

## Assembly Instructions



Vacuum Belt Applicator

# 5414 / 5416

## 2 Assembly Instructions for the following product

2

| Family                 | Type |
|------------------------|------|
| Vacuum Belt Applicator | 5414 |
|                        | 5416 |

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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 and Hermes+ series. Any other use or use going beyond this shall be regarded as improper use. The manufacturer/supplier shall not be liable for damage resulting from unauthorized use; the user shall bear the risk alone.
- Usage for the intended purpose also includes complying with the manual.



### Note!

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

## 1.3 Safety Instructions



### Attention!

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

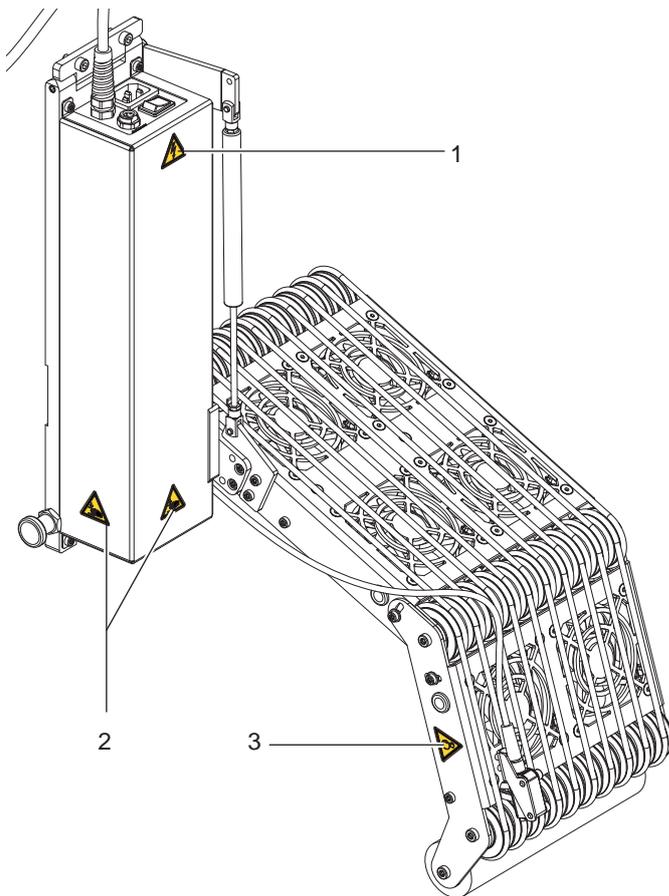


### Warning!

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

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

1.4 Safety Markings



- 1:  Danger of hazardous voltage!
- 2:  Danger of crushing hands and fingers by the moving pad!
- 3:  Danger of harm by rotating parts.

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

Fig.1 Safety markings

1.5 Environment



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

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

The modular construction of the applicator enables it to be easily disassembled into its component parts.

- ▶ Send the parts for recycling.

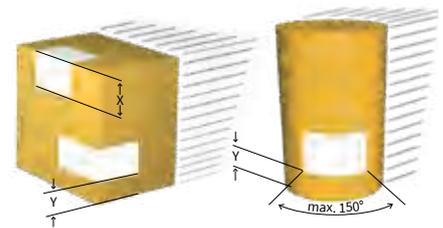
## 2.1 Important Features

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



### Attention

Don't move the transport belt or - roller by hand or by an other outside power.  
Danger of destruction of the electronic control.



## 2.2 Technical Data

|   |                       | Vacuum Belt Applicator                     |                   |          |
|---|-----------------------|--|-------------------|----------|
|   |                       | 5414                                       | 5416              |          |
| Labeling  |                       | On the surface, a cylinder and corner-wrap |                   |          |
| Dispensing to   |                       | left and right                             |                   |          |
| Label width   | HERMES Q4 / Hermes+ 4 | mm   | 20 - 114          | -        |
|   | HERMES Q6 / Hermes+ 6 | mm   | -                 | 46 - 174 |
| Label height  |                       |  | 80 - 356          | 80 - 356 |
| Product during labeling                                     | in motion             |  | ■                 |          |
| Labeling on the product                                     | from above            |  | ■                 |          |
|   | from below            |  | -                 |          |
|   | from the side         |  | ■                 |          |
| Product height  | steady                |  | ■                 |          |
|   | variable              |  | ■                 |          |
| Product speed   | up to                 | m/s  | 0,3               |          |
| Gap from the one product to the next                        | not less than         | m  | 0,5               |          |
| Stability at application level                              | up to                 | mm   | F = 30 N          |          |
| Corner-wrap labeling  |                       | mm/s                                       | Parameter X = 160 |          |
| Vacuum belt speed <sup>1)</sup>                             |                       | mm/s                                       | 100 - 300         |          |
| Cycle time <sup>2)</sup>                                    | up to                 | label/min                                  | 15                |          |
| Label distance to conveyor belt when labeling from the side |                       | mm   | Parameter Y = 20  |          |

