



Tamp Applicator with Lift and Turn Cylinder 4200

2 Operator's Manual - Translation of the Original Version for the following products

2

Family
4200

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1	Introduction	4
1.1	Instructions	4
1.2	Intended Use	4
1.3	Safety Instructions.....	4
1.4	Safety Marking	5
1.5	Environment.....	5
2	Product Description.....	6
2.1	Function	6
2.2	Important Features.....	6
2.3	Technical data	6
2.4	Device Overview	7
2.5	Delivery Of The Applicator	8
3	Installation	9
3.1	Mounting Device	9
3.1.1	Mounting Applicator	9
3.1.2	Mounting Tamp	10
3.2	Connections	11
4	Adjustments	12
4.1	Mechanical Adjustments	12
4.1.1	Adjustment the Pad Orientation in the Takeover Position	12
4.1.2	Setting the Blow Tube.....	13
4.2	Pneumatic Adjustments.....	14
4.2.1	Function Control Valves.....	14
4.2.2	Throttle Valves at the Valve Block	15
4.2.3	Throttle Valve at the Cylinder	16
5	Operation	17
5.1	Setting the Operating Mode and Delay Times	17
5.1.1	Takeover the label from printer to the applicator	17
5.1.1	DIP Switches	18
5.1.2	Potentiometer	18
5.1.3	Read Settings of Potentiometers.....	19
5.1.4	Operating Mode.....	19
5.2	Pre-Dispense Key	20
5.3	Peel Position	21
5.4	Normal Operation.....	21
6	PLC Interface.....	22
6.1	Comments on the Signals.....	22
6.2	Circuit Diagrams of Inputs and Outputs	24
6.3	Examples for Circuits to Creating an External Start Signal.....	25
7	Error Messages	26
7.1	Printer Error Messages	26
7.2	Applicator Error Messages.....	26
8	Function Of The LED's On The PCB.....	27
9	Declaration.....	28
9.1	EC Declaration of Incorporation	28
9.2	EC Declaration of Conformity.....	29
10	Index.....	30

1.1 Instructions

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



Danger!

Draws your attention to an exceptionally grave, impending danger to your health or life.



Warning!

Indicates a hazardous situation that could lead to injuries or material damage.



Attention!

Draws attention to possible dangers, material damage or loss of quality.



Notice!

Gives you tips. They make a working sequence easier or draw attention to important working processes.



Environment!

Gives you tips on protecting the environment.



Handling instruction



Reference to section, position, illustration number or document.



Option (accessories, peripheral equipment, special fittings).

Zeit 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 the life and limb of the user or third parties and/or damage to the device and other tangible assets can arise during use.
- The device may only be used for its intended purpose and if it is in perfect working order, and it must be used with regard to safety and dangers as stated in the operating manual.
- The device is developed to work in a system with a **Hermes A** printer
- The device applicator is intended exclusively for labeling suitable materials that have been approved by the manufacturer. Any other use or use going beyond this shall be regarded as improper use. The manufacturer/supplier shall not be liable for damage resulting from unauthorized use; the user shall bear the risk alone.
- Usage for the intended purpose also includes complying with the operating manual, including the manufacturer's maintenance recommendations and specifications.



Notice!

The complete documentation is currently in the Internet.

1.3 Safety Instructions

- 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.
- The device may only be used in a dry environment, do not expose it to moisture (sprays of water, mists, etc.).



Warning!

Make sure that the printer is disconnected from the power supply and the valve at the service unit as well as the shutoff valve at the applicator are closed, while installing the delivered components.

1 Introduction



Warning!

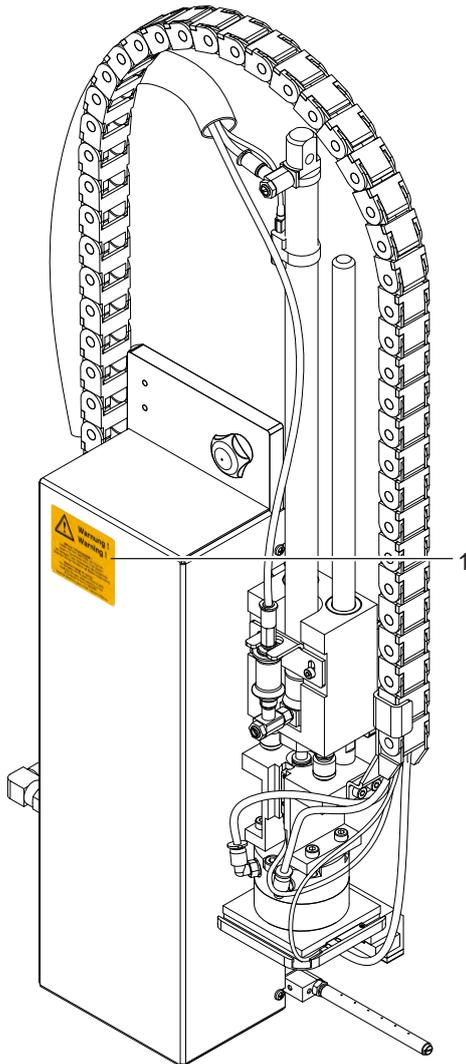
In operation, moving parts are easily accessible. Therefore, keep long hair, loose clothes and jewelry distant. Before any manipulations in those areas, close the shutoff valve.



Warning!

Do not try to manipulate or repair parts they are not described in the manuals of the tamp applicator or the printer.

1.4 Safety Marking



1:



Risk of injury by moved parts

Figure 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 printer enables it to be easily disassembled into its component parts.

- ▶ Send the parts for recycling.

The electronic circuit board of the device is equipped with a lithium battery.

2.1 Function

The universal tamp applicator **1005** is an additional module for the transfer printer **Hermes A**. It's developed for the automatically apply a label onto a product. To apply the label the applicator used a Tamp, which moved between a basic position and a labeling position by pneumatic cylinder. The label can apply in print direction or in a 90 degree position to the print direction.

In the start position the applicator is between two labeling cycles.

In the take-over position the tamp get the label from printer.

In the take-over position, the label is picked up from the printer by the vacuum plate of the pad. A sensor at the cylinder signals when the pad is in the take-over position.

The label is removed from the carrier ribbon directly at the dispense edge of the printer. It is sucked on the pad by a vacuum via drill-holes at the bottom of the pad.

For support, the label is also blown against the pad with an air current coming from a blow tube. The correct transfer of the label is controlled by a vacuum sensor.

Next, the pad is moved down into the labelling position, which is confirmed by another sensor (labelling position sensor). Here, the label is stamped onto the product.

While the pad is moving back into the starting position, the vacuum sensor controls whether the label has been removed from the pad. Specially adapted pads can be used for different label sizes

The label transfer to the product is possible over :

- **Stamp**
The label will be impressed at the unmoved product by pad.

2.2 Important Features

- Supporting air, vacuum and cylinder speed are adjustable. So it's possible to accommodate the system to different label sizes.
- For operation in a superior system the applicator's PLC (programmable logic control) interface with potential free inputs and outputs can be used.
- To integrate the applicator in a higher process the applicator has a PLC Interface with a 15-pin SUB-D connector.

2.3 Technical data

Label transfer		Stamp
Label width in mm		4-80
Label height in mm		4-20
Cylinder stroke in mm		100-400
Compressed air supply		0,5 MPa (5 bar)
Product surface		flat
Noise level		under 70 dB(A)
Product height	variable	■
	fixed	-
Product	stationary	■
	moving	-
	rotating	-

