

Service Manual



Flag Applicator

4712

Family	Type
Flag Applicator	4712L-300

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1	Introduction	5
1.1	Instructions.....	5
1.2	Intended Use.....	5
1.3	Safety Instructions.....	5
1.4	Safety Markings	6
1.5	Environment.....	6
2	Product Description.....	7
2.1	Important Features.....	7
2.2	Technical Data.....	7
2.3	Device Overview without Cover	8
2.4	Contents of Delivery.....	10
3	Configuration on the Printer	11
3.4.1	Method for Changing the Printer Setup.....	11
3.1	Configuration Parameters of the Applicator	12
3.2	Setting the Peel Position	13
3.3	Activation of Peel-off Mode	13
4	Test Mode.....	14
4.1	Test Mode without a Print Job.....	14
4.2	Test Mode with a Print Job	14
5	Installation	15
5.1	Standard values ex factory.....	15
5.2	Required Space	15
5.3	Tools.....	16
5.4	Mounting and Demounting the Cover	17
5.5	Cleaning	17
5.6	Mounting the Applicator.....	18
5.7	Releasing the Transportation Lock.....	19
5.8	Mounting the Blow Tube.....	19
6	Adjustments	20
6.1	Compressed Air Connection	20
6.2	Mounting the Suction Pads	21
6.3	Preparing the Pad Assembly for Adjustments	21
6.4	Adjusting the Pad.....	22
6.4.1	Moving the Pad in Y-Direction	23
6.4.2	Moving the Pad in Z-Direction	24
6.4.3	Moving the Pad in X-Direction.....	25
6.5	Alignment of the Product to the Applicator.....	26
6.6	Setting the Application Height	27
6.7	Adjusting the Vacuum	28
6.8	Adjustments to the Blowtube (Supporting Air).....	29
6.9	Adjustment on the Pressure Reduce Valve Cylinder Flag	30
6.10	Set Throttle Valves on the Cylinders	31
6.11	Set the Sensors.....	31
6.12	Set Cylinder Z / Actor 1	32
6.12.1	Set cylinder 'Z' throttle valves.....	32
6.12.2	Set cylinder 'Z' sensors.....	32
6.13	Setting of the End Position Dampener.....	33
6.14	Set Cylinder Flag / Actor 2	34
6.14.1	Set Cylinder 'flag' throttle valves.....	34
6.14.2	Set Cylinder 'flag' sensors	34
6.14.3	Removing the pliers assembly	35
6.14.4	Dismounting the pliers assembly.....	36
6.15	Set Cylinder Pliers / Actor 3.1	39
6.15.1	Set throttle valves on cylinder 'pliers'.....	39
6.15.2	Set sensor on cylinder 'pliers'	39
6.16	Set Cylinder Peel Position / Actor 3.0	40
6.16.1	Set throttle valves on cylinder 'peel position'	40
6.16.2	Set sensor on cylinder 'peel position'	40

7	Failure	41
7.1	Error Messages of the Printer	41
7.2	Error Messages of the Applicator	41
7.3	Error Pattern.....	42
8	Spare Parts	44
8.1	Retainer Assembly	44
8.2	Pneumatics Retainer Assembly	45
8.3	Electronics Retainer Assembly.....	46
8.4	Guiding Cylinder Z Assembly	47
8.5	Cylinder Z Assembly	48
8.6	Pliers Assembly.....	49
9	Drawings	50
9.1	Block diagram	50
9.2	Pneumatic drawing Type 4712.....	51
10	Test Report	52
11	Index.....	53

1 Introduction

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 manual.
- The device is designed to use on a cab printer of the HERMES Q series. 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 manual.



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!

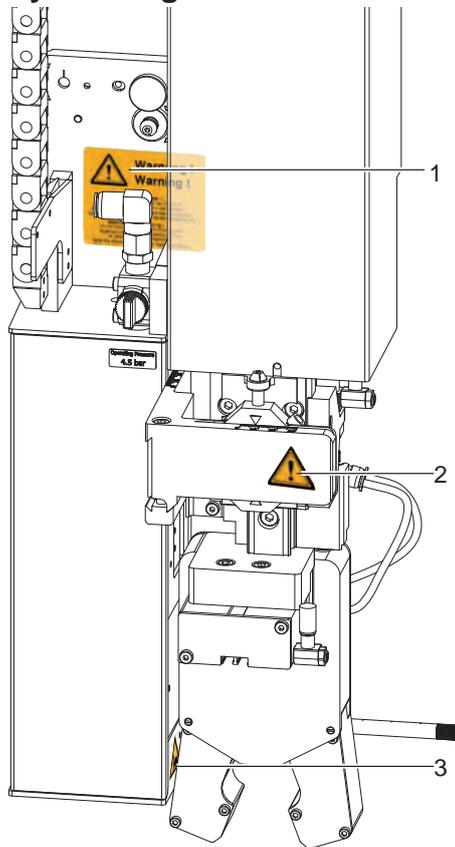
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

- 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 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



1:  Risk of injuries by moving parts!

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

3:  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.
- For operation within a system the I/O interface of the printer can be used.

2.2 Technical Data

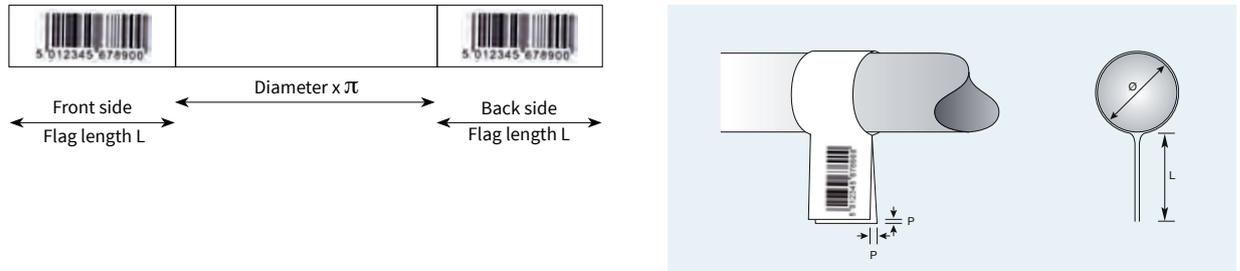


Fig. 2 Applicator parameters

Label transfer method		Form-pad
Label width in mm		60 -100
Label height in mm		10 - 50
Diameter in mm		3 - 16
Compressed air pressure		0,45 MPa (4,5 bar)
Sound pressure level		unter 74 dB(A)
Product during labeling	fixed	■
	in motion	-
Labeling onto the product	from top	■
	from below	■
	vertically rotated	0 - 180° clockwise; others on request
	from the side	■
Product height	fixed	■
	variable	-
Product distance to lower edge at cylinder stroke	min. mm	70
	300 mm up to mm	260
Immersion depth tongs	mm	55
Offset P	up to mm	1,0 ²⁾
Cycle time about frequency/min. ¹⁾		15

¹⁾ Determined at print speed 100 mm/s.

²⁾ Depending on the label quality.

Table 1 Technical data

2.3 Device Overview without Cover

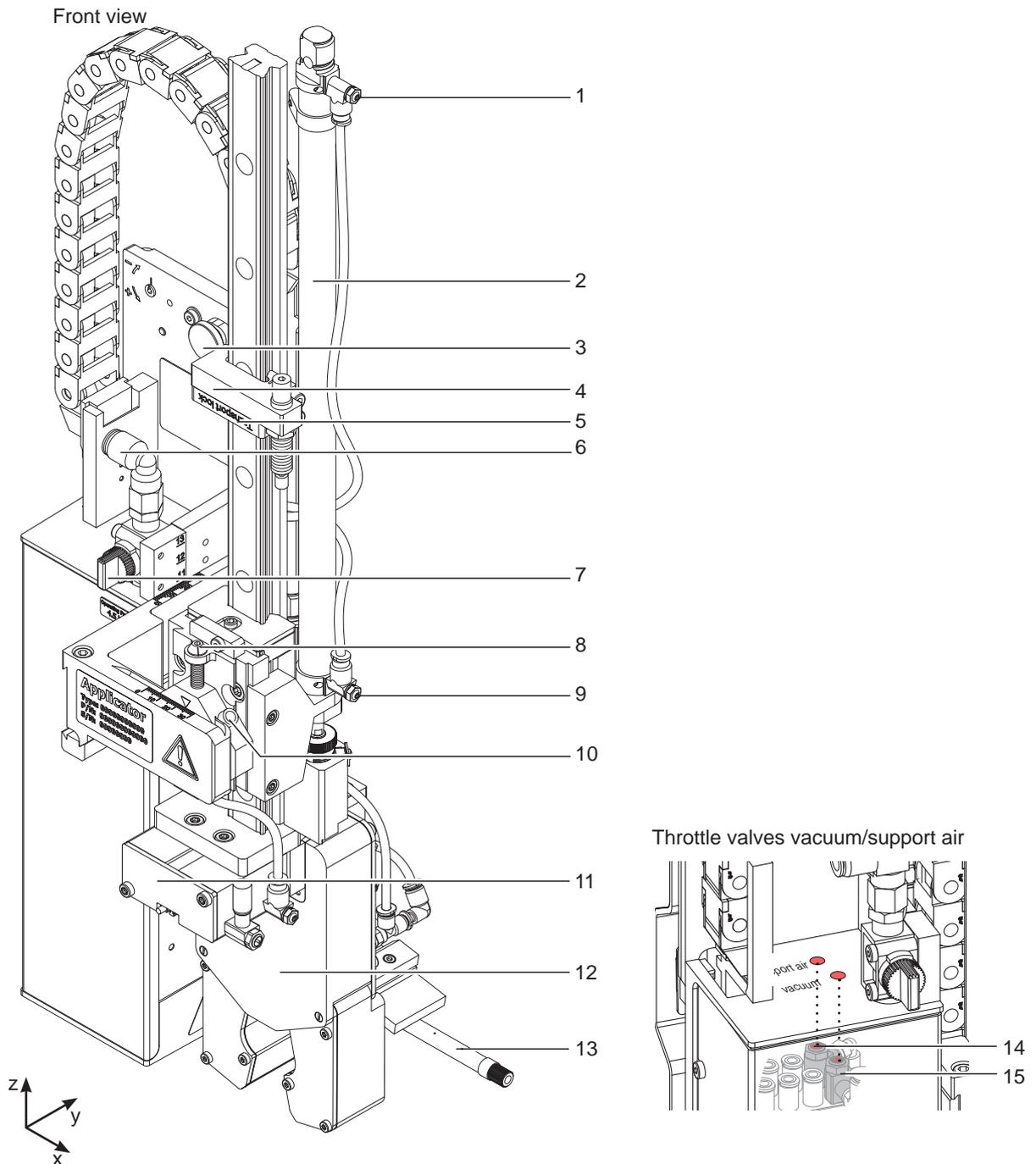


Fig. 3 Overview - Front View

- | | |
|---|--------------------------------------|
| 1 Throttle valve cylinder Z- movement inside | 10 Screw to fix the pad position X/Z |
| 2 Cylinder 'Z' | 11 Cylinder 'Peel position' |
| 3 Knurled screw for attaching the applicator on the printer | 12 Pad assembly |
| 4 Stopper with Shock Absorber | 13 Blowtube for Support Air |
| 5 Transport Lock | 14 Support air throttle valve |
| 6 Compressed air connector | 15 Vacuum throttle valve |
| 7 Shutoff valve | |
| 8 Setting screw for vertical adjustment cylinder assembly | |
| 9 Throttle valve cylinder Z- movement outside | |

Back view

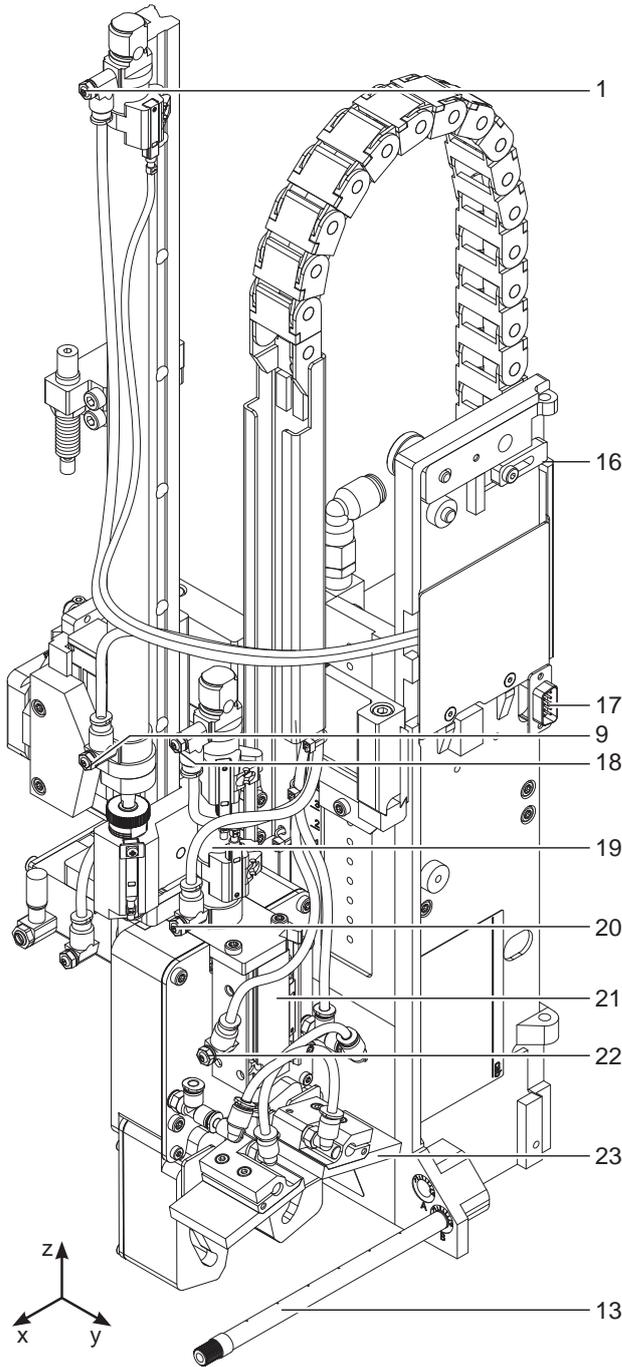


Fig. 4 Overview - Rear View

- 1 Throttle valve cylinder Z- movement inside
- 9 Throttle valve cylinder Z- movement outside
- 13 Blowtube for Support Air
- 16 Locking for hinges
- 17 Interface to the printer SUB-D9
- 18 Throttle valve cylinder 'flag'- movement inside
- 19 Cylinder 'flag'
- 20 Throttle valve cylinder 'flag'- movement outside
- 21 cylinder 'pliers'
- 22 Throttle valve cylinder 'pliers'
- 23 Pad - customized

Valves and control unit (without tubes)

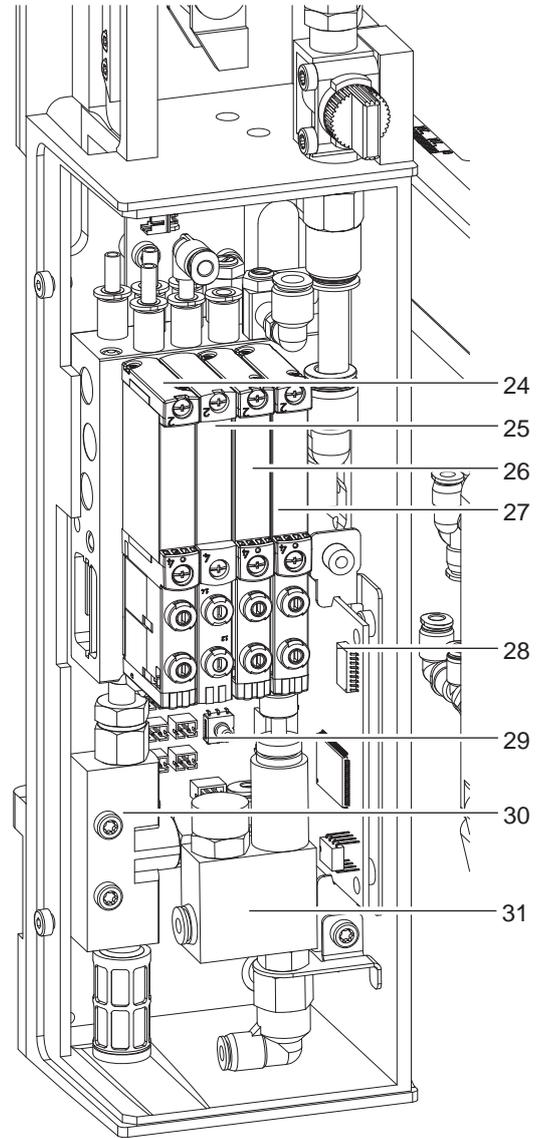
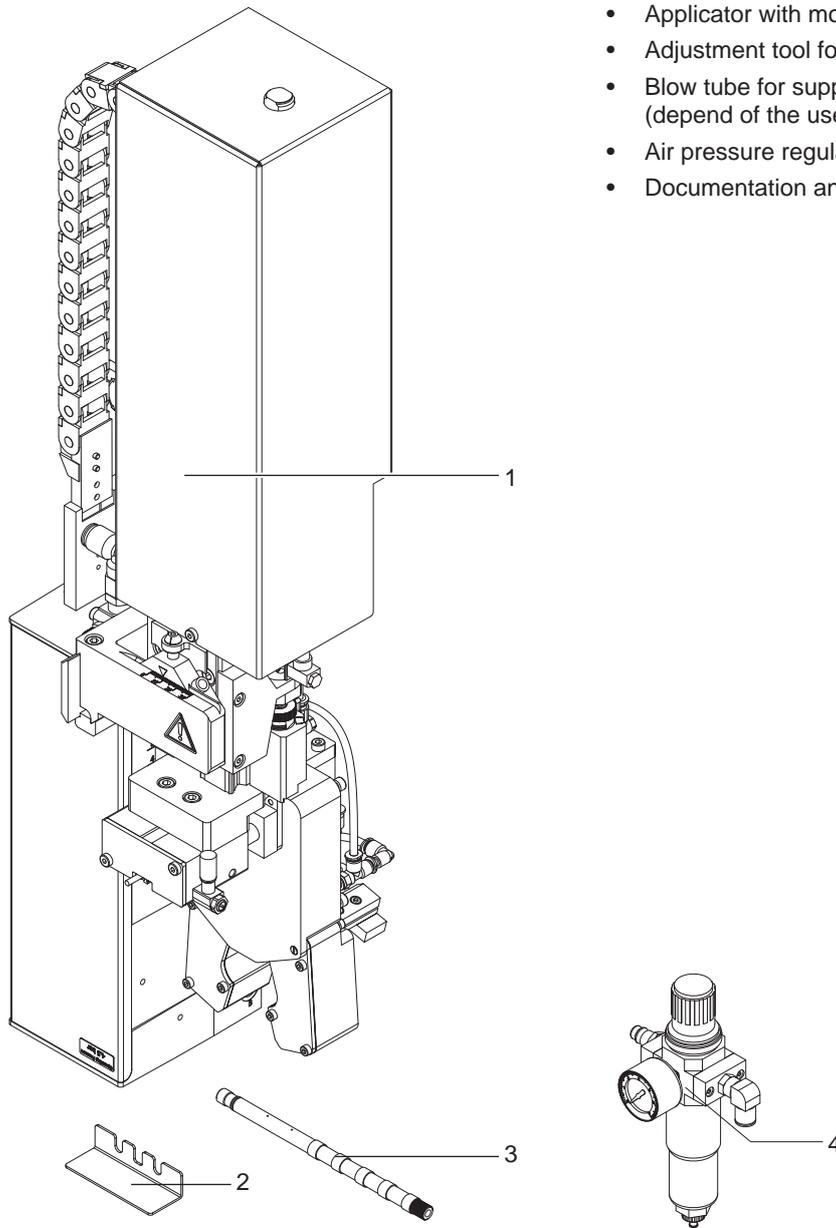


Fig. 5 Overview - Control System

- 24 Magnetic Valve Cylinder 'Z'
- 25 Magnetic Valve Cylinder 'flag'
- 26 Magnetic Valve Cylinder 'peel position / Cylinder 'pliers'
- 27 Magnetic Valve Vacuum and Support Air
- 28 PCB Applicator Control
- 29 PCB Applicator Interfaces
- 30 Vacuum Generator
- 31 Pressure Reduce Valve Cylinder 'flag'

2.4 Contents of Delivery



- Applicator with mounted pad assembly (1)
- Adjustment tool for the pads (2)
- Blow tube for supporting air (3)
(depend of the used printer)
- Air pressure regulation unit (4)
- Documentation and test report

Fig. 6 Content of Delivery



Note!

