

Assembly Instructions



Air-Jet Box

6114

2 Assembly Instructions for the following products

2

Family	Type
Air-Jet Box	6114 L
	6114 R

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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 routines easier or on important steps to be carried out.



Environment!

Gives you tips on protecting the environment.



Handling instructions.



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.



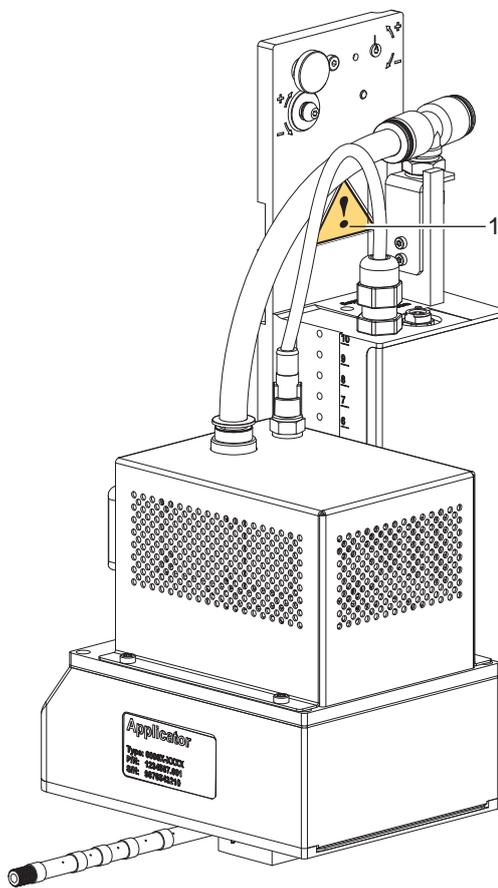
Warning!

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 and close the shutoff valve of the applicator.
- Only connect the device to other devices which have a protective low voltage.
- Switch off all affected devices (computer, printer, accessories) before connecting or disconnecting.

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

1.4 Safety Markings



1:



Caution! Compressed Air!



Attention!

Never remove or cover safety markings!
Replace it in case of damage!

Fig. 1 Safety marking

1.5 Environment



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

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

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

- ▶ Send the parts for recycling.

2.1 Important Features

- The supporting air and the vacuum is adjustable. Thus the applicator can be adjusted to different label materials and sizes.
- For operation in a system the I/O interface of the printer can be used.

2.2 Technical Data

Label transfer method		Air-Jet Box 6114 L/R
Label width	HERMES Q4 / Hermes+ 4 ²⁾ mm	50 - 114
Label height ²⁾	mm	50 - 125
Product during labeling	fixed	■
	in motion	■
Labeling onto the product	from the top	■
	sideways	■
Product height	variable	■
Product distance to lower edge	mm	200
Compressed air pressure	bar	4,5 - 6
Cycle ¹⁾	frequency/min.	120

Table1 Technical Data

¹⁾ Determined at 50 mm stroke below device/smallest label height/print speed 250 mm/s .

