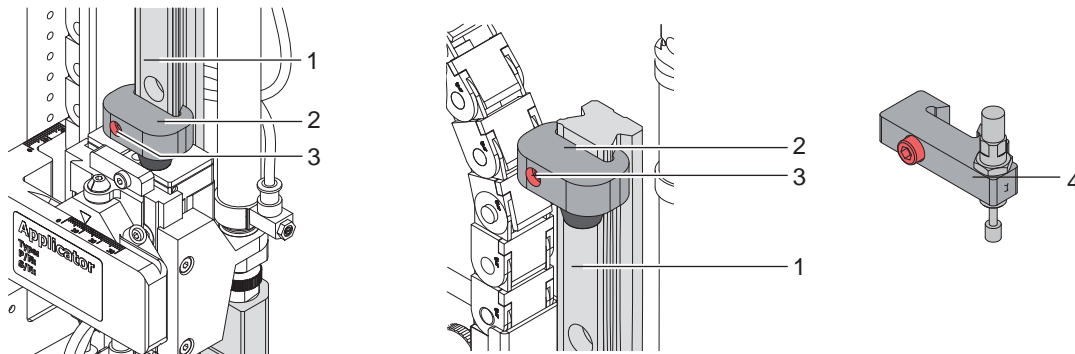


Fig. 12 Stopper/transportation lock as transportation safety

Before the applicators are delivered, a stopper/transportation lock (2) is mounted on the rod (1). With this stopper (2) the labelling position for the operation mode "blow on" can be adjusted. In transit the same stopper is in the transport safety position, ensuring that the movement of the tamp is kept to a minimum. For longer transit times a stopper with a cushion further reduces the impact energy (4).

Releasing the transportation lock

1. Loosen the screw (3) of the stopper (2).
2. Move the stopper (2) to the top end of the rod (1).
3. Tighten the screw (3) to fix the stopper (2) in place.

6.7 Mounting the Blow Tube

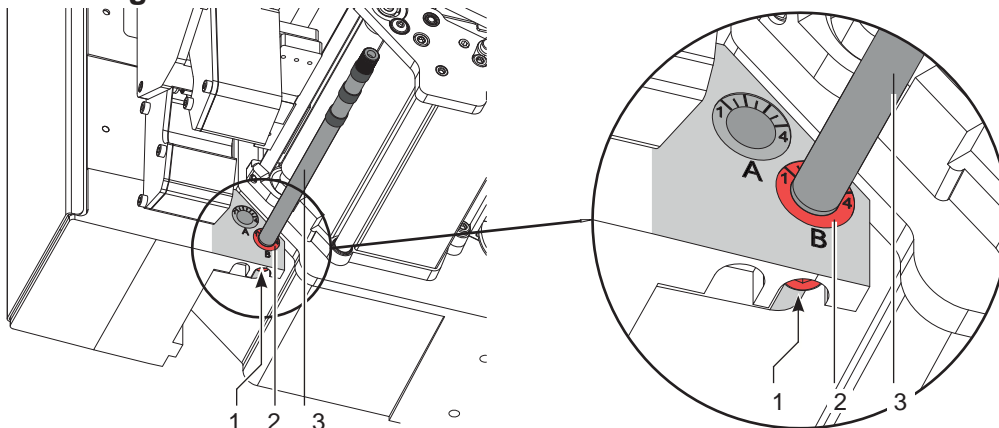


Fig. 13 Mounting the blow tube

The blow tube (3) can be rotated around its axis. By this principle the direction of the compressed air can be optimized.

1. Loosen the screw (1).
2. Insert the blow tube (3) as far as possible into the provided slot B (2).
3. Tighten the screw (1) to ensure the blow tube stays in place. ▷ Adjustment of the blow tube and compressed air.

6.8 Connecting the Air Pressure



Attention!

Performance control and operational settings were tested with an air pressure of 4,5 bar. The applicator operating range is between 4,0 and 6,0 bar.



Warning!

In case of connecting the printer to the compressed air the applicator is regarded as "IN USE."

- ▶ Do not reach into the zone of the moving pad and keep long hair, loose clothes, and jewelry away. Danger of injury by moving parts!

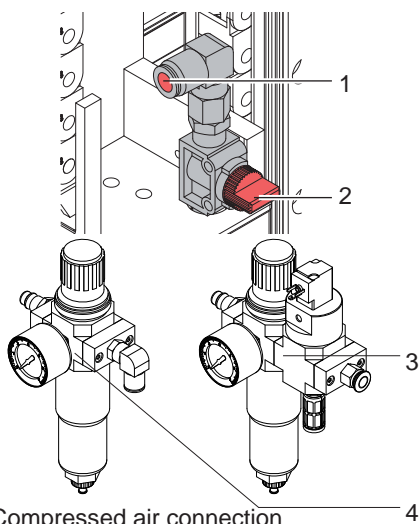


Fig. 14 Compressed air connection

- 1 Ensure the setting of the stop valve (2) is perpendicular to the air flow direction. (As illustrated).
- 2 Attach compressed air to the fitting (1).
- 3 Open the stop valve (2).
- 4 Switch on the printer via the power switch.

To stabilize the flow of air it is possible to attach an air pressure regulation unit * (3).

This will need to be set up via the printer.
▷ Interface description of the printer air pressure regulation unit * (4).



Note!

If the pad is outside the start position when being switched on an error message will be shown on the display of the printer and the operation will be interrupted.

If you push the *pause* button on the printer the applicator will move into the start position. The Applicator is ready for use.



Note!

Mount and use the air pressure regulation unit only in the described position. Else the function of the air-water separator can't be guaranteed.

6.9 Mounting the Suction Pads

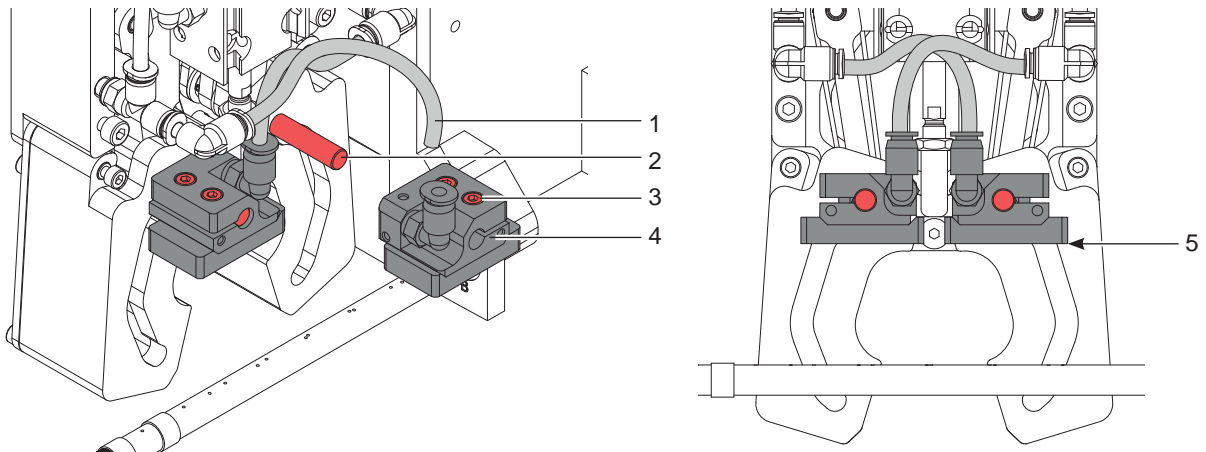


Fig. 15 Mounting the suction pads

1. Loosen screws (3).
2. Slide the suction pads (4) over the provided pins (2) leaving approximately 1 mm between the clamps and the pads to ensure mobility without friction.
Mount the suction pads so that the shorter pieces of foam are facing each other.
3. Alignment of the suction pads.
The surfaces of the suction pads that are facing the printer need to be level (5).
The bottom surfaces of the pads must be level and at an angle of 0° to each other.
4. Tighten the screws (3).

6.10 Preparing the Tamp Assembly for Adjustments

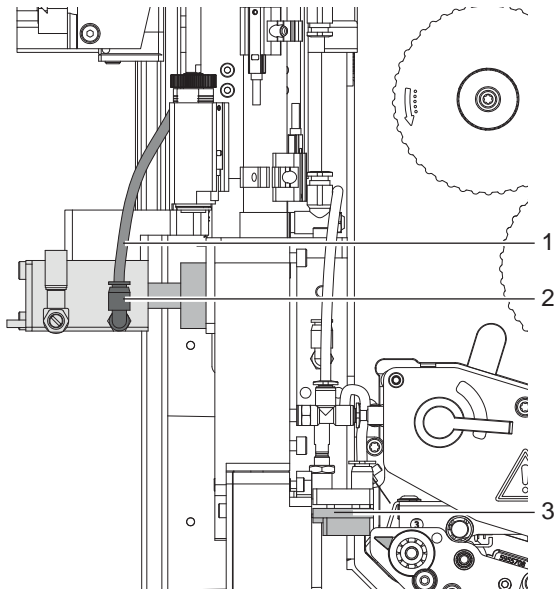


Fig. 16 Preparing the tamp assembly for adjustments

5. Pull off the tube (1) from the L-connector (2) on the horizontal cylinder.
6. Push the tamp in the direction of the printer.
7. Align the suction pads (3) to the edge of the printer ▷ „7.1 Adjustments to the Tamp“ on page 20.
8. Connect the tube (1) to the L-connector (2).

7.1 Adjustments to the Tamp

For the perfect application of labels it is necessary that the tamp is placed precisely above the dispensed label.

Moving the tamp in x-, y- and z-direction

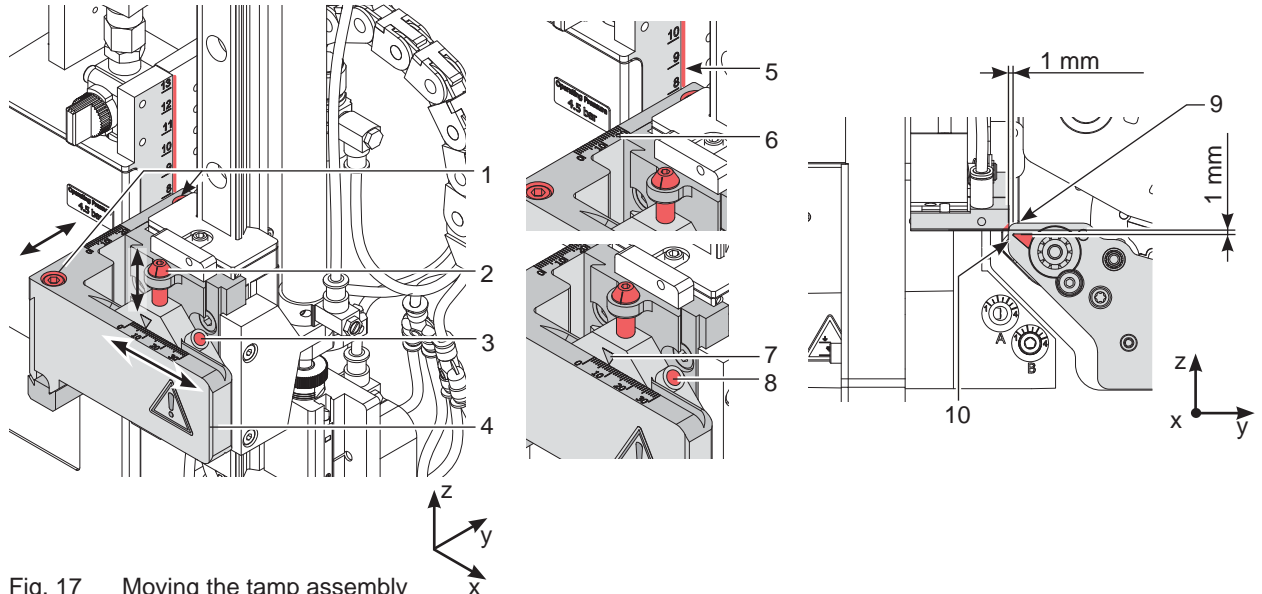


Fig. 17 Moving the tamp assembly

Adjustment in X-direction (sideways adjustment)

1. Loosen screw (3).
2. Move cylinder assembly (5) with the pad at the bearing (4) so that the dispensed label is aligned centrally to the pad. As reference use the provided graduation/ruler on the cross beam.
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 the tamp along the guiding rail that the distance from the edge of the pad (5) to the edge of the dispensing plate (6) 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 the setting screw (2) so that the bottom side of the pad is 1 mm over the top of the dispensing plate (6) of the printer.
3. Tighten screw (3).

