Thermopatch
Since 1934

HIQ-EOS-2/EOS-5

Works standalone or with a PC!

Highlights • All-round label printer • Fast processor • Compact • Full color touchscreen • Also suitable for working with keyboard • USB, Bluetooth and WLAN connection possible

Looking for an all-round label printer for your textile products? Then choose the HiQ-EOS-2 or EOS-5. For workwear, personal clothing, sheets and table linens, the EOS printers offer full flexibility, with the best print quality and convenience guaranteed.
The HiQ-EOS-2 and its big brother the HiQ-EOS-5 label printers each feature a full colour touchscreen and leading technology at an attractive price. They can be used in the following configurations:

Standalone
One of the advantages of an EOS printer is that it can function in standalone with a USB keyboard. This means that no dedicated PC or additional software is required. A label design may be pre-programmed and stored either on a USB stick, or in the printer's internal memory.

Connection via a PC or network
The HiQ-EOS-2 / EOS-5 printers can also be connected to a PC or network. In addition to the built-in USB connection, both models can be supplied with an optional Bluetooth or WLAN connection. With the help of our 'Make Your Mark' or 'Bartender' software packages, you can quickly design any desired label.

With or without a knife
The HiQ-EOS-2 / HiQ-EOS-5 can be used in either of these possible configurations:
- without knife for processing pre-perforated tape (die-cut)
- with optional knife for processing continuous tape

Label media
Both EOS printers support various types of label tapes, such as HiQ, Hytex, CombiTex, CombiPly, Mediron and FasTag. The HiQ-EOS-2 is for label rolls up to a maximum diameter of 152 mm. The HiQ-EOS-5 is for label rolls up to a diameter of 203 mm; all other technical specifications of this printer are identical to the HiQ-EOS-2.

HIQ-EOS series

Cutting-edge technology at an attractive price. The EOS2 is simple to use, compact in size and is very durable. The EOS can be connected to a pc or used in stand-alone mode with only a keyboard. Great printer for areas where you have limited space.

The EOS2 label printer has a full color touchscreen. Thanks to a fast processor and the possibility for wireless connectivity (Bluetooth and WLAN), you can work just about anywhere you want. A keyboard can also be connected directly to the EOS2 and you can then utilized the pre-loaded label formats on the printer. For example, previously loaded label layouts can be easily retrieved, data can be added and then printed. With the optional cutter you can also work with our continuous HiQ tape.

Power supply (Volt)	100 – 240
Power consumption maximum (Watt)	100
Temperature range (°C)	N/A
Timer (Sec-)	N/A
Dimensions HxWxD maximum (Millimetres)	189 x 322 x 253
Weight (Kilogram)	4
Sealing platen (Millimetres)	N/A
Noise level (Decibel)	< 55
Air pressure range (Bar)	N/A
Shipping weight (Kilogram)	6
Shipping dimensions HxWxD (Millimetres)	325 x 370 x 370
Certification	CE

Service Manual

we identify more

Label Printer

EOS2 / EOS5

Made in Germany

Service Manual
for the following products

Family	Type
EOS	EOS2/200
	EOS2/300
	EOS5/200
	EOS5/300

Edition: 12/2018 - **Part No.** 9003340

Editor

Regarding questions or comments please contact cab Produkttechnik GmbH & Co. KG.

Topicality

Due to the constant further development of our products discrepancies between documentation and product can occur.

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Inhaltsverzeichnis

1 Introduction

1.1 Instructions

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

Danger!
Draws attention to an exceptionally great, imminent danger to your health or life due to hazardous voltages.

Danger!
Draws attention to a danger with high risk which, if not avoided, may result in death or serious injury.

Warning!
Draws attention to a danger with medium risk which, if not avoided, may result in death or serious injury.

Caution!
Draws attention to a danger with low risk which, if not avoided, may result in minor or moderate injury.

Attention!
Draws attention to potential risks of property damage or loss of quality.

Note!
Advices 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 General Safety Instructions

This service manual is intended for use by qualified service and maintenance personnel. For more operation and configuration information, refer to the user or configuration manual.

Follow the general safety rules below:

- Keep the area around the device clean at all times!
- Work with safety in mind.
- Parts of device that are removed during the maintenance work must be put in a safe place.
- Avoid risks of tripping over.

Danger!
Double pole/neutral fusing.

Danger!
Danger to life and limb from increased current flow through metal parts in contact with the device.
- ▶ **Do not wear clothing with metal parts.**
- ▶ **Do not wear jewelry.**
- ▶ **Do not wear spectacles with metal frames.**

Warning!
Items of clothing drawn into the device by moving parts can lead to injuries.
- ▶ **Do not wear any items of clothing which could get caught by moving parts.**

1.3 Protective Devices

Warning!
There is a risk of injury if protective devices are missing or defective.
- ▶ **Replace all protective devices (covers, safety notices, grounding cables etc) after maintenance work has been completed.**
- ▶ **Replace parts that have become defective or unusable.**

Wear protective goggles for:

- Knocking pins or similar parts in or out with a hammer.
- Using spring hooks.
- Inserting or removing springs, retaining rings or grip rings.
- Using solvents, cleansers or other chemicals.

1.4 Handling Electricity

The following work may only be done by trained and qualified electricians:

- Work on electrical components.
- Work on an open device still connected to the mains supply.

General precautions before starting maintenance work:

- Find out where the emergency and power switches are so that they can be quickly thrown in an emergency.
- Disconnect the current supply before carrying out the following work:
  - Installing or removing power units.
  - Working in the immediate vicinity of open power supply components.
  - Mechanical check of power supply components.
  - Modifying circuits in the device.
- Test the zero potential of the device parts.
- Check the working area for possible sources of danger, such as wet floors, defective extension cables, defective protective conductor connections.

Additional precautions in the case of exposed voltages:

- Ask a second person to remain near the working site. This person must know where the emergency and power switches are, and how to switch the current off if danger arises.
- Only use one hand to work on electric circuits of devices that are switched on. Keep the other hand behind your back or in your pocket.
  This prevents electricity from flowing through your own body.

1.5 Procedure in Case of Accidents

- Act calmly and with great care.
- Avoid danger to yourself.
- Switch off power.
- Request medical assistance.
- Give first aid, if necessary.

2 Replacing Assembly Units

2.1 Tools

▶ Do not use any worn of damaged tools.

▶ Only use tools and testing devices that are suitable for the task at hand.

cab special tools:

- Test collar for transfer ribbon winder (cab item number: 5966016)

Standard tools:

- Screw driver Torx, size TX 10
- Adjusting pliers flat-nosed, form A straight Type 135
- Cylindrical dynamometer (spring scale), 0 - 5 N (cab item number: 5966017)

Auxiliary Materials:

- Grease for plastic materials (cab item number: 5966279)

2.2 Replacing the Printhead

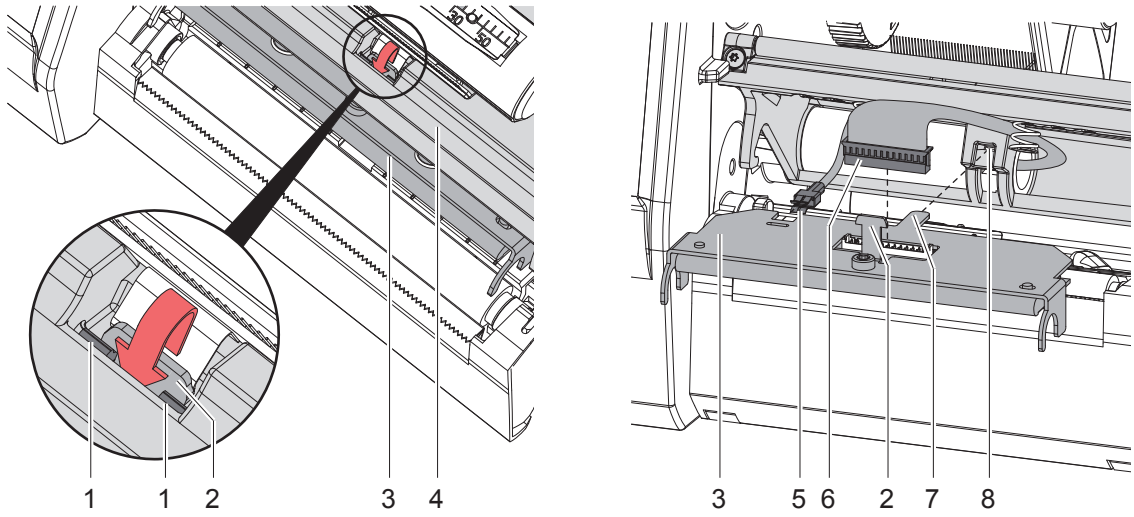


Fig. 1 Replacing the printhead

Attention!

The printhead can be damaged by static electricity discharges and impacts!

▶ **Set up printer on a grounded, conductive surface.**

▶ **Ground your body, e.g. by wearing a grounded wristband.**

▶ **Do not touch contacts on the plug connections (5,6).**

▶ **Do not touch heating line with hard objects or your hands.**

1. Fold up printhead retainer (4).
2. Remove material and ribbon from the printer.
3. Push printhead (3) up against the printhead retainer, slide the holding lug (2) over the web (1) and pull it out of the slit in the printhead retainer.
4. Remove printhead from the guide (8) in the printhead retainer.
5. Detach the cables (5,6) from the printhead.
6. After changing the printhead, attach the cables (5,6) to the printhead.
7. Insert the holding lug (7) of the printhead into the guide (8) in the retainer.
8. Push printhead up against the printhead retainer. While doing so, guide the holding lug (2) of the printhead upwards through the slit in the retainer.
9. Slide the printhead into the printhead retainer until the holding lug (2) latches over the web (1).

2.3 Replacing the Print Roller

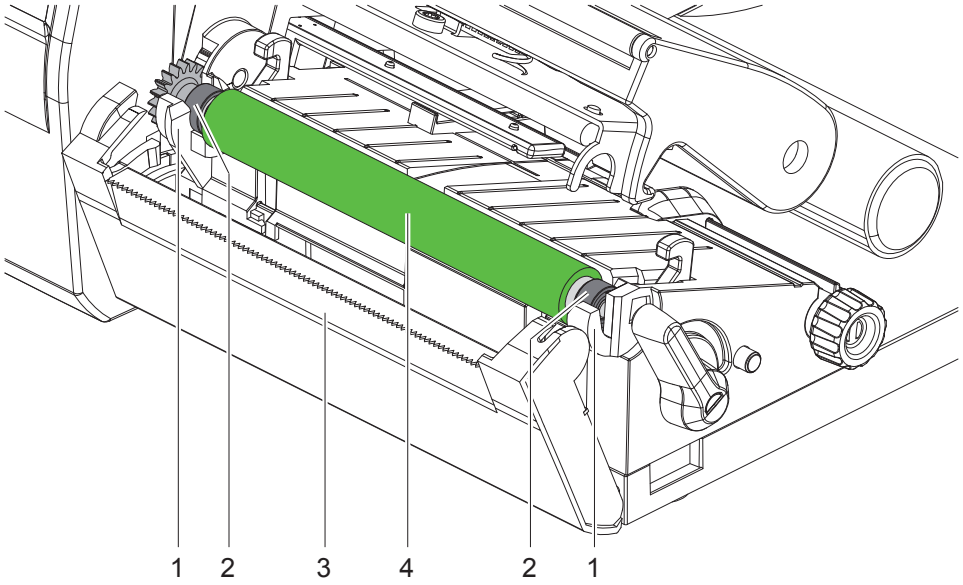


Fig. 2 Replacing the print roller

1. Open the printhead.
2. Remove material and transfer ribbon from the printer.
3. Fold down the cover (3) with the tear-off plate.
4. Lift the print roller (4) from its retainers (1).
5. Push the new roller with bearings (2) into the retainers (1) until they click into place.
6. Fold up the cover (3) with the tear-off plate.