<sup>1)</sup> The product speed has to be higher than the vacuum belt speed

<sup>2)</sup> Calculated with label height 100 mm, print speed 250 mm/s

2.3 Product Overview

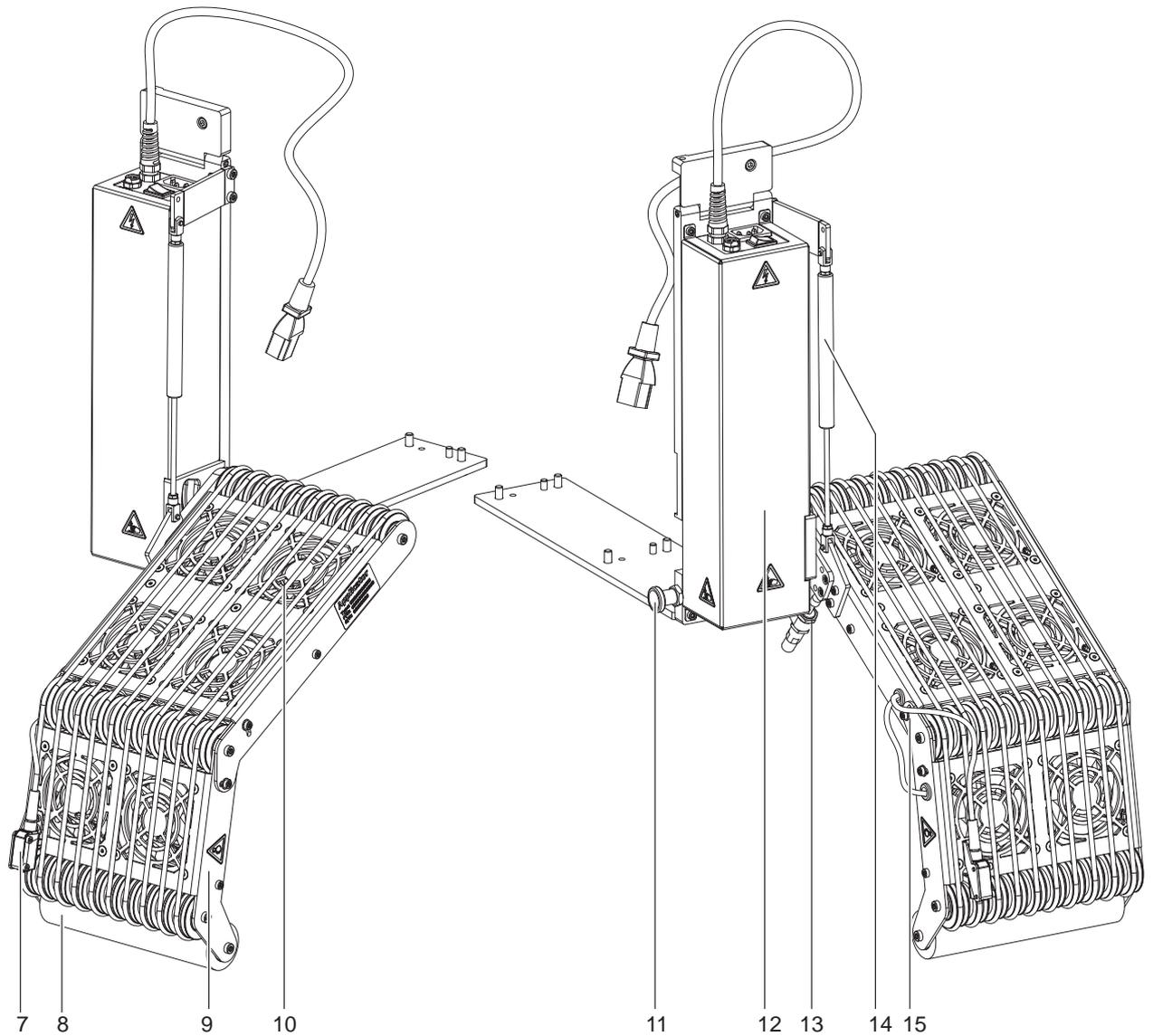


Fig.2 Device overview

- 1 3 pin female connector - start sensor
- 2 Applicator main switch
- 3 Base plate for mounting the printer
- 4 SUB-D 15 for connecting the printer
- 5 Power cable to printer
- 6 Power connector
- 7 Sensor
- 8 Pressure roller
- 9 Angled transport unit

