



Stroke Applicator

4414

for the following products

Family	Type
Stroke Applicator	4414L-200
	4414L-300
	4414L-400
	4414R-200
	4414R-300
	4414R-400

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Germany
cab Produkttechnik GmbH & Co KG
 Karlsruhe
 Phone +49 721 6626 0
www.cab.de

USA
cab Technology, Inc.
 Chelmsford, MA
 Phone +1 978 250 8321
www.cab.de/us

Taiwan
cab Technology Co., Ltd.
 Taipei
 Phone +886 (02) 8227 3966
www.cab.de/tw

Singapore
cab Singapore Pte. Ltd.
 Singapore
 Phone +65 6931 9099
www.cab.de/en

France
cab Technologies S.à.r.l.
 Niedermodern
 Phone +33 388 722501
www.cab.de/fr

Mexico
cab Technology, Inc.
 Juárez
 Phone +52 656 682 4301
www.cab.de/es

China
cab (Shanghai) Trading Co., Ltd.
 Shanghai
 Phone +86 (021) 6236 3161
www.cab.de/cn

South Africa
cab Technology (Pty) Ltd.
 Randburg
 Phone +27 11 886 3580
www.cab.de/za

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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 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, including the manufacturer's maintenance recommendations and specifications.



Note!

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

1.3 Safety Instructions



Attention!

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



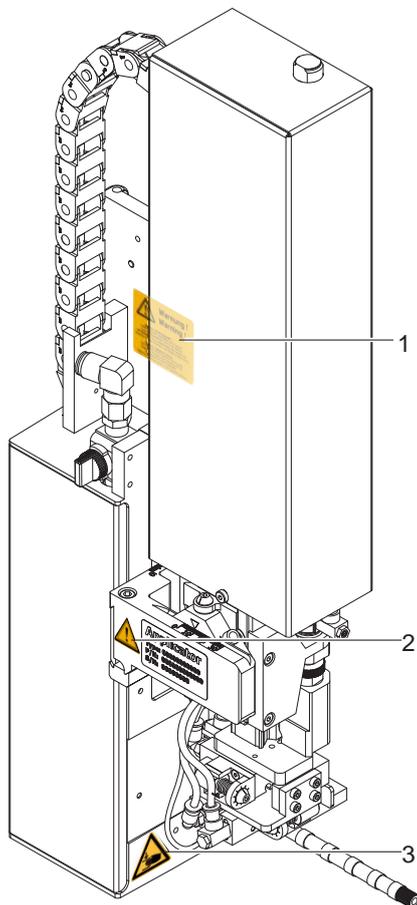
Warning!

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

- Before mounting the delivered components disconnect the printer from the power supply and close the shutoff valve of the applicator.
- Only connect the device to other devices which have a protective low voltage.

- Switch off all affected devices (computer, printer, accessories) before connecting or disconnecting.
- In operation, moving parts are easily accessible. This applies especially for the zone, where the pad is moved between the starting and the labelling position. During operation do not reach into that zone and keep long hair, loose clothes, and jewelry away. Before any alterations are undertaken in those areas, close the compressed air shutoff valve.
- The device may only be used in a dry environment, do not expose it to moisture (water splashes, sprays and mist)
- Do not use the device in an explosive atmosphere.
- Do not use the device close to high-voltage power lines.
- Perform only those actions described in this service manual. Work going beyond this may only be performed by trained personnel or service technicians.
- Unauthorized interference with electronic modules or their software can cause malfunctions.
- Other unauthorized work on, or modifications to the device can also endanger operational safety.
- Always have service work done by a qualified workshop, where the personnel have the technical knowledge and tools required to do the necessary work.
- There are various warning stickers on the device. They draw your attention to danger. Warning stickers may therefore not be removed.

1.4 Safety Marking



- 1:  Warning to damages by moving parts!
- 2:  The cylinder is under pressure also if the printer is switched off. Possibility of residual energy!
- 3:  Danger of crushing to 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 print module enables it to be easily disassembled into its component parts.
- ▶ Send the parts for recycling.

2.1 Important Features

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

2.2 Technical Data

Label transfer method		Tamp pad	Tamp pad with foam	Tamp pad with label stop
		4414 L/R 11 F	4414 L/R 12 F	4414 L/R 61 F
Label width in mm for	HERMES Q2	4 - 58	10 - 58	10 - 58
	HERMES Q4	10 - 114	10 - 114	10 - 114
Label height in mm for	HERMES Q2	4 - 80	8 - 80	4 - 80
	HERMES Q4	8 - 80	8 - 80	8 - 80
Compressed air pressure		0,45 MPa (4,5 bar)		
Sound pressure level		under 74 dB(A)		
Product during labeling	fixed	■	■	■
Labeling onto the product	from the top	■	■	■
	from below	■	■	■
	sideways	■	■	■
Product height	variable	■	■	■
Horizontal short stroke cylinder	x-direction	3 - 7	3 - 7	3 - 7
	y-direction	11 - 15	11 - 15	11 - 15
Product distance to lower edge at cylinder stroke	200 mm up to mm	135	135	135
	300 mm up to mm	235	235	235
	400 mm up to mm	335	335	335
Immersion depth pad ²⁾	up to mm	90	90	90
Cycle time about frequency/min. ¹⁾		25	25	25

Table 1 Technical Data

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

²⁾ Immersion depth at applicator >25 mm, the cover of the Hermes+ must be modified.

2.3 Overview without a Cover

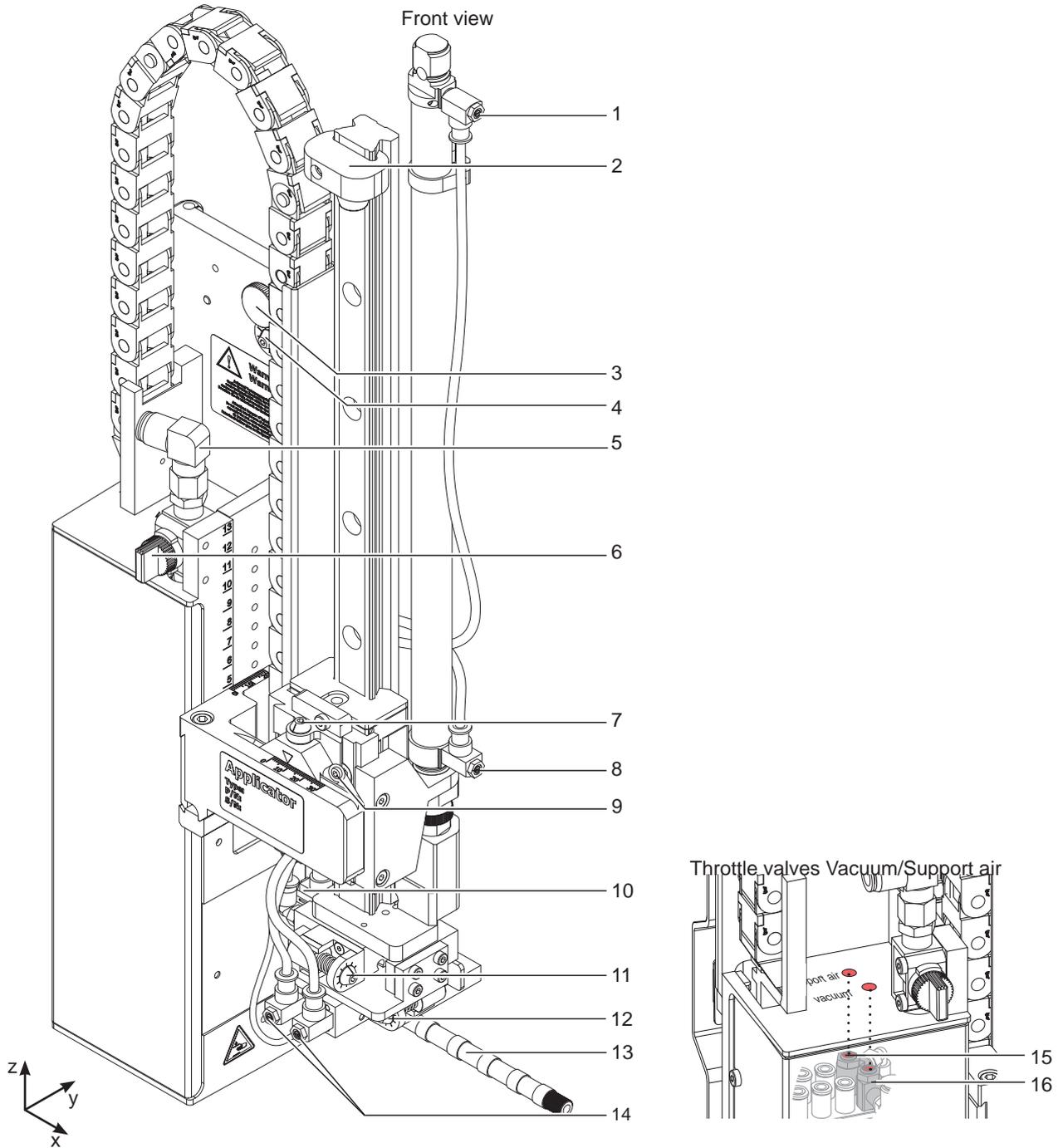


Fig. 2 Device overview - front view

- | | |
|--|---|
| 1 Throttle valve cylinder - move in Z-direction | 8 Throttle valve cylinder - move out Z-direction |
| 2 Stopper for the operation mode "Blow on", transport lock | 9 Screw to fix the vertical tamp position |
| 3 Knurled screw for attaching the applicator to the printer | 10 Throttle valve cylinder - move out X-direction |
| 4 Setting screw to adjust the angle between applicator and printer | 11 Setting screw stopper cylinder X-direction |
| 5 Compressed air connector | 12 Setting screw stopper cylinder Y-direction |
| 6 Shutoff valve | 13 Blow tube for supporting air |
| 7 Setting screw for vertical adjustment cylinder assembly | 14 Throttle valve cylinder - move Y-direction |
| | 15 Support air throttle valve |
| | 16 Vacuum throttle valve |