2.4 Removing the Casing

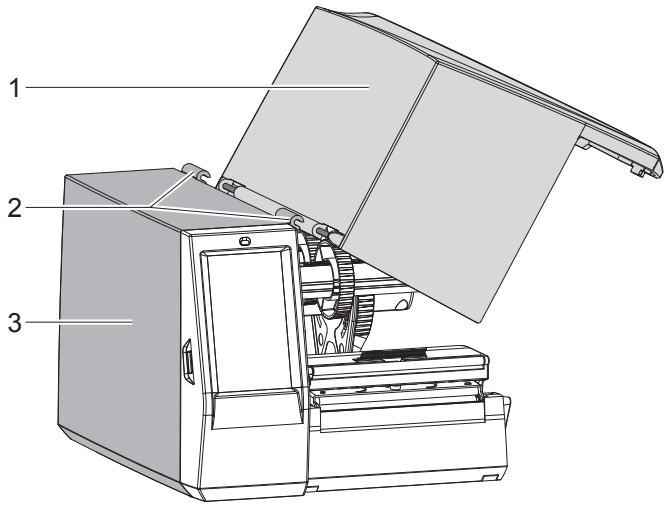


Fig. 3 Removing the cover

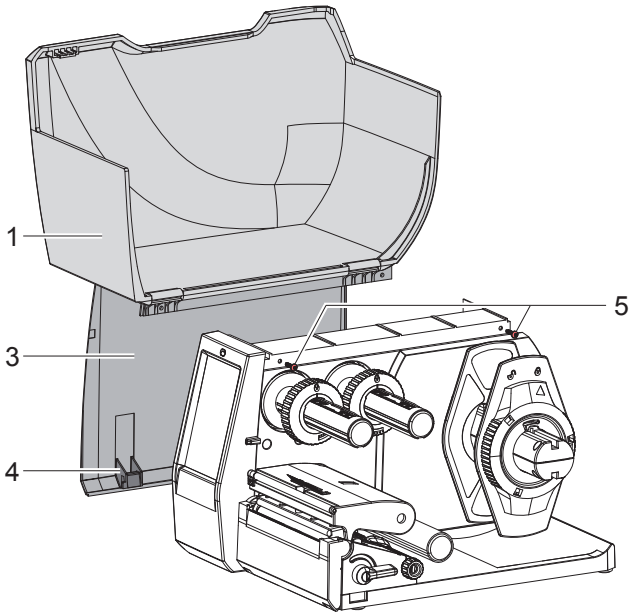


Fig. 4 Removing / mounting the casing

Removing the cover

- ▶ Lift the cover (1) by turning by 60°.
- ▶ Push the cover out of the hinges (2) of the cover plate (3) diagonally to the ground.

Note!

For service work it is recommended to remove the casing consisting of cover (1) and cover plate (3) connectedly. It is not necessary to separate the cover from the cover plate.

Danger!

Risk of death via electric shock!

- ▶ **Before opening the housing cover, disconnect the device from the mains supply and wait at lease one minute until the power supply unit has discharged.**

Removing the casing

- ▶ Open the cover (1).
- ▶ Loosen 2 screws (5).
- ▶ Push the cover plate (3) with the cover (1) to the connector side.
- ▶ Lift the cover plate (3) with the cover (1) from the printer.

Mounting the casing

- ▶ Insert the hooks (4) into the slot of the bottom and push the casing to the control panel side.
- ▶ Fix the cover plate with 2 screws (5).

2.5 Replacing the Control Panel

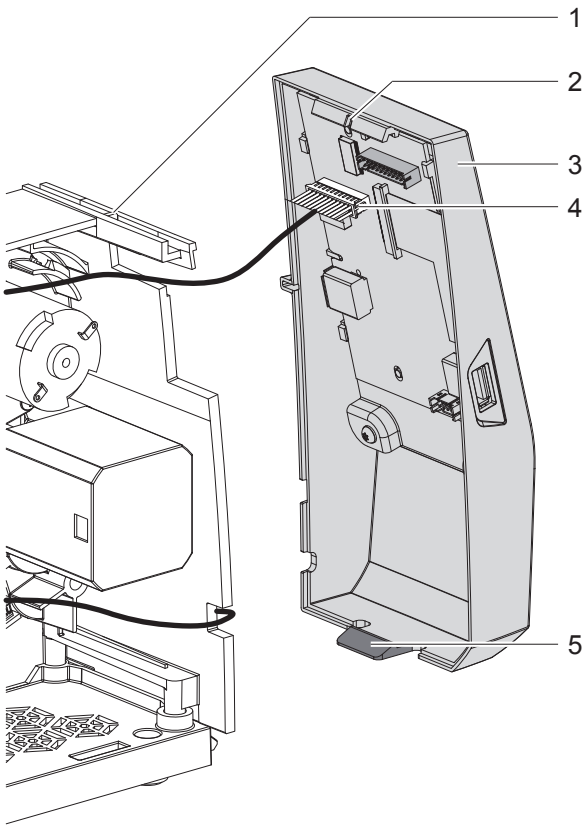


Fig. 5 Removing / mounting the control panel

Removing

- ▶ Remove the casing.
- ▶ Unlock the control panel (3) at the latch (5) swing it away from the printer and remove it by lifting.
- ▶ Unplug the connector of the display cable (4).

Mounting

- ▶ Re-connect the cable (4).
- ▶ Hook the slot (2) of the cover into the guide (1) and press the control panel against the printer until the latch (5) clicks into place.
- ▶ Mount the casing.

2.6 Replacing the Transport Module

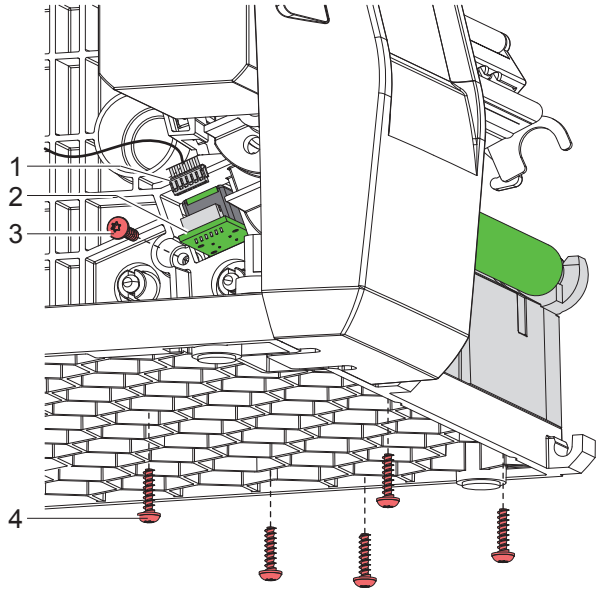


Fig. 6 Removing / mounting transport module 1

Removing

- ▶ Remove the tear-off plate/cutter.
- ▶ Remove the casing.
- ▶ Unplug the connector (1) of the label sensor (2).
- ▶ Move the label sensor as far as possible to the operator's side ▷ Operator's Manual.
- ▶ Remove screw (3) and 5 screws (4).

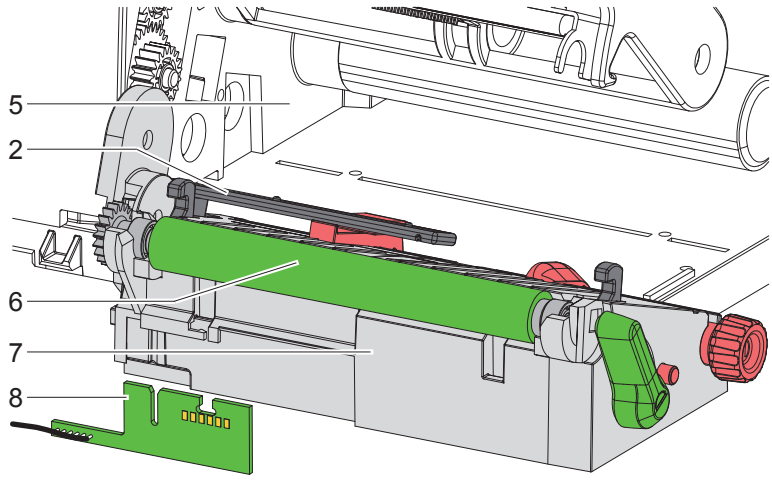


Fig. 7 Removing / mounting transport module 2

- ▶ Remove control panel.
- ▶ Remove the transport module (7) with the printing roller (6) by tilting from the chassis (5).
- ▶ Pull the cutter connection cable (8) downward out of the transport module (7).

Mounting

- ▶ Mount the assembly units in reverse order.