- 10 Fan 5414: 3x / 5416:6x
- 11 Mounting plate with bolts
- 12 Control unit
- 13 Repositioning spring
- 14 Shock absorber
- 15 Angle setting unit

## 2.4 Contents of Delivery

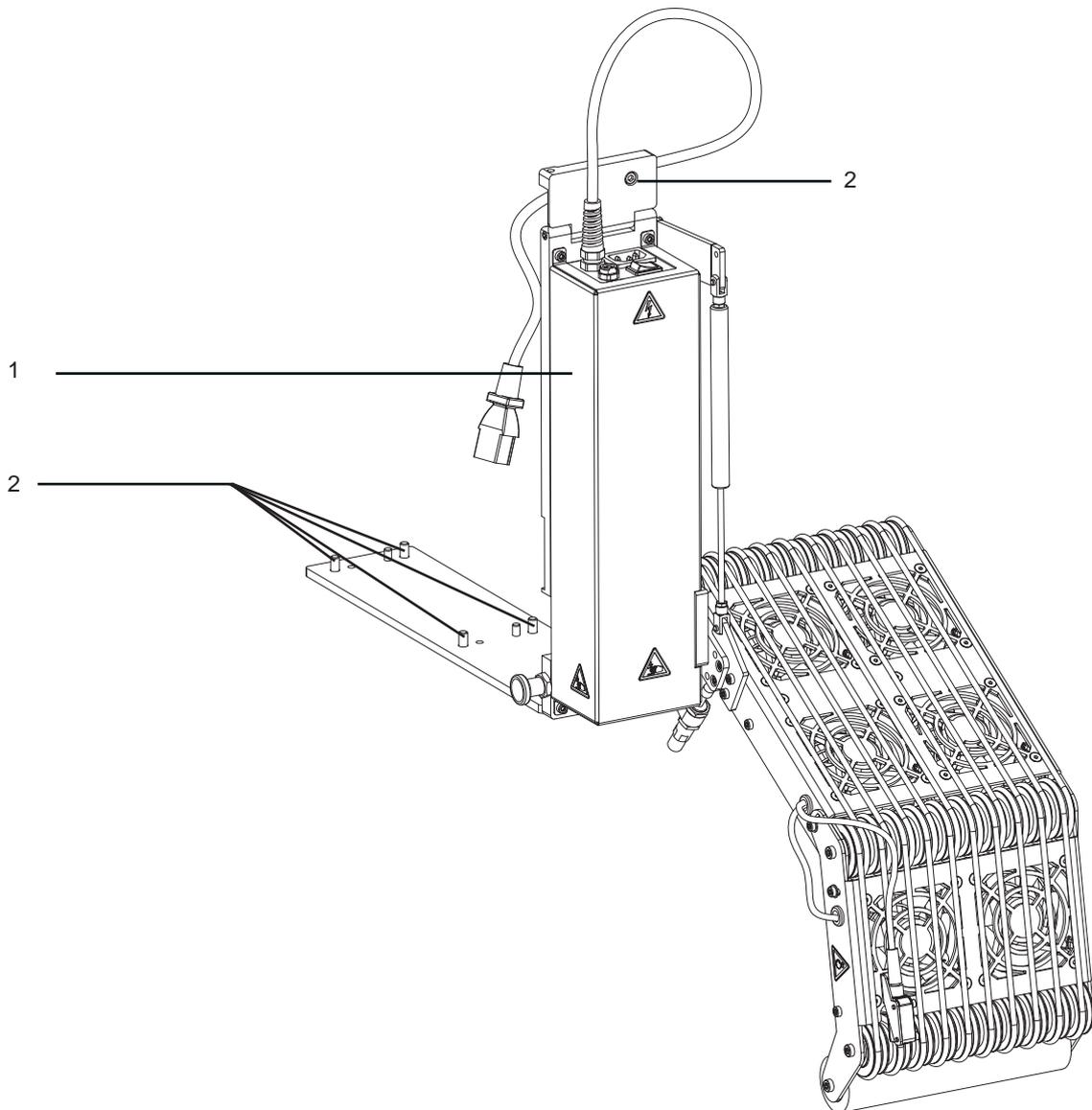


Fig.3 Content of delivery

- Applicator, assembled (1)
- Screws to mount on the printer (2)
- Cable-clip self-adhesive 4x (3)
- Documentation

**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.

- ▶ Set up label printer with applicator only in dry locations protected from moisture and splashes.