Aligning the pad parallel to the dispensing plate.

The edge of the pad should be positioned parallel to the dispensing plate of the printer in order to position the label exactly on the stamp.

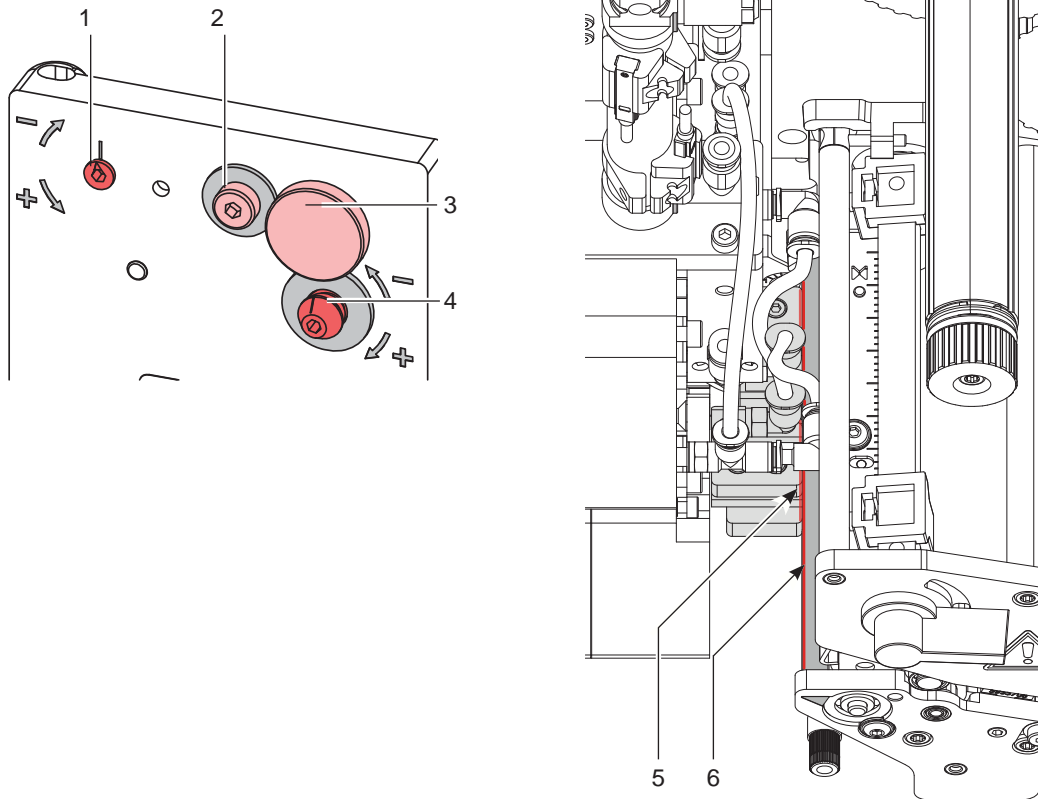


Fig. 18 Aligning the pad to the dispensing plate

1. Loosen the knurled screw (3) and the screw (2).
2. Push the applicator against the printer and use the setting screw (4) and the eccentric (1) to correct the angle of the applicator to the printer.
The dispensing plate (5) must be parallel to the displacing plate (6) of the printer.
3. Tighten screw (2) and mount the applicator to the printer using the knurled screw (1).

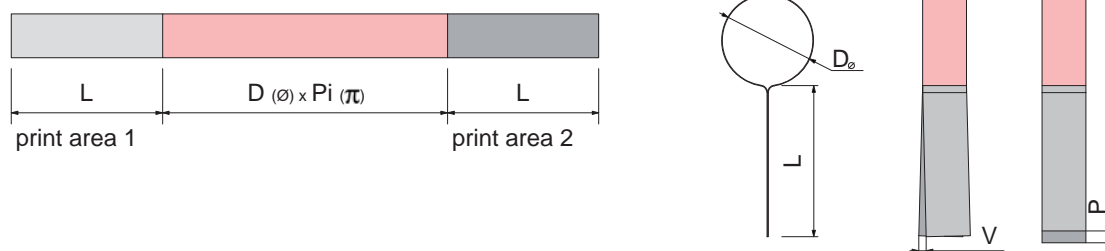


Fig. 19 Label parameters

A misalignment of the pad to the printer is noticeable by the vertical offset of the length (P) and/or the horizontal deviation of (V).

7.2 Alignment of the Product to the Applicator

Depending on the orientation of the applicator to the printer the alignment of the product will take place.



Note!

For optimal alignment of the product for labeling a fixed uptake of the product is necessary.

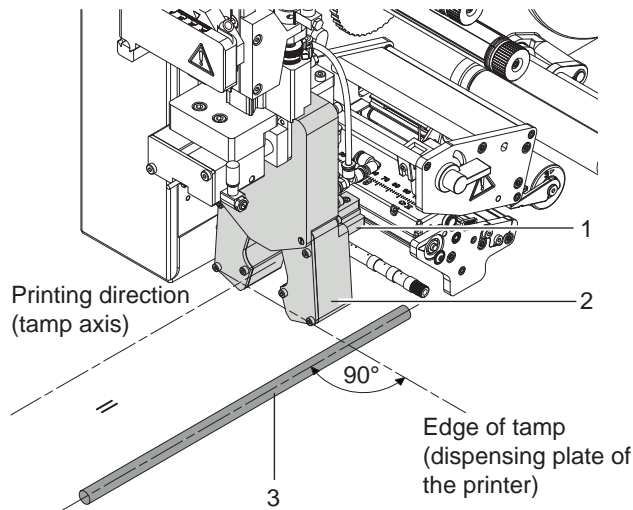


Fig. 20 Alignment of the product to the tamp

The product (3, 5) must be aligned to 90° to the edge of the tamp (1). Because the tamp with the tongs (2) are parallel to the dispensing plate of the printer it can be used for the alignment.

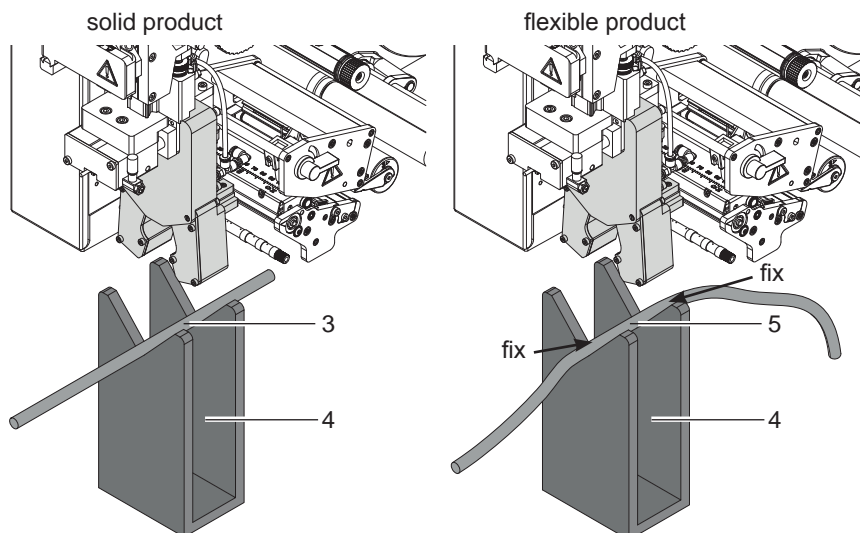


Fig. 21 Examples for simple product uptake

With flexible products (5) both edges must be fixed to prevent the product from moving during the application process.

7.3 Setting the Application height

The following steps explain the labeling procedure.

- The label is printed, transported to the dispensing plate and taken up by the applicator.
- The applicator assembly group, with the two piece tamp (3), drives to the application position where the stopper (5) brakes the motion of the assembly group.
- The tongs close.
- Both tamp parts (3) are pushed together in a half-circular motion and create the flag application.

Settings

- Place the product in the product-holder

**Note!**

To test the settings of the application height it is beneficial to use a test product with a diameter of 18 mm.

- Disconnect the pressurized air.
- Pull down the applicator assembly group with open tongs to the test product (2) manually. If a test product of 18 mm diameter is used, the edge of the assembly group (1) should lightly touch the product.
- From the bottom edge of the product (2) the distance to the edge (1) of the assembly group must contain 18 mm. When using smaller products - measure.
- Loosen the screws (4) at the stopper (5).
- Pull the stopper down to the point of impact of the product.
- Tighten screw (4) at the stopper (5).

**Attention!**

The breaking of the motion of the main cylinder is caused by the stopper and not the product!

- Reconnect the pressurised air.