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



Attention!

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

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

The method of use of the applicator can be 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.

The flag applicator will activate in the mode of operation *Blow* pursued around all necessary parameters and to be able to modify.

The application modes can be further modified by delay settings.



Note!

For detailed information about the printer configurations and functions of the buttons

▷ **Configuration manual** respectively ▷ **Operator's Manual of the printer**

3.4.1 Method for Changing the Printer Setup

1. Press **menu** button.
2. Menu



Setup>



Labelling >

3. Select and adjust the needed parameters.
4. Return to the "Ready" mode.

3.1 Configuration Parameters of the Applicator

► Start menu.

► Select  Setup >  Labelling.

Parameter	Meaning	Default
 <i>Transfer mode</i>	Setting the operation mode <i>Blow on</i>	<i>Blow on</i>
 <i>Cycle sequence</i>	Setting the application mode <i>Print-Apply</i> : An external start signal releases the print of a label and following the application of the label. After a cycle is complete, the pad without label waits in the start position. <i>Apply-Print</i> : An extra signal starts the print of the first label and the transfer of the label to the pad. The external start signal releases the application of the label and following the print and transfer of the next label. After a cycle is complete, the pad with a label is in the waiting position.	<i>Print-Apply</i>
 <i>Waiting position</i>	Only for <i>mode = Blow on</i> and <i>Cycle sequence = Apply-Print</i> <i>up</i> : Pad waits in the start position for the start signal <i>down</i> : Pad waits in the labelling position for the start signal	<i>up</i>
 <i>Blow time</i>	Controls how long the pads with the suction plates are pressed together.	<i>200 ms</i>
 <i>Support delay on</i>	Setting the switch-on delay (max. 2,5 s) for the supporting air between print start and switching on the supporting air. The delay prevents swirling at the front of the label and, consequently, avoids faults when the label is being picked up from the printer.	<i>0 ms</i>
 <i>Support delay off</i>	Setting the switch-off delay (max. 2,5 s) for the supporting air between the end of label forwarding and switching on the supporting air. The delay can be useful to separate the rear edge of the label from the carrier to avoid errors and to improve the accuracy of label positioning	<i>270 ms</i>
 <i>Start delay</i>	Delay (max. 2,5 s) between start signal and the start of an labelling cycle. Allows e.g. the use of product sensors at conveyors.	<i>0 ms</i>
 <i>Lock time</i>	Controls the time from the start of flag formation until the pliers open	<i>250 ms</i>
 <i>Vacuum delay</i>	<i>On</i> - The vacuum will be switched on after the label feed is completed. <i>Off</i> - The vacuum will be switched on when the label feed starts.	<i>Off</i>
 <i>Vacuum control</i>	Setting the label transfer check from printer to pad and from pad to product by the vacuum sensor	<i>On</i>
 <i>Label hand-over</i>	<i>Passive</i> - The pad waits in front of the dispense edge for the label. <i>Active</i> - The pad moves to the dispense edge and takes the label.	<i>Passive</i>
 <i>Cleaning blow</i>	Activation of a short blow impulse after the application of the label to clean the suction channels.	<i>On</i>
 <i>Peel-off position</i>	Shift the position of the dispensed label relative to the dispensing edge. The setting can also be adjusted by the software. The settings of configuration and software are added together.	<i>0.0 mm</i>

Table 2 Parameters of the Setup > Labelling menu

3.2 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  button and Enter button . ▷ „4.1 Test Mode without a Print Job“
- ▶ In the submenu  Labelling >  Peel-off position adjust the "Peel-off position" in such a way, that the blank labels are peeled-off completely from the liner
▷ „3 Configuration on the Printer“

Peel-off offset in the software

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

3.3 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.

4.1 Test Mode without a Print Job

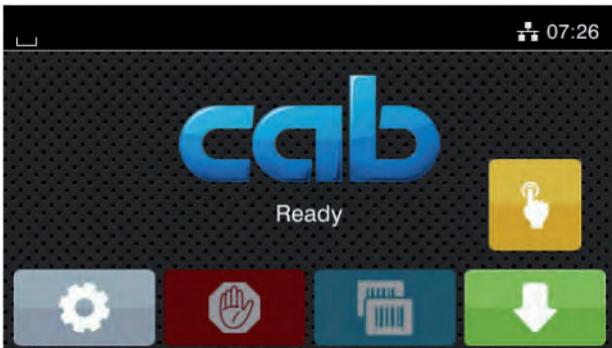


Fig. 7 Display

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

- ▶ Push button . This causes the feed of an empty label. Simultaneously the vacuum of the pad as well as the supporting air are activated. As soon as the label has securely arrived at the pad the supporting air is switched off.
- ▶ Push button . The cylinders are controlled so that the pliers move into the labeling position. The pliers are closed and formed on the product a label flag. After the transfer of the label, the cylinders are reversed, so that the pliers opens and moves back to the normal position



Note!

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

4.2 Test Mode with a Print Job

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

- ▶ Send a print job.

The test mode is executed in steps. Every step will start by using the  button.

A label is printed. The vacuum of the suction pads as well as the supporting air (blow tube) are switched on. After the label has been picked up by the pads, the supporting air is switched off. The pad assembly move into the labeling position and will closed.

- ▶ The pliers are closed and formed on the product a label flag. Set it by the parameter *Lock Time*.
- ▶ After the transfer of the label, the cylinders are reversed, so that the pliers opens. By the parameter *Cleaning blow* it's possible to close and opens the pliers again.
- ▶ The pad assembly moves back to the normal 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.



Note!

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

5.1 Standard values ex factory

**Note!**

The applicator is set up in a standard configuration by the factory. These values guarantee a reliable operation.

**Note!**

In the case of a customer specific setup with special material the settings can deviate from the standard values.

In this case the standard values in the setup protocol are as follows.

The factory default settings are:

- Connected to a cab HERMES Q printer, vertical
- Pressure value of the compressed air: 0,45 MPa (4,5 bar)
- Vacuum -0,06 MPa (-0,6 bar)
- Support Air 0,20 MPa (2,0 bar)
- Pressure value on the exit pressure reduce valve pad movement 0,20 MPa (2,0 bar)

5.2 Required Space

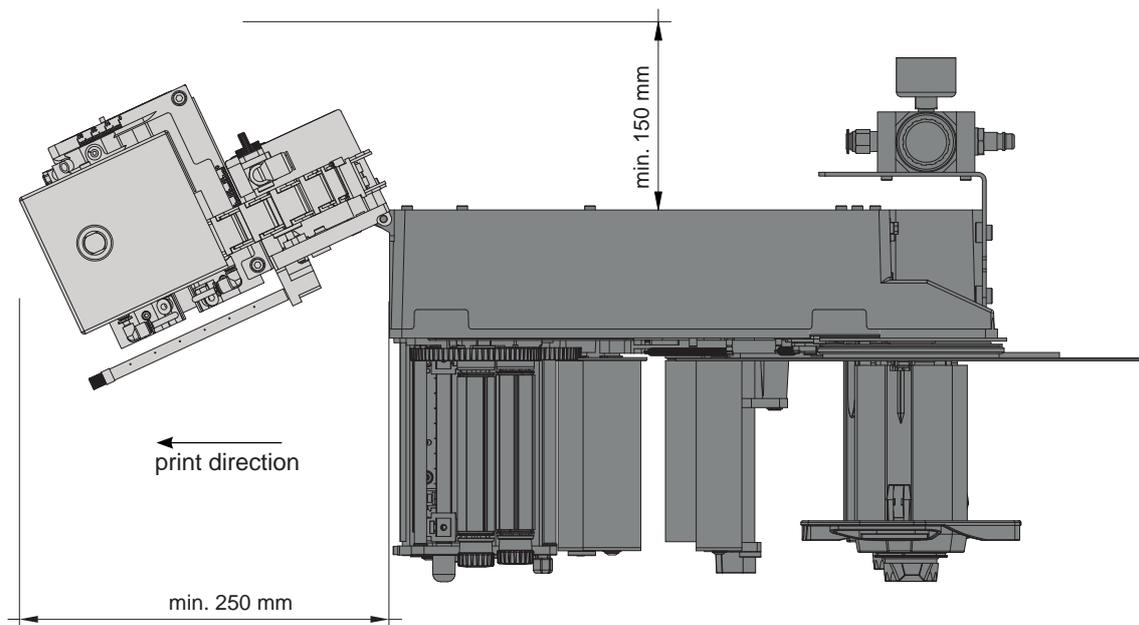


Fig. 8 Disengaging or pivoting the applicator

5.3 Tools

Screwdriver with parallel blade	2,5		To adjust the throttle valves and product sensor
Thickness feeler gauge	0,05		Setting the connecting rod connection in the pliers assembly
Hexagon key L-wrench	0,8		To adjust the sensors (in contents of delivery)
	2,5		For matched norm parts (in contents of delivery)
	4		Pad adjustments Changing pad
Flat-round nose	straight		To mount/dismount tubes
	angled		
Open spanner	SW 5,5 90°		To change the pliers aperture
	SW 8		To change the throttle valves
	SW 13		Setting the spring power on the adapter bolt
	SW20		Changing the cylinder
Adjustment tool for the pads	cab Art.-Nr.: 5972857		Mounting the pads
Manometer	± 7 bar		Pressure air measurement

Table 3 Tools

5.4 Mounting and Demounting the Cover

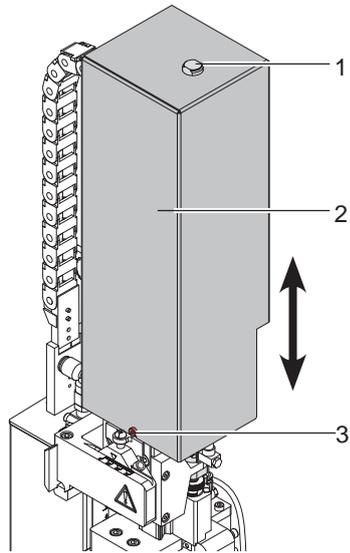
To initialize the applicator or perform adjustments it is required to remove the cover. Once content with the changes reattach the cover.



Warning!

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

Only in the case of servicing, adjustments 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 cylinder.
4. Guide cylinder (1) through the hole in the cover (2).
5. Tighten the screw (3) to fix the cover (2) in place.

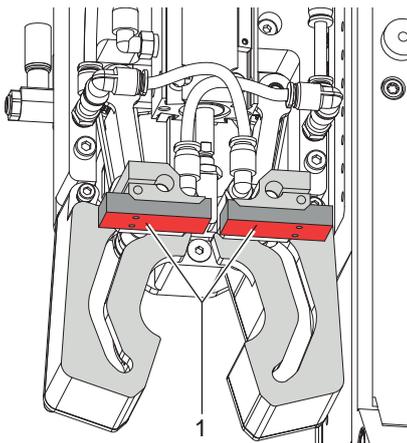
Fig. 9 Cover

5.5 Cleaning



Attention!

► Never use solvent or 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 the most dirt is deposited here.

Fig. 10 Cleaning of the pad

5.6 Mounting the Applicator

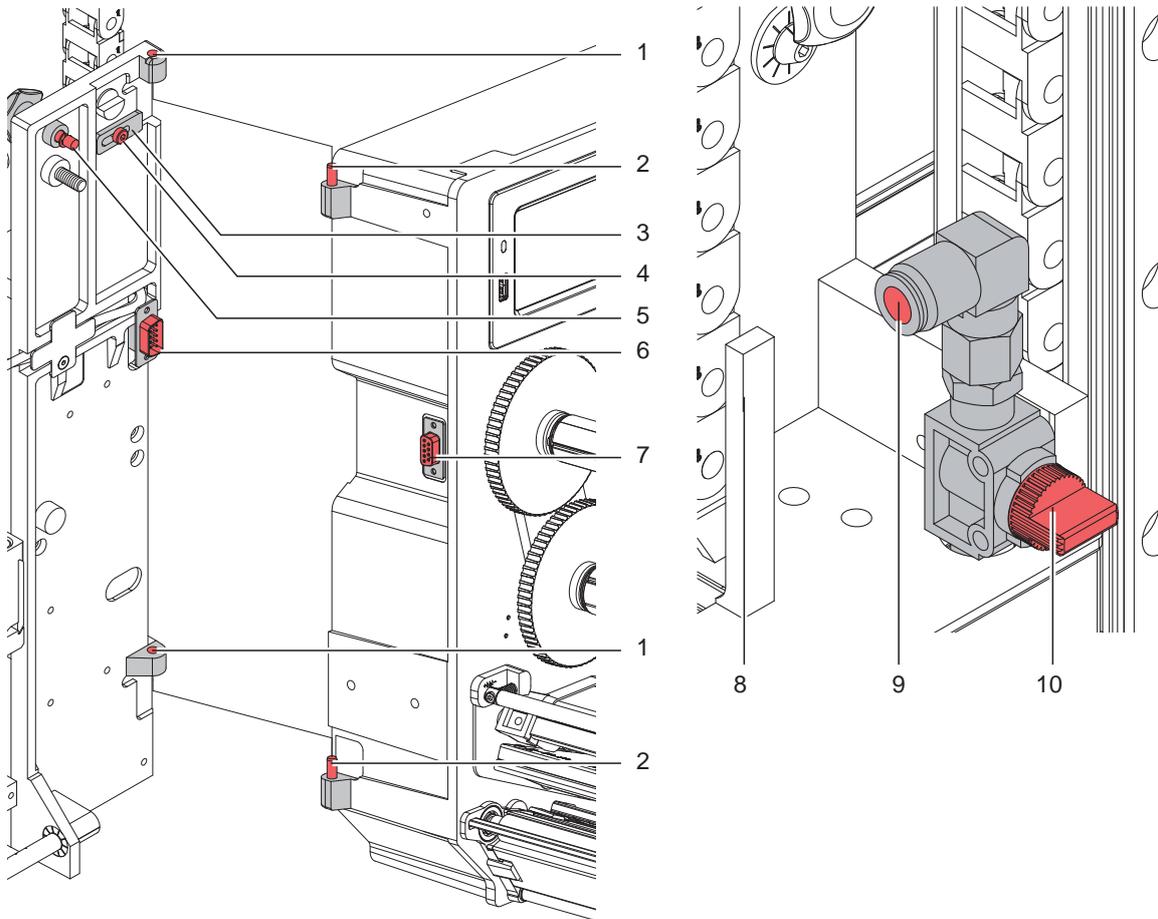


Fig. 11 Mounting applicator on printer



Attention!

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

Mount the applicator

1. Hang the applicator with the female part of hinges (1) at the printer mounted hinges parts (2).
2. Connect SUB-D 15 male connector (6) to the female connector (7) of the printer.
3. To prevent the applicator from slipping out of the hinges loosen screw (4) and move the locking plate (3) under the hinges and tighten screw (4).
4. Swing the applicator to the printer and tighten the thumbscrew (5).
5. Keep the external compressed air supply closed and close the shut-off valve (10) on the applicator ▷ see illustration
6. Insert external compressed air supply (8) into the plug connector (9) on the shut-off valve (10).
7. Switch on compressed air and open shut-off valve (10) by turning 90 °.

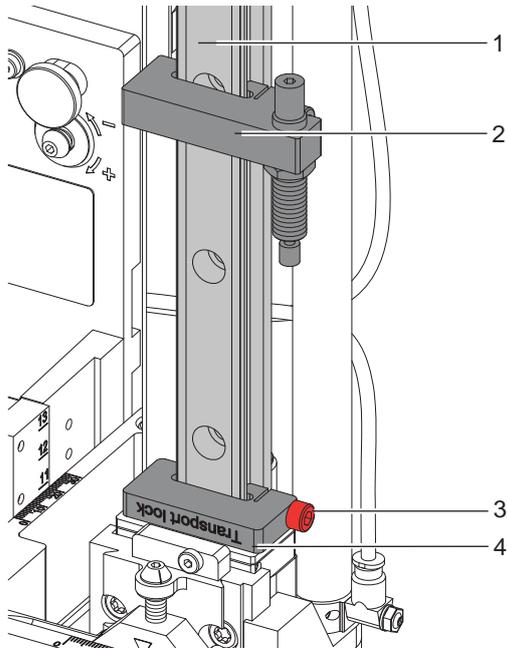
For cleaning the applicator and printer it's sometime necessary to turn away or/and dismount the applicator. Don't change the adjustments of setting screws, throttle valves or other.

Turn away/Dismount the applicator

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

5.7 Releasing the Transportation Lock

Before the applicators are delivered, a transportation lock (4) is mounted on the rod (1). For the labeling operation, the transport lock (4) is pushed onto the stopper (2). The stopper (2) brakes the lifting movement and triggers the flag formation.



Releasing the transportation lock

1. Loosen the screw (3) of the transport lock (2).
2. Move the transport lock (4) on the rod (1) to the stopper (2).
1. Tighten the screw (3) of the transport lock (2) to fix the position.

If the position of the stopper (2) is changed to change the application height, the transport lock (4) must also be moved.

▷ „6.6 Setting the Application Height“

Fig. 12 Transportation Lock

5.8 Mounting the Blow Tube

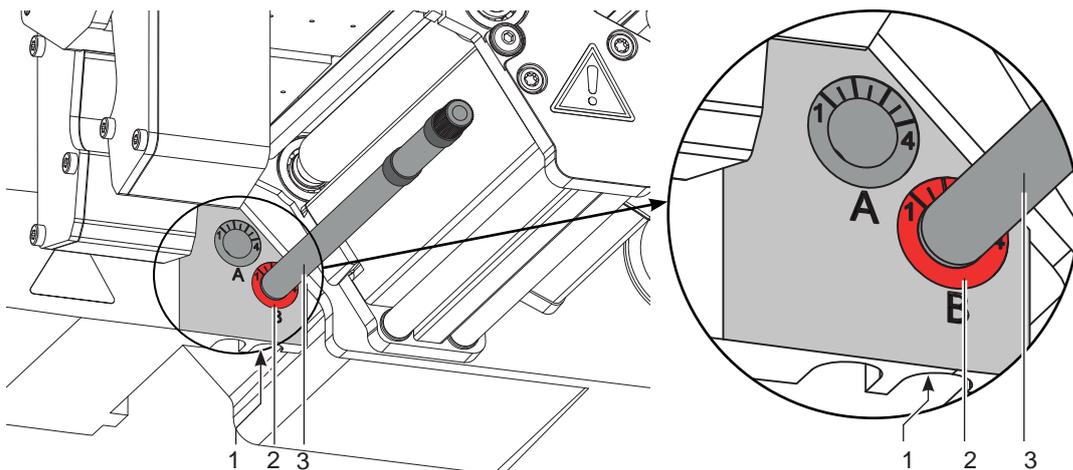


Fig. 13 Mounting the blow tube

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.
- ▷ „6.8 Adjustments to the Blowtube (Supporting Air)“.