## 3.1 Mounting on Printer

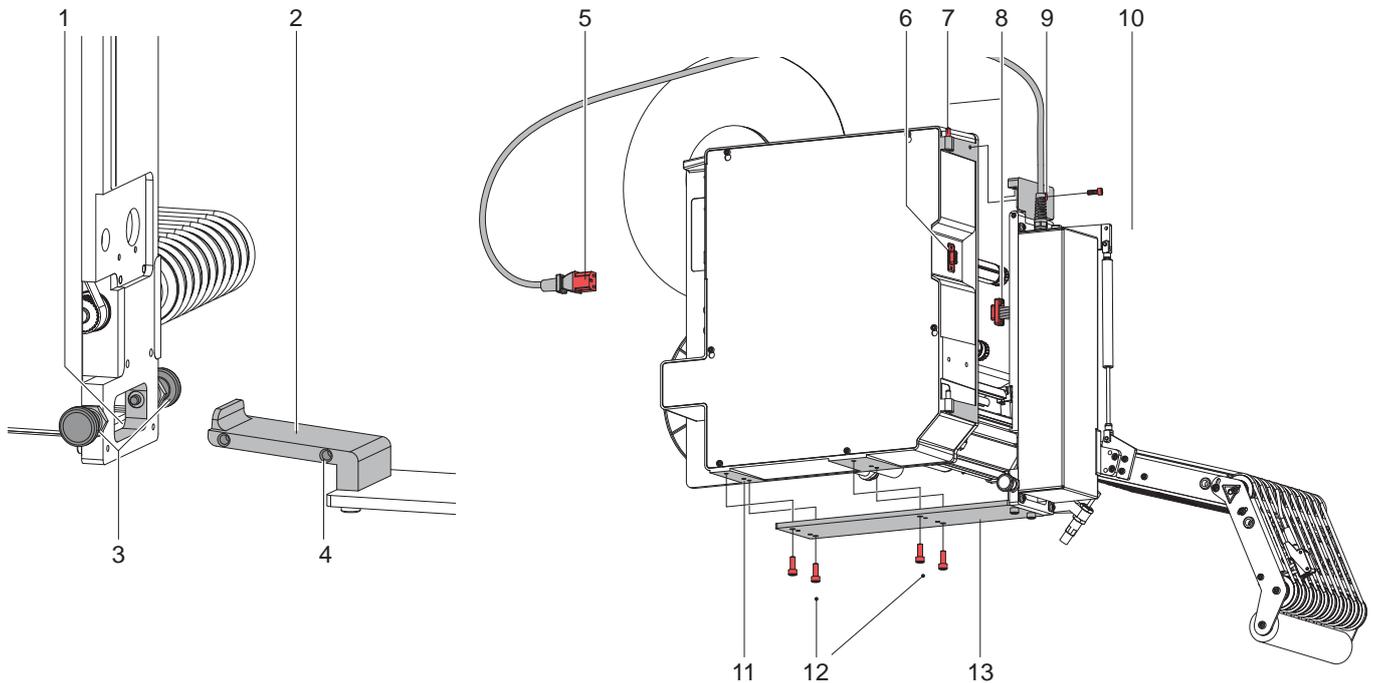


Fig.4 Assembly

- 1 Pull out the locking bolt (3) and put in the base plate (3) into the opening (1).
- 2 Let the locking bolt (3) snap into the holes (4).
- 3 If you can't work on the bottom side of the printer it's necessary to lay the printer on the rear side.
- 4 Put the hinges hole of the mounting plate (5) over the pin (3).
- 5 Connect SUB-D 15 male connector (4) to the female connector (2) of the printer.
- 6 Swing the applicator to the printer and set on screw (6) and turn in easily.
- 7 The holes in the mounting plate (9) must be over the holes in the printer base plate (7).
- 8 Set in and tighten screws (8).
- 9 Tighten screw (6).

**Attention!**

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

▷ Initiation/ Service Manual Applicators

**Attention!**

- ▶ Disconnect the printer and applicator from the power supply before mounting the applicator!
- ▶ Ensure a stable position of the printer!