²⁾ Smaller labels on request

2.3 Overview

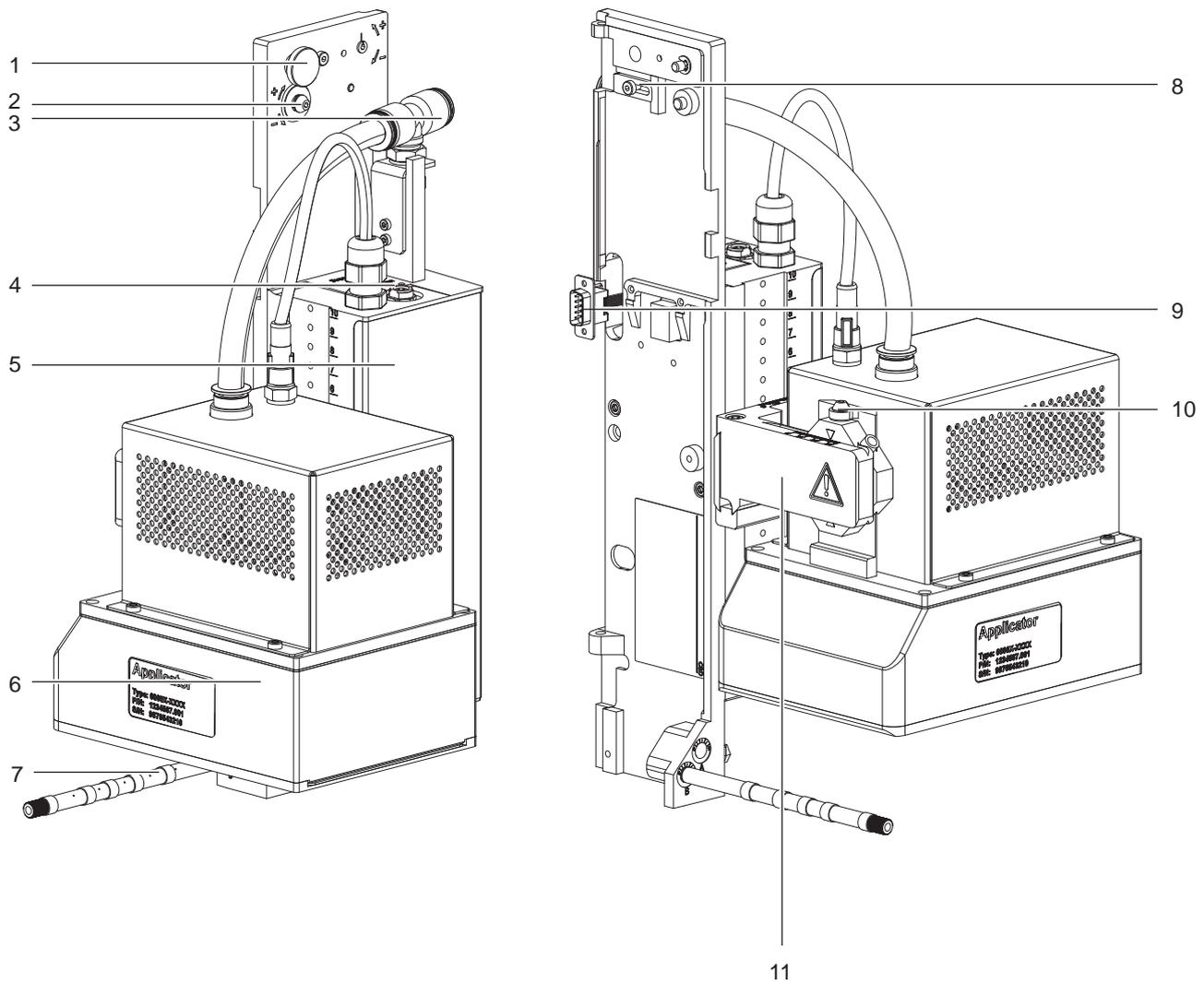
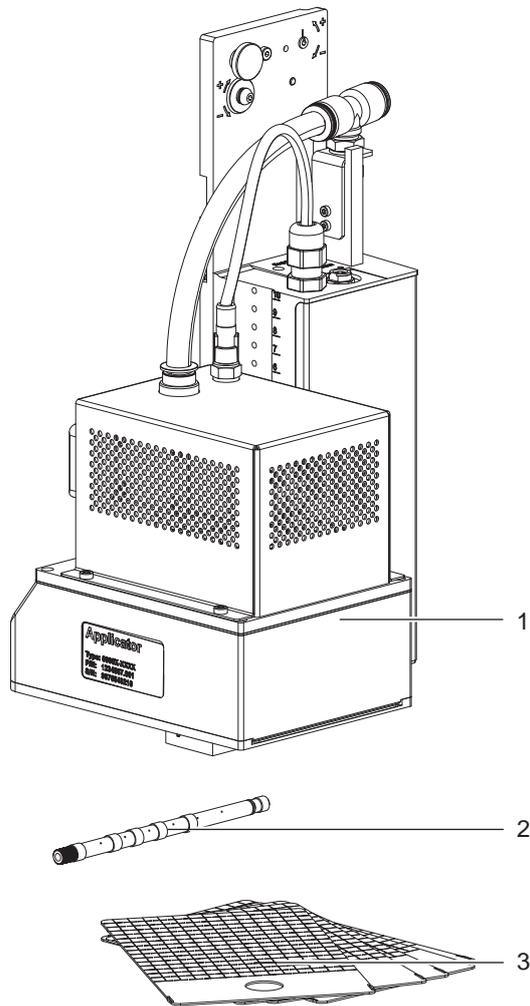


Fig. 2 Device overview

- | | |
|--|---|
| 1 Knurled screw for attaching the Air-Jet Box to the printer | 8 Locking for hinges |
| 2 Setting screw for adjustment to the printer | 9 SUB-D 9 plug interface to the printer |
| 3 Compressed air connector | 10 Blow tube |
| 4 Interface for external sensor | 11 Setting screw for fine adjustment height |
| 5 Base plate with the control unit | 12 Crossbeam |
| 6 Blow nodule | |
| 7 Blow tube | |

2.4 Contents of Delivery



- 1 Air-jet module
- 2 Bow tube (as ordered)
- 3 Former plate (5x)

Documentation

Fig. 3 Contents of delivery

**Note!**

Please keep the original packaging in case the Air-Jet Box must be returned.

**Attention!**

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

- ▶ Only set up the label printer with the Air-Jet Box in dry locations protected from moisture and water splashes.