Table 1 Technical data

2.4 Device Overview

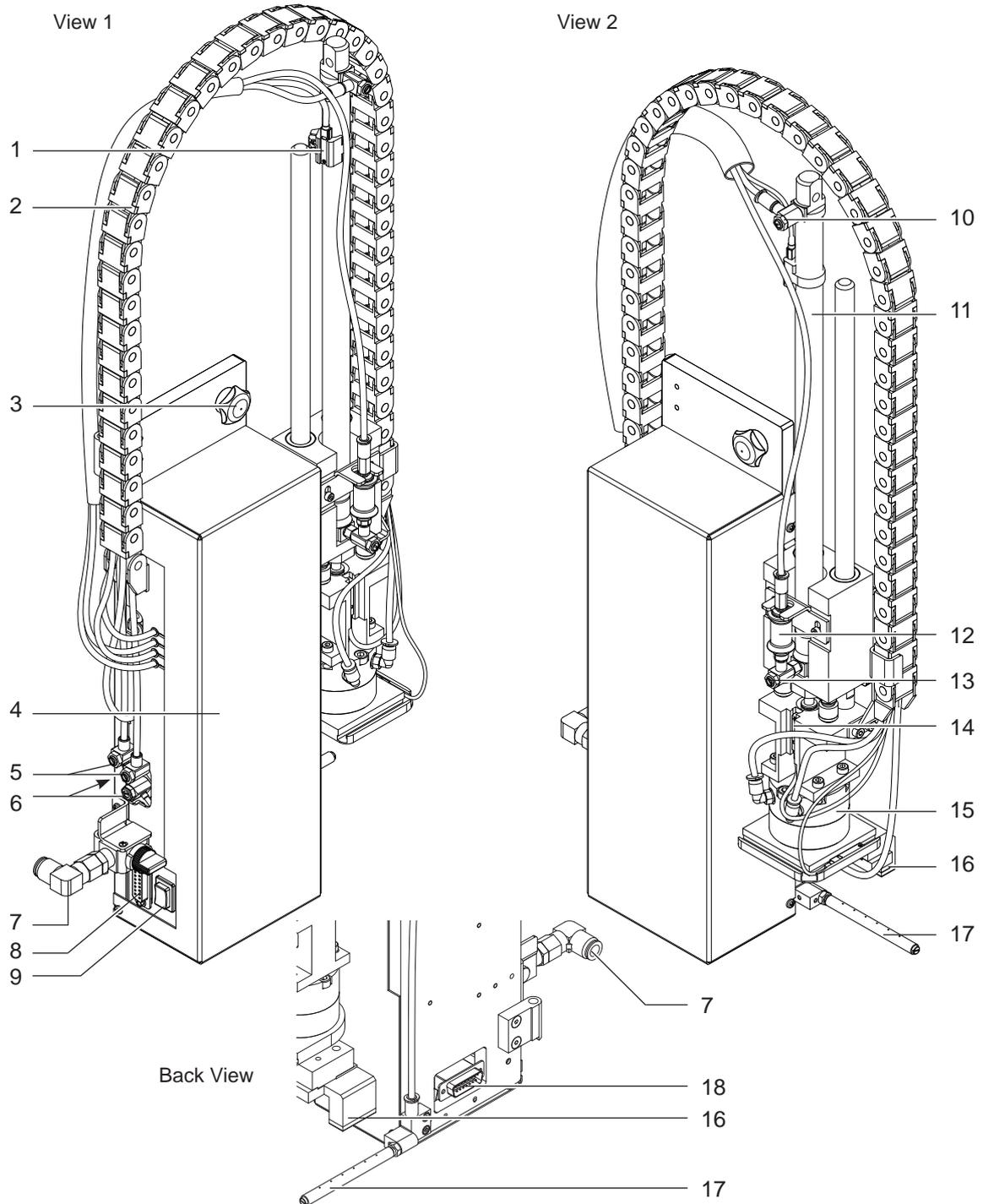
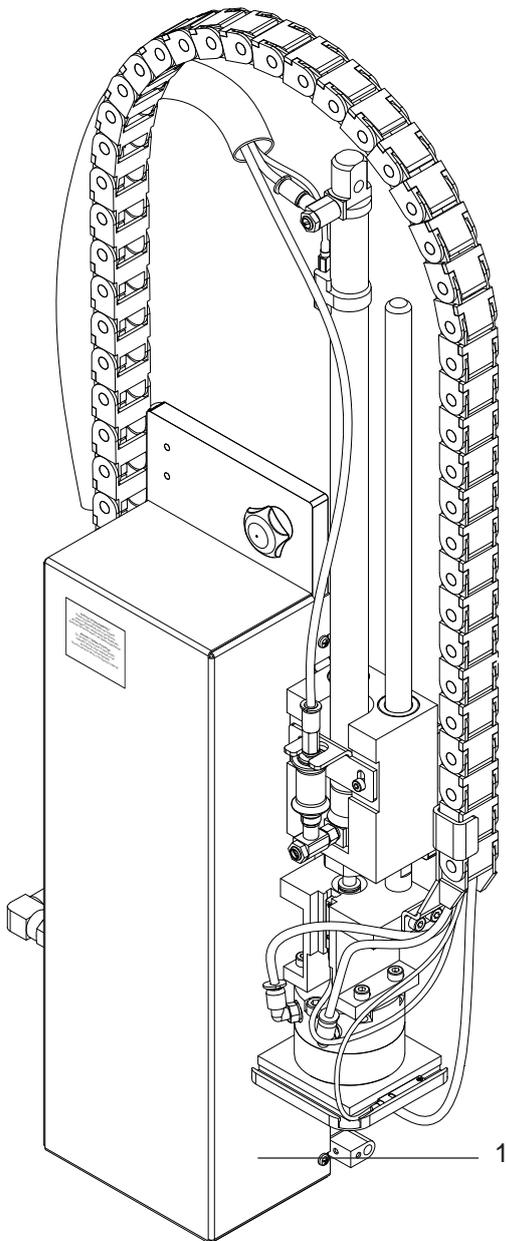


Figure 2 Overview

- | | | | |
|---|---------------------------------------|----|------------------------------|
| 1 | Sensor "high end position" | 10 | Throttle valve lift cylinder |
| 2 | Energy Track | 11 | Lift cylinder |
| 3 | Thumbscrew | 12 | Slide valvel |
| 4 | Cover | 13 | Throttle valve lift cylinder |
| 5 | Throttle valve turn cylinder | 14 | Sensor "Labeling Positionr" |
| 6 | Throttle valve vacuum and support air | 15 | Turn cylinder |
| 7 | Connector compressed air | 16 | Tamp (* customized) |
| 8 | PLC Interface | 17 | Blow tube (* customized)) |
| 9 | Pre dispense key | 18 | Interface Applicator-Printer |

2.5 Delivery Of The Applicator



- 1 Applicator 4200
 - 2 Hinges and screws, 2 Sets
 - 3 Screw
(in the set of the tamp)
 - 4 Tamp (as per order)
 - 5 Blow tube (as per order - to the tamp)
- Documentation

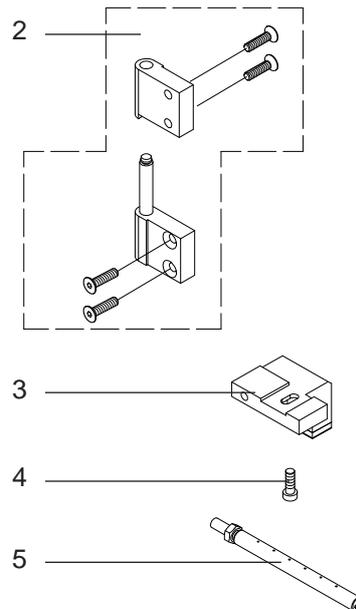


Figure 3 Delivery

**Notice!**

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

**Attention!**

Damage of the applicator by water and wetness.

► Use printer and applicator only in a dry environment.

3.1 Mounting Device



Warning!

Risk of injury trough uncontrolled movement of the applicator.
Mount the applicator only when the printer is switched off and the compressed air is disconnected.



Warning!

Risk of injury and damage in case of using the applicator not appropriate.
Use the applicator only secure mounted at a Hermes A - printer.

3.1.1 Mounting Applicator

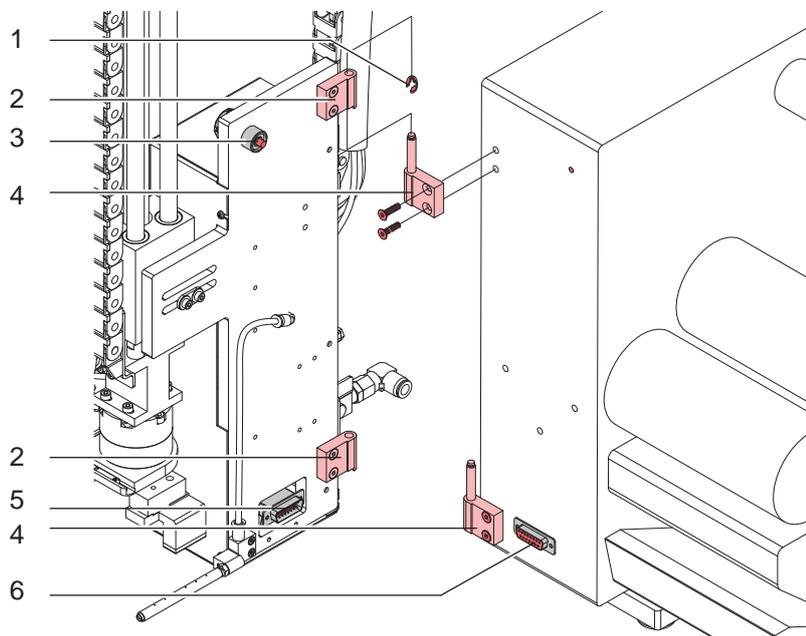


Figure 4 Mounting and connecting

1. Axle part of hinges (4) mount like Figure 4 .
2. Applicator hang with the female part (2) of hinges at the printer mounted hinges parts (4).
3. Lock hinges by snap ring (1).
4. Connect SUB-D15 male connector (5) to the female connector (6) of the printer.
5. Swing the applicator to the printer and tighten the thumbscrew (3).