6.1 Compressed Air Connection



Attention!

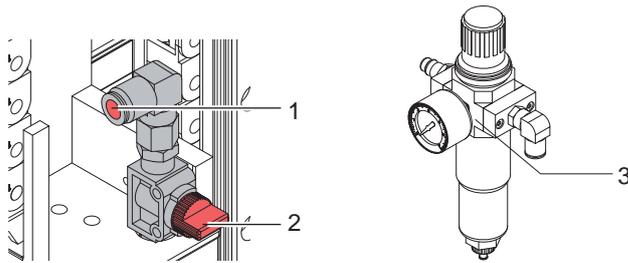
Adjustments and functionality control were done with a compressed air value of 4.5 bar. The applicator's operating range is between 4.0 and 6.0 bar.



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 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.

A pressure regulation unit (3) must be connected upstream to stabilize the compressed air supply.

Fig. 14 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 continue 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.

6.2 Mounting the Suction Pads

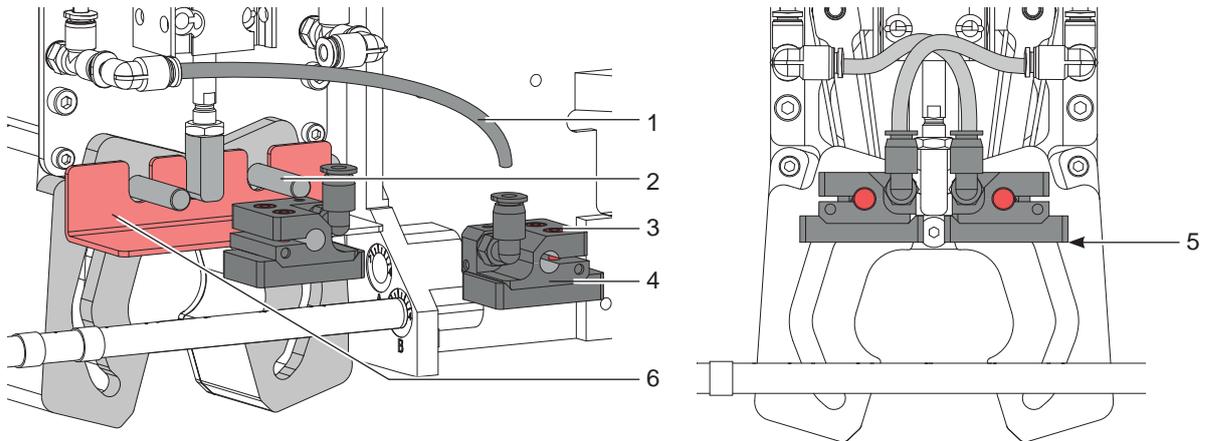


Fig. 15 Mounting pads

1. Loosen screws (3).
2. Use the adjusting tool (6) included (cab serial No.: 5972857) as shown in the picture to adjust the suction plates.
3. Slide each suction plate (4) over the corresponding driving pin (2) to the adjusting tool (6).
Mount the suction plates (4) so that the L connectors (hose connections) are accessible from the front.
4. Tighten screws (3).
5. Remove adjustment tool (6) downwards.
The lower surfaces must now be aligned at an angle of 0° and at a height to each other.

6.3 Preparing the Pad Assembly for Adjustments

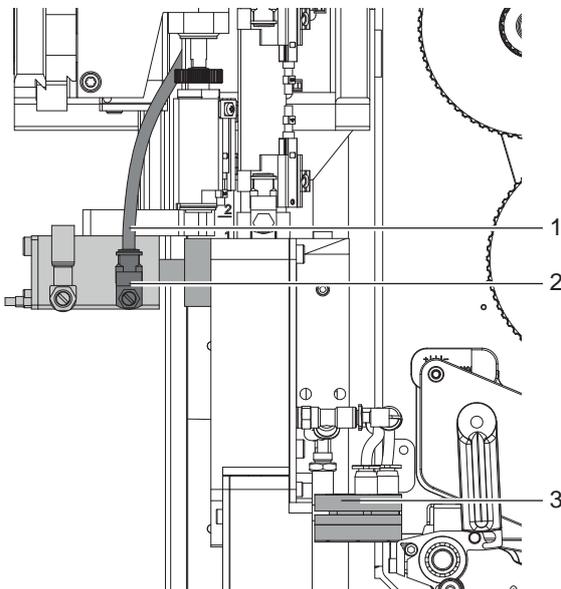


Fig. 16 Preparing the pad assembly for adjustments

1. Pull off the tube (1) from the L-connector (2) on the horizontal cylinder.
2. Align the suction pads (3) to the dispense edge of the printer ▷ „6.4 Adjusting the Pad“.
3. Connect the tube (1) to the L-connector (2).

6.4 Adjusting the Pad

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

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 pad.

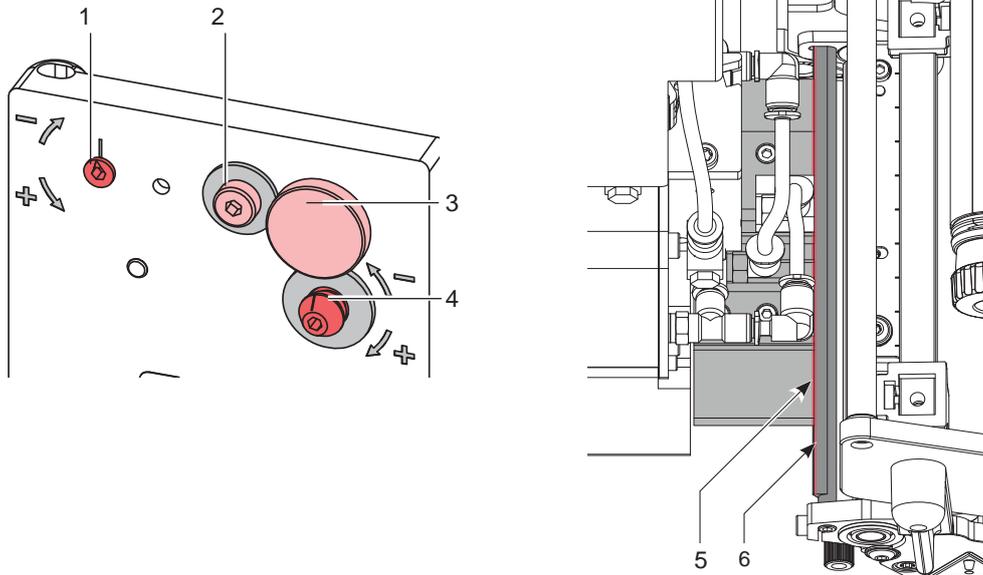
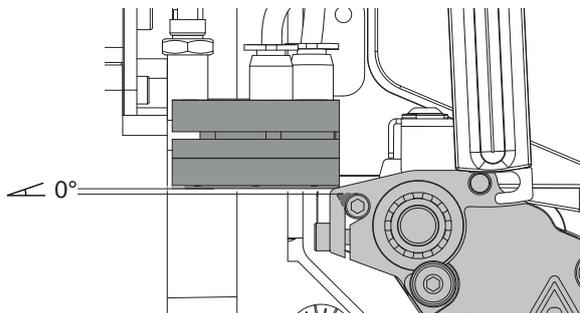


Fig. 17 Aligning the pad to the dispensing plate

1. Loosen the knurled screw (3) and the set screw (4).
2. Screw in the knurled screw (3) until the pad edges (5) are aligned parallel to the dispensing edge (6) of the printer.
3. Tighten the set screw (4) until it touches the printer.

Aligning the pad at an angle to the dispensing plate



4. If the angle between the pad surface and the dispensing edge - support surface is not 0° loosen screw (2).
5. Correct the angle of attack by turning the eccentric (1).
6. Tighten screw (2).

6.4.1 Moving the Pad in Y-Direction

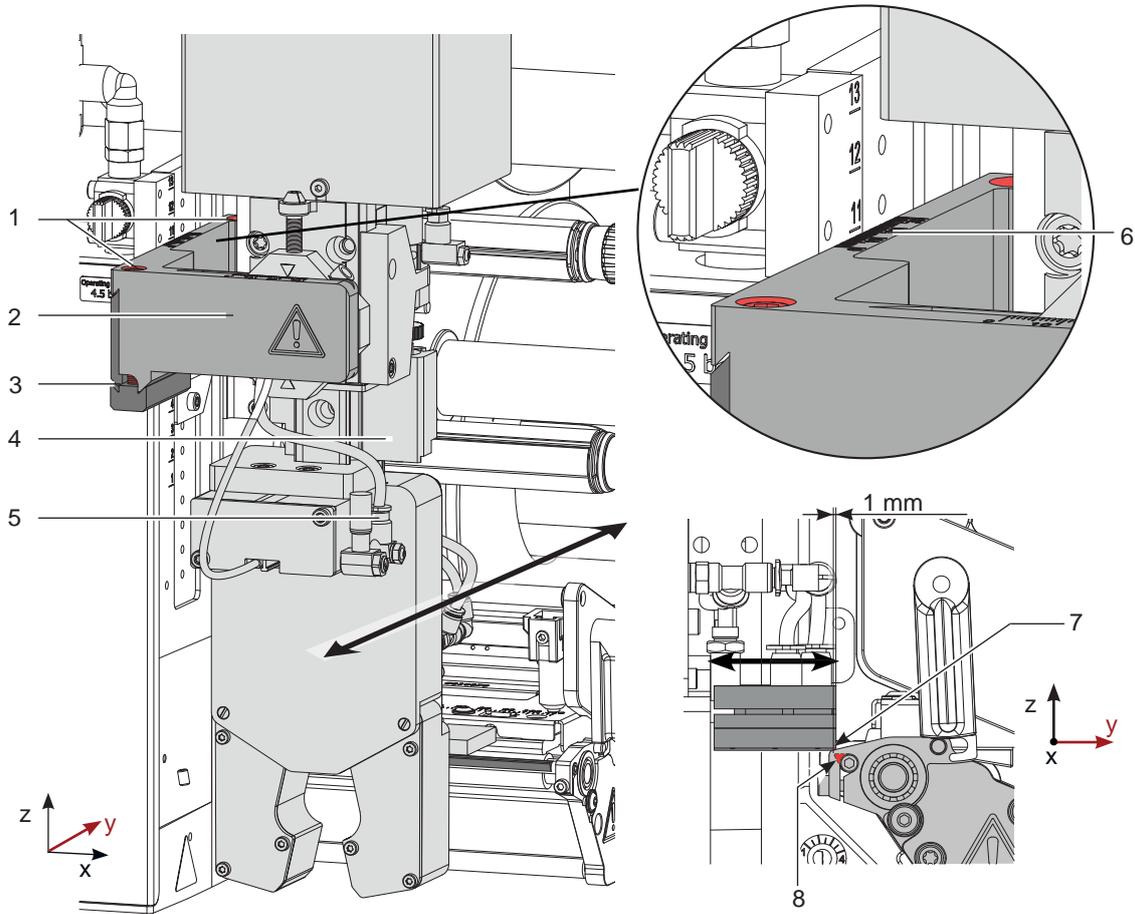


Fig. 18 Displacement in the Y direction

Displacement in the Y direction (printing direction)

1. Switch off the compressed air and pull the tube out of the throttle valve (5). The cylinder extends by spring force and is in the label transfer position.
2. Loosen screws (1) on the cross beam (2).
3. Move cylinder assembly (4) with the pad and crossbeam (2) along the guiding rail (3) that the distance from the edge of the pad (7) to the edge of the dispensing plate (8) of the printer is approximately 1 mm.
Orientation: Graduation (6)
4. Tighten screws (1).
5. Put the tube back into the throttle valve (5) and switch on the compressed air.

6.4.2 Moving the Pad in Z-Direction

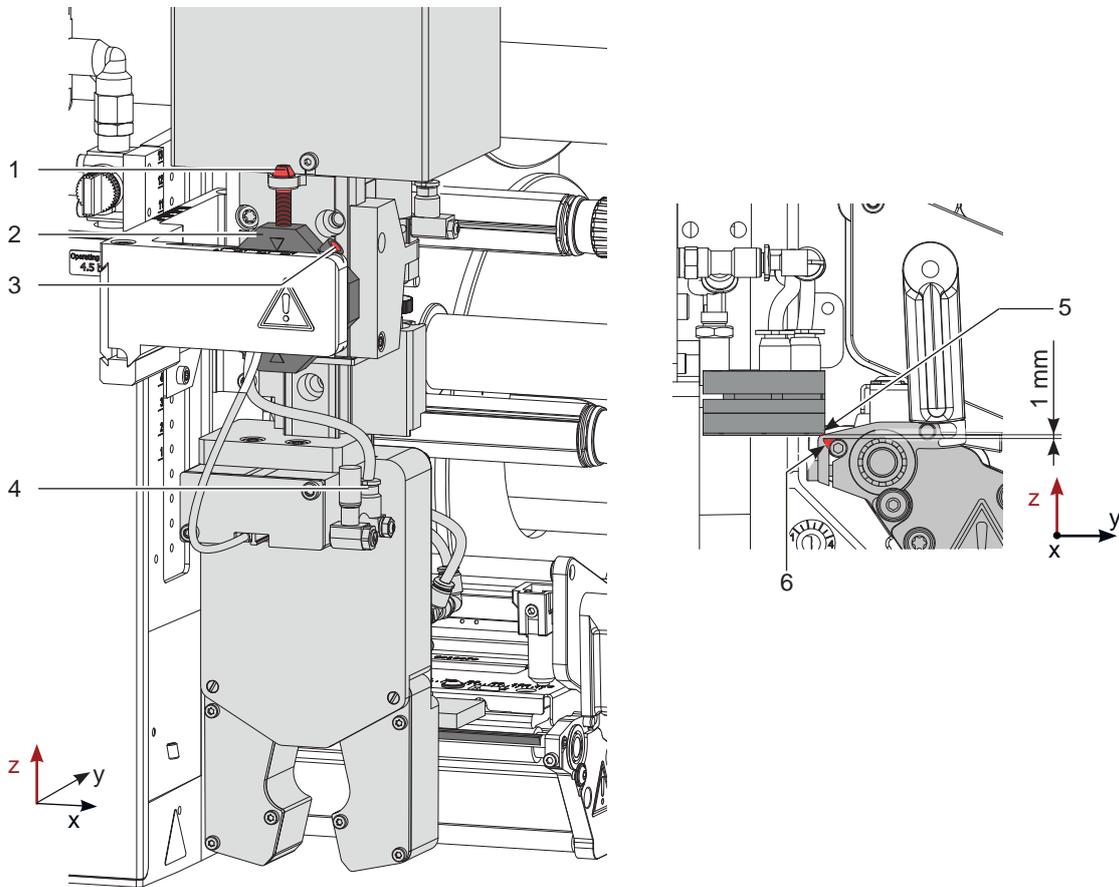


Fig. 19 Displacement in the Z direction

Displacement in the Z direction (Height)

1. Switch off the compressed air and pull the tube out of the throttle valve (4). The cylinder extends by spring force and is in the label transfer position.
1. Loosen screw (3) on the binder (2).
2. Turn the setting screw (1) 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).
4. Put the tube back into the throttle valve (4) and switch on the compressed air.

6.4.3 Moving the Pad in X-Direction

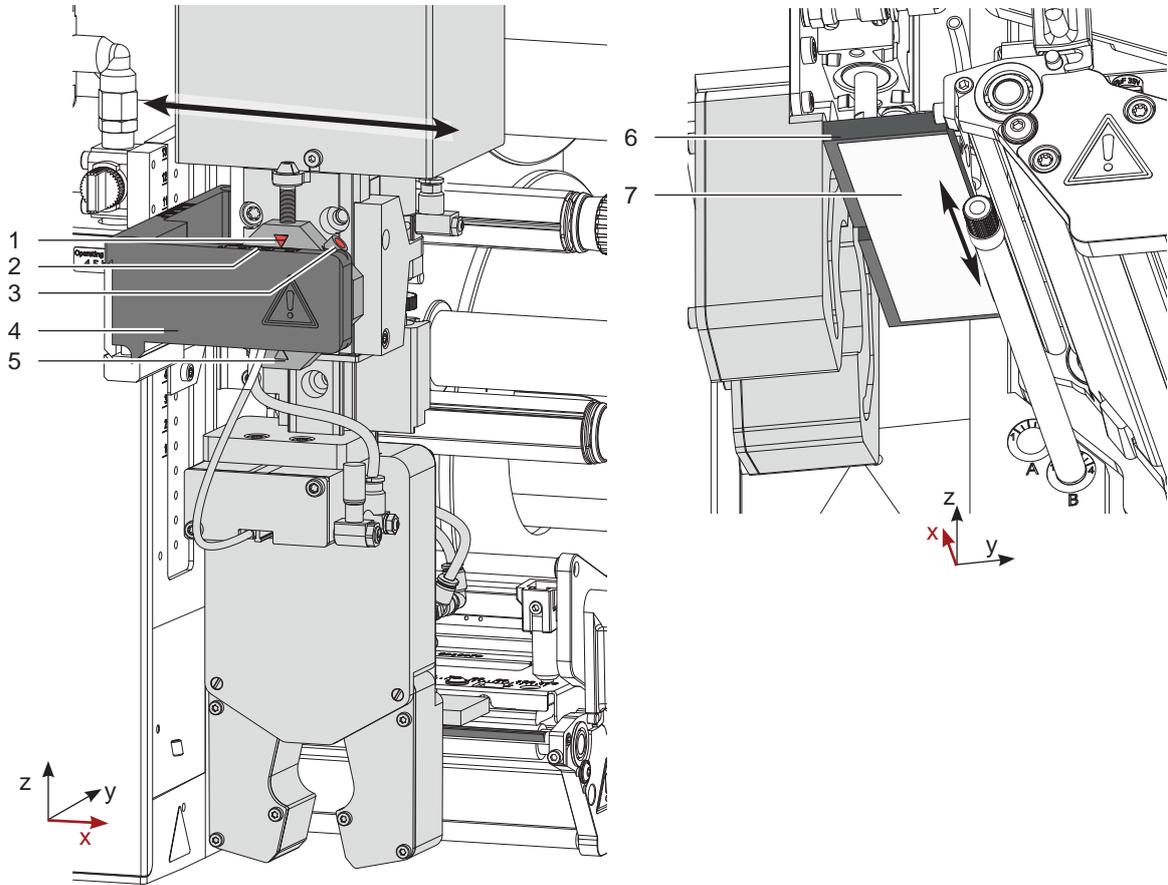


Fig. 20 Displacement in the Y direction

Displacement in the X direction (Side)

1. Loosen screw (3) on the binder (5).
2. Move cylinder assembly with the pad along the crossbeam (4) so that the dispensed label (7) is aligned centrally to the pad (6). As reference use the provided graduation/ruler on the crossbeam. Orientation: Graduation (2) and Marking (1)
3. Tighten screw (3).