2.7 Replacing the Stepper Motor

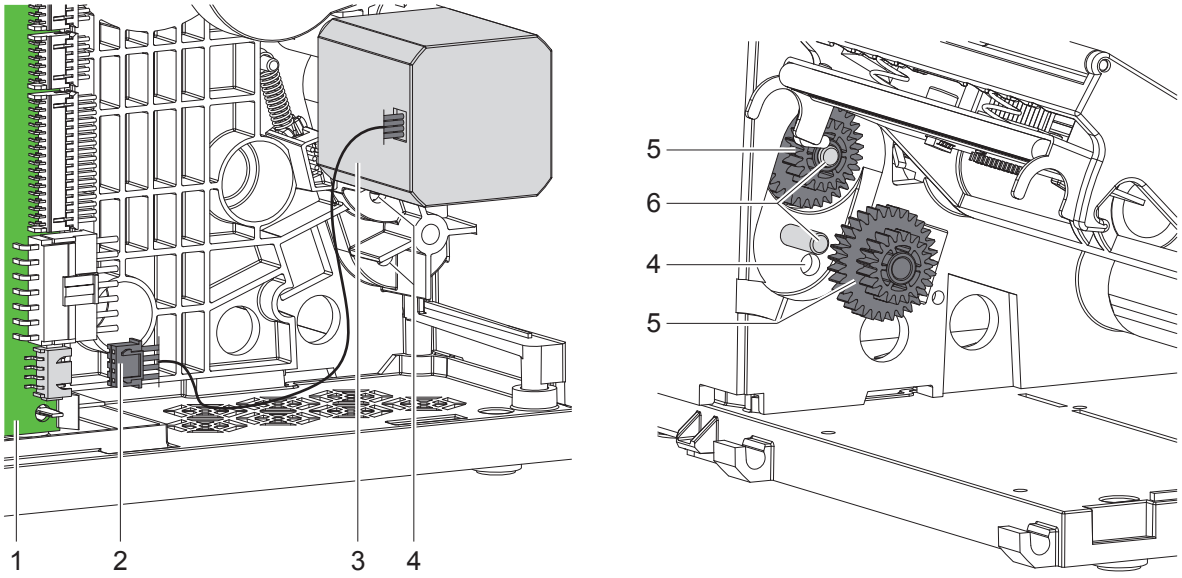


Fig. 7 Removing / mounting stepper motor 1

Removing

- ▶ Remove the casing
- ▶ Remove the transport module.
- ▶ Unplug the connector (2) of the stepper motor (3) from the CPU (1).
- ▶ Remove the gearwheels (5) from the axles (6).

Note!

The gearwheels (5) are reachable from the inner side of the chassis through the holes (4) with a pointed tool and can be pushed that way from the axles.

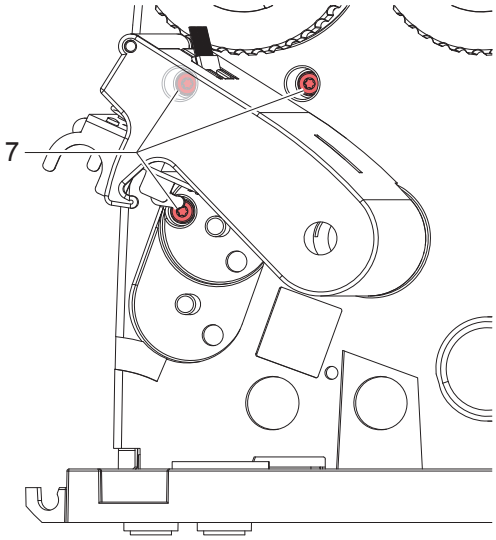


Fig. 8 Removing / mounting stepper motor 2

- ▶ Loosen 3 screws (7) and remove the stepper motor (3).

Mounting

- ▶ Mount the assembly units in reverse order.

2.8 Replacing the Printhead Holder

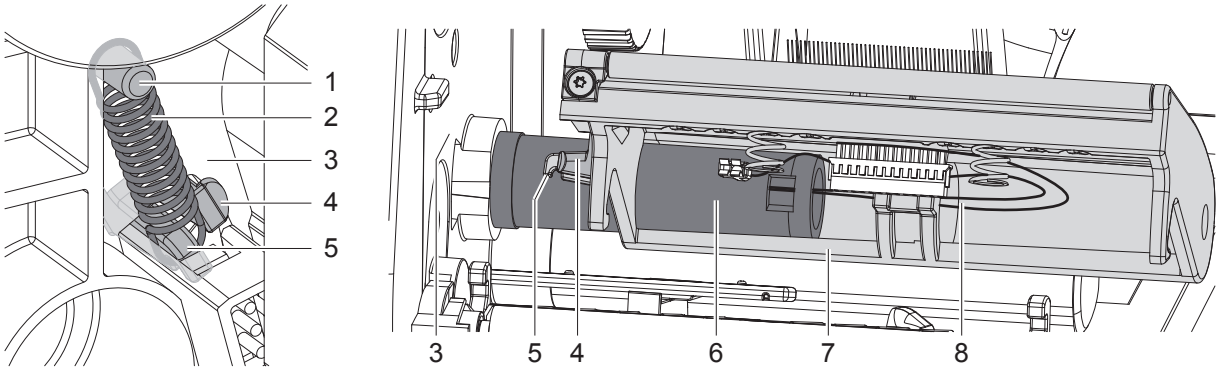


Fig. 9 Removing / mounting printhead holder

Removing

- ▶ Remove the casing.
- ▶ Remove the printhead.
- ▶ Remove the spring (2) from the spring bolt (1).
- ▶ Lift the printhead holder (7), unlock the latch (4) and push the printhead holder with the spring (2) to the operator's side out of the chassis (3).
- ▶ Remove the printhead holder (7) with the spring (2) completely from the retainer (6). In doing so remove the printhead cable (8) from the printhead holder.
- ▶ Keep the spring (2).

Mounting

- ▶ Push the printhead holder (7) onto the retainer (6). In doing so insert the printhead cable (8) into the printhead holder.
- ▶ Push latch (4) and spring hook (5) of the printhead holder through the gap of the chassis (3).

Note!

For the following mounting of the spring (2) it is recommended to push the printhead holder in a position, where the latch (4) is clamped by the chassis but not completely locked yet.

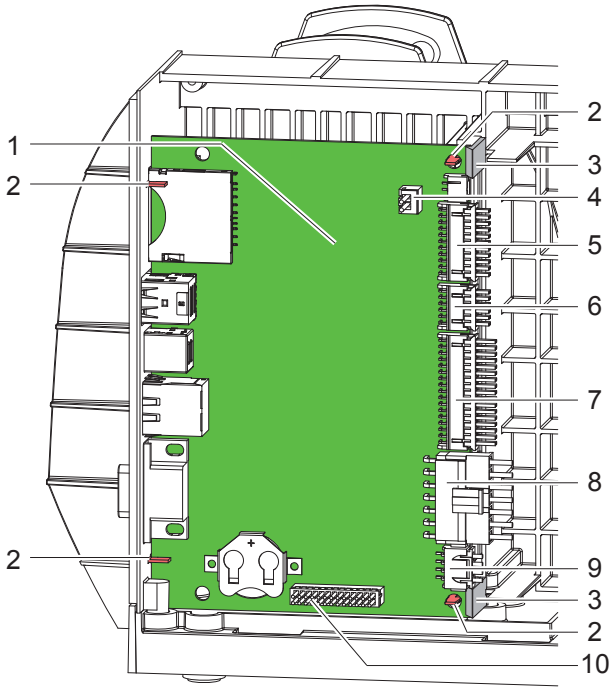
- ▶ Mount the spring (2) onto the spring hook (5).
- ▶ Push the printhead holder (7) further until the latch (4) clicks into place.
- ▶ Mount the spring (2) onto spring bolt (1).
- ▶ Mount the printhead.
- ▶ Mount the casing.

2.9 Replacing the PCB CPU

Danger!

Risk of death via electric shock!

▶ **Before opening the housing cover, disconnect the device from the mains supply and wait at least one minute until the power supply unit has discharged.**



1 PCB CPU
2 Pins
3 Latches

Connectors:
4 CON13 - Gear motor
5 CON12 - Control panel
6 CON11 - Sensors
7 CON10 - Printhead
8 CON9 - Power supply
9 CON8 - Stepper motor
10 CON7 - Cable cutter connection

Fig. 10 Replacing the PCB CPU

1. If possible, save the printer configuration to an external medium ▷ Configuration Manual.
2. Unplug the printer from the electrical outlet.
3. Detach all interface cables from the back of the printer.
4. Remove all memory media from the slots.
5. Remove the casing..
6. Unplug all plug connections (4-10) from the PCB CPU (1).
7. Unlock the latches (3) and remove the PCB CPU from the pins (2).
8. Put the PCB CPU onto the pins (2) and snap it in into the latches (3).
9. Connect all cables (4-10) to the PCB CPU.
10. Mount the casing.
11. Restore all interface connections on the back of the printer.
12. Connect the power cable.
13. Update the firmware if necessary.
14. Adjust the label sensor ▷ Configuration Manual.
15. Load the printer configuration from the memory medium if possible. Otherwise, set the printer configuration via control panel ▷ Configuration Manual.

2.10 Replacing the Power Supply Unit

Danger!

Risk of death via electric shock!

▶ **Before opening the housing cover, disconnect the device from the mains supply and wait at least one minute until the power supply unit has discharged.**

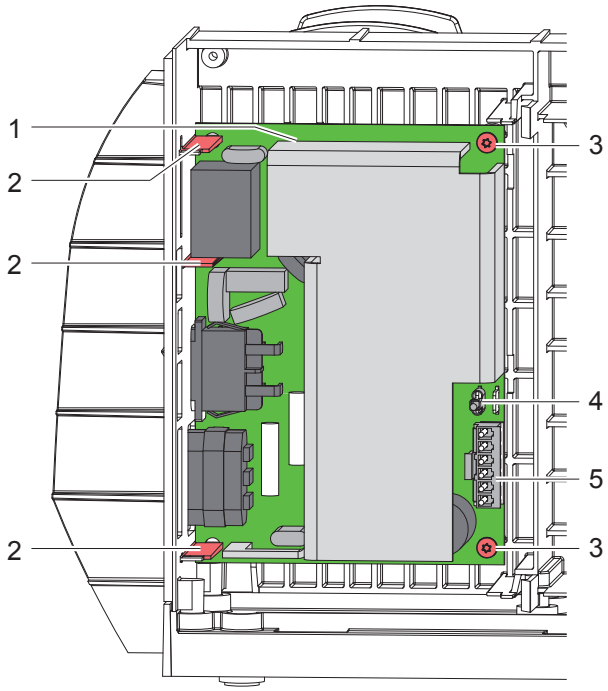


Fig. 11 Replacing the power supply unit

1. Unplug the printer from the electrical outlet.
2. Remove the casing.
3. Dismount the PCB CPU ▷ 2.9 on page 14.
4. Unplug the cables from the connectors (4,5).
5. Loosen two screws (3).
6. Pull the power supply unit (1) from the pins (2).
7. Insert the new power supply unit and fix it with the screws (3).
8. Connect the cables at the connectors (4,5).
9. Re-mount the PCB CPU.
10. Mount the casing.

2.11 Checking the Braking Force at the Ribbon Supply Hub

During printing operation the spring on the transfer ribbon supply hub functions as a brake. The braking force on the supply hub influences the transport of the transfer ribbon.

The braking force on the transfer ribbon supply hub is measured with a test collar.