### 3.2 Power Supply of the Applicator and the Printer

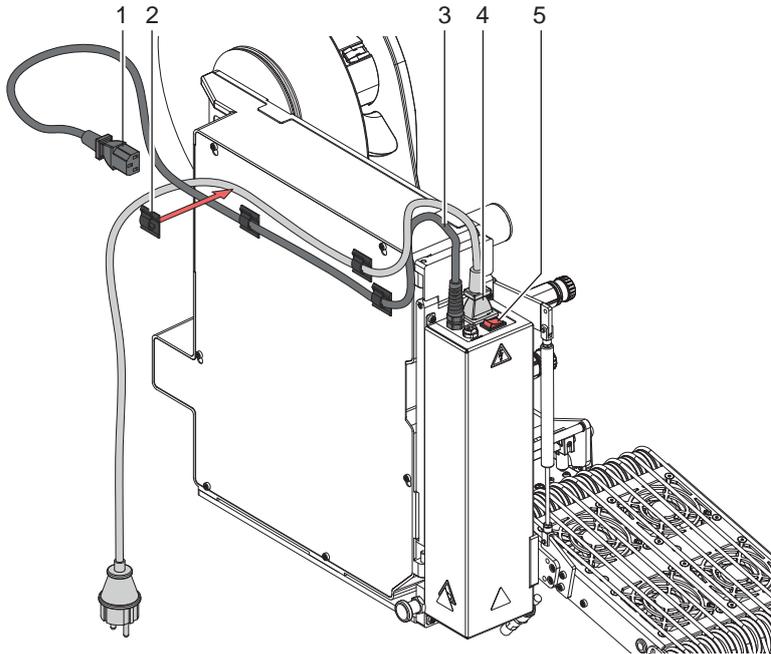


Fig.5 Power supply of the applicator and the printer



**Attention!**

Plugged in power cables supply the full voltage to the printer.  
The power switch of the applicator only affects the power supply of the applicator.

1. Connect the main power cable (4), delivered with the printer, into the connector of the applicator.
2. Use the power cable (3) to connect the applicator to the printer (2).
3. Switch on the applicator with the switch (5).
4. Switch on the printer.



**Note!**

If only the printer is switched on and not the applicator the error message: Air pressure error will be visible on the display.

5. To ensure that the cables do not hinder the applicator or the printer four self-sticking cable clamps (1) have been included in the delivery.

### 3.3 Starting Signal via External Sensors

The start signal for applying labels can be initiated by an external sensor that is connected to the 3-pin female connector (1) directly on the applicator.

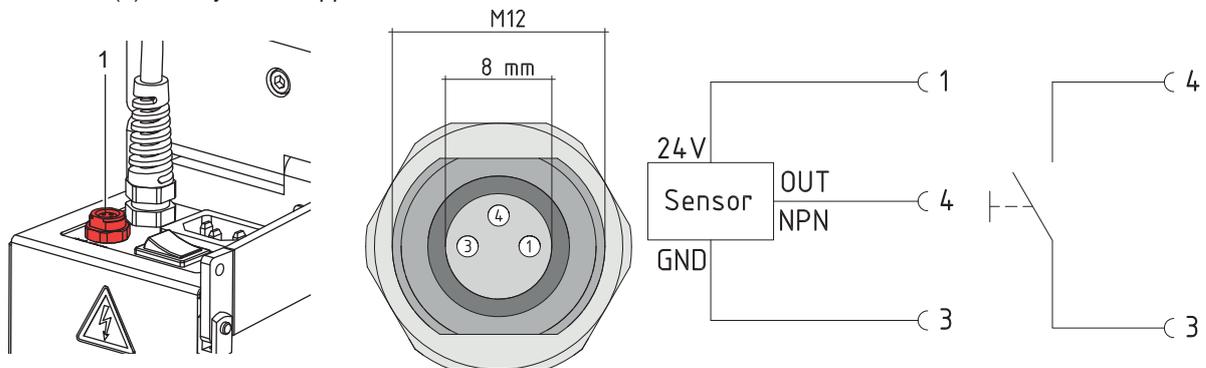


Fig.6 Connector for the starting sensor on the applicator

The start of the printing order is still initiated via the I/O interface of the printer.

To configure the external sensor ▷ „5.3 Signals“ auf Seite 14

### 4.1 Standard Operation

- ▶ Check all external connections before attempting to print.
- ▶ Swivel out the applicator ▷ 5.2 Pivoting, Dismounting and Remounting the Applicator
- ▶ Adding transfer foil and labels ▷ Operator's Manual of the printer.
- ▶ Switch on the printer.
- ▶ Press the **feed** button on the printer.  
This will start a synchronization process of the label transport system is initiated. The dispensed labels need to be removed manually. After a few seconds the printer will start a process to feed the label into the printing position.



#### Note!

The above mentioned process is also to be performed when a print job has been canceled.

This process does not need to be started if the print head did not open in between to print jobs even if the printer was switched off.