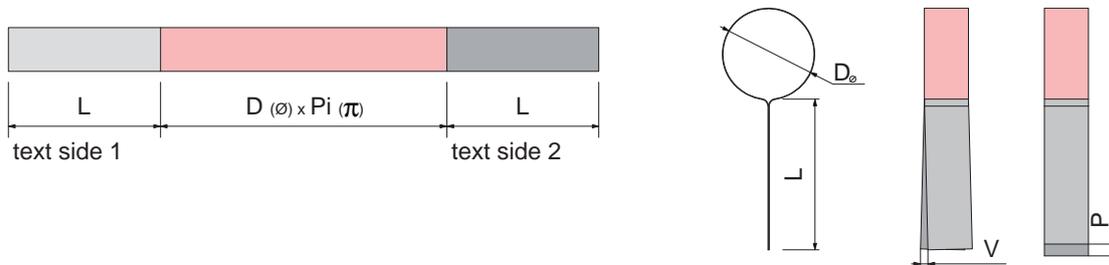


Fig. 21 Label parameter

A misalignment of the pad to the printer can be recognized by the increase in the length offset P and / or the bevel V (side offset)

- With bevel V (side offset) the parallelism of the pad to the dispensing edge of the printer must be set.
- With length offset P, the position of the punch in the X direction must be set.

6.5 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.

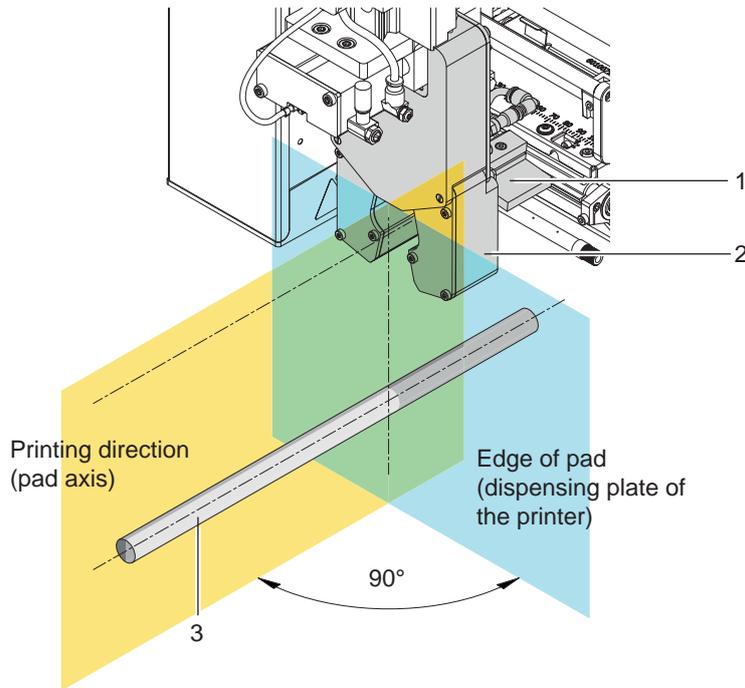


Fig. 22 Alignment of the product to the pad

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

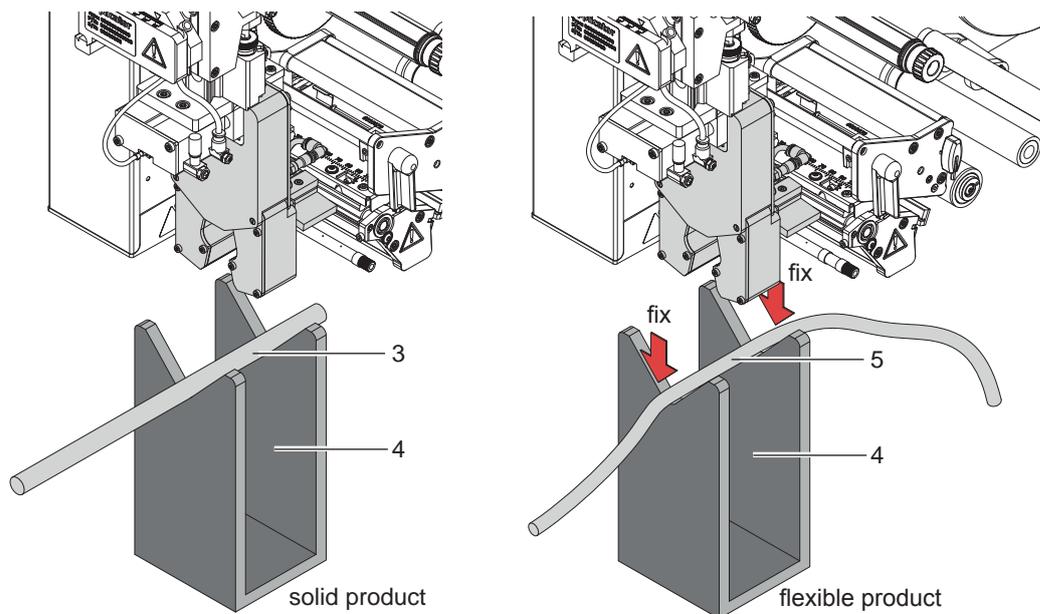


Fig. 23 Examples of simple product uptake

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

6.6 Setting the Application Height

- ▶ Dismount the cover ▷ „5.4 Mounting and Demounting the Cover“
- ▶ Place the product in the product-holder
- ▶ Switch off the compressed air.
- ▶ Pull the tubes out of the main cylinder Z-direction to be able to move the pliers manually.
- ▶ Move the pliers to the product manually.
- ▶ The upper edge (2) of the pad assembly should be located directly under the lower edge of the product (1). Design the appropriate bracket. The center of the product (1) must be perpendicular to the closing plane of the two pads (2).
- ▶ Loosen the screws (8) at the stopper (4) and screws (9) at the transport lock (3). Pull the Stopper (5) and the transport lock (3) all the way down to the slide until the shock absorber is fully pushed in.
- ▶ Tighten screw (8) at the stopper (4) and screw (9) at the transport lock (3).
- ▶ Fine adjustment by turning the shock absorber (6).

**Attention!**

The transport lock and stop must not hit the carriage (7) directly.
The carriage (7) may only touch the shock absorber (6).

- ▶ Put the tube back into the main cylinder Z-direction.
- ▶ Switch on the compressed air.
- ▶ Mount the cover ▷ „5.4 Mounting and Demounting the Cover“

**Attention!**

The stroke of the main cylinder is braked by the stopper with the shock absorber (5), not by the product!

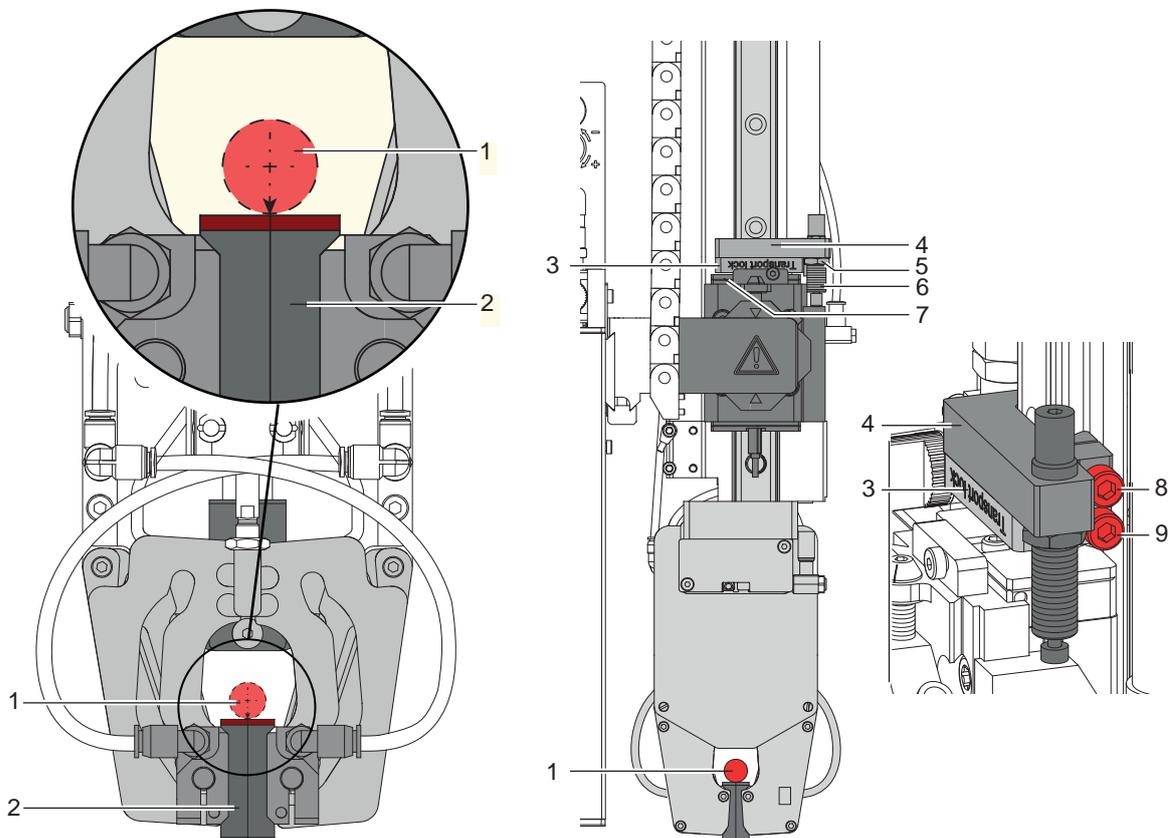


Fig. 24 Adjust the application height

6.7 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 strong enough 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 prevent the label from being applied to the product. If the vacuum is too strong the label will not be released by the pad.

If the vacuum is set too high the advancement of the label can be stopped before it reached the pad properly.

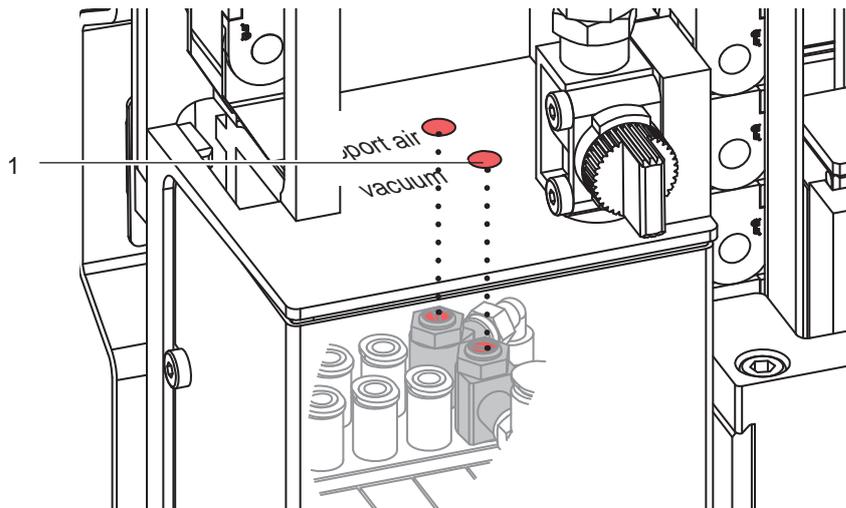
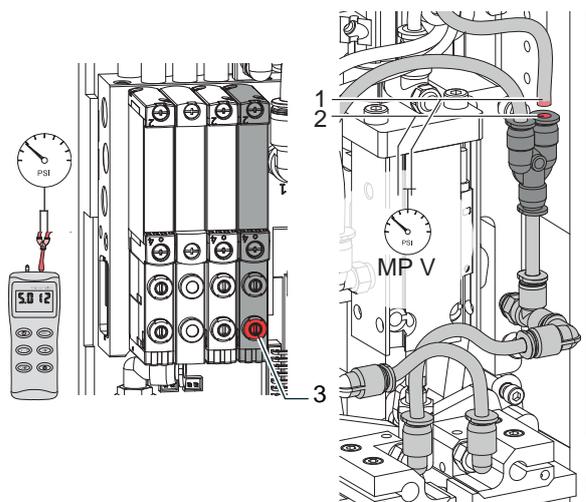


Fig. 25 Vacuum throttle valve

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

Measuring point (MP V) of the vacuum



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

MP V: Vacuum target value -0,6 bar

1. Demount cover.
2. Cover both 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. 26 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.

6.8 Adjustments to the Blowtube (Supporting Air)

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

The default air pressure value is set to 2 bar.



Note!

When changing the label width (2", 4" or 6") the respective blowtube is to be used. With the correct blowtube the quantity of blow holes used and the air pressure and blowtube alignment should be adjusted respectively.

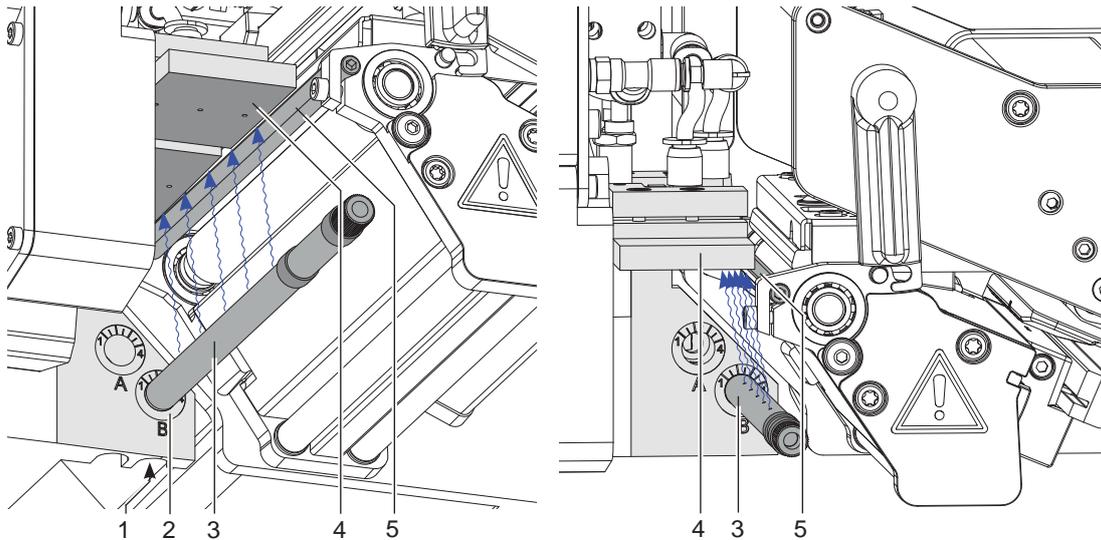


Fig. 27 Adjustment to the blow tube

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

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

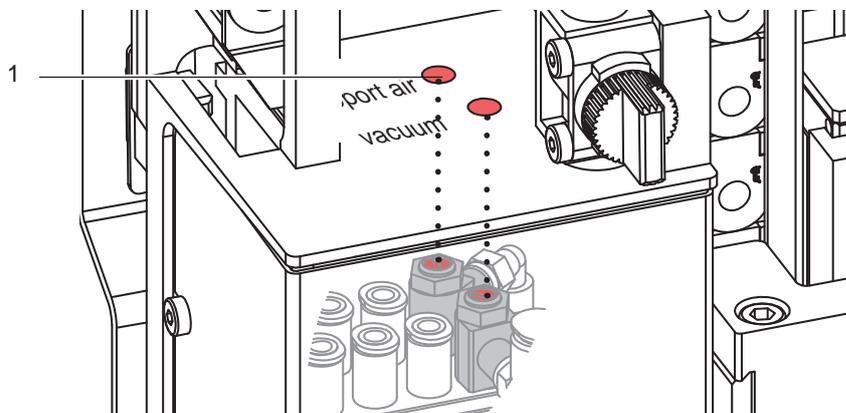
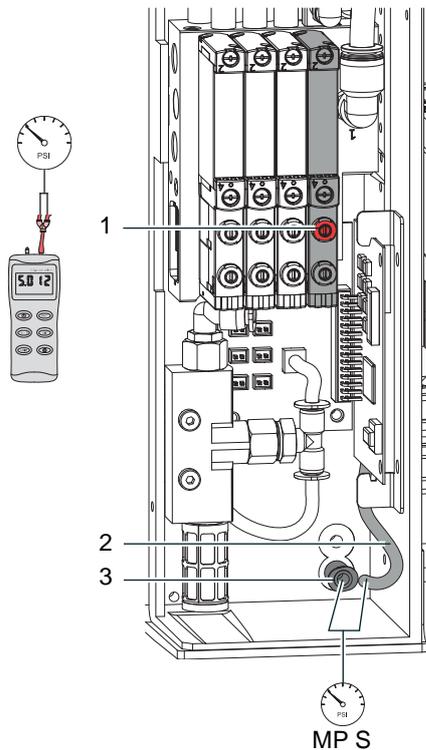


Fig. 28 Throttle valve for supporting air

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

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

Measuring point (MP S) for Supporting Air.



With a Manometer that is capable of measuring pressures ranging 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 blowtube connection.
- Connection (2) to the blowtube.
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.

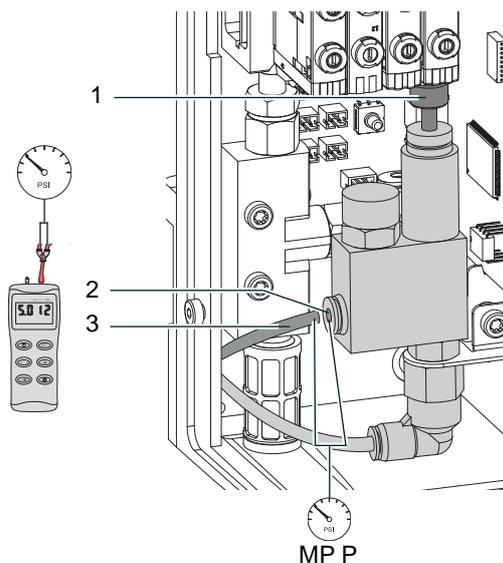
Fig. 29 Measuring point for supporting air- picture without pressure reduce valve



Attention!

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

6.9 Adjustment on the Pressure Reduce Valve Cylinder Flag



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

MP P: Pressure (desired default value 2 bar)

Remove the cover and interpose the manometer at the MP P.

- Tube (3) to the pressure reduce valve.
 - Push-in Connector (2) on the pressure reduce valve
5. Run cycles ▷ „4.1 Test Mode without a Print Job“. Check the pressure when closing the pads.
 6. If necessary, set pressure on the regulator (1).
 7. Mount the cover.

Fig. 30 Measuring point for the pressure on the pressure reduce valve to cylinder flag



Attention!

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

6.10 Set Throttle Valves on the Cylinders

Exhaust throttle valves are installed on the cylinders of the applicator. The valves control the movement of the cylinders in the direction of the valves.