3.1.2 Mounting Tamp

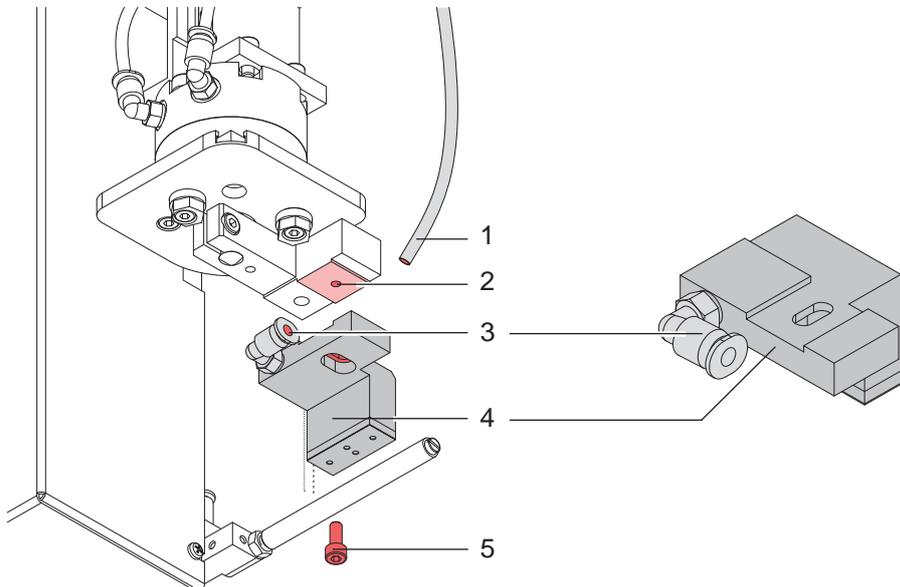


Figure 5 Mounting pad

**Warning!**

Mount the pad only when the printer is switched off and the compressed air disconnected.

1. Put the tamp (4) with the nut over the guiding of the tamp holder (2).
2. Fix tamp (4) with screw (5) on the tamp holder (2).
3. Put in the vacuum tube (1) into the L connector (3) of the tamp.

**Attention!**

- ▶ To avoid a collision of the pad with other parts of printer or applicator make a first adjustment of the pad in all directions before the printer switched on and the compressed air will be connected. (▷ "Mechanical Adjustments").

3.2 Connections

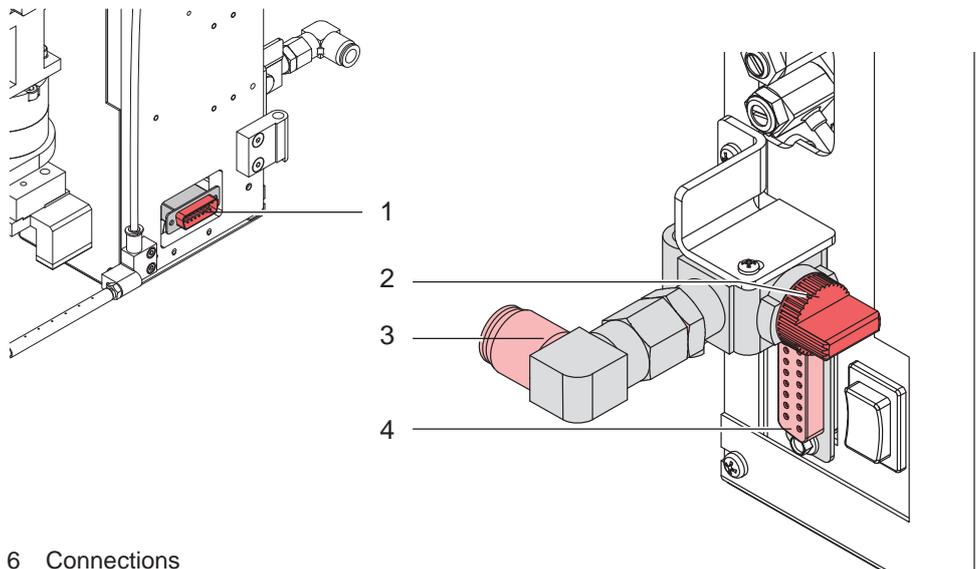


Figure 6 Connections

1. Connect SUB-D 15 male connector (1) to the female connector (Fig. 4-6) of the printer.
2. Swing the applicator to the printer and tighten the knurled screw (4-2) at the printer.
3. Check the vertical position of the stop valve (2) . (stop valve closed)
4. Attach compressed air at the fitting (3) .
5. Connect the PLC-interface (4) via 15-pin female connector. (▷ PLC-interface)



Warning!

The pad will move promptly from the bottom up after opening the compressed air supply and switch-on the printer! Risk of bruise!

- ▶ Don't touch in the area of moving parts and secure hairs, loose clothes and jewelry.

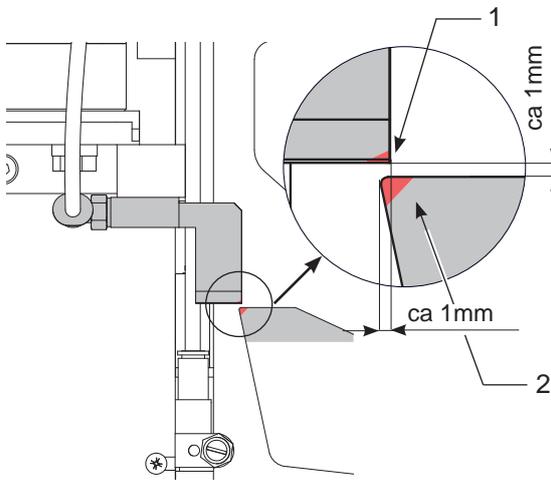


Warning!

Guide bar can move over the fix mounted parts of the system.
Risk of crush!

4.1 Mechanical Adjustments

4.1.1 Adjustment the Pad Orientation in the Takeover Position



The exact adjustment of the pad in the takeover- (or start-) position is necessary to get a faultless transfer of labels between printer and applicator. To adjust the pad, put in the material like the operator's manual of the printer.

Look for the right size of labels to the pad.

The printer side of the pad (1) must be parallel and approx. 1mm over the dispense plate edge (2).

Also adjust the pad in a vertical distance of approx. 1mm to the dispense plate edge (2).

Figure 7 Tamp orientation to the dispence plate of the printer

1. Put in material into the printer and make that the label will be in dispense position (▷Operator's Manual of the printer)
2. Open compressed air and switch on the printer to move the pad of the applicator in start position.
3. Loosen knurled screw (3) and counter nut (5) of the setting screw (4) .
4. Press the applicator against the printer and adjust with the setting screw (4) the pad in a line to printer dispence plate.
5. Tighten the counter nut (5) and fix the applicator with the knurled screw (3) .
6. With loosening the nuts (6) sand turning the stopper (6) you can adjust the pad in a vertical direction.
7. With loosening the screws (8) you can adjust the pad in a horizontal direction across to the printer.
8. A fine adjustment in horizontal print direction is possible with the screw (11) and screws (9) . Move the pad for adjustments to the printer.