- ▶ Start the printing job.
- ▶ Start the label operation over the I/O interface.  
Errors that occur during printing jobs will be visible on the display of the device. ▷ Error Messages

### 4.2 Pivoting the Applicator

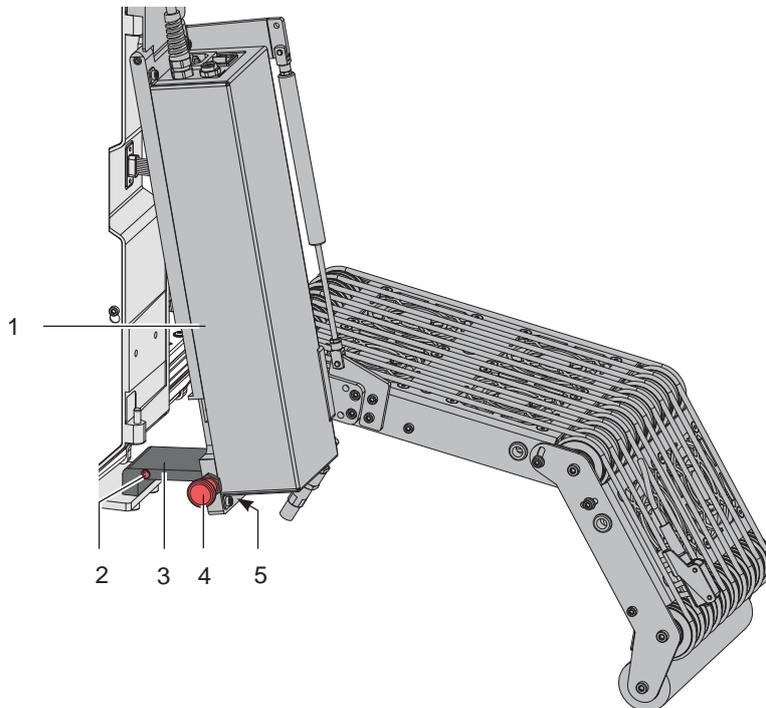


Fig.7 Pivoting the applicator



#### Warning!

**Potential hazard of crushing of hands and fingers by the weight of the applicator. When releasing the catches be cautious of unexpected pivoting of the applicator.**

1. In order to remove the applicator (1) from the printer to clean or restock them, the bolts (4) on either side must be pulled outward.
2. Lift the end of the applicator (1) with the bolts (4) raised out until they are able snap into the holes provided (5) on the resting plate (3).
3. To reconnect the applicator (1) to the printer, pull out the bolts (4) again and guide the applicator (1) back down towards the printer until the bolts can slide into the provided holes (2) on the resting plate (3).

## 4.3 Cleaning

**Attention!**

- ▶ Never use solvent or abrasive.

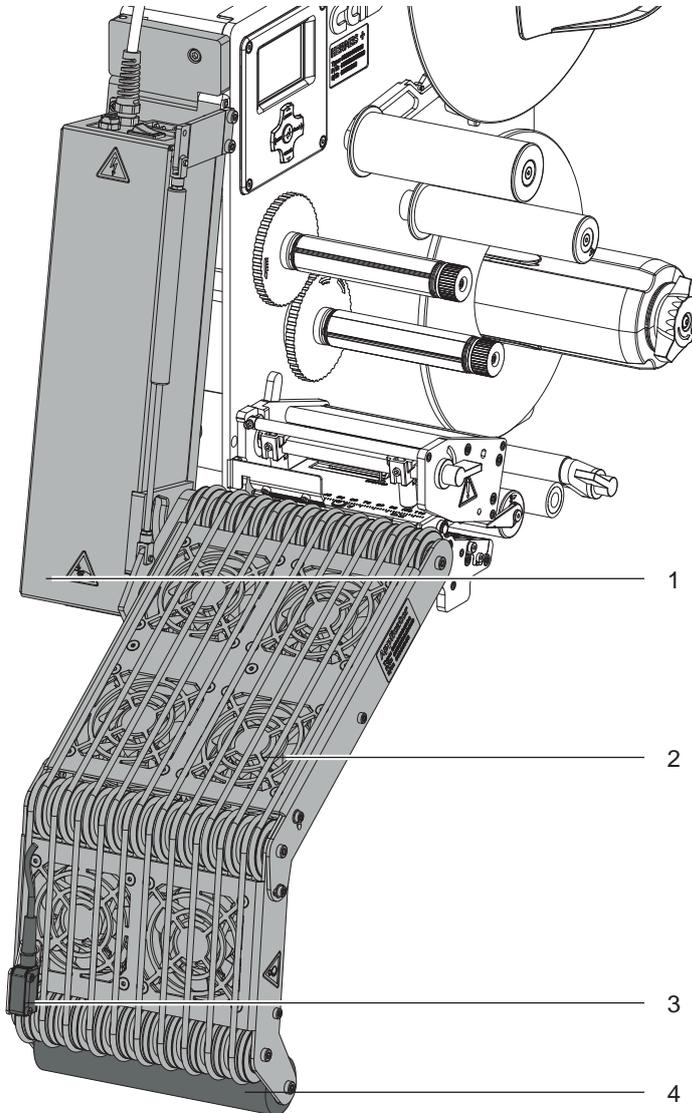


Fig.8 Cleaning

- ▶ Remove the applicator to get to the items of interest. ▷ „4.2 Pivoting the Applicator“
- ▶ Clean the outer surfaces (1) and transport belts with a general purpose cleaner.
- ▶ The fans (2) gather dust and are best cleaned with a vacuum cleaner or an upholstery cleaner.
- ▶ The reflex sensors (3) should be cleaned with glass cleaner.
- ▶ Remove any coarse debris before cleaning the roller (4) with either a general purpose cleaner or a special roller abrasive.
- ▶ Remount the applicator.