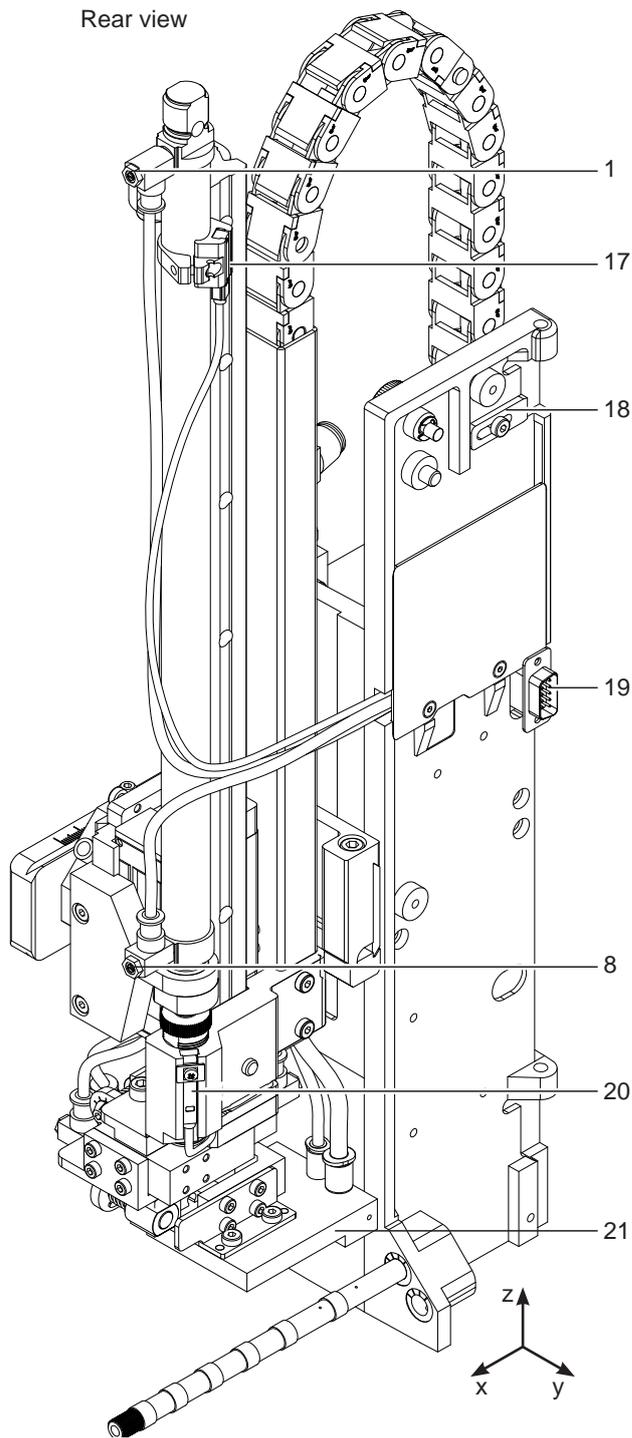


Fig. 3 Device overview - rear view

- 1 Throttle valve cylinder - move in Z-direction
- 8 Throttle valve cylinder - move out Z-direction
- 17 Sensor "Start Position"
- 18 Locking for hinges
- 19 Interface to the printer
- 20 Sensor labeling position
- 21 Pad (customized)

Valves and control system

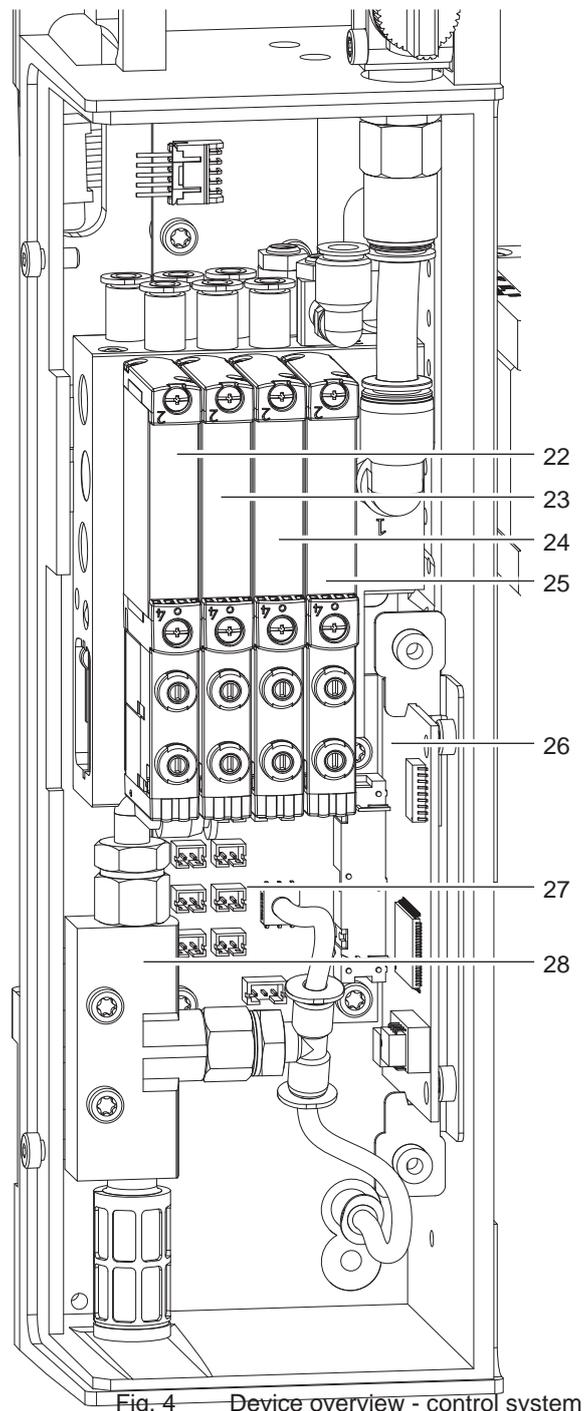
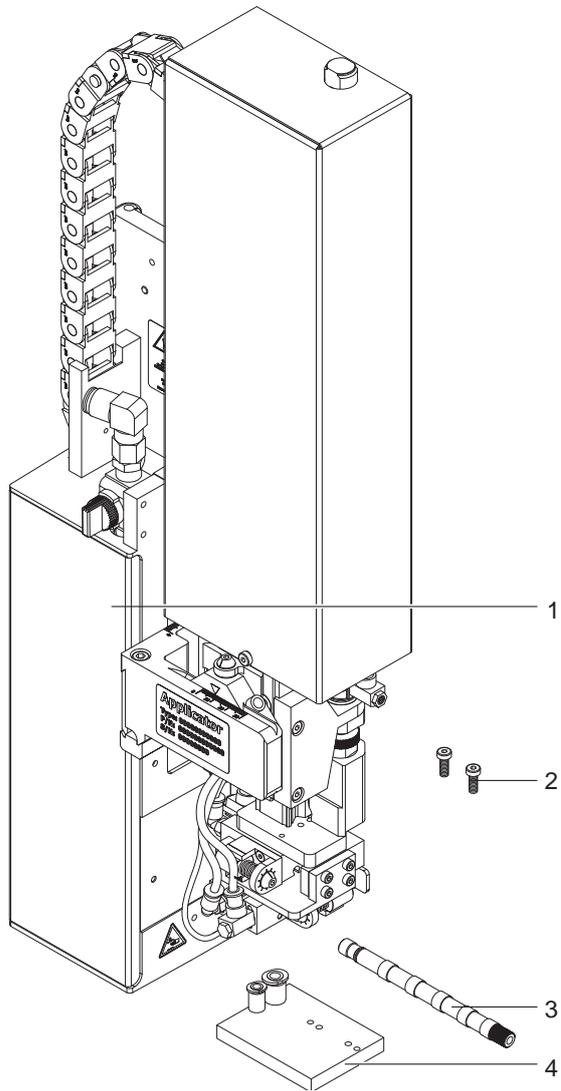


Fig. 4 Device overview - control system

- 22 Valve Cylinder Z
- 23 Valve Cylinder X/Y
- 24 Valve Blow air
- 25 Valve Vacuum and Support air
- 26 PCB Applicator Control
- 27 PCB Applicator Interfaces
- 28 Vacuum Generator

2.4 Contents of Delivery



- 1 Applicator
- 2 Screws (part of the pad)
- 3 Blow tube (as ordered)
- 4 Pad (as ordered)
- 5 Documentation

Fig. 5 Contents of delivery



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



Attention!
The device and printing materials will be damaged by moisture and wetness.
▶ Only set up label printer with applicator in dry locations protected from moisture and splashes.

3.1 Standard Operation

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



Attention!

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

- ▶ Switch on the printer.



Note!

If the pad is outside the starting position when the printer-applicator system is switched on the procedure will be interrupted with an error message visible on the display.

Pushing the pause button on the printer will negate the error moving the pad to the starting position. The Applicator is ready for work.

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



Note!

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

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

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

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

3.2 Cleaning



Attention!

Never use solvent and abrasive.

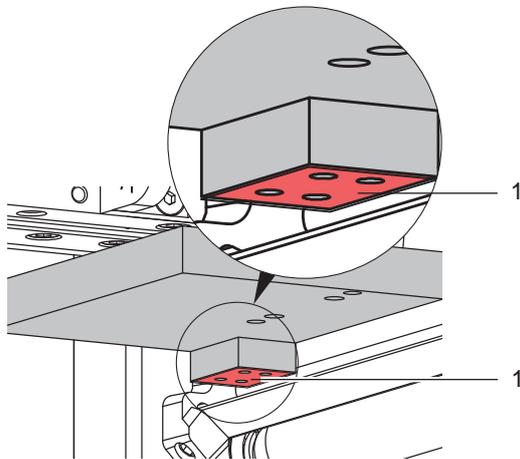


Fig. 6 Cleaning the pad with slide foil

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

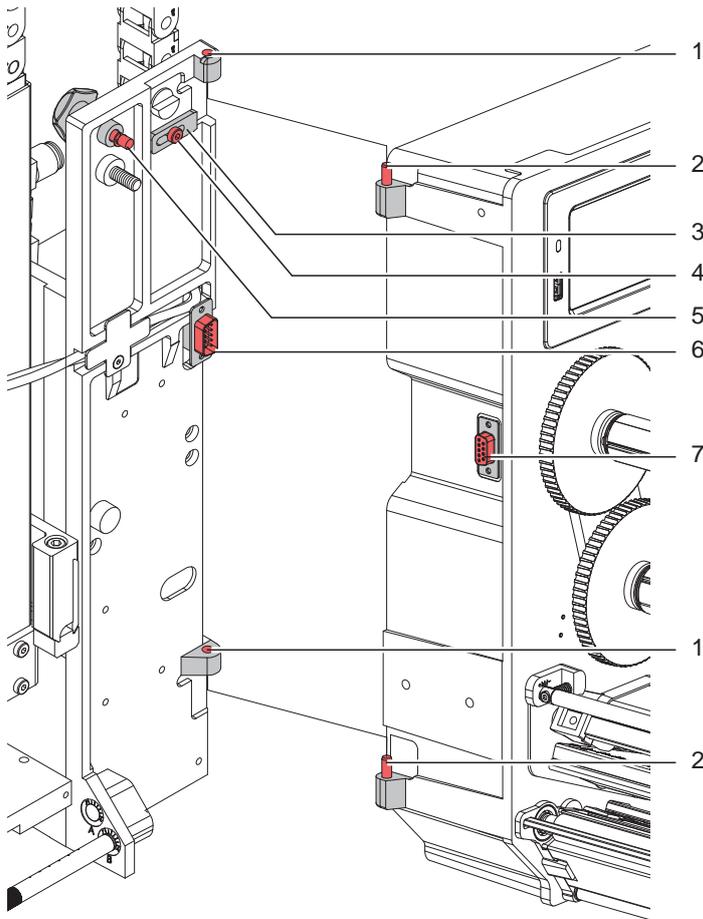


Fig. 7 Mounting applicator on printer



Attention!