The set values for the braking force at the test collar are:

Spring on	Direction of rotation	Braking Force
Transfer Ribbon Supply Hub	any direction	1,6 - 2,0 N

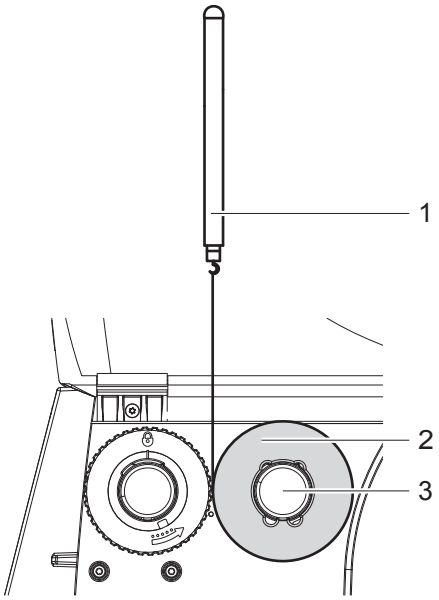


Fig. 12 Measure braking force on supply hub - for ink side-out transfer ribbon

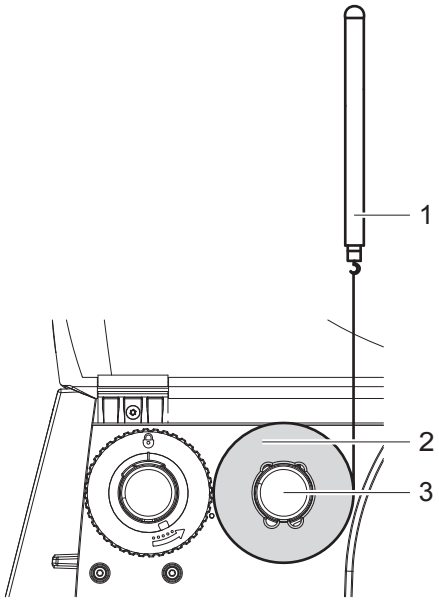


Fig. 13 Measure braking force on supply hub - for ink side-in transfer ribbon

1. Remove transfer ribbon from the printer.
2. Put test collar (2) on the supply hub (3).
3. Wind the cord around the test collar several times.
4. Secure spring scale (1) at the end of the cord.
5. Pull at the spring scale until the supply hub begins turning.
6. Allow the cord to unwind from the test collar at least one full turn and read the pulling force on the spring scale at the same time.
7. Compare the braking force with the set values.

3 Troubleshooting and Error Treatment

3.1 Failure of Device Functions

Functional error	Possible remedy
Medium is not transported	Check electrical connections between PCB CPU and motor
	Check drive mechanism
	Replace the PCB CPU
	Replace the motor
No print image with medium transport	Check plug connections at the printhead
	Examine printhead cable for damage and replace if necessary
	Replace the printhead
	Replace the PCB CPU
No display function	Check cable connection between PCB CPU and control panel
	Replace the control panel
	Replace the PCB CPU
Communication via an interface is not functioning	Check whether the interface configurations of the printer and computer match
	For an Ethernet connection, check the validity of the IP address and the subnet mask
	Check the interface cable and replace it if necessary
	If all functionality of the interface has been lost, replace the PCB CPU
A peripheral device is not functioning	Check whether the peripheral device is activated via programming
	Check the peripheral device
	Replace the PCB CPU

Table 1 Failure of device functions

3.2 Permanent Hardware Faults

Error message	Cause	Fault recovery
Voltage error		
V_{BAT}	Voltage of the battery on the PCB CPU is too low	Replace the PCB CPU
24 V	24 V too low	Check voltage at measurement point +24V ▷ Fig. 15 on page 19: • Voltage too low: Replace the power supply unit • Voltage is correct: Replace the PCB CPU
24 V TPH	24 V for the printhead too low	Check voltage at measurement point +24V TPH ▷ Fig. 15 on page 19: • Voltage too low: Replace the power supply unit • Voltage is correct: Replace the PCB CPU

Table 2 Hardware faults

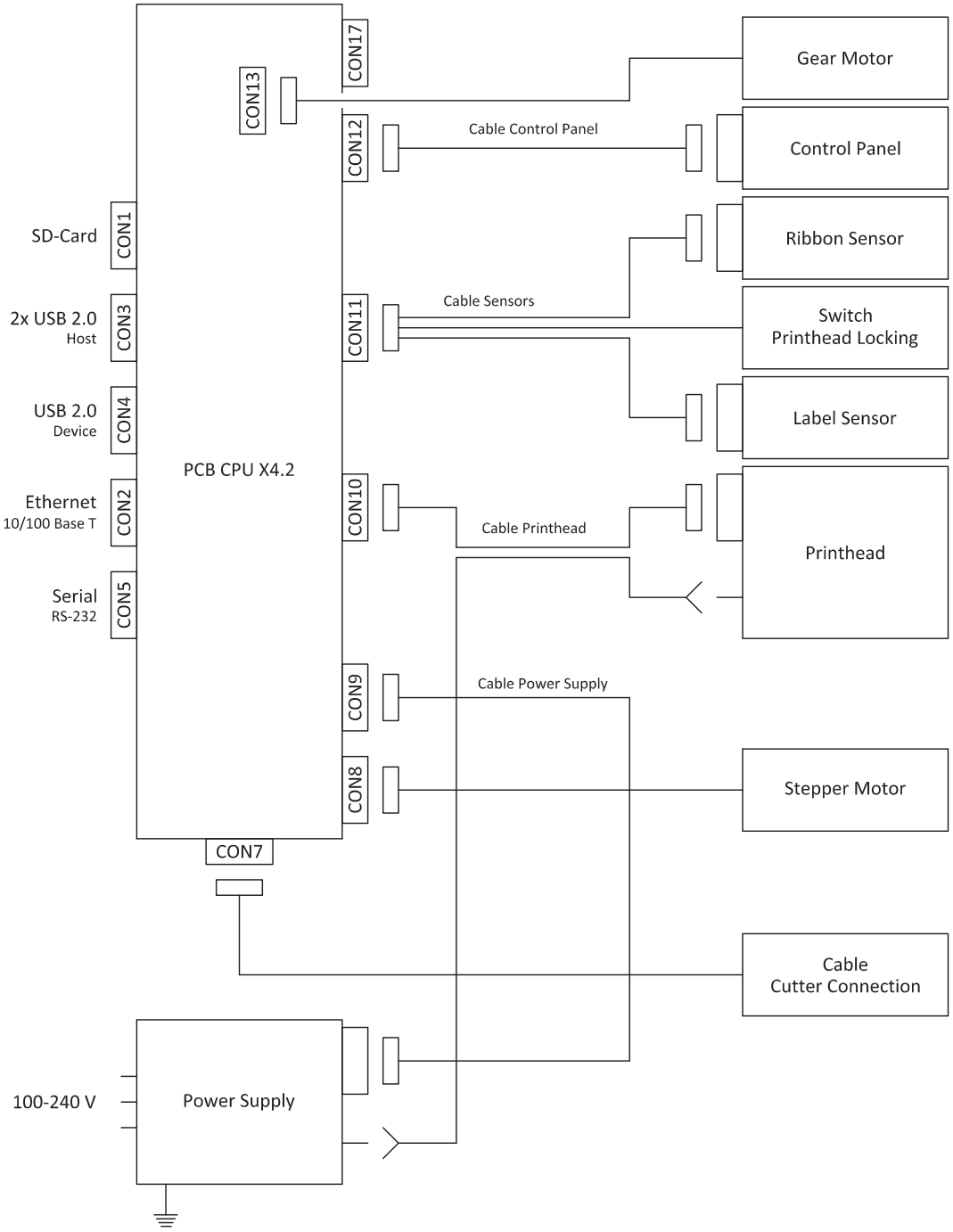


Fig. 14 Block diagram

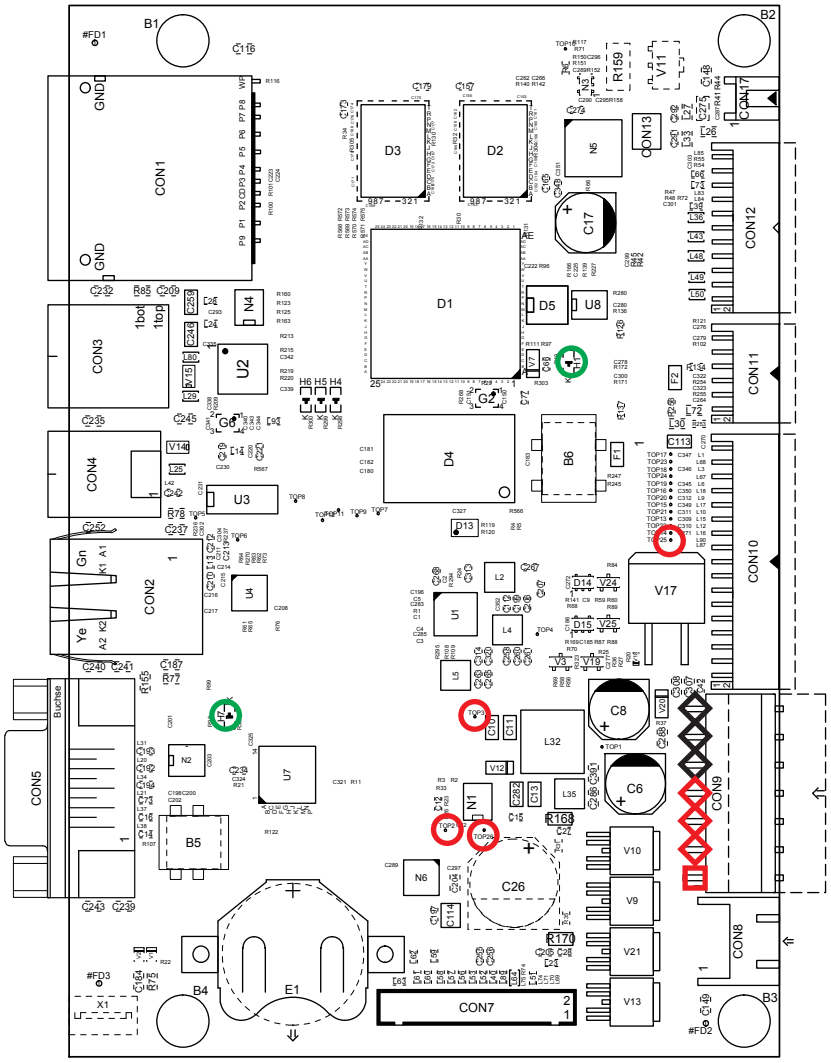


Fig. 15 Layout Diagram PCB CPU

Measuring points of CON9:

◆	GND
◆	+24V
■	$+V_{MOT}$ (+24V)

Measuring point on the PCB:

TOP2	+24V
TOP3	+5V
TOP25	+24V TPH
TOP26	$+V_{MOT}$ (+24V)

LED on the PCB:

H1	+3,3V
H7	LED FPGA on during start procedure blinking after the start procedure

6 Index

20

Operator's Manual

we identify more

Label Printer

EOS2 / EOS5

Made in Germany

Operator's Manual
for the following products

Family	Type
EOS	EOS2/200
	EOS2/300
	EOS5/200
	EOS5/300

Edition: 09/2018 - **Part No.** 9003246

Editor

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Topicality

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1 Introduction

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Draws attention to an exceptionally great, imminent danger to your health or life due to hazardous voltages.