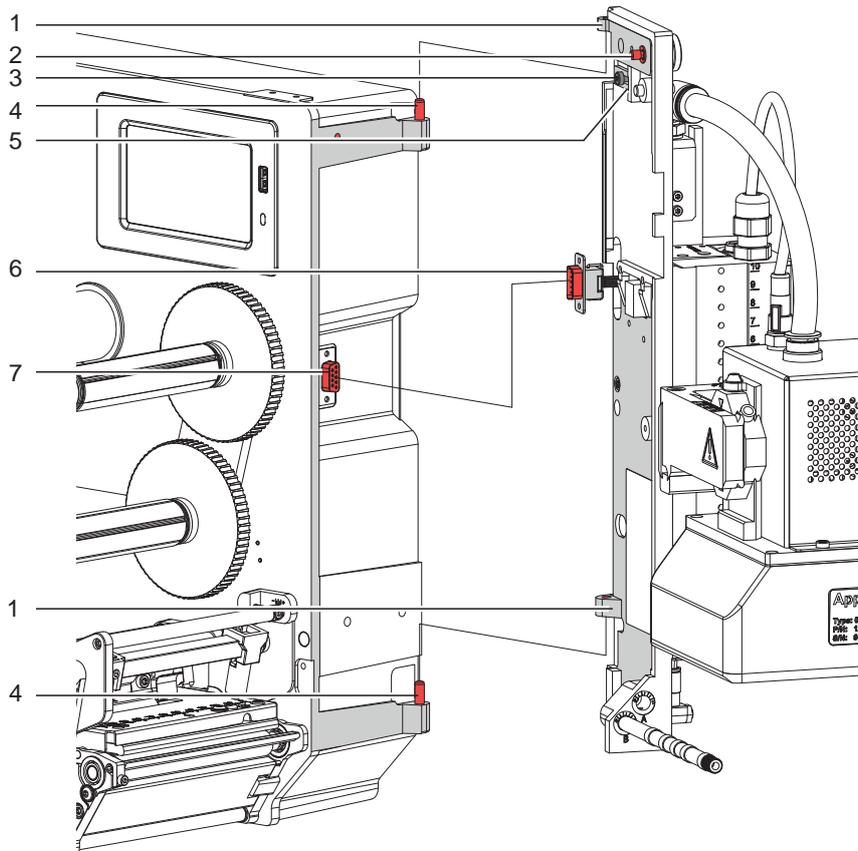


Fig. 4 Mounting the Air-Jet Box to the printer



Attention!

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



Attention!

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

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

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

Mounting the applicator

1. Attach the applicator via the female part (1) of hinges to the male printer mounted hinges parts (2).
2. Connect SUB-D 15 male connector (6) to the female connector (7) of the printer.
3. To secure the applicator slide the locking plate (3) under the hinge and tighten the screw (4).
4. Swing the applicator to the printer and tighten the thumbscrew (5).

Turning away & dismounting the applicator

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

4.1 Adjusting the Air-Jet Module

1. Start a printing job ▷ Operation
2. Set peel position

To optimize the transfer of the labels from the printer to the pad there 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 this course of action for a problem free start after loading labeling material or when correcting errors.

Parameter "Peel Position" in the printer configuration.

- ▶ Check the basic setting in the printer setup. Perform labelling cycles by reciprocally pressing  respectively the **feed** key and  respectively Enter ↵.
- ▶ Adjust the "Peel Position" in such a way, that the blank labels are peeled-off completely from the liner
▷ Configuration Parameters of the Applicator.

	> Peel-off position	Shift the position of the dispensed labels relative to the dispensing edge. In the software an extra peel offset value is available. The offset values from "Peel position" and from software are added together for execution. ▷ "Setting the Peel Position".	0,0 mm
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Peel-off offset in the software

- ▶ Check the setting in the software. Perform labelling cycles by repeatedly pressing  respectively Enter ↵
- ▶ Adjust the peel-off offset in such a way, that the printed labels are peeled-off completely from the liner
▷ Programming manual or software documentation.

3. Move the air-jet module body (4) so that the labels move perpendicularly to it and has a row of holes preferably running along the edges on the base.

- Loosen screws (3) to move the air-jet module (4) in the printing direction.

Move air-jet module (4) and tighten screws (3).

- Loosen screw (2) to move the air-jet module perpendicular to the printing direction.

Move air-jet module (4) and tighten screw (2).

Adjust the air-jet module so that the label is direct and in the center of the nozzle array.