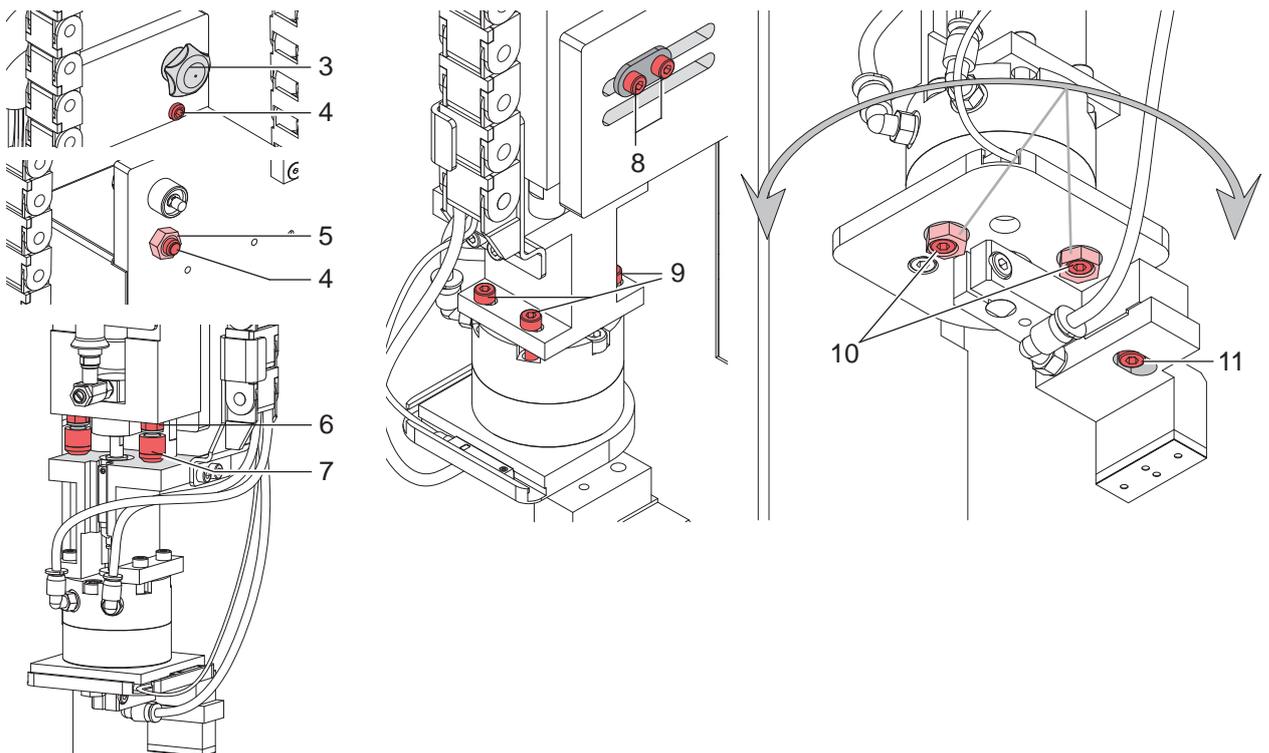


Figure 8 Adjustment the pad orientation - Label takeover

4.1.2 Setting the Blow Tube

It's possible to change the direction of supporting air by rotation the air tube (3).
I case of a smaller label the airstream direction must be near the dispense edge (1).

1. Hold the slotted screw (4) with a screw winder and loosen counter nut (2).
2. Adjust the tube (3) by rotation until the air current is aligned with the dispense edge (1) of the printer.
3. Tighten the counter nut (2).

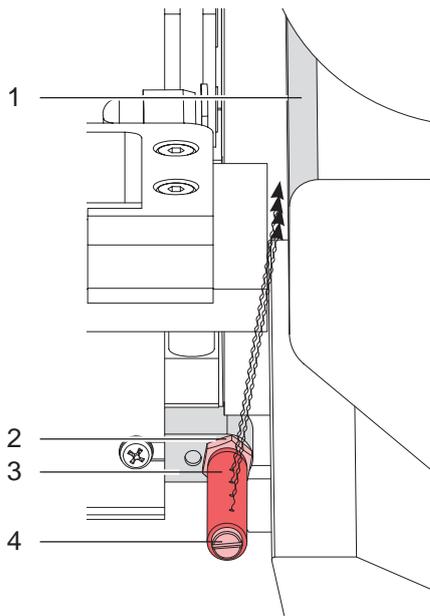


Figure 9 Adjust the blow tube

4.2 Pneumatic Adjustments

4.2.1 Function Control Valves

Except valve (1) for control the lift cylinder all valves are mounted at the valve block.

These valves will triggered by electrical signals in normal operation.

Its also possible to trigger the valves by hand via a micro switches (5) at the valves for tests.

The manually control of valve (1 - lift cylinder) and valve (2 - mini slide cylinder) is possible only in case of a switched off printer.

To reach the valves at the valve block it's essential to dismount the cover.

(▷ 5.1 Operation)

- Valve (1) to control the lift cylinder
- Valve (2) to control the mini turn cylinder
- Valve (3) to control the supporting air
- Valve (4) to control the vacuum

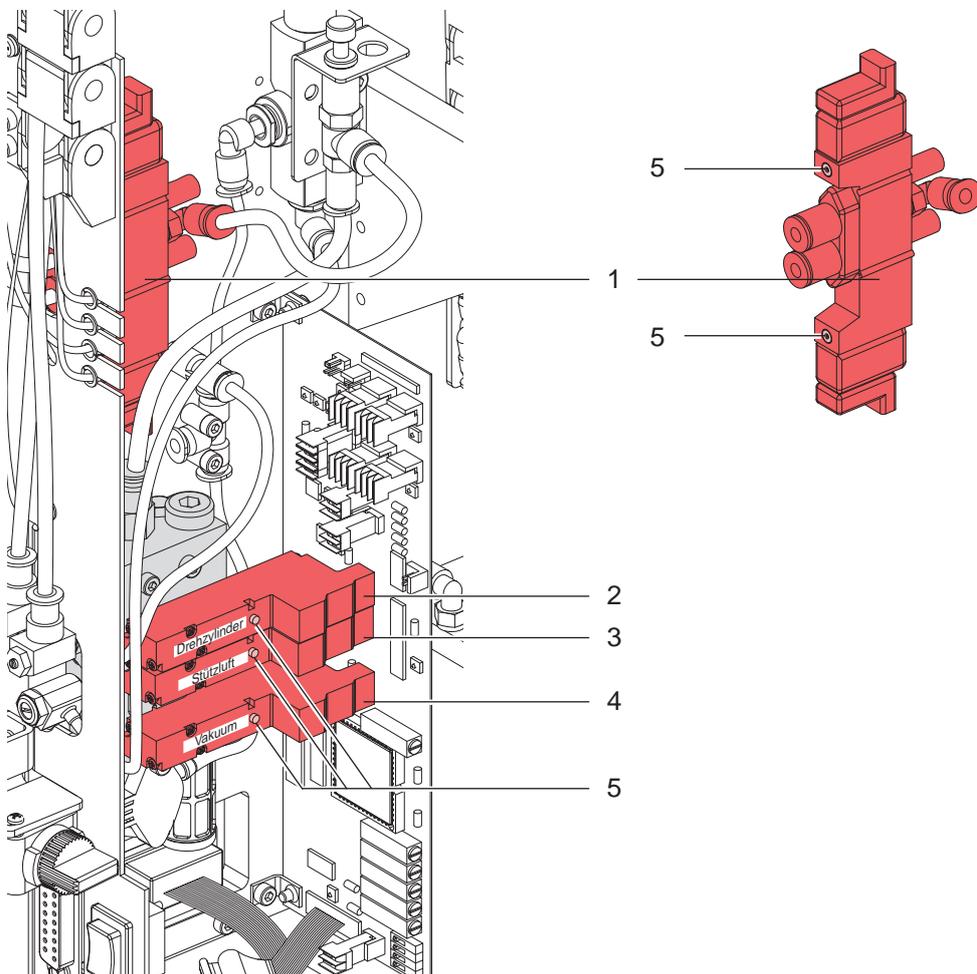


Figure 10 Pneumatic control valves

4.2.2 Throttle Valves at the Valve Block

**Notice!**

In case the cylinder movements needs longer then 2 seconds the system break up the operation and produce an error message.

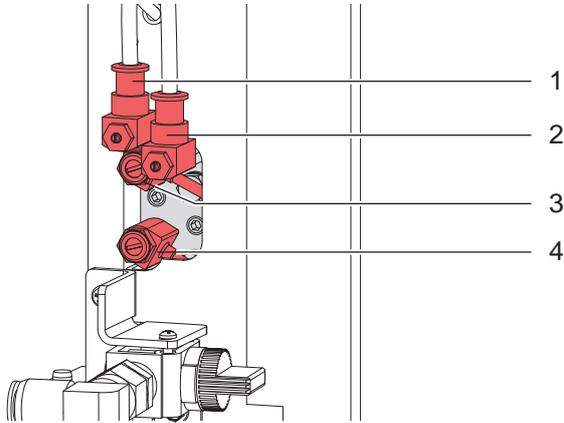


Figure 11 Throttle valve at the valve block

Throttle valve - Turn cylinder (1 and 2)

Over the throttle valves (1/2) it's possible to change the speed of the turn cylinder. This valves are adjusted by factory and shouldn't change.

Throttle valve - supporting air (3)

Over the throttle valve (3) the supporting air can be changed.

The valve is adjusted trough the throttle screw.

Turn in clockwise direction the valve will close.

The valve has to be tuned in such a way, that the label is blown onto the pad without turning or swinging.

Throttle valve - vacuum (4)

With this valve (4) the vacuum to suck the label onto the pad can be adjusted.

Turn the throttle screw to adjust the valve.

Turning clockwise will close the valve.

4.2.3 Throttle Valve at the Cylinder



Notice!

In case the cylinder movements needs longer then 2 seconds the system break up the operation and produce an error message.