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

▷ „3 Mounting“



**Note!**

The alignment of the applicator to the printer is predetermined by the manufacturer and may not be altered in order to ensure correct application of the labels. Only the angle to the printer and the pressure of the roller may be altered.

**5.1 Label Distance to the Printer**

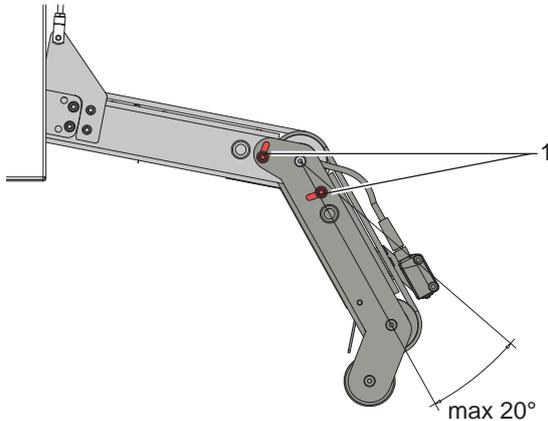


Fig.9 Angle setting



**Warning!**

**Potential risk of injury! Take care when loosening the screws (1).**

**The device folds down automatically due to its own weight.**

- ▶ Loosen screw (1) to set the angle thus the depth of the applicator.
- ▶ Set up the angle or depth of the product and tighten the screw again. ▶ „5.2 Settings in the Setup of the Printer“

**5.2 Settings in the Setup of the Printer**

The configuration parameters of the applicator can be found in the menu Setup > Labelling  
(Hermes+: Setup > Machine param. > Applicator)

**Speed**

**Note!**

The speed of the belt and the label transportation will set by the parameter Support delay OFF. The value is displayed in ms and not in real value used mm/s.

**Note!**

It's necessary to set exact the values in the table. Deviations will result in automatic defaulting back to the standard value of 100.



Support delay OFF Parameter to set the speed of the belts.

Five steps are available.

|        |   |          |                                  |
|--------|---|----------|----------------------------------|
| 100 ms | : | 100 mm/s | speed of the transportation belt |
| 150 ms | : | 150 mm/s | speed of the transportation belt |
| 220 ms | : | 220 mm/s | speed of the transportation belt |
| 300 ms | : | 300 mm/s | speed of the transportation belt |

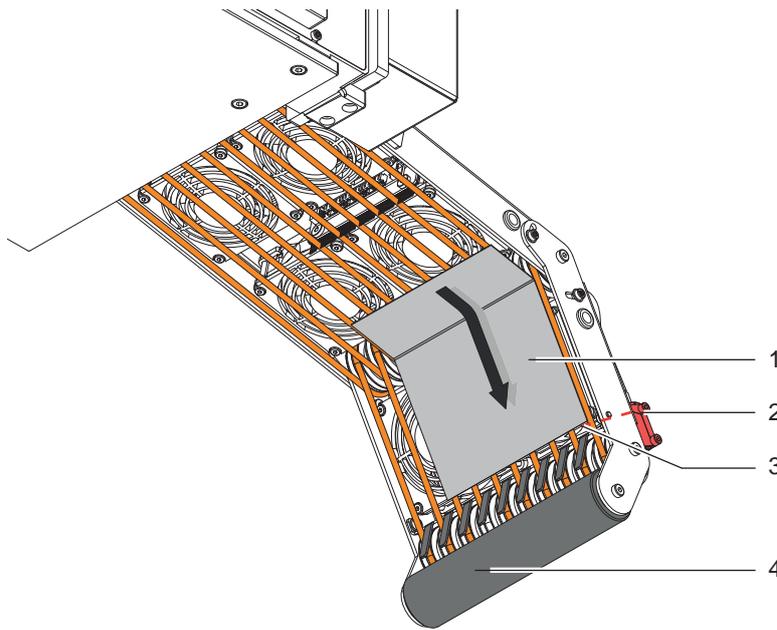


Fig.10 Label transportation/ reflex sensor

In the setup  *Setup* >  *Labelling* >  *Transfer mode* the operation mode *Blow on* must be selected to gain access to the parameter "*Blow time*".