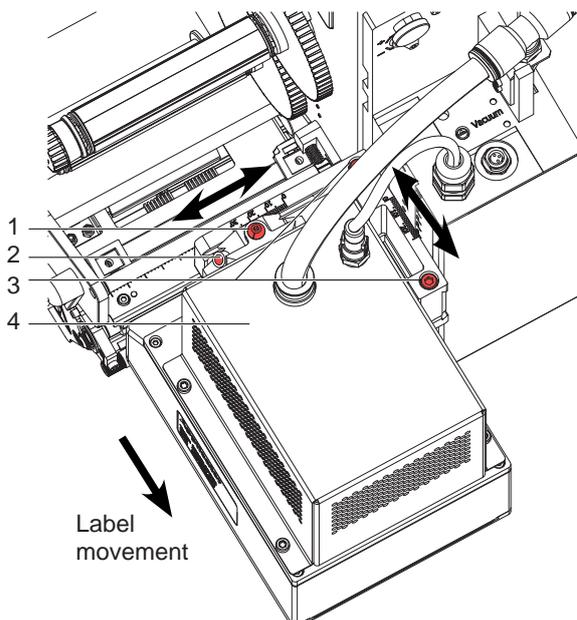


Fig. 5 Adjusting the air-jet module sidewise

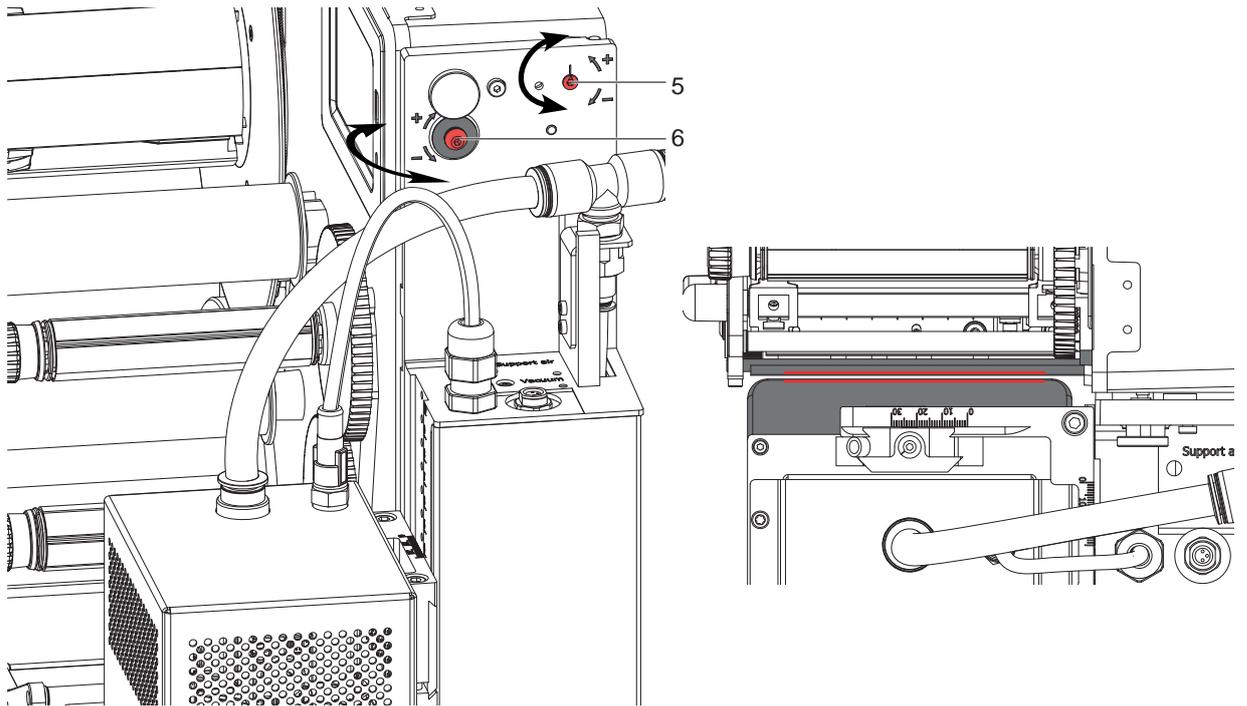


Fig. 6 Adjusting the Parallelism

4. Loosen knurled screw and press the applicator against the printer.
5. Adjust the angle between applicator pad edge and printer dispensing plate via the eccentric (5).
6. By turning setting screw (6) the tamp assembly in a horizontal angle to the printer.
7. By turning setting screw (1) the tamp assembly moves up or down. Turn the screw until the dispensing plate and the suction plate are about 1 mm apart.