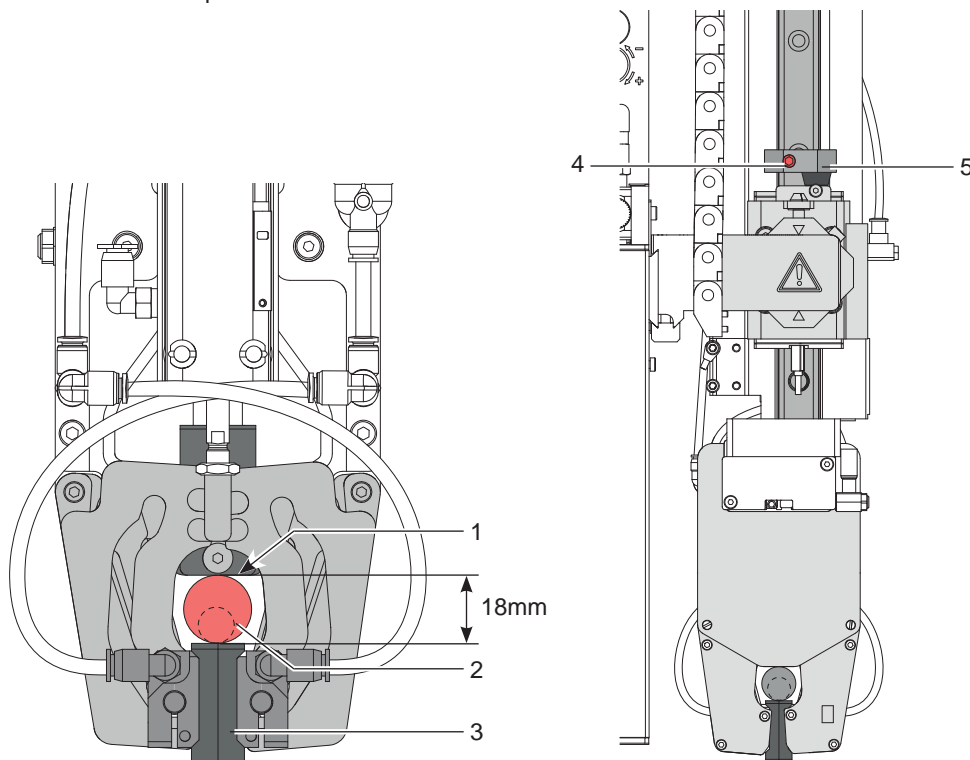


Fig. 22 Setting up the application height

7.4 Adjusting the Vacuum

Via the negative pressure the label is fixed to the applicator. This vacuum needs to be strong enough to hold the label and cover all suction apertures. It may not be so strong as to hinder the transport of the from the printer to the applicator. This is dependent on the label material used.

The default value of the vacuum is -0.6 bar.



Note!

By adjusting the vacuum it is possible to adhere to the label to the pad to the point where it cannot be applied to the product.

If the vacuum is set too high the advancement of the label can be stopped prematurely.

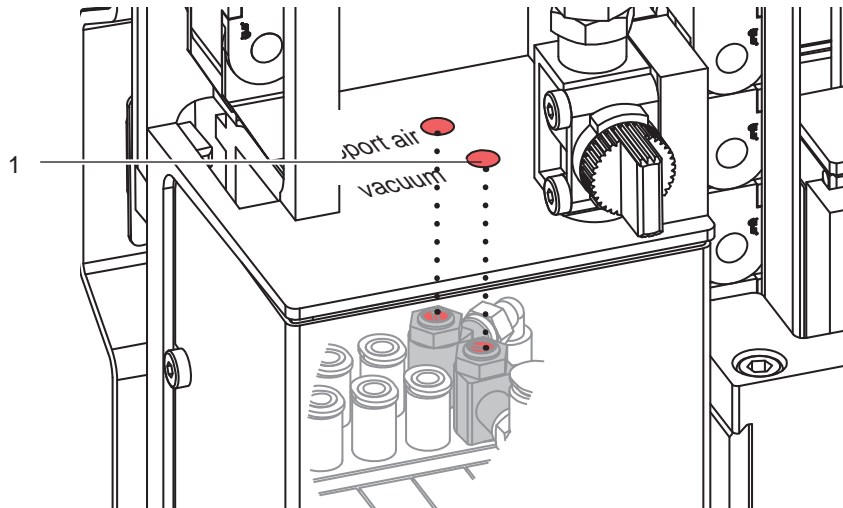
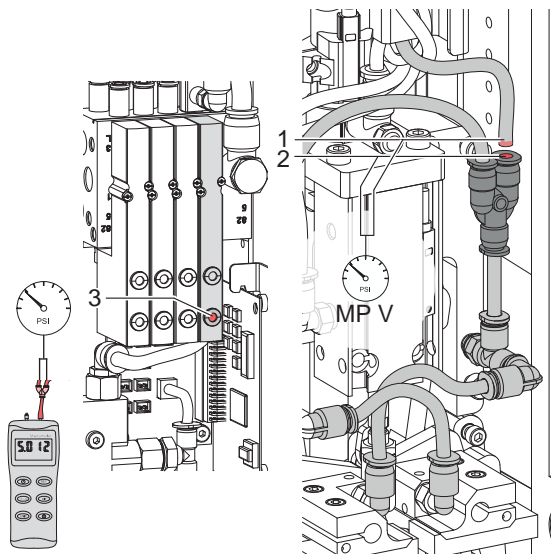


Fig. 23 Vacuum throttle valve

- Use the throttle valve (1) to ensure that the label is sucked up safely over its entire surface.
- To strengthen the vacuum turn the throttle valve setting screw anti-clockwise.

Measuring point (MP V) of the vacuum



With a manometer that can measure everything from -7 to 7 bar of pressure almost all values can be measured.

MP V : Vacuum target value -0,6 bar

1. Demount cover.
2. Cover bother suction pads hermetically.
3. Place the manometer at the MP V.
 - Remove tube (1) from the chain.
 - Y-connector (2) pressure supply to the pad
4. Press the micro-switch (3) to manually lift the magnetic vent with an active air flow to measure the pressure.
5. If required adjust the pressure with the throttle valve.
6. Remount cover.

Fig. 24 Measuring point of the vacuum



Attention!

After measuring the pressure ensure that the connections to and from the air pressure are securely fastened back in place.

7.5 Adjustments to the Blowpipe (Supporting Air)

For optimal support during the acquisition of the label of the applicator the supporting air is to be set up to be free of turbulence and evenly push the label against the pad.

The default air pressure value is set to 2 bar.



Note!

When alternating the printing width (2", 4" or 6") the respective blow pipe is to be used. With the change to label size and the quantity of the available holes in the blowpipe the supporting air needs to be checked respectively adjusted.

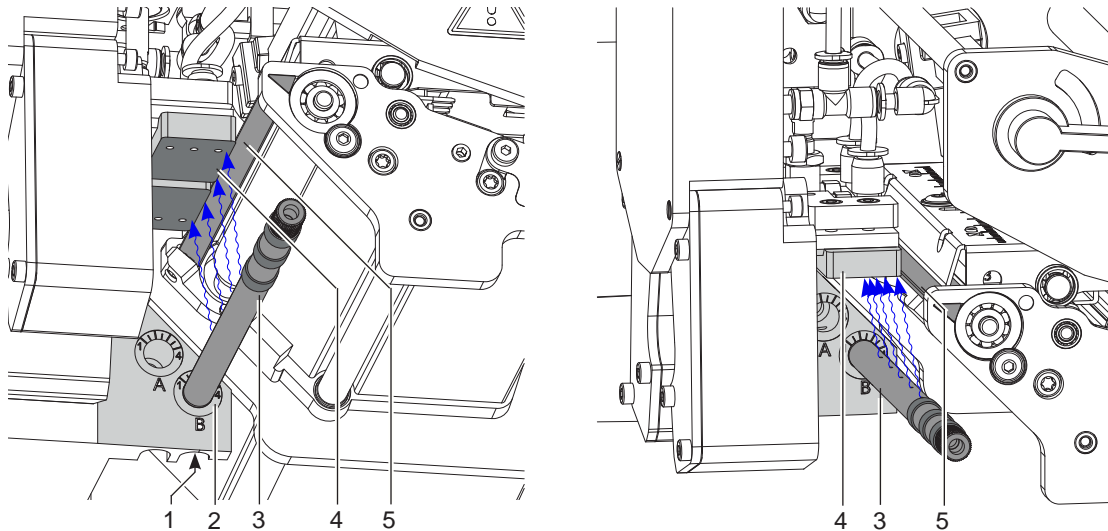


Fig. 25 Adjustment to the blow tube

The blowpipe (3) for the relative air pressure can be turned on its own axis to optimize the support for the acquisition of the label.

1. Loosen screw (1).
2. Insert the blowpipe (1) into the blowpipe-slot B (2).
Turn the blowpipe so that the airflow supports the label from the displacing plate (5) to the pad (4).
 - For smaller labels turn the holes of the blowpipe into the direction of the displacing plate (4).
 - For larger labels guide a stronger airflow away from the displacing plate (5) toward the pad (4).
Better orientation can be gained by using the indicator at the base of the blowpipe.
3. Tighten screw (1).

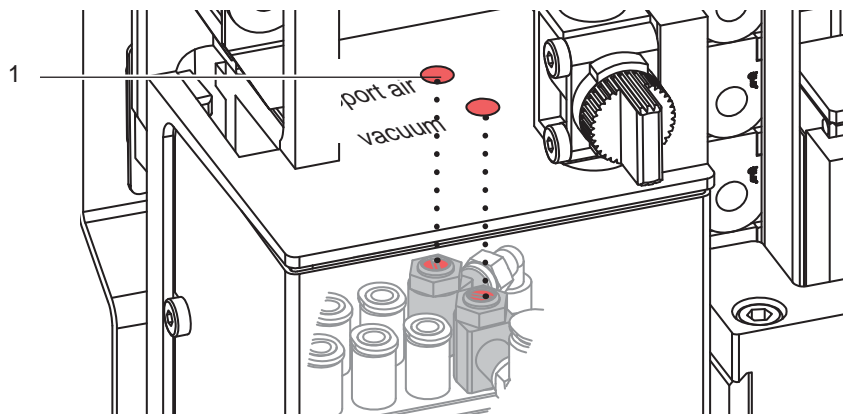
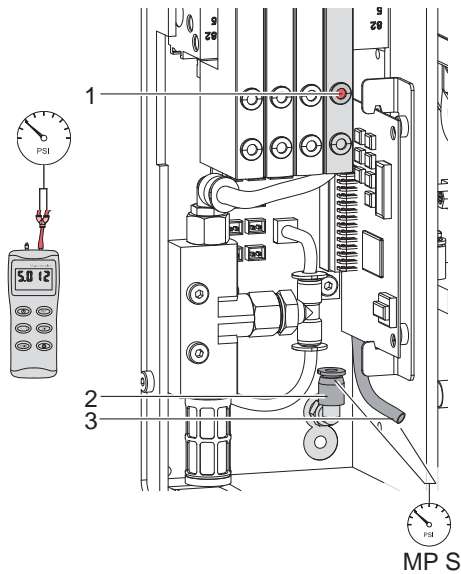


Fig. 26 Throttle valve for supporting air

The force of the compressed air can be varied via the throttle valve (1) to improve the blowing on of the label.

- To strengthen the supporting air turn the throttle valve (1) anti-clockwise.

Measuring point (MP S) for Supporting Air.



With a Manometer that is capable of measuring pressure from -7 to 7 bar the effective pressures can be measured.

MP S : Support air (desired default value 2 bar)

1. Remove the cover and interpose the manometer at the MP S .
 - Tube (3) from the vent block to the blowpipe connection.
 - Connection (2) to the blowpipe.
2. Measure the air pressure by pressing the micro switch (1) to raise the magnetic valve while the air pressure feed is open.
3. If required set the air pressure as needed via the throttle valve.
4. Remount cover.

Fig. 27 Measuring point for supporting air



Attention!

After measuring the air pressure check the ensure safe connections and a stable state of the applicator and printer.