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



Attention!

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

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

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

Pivot Away/Dismount the applicator

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

Mount the applicator

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

4.1 Error Messages of the Printer

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

Error treatment:

- ▶ Clearing the error results.
- ▶ Press the  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.

4.2 Error messages of the applicator

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

Error Message	Possible Cause
<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 2 Error messages of the applicator

Error treatment:

- ▶ Clear the error state.
- ▶ In order to clear the error state press **continue**, **repeat** or **cancel**.
 - Continue* with the next label in the printing queue.
 - Repeat* 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  to send a printed label to the pad.

5.1 Factory default Settings



Note!

The applicator is set up in a standard configuration by the factory. These values guarantee a smooth 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+ printer, vertical
- Used Pad:
 - cab part No.: 5963881 54x36 for L
 - cab part No.: 5963878 54x36 for R
- Material used for factory default settings: cab part No.: 5556472 54x35.5
- Pressure value of the compressed air: 0.45 MPa (4.5 bar)
- Factory setting sensors
 - Cylinder Z ▷ „6.8 Lift Speed of Cylinder Z“
 - Cylinder X/Y ▷ „6.13 Sensors on Cylinder X/Y“
- Factory settings throttle valves
 - Cylinder Z ▷ „6.8 Lift Speed of Cylinder Z“
 - Cylinder X/Y ▷ „6.12 Lift Speed of Cylinder X/Y“

5.2 Tools

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

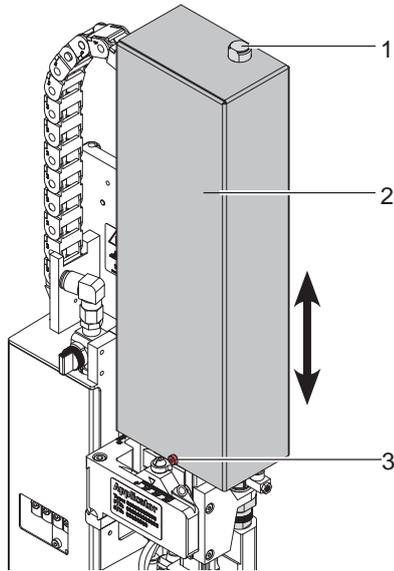
5.3 Mount and dismount the cover

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



Warning!

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



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

Fig. 8 Cover

5.4 Transportation Lock

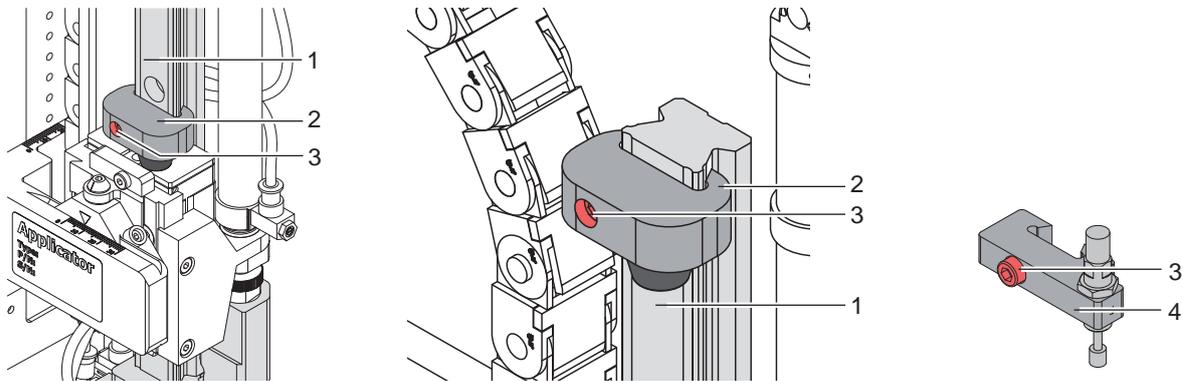


Fig. 9 Stopper as transport lock

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

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



Note!

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

Releasing the transport lock

1. Loosen screw (3) of the stopper (2).
2. Move the stopper (2) along the rod (1) into the position as in operation mode:
 - Operation mode "Blow on": ▷ 7.4 Adjusting the stopper
 - Operation mode "Stamp on" : Move the stopper (2) up to the end of the rod (1).
3. Tighten screw (3) to fix the stopper (2) in position.

5.5 Mounting the Applicator to the Printer

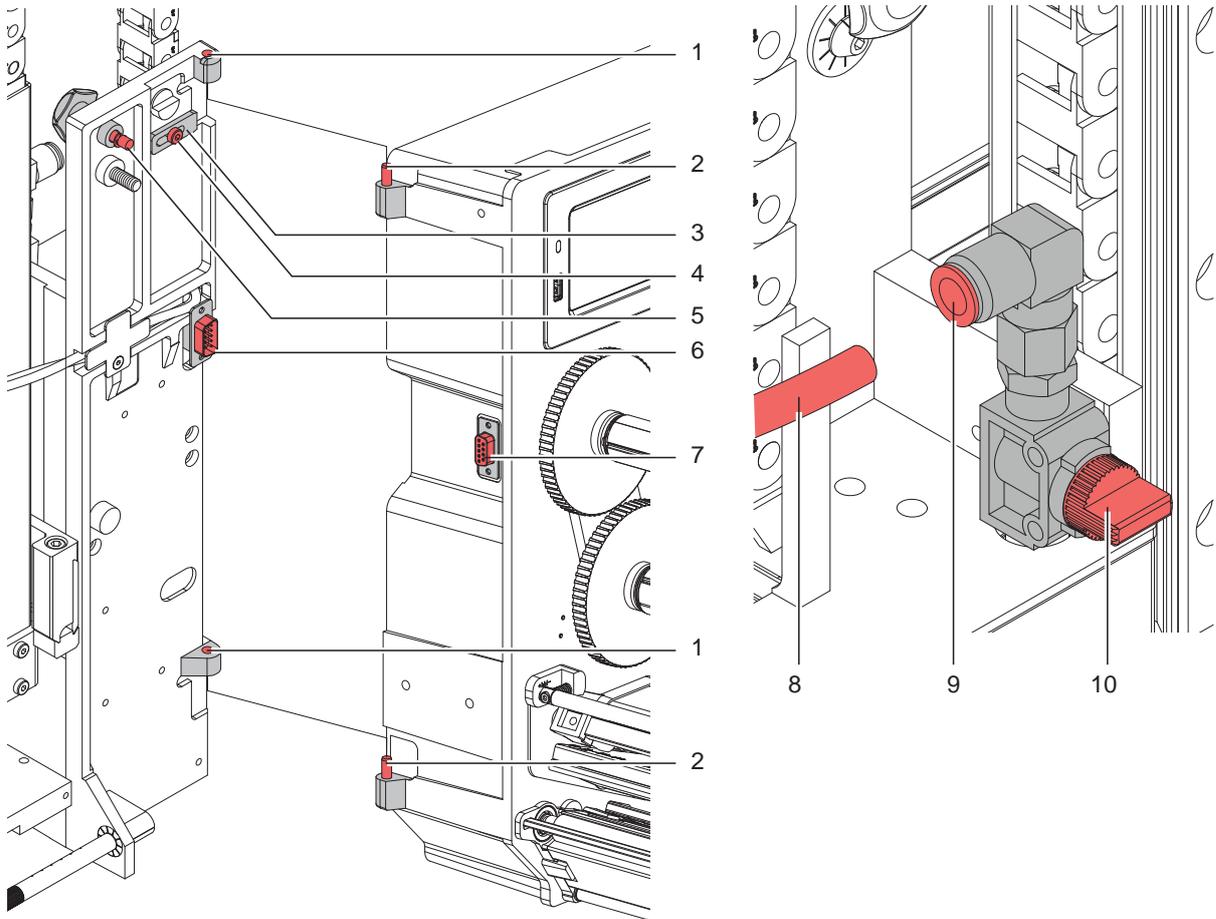


Fig. 10 Mounting applicator on printer

**Attention!**

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

▷ Service Manual

Mount the applicator

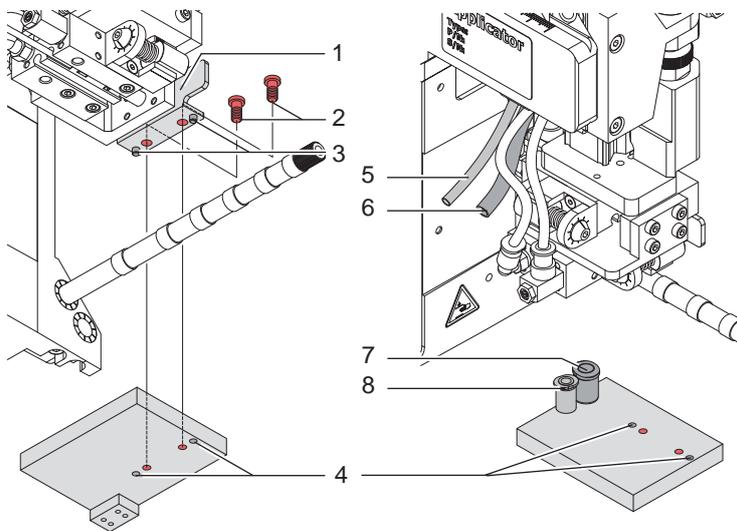
1. Hang the applicator with the female part of hinges (1) at the printer mounted hinges parts (2).
2. Connect SUB-D 15 male connector (6) to the female connector (7) of the printer.
3. To prevent the applicator from slipping out of the hinges loosen screw (4) and move the locking plate (3) under the 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.