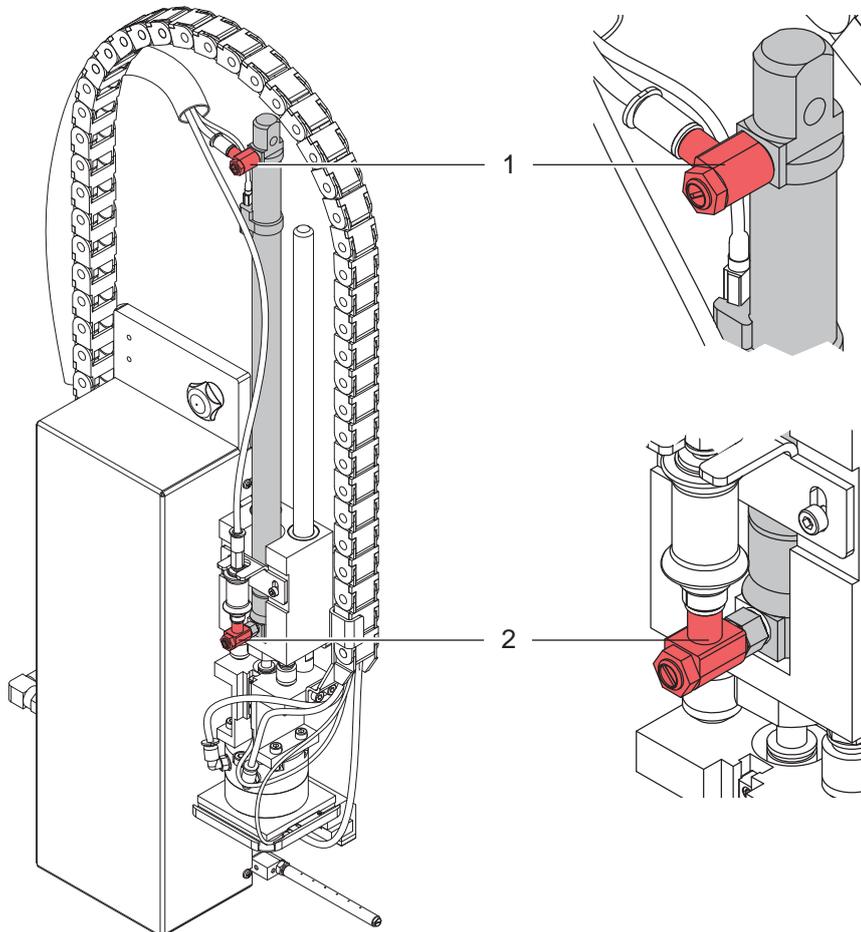


Figure 12 Throttle valve at the cylinder

Throttle valve cylinder - run-in movement (1) (destination: takeover position)

Over this valve the speed of cylinder movement (drive-out direction/up) can be changed.

The valve is adjusted at the throttle screw.

Turn in the clockwise direction closes the valve. The speed will be reduced.

Throttle valve cylinder - run-out movement (2) (destination: labelling position)

Over this valve the speed of cylinder movement (drive-in direction/down) can be changed.

The valve is adjusted at the throttle screw.

Turn in the clockwise direction closes the valve. The speed will be reduced.

5.1 Setting the Operating Mode and Delay Times

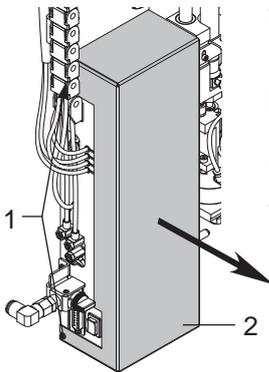


Figure 13 Cover

It is possible to use the applicator in different operating modes. These modes are different in how they apply the label to the product (stamp/blow) and the sequence of operation (print/apply or apply/print).

It's also possible to choose between two label takeover modes (printer to applicator). The 'Flying takeover' (Version A) and the 'Contact takeover' (Version B).

After removing the cover (2) of the manifold, 6 potentiometers (Figure 15) as well as 4 DIP switches (Figure 14) become accessible by which the parameters can be set.

To remove the cover (2) loosen screws (1).

5.1.1 Takeover the label from printer to the applicator

Two kinds of takeover the label by the applicator are selectable, depend of size and material of the label.

It's also possible to choose between two label takeover modes (printer to applicator). The 'Flying takeover' (Version A) and the 'Contact takeover' (Version B).

The standard factory setting is Version A.

It's possible to change this setting by DIP Switch 2.

Version A

The start position of the tamp is approx. 1mm over the dispense plate of the printer. This is also the takeover position of the label.

The label is printed and fed forward so far that it is removed from the liner completely. So the label will takeover from the tamp via the vacuum and assist by the support air. After the complete takeover process (controlled by the vacuum sensor) the support air will be switched off and the turn cylinder will turn 90°.

Version B

This Version is typical to use for very small labels.

In this version, the start position is defined in the upper end position of the lift cylinder and the 90° position of the turn cylinder. The start position is not identical with the takeover position.

The label is printed and fed forward so far that a small stripe is resting on the liner.

The vacuum will be switched on and the tamp will turn in the 0° position. The lift cylinder will move down to contact the label. To assist the takeover the support air will be switched on.

The labelling sensor stops this move and the vacuum sensor controls the right takeover of the label.

The tamp will move upwards by the lift cylinder and will turn in the 90° position.

Apply the label

In the 90° position the lift cylinder moves out.

In the 90° apply the lift cylinder will move the tamp to the product. It will stop by the labelling sensor and control the correct labelling by the vacuum sensor.

In the 0° apply will stop the lift cylinder the movement in a defined position. The turn cylinder rotates the tamp in the 0° position. After this, the lift cylinder will move the tamp to the product.

It will stop by the labelling sensor and control the correct labelling by the vacuum sensor.

Then, the tamp will move back in the start position and the labelling cycle is closed.

5.1.1 DIP Switches

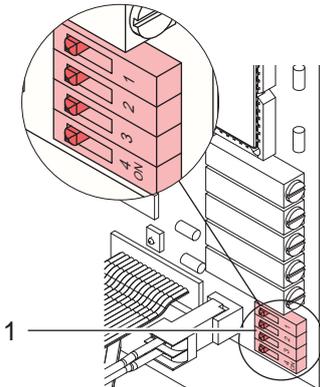


Figure 14 DIP switches

DIP switch	Parameter	ON	OFF
1	no Function	-	-
2	Label takeover	Version A	Version B
3	operating mode	print/apply	apply/print
4	save values of potentiometers (▷ 5.3 Read settings of potentiometers)	no	yes

Table 2 Parameter of DIP switches

If switch No. 4 is OFF the setting of the potentiometers is automatically stored in the Hermes A when switched on. Therefore, in case the applicator has been changed (e.g. in case of an accident) the settings are still saved and can be transferred to a replacement. (▷ Read settings of potentiometers)

5.1.2 Potentiometer



Notice!

In case of changing a parameter by a potentiometer, the value of this parameter will displayed at the printer display for short time.

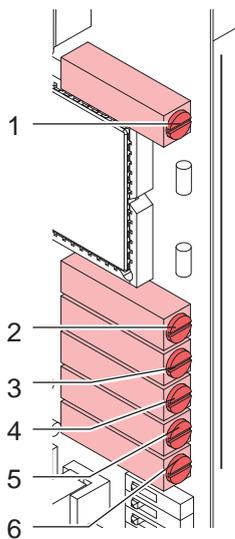


Figure 15 Potentiometer

Potentiometer 1 is sealed. Certain voltage settings are pre-adjusted from the factory and not to be changed by the user.

Potentiometer 2 : t_B - blowing time 0...2.5 s
For the precision applicator 4400 it has no function. But the complete application process extended on the setting value.

Potentiometer 3 : t_{SA} - switch-off delay supporting air 0 ... 2.5 s
Delayed to the process of the label being picked up, the supporting air is switched off. In many cases, after being picked up by the pad the label edge may still stick on the silicon liner. This may affect the accuracy of the label positioning or even cause labelling faults. Therefore, switching off the supporting air delayed may be useful to separate the label from the carrier ribbon and place it neatly on the surface of the pad.

Potentiometer 4 : s_{SE} - switch-on delay supporting air 0 ... 20 mm
The supporting air from the blow tube is not immediately switched on when the print of the label is released but delayed, when the label has covered a certain distance s_{SE} . This delay helps to prevent a turning or swinging at the front of the label and, consequently, avoids faults when the label is picked up from the printer. The parameter measures the distance covered by the label before the supporting air is switched on, and does not depend on the print speed. This way, the position of the label may be determined until the air is switched on.