Danger!
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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!
Advices 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 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 printer is intended exclusively for printing 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.

Note!
The complete documentation is included in the scope of delivery on DVD, and can also currently be found in the Internet.

1.3 Safety Instructions

- The device is configured for voltages of 100 to 240 V AC. It only has to be plugged into a grounded socket.
- 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.).
- Do not use the device in an explosive atmosphere.
- Do not use the device close to high-voltage power lines.
- If the device is operated with the cover open, ensure that people‘s clothing, hair, jewelry etc. do not come into contact with the exposed rotating parts.
- The device or parts of it can become hot while printing. Do not touch during operation, and allow to cool down before changing material and before disassembly.
- Risk of crushing when closing the cover. Touch the cover at the outside only. Do not reach into the swivel range of the cover.
- Perform only those actions described in this operating 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.
- Warning stickers must not be removed, as then you and other people cannot be aware of dangers and may be injured.
- The maximum sound pressure level is less than 70 dB(A).

Danger!

Danger to life and limb from power supply.

▶ **Do not open the device casing.**

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.

1.4 Environment

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

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

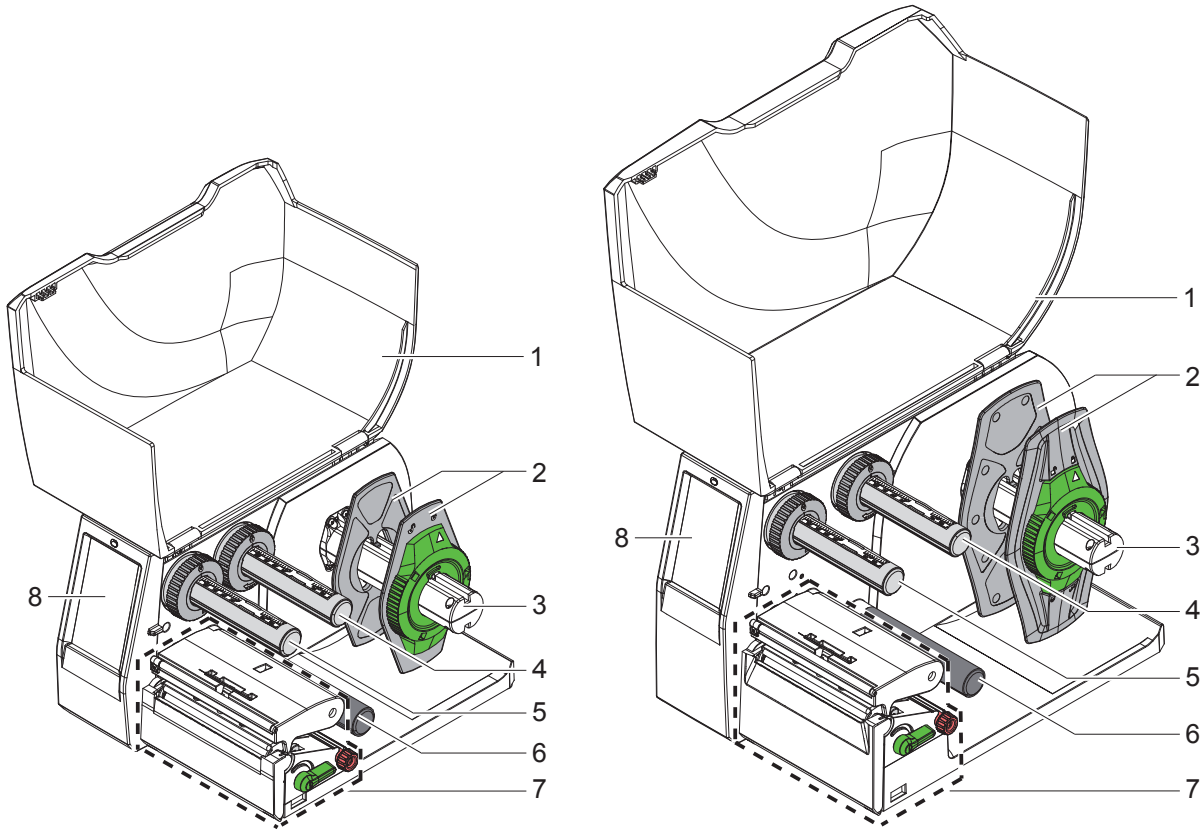
The modular construction of the printer enables it to be easily disassembled into its component parts.

▶ Send the parts for recycling.

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

▶ Take old batteries to collection boxes in shops or public waste disposal centers.

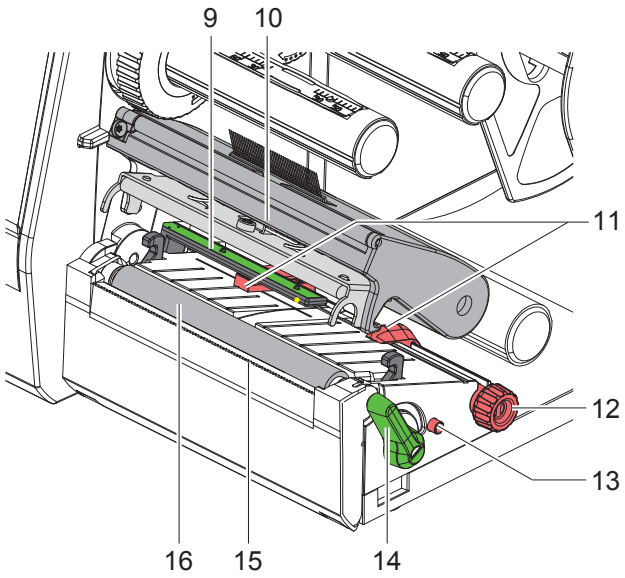
2.1 Device Overview



EOS2 EOS5

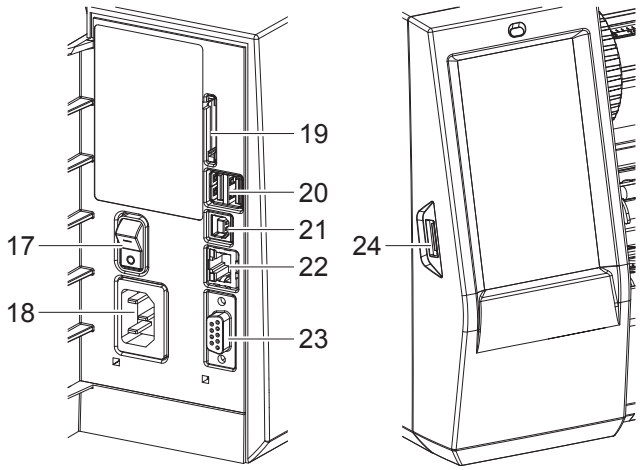
1 Cover
2 Margin stop
3 Roll retainer
4 Ribbon supply hub
5 Ribbon take-up hub
6 Roller
7 Print unit
8 Touchscreen-Display

Figure 1 Overview



9 Label sensor
10 Printhead retainer with printhead
11 Margin stop
12 Knob for adjusting the guides
13 Knob for adjusting the label sensor
14 Lever for locking the printhead
15 Tear-off plate
16 Print roller

Figure 2 Print unit



17 Power switch
18 Power connection jack
19 Slot for SD card
20 2 USB master ports for keyboard, scanner, USB memory stick, Bluetooth adapter, service key or WiFi stick
21 USB full-speed slave port
22 Ethernet 10/100 Base-T
23 Serial RS-232 port
24 USB master port for keyboard, scanner, USB memory stick, Bluetooth adapter, service key or WiFi stick

Figure 3 Connections

2.2 Unpacking and Setting-up the Printer

- ▶ Lift the label printer out of the box.
- ▶ Check label printer for damage which may have occurred during transport.
- ▶ Set up printer on a level surface.
- ▶ Remove foam transportation safeguards near the printhead.
- ▶ Check delivery for completeness.

Contents of delivery:

- Label printer
- Power cable
- USB cable
- Operator's Manual
- DVD with label software, Windows driver and documentation

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

Attention!
The device and printing materials will be damaged by moisture and wetness.
▶ Set up label printers only in dry locations protected from splash water.

2.3 Connecting the Device

The standard available interfaces and connectors are shown in Figure 3.

2.3.1 Connecting to the Power Supply

The printer is equipped with a wide area power unit. The device can be operated with a supply voltage of 230 V~/50 Hz or 115 V~/60 Hz without adjustment.

1. Check that the device is switched off.
2. Plug the power cable into the power connection socket (18/Figure 3).
3. Plug the power cable into a grounded socket.

2.3.2 Connecting to a Computer or Computer Network

Attention!
Inadequate or no grounding can cause malfunctions during operations.
Ensure that all computers and cables connected to the label printer are grounded.

▶ Connect the label printer to a computer or network by a suitable cable.

For details of the configuration of the individual interfaces ▷ Configuration Manual.

2.4 Switching on the Device

When all connections have been made:

▶ Switch the printer on at the power switch (17/Figure 3).
The printer performs a system test, and then shows the system status *Ready* in the display.

3 Touchscreen-Display

The user can control the operation of the printer with the control panel, for example:

- Issuing, interrupting, continuing and canceling print jobs,
- Setting printing parameters, e.g. heat level of the printhead, print speed, interface configuration, language and time of day (▷ Configuration Manual),
- Control stand-alone operation with a memory module (▷ Configuration Manual),
- Update the firmware (▷ Configuration Manual).

Many functions and settings can also be controlled by software applications or by direct programming with a computer using the printer's own commands. ▷ Programming Manual for details.

Settings made on the touchscreen display make the basic settings of the label printer.

Note!
It is advantageous, whenever possible, to make adaptations to various print jobs in the software.

3.1 Start Screen

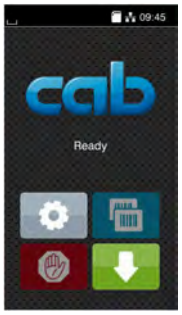
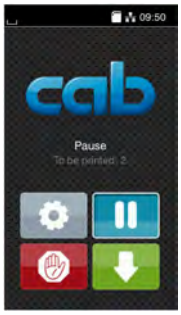
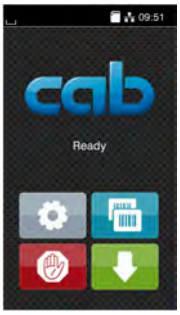
			
After switching on	During printing	In pause state	After print job

Figure 4 Start screen

The touchscreen display is operated directly by touch:

- To open a menu or select a menu item lightly touch the corresponding symbol.
- To scroll in lists slide finger up or down on the display.