5.6 Mounting the Pad



1. Slide the pins (3) into the holes of pad (4) by lifting the pad to pad holder (1).
2. Fix the pad with the screws (2) to the pad holder (1).
3. Insert the vacuum tube (5) and the blowing air tube (6) into the appropriate push-in-fittings (7,8) of the pad.

Fig. 11 Mounting the pad



Attention!

- ▶ To avoid possible collisions of the pad with other parts of the printer-applier system, please roughly align the pad in all directions (▷ „6 Adjustments“) before connecting the applicator to the compressed air supply!

5.7 Mounting the Blow Tube

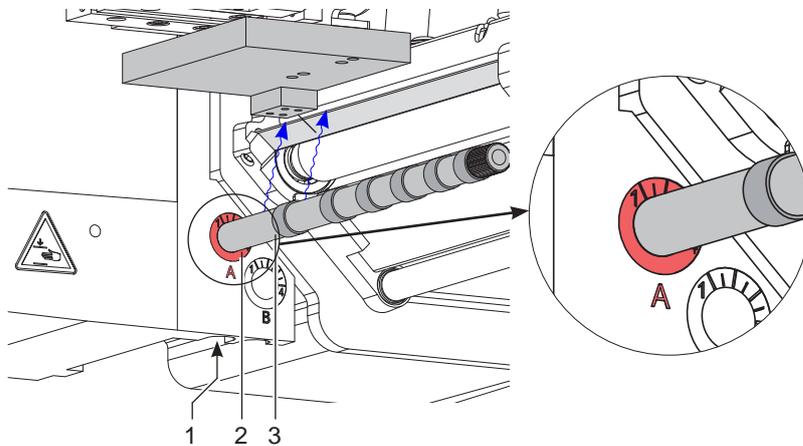


Fig. 12 Mounting the blow tube

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

1. Loosen screw (1).
2. Put in the blow tube (3) into the hole A (2).
3. Tighten screw (1) gently to secure it. ▷ „6.5 Adjustment of the Stopper for Blow Mode“

6.1 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.

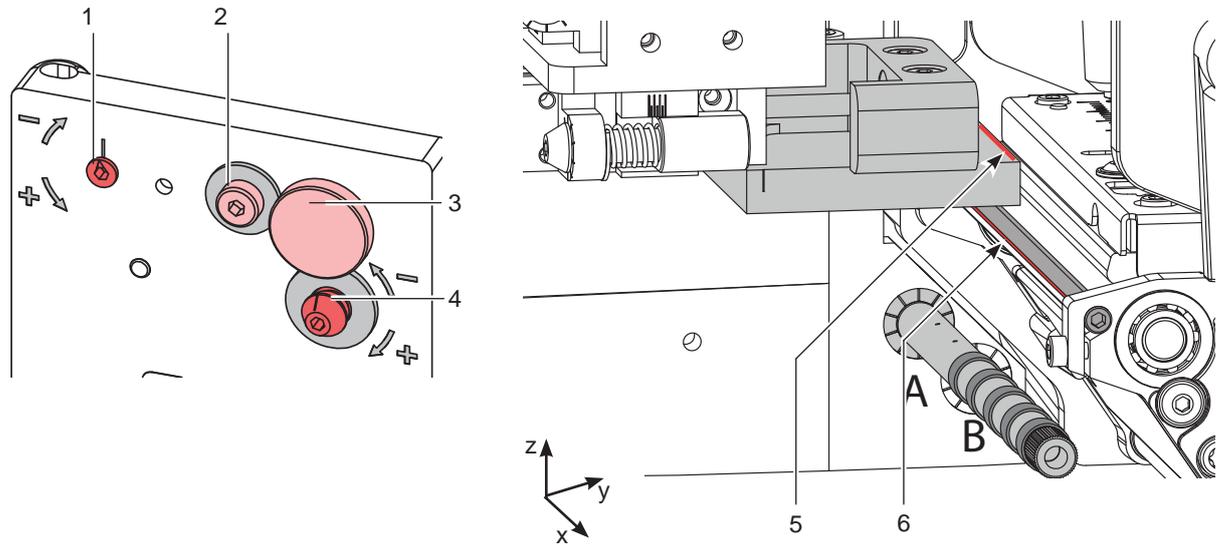
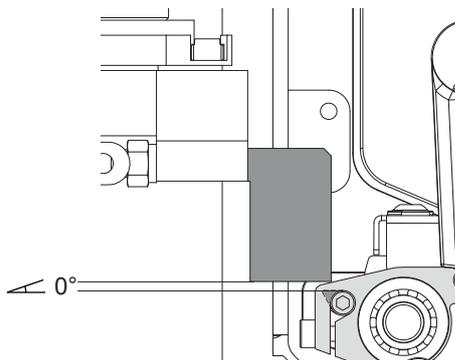


Fig. 13 Aligning the pad to the dispensing plate

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).

6.1.1 Moving the Pad in Y-Direction

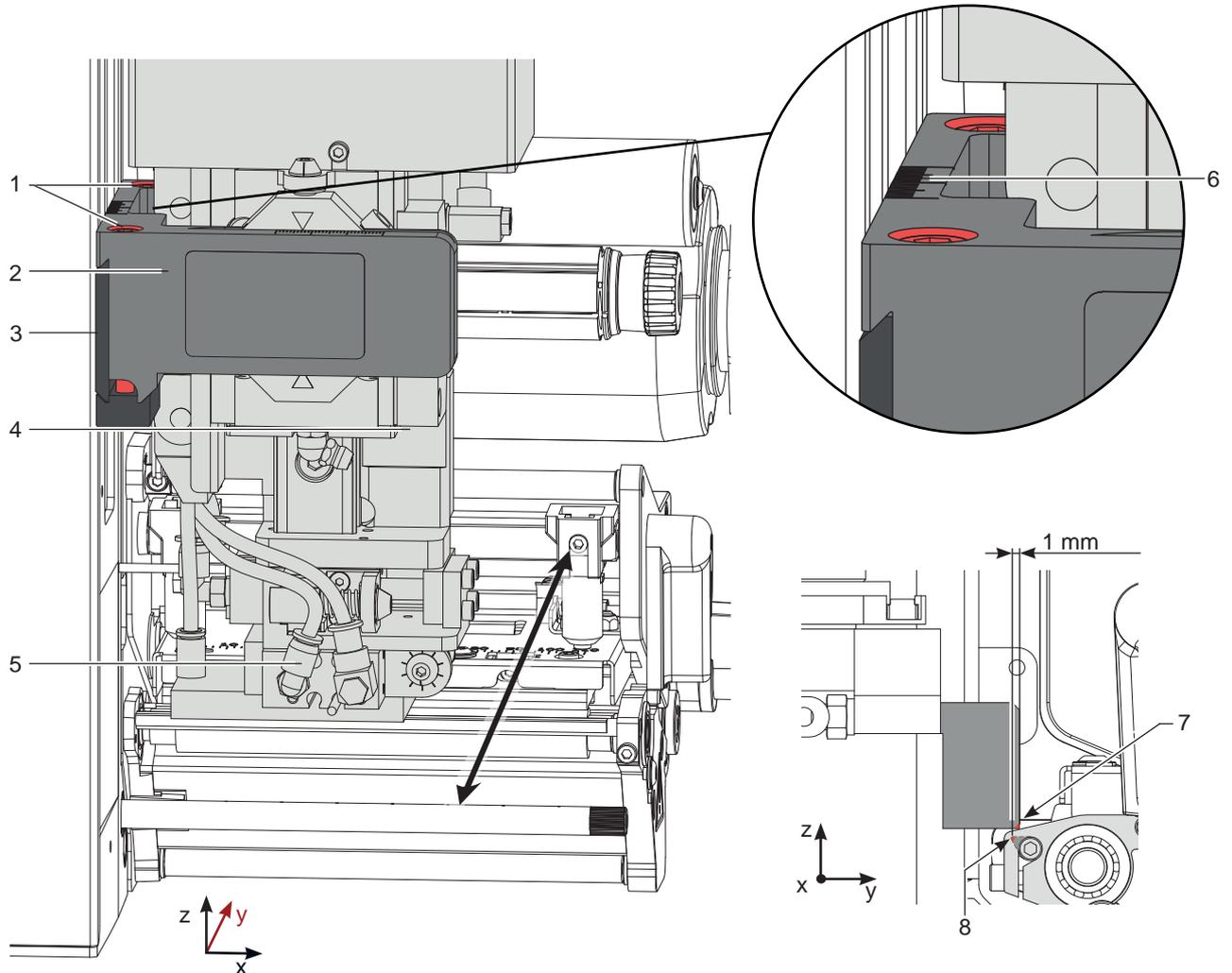


Fig. 14 Displacement in the Y direction

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.