Potentiometer 5 : t_{SP} - locking time 0 ... 2.5 s
All start signals coming in following the first start signal are ignored when they arrive within the locking time t_{SP} . It's used for debouncing of the start signal.

Potentiometer 6 : t_{VS} - start delay 0 ... 2.5 s
The parameter t_{VS} determines the time period between the start signal and the start of the labelling process. This delay makes it possible to release the start of the process controlled by a sensor, for instance, when a sensor is located within an assembly line in front of the labelling place.

5.1.3 Read Settings of Potentiometers

Sometimes it's necessary to change the setting of parameters in case of changing the operation environment or other.

Would you change the applicator it's possible the applicator values to save into the printer.



Notice!

In case the applicator has been changed (e.g. in case of an malfunction) the stored parameters can be viewed as described above and the new device can be adjusted accordingly. For that purpose the DIP-switch 4 at the new applicator has to be 'ON' during switching on the device the first time.

The takeover the values of a changed applicator will be manually by comparison with the saved values.

1. Read values - press and hold pressed the key **MODE** of the printer's navigator pad. After approx. 3 seconds it will displayed the 'short status'. To got back the main menu press the key .
2. The setting of the five delay times is displayed by pressing the key  or the key .
3. Change the value at the corresponding potentiometer.
The current value will displayed at the printer display.
4. To read an other value start again from step 1.
5. Are the settings finished, switch the DIP-switch 4 of the new applicator at the position 'OFF' to record possible later settings.

5.1.4 Operating Mode

The operation of the applicator can warden while maintaining the operational sequence in principle by parameter attitudes in control electronics modified.

Moreover exist a special mode for setting by using the pre dispense key.

Operating mode 'printing / labelling'

The print of a label is released by an external start signal (via PLC interface). At the same moment the vacuum on the pad as well as the supporting air from the blow tube are switched on. When the label is printed and picked up from the carrier ribbon, the supporting air is switched off. Then the lift cylinder is driven to move the pad down towards the labelling position. A sensor signals when the labelling position is reached. Following, the vacuum is switched off and the label is placed onto the product by the pressure of the stamp. After that, the lift cylinder is driven to move the pad back into the starting position. Thus, the labelling cycle is finished.

Operating mode 'labelling / printing'

Before starting the mode 'labelling / printing' the printing and picking up of the first label has to be released separately by a special signal (via PLC interface). The pad with the printed label is in the starting position. The vacuum on the pad is switched on. By an external start signal the lift cylinder is driven to move the pad down into the labelling position. The sensor signals when the labelling position is reached. In the following, the vacuum is switched off and the label is placed onto the product by the pressure of the stamp. After that, the lift cylinder is driven to move the pad back into the starting position. The print of the next label is released. At the same moment the vacuum on the pad as well as the supporting air are switched on. When the label is printed and picked up, the supporting air is switched off. Thus, the labelling cycle is finished.

5.2 Pre-Dispense Key

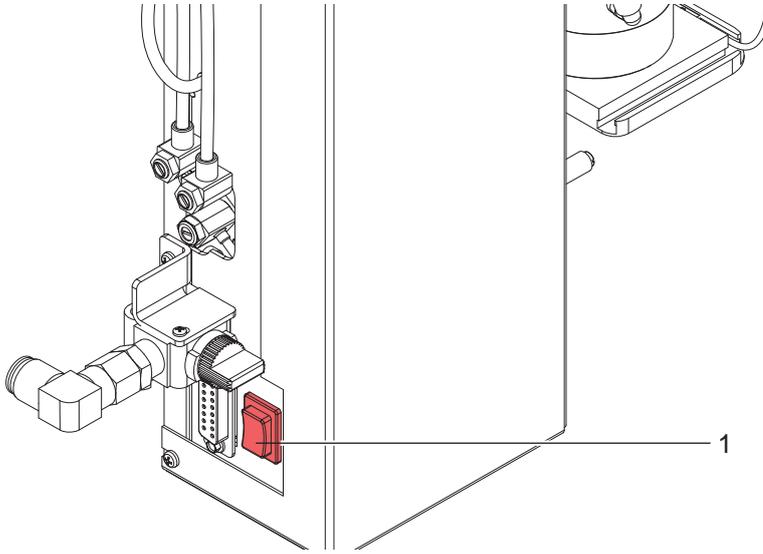


Figure 16 Pre-dispense key

Without print job

The whole labelling process can be simulated without the need of a print job or a connection to a computer by alternately pressing the key **FEED** and the pre-dispense key (1).



Notice!

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

If the printer has no print job, pressing the key respectively the key will release the feed of a blank label. At the same moment the vacuum at the pad as well as the supporting air (blow tube) are switched on. After the label has been picked up by the pad, the supporting air is switched off. Pressing the pre-dispense key (1) will drive the lift cylinder to move the pad down into the labelling position. A sensor signals when the labelling position is reached. Following, the vacuum is switched off and the label is placed onto the product. Then, the lift cylinder is driven to move the pad back into the starting position.

With print job

By pressing the pre-dispense key (1), half cycles of the labelling process can alternately be released, provided that there is a print job.

- **1(st) half cycle**

Pressing the key will release the print of one label. At the same moment the vacuum at the pad as well as the supporting air (blow tube) are switched on. After the label has been printed and picked up by the pad, the supporting air is switched off.

- **2(nd) half cycle**

Pressing the key will drive the lift cylinder to move the pad down into the labelling position. The sensor signals when the labelling position is reached. Following, the vacuum is switched off and the label is placed onto the product. Then, the lift cylinder is driven to move the pad back into the starting position.

5.3 Peel Position

To set the peel position, the accurate position of the label to take over the label from printer to the pad, the system offers two possibilities.



Notice!

The two-part procedure to set the peel position is very important for a restart after put in material and after troubleshooting. It's possible that if so the software setting of peel position don't respond.

Peel position in the printer configuration

The first option to adjust the peel position offers the printer configuration. (▷ Operators manual of the printer). This option should be the first step and generate the basic adjustment.

The whole labelling process can be simulated without the need of a print job or a connection to a computer by alternately pressing the key **FEED** and the pre-dispense key.

Peel position in the software

A second peel-off parameter is available in the software. The software value does not replace the value of the printer configuration but it serves the fine adjustment of the peel position for the current print job. The values from printer configuration and from software are added together for execution.

The **P-command** (Set Peel-Off Mode) is described in the programmer manual.

Check the adjustment of the peel position in the software by printing out test prints with the label to be applied. Adjust the software parameter with a real print job in such a way, That the printed labels are totally peeled-off from the liner.

5.4 Normal Operation

1. Check all external connections before starting to print.
2. Load the media corresponding to the instructions in the operator's manual of the Hermes A (chapter 'Media Loading'). Make sure that the locking system (print head) is locked.
3. Open the shutoff valve.
4. Switch on the printer.



Notice!

Make sure that the pad is not covered.

5. Before starting the first print job press the key **FEED** on the printer. This generates a synchronous running. Remove the processed labels manually. After a few seconds the printer carries out a brief rewind and the edge of the next label is positioned at the print line. This synchronizing also has to be carried out when the print job has been interrupted with the key **CANCEL** or open and close the print head locking system.



Notice!

It is not necessary to make a synchronous run in case the print head of the printer wasn't opened. Also when the printer was switched off.

6. Start the print job.
7. Start the labeling process via PLC interface.

If an error occurs while the applicator is operating, this is reported in the display of the Hermes A.
(▷ Error message)

For use in a net worked system the applicator is equipped with a PLC interface to start and interrupt the labelling process. It also passes on state information as well as error messages of the applicator to the system control. The interface has a 15 pin SUB-D connector.

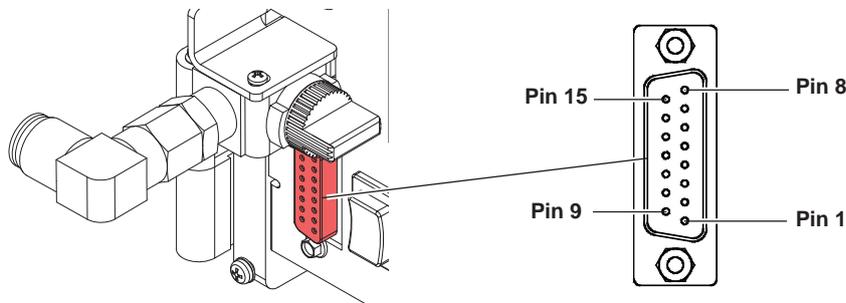


Figure 17 Female connector of the PLC interface



Attention!

To avoid faulty signals use a shielded cable for an external control system.