	Open the menu		Repeat the last printed label
	Interrupt the print job		Cancel all print jobs
	Continue the print job		Feed a blank label

Table 1 Symbols on the start screen

Note!
Inactive symbols are shaded.

With special software or hardware configurations additional symbols appear on the start screen:

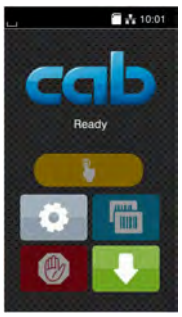
		
Printing on demand without print job	Printing on demand within print job	Direct cut with cutter installed (accessory)

Figure 5 Optional symbols on the start screen

	Release printing of a single label within a print job including cutting...		Release a direct cut without media feed

Table 2 Optional symbols on the start screen

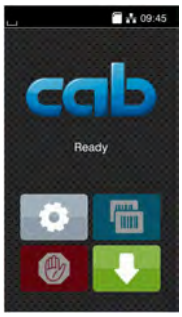
In the headline several information are displayed as widgets depending on the configuration:

Figure 6 Widgets in the start screen

	Displays the current data transfer in the form of a falling drop.
	The *Save data stream* function is active ▷ Configuration manual All received data are stored in a .lbl file.
	Warning ribbon end ▷ Configuration manual The remaining diameter of the ribbon supply roll undershoots the set value.
	SD card installed
	USB memory installed
	gray: Bluetooth adapter installed, white: Bluetooth connection active
	WiFi connection active The WiFi strength is displayed by the number of white arcs.
	Ethernet connection active
	USB connection active
	abc program active
	Clock time

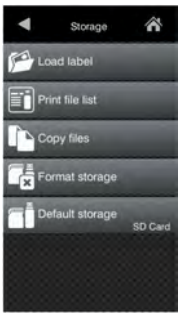
Table 3 Widgets in the start screen

3.2 Navigation in the Menu



Start level

Selection level



Parameter/function level

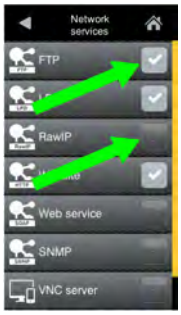
Figure 7 Menu levels

▶ To open the menu select  on the start screen.

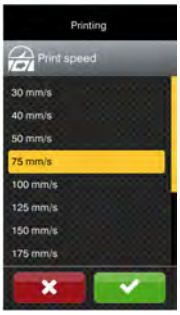
▶ Select a theme in the selection level.
Several themes have substructures again with selection levels.
To return from the current level to the upper one select ◀. To leave the menu select ⌂.

▶ Continue the selection until the parameter/function level is reached.

▶ Start a function. The will carry out the function possibly after a preparing dialogue.
- or -
Select a parameter to set. The setup possibilities are depending from the parameter type.

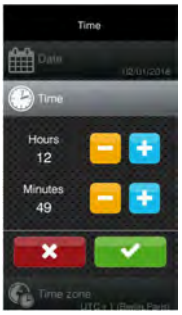


Logical parameters



Selection parameters

Numerical parameters



Date/time

Figure 8 Samples for parameter setting

	Scroll bar for rough value setting
	Decreasing the value step-by-step
	Increasing the value step-by-step
	Return without saving the setting
	Return with saving the setting
	Parameter is disabled, touching enables the parameter
	Parameter is enabled, touching disables the parameter

Table 4 Buttons for parameter setting

4.1 Loading Media from Roll

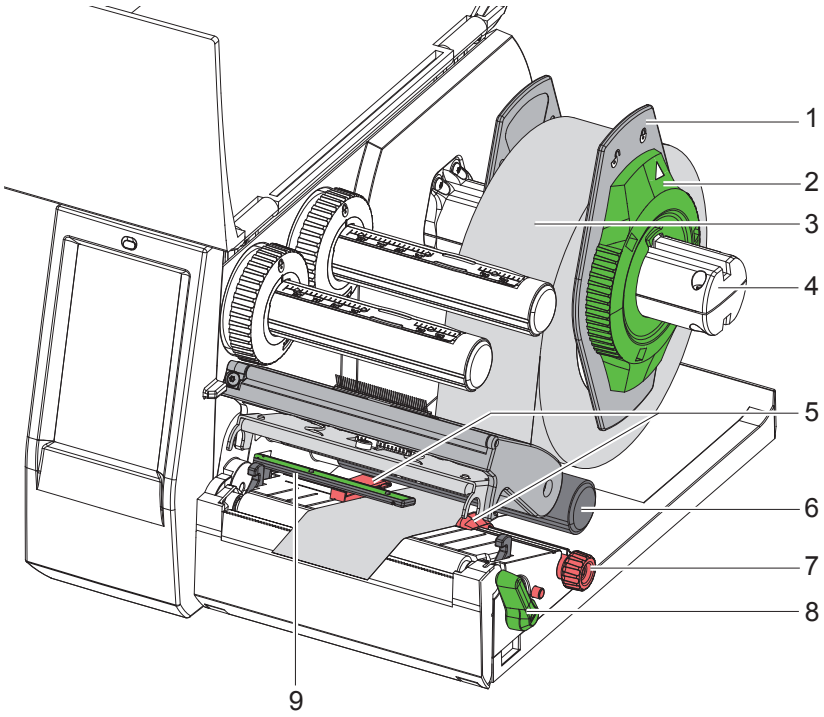


Figure 9 Loading media from roll

1. Turn ring (2) at the margin stop (1) counterclockwise, so that the arrow points to the symbol, and thus release the margin stop.
2. Remove the margin stop (1) from the roll retainer (4).
3. Load label roll (3) on the roll retainer (4) in such a way that the labels can be inserted into the printhead in the right position. The printing side of the labels must be visible from above.
4. Re-mount the margin stop (1) onto the roll retainer (4). Push the margin stop (1) to the roll (3) until the roll touches both margin stops and a clear resistance is encountered.
5. Turn ring (2) clockwise, so that the arrow (10) points to the symbol, and thus fix the margin stop (1) on the roll retainer (4).
6. Turn lever (8) counterclockwise to open printhead.
7. Position guides (5) by turning the knob (7) so that they are several millimeters wider than the material.
8. Position material below the roller (6) and guide it through the print unit.

Attention!

▶ **Guide material through the print unit below the label sensor (9).**

9. Move guides (5) closely to the edges of the material without clamping the material.
10. Adjust label sensor (▷ 4.2 on page 13).
11. Press printhead retainer down and turn lever (8) clockwise to lock the printhead.

4.2 Adjusting the Label Sensor

Note!
When the printer is delivered the label sensor is positioned in the middle of the paper feed. Thus, the label sensor must only be adjusted if materials with the following characteristics are used:

- **Material with reflex or cut-out marks, which are not in the middle.**
- **Multi-strip material with an even number of strips.**
- **Material with irregularly shaped labels.**

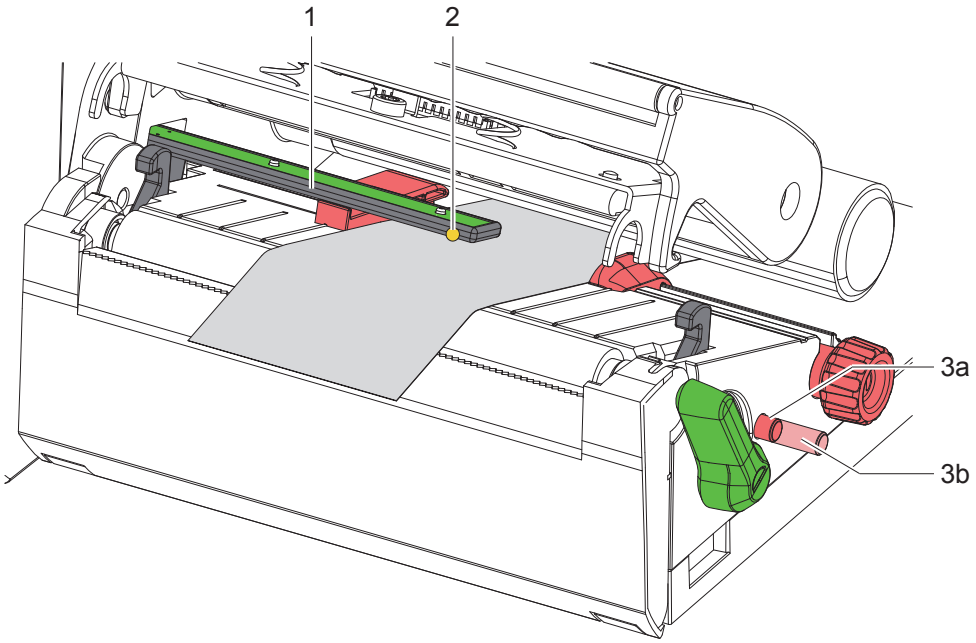


Figure 10 Adjusting the label sensor

The sensor position (3) is marked with a yellow LED in the sensor retainer.

1. Open the printhead.
2. Bring knob (3) by pressing it into the setting position (3b).
3. Position the sensor holder (1) by turning the knob (3) so that the sensor (2) can detect the front edge of the label in the direction of paper flow or the reflex or cut-out mark.
4. Bring knob (3) by pressing it into the basic position (3a).

4.3 Loading Transfer Ribbon

Note!
With direct thermal printing, do not load a transfer ribbon; if one has already been loaded, remove it.

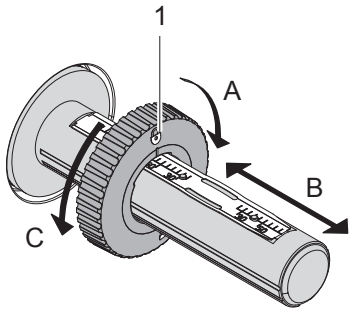


Figure 11 Guide Adjustment

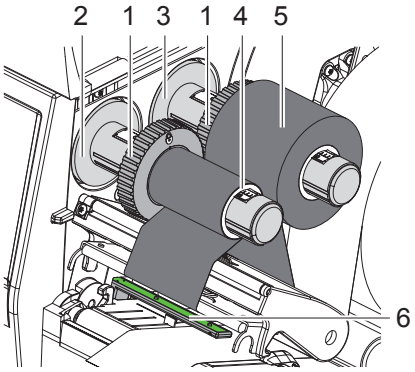


Figure 12 Loading Transfer Ribbon

1. Clean the printhead before loading the transfer ribbon (▷ 6.3 on page 18).
2. Open the printhead.
3. Set guide (1) on the ribbon supply hub to the correct transfer ribbon width (Figure 11):
- Hold the hub and unlock the guide (1) by turning it in direction A.
- Slide the guide in direction B and adjust the guide to the ribbon width using the scale.
- Hold the hub and lock the guide by turning it in direction C.
4. Slide transfer ribbon roll (5) onto the ribbon supply hub (3) until it reaches the guide (1) so that the color coating of the ribbon faces downward when being unwound.