6.1.2 Moving the Pad in Z-Direction

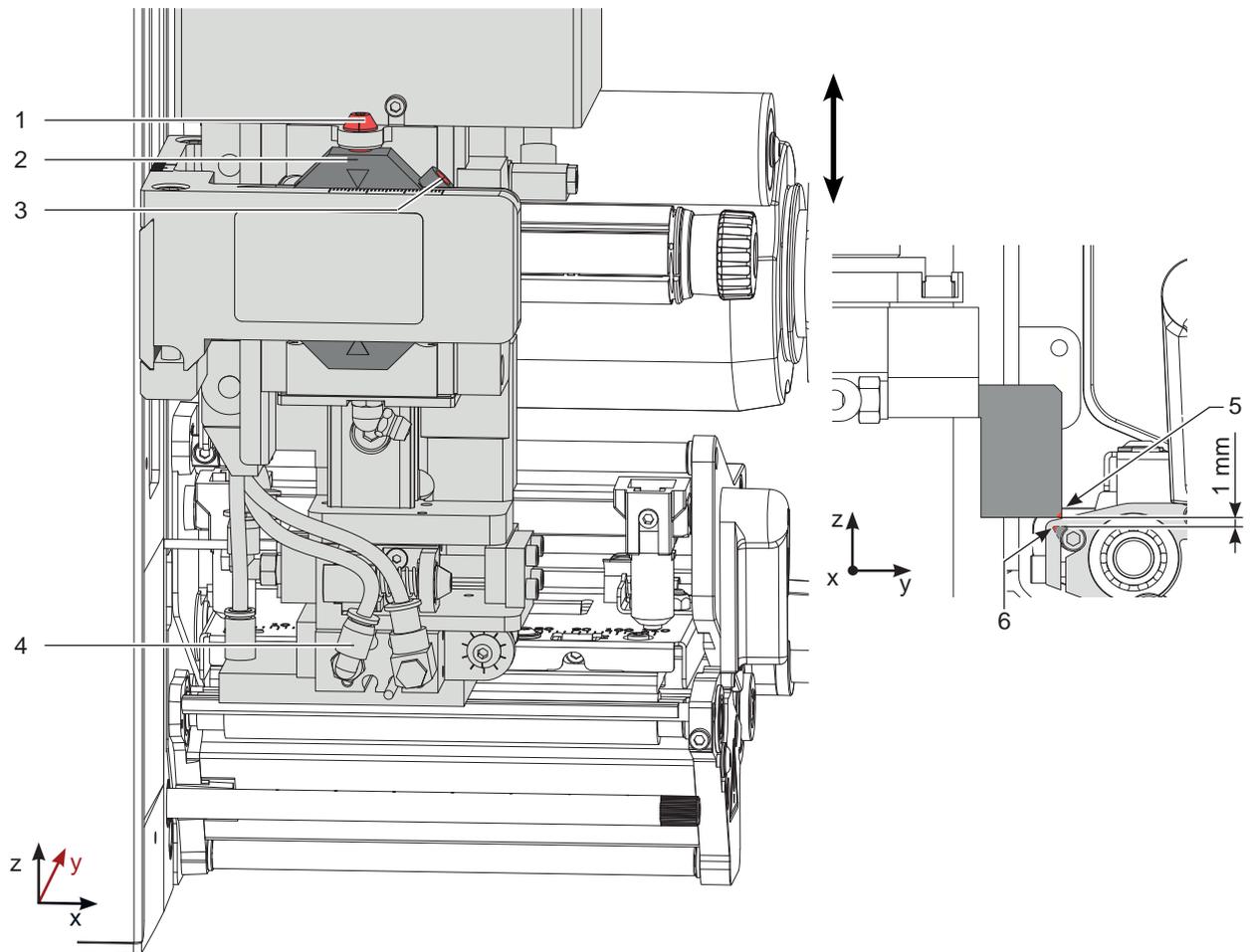


Fig. 15 Displacement in the Z direction

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.

6.1.3 Moving the Pad in X-Direction

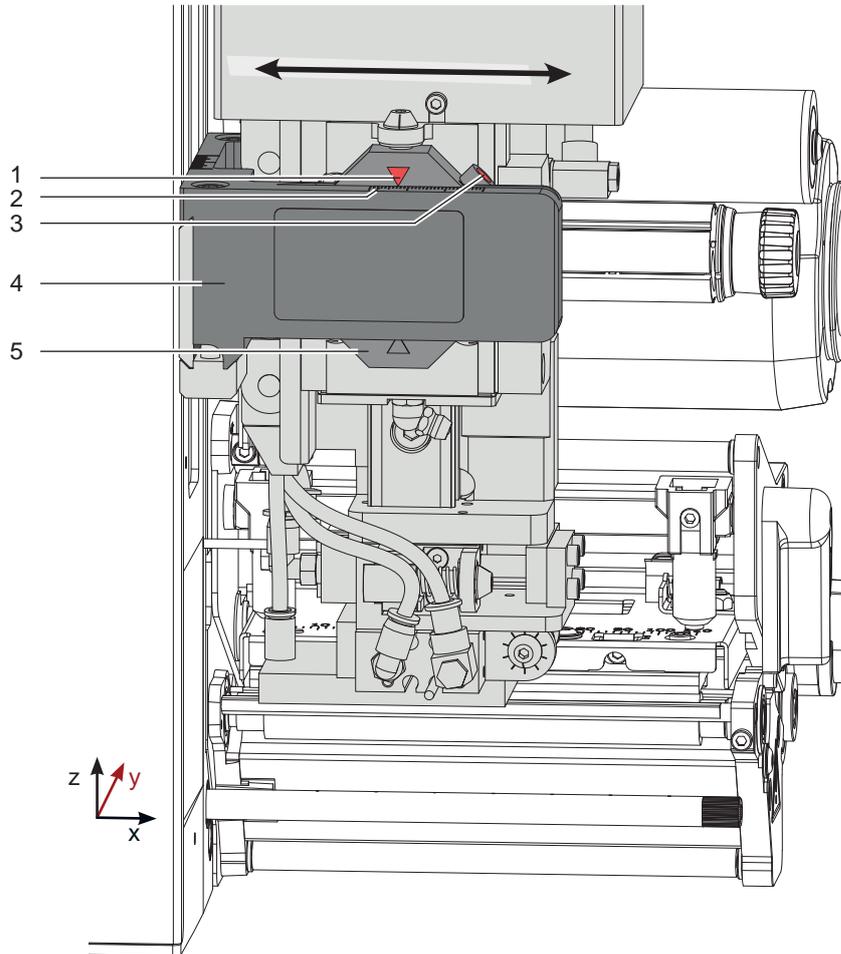


Fig. 16 Displacement in the Y direction

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 is aligned centrally to the pad. As reference use the provided graduation/ruler on the crossbeam.
Orientation: Graduation (2) and Marking (1)
3. Tighten screw (3).

6.2 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.

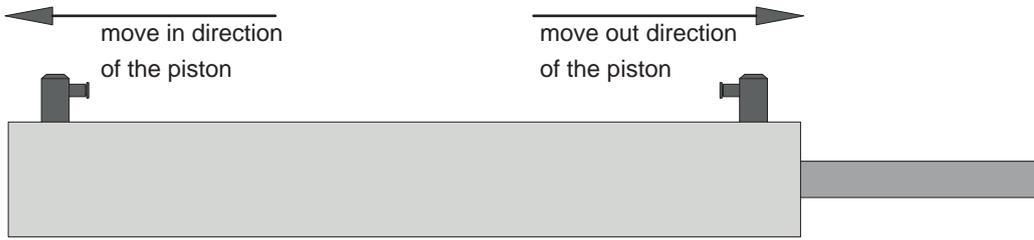


Fig. 17 Throttle valves on the cylinders



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.

- Factory settings throttle valves
 - Cylinder Z ▷ „6.7 Lift Speed of Cylinder Z“
 - Cylinder Y ▷ „6.12 Lift Speed of Cylinder Y“

6.3 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.

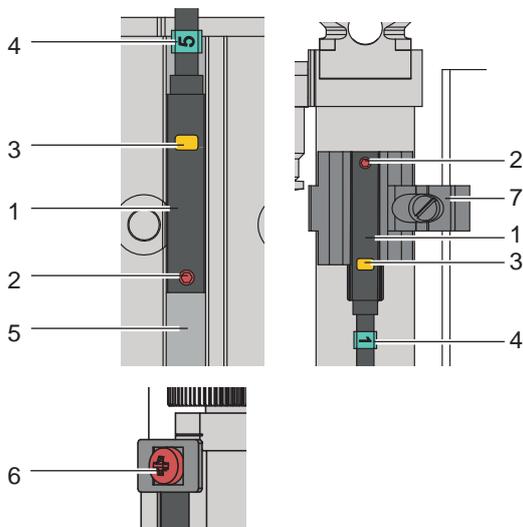
An LED is integrated for status detection of the sensor. This LED lights up when the sensor is triggered by the magnet in the cylinder piston.



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. 18 Sensor / Mounting

- Factory setting sensors
 - Cylinder Z ▷ „6.8 Sensors on Cylinder Z“
 - Cylinder Y ▷ „6.13 Sensors on Cylinder Y“

6.4 Vacuum Adjustments

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

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

The default Value of the Vacuum is -0.6 bar.

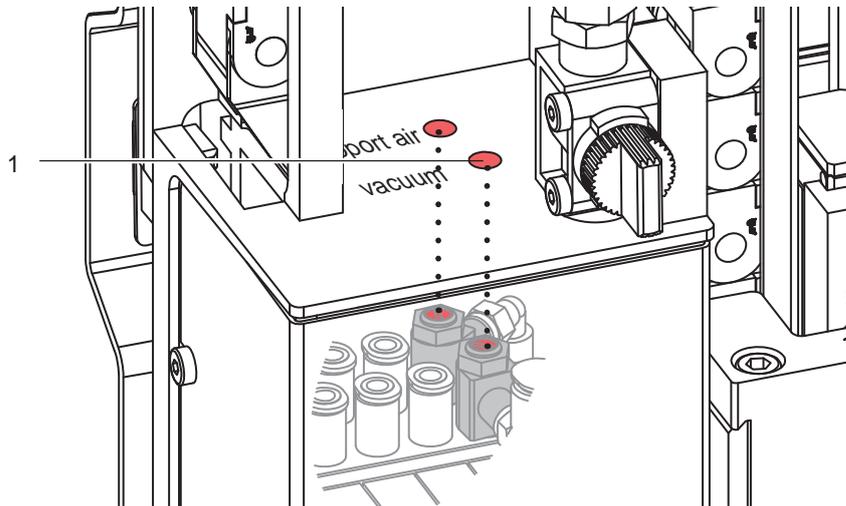
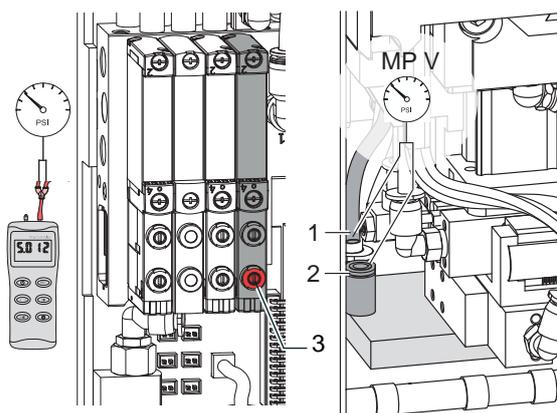


Fig. 19 Throttle valve "vacuum"

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

Measuring Point Vacuum (MP V)



Use a manometer with a measurement range of -7 to 7 bar

MP V: Vacuum -standard value -0.6 bar

1. Remove cover.
2. Cover the suction plate so it is airtight.
3. Attach manometer between tube (1) at the energy track and fitting (2) on the pad.
4. Activate the valve manually by pressing the micro switch (3) to measure the pressure.
5. Adjust the pressure as required.
6. Mount cover.

Fig. 20 Measuring points of the vacuum



Attention!

After pressure measurements, reconnect all components correctly.

6.5 Blow Tube (Support Air) Adjustments

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

The default factory value is 2 bar.



Note!