6.1 Comments on the Signals

Pin	Signal	Description	Activation / Active state
1	XSTRT ⊖	Start signal Signal run the labelling process	It is active when +24V between Pin 1 and Pin 9.
2	XSTP ⊖	Stop signal It releases following functions : <ul style="list-style-type: none"> to finish the print of a label and its picking-up by the pad to interrupt or to stop the beginning of the labelling process to make the pad moving back into the starting position to command the disregard of all following signals if the stop signal has been activated during the labelling phase, the display will show the message 'Host stop/ error' (does not show message during print process). 	It is active when +24V between Pin 2 and Pin 10.
3	XDREE ⊖	90° Labelling This signal starts the 90° labelling .	It is active when +24V between Pin 3 and Pin 11.
4	XDNB ⊕	Printer not ready This is an error message of the printer. The details and type of error can be learnt from the printer display. ('Ribbon out'; 'Paper out'; 'No label') After troubleshooting, the print of the last label will be repeated.	Contact between Pin 4 and Pin 14 (RUEL) is opened.

Table 3 PLC - connector pin assignment

Pin	Signal	Description	Activation / Active state
5	XEDG 	No existing print job State message. There is no print job currently available.	Contact between Pin 5 and Pin 14 (RUEL) is opened.
6	XSAA 	General error message General error message of both, printer and applicator. This message is shown when one of the two errors either XDNB or XETF occurs. This signal is important in case that only one error signal of the applicator can be analyzed from the system control.	Contact between Pin 6 and Pin 14 (RUEL) is opened.
7	XSOE 	Pad in starting position The signal is active when the pad is in the starting position where it picks up the label from the printer.	Contact between Pin 7 and Pin 14 (RUEL) is opened.
8	GND 	Grounding	0V
9	XSTRTR 	Reverse line to the start signal XSTRT	
10	XSTPR 	Reverse line to the stop signal XSTP	
11	XDREER 	Reverse line to the 'print first label' signal XDREE	
12	XSUE 	Pad in labelling position The signal is active when the pad is in its labelling position where the label is removed from the vacuum plate and positioned onto the product.	Contact between Pin 12 and Pin 14 (RUEL) is opened.
13	XETF 	Applicator fault This is an error message of the applicator. This message is shown when one of the following errors occurs at the applicator : <ul style="list-style-type: none"> - pad has not reached the labelling position within 2s after the movement of the cylinder - pad has not reached the starting position within 2s after the movement of the cylinder - a printed label has not been picked up by the pad properly or it fell down during the movement of the cylinder (message of the vacuum sensor) - the label is still on the vacuum plate of the pad when the cylinder moves back up (message of the vacuum sensor) The type of fault is shown in the display of the printer. After fault correction, the print of the last label printed before the fault occurred will not be repeated.	Contact between Pin 13 and Pin 14 (RUEL) is opened.
14	RUEL	Reverse line (for all output signals)	
15	24P 	Operating voltage +24V, Si T 100mA	

Table 3 PLC - connector pin assignment (continuance)

**Attention!**

Never apply any external voltage on pin15!

6.2 Circuit Diagrams of Inputs and Outputs

The **inputs** are optical couplers with a current limiting resistor of $2.4\text{k}\Omega$ in the input circuit. For each signal X[IN] there is a separate reverse line X[IN]R via the plug connector. From that, the following matching pairs of signals result :

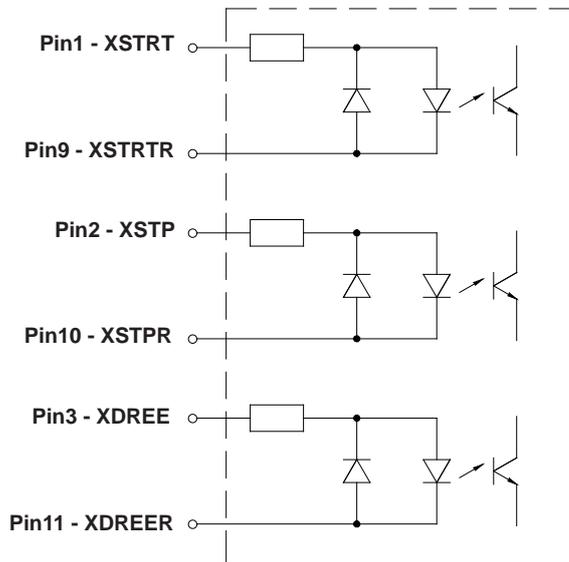


Fig. 18 Circuit of the Inputs

All outputs are realized through solid state relays which outputs are connected among one another one-sided. The joint line is lead to the plug connector as RÜL signal. The switch function of the outputs is to open or close the contact between the joint line RÜL and the respective output.

Electrical requirements :

$$U_{\max} = 42\text{V}$$

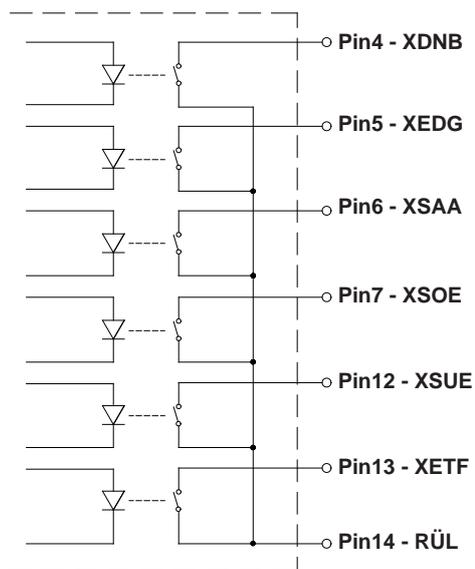
$$I_{\max} = 100\text{mA}$$


Fig. 19 Circuits of the Outputs

6.3 Examples for Circuits to Creating an External Start Signal

! **Attention!**
 Should be exploit applicator data external, so it is to use an external voltage (24V) for signals.
 It's necessary that the external system and the printer/applicator system are electrically isolated.

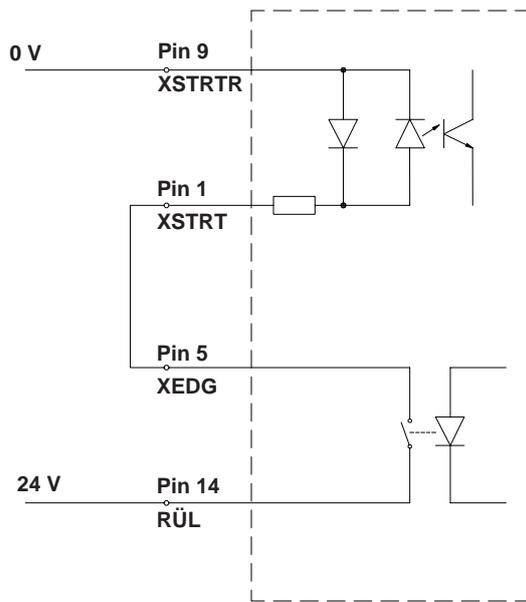


Fig. 20 Example for start of the print- and labelling procedure for one label in case of an existing print job.

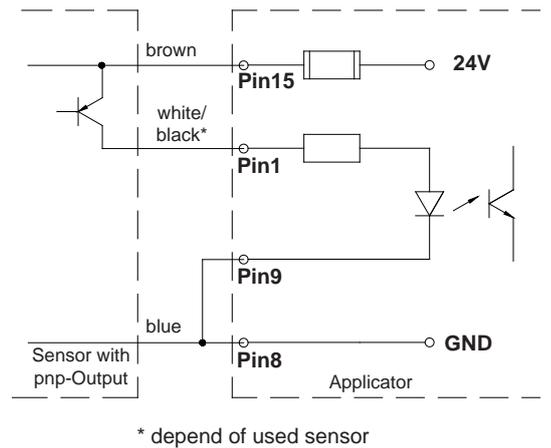


Fig. 21 Example for an optical sensor with pnp-output

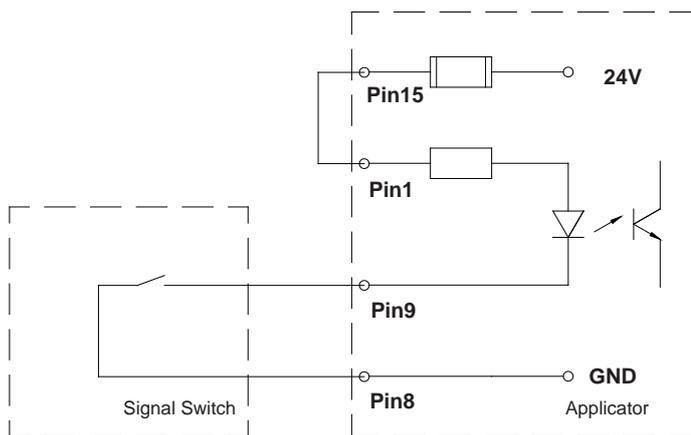


Fig. 22 Example with releasing switch

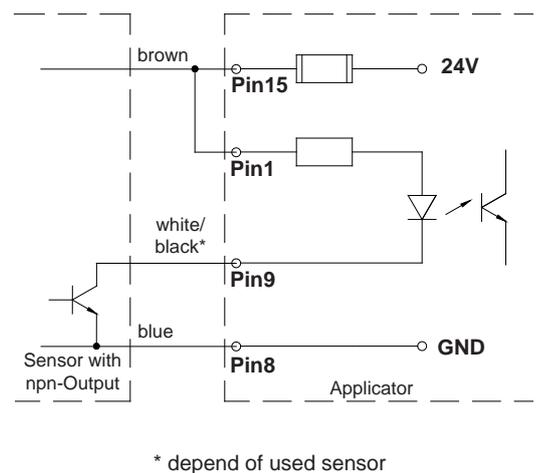


Fig. 23 Example for an optical sensor with npn-output

7.1 Printer Error Messages

Detailed information about printer errors (e.g. 'Paper out', 'Ribbon out', etc.), their causes and correction methods can be found in the operator's manual for the printer



Notice!