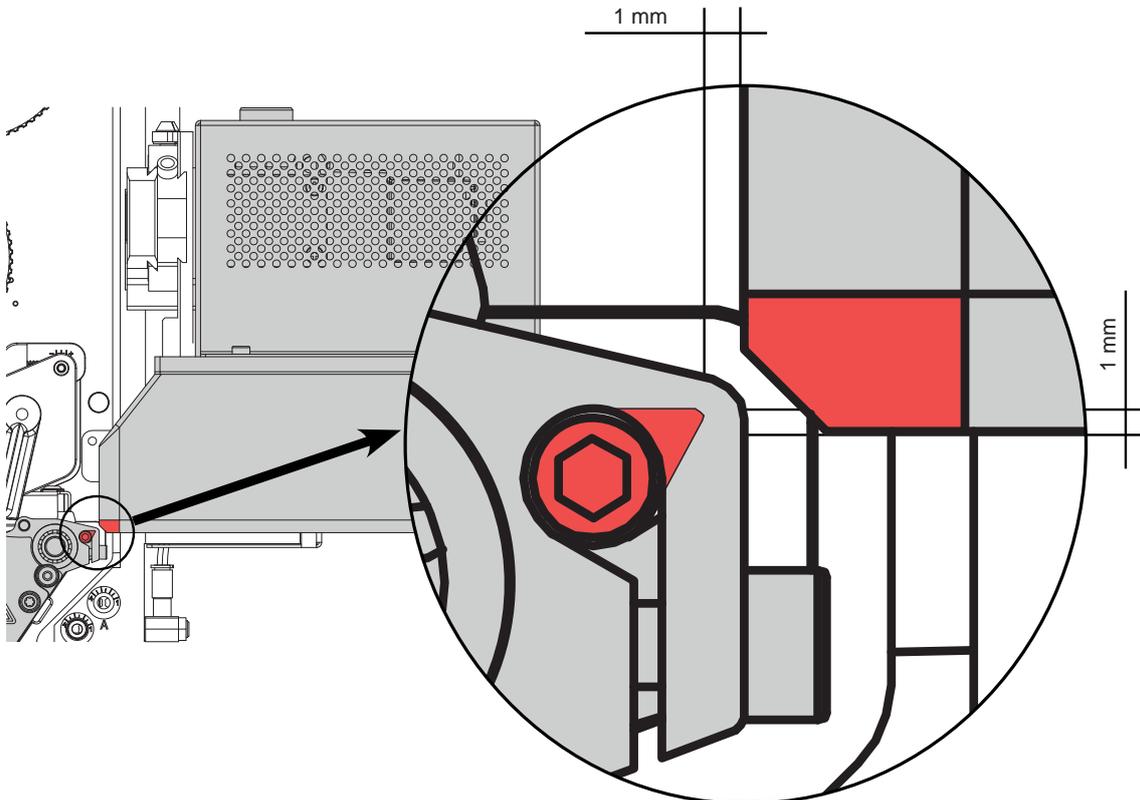


Fig. 7 Adjusting the height of the air-jet module

4.2 Vacuum Adjustments

The label will be held on the suction plate 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 suction plat.