When changing the label size (2", 4" or 6") the appropriate blow tube is to be used.

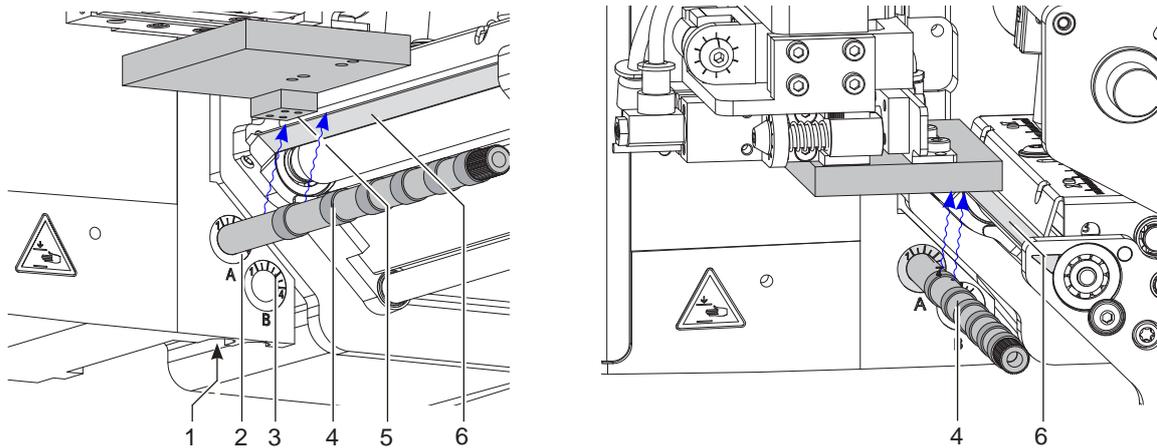


Fig. 21 Adjust the blow tube

The blow tube (2) for the supporting air can be rotated around its axis. This allows the direction of the supporting air can be optimized.

1. Loosen screw (1).
2. Put in the blow tube (4) into the tube adapter A (2).
Turn the blow tube (2) in the direction that the air current can support the take up of the label.
 - For small labels direct the air current to the dispensing edge (4) of the printer.
 - For larger labels direct the air current away from the dispense edge (4).
 Use the graduation to orientation.
3. Open as many holes of the blow tube as are needed to cover the label width. Remove rings (4) if necessary.
All holes outside the label width should be covered with the shrink tube rings provided. Once the unneeded holes have been covered the shrink tube should be shrunk.
4. Tighten screw (1).

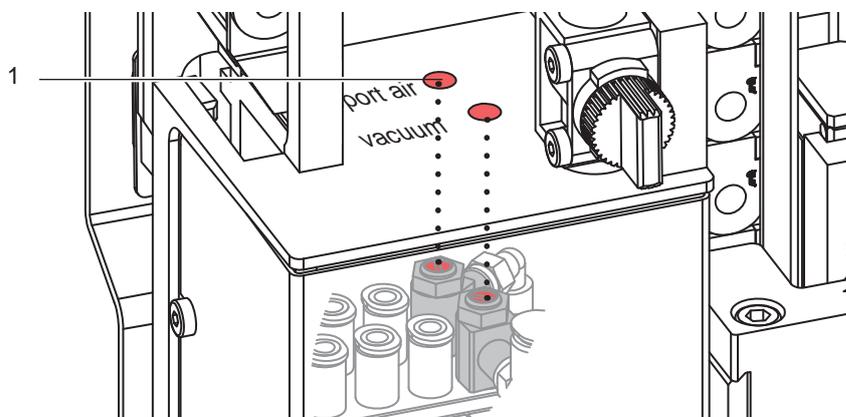
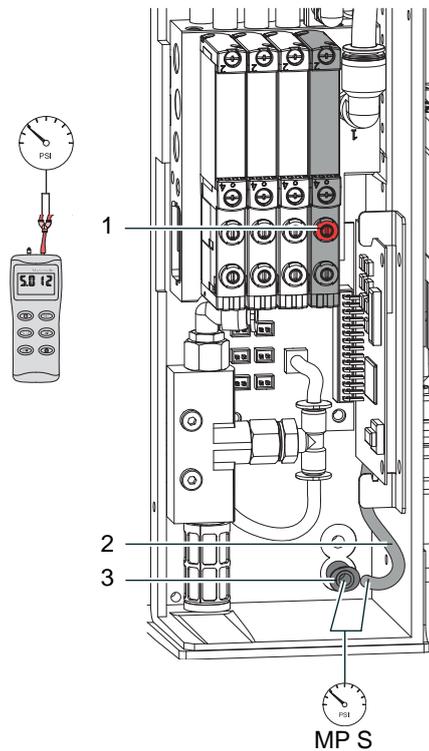


Fig. 22 Throttle valve "support air"

The strength of the supporting air can be varied via the provided throttle valve (1).

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

Measuring Point Support Air (MP S) of support air



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

MP S : support air (reference value 2 bar)

1. Remove cover and connect the manometer on RP S.
 - Tube (2) from valve block to blow tube connector.
 - Fitting (3) on the blow tube.
2. Activate the valve manually with open compressed air supply and pressing of micro switch (1) to measure the pressure.
3. As and when required adjust it on support air throttle valve "support air" .
4. Mount cover again.

Fig. 23 Reading points to measure the pressure



Attention!

After pressure measurements, connect all component exactly and check it.

6.6 Labelling Position of the Tamp

The labelling position is depend of the customer environment and must adjust finally on-site.

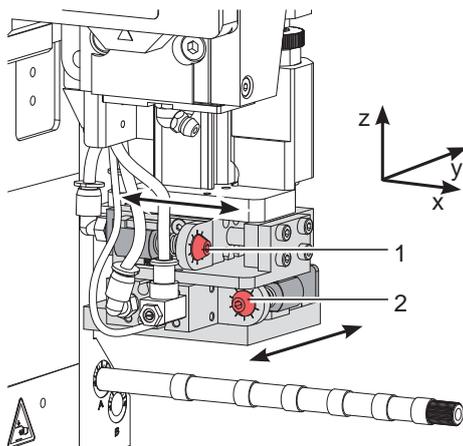


Fig. 24 Adjusting the labeling position

The labelling position of the tamp is different to the start position in X- and Y-direction and will adjust by setting screws in both directions.

With the setting screws is a positioning space up to +/- 2 mm possible.

- Setting in Y-direction by setting screw (1) .
- Setting in X-direction by setting screw (2) .

6 Adjustments

6.7 Adjustment of the Stopper for Blow Mode



Note!
For operation mode "Blow on" only!

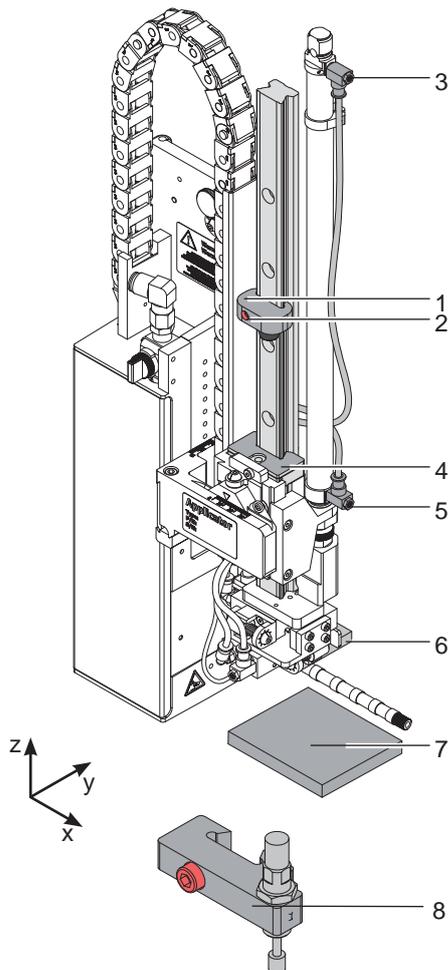
The operation mode "Blow on" allows labelling without contact.

The pad does not press on the product. The label will be blown from the pad onto the product over a distance of up to 10 mm.



Attention!

► Switch off the printer and close the shutoff valve of the compressed air via the shut-off valve!



1. Place a product sample (7) at the labelling point.
2. Pull the tubes out of the push-in-fittings (3,5).
3. Loosen the screw (2) in the stopper (1).



Note!
In case you move the tamp assembly manually move in the Y-cylinder. So that the tamp doesn't touch the dispense plate or blow tube during movement.

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



Note!
To reduce the impact energy of the tamp it's possible to use a stopper with absorption as option.