Note!
To rewind the ribbon a ribbon core (4) is needed that must be at least equal in width to the supply ribbon.

▶ **When changing the transfer ribbon use the empty supply ribbon core for winding the next ribbon.**

5. Adjust the position of the guide on the take-up hub to the width of the ribbon core (4) and push ribbon core on the take-up hub (2).
6. Guide the transfer ribbon though the printing unit as shown in Figure 13.

Attention!

▶ **Guide transfer ribbon over the label sensor (6).**

7. Secure starting end of transfer ribbon to the transfer ribbon core (4) with adhesive tape. Regard counterclockwise rotation direction of the transfer ribbon take-up hub here.
8. Turn transfer ribbon take-up hub (2) counterclockwise to smooth out the feed path of the transfer ribbon.
9. Close the printhead.

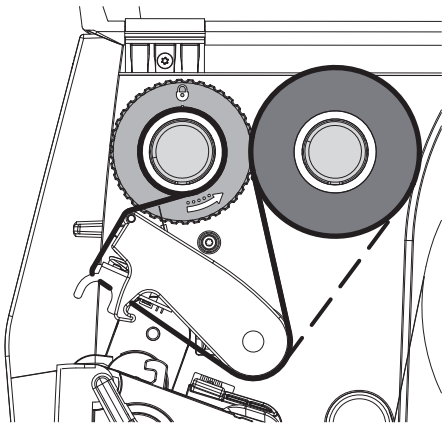


Figure 13 Transfer Ribbon Feed Path

4.4 Setting the Feed Path of the Transfer Ribbon

Transfer ribbon wrinkling can lead to print image errors. The transfer ribbon deflection (2) can be adjusted so as to prevent wrinkles.

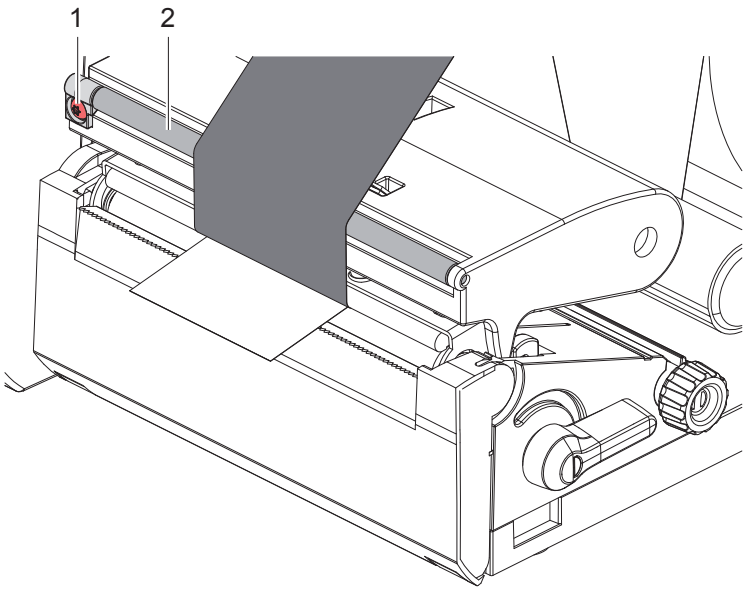


Figure 14 Setting the feed path of the transfer ribbon

Note!
The adjustment is best carried out during printing.

▶ Turn screw (1) with torx wrench TX10 and observe the behavior of the ribbon.

- By turning it clockwise the outer edge of the transfer ribbon is tightened.
- By turning it counterclockwise the inner edge of the transfer ribbon is tightened.

Attention!

Printhead damage caused by improper handling!

- **Do not touch the underside of the printhead with the fingers or sharp objects.**
- **Ensure that the labels are clean.**
- **Ensure that the label surfaces are smooth. Rough labels act like emery paper and reduce the service life of the printhead.**
- **Print with the lowest possible printhead temperature.**

The printer is ready for operation when all connections have been made and labels and, if applicable, the transfer ribbon have been loaded.

5.1 Printing in Tear-off Mode

After printing the label is torn-off manually. For this the printer is equipped with a tear-off plate.

5.2 Printing in Cutting Mode

* For EOS2 and EOS5 cutters are available as accessory. With the cutter installed labels and endless material can be cut-off automatically after printing.

6 Cleaning

6.1 Cleaning Information

Danger!
Risk of death via electric shock!
▶ **Disconnect the printer from the power supply before performing any maintenance work.**

The label printer requires very little maintenance.

It is important to clean the thermal printhead regularly. This guarantees a consistently good printed image and plays a major part in preventing premature wear of the printhead.

Otherwise, the maintenance is limited to monthly cleaning of the device.

Attention!
The printer can be damaged by aggressive cleansers.
Do not use abrasive cleaners or solvents for cleaning the external surfaces or modules.

- ▶ Remove dust and paper fluff from the print area with a soft brush or vacuum cleaner.
- ▶ The cover of the printer can be cleaned with a standard cleanser.

6.2 Cleaning the Print Roller

Accumulations of dirt on the print roller may impair the media transport and the print quality.

Attention!
Damage of the print roller.
▶ **Do not use sharp objects (knives, screwdrivers, etc.) to clean the print roller.**

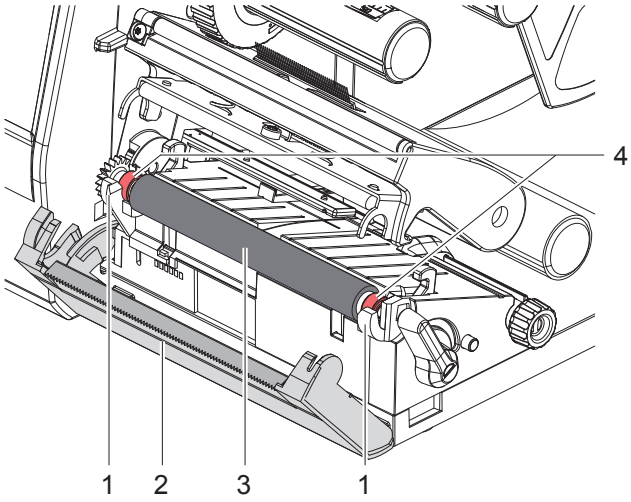


Figure 15 Print roller

1. Open the printhead.
2. Remove material and transfer ribbon from the printer.
3. Fold down the tear-off plate (2).
4. Lift the print roller (3) from its retainers (1).
5. Remove deposits with roller cleaner and a soft cloth, or replace it if the roller appears damaged.
6. Push roller with bearings (4) into the retainers (1) until they click into place.
7. Fold up the tear-off plate (2).

6.3 Cleaning the Printhead

Cleaning intervals: direct thermal printing - every media roll change
thermal transfer printing - every ribbon roll change

Substances may accumulate on the printhead during printing and adversely affect printing, e.g. differences in contrast or vertical stripes.

Attention!
Printhead can be damaged!
Do not use sharp or hard objects to clean the printhead.
Do not touch protective glass layer of the printhead.

Caution!
Risk of injury from the hot printhead.
▶ **Ensure that the printhead has cooled down before starting cleaning.**

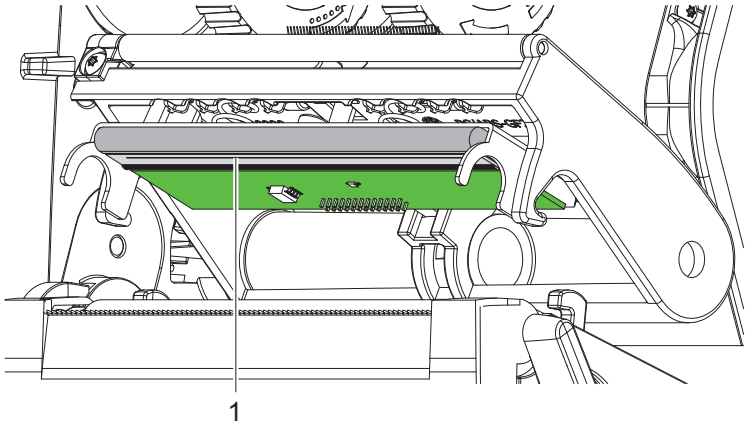


Figure 16 Heating line of the printhead

▶ Open the printhead.
▶ Remove material and transfer ribbon from the printer.
▶ Clean the printing line (1) with special cleaning pen or rubbing alcohol and a soft cloth.
▶ Allow printhead to dry for 2–3 minutes before commencing printing.

7 Fault Correction

7.1 Error Display

The appearance of an error will be shown on the display:

Figure 17 Error display

The error treatment is pending on the error type ▷ 7.2 on page 19.

The display offers the following possibilities to continue after an error occurred:

Repeat	The print job will be continued after clearing the error cause.
Cancel	The print job will be cancelled.
Feed	The paper feed will be synchronized. Following the print job can be continued.
Ignore	The error message will be ignored. The print job will be continued possibly with limited performance.
Save log	The error does not allow print operation. For detailed analysis several system files can be saved on an external memory.

Table 5 Button in the error display

7.2 Error Messages and Fault Correction

Error message	Cause	Remedy
Barcode error	Invalid barcode content, e.g. alphanumeric characters in a numerical barcode	Correct the barcode content.
Barcode too big	The barcode is too big for the allocated area of the label	Reduce the size of the barcode or move it.
Buffer overflow	The input buffer memory is full and the computer is still transmitting data.	Use data transmission via protocol (preferably RTS/CTS).
Cutter blocked	Cutter cannot return into its home position and stays in an undefined position	Switch off the printer. Remove material. Switch on the printer. Restart print job. Change material
	No cutter function	Switch the printer off and then on. If error recurs call service.
Cutter jammed	The cutter is unable to cut the labels but is able to return into its home position	Press *Cancel* Change material.
Device not conn.	Programming addresses a non-existent device	Either connect this device or correct the programming.
File not found	Requested file is not on the card	Check the contents of the card.
Font not found	Error with the selected download font	Cancel current print job, change font.
Memory overflow	Current print job contains too much information, e.g. selected font, large graphics	Cancel current print job. Reduce amount of data to be printed.
Name exists	Duplicate usage of field name in the direct programming	Correct programming

Error message	Cause	Remedy
No label found	There are labels missing on the label material	Press *Repeat* repeatedly until printer recognizes the next label on the material.
	The label format as set in the software does not correspond with the real label format	Cancel current print job. Change the label format set in the software. Restart print job.
	Printer is loaded with continuous paper, but the software is set on labels	Cancel current print job. Change the label format set in the software. Restart the print job.
No label size	The size of the label is not defined in the programming.	Check programming.
Out of paper	Out of label roll	Load labels.
	Error in the paper feed	Check paper feed.
Out of ribbon	Out of transfer ribbon	Insert new transfer ribbon.
	Transfer ribbon melted during printing	Cancel current print job. Change the heat level via software. Clean the printhead ▷ 6.3 on page 18 Load transfer ribbon. Restart print job.
	The printer is loaded with thermal labels, but the software is set to transfer printing	Cancel current print job. Set software to direct thermal printing. Restart print job.
Printhead open	Printhead not locked	Lock printhead.
Printhead too hot	Printhead is overheated	After pausing the print job will be continued automatically. If the fault recurs repeatedly, reduce the heat level or the print speed via software.
Read error	Read error when reading from the memory card	Check data of the card. Backup data, reformat card.
Remove ribbon	Transfer ribbon is loaded although the printer is set to direct thermal printing	for direct thermal printing remove ribbon
		for thermal transfer printing set the printer in the configuration or in the software to transfer printing
Ribbon ink side	Identified ribbon unwinding direction does not match to the setup setting	Ribbon loaded incorrectly. Clean the printhead ▷ 6.3 on page 18. Load the ribbon correctly.
		Setting does not match to the used ribbon. Correct the setting.
Syntax error	Printer has received an unknown or invalid command from the computer.	Press *Ignore* to skip the command or press *Cancel* to cancel the print job.
Unknown card	Card not formatted, Type of card not supported	Format card, use different type of card.
Voltage error	Hardware error	Switch the printer off and then on. If error recurs call service. It is shown which voltage has failed. Please note.
Write error	Hardware error	Repeat the write process, reformat card.