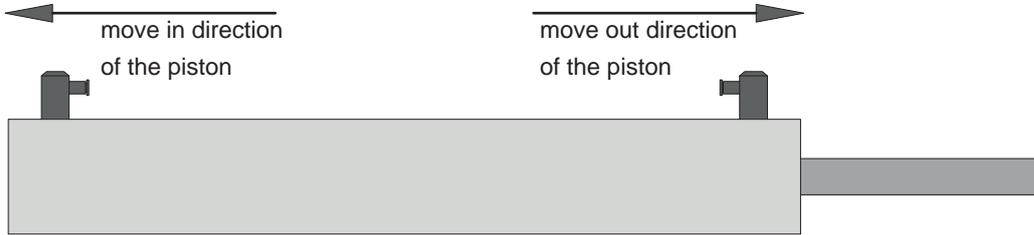


Fig. 31 Throttle valves on the cylinders



Note!

► When replacing or re-adjusting the throttle valves, always adopt the settings from the test report!

The setting values are the revolutions of the adjusting screw on the throttle valve. To do this, the throttle valve is completely closed. Turn the adjusting screw on the throttle valve clockwise until it stops.

To adjust, turn the adjusting screw on the throttle valve counterclockwise. The number of revolutions for the respective throttle valve can be found in the test protocol included in the scope of delivery of the applicator.

6.11 Set the Sensors

Sensors are used for status detection and process control on the applicator. Precise positioning is important for the applicator to function correctly. The sensors are proximity switches that are triggered by a magnet in the cylinder piston.

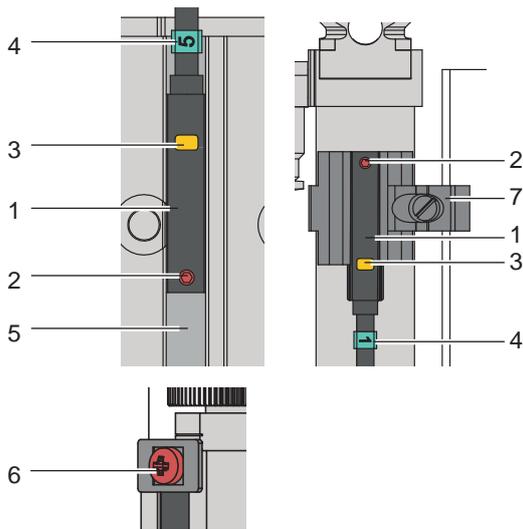
An LED is integrated for status detection of the sensor. This LED lights up when the sensor is triggered by the magnet in the cylinder piston.



Note!

► When replacing or re-adjusting the sensors, always adopt the settings from the test report!

Sensor and types of mounting



1. Sensor
2. Set screw with 0.8 mm hexagon socket to fix the sensor.
3. LED for status detection.
4. Markers on the sensor and on the connector for connection to the control circuit board
5. Guide groove on the cylinder.
6. Phillips screw with holding plate for fixing the sensor.
7. Mounting clamp for sensors.

Fig. 32 Sensor / Mounting

6.12 Set Cylinder Z / Actor 1

6.12.1 Set cylinder 'Z' throttle valves

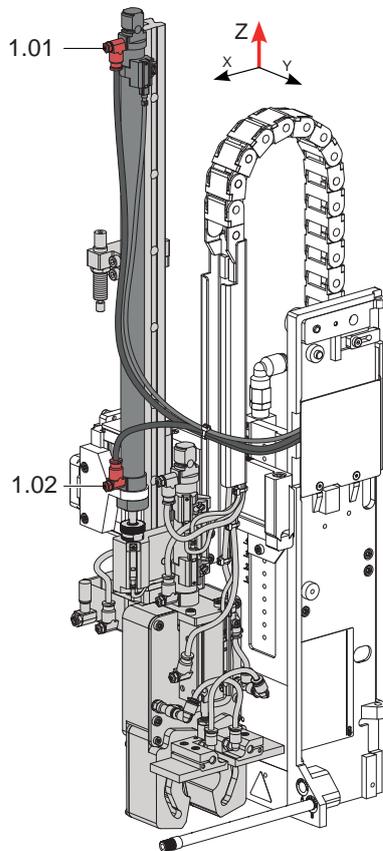


Fig. 33 Throttle valves zylinder 'Z'

Throttle valve (1.01) movement inside

Marker on the tube with the number 1

Close the throttle valve (1.01) completely.
Turn the set screw clockwise until it stops.

If no different value is noted in the test report,
open the throttle valve (1.01) by turning it **9 turns** counterclockwise.

Throttle valve (1.02) movement outside

Marker on the tube with the number 2

Close the throttle valve (1.02) completely.
Turn the set screw clockwise until it stops..

If no different value is noted in the test report,
open the throttle valve (1.02) by turning it **8 turns** counterclockwise.

6.12.2 Set cylinder 'Z' sensors

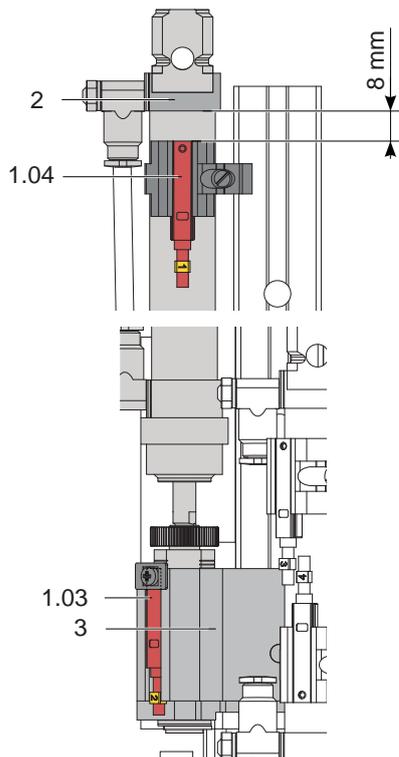


Fig. 34 Sensors cylinder 'Z'

Sensor (1.04) start position

Marker on the sensor with the number 1

If no different value is noted in the test report,
set the distance between the edge of the sensor (1.04) and the
edge of the connection ring (2) to 8 mm.

As a check, switch on the printer and switch on compressed air.
In the start position of the applicator, the LED on the sensor must
light up. The lifting cylinder is completely retracted in this position.

Sensor (1.03) end position

Marker on the sensor with the number 2

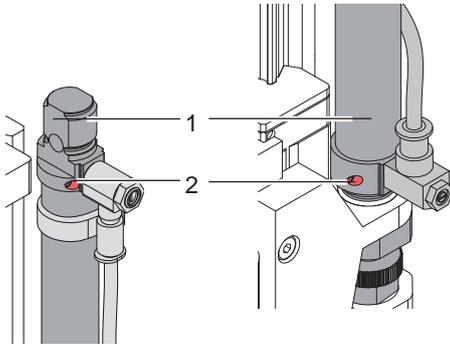
If no different value is noted in the test report,
the distance between the upper edge of the sensor (1.03) and the
upper edge of the pad holder (3) is 0.0 mm.

To check, switch on the printer and the LED on the sensor lights up.
When the cylinder piston is pressed into the pad retainer (3), the
LED goes out.

6.13 Setting of the End Position Dampener

**Note!**

The end position dampening of the lifting cylinders are set 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) counter-clockwise to decrease the end position dampening..

Fig. 35 End position dampening cylinder 'Z'

6.14 Set Cylinder Flag / Actor 2

6.14.1 Set Cylinder 'flag' throttle valves

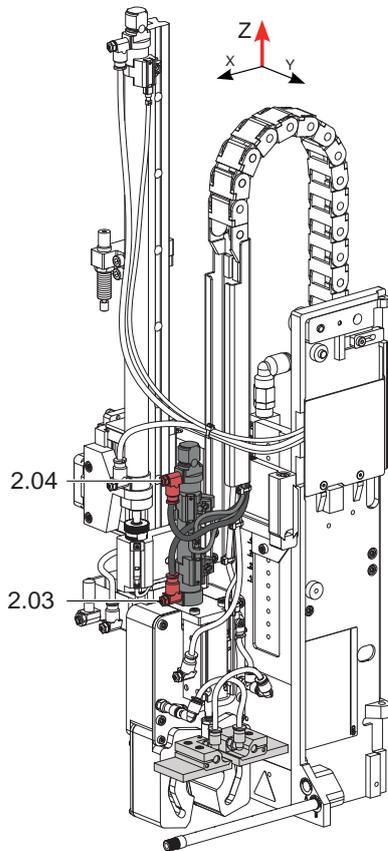


Fig. 36 Cylinder 'flag' throttle valves

Throttle valve (2.04) movement inside

Marker on the tube with the number 3

Close the throttle valve (2.04) completely.
Turn the set screw clockwise until it stops.

If no different value is noted in the test report,
open the throttle valve (1.01) by turning it **8 turns** counterclockwise.

Throttle valve (2.03) movement outside

Marker on the tube with the number 4

Close the throttle valve (2.03) completely.
Turn the set screw clockwise until it stops.

If no different value is noted in the test report,
open the throttle valve (2.03) by turning it **9 turns** counterclockwise.

6.14.2 Set Cylinder 'flag' sensors

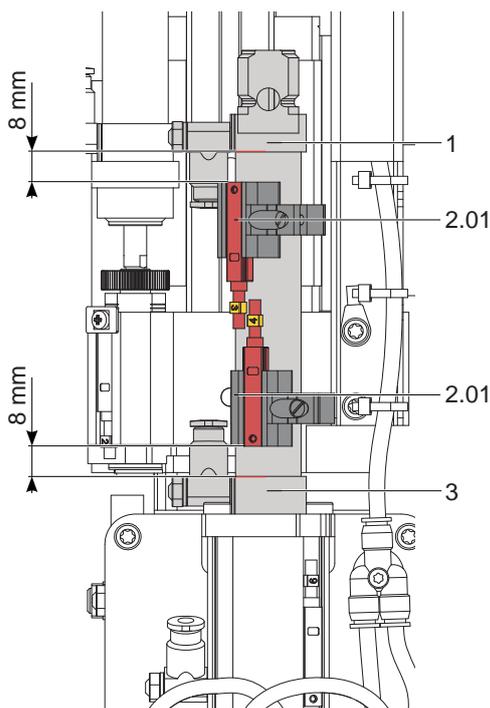


Fig. 37 Cylinder 'flag' sensors

Sensor (2.01) Pads in start position

Marker on the sensor with the number 3

If no different value is noted in the test report,
set the distance between the edge of the sensor (2.01) and the
edge of the connection ring (1) to 8 mm.

As a check, switch on the printer and switch on compressed air.
In the start position of the applicator, the LED on the sensor must
light up. The lifting cylinder is completely retracted in this position.

Sensor (2.02) Pads are closed

Marker on the sensor with the number 4

If no different value is noted in the test report,
set the distance between the edge of the sensor (2.02) and the
edge of the connection ring (3) to 8 mm.

As a check, switch on the printer and the LED on the sensor does
not light up. The LED lights up when the pair of pads is closed.

6.14.3 Removing the pliers assembly

To change the cylinder lug or the connecting rod linkage, the pliers assembly (5) must be dismantled.

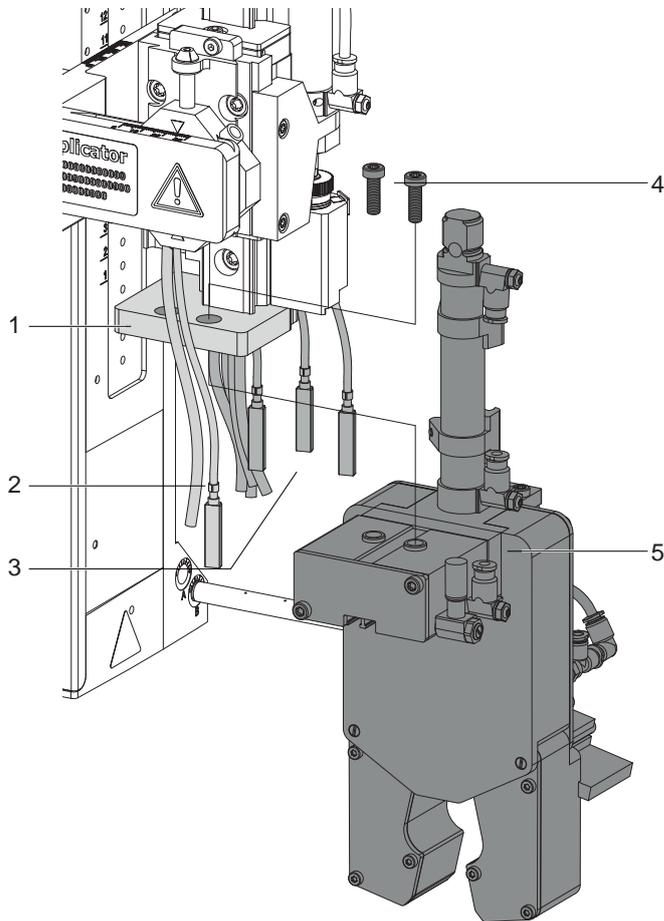


Fig. 38 Dismounting the pliers assembly

- ▶ First pull all tubes (2/3) coming from the valve block out of the connectors. These are provided with number markers and can be reassigned based on the instructions for the throttle valves of the cylinders and the pneumatic plan after reassembly.
- ▶ Loosen the setscrews on the sensors of the cylinder 'peel position', 'flag' and 'pliers' and pull out the sensors (2/3) on the cylinders.
- ▶ Secure the pliers assembly (5) against falling and loosen the screws (4) on the plate (1).
- ▶ Remove pliers assembly (5) and disassemble into the following assemblies / parts.

6.14.4 Dismounting the pliers assembly

If it is necessary to change the lifting cylinder flag (2) or the connecting rod (14), the following assemblies must be removed from the dismantled assembly 'pliers'.

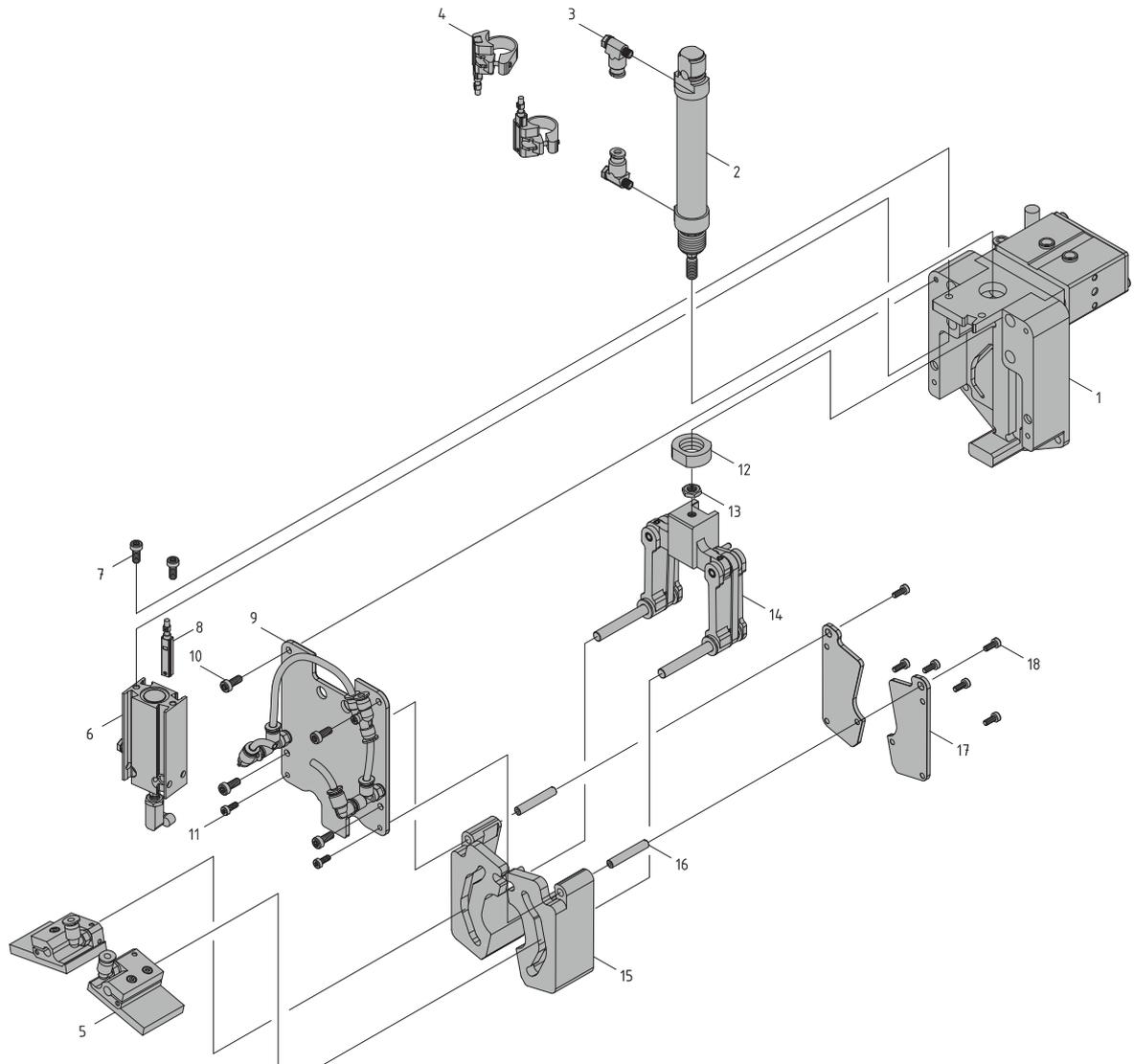
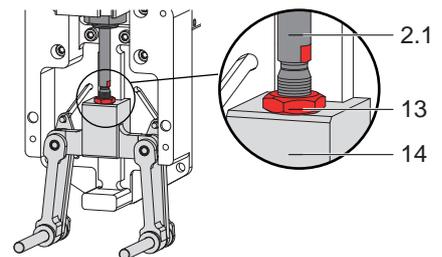


Fig. 39 Disassemble the pliers assembly

- ▶ Disassemble the pads (1).
- ▶ Loosen and pull out the sensor (8). Loosen the screws (7) and remove the compact cylinder (6) from the holder of the base plate (1).
- ▶ Loosen screws (10) and (11) and remove the cover (9) with connections.
- ▶ Loosen the screws (18) and remove the covers (17) from the pliers jaws (15)..
- ▶ Pull out the pliers jaws (15) and axles (16) .
- ▶ Loosen the nut (13) on the connecting rod linkage (14) and screw the cylinder piston (2.1) from the cylinder (2) out of the connecting rod linkage (4).
- ▶ Remove the connecting rod linkage (14) from the base body (1). If only the connecting rod linkage (14) is changed, the cylinder (2) is not dismantled and the next two points are omitted.



- ▶ Only for changing the lifting cylinder (2), the sensor brackets (4) and the throttle valves (3)
- ▶ Remove from the lifting cylinder (2).
- ▶ Loosen nut (12) and remove lifting cylinder (2).

Assembly of the pliers assembly

- ▶ When the lifting cylinder (2) has been replaced, insert it and fasten it with the nut (12) to the holder on the base plate.
- ▶ Mount the sensor brackets (4) and the throttle valves (3) on the lifting cylinder (2).
- ▶ Set throttle valves (3).