Fig. 25 Adjusting the Stopper

6.8 Lift Speed of Cylinder Z

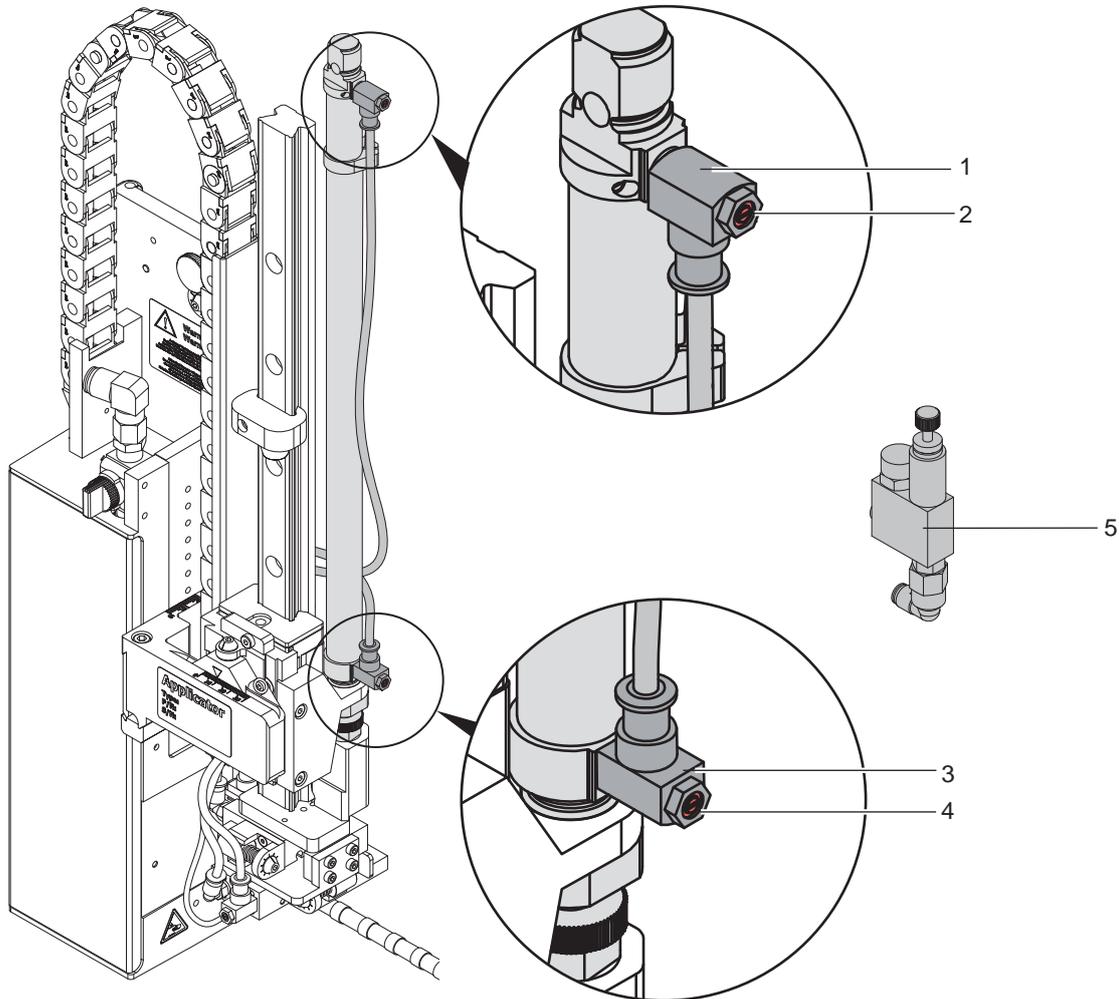


Fig. 26 Throttle valves on the cylinder Z

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

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

**Note!**

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

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

**Attention!**

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

**Note!**

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

- ▷ „6.11 Adjusting the Options for Z-Direction Movement“

6.9 Sensors on Cylinder Z

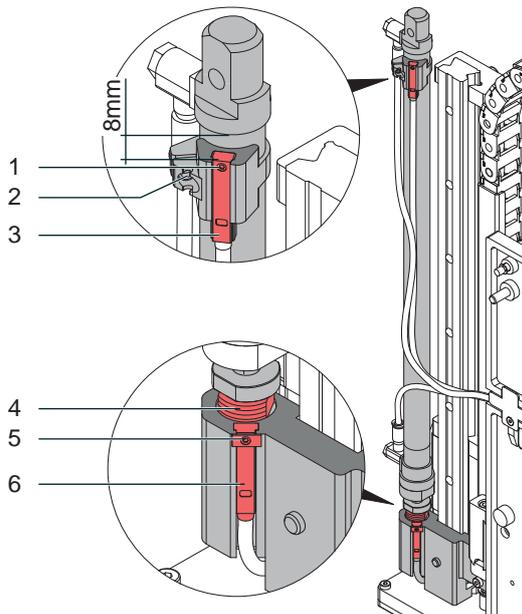


Fig. 27 Sensors on cylinder Z

Sensor Start Position (3) Cylinder Z

1. Loosen screw (1) of sensor "Start Position" (3) and move the sensor so that the top edge of the sensor sits comfortably in the sensor holder.
2. Remove the compressed air tubes of the cylinder Z and power up the printer with connection to the applicator.
3. Move the pad toward the stopper manually.
4. Loosen screw (2) of the sensor holder.
5. Position the sensor so that it triggers securely with lit up LED at complete contraction of cylinder Z. This is achieved with the top edge of the sensor being about 8 mm from the top edge of the connection ring.
6. Tighten screw (2).

Sensor End Position (6) Cylinder Z

The sensor End Position (6) is to be mounted flush with the upper edge of the punch holder. Depending on the weight of the punch and the installation position, the tension of the spring in the adapter bolt is set in order to avoid unintentional triggering of the sensor End Position (6). The triggering magnet is integrated in the adapter bolt and varies its position when the spring tension changes.

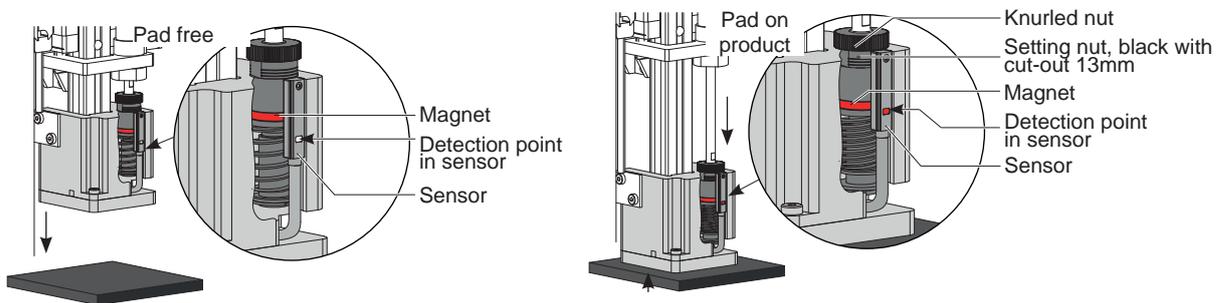


Fig. 28 Labelling sensor principle

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

6.10 End Position Cushioning



Note!

The end position cushioning on the cylinder is adjusted by factory at customer project values. It's not necessary to change it if you don't change the configuration.

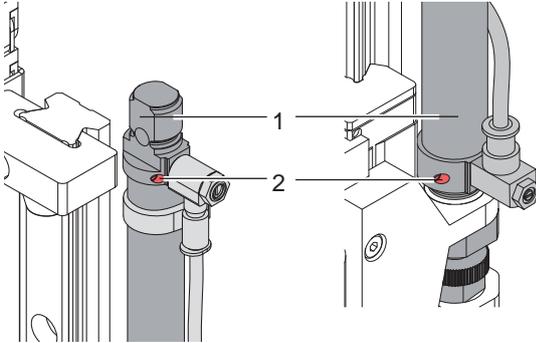


Fig. 29 End Position Cushioning

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

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

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

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

6.11 Adjusting the Options for Z-Direction Movement

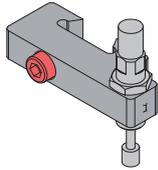


Fig. 30 Stopper (Guide Rail)

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

Adjustments like chapter ▷ „6.5 Adjustment of the Stopper for Blow Mode“

Adjust the stopper with maximum compressed spring.

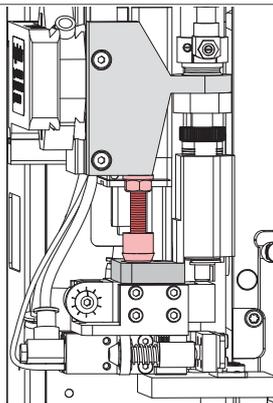


Fig. 31 Stopper (Tamp Assembly)

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

The adjustment must be done in the start position of the applicator.

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

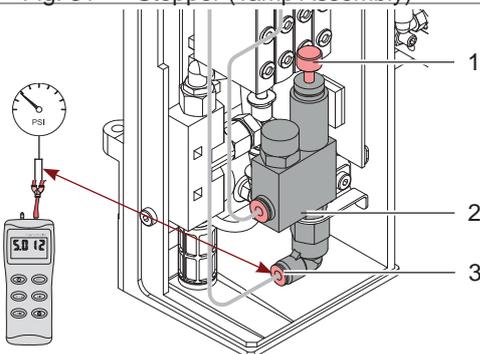


Fig. 32 Pressure reduction valve Cylinder Z

The pressure reduction valve (2) can be used when labelling pressure-sensitive products or considering general safety aspects to reduce the pressure of the cylinder in Z-direction. The standard value is 2.5 bar.

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

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

Instructions are provided with the upgraded set.

6.12 Lift Speed of Cylinder X/Y

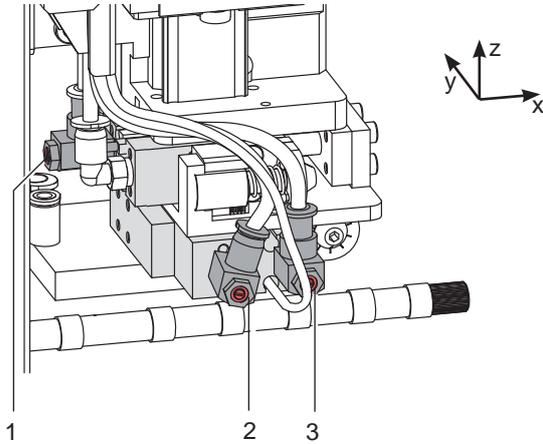


Fig. 33 One-Way Flow Control Valve on Cylinder X/Y

- ▶ Adjust lift speed as necessary.
- ▶ To push the movement out in X-direction turn the screw on throttle valve (1) counterclockwise. turning clockwise on throttle valve (1) reduces the speed (move out) in X-direction.
- ▶ To push the movement out in Y-direction turn the screw on throttle valve (2) counterclockwise. turning clockwise on throttle valve (2) reduced the speed (move out) in Y-direction.
- ▶ To push the movement in Y-direction turn the screw on throttle valve (3) counterclockwise. turning clockwise on throttle valve (3) reduced the speed (move in in Y-direction).

6.13 Sensors on Cylinder X/Y

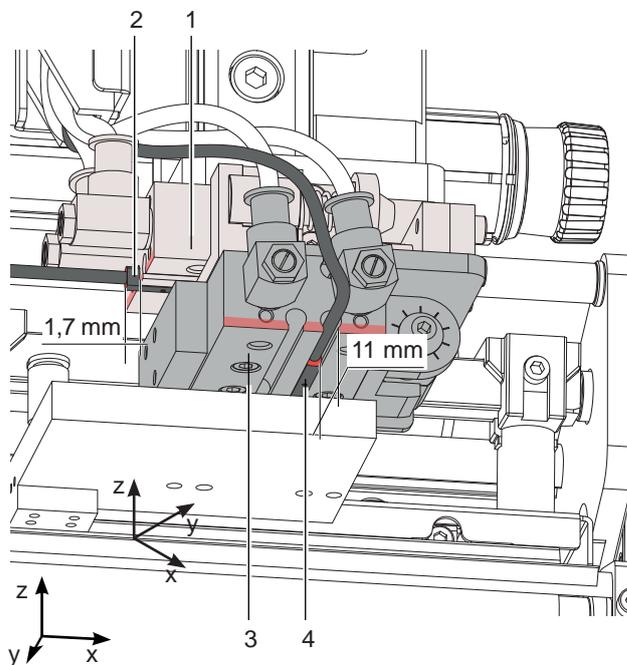


Fig. 34 Sensors on cylinder X/Y

- Place sensor start position(2) cylinder X so that it switched on in case the cylinder X (1) is full moved in and switched off if the cylinder leaved this position.