7.6 Adjustment to the Speed of Cylinder Z

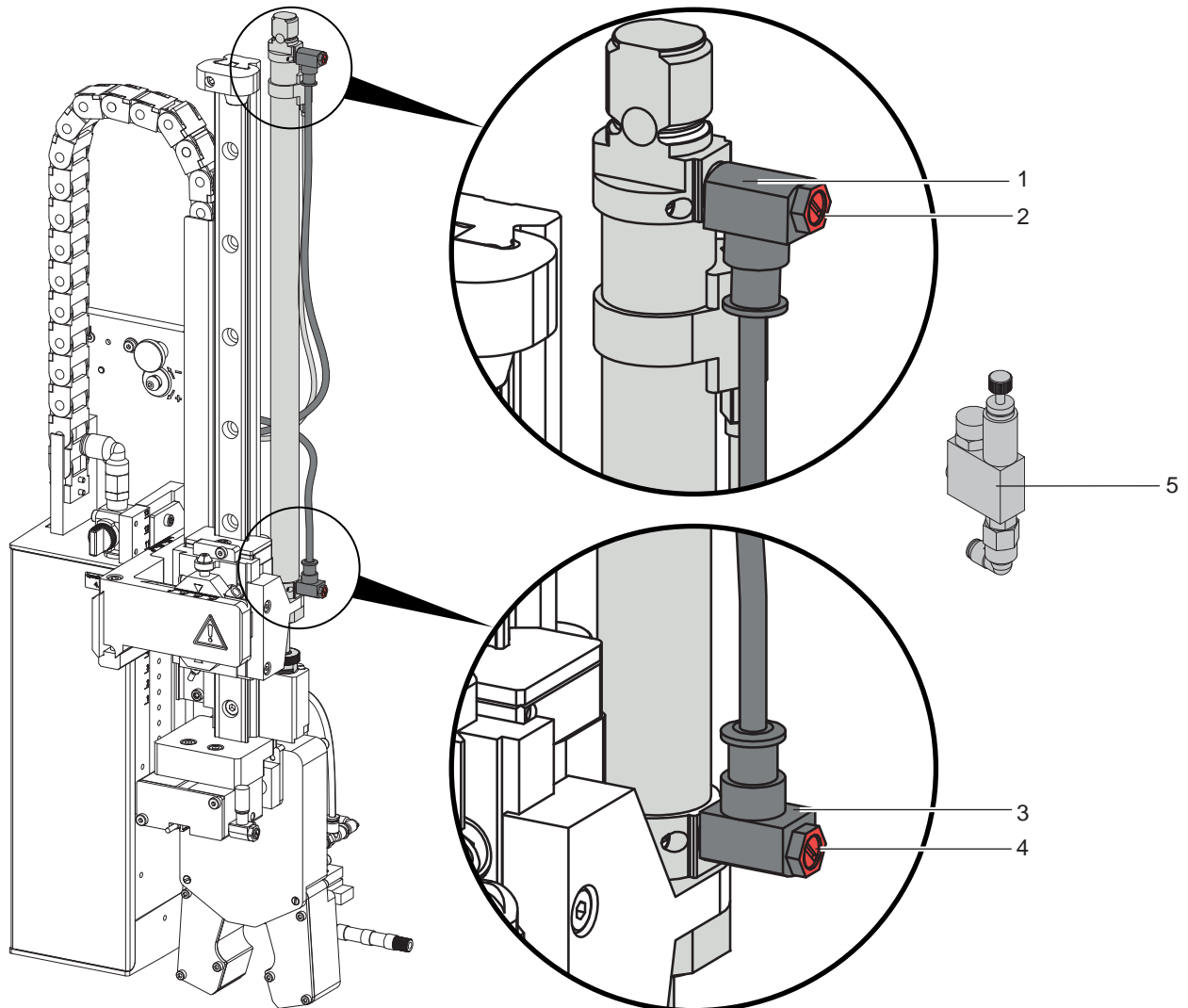


Fig. 28 Throttle valves at cylinder z

Adjustments to the speed of the up and down motion can be performed via exhaust-throttle valves (1, 3).

- Adjust the speed to suit the requirements.
- To increase the speed of the outward motion turn screw (4), at the bottom end of the throttle valve, anti-clockwise.
- To increase the speed of the inward motion turn screw (2), at the top end of the throttle valve, anti-clockwise.

**Note!**

The impact of the pad is influenced by the outward motion of the cylinder z.

- To reduce the outward motion and consequently the impact of the label turn screw (4) at the bottom throttle valve clockwise.

**Attention!**

A up-downward cycle may not take longer than 2 seconds.

Reducing the cycle speed too much will result in the error "Lower Position."

**Note!**

To reduce the thrust of the cylinder in the z-direction due to safety reasons a pressure regulation valve (5) is optionally obtainable.

- ▷ 7.7 Setting the options of motion in the z-direction.

7.7 Settings of the Sensors of Cylinder Z

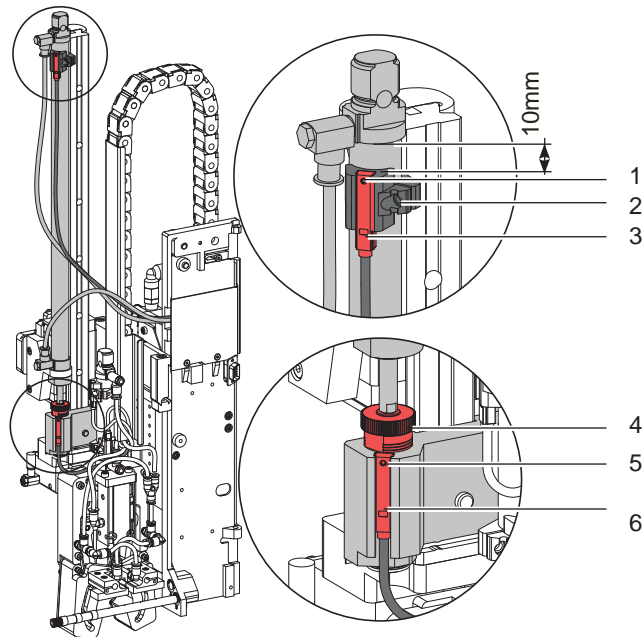


Fig. 29 Sensors on cylinder z

Impact sensor upper end

1. Loosen screw (1) of sensor "upper position" (3) and move the sensor to lock into the sensor retainer.
2. Remove the tubes from the pressure connectors of cylinder z and switch on the printer after connecting the applicator.
3. Push the pad downward manually to its opposite maximum.
4. Loosen screw (2) from its brace.
5. Move the sensor into its maximum "Lower position" and ensure that the sensor triggers securely and the LED lights up. A distance of 10 mm between the top end of the sensor and the bottom edge of the connection ring is required.
6. Tighten screw (2).

Impact sensor lower end

The placement of the impact sensor (6) is dependant on the weight of the pad and the its location. These parameters are used to set the strength of the spring via the adapter bolt to prevent unwanted triggering of the sensor. The triggering magnet is integrated into the adapter bolt and changes its position when adjusted.

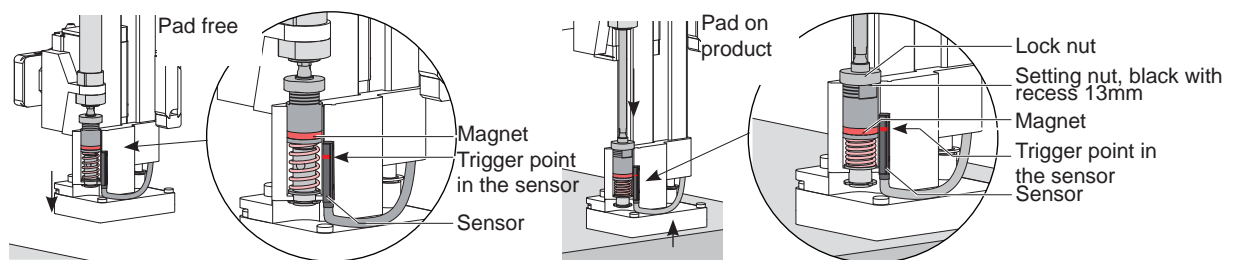


Fig. 30 Principle of the impact sensor

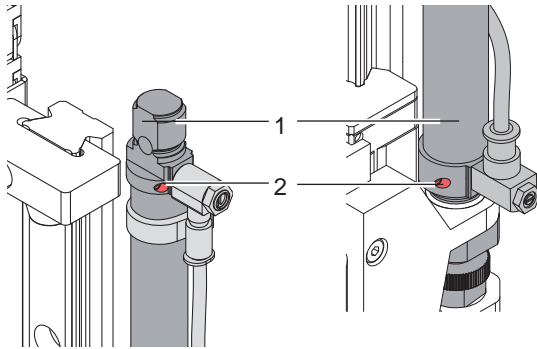
1. Prepare the printer and the applicator to be configured.
2. Set the tension of the spring of the adapter bolt (4), by turning the black setting nut, so the counter force of the cylinder z does not impact on the tamp assembly without hitting the product intended to be labeled first or when using the "blow on" mode just before (10 mm).
Turn the setting nut with an open end wrench 13 mm whilst holding the lock nut in place.
-Turning the nut clockwise increases the springs force up to three increments. (Markings)
-Turning the nut anti-clockwise decreases the tension of the spring to one increment. (Markings)
In blow on mode the cylinder pushes onward while the pad is slowed by the impact. The adapter bolt gets pushed into the pad and the impact sensor is triggered.
3. Loosen screw (5) and adjust sensor (6) so that it is triggered securely and the LED light goes off when the Adapter bolt is pushed into the pad.
4. Tighten screw (5).

7.8 Setting of the End Position Dampener



Note!

The end position dampening of the lifting cylinders are set to clients specification by default and will normally not need to be adjusted.



The end position dampening of the cylinder z is for relief of mechanical strain particularly at higher speeds or when using a larger mass.

The end position dampening is best set up so the piston reaches both ends securely but does not impact anything harshly.

By raising the end position dampeners the speed of the piston is reduced and so the overall time cycle is increased.

- At cylinder (1) turn the setting screw (2) clockwise to increase the end position dampening.
- At cylinder (1) turn the setting screw (2) anti-clockwise to decrease the end position dampening.

Fig. 31 End position dampening

7.9 Settings for Movement in Direction Z

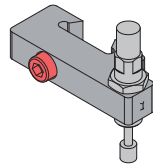


Fig. 32 End position (guide rail)

The impact with the end position dampener reduces the lifting speeds of cylinder z shortly before it reaches an end position and reduces material strain when using heavy applicators and/or high impact force.

The adjustment is as in section ► 7.7 Settings of the Sensors of Cylinder Z.

Impress the spring as far as possible when setting up the end position dampener and adhere to the service manual guild lines.

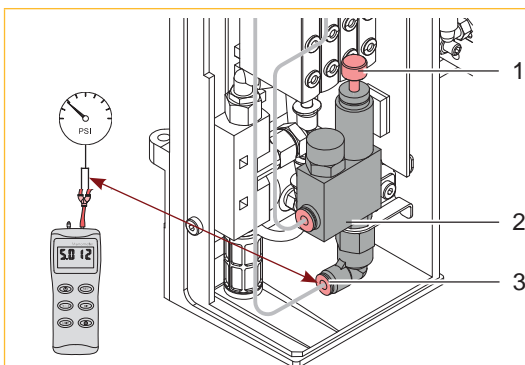


Fig. 33 Pressure reduction valve cylinder z upward motion

The pressure regulator (2)

The pressure valve (2) is implemented to protect pressure sensitive products from the pad's pressure levels and for safety reasons, namely to reduce the pressure in the cylinder of direction z.