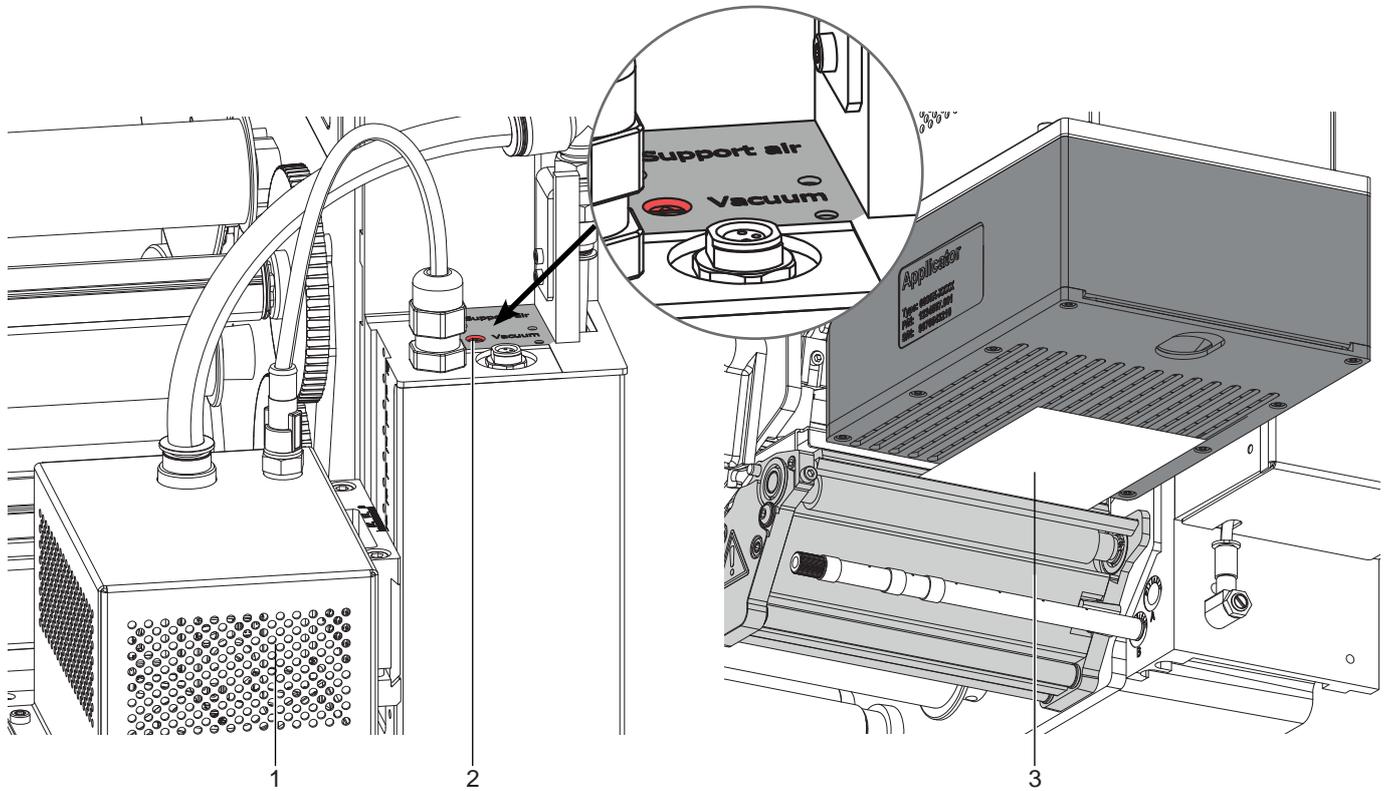


Fig. 8 Vacuum adjustments

- ▶ Adjust the vacuum on the potentiometer "vacuum" (2) so that the label (3) will be sucked up over its entire area.
- ▶ To increase the vacuum turn the potentiometer (1) counterclockwise to control the speed of the ventilator (1).

4.3 Adjusting the Blow Tube (Supporting Air)

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 suction plate.

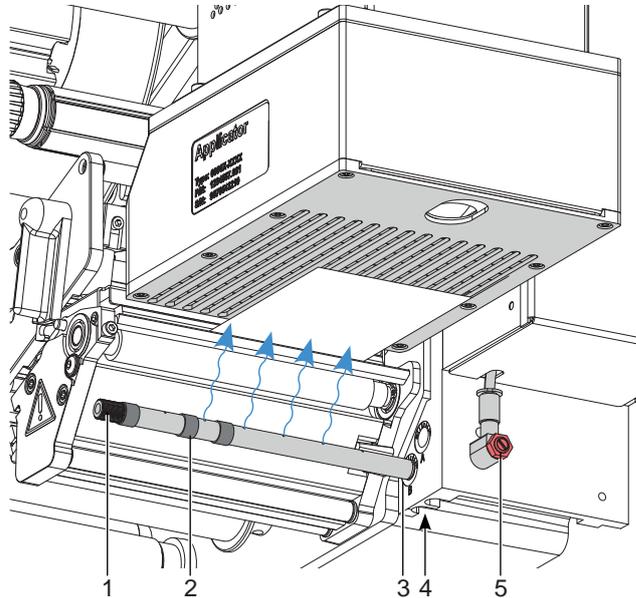


Fig. 9 Adjust the blow tube

The blow tube (4) for the supporting air can be rotated around its axis. That way the direction of the supporting air can be optimized.

1. Loosen screw (1).
2. Put the blow tube (3) into the tube adapter B (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 more toward the dispensing edge (5) of the printer.
 - For larger labels direct the air current away from the dispense edge (6).
 Use the graduation guide for 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).
5. To increase the support air turn the setting screw on the throttle valve (5) counterclockwise.

4.4 Configuration Parameters of the Applicator

The configuration parameters of the applicator can be found in the menu *Setup > Machine param.*

Parameter	Meaning	Default
 Labelling	Configuration parameters of the applicator	
 > Transfer mode	Setting the operation mode <i>Stamp on, Roll on, Blow on</i>	<i>Blow on on</i>
 > Blow time	only for Mode of oper. Blow on The length of time (max. 2.5 s) air is blown for the label transfer	100 ms

Table2 Applicator parameters

5.1 Connection

The start signal to apply the label can originate from an external sensor connected to the 3 pole connector (1) connected directly to the applicator.