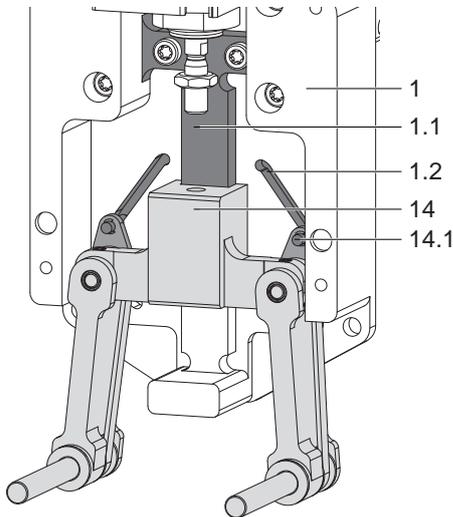


Fig. 40 Insert connecting rod linkage

- ▶ Lightly grease the guide (1.1) on the base plate (1).



Attention!

Use only a plastic grease to grease the running surfaces on the guide.

cab Part No.: 5984552.001

- ▶ Move the rod linkage (14) with the groove on the center piece place to the guide (1.1) of the base plate (1).
- ▶ Insert the pins of the cam wheels (14.1) of the connecting rod linkage (14) into the guide (1.2) in the base plate (1).
- ▶ Press the connecting rod linkage (14) completely onto the guide (1.1) on the base plate (1).

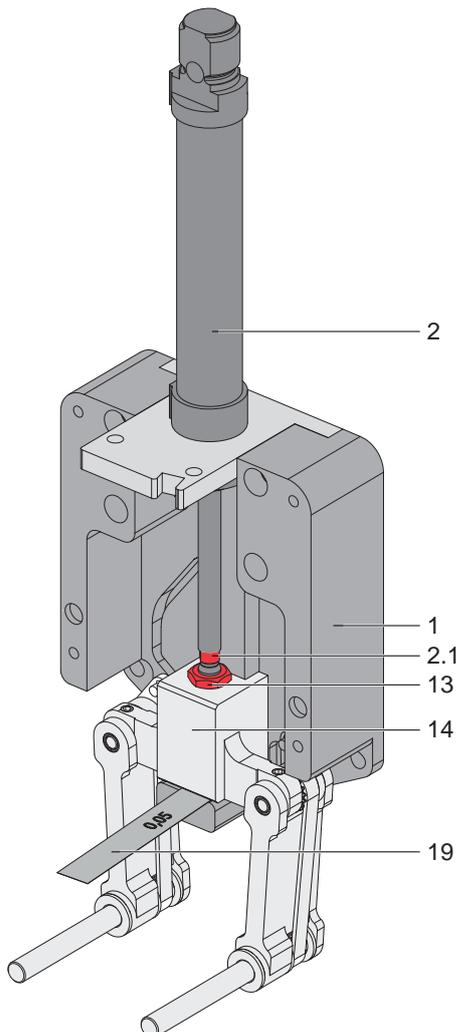


Fig. 41 Set the stroke on the cylinder 'flag'

- ▶ Pull the piston rod (2.1) out of the lifting cylinder (2) and screw the nut (13) onto the piston rod (2.1) up to the end of the thread.
- ▶ Screw the piston rod (2.1) into the threaded hole in the connecting rod linkage (14).
- ▶ Insert a feeler gauge (19) with a thickness of 0.05 mm between the lower stop of the base plate (1) and the connecting rod linkage (14).
- ▶ Press the connecting rod linkage (14) with the screwed-on piston rod (2.1) against the stop in the base plate (1).
- ▶ Now carefully screw the piston rod (2.1) into the connecting rod linkage (14) so that the feeler gauge (19) can be pulled out easily.
- ▶ Turn the nut (13) clockwise until it locks the position of the piston rod (2.1) in the connecting rod linkage (14).
- ▶ Insert axles (16) and slide pliers jaws (15) on. Push the shafts for the punch attachment on the connecting rod linkage (14) into the guide grooves on the framing.
- ▶ Attach the covers (17) of the pliers jaws (15) with the screws (18).
- ▶ Attach the cover (9) with connections with the screws (10) and (11) to the base plate (1).

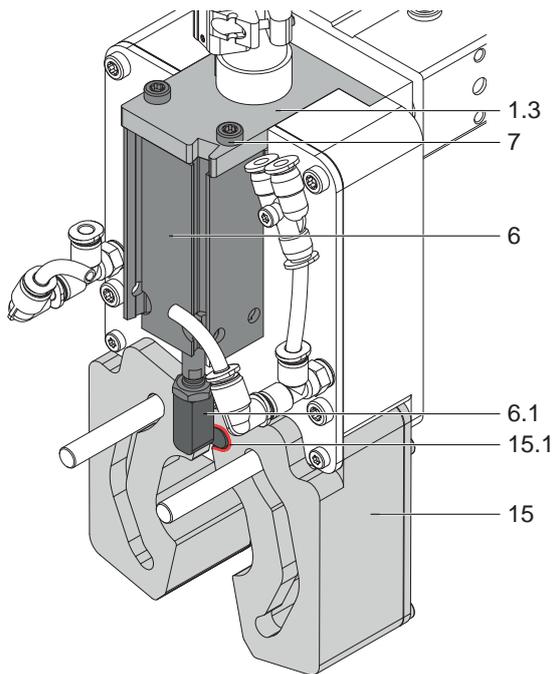


Fig. 42 Mount the 'pliers' cylinder

- ▶ Place the cylinder 'pliers' (6) with the tappet (6.1) on the holder (1.3) of the base plate (1).
- ▶ Insert the tappet (6.1) in the recesses (15.1) of the pliers jaws (15).
- ▶ Attach the compact cylinder (6) with the screws (7) on the holder (1.3) of the base plate (1).

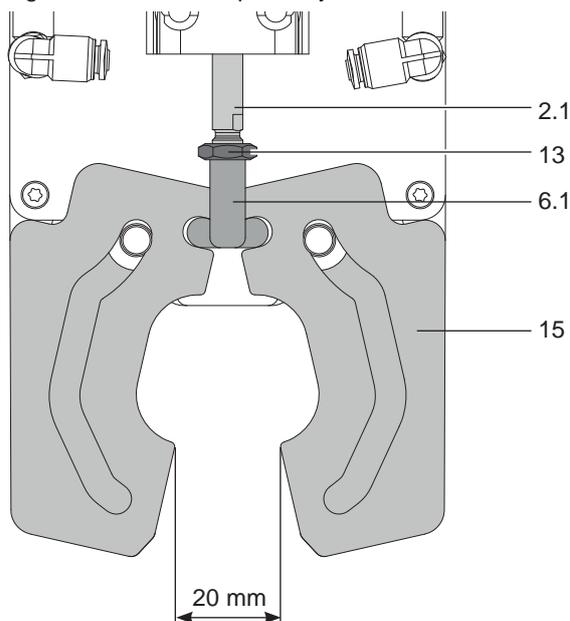


Fig. 43 Adjust pliers opening

Adjust pliers opening

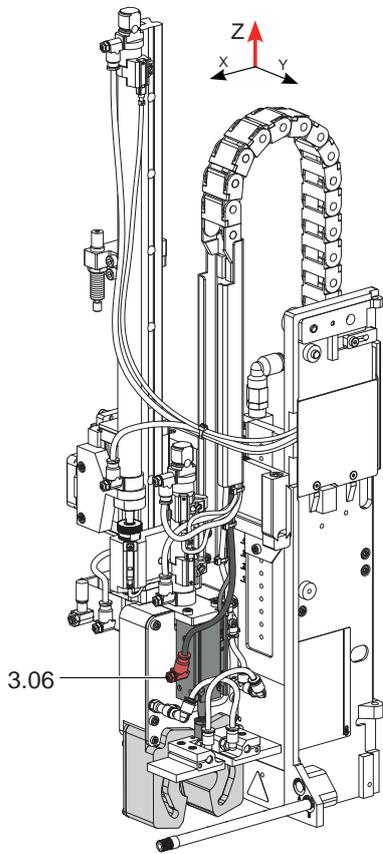
- ▶ Loosen nut (13).
 - ▶ Turn the cylinder piston (2.1) in the tappet (3) until the pliers jaws (15) are 20 mm apart. Measuring points, see picture
 - ▶ Tighten nut (13).
- ▶ Insert the tubes into the connectors and throttle valves.
 - ▶ Mount and adjust sensors.

The following sensors must be set:

- Sensors on cylinder 'flag'
 - ▷ „6.14.2 Set Cylinder 'flag' sensors“
- Sensors on cylinder 'peel position'
 - ▷ „6.16 Set Cylinder (3.0) 'peel Position“
- Sensors on cylinder 'pliers'
 - ▷ „6.15.2 Set sensor on cylinder 'pliers“

6.15 Set Cylinder Pliers / Actor 3.1

6.15.1 Set throttle valves on cylinder 'pliers'



Throttle valve (3.06) movement outside

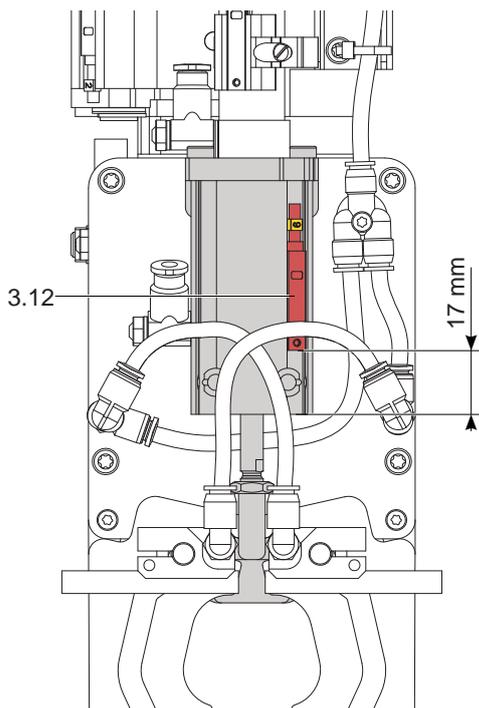
Marker on the tube with the number 6

Close throttle valve (3.06) completely.
Turn the set screw clockwise until it stops.

If no different value is noted in the test report, open the throttle valve (3.06) by turning it **8.5 turns** counterclockwise.

Fig. 44 Throttle valves on cylinder 'pliers'

6.15.2 Set sensor on cylinder 'pliers'



Sensor (3.12) pliers open

Marker on the sensor with the number 6

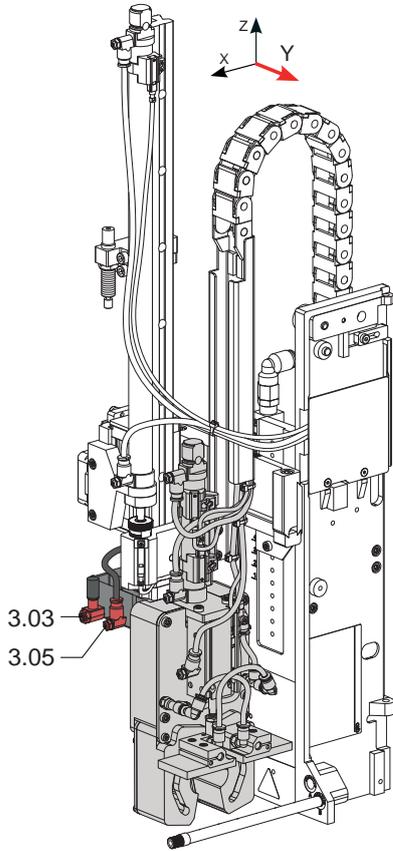
If no different value is noted in the test report, set the distance between the edge of the sensor (3.12) and the edge of the compact cylinder to 17 mm.

As a check, switch on the printer and switch on compressed air.
In the start position of the applicator, the LED on the sensor must light up. The pliers are open in this position.
When the pliers are closed, the LED goes out.

Fig. 45 Sensor on cylinder 'pliers'

6.16 Set Cylinder Peel Position / Actor 3.0

6.16.1 Set throttle valves on cylinder 'peel position'



Throttle valve (3.03) movement inside with silencer

Close throttle valve (3.03) completely.
Turn the set screw clockwise until it stops.

If no different value is noted in the test report, open the throttle valve (3.03) by turning it **3 turns** counterclockwise.

Throttle valve (3.05) movement inside

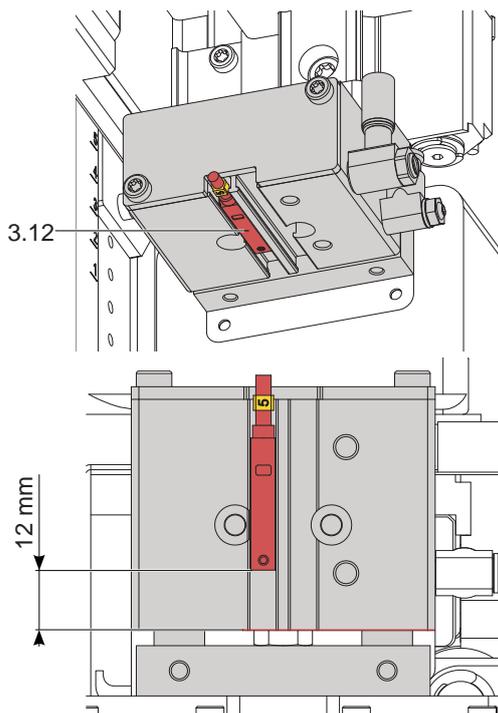
Marker on the tube with number 5

Close throttle valve (3.05) completely.
Turn the set screw clockwise until it stops.

If no different value is noted in the test report, open the throttle valve (3.05) by turning it **7 turns** counterclockwise.

Fig. 46 Throttle valve on the cylinder 'peel position'

6.16.2 Set sensor on cylinder 'peel position'



Sensor (3.01) pad assembly in basic position

Marker on the sensor with number 5

If no different value is noted in the test report, set the distance between the edge of the sensor (3.01) and the edge of the cylinder to 12 mm.

As a check, switch on the printer and switch on compressed air. In the start position of the applicator, the LED on the sensor must light up. In this position, the pad assembly is at a maximum distance from the dispensing edge of the printer. When the cylinder extends and the pad assembly moves to the dispensing edge of the printer, the LED goes out.

Fig. 47 Sensor on the cylinder 'peel position'

7.1 Error Messages of the Printer

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

Error treatment:

- ▶ Clearing the error results.
- ▶ Press the  to synchronize the label feed, remove the left over labels manually.

To quit the error state press *Repeat*.

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

7.2 Error Messages of the Applicator

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

Error Message	Possible Cause
<i>Air pressure error</i>	Compressed air is switched off
	Pressure to low < 4 bar
	Pressure to high > 6 bar
<i>Label not depos.</i>	Label has not been placed onto the product; after the pad has moved back the label still sticks on the pad
<i>Upper position not reached</i>	Pad is not in start position if the printer switched on
	Pad has not reached the home position within 2s after the movement of the pad was started
	Pad has undefined leaving the start position
<i>External error</i>	Process of labeling was braked via the I/O interface of the printer with the XSTP signal
<i>Upper position not left</i>	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
<i>Vac. plate empty</i>	Label has not been picked up properly by the pad; or label fell off the pad before it could be placed onto the product
<i>Lower position not reached</i>	Pad has not reached the starting position within 2s after the pad has left the labelling position; or pad has left the starting position unauthorized

Table 4 Fehlermeldungen des Applikators

Error treatment:

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



Warning!

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

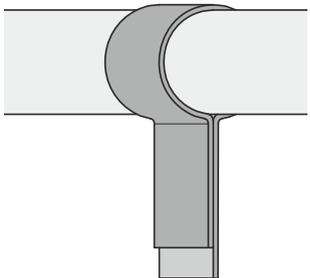
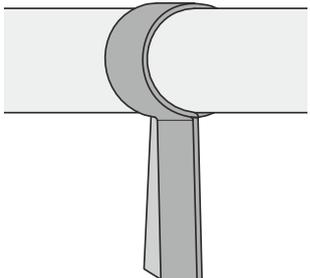
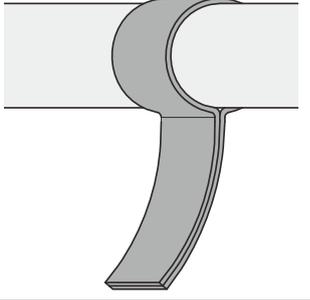
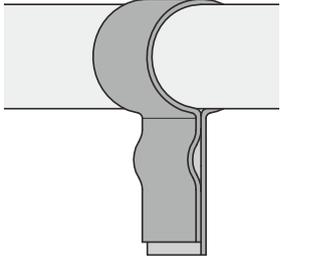
Danger of injury to hands and fingers by the moving pad!

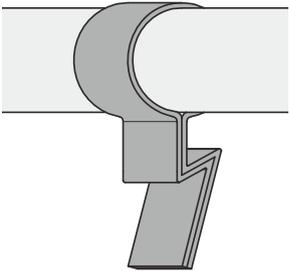
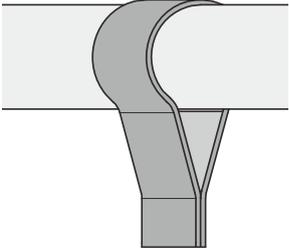
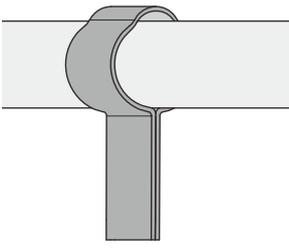
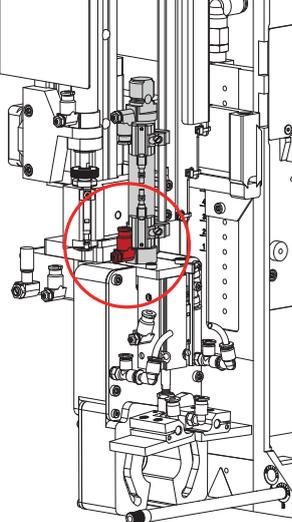
- ▶ **Do not reach into the area of the moving pad and keep long hair, loose clothes, and jewelry away.**

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

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

7.3 Error Pattern

No.	Error pattern	Possible error cause	Troubleshooting
1		The label is not centered on the pair of pads after delivery from the printer.	Correct the pad position in the X direction
		In the basic position, pads are not aligned parallel to each other	Align the pad precisely using the setting tool for pad assembly
2		Product not exactly aligned to the applicator.	Correct the position of the product or the product holder in relation to the applicator. Align the axis of the product exactly in the printing direction.
		After delivery from the printer, the label is twisted onto the pair of pads	Alignment of the applicator with the dispensing edge of the printer. Parallelism Check support air.
3		Product not exactly aligned in the X direction to the applicator.	Correct the position of the product or the product holder in relation to the applicator
4		Product not exactly aligned in the X direction to the applicator.	Correct the position of the product or the product holder in relation to the applicator

No.	Error pattern	Possible error cause	Troubleshooting
5		electrostatic charge	Install an external ionizing blower.
6		Application height not correct	Readjust the stopper
		Product too soft and flexible	Clamp the product if possible. Fix the product on the supports
		In the basic position, pads are not aligned parallel to each other	Align the pad precisely using the setting tool for pad assembly
7		Value for the parameter <i>Lock time</i> too small.	Increase the value for the parameter <i>Lock time</i> and thus delay the pliers opening.
		 <p data-bbox="906 1077 1139 1189">Throttle valve (2.03) on the cylinder 'flag' too closed for closing the pads.</p>	Set the throttle valve (2.03) to the specified value according to the test report. Open further if necessary.