Factory setting: **1.7 mm** outwards from the front edge of the cylinder to the edge of the sensor on the cable.

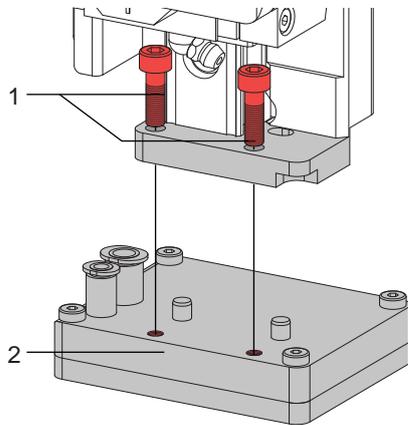
- Place sensor end position (4) cylinder Y so that the sensor will switch on if the cylinder Y (3) is completely moved out and will switch off if the cylinder leaved this position.

Factory setting: **11 mm** inwards from the front edge of the cylinder to the edge of the sensor on the cable.

6.14 Labeling from Below - Changing the Spring of the Impact Sensor

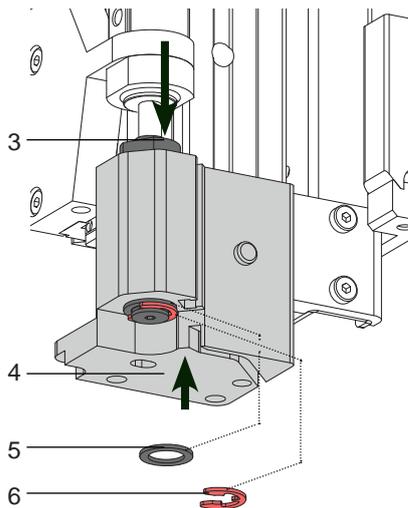
For fault free labeling in a side- or upward-motion it is necessary to change the spring of the impact sensor.

The stronger spring prevents the unwanted triggering of the impact sensor due to the inertia of the cylinder and stamp assembly group.



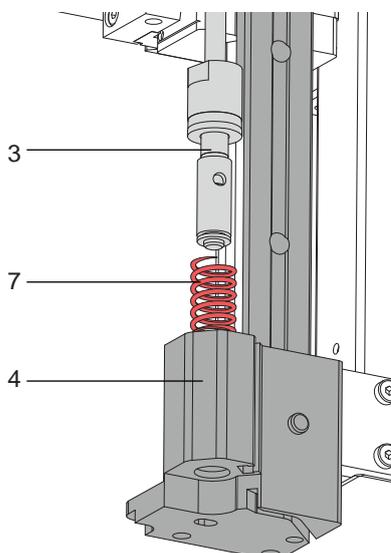
- ▶ Loosen screw (1) and dismount the stamp (2) to get to the locking washer (6).

Fig. 35 Demounting the stamp



- ▶ Push the adapter bolt (3) into the stamp uptake (4) to ensure that the bottom of the bolt is pushed out. Demount locking plate (6).
- ▶ Remove washer (5).

Fig. 36 Loosening the adapter bolt



- ▶ Hold onto the adapter bolt (3) and pull off the stamp uptake (4).
- ▶ Pull out the pressure spring (6) and replace it with the alternative.
- ▶ Push together the stamp uptake (4) and the adapter bolt (3).
- ▶ Replace the washer (5).
- ▶ Place the locking washer (6) back into it's position.

Fig. 37 Changing the spring

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

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

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

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

Table 3 Operation and application modes

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



Note!

For more information about the printer configuration and the function of the buttons in the navigator pad

▷ Configuration manual of the printer or ▷ Operator's manual of the printer

7.1 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.

7.2 Configuration Parameters of the Applicator

► Start menu.

► Select  Setup >  Labelling.

Parameter	Meaning	Default
 <i>Transfer mode</i>	Setting the operation mode <i>Stamp on, Roll on, Blow on</i>	<i>Stamp on</i>
 <i>Cycle sequence</i>	Setting the application mode <i>Print-Apply / Apply-Print</i> <i>Print-Apply:</i> An external start signal 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 at <i>Transfer 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>	* Only at <i>Transfer mode = Roll on</i> Switch-on time (max. 2,5 s) of the blowing air for the label transfer	<i>1000 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>0 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>	All start signals coming in following the first start signal are ignored when they arrive within the lock time (max. 2,5 s).	<i>0 ms</i>
 <i>Vacuum delay</i>	<i>On</i> - The vacuum will be switched on after the label feed is completed. <i>Off</i> - The vacuum will be switched on when the label feed starts.	<i>Off</i>
 <i>Vacuum control</i>	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>Off</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 4 Parameters of the Setup > Labelling menu

7.3 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 . ▷ „8.1 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
 - ▷ „7.3 Configuration Parameters of the Applicator“

Peel-off offset in the software

- ▶ Check the setting in the software. Perform labelling cycles by repeatedly pressing the Enter button .
- ▷ „8.2 Test Mode with a Print Job“
- ▶ Adjust the peel-off offset in such a way, that the printed labels are peeled-off completely from the liner
 - ▷ Programming manual or software documentation.

7.4 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.

8.1 Test Mode without a Print Job

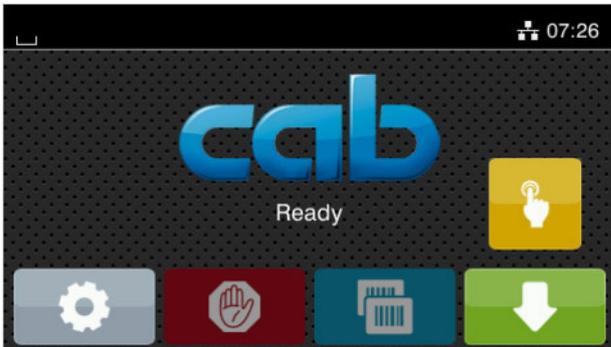


Fig. 38 Display

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 . When pushing this button the cylinder Z is extended into the labeling position. Reaching the labeling position is signaled by the triggering of the impact sensor. With that signal the vacuum is stopped and the label is applied to the product. With the application of the label the cylinder is contracted back into the starting position.



Note!

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

8.2 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 two half cycles:

- ▶ Push the  button.

Half cycle 1

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

- ▶ Push the  button.

Half cycle 2

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

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



Note!

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

9.1 Block Diagram Type 4414

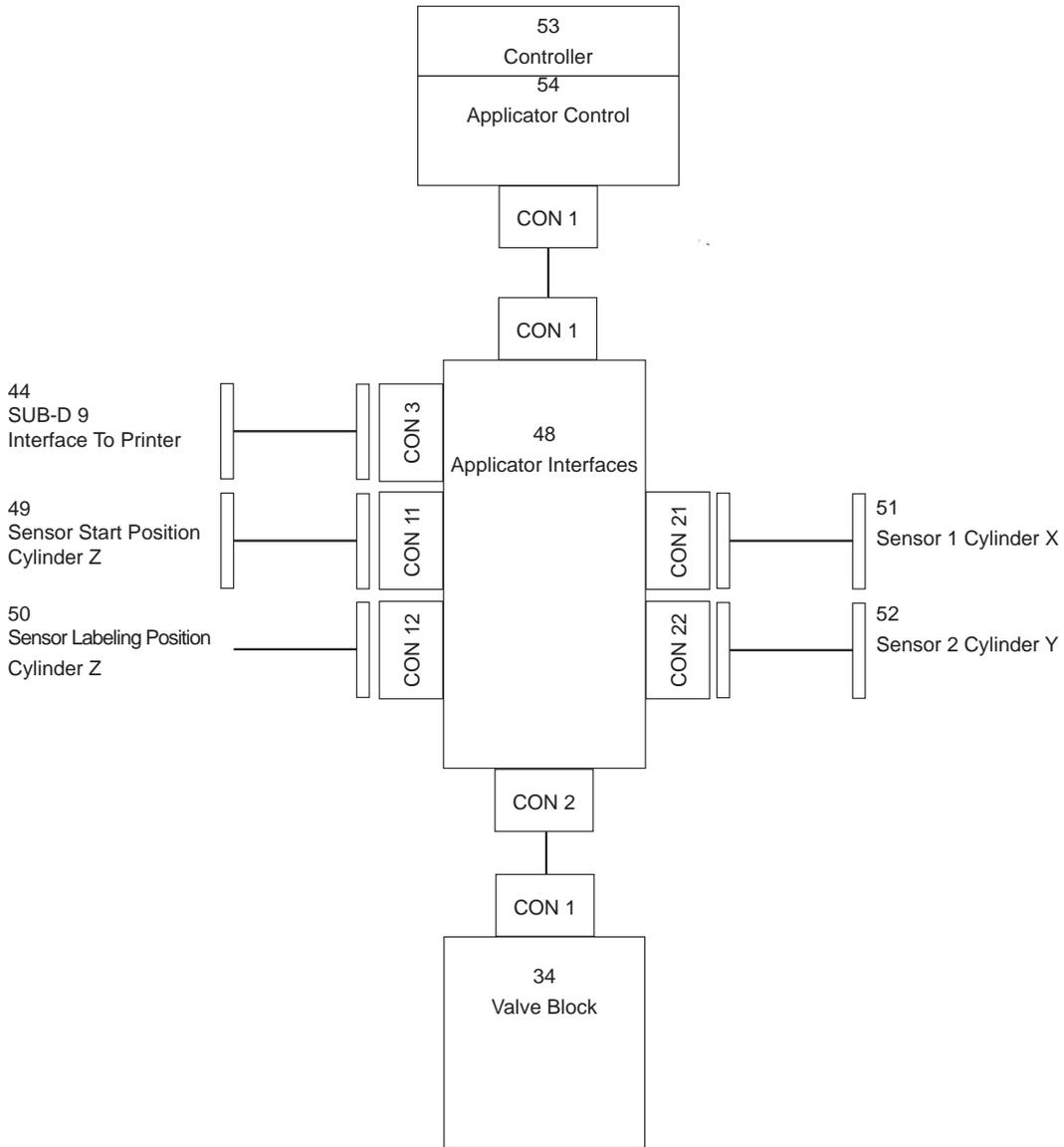


Fig. 39 Block diagram 4414

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