The activating value is 2.5 bar.

- Place the manometer at the exit (3) using the knurled screw (1) to set the pressure to 2.5 bar.

The pressure valve can be retrofit to the applicator or implemented into the order of the product.

Retrofitting a pressure valve includes an installation guide.

The use of the applicator can be principally modified by altering the parameter settings.

The most important setting is the choice between the mode "stamp" and "blow." Besides that the applicator has different sequences of printing and applying labels in a labeling cycle.

	Stamp	Blow
Print / Apply	x	x
Apply / Print waiting position top	x	x
Apply / Print waiting position bottom	-	x

Table 4 Application modes

The application modes can be further modified by delay settings.



Note!

For detailed information about the printer configuration and functions of the buttons
 ▷ Configuration manual resp. ▷ Operator's Manual of the printer

8.1 Method of Changing the Configuration

1. Press the **menu** key.
2. Navigate to `Setup > Machine param. > Applicator.`
3. Select the desired parameters.
4. Set the machine to "Ready."

8.2 Quick Selection Mode for the Setting of Delay Times

Besides the standard access to configuration there is a quick mode for setting only the delay times of the printer.



Note!

The settings in the quick selection mode are can be applied, with effect, while the printer is active.

1. Press and hold **menu** for about 2s. The first delay time is visible.
2. Set the desired time settings by pressing the **▲** and **▼** keys.
3. To change between the different delay times use the **►** key.
4. To leave the quick mode push the **◀** key. The set values will be saved.

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 parameter of the applicator	
 > Mode of oper.	Setting of the mode Stamp or Blow	Stamp
 > Mode	Selection of the type of cyclic operation: Print-apply The start signal prints a label and applies it to a product. After the cycle the pad is stopped at the starting position without a label. Apply-print: A separate signal that starts the printing of the first label and hands it over to the pad. Start signal applies the label to the product followed by the printing of the next label. The completion of the cycle is reached with a printed label on the pad.	Print-apply
 > Waiting position	Only in operating mode Blow and Mode Apply-print top: Pad is waiting for signal in parked position bottom: Pad is waiting for signal in labeling position	Top
 > Blow time	Only in operation mode Blow Startup time (max. 2.5 s) of compressed air for applying the label	0 ms
 > Support delay on	Time delay (max. 2.5 s) between the stat of the printing and activation of the supporting air. This prevents turbulence when handing over the label preventing errors.	0 ms
 > Support del. off	Time delay (max. 2.5) between the moving the label to its application end position and the switching off of the supporting air.	270 ms
 > Delay time	Time (max. 2.5 s) between the starting signal and the begin of the labeling cycle. This is useful when using product sensors and conveyor belts.	0 ms
 > Lock time	After the first starting signal all subsequent starting signals will be ignored during the lock time. This is used for the debouncing of the start signals.	0 ms
 > Peel position	Adjustment of the position of the label in regard to the dispensing plate. This offset is also adjustable via software over <code>Machine param.</code> and the adjustments are added together. ▷ 8.4 Adjustments to the Dispensing Offset	0,0 mm
 > Vacuum control	Controlling the label hand over via a vacuum sensor.	On
 > Handover up. pos.	Acquisition of the label directly from the dispensing plate via contact of the pad on the dispensing plate.	Off
 > Cleaning blow	Activation/deactivation of the cleaning blow function to clear the pad of any debris or dirt.	On
 > Vacuum delay	On – The vacuum will be switched on after the label transportation is complete. Off – The vacuum is switched on at the beginning of the label transport.	Off

Table 5 Configuration parameters of the applicator

8.4 Adjustments to the Dispensing Offset

There are two separate methods to optimize label acquisition from the printer. This is achieved via adjusting the offsets.



Attention!

- ▶ Optimize the label offset configuration first.
- ▶ Subsequently adjust the label offset via the software.

This method is particularly important after a problem-free start and inserting new material and dealing with error messages.

Label offset in the printer configuration.

- ▶ Check the basic settings of the printer. Additionally check the label cycles by test printing different settings by pressing **feed** and then the enter ↵. ▷ 9.1 Test Mode without a Print Job.
- ▶ Set up the printer so that the empty labels are deposited completely and neatly by the dispensing plate ▷ 8.3 Configuration Parameters of the Applicator.

Label offset configuration via Software

- ▶ Check the offset parameters in the software. Concurrently test these settings by pressing the enter key ↵. ▷ 9.2 Test Mode with Print Job.
- ▶ Configure the offset in the software that the printed labels are deposited completely and neatly on the dispensing plate ▷ Programming manual or Software documentation.

8.5 Activating the Peel-off Mode



Note!

For labeling 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 move the starting position immediately!

Risk of crushing of hands and fingers by the moving pad. This is particularly hazardous when the pad moves between the starting- and end positions.

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

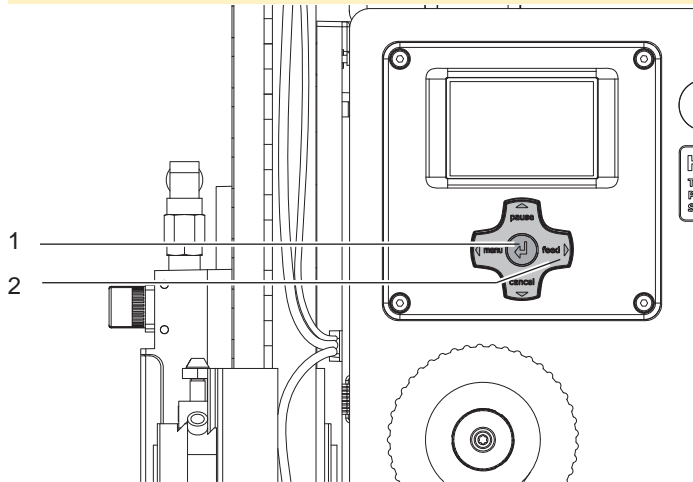


Fig. 34 Test mode via ↵ enter key

**Note!**

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

The whole labeling process can be simulated without the need of a print job or a connection to a computer by alternately pressing the **feed** key (2) and the Enter key ↵ (1):

- Press the **feed** key (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 key ↵ (1).
The pad is moved to the labeling position. A sensor signals when the labeling 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!**

► Use this test mode to configure the peel-off offset in the software.

This method allows the checking of the labeling process with the actual print data by using the Enter key ↵.

- Send a print job.

The test mode is executed in two alternating half cycles:

- Press the Enter key ↵ (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 key ↵ (1) again.

Half cycle 2

The pad is moved to the labeling position. A sensor signals when the labeling position is reached. The vacuum is switched off and the label is placed onto the product. Then, the pad is moved back into the starting position.

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

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	5964036.001	Base Plate	1		
7	5966530.001	Eccentric	1		
8	5966529.001	Hinges L	1		
9	5964090.001	Bar	1		

No.	Part-No.	Description	PU	Serial No.	
				from	to
10	5903525.001	E-Ring DIN6799-4	10		
11	5964429.001	Plate	1		
12	5902021.001	Screw DIN7991-M3x6	10		
13	5970042.001	Adapter Profile	1		
14	5902167.001	Screw DIN912 M5x50	10		
15	5964312.001	Crossbeam	1		
16	5964310.001	Clamping Element	1		
17	5964062.001	Binder	1		

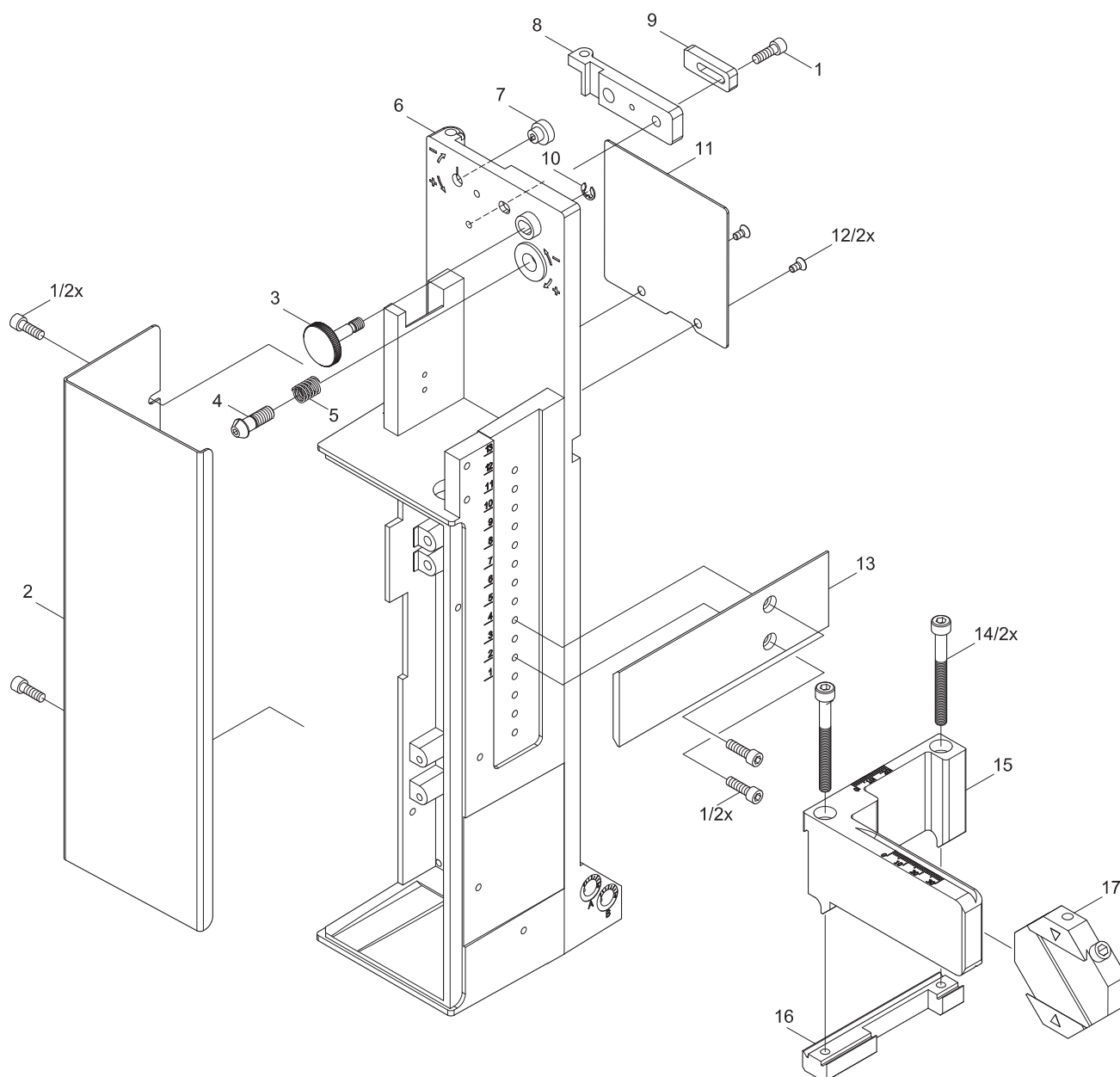
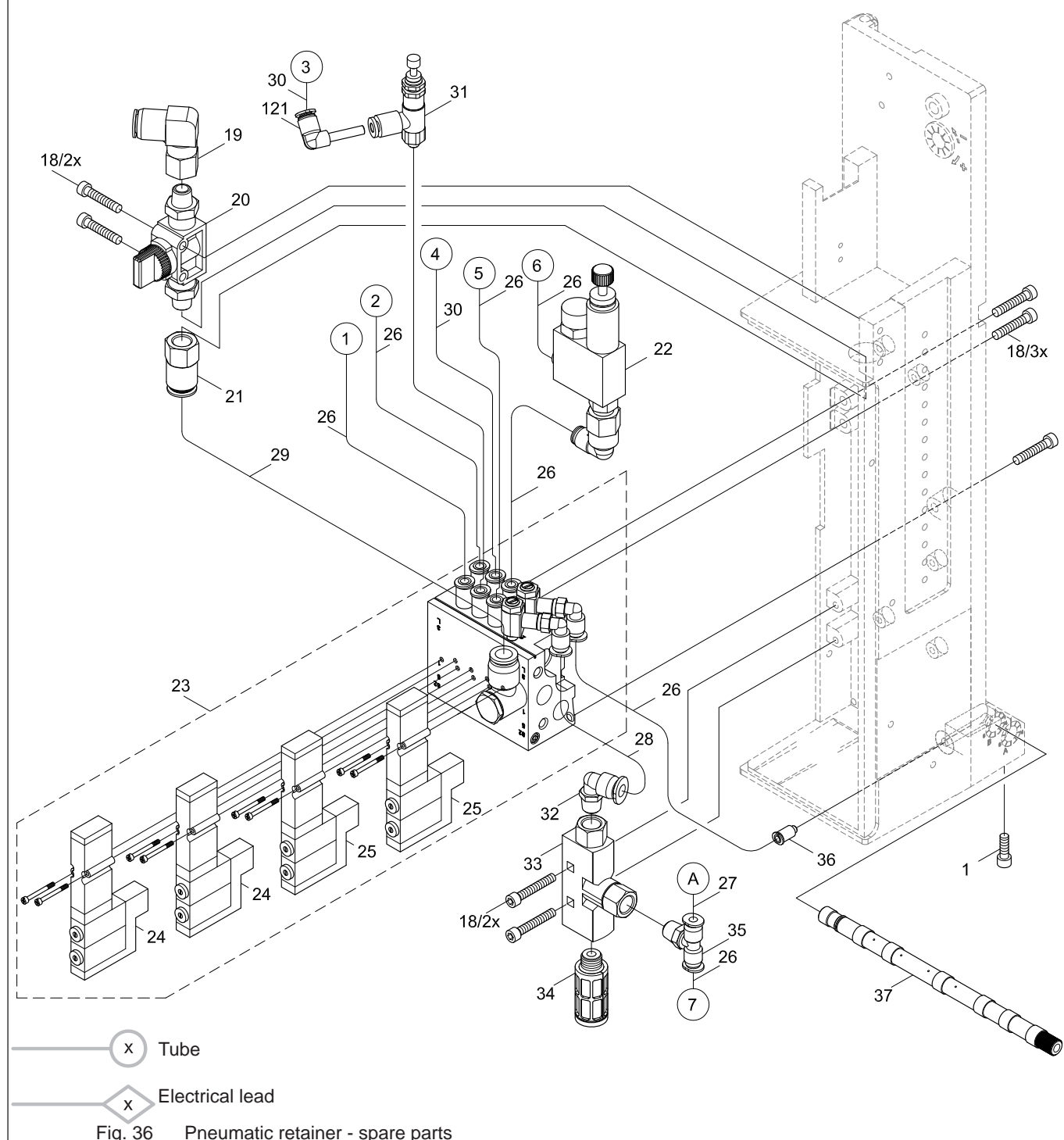