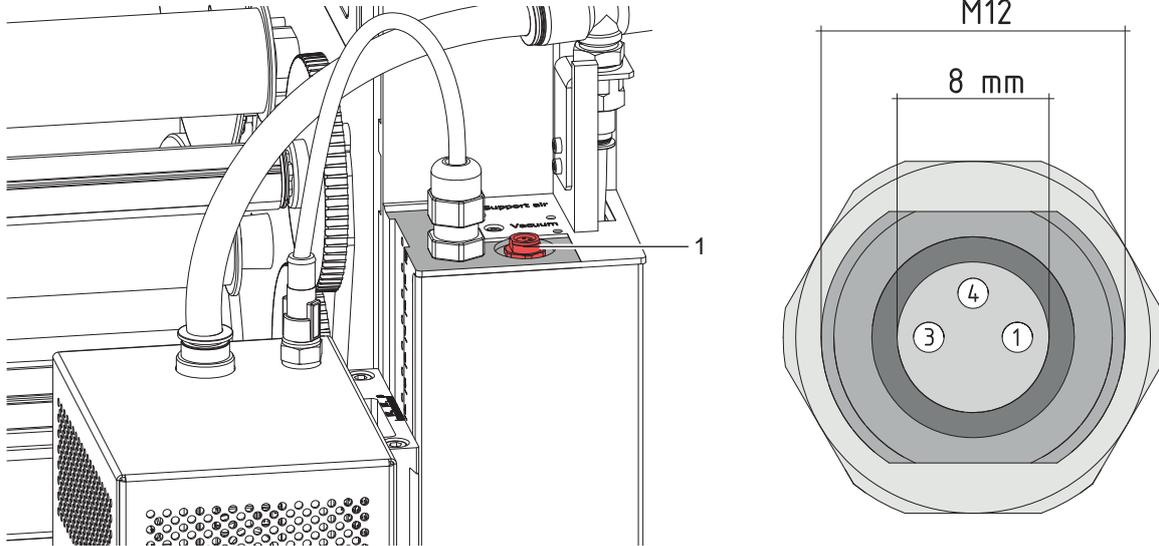


Fig. 10 Start signal connector on the applicator

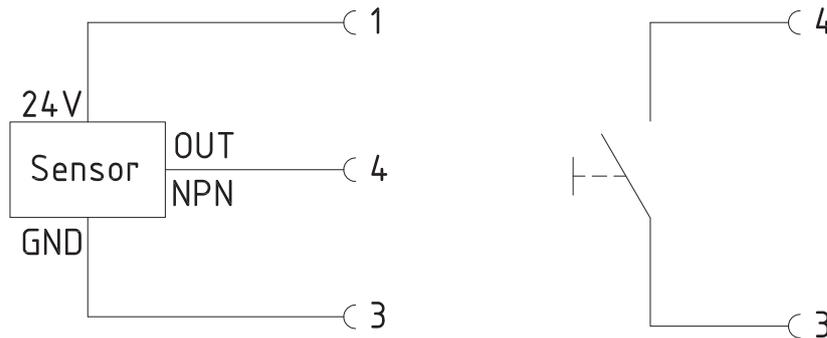


Fig. 11 Examples of connections of start sensors

The start of the printing job - print first label is still initiated over the I/O interface of the printer. Circuitry and programming of the connections is to be set as illustrated.

5.2 Signals

- The signal **FSTLBL** respectively **DREE** (Hermes+) causes the label to be printed which is then transported to the waiting position.
- The signal **START** will transport and apply the label to the product.

In the application mode "**Apply - Print**" the printing of the next label starts directly after application of the previous label. In the application mode "**Print - Apply**" the signal **START** must be sent for the print.

Pin	Signal	Name	Description		Activation/active status
			without applicator	with applicator	
1		FSTLBL DREE (Hermes+)	-	Cycle sequence = Apply-Print Print first label	Switch on +24V between Pin 1 and Pin 25
13		START	Print start signal Precondition: The superior control has confirmed with the ETE signal that the previous label has been taken from the peel-off position.	Start of printing and labeling	+24V between Pin 13 and Pin 25

▷ Interface description of the printer

Table3 A section of the interface description of the label printer

- ▶ Check all external connections.
- ▶ Load the material. Ensure that the locking system is locked ▷ "Operator's Manual" of the printer.
- ▶ Open the shutoff valve.
- ▶ Switch on the printer.
- ▶ Press the  respectively **feed** at the printer.
A synchronization feed is released. The processed labels have to be removed manually. After a few seconds the printer carries out a short backfeed to position the front edge of the next label at the printing line.

**Note!**

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

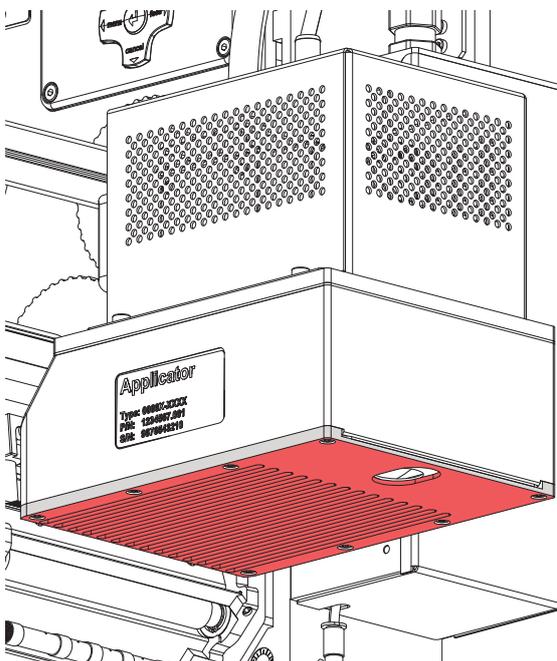
- ▶ Start a print job
- ▶ Start the labelling process via PLC interface.

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

6.1 Cleaning

**Attention!**

Never use solvent and abrasive.



- ▶ Clean the outer surfaces with a multi purpose cleaner.
- ▶ Especially the surface of the suction plates needs regular cleaning as left over debris is likely to adhere to the pad preventing an optimal label take over.