After reaching the reflex sensor (1) and the detection point (3) the transportation process continues a certain time to ensure that the label (2) it is applied by the pinch roller (4). The time and distance of this process can be adjusted via the parameter:

 > *Blow time*

A higher value means the label will be transported further.  
200 ms represents about 10 mm.

**Follow up feed of the label**

After the label (2) has left the the reflex sensor area (3) the application will continue transportation will continue to apply the label to the product. This length of this transportation process can be adjusted via the parameter:

 > *Support delay ON*

**5.3 Signals**

- With the Signal **DREE** the print job will be started and the label will be transported to the roller.
- The signal **START** starts the advancement of the label to the reflex sensor area including a short follow-up.

When using the application mode "**Apply - Print**" the next print job will follow the current one automatically. In the application mode "**Print - Apply**" the print job waits for the signal DREE before it starts.

| Pin | Signal  | Name  | Description   |  | Activation/ Activated Mode         |
|-----|---|-------|---|--|------------------------------------|
|     |   |       | without applicator  | with applicator                            |                                    |
| 1   |  | DREE  | -   | Print first label in modes "Apply - Print" | add +24V between pin 1 and pin 25  |
| 13  |  | START | Start the print job provided the withdrawal of the previous label was confirmed with an ETE signal. | Start of the print/labeling job            | add +24V between Pin 13 and Pin 25 |

Table 2 Pin-layout I/O-interface ▷ Interface layout of the label printer

## 6.1 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  respectively **feed** to synchronize the label feed, remove the left over labels manually.

To quit the error state press *Repeat* (HERMES Q) respectively the **pause** key (Hermes +).

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

## 6.2 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>Vac. plate empty</i>  | The Label has been lost on the way or at the waiting position in front of the pinch roller before the START signal was received. |
| <i>Lower position not reached</i><br><i>Lower position (Hermes+)</i> | The label has not arrived at the sensor area 5 sec. after printing or it wasn't detected.  |
| <i>Air pressure ins.</i>   | Applicator is not switched on.   |

Table 3 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* respectively the **pause** and enter ↵ key repeat the print of the label causing the error. Only applicable with error *Vac. plate empty*.
  - Cancel* the current print job.



### Note!

**When receiving errors check the settings and adjustment parameters in the service manual.**

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

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

## 7.1 Declaration of Incorporation



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GmbH & Co KG  
Wilhelm-Schickard-Str. 14  
D-76131 Karlsruhe  
Germany

### Declaration of Incorporation

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

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

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

|   |   |
|---|---|
| Device:   | <b>Vacuum Belt Applicator</b>   |
| Type:   | <b>5414, 5416</b>   |
| Applied EU Regulations  | Applied Standards   |
| <b>Directive 2006/42/EC on machinery</b>  | <ul style="list-style-type: none"> <li>• <b>EN ISO 12100:2010</b></li> <li>• <b>EN ISO 13849-1:2015</b></li> <li>• <b>EN 60950-1:2006<br/>+A11:2009+A12:2011+A1:2010+A2:2013</b></li> </ul> |
| Person authorised to compile the technical file:  | <b>Erwin Fascher<br/>Am Unterwege 18/20<br/>99610 Sömmerda</b>  |
| Signed for, and on behalf of the Manufacturer:  | <b>Sömmerda, 08.07.2019</b>   |
| cab Produkttechnik Sömmerda<br>Gesellschaft für Computer-<br>und Automationsbausteine mbH<br>99610 Sömmerda | <br><b>Erwin Fascher<br/>Managing Director</b>  |

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

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

## 7.2 EU Declaration of Conformity



cab Produkttechnik  
GmbH & Co KG  
Wilhelm-Schickard-Str. 14  
D-76131 Karlsruhe  
Germany

### EU Declaration of Conformity

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

|  |   |
|--|---|
| Device:  | <b>Vacuum Belt Applicator</b>   |
| Type:  | <b>5414, 5416</b>   |
| Applied EU Regulations   | Applied Standards   |
| <b>Directive 2014/30/EU relating to electromagnetic compatibility</b>  | <ul style="list-style-type: none"> <li>• EN 55032:2012</li> <li>• EN 55024:2010</li> <li>• EN 61000-6-2:2005</li> </ul>           |
| <b>Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment</b>   | <ul style="list-style-type: none"> <li>• EN 50581:2012</li> </ul>   |
| <b>Commission delegated directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances</b> |   |
| Signed for, and on behalf of the Manufacturer:   | <b>Sömmerda, 08.07.2019</b>   |
| cab Produkttechnik Sömmerda<br>Gesellschaft für Computer-<br>und Automationsbausteine mbH<br>99610 Sömmerda  | <br><b>Erwin Fascher</b><br>Managing Director |