Fig. 35 Retainer assembly - spare parts

10.2 Pneumatic Retainer Assembly

No.	Part-No.	Description	PU	Serial No.	
				from	to
1	5902489.001	Screw DIN7984-M4x8	10		
18	5902863.001	Screw DIN7984 M4x25	10		
19	5905285.001	Push-in-L-Connector	1		
20	5905284.001	Block Valve	1		
21	5906842.001	Push-in/threaded Fitting	1		
22	5966418.001	Pressure Reduction Valve	1		
23	5966651.001	Valve Block	1		
24	5906021.001	Magnetic Valve	1		
25	5906022.001	Magnetic Valve	1		
26	5966460.001	Tube	2m		
27	5966463.001	Tube	2m		
28	5966464.001	Tube	2m		

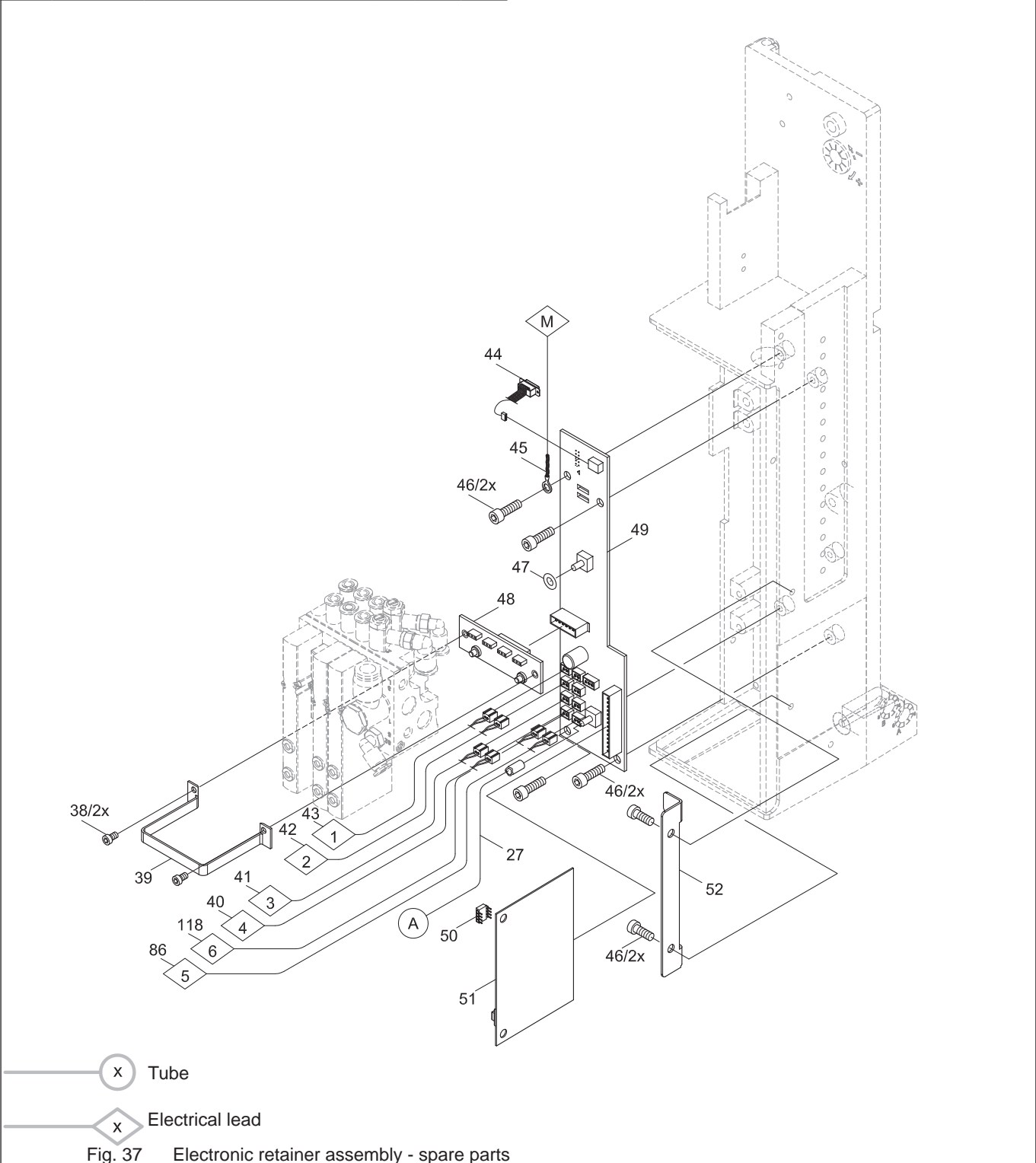
No.	Part-No.	Description	PU	Serial No.	
				from	to
29	5966465.001	Tube	2m		
30	5966466.001	Tube	2m		
31	5911003.001	Miniature-pressure controller	1		
32	5905317.001	Push-in-L-Connector	1		
33	5906844.001	Vacuum Generator	1		
34	5905257.001	Silencer	1		
35	5905338.001	Push-in T-Connector	1		
36	5905283.001	Push-in/threaded Fitting	1		
37.1	5964277.001	Blowtube	1		
37.2	5964095.001	Blowtube	1		
121	5905604.001	Push-in L-Connector	1		



10.3 Electronic Retainer Assembly

No.	Part-No.	Description	PU	Serial No.	
				from	to
27	5966463.001	Tube	2m		
38	5902144.001	Screw DIN7984-M3x5	10		
39	5964045.001	Bracket	1		
40	5972217.001	Sensor	1		
41	5972217.001	Sensor	1		
42	5964594.001	Sensor	1		
43	5964494.001	Sensor Start-Pos. Zyl. 1	1		
44	5955586.001	Cable	1		
45	5964591.001	Cable	1		
46	5902571.001	Screw DIN7984-M4x6	10		