With the installation of an applicator the error treatment expands. This means in particular, that after correcting the error and before the correction is quit with the key **[PAUSE]**, an additional label feed has to be released using the key **[FEED]**. This synchronizes the process of printing and labelling. Possibly dispensed blank labels have to be removed manually. After quitting the error message the label caused the error will be printed once more

7.2 Applicator Error Messages

The following table gives an overview of error messages and their possible cause. It also suggests methods to resolve the problem. After error correction, always quit the error message of the applicator with the key **[PAUSE]**. To reprint the label where the applicator error occurred, a new print job has to be released

Error message	Possible cause of error	Error handling
Label not deposit	Label has not been placed onto the product; after the lift cylinder has moved back the label still sticks on the vacuum plate of the pad	Manually labelling of the product Check the labelling position of the pad
Upper position	Pad has not reached the starting position within 2s after the lift has moved back; or Pad has left the starting position unauthorized	Check the pneumatic adjustments (esp. the upper throttle valve of the cylinder); Manually labelling of the product Check the sensor start-position and the sensor of the mini slide cylinder out (service)
Host stop error	Labelling process has been interrupted by an XSTP stop signal via PLC interface	Manually labelling of the product if necessary
Reflex sensor faulty	There has been no change of the switch state at the upper control sensor (at the cylinder) between the start of the labelling process and the signal from the labelling position sensor	Check the sensors (service)
Vacuum plate empty	Label has not been picked up properly by the pad; or Label fell off the pad before it could be placed onto the product	If possible, place the 'lost' label onto the product manually; Otherwise stop print job and start again with adapted parameters (e.g. count)
Lower position	Pad has not reached the labelling position within 2s after the movement of the cylinder	Check the pneumatic adjustments (esp. the lower throttle valve of the cylinder); Make sure that the securing device has been unlocked; Check the applicator for heaviness of its mechanics; Check the labelling position sensor and the sensor of the mini slide cylinder in (service); Label the product manually

Table 4 Error messages of the applicator

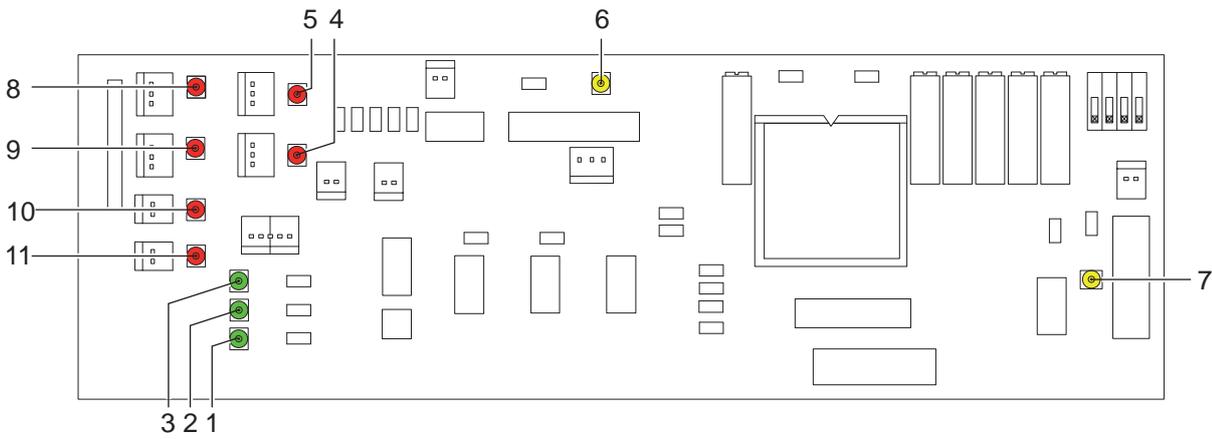


Figure 24 LED's on the PCB

LED-No.	Colour	Function	Active state
1	green	PLC-signal XSTRT	ON
2	green	PLC-signal XSTP	ON
3	green	PLC-signal XDREE	ON
4	red	Upper position sensor	ON
5	red	Labelling position sensor	ON
6	yellow	Label on the pad	ON
7	yellow	Operation voltage 5V	ON
8	red	Sensor Tamp in 90° Position	ON
9	red	Sensor Tamp in waiting position	ON
10	red	no function	-
11	red	no function	-

Table 5 LED's on the PCB

9.1 EC Declaration of Incorporation



Gesellschaft für Computer-
und Automations-
Bausteine mbH & Co KG
Wilhelm-Schickard-Str. 14
D-76131 Karlsruhe,
Germany

EC Declaration of Incorporation

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

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

The „partly completed machinery“ additionally complies with the Directive 2004/108/EC relating to electromagnetic compatibility.

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

Device:	Applicator
Type:	4200
Applied EC Regulations and Norms:	
Directive 2006/42/EC on machinery	<ul style="list-style-type: none"> • EN ISO 12100-1:2003 • EN ISO 12100-2:2003 • EN ISO 14121-1:2007 • EN 60950-1:2006
Person authorised to compile the technical file :	Erwin Fascher Am Unterwege 18/20 99610 Sömmerda
Signed for, and on behalf of the Manufacturer :	Sömmerda, 25.01.2010
cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda	 Erwin Fascher Managing Director

The product must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive on machinery

The documents according annex VII part B from the incomplete machinery are created and will commit to state agencies on request in electronic kinds.

Declaration of Conformity according Directive 2004/108/EC relating to electromagnetic compatibility on the next page

9.2 EC Declaration of Conformity



Gesellschaft für Computer- und Automations-Bausteine mbH & Co KG
 Wilhelm-Schickard-Str. 14
 D-76131 Karlsruhe,
 Germany

EC Declaration of Conformity

We declare herewith that as a result of the manner in which the device designated below was designed, the type of construction and the devices which, as a result have been brought on to the general market comply with the relevant fundamental regulations of the EC Rules for Safety and Health. In the event of any alteration which has not been approved by us being made to any device as designated below, this statement shall thereby be made invalid.

Device:	Applicator
Type:	4200
Applied EC Regulations and Norms:	
Directive 2004/108/EC relating to electromagnetic compatibility	• EN 55022:2006
	• EN 55024:1998+A1:2001+A2:2003
	• EN 61000-3-2:2006
	• EN 61000-3-3:1995+A1:2001+A2:2005
Signed for, and on behalf of the Manufacturer :	Sömmerda, 25.01.2010
cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda	 Erwin Fascher Managing Director

B

Blow Tube..... 13

C

Conformity

EU Declaration of..... 28

Connections..... 11

Control Valves 14

Cover 17

Cylinder stroke..... 6

D

Delivery..... 8

DIP Switches 18

Dispence plate..... 12

E

Environment 5

Error Messages 26

EU Declaration of Conformity 28

External Start Signa..... 25

F

Features 6

Function..... 6

H

Half cycle..... 20

I

Input..... 24

Intended Use 4

K

Kinds of takeover the label 17

L

Label height..... 6

Label width 6

LED's On The PCB..... 27

M

Marking..... 5

O

Operating Mo..... 19

Operation..... 19

Output..... 24

Overview..... 7

P

Pad Orientation..... 12

Peel Position..... 21

PLC Interface..... 22

Potentiometer 18, 19

Pre-Dispense Key..... 20

Printer configuration

Peel position 21

R

Read Settings 19

S

Safety 4

Signa 22

Software

Peel Position..... 21

Start position..... 6

SUB-D 15 11

T

Tamp..... 10

Throttle Valve

Cylinder..... 16

Throttle Valves

Valve Block 15

V

Vacuum..... 10