8.1 Retainer Assembly

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
1	5902489.001	Screw DIN7984-M4x8	10			
2	5964129.001	Cover	1			
3	5965963.001	Set Screw	1			
4	5904544.001	Spring	10			
5	5964367.001	Knurled Screw	1			
6	5902241.001	Screw DIN7984-M4x10	10			
7	5903003.001	Washer DIN125-A4.3	10			
8	5964036.001	Mounting Plate	1			
9	5966530.001	Eccentric	1			
10	5966529.001	Hinges	1			

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
11	5964090.001	Interlock	1			
12	5903525.001	E-Ring DIN 6799-4	10			
13	5964429.001	Plate	1			
14	5902021.001	Screw DIN7991-M3x6	10			
15	5971908.001	Adapter Profile	1			
16	5902837.001	Screw DIN7984-M4x8	10			
17	5902167.001	Screw DIN912-M5x50	10			
18	5971963.001	Crossbeam	1			
19	5964062.001	Binder	1			
20	5971965.001	Clamping Element	1			

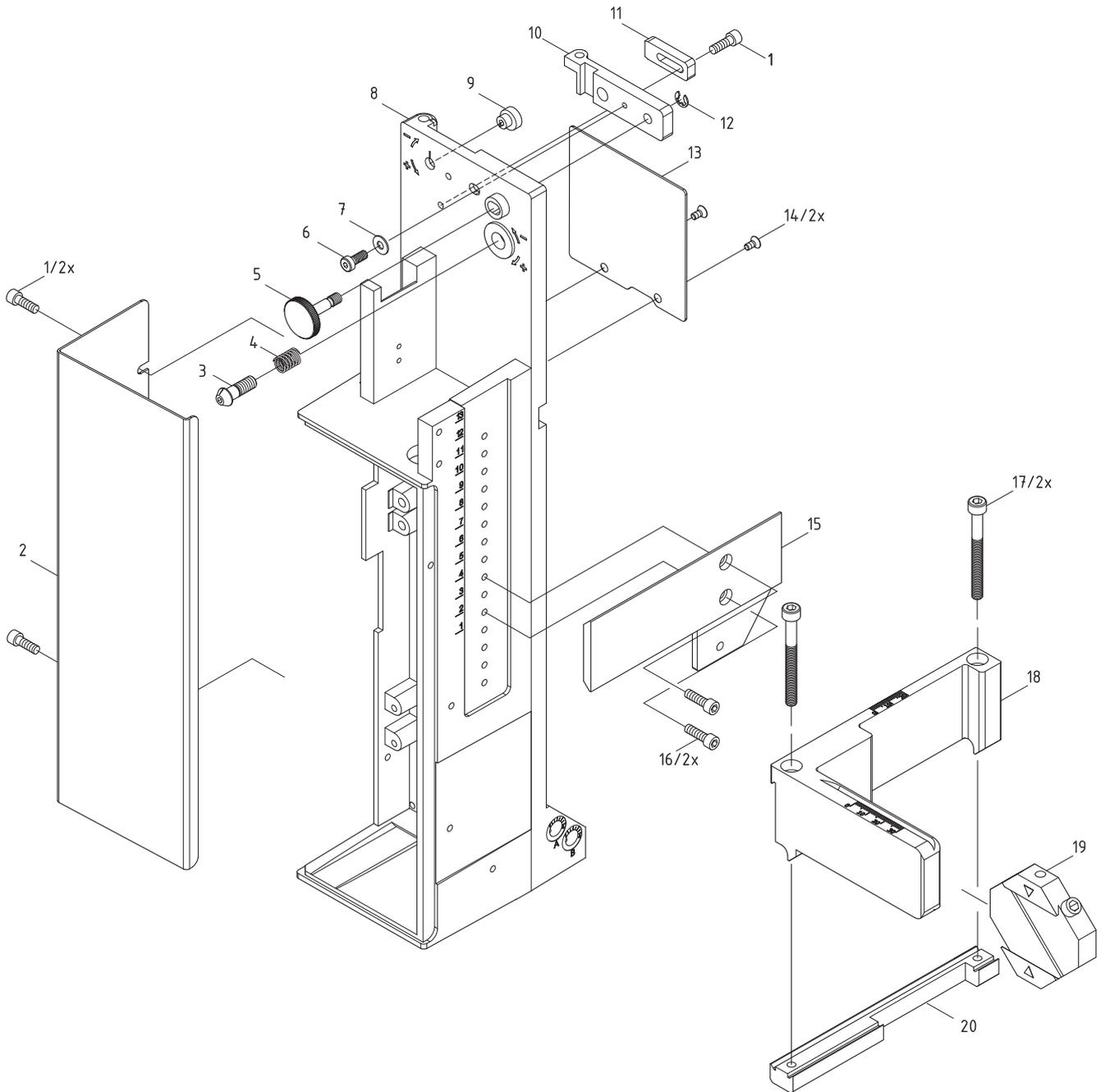
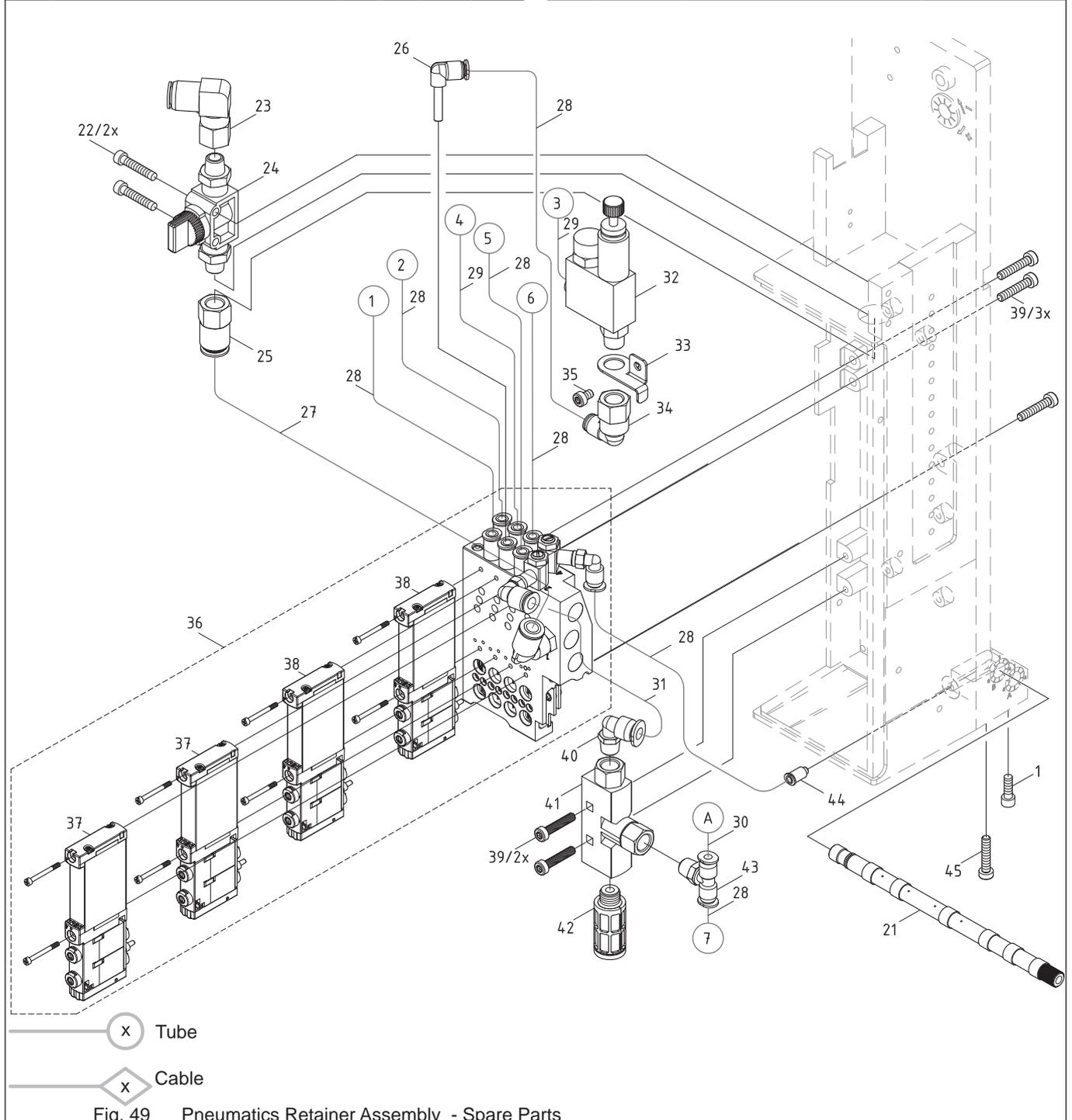


Fig. 48 Retainer Assembly - Spare Parts

8.2 Pneumatics Retainer Assembly

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
1	5902489.001	Screw DIN7984-M4x8	10			
21	5964095.001	Blow Tube 4"	1			
22	5902863.001	Screw DIN7984-M4x25	10			
23	5905285.001	Push-in L-Connector	1			
24	5905284.001	Shut-off valve	1			
25	5906842.001	Push-in/threaded Fitting	1			
26	5905604.001	Push-in L-Fitting	1			
27	5966465.001	Tube Ø8	2m			
28	5966460.001	Tube Ø4	2m			
29	5966466.001	Tube Ø4	2m			
30	5966463.001	Tube Ø4	2m			
31	5966464.001	Tube Ø6	2m			
32	5906967.001	Pressure Reduce Valve	1			
33	5966413.001	Support	1			
34	5906966.001	Push-in L-Connector	1			
35	5902571.001	Screw DIN7984-M4x6	10			
36	5976156.001	Valve Block	1			
37	5907428.001	Magnetic Valve	1			
38	5907429.001	Magnetic Valve	1			
39	5902862.001	Screw DIN7984-M4x20	10			
40	5906914.001	Push-in L-Connector	1			
41	5906844.001	Vacuum Generator	1			
42	5905257.001	Silencer	1			
43	5906915.001	Push-in T-Connector	1			
44	5905283.001	Push-in/threaded Fitting	1			
45	5902420.001	Screw DIN7984-M4x20	10			



8.3 Electronics Retainer Assembly

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
30	5966463.001	Tube Ø4	2m			
35	5902571.001	Screw DIN7984-M4x6	10			
35	5902571.001	Screw DIN7984-M4x6	10			
46	5966417.001	Retainer	1			
47	5955586.001	Cable	1			
48	5964591.001	Cable	1			
49	5971416.001	PCB Applicator Interfaces	1			
50	5906943.001	Sealing Ring	10			

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
51	5964494.001	Sensor	1			
52	5964595.001	Sensor	1			
53	5964458.001	Sensor	1			
54	5964492.001	Sensor	1			
55	5971449.001	Sensor	1			
56	5971448.001	Sensor	1			
57	5979208.001	EEPROM	1			
58	5955575.001	Applicator Control	1			

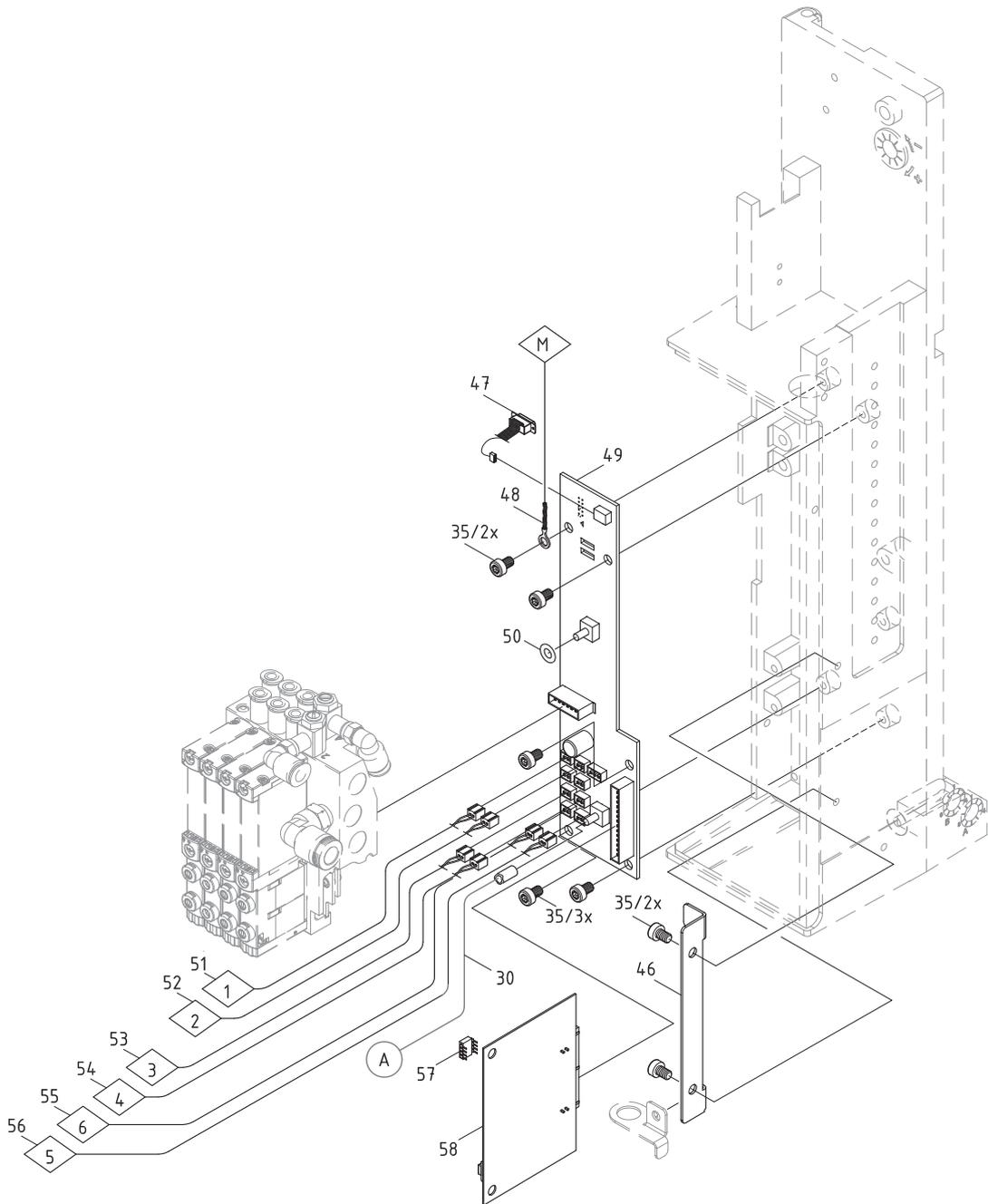


Fig. 50 Electronics Retainer Assembly - Spare Parts

8.4 Guiding Cylinder Z Assembly

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
52	5964595.001	Sensor	1			
59	5964236.001	Tamp Retainer	1			
60	5964343.001	Stopper	1			
61	5907714.001	Shock Absorber	1			
62	5977413.001	Tansport Lock	1			
63	5965966.001	Sliding Carriage	1			
64	5964061.001	Set Screw	1			
65	5964302.001	Plate	1			
66	5907431.001	Screw DIN7984 M 6x10	10			
67	5903505.001	E-Ring DIN6799-5	10			

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
68	5964301.001	Holder	1			
69	5902572.001	Screw DIN7984 M4x16	10			
70	5521159.001	Nut	1			
71	5955707.001	Adapter Bolt	1			
72.1	5905069.001	Spring	1			
72.2	5905049.001	Spring	1			
73	5521157.001	Washer	1			
74	5521158.001	Washer	1			
75	5903501.001	E-Ring DIN6799-7	10			
76	5902159.001	Screw DIN912-M5x12	10			

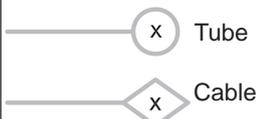
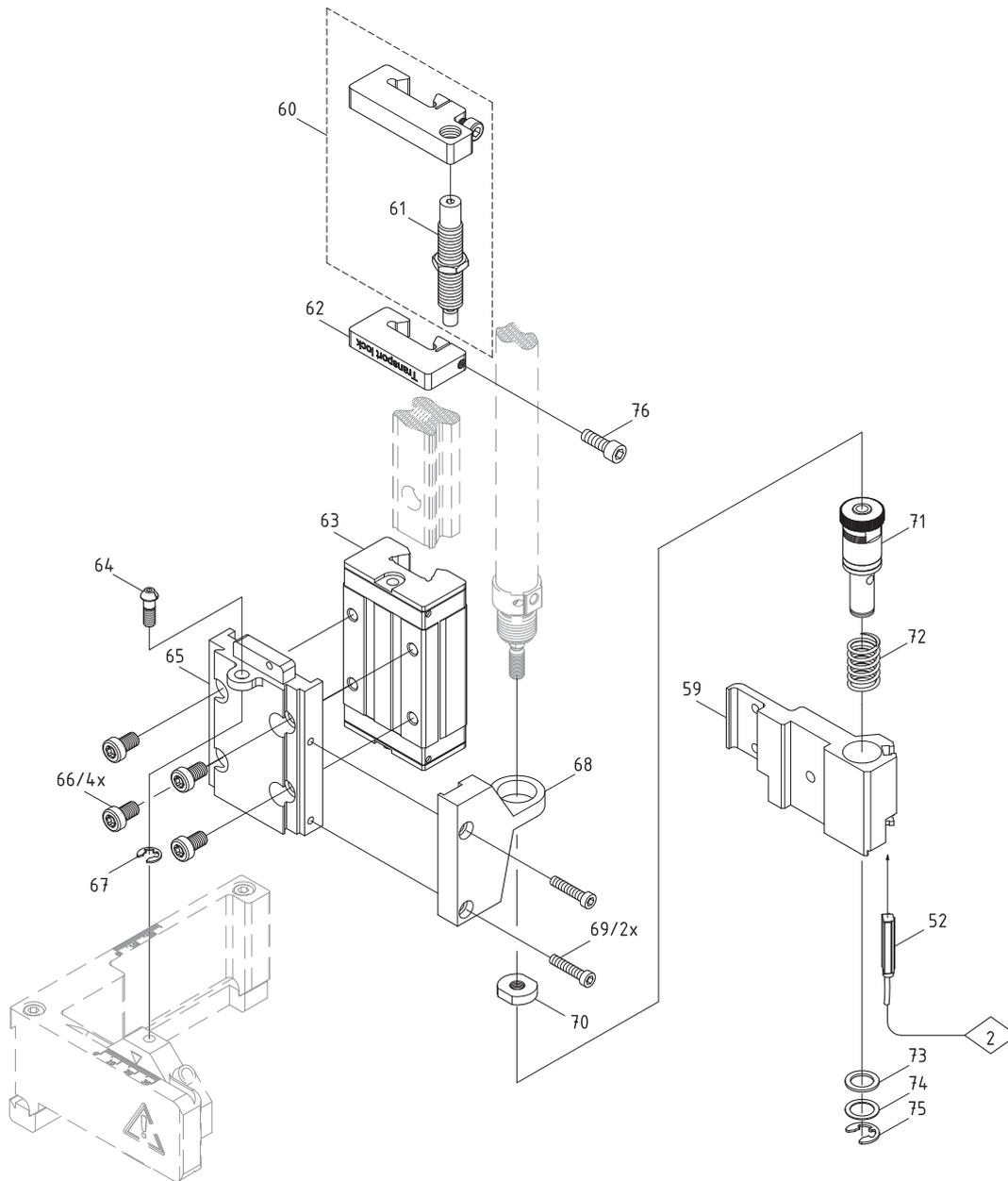