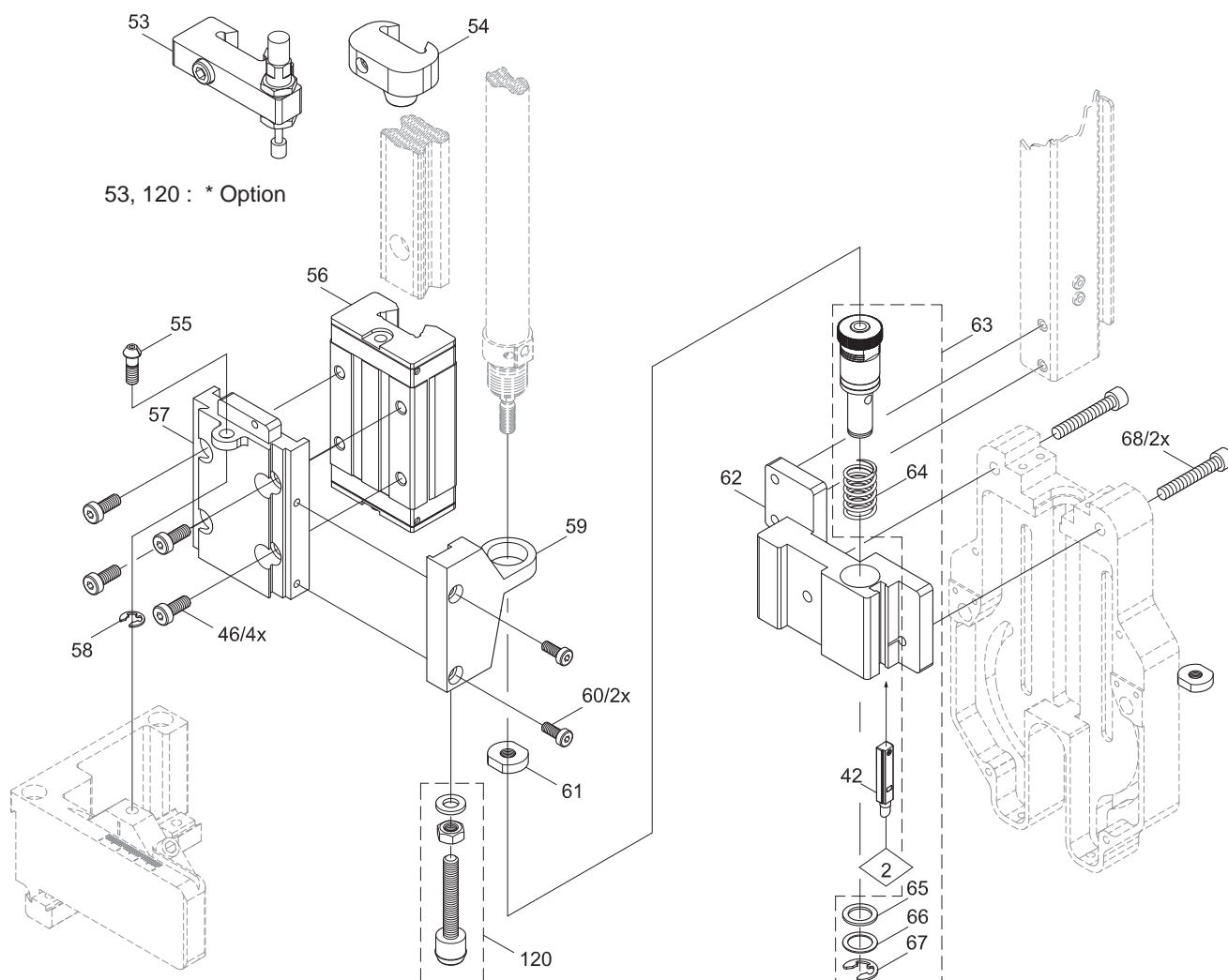
No.	Part-No.	Description	PU	Serial No.	
				from	to
47	5906943.001	Sealing Ring	10		
48	5955585.001	PCB Valve Block	1		
49.1	5971416.001	Applicator Interfaces	L	1	
49.2	5971417.001	Applicator Interfaces	R	1	
50	5971845.001	EEPROM	1		
51	5955575.001	Applicator Control	1		
52	5966417.001	Retainer	1		
86	5972217.001	Sensor	1		
118	5972217.001	Sensor	1		



10.4 Cylinder Guidance Assembly

No.	Part-No.	Description	PU	Serial No.	
				from	to
42	5964594.001	Sensor	1		
53	5964343.001	Stopper	1		
54	5964364.001	Stopper	1		
55	5964061.001	Setting Screw	1		
56	5965966.001	Sliding Carriage	1		
57	5964302.001	Plate	1		
58	5903505.001	E-Ring DIN6799-5	10		
59	5964301.001	Holder	1		
60	5902562.001	Screw DIN7984-M4x14	10		

No.	Part-No.	Description	PU	Serial No.	
				from	to
61	5521159.001	Nut	1		
62	5964236.001	Tamp Retainer	1		
63	5964311.001	Adapter Bolt	1		
64	5905069.001	Spring	1		
65	5521157.001	Washer	1		
66	5521158.001	Washer	1		
67	5903501.001	E-Ring DIN6799-7	10		
68	5902119.001	Screw DIN912 M5x25	10		
120	5964351.001	Stopper	1		



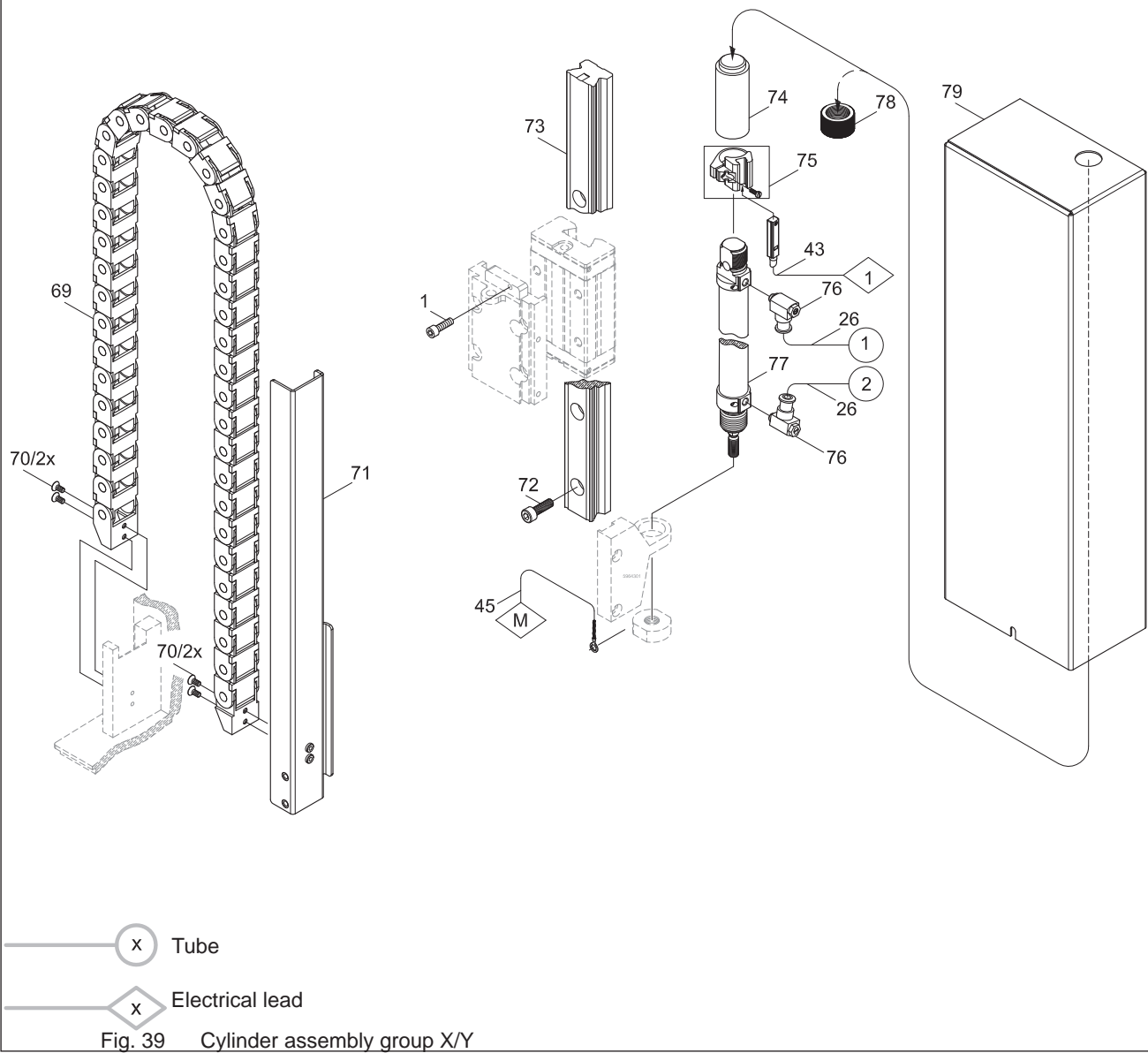
⊗ Tube

⊗ Electrical lead

Fig. 38 Tamp holder - spare parts

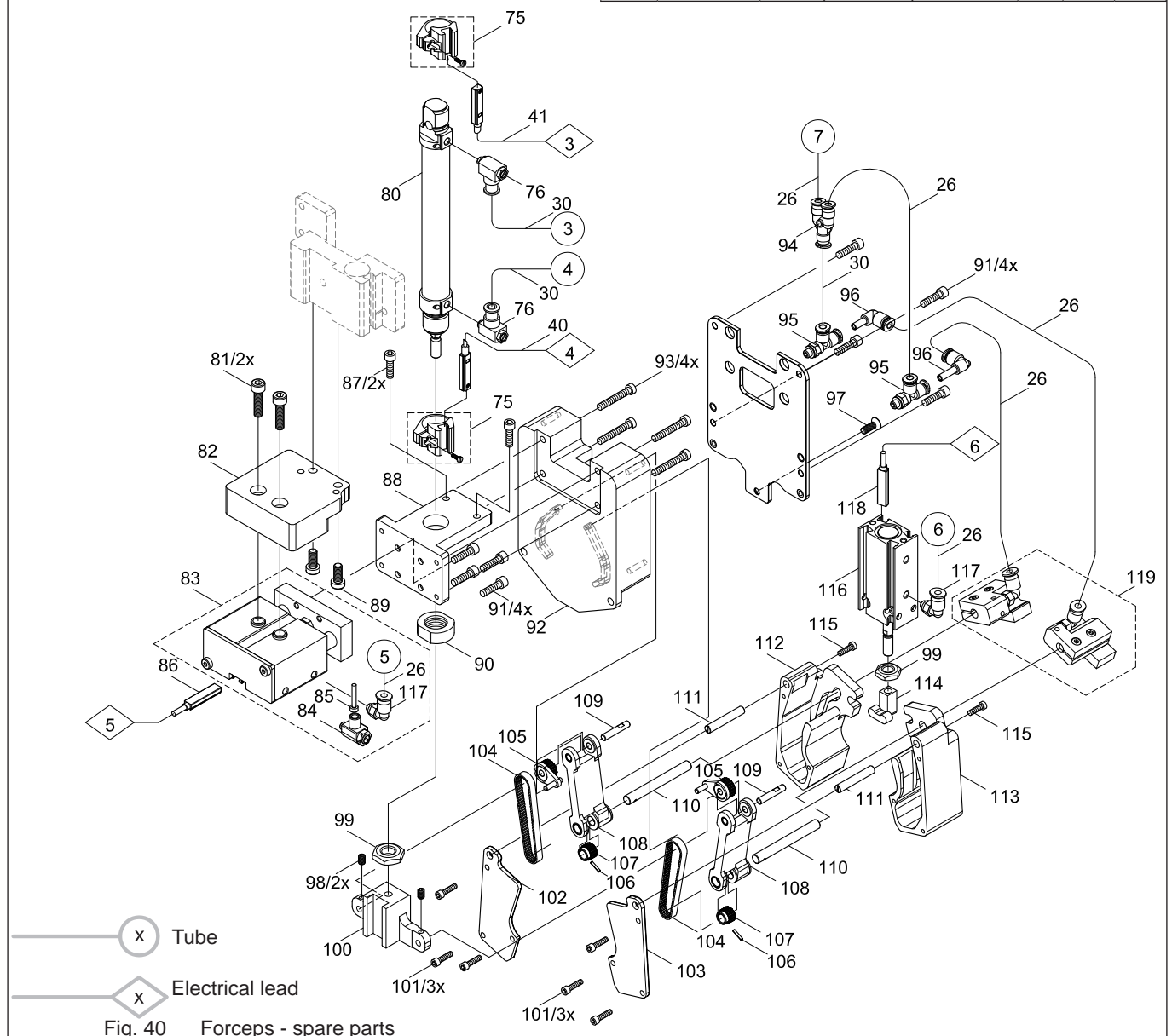
10.5 Cylinder Assembly Group X/Y

No.	Part-No.	Description	PU	Serial No.	
				from	to
1	5902489.001	Screw DIN7984-M4x8	10		
26	5966460.001	Tube	2m		
43	5964494.001	Sensor	1		
45	5964591.001	Cable	1		
69	5964374.001	Energy Track	1		
70	5902047.001	Screw DIN7991-M3x5	10		
71	5971706.001	Bracket	1		
72	5902335.001	Screw DIN7984-M6x25	10		
73	5964307.001	Guide Rail	1		
74	5964443.001	Bolt	1		
75	5905593.001	Mounting Clip	1		
76	5906636.001	One-way Flow Control Valve	1		
77	5905973.001	Cylinder	1		
78	5964489.001	Knurled Nut	1		
79	5970053.001	Cover	1		