Fig. 12 Cleaning the suction plate

In order to get the perfect label application it is necessary to set the jets of the applicator to the size and shape of the used label.

Ideally the settings will have been set by the manufacturer with predetermined labeling material.

Should this not be possible the following steps will assist with the initiation and/or adjustments.

6.2 Sizing the Former Plate

Take a former plate from the accessories kit.
dimensions in mm

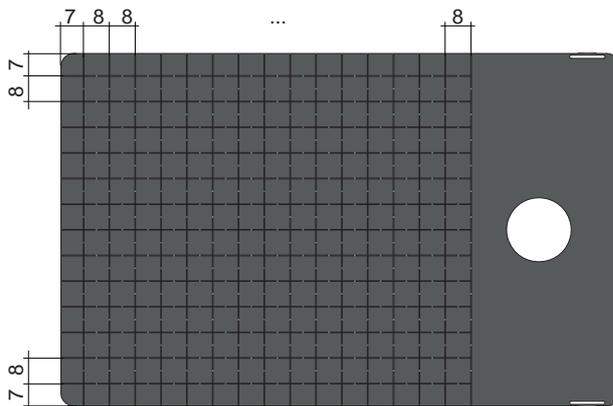


Fig. 13 Former plate

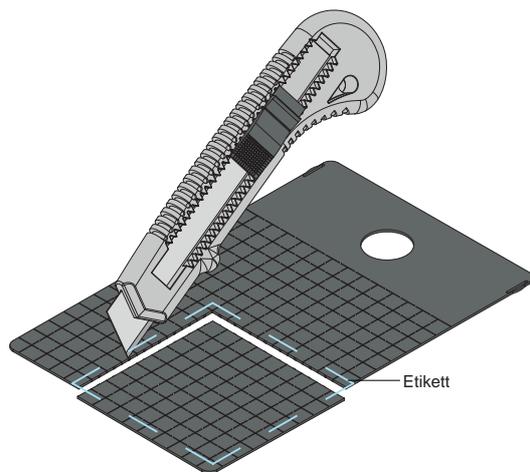


Fig. 14 Cutting the aperture

1. Place the label on the former plate. Use the front and a side edge as orientation.
2. Mark the label size on the on the former plate.
3. Cut the next inside perforation..

The aperture must be smaller the the label.

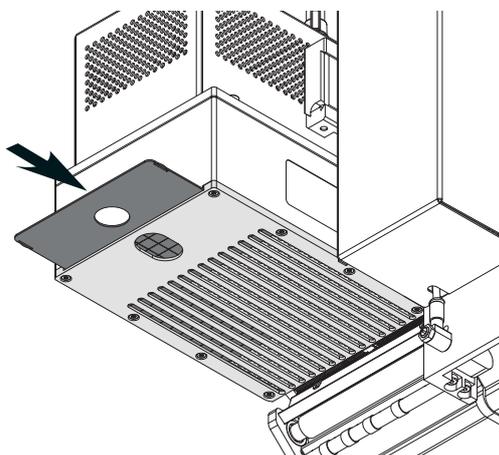


Fig. 15 Slide in the former plate

4. Slide the former plate complete into the blow module. The aperture must be on the base plate side.

7.1 Error Messages of the Printer

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

Error treatment:

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

7.2 Error messages of the Air-Jet Box

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
<i>Air pressure ins. (Hermes+)</i>	Pressure to low < 4 bar
	Pressure to high > 6 bar

Table4 Error messages of the Air-Jet Box

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.



Warning!

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

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

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

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

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

8.1 Declaration of Incorporation



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Deutschland

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:	Air-Jet Box
Type:	6114
Applied EC Regulations and Norms:	
Directive 2006/42/EC on machinery:	<ul style="list-style-type: none"> • EN ISO 12100:2010 • EN ISO 13849-1:2015 • EN 60950-1:2006 +A11:2009+A12:2011+A1:2010+A2:2013
Person authorised to compile the technical file:	Erwin Fascher Am Unterwege 18/20 99610 Sömmerda
Signed for, and on behalf of the Manufacturer:	Sömmerda, 08.07.2019
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.

8.2 EU Declaration of Conformity



cab Produkttechnik
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Wilhelm-Schickard-Str. 14
D-76131 Karlsruhe
Deutschland

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:	Air-Jet Box
Type:	6114
Applied EU Regulations and Norms:	Applied Norms:
Directive 2014/30/EU relating to electromagnetic compatibility:	<ul style="list-style-type: none"> • EN 55024:2010 • EN 55032:2012 • EN 61000-6-2:2005
Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment:	<ul style="list-style-type: none"> • EN 50581:2012
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	
Signed for, and on behalf of the Manufacturer:	Sömmerda, 08.07.2019
cab Produkttechnik Sömmerda Gesellschaft für Computer- und Automationsbausteine mbH 99610 Sömmerda	 Erwin Fascher Managing Director