Fig. 51 Guiding Cylinder Z Assembly - Spare Parts

8.5 Cylinder Z Assembly

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
1	5902489.001	Screw DIN7984-M4x8	10			
16	5902837.001	Screw DIN7984-M4x8	10			
28	5966460.001	Tube Ø4	2m			
48	5964591.001	Cable	1			
51	5964494.001	Sensor	1			
77	5979676.001	Energy Track	1			
78	5902839.001	Screw DIN7991-M3x6	10			
79	5902838.001	Screw DIN7984 M3x6	10			
80	5979217.001	Plate	1			

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
81	5902900.001	Screw DIN7984-M 6x20	11			
82	5525920.001	Distance Bolt 4x15	10			
83	5979604.001	Cable Guide	1			
84	5964307.001	Guide Rail	1			
85	5905593.001	Mounting Clip	1			
86	5906636.001	One-way Flow Control Valve	1			
87	5905973.001	Cylinder	1			
88	5970053.001	Cover	1			
89	5900502.001	Lead-in Grommet	1			

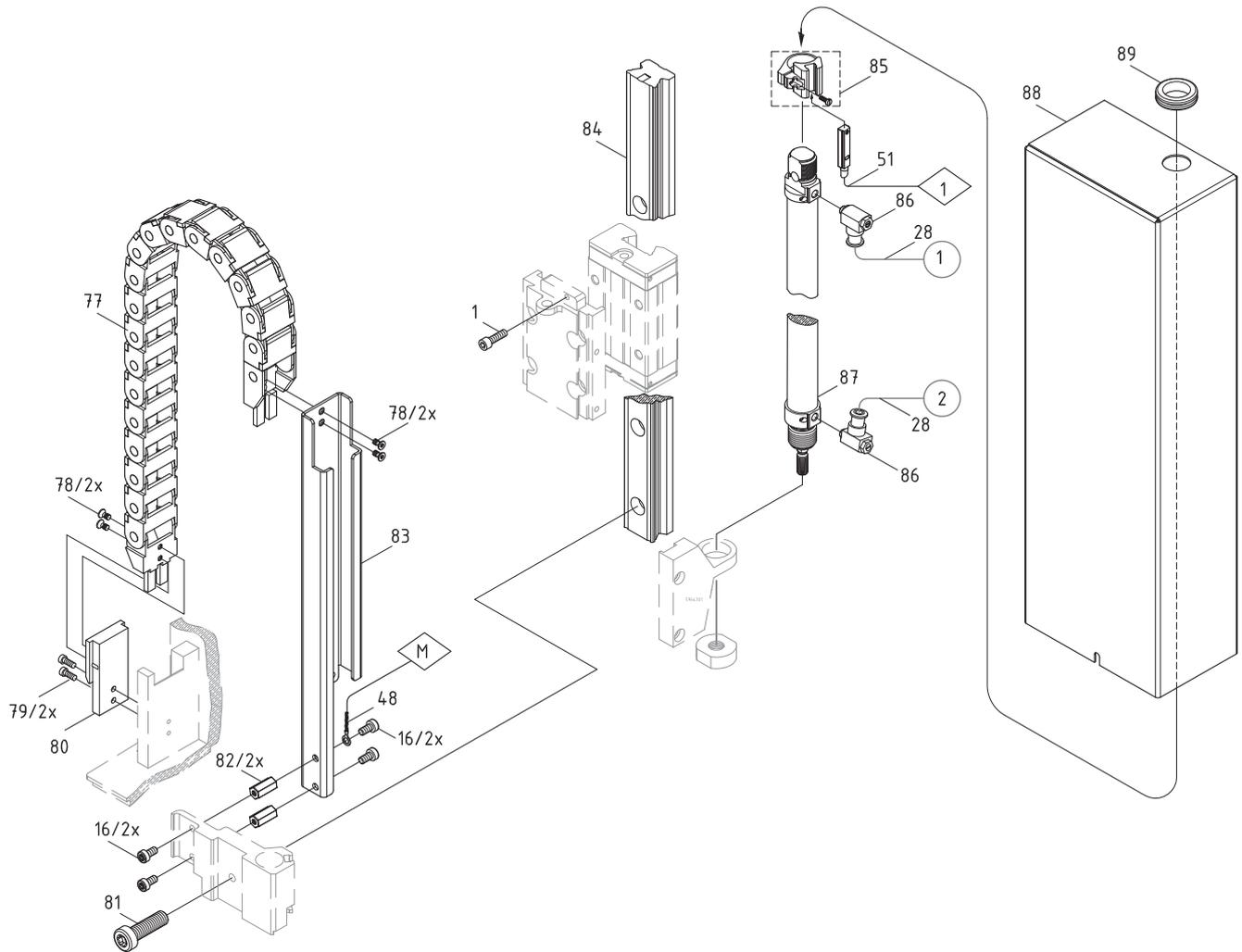


Fig. 52 Cylinder Z Assembly - Spare Parts

8.6 Pliers Assembly

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
26	5905604.001	Push-in L-Fitting	1			
28	5966460.001	Tube Ø4	2m			
29	5966466.001	Tube Ø4	2m			
39	5902862.001	Screw DIN7984-M4x20	10			
53	5964458.001	Sensor	1			
54	5964492.001	Sensor	1			
55	5971449.001	Sensor	1			
56	5971448.001	Sensor	1			
70	5521159.001	Nut	1			
85	5905593.001	Mounting Clip	1			
86	5906636.001	One-way Flow Control Valve	1			
90	5902903.001	Screw DIN7984-M5x16	10			
91	5979607.001	Plate	1			
92	5971805.001	Cylinder	1			
93	5906020.001	Silencer	1			
94	5905249.001	One-way Flow Control Valve	1			
95	5907177.001	Cylinder	1			

No.	Part-No.	Description	PU	Note	Serial No.	
					from	to
96	5902565.001	Screw DIN7984-M4x10	10			
97	5979608.001	Holder	1			
98	5979602.001	Base Plate	1			
99	5972206.001	Cover	1			
100	5905371.001	Push-in Y-Fitting	1			
101	5907427.001	Push-in T-Connector	1			
102	5902536.001	Nut DIN439-M6	10			
103	5972854.001	Piston Assembly	1			
104	5902867.001	Screw DIN7984-M3x8	10			
105	5972214.001	Cover left	1			
106	5972208.001	Cover right	1			
107	5971981.001	Axle	1			
108	5979553.001	Pliers Jaws left/right	1			
109	5971913.001	Tappet	1			
110	5907172.001	Compact cylinder	1			
111		Pads				

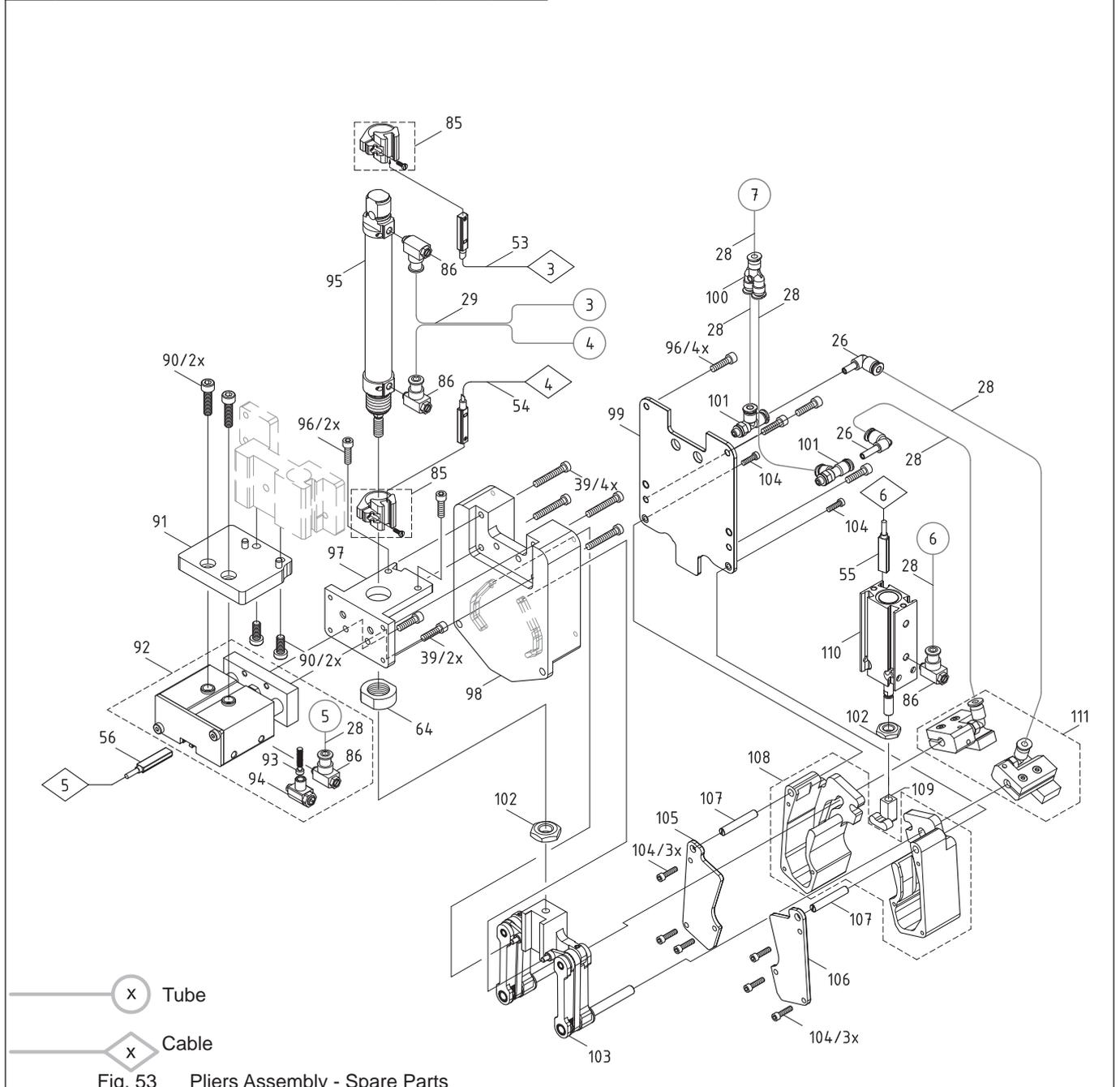


Fig. 53 Pliers Assembly - Spare Parts

9.1 Block diagram

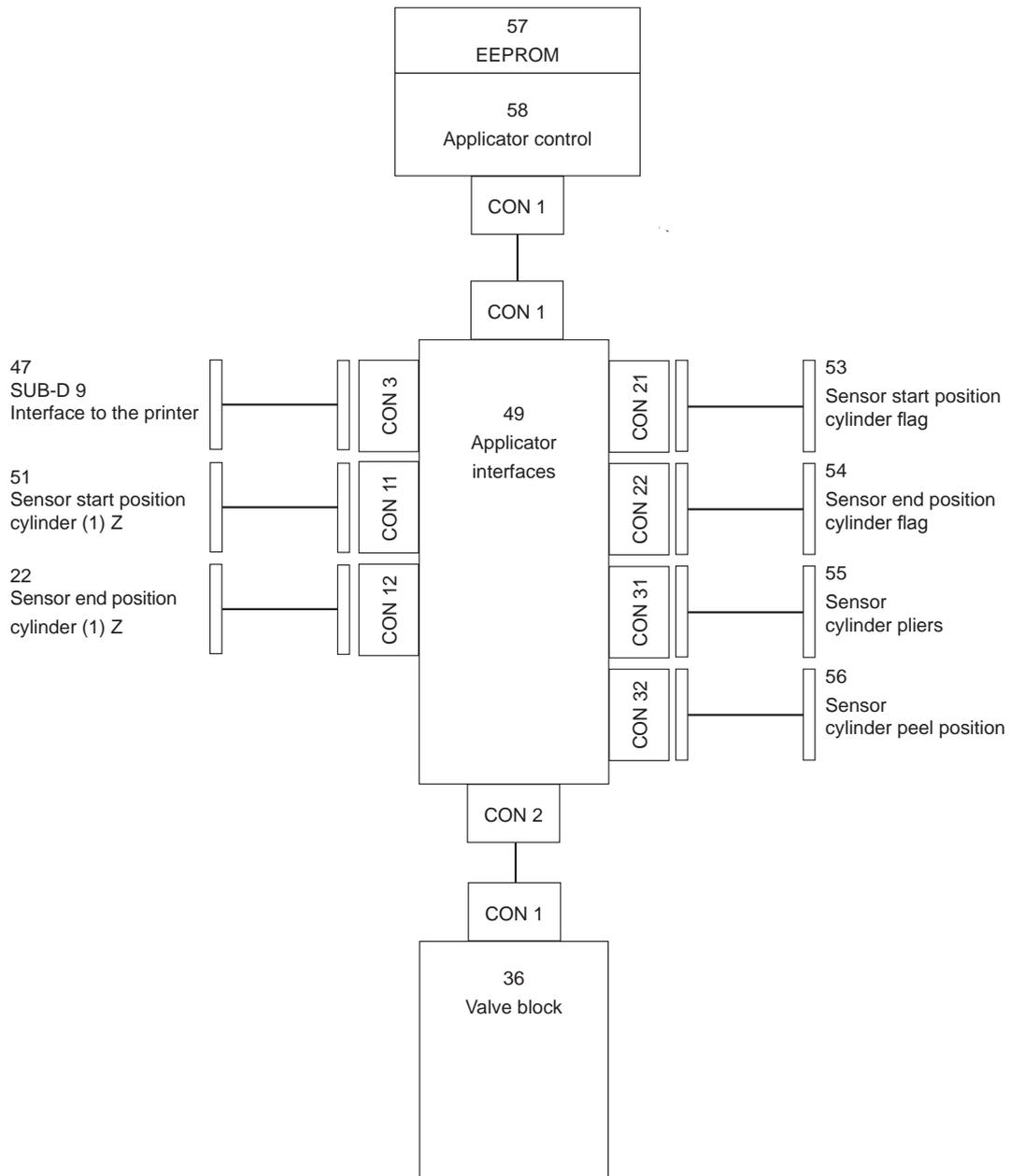


Fig. 54 Block diagram

		target	target	actual	unit
	Serial No. PCB applicator control			575194352728	
	controller/index-PCB applicator control			5979208/03	
1.	adjustments				
1.1	adjustment compressed air	=	4.50	OK	bar
1.2	pressure cyl. 2	=	2.00	2.00	bar
1.3	vacuum sensor checked, vacuum value topped	<=	-0.65	-0.68	bar
1.4	vacuum throttle valve	=	-0.60	OK	bar
1.5	adjust			OK	
1.6	function with adjusted blow tube			OK	
1.7	sensor compressed air checked			OK	
1.8	function sensor labeling position			OK	
1.9	Function sensor start position main cylinder			OK	
1.10	position sensor (PLIO 1)	=	8.00	8.00	mm
1.11	position sensor (PLIO 2)	=	0.00	0.00	mm
1.12	position sensor (PLIO 3)	=	8.00	8.00	mm
1.13	position sensor (PLIO 4)	=	8.00	8.00	mm
1.14	position sensor (PLIO 5)	=	12.00	12.00	mm
1.15	position sensor (PLIO 6)	=	17.00	17.00	mm
1.16	valve opening 1.01 turns anticlockwise	=	9.00	9.00	
1.17	valve opening 1.02 turns anticlockwise	=	8.00	8.00	
1.18	valve opening 2.04 turns anticlockwise	=	8.00	8.00	
1.19	valve opening 2.03 turns anticlockwise	=	9.00	9.00	
1.20	valve opening 3.05 turns anticlockwise	=	7.00	7.00	
1.21	valve opening 3.03 turns anticlockwise	=	3.00	3.00	
1.22	valve opening 3.06 turns anticlockwise	=	8.50	8.50	
1.23	Function sensor start position StartPosZ/EndPosZ			OK	
1.24	adjustment aperture-claw	=	20.00	20.00	mm
1.25	number of cylce per minute	16.00	18.00	18.00	
2.	functional checks				
2.1	part-no./size test-label			80x25	
2.2	no collision of the tubes			OK	
2.3	notes:			---	
2.4	notes:			---	
2.5	labeling without malfunction			OK	
3.	final assembly				
3.1	visual check			OK	
3.2	fix			OK	
3.3	apply product-, warn labels			OK	
4.	packing				
4.1	by pack complete (check scope of delivery), package labelled			OK	

Fig. 56 Test report example applicator 4712

Description in the test report	Description in the im Document/Pneumatic drawing
Cylinder 1	Cylinder (1) Z
Cylinder 2	Cylinder (2) Flag
Cylinder 3.0	Cylinder (3.0) Peel Position
Cylinder 3.1	Cylinder (3.1) Pliers

A		V	
Adjusting tool.....	21	Vacuum.....	28
Application Height.....	27	Vacuum throttle valve	28
B		Values ex factory	15
Block diagram.....	50	Valves and control unit	9
Blowtube.....	29	X	
Blow Tube.....	19	X-Direction.....	25
C		Y	
Cleaning	17	Y-Direction	23
Compressed Air.....	20	Z	
Compressed air supply.....	20	Z-Direction.....	24
Configuration	11		
Cover	17		
Cylinder	31		
Cylinder (1) Z-direction.....	32		
Cylinder (2) flag.....	34		
Cylinder (3.0) 'peel Position'	40		
Cylinder Flag	30		
Cylinder 'flag' sensors.....	34		
Cylinder 'flag' throttle valves.....	34		
Cylinder Z Assembly.....	48		
D			
Data.....	7		
Delivery.....	10		
Device Overview.....	8		
Dispensing plate.....	22		
E			
Electronics.....	46		
End Position Dampener.....	33		
Environment	6		
Error Messages	41		
Error Pattern.....	42		
F			
Failure.....	41		
Flexible product.....	26		
G			
Grease.....	37		
Guiding Cylinder Z.....	47		
L			
Labelling menu	12		
M			
Menu.....	11		
Mounting.....	18		
P			
Pad.....	22		
Pad Assembly.....	21		
Pad in X-Direction.....	25		
Pad in Y-Direction	23		
Pad in Z-Direction.....	24		
Parameters of the Applicator	12		
Peel-off Mode	13		
Peel Position.....	13		
Pliers assembly	35		
Disassemble	36		
Pliers Assembly	49		
Pliers opening.....	38		
Pneumatic drawing.....	51		
Pneumatics.....	45		
Pressure Reduce Valve	30		
Product to the Applicator	26		
R			
Retainer Assembly.....	44		
S			
Safety	5		
Safety Markings.....	6		
Sensor / Mounting	31		
Sensor on cylinder 'pliers'.....	39		
Sensor on the cylinder 'peel position'.....	40		
Sensors	31		
Sensors cylinder 'Z'.....	32		
Set Cylinder (3.1) 'pliers'.....	39		
Setup	12		
Solid product.....	26		
Space	15		
Spare Parts.....	44		
Standard values.....	15		
Suction Pads	21		
Supporting Air.....	29		
T			
Test Report	52		
Throttle valve on the cylinder 'peel position'	40		
Throttle Valves.....	31		
Throttle valves on cylinder 'pliers'.....	39		
Throttle valves cylinder 'Z'	32		
Tools	16		
Transportation Lock.....	19		
Troubleshooting.....	42		