10.6 Tamp Assembly

No.	Part-No.	Description	PU	Serial No.	
				from	to
26	5966460.001	Tube	2m		
30	5966466.001	Tube	2m		
40	5972217.001	Sensor	1		
41	5972217.001	Sensor	1		
75	5905593.001	Mounting Clip	1		
76	5906636.001	One-way Flow Control Valve	1		
80	5906974.001	Cylinder	1		
81	5902142.001	Screw DIN912-M5x20	10		
82	5971894.001	Plate	1		
83	5971805.001	Cylinder	1		
84	5905249.001	One-way Flow Control Valve	1		
85	5906020.001	Silencer	1		
86	5972217.001	Sensor	1		
87	5902014.001	Screw DIN912-M4x14	10		
88	5971901.001	Mounting Clip	1		
89	5902281.001	Screw DIN7984-M5x12	10		
90	5521159.001	Nut	1		
91	5902031.001	Screw DIN912-M4x12	10		
92	5971895.001	Base Plate	1		
93	5902398.001	Screw DIN7984-M4x25	10		
94	5905371.001	Push-in Y-Fitting	1		
95	5907427.001	Push-in T-Connector	1		
96	5905604.001	Push-in L-Fitting	1		
97	5902224.001	Screw DIN7991-M4x12	10		
98	5904546.001	Set Screw DIN913-M4x5	10		
99	5902541.001	Nut DIN439-M4	10		
100	5972848.001	Slide	1		
101	5902010.001	Screw DIN912-M3x10	10		
102	5972214.001	Cover left	1		
103	5972208.001	Cover right	1		
104	5907437.001	Belt 68MXL 019	1		
105	5972852.001	Cam wheel	1		
106	5904055.001	Pin DIN1481 1.5x8	10		
107	5972846.001	Gear 16 MXL	1		
108	5972853.001	Connecting rod	1		
109	5972856.001	Axle	1		
110	5972847.001	Shaft	1		
111	5971981.001	Axle	1		
112	5971896.001	Framing left	1		
113	5971897.001	Framing right	1		
114	5971913.001	Pivot plate	1		
115	5902411.001	Screw DIN7984-M3x8	10		
116	5907172.001	Compact cylinder	1		
117	5905255.001	Push-in L-Connector	1		
118	5972217.001	Sensor Compact Cylinder 4	1		
119		Suction pad - client specified			



11.1 Block Diagram

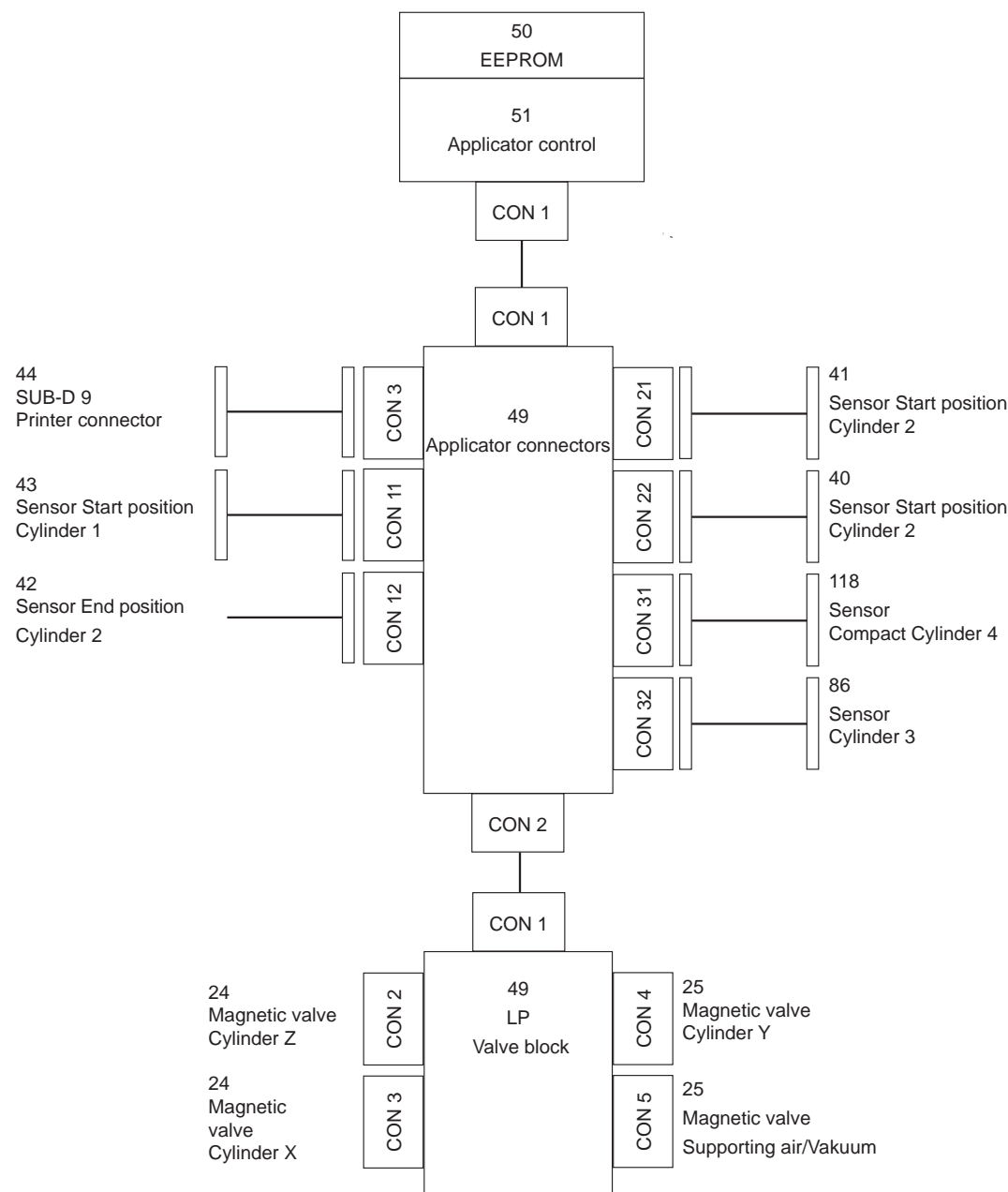


Fig. 41 Block diagram

11.2 Pneumatic Illustration Type 4712

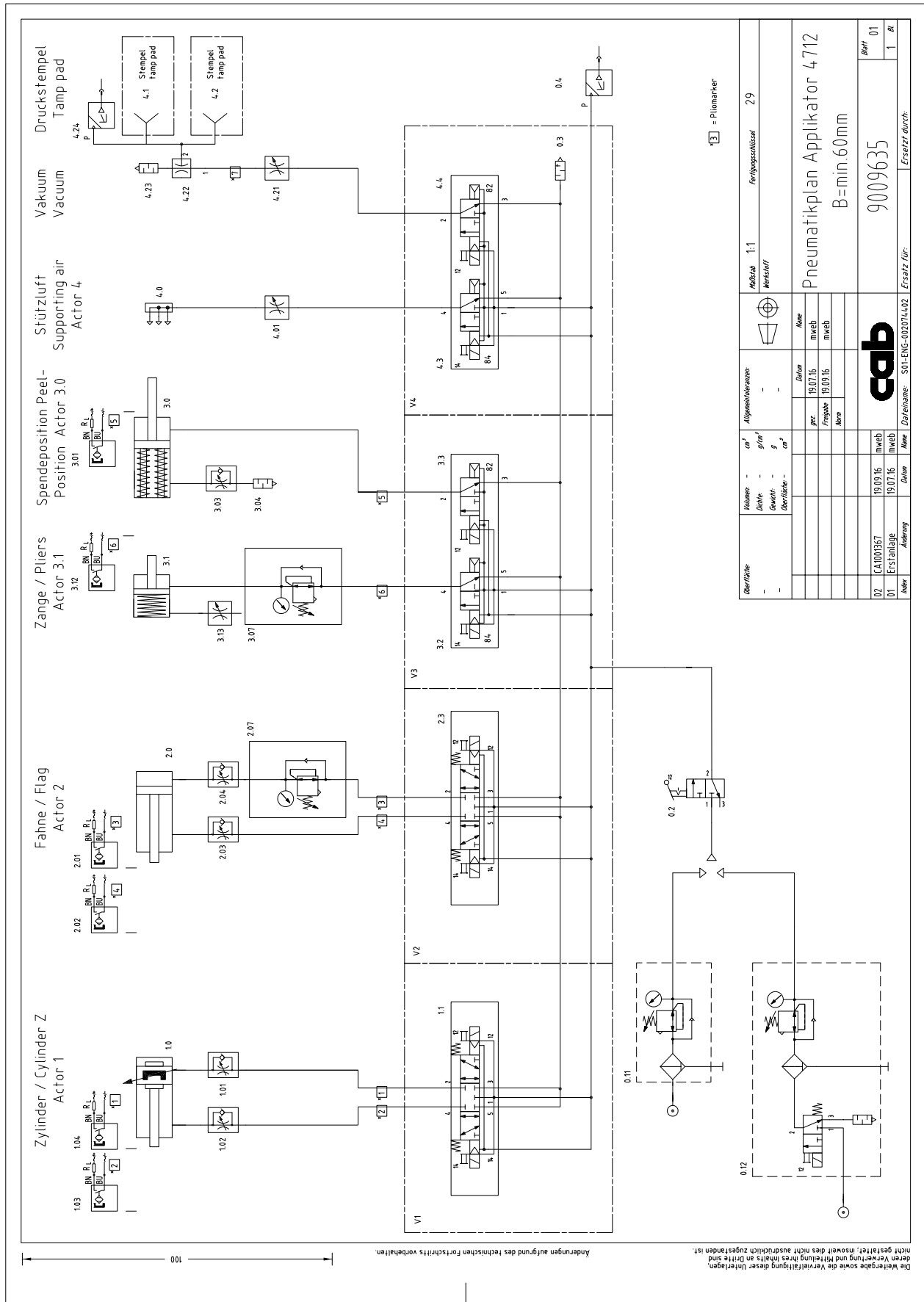


Fig. 42 Pneumatic plan type 4712

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Air pressure 18

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