Table 6 Error Messages and Fault Correction

7.3 Problem Solution

Problem	Cause	Remedy
Transfer ribbon creases	Transfer ribbon deflection not adjusted	Adjust the transfer ribbon deflection. ▷ 4.4 on page 15
	Transfer ribbon too wide	Use a transfer ribbon slightly wider than the width of label.
Print image has smears or voids	Printhead is dirty	Clean the printhead. ▷ 6.3 on page 18
	Temperature too high	Decrease temperature via software.
	Unsuitable combination of labels and transfer ribbon	Use different type of ribbon.
Printer does not stop after transfer ribbon runs out	Thermal printing is chosen in the software	Change to thermal transfer printing.
Printer prints a sequence of characters instead of the label format	Printer is in *ASCII dump mode*	Cancel the *ASCII dump mode*.
Printer transports label media, but transfer ribbon does not move	Transfer ribbon incorrectly inserted.	Check and, if necessary, correct the transfer ribbon web and the orientation of the label side.
	Unsuitable combination of labels and transfer ribbon	Use different type of ribbon.
Printer only prints each second label	Setting of the size in the software is too large.	Change the size in the software.
Vertical white lines in the print image	Printhead is dirty	Clean the printhead. ▷ 6.3 on page 18
	Printhead is defective (failure of heat elements)	Change the printhead. ▷ Service Manual.
Horizontal white lines in the print image	Printer is used with the *backfeed* > *smart* in the cut or peel-off mode	Set the *backfeed* > *always* in the setup. ▷ Configuration Manual.
Print image is irregular, one side is lighter	Printhead is dirty	Clean the printhead. ▷ 6.3 on page 18

Table 7 Problem solution

8.1 Media Dimensions

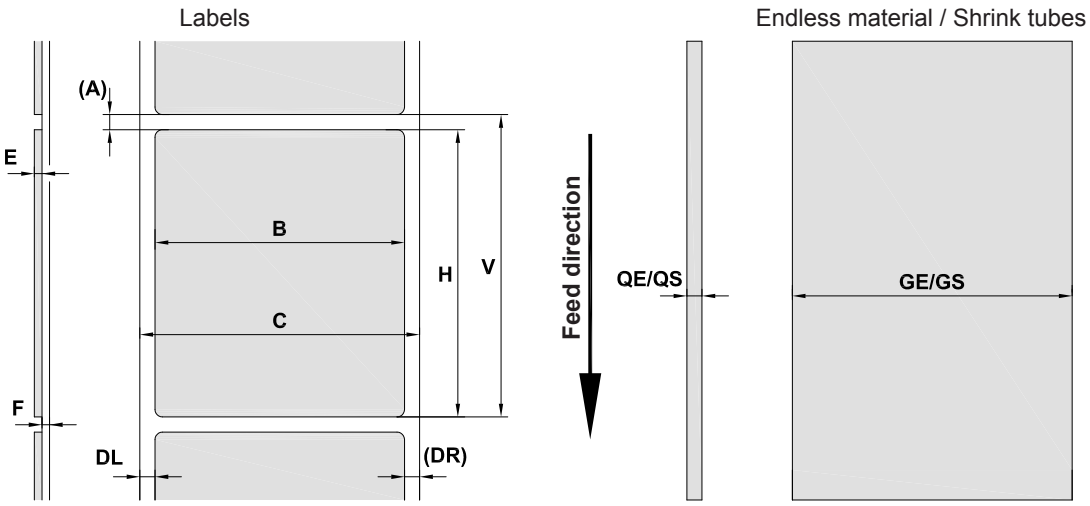


Figure 18 Media dimensions

Dim.	Designation	Dim. in mm
B	Label width with multi-lane labels	10 - 116 5 - 57
H	Label height	5 - 1000
-	Tear-off length	> 30
-	Cut length	> 5
A	Label distance	> 2
C	Width of liner	9 - 120
GE	Width of endless material	9 - 120
GS	Width of shrink tubes	5 - 85
DL	Left margin	≥ 0
DR	Right margin	≥ 0
E	Label thickness	0,03 - 0,60
F	Liner thickness	0,03 - 0,16
QE	Thickness of endless material	0,05 - 0,50
QS	Thickness of shrink tubes	≤ 1,1
V	Label feed	> 7
	• Small label sizes, thin materials or strong glue can lead to limitations. Critical applications need to be tested and cleared. • Note the bending stiffness ! Material must be flexible to follow the radius of the print roller !	

Table 8 Media dimensions

8.2 Device Dimensions

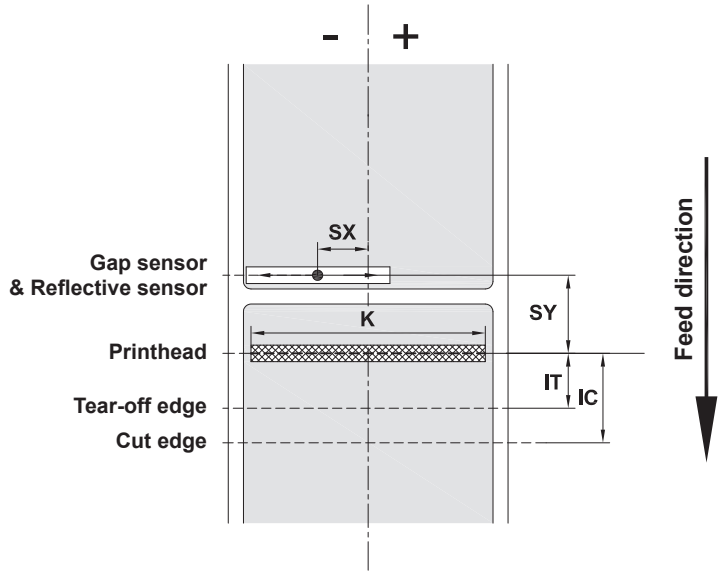


Figure 19 Device dimensions

Dim.	Designation	Dim. in mm
IT	Distance printhead - tear-off edge	13,7
IC	Distance printhead - cut edge	20,3
K	Print width 203 dpi 300 dpi	 108,0 105,7
SX	Distance gap/reflective sensor - middle of paper track i.e. permissible distance of reflex or cut-out marks from the middle of the material	-58 - 0
SY	Distance gap/reflective sensor - printhead	44,9

Table 9 Device dimensions

8.3 Reflex Mark Dimensions

Labels with reflex marks

Endless material with reflex marks

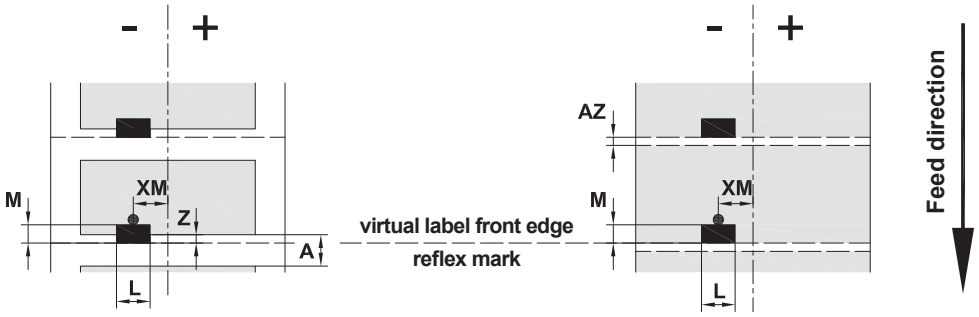


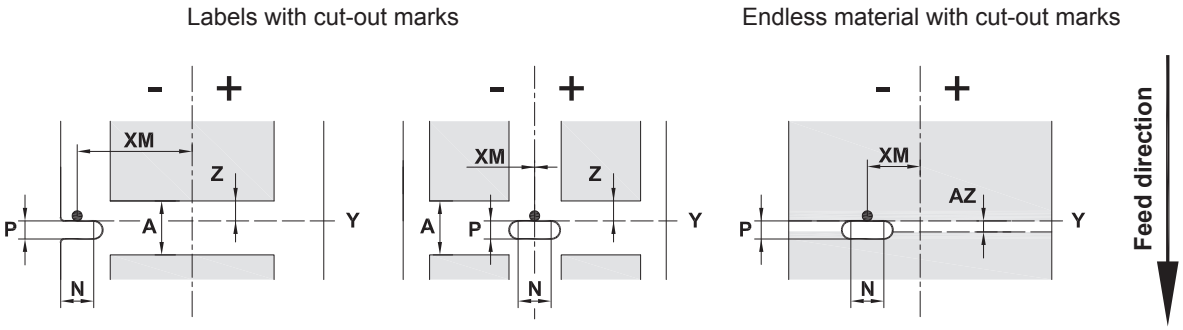
Figure 20 Reflex mark dimensions

Dim.	Designation	Dim. in mm
A	Label distance	> 2
AZ	Distance between print zones	> 2
L	Width of reflex mark	> 5
M	Height of reflex mark	3 - 10
XM	Distance mark - middle of paper track	-58 - 0
Z	Distance virtual label front edge - actual label front edge ▶ Adjust software settings	0 up to A / recommended : 0
	• Reflex marks must be on the back side of the material (liner). • Label sensor for reflex marks on the top side on request. • Specification is valid for black marks. • Recognition of colored marks may fail. ▶ Preliminary tests are needed.	

Table 10 Reflex mark dimensions

Note!
In case of translucent label material, reflex marks can be detected not only by the reflective sensor but also by the gap sensor.

8.4 Cut-out Mark Dimensions



for marginal cut-out marks
minimum liner thickness 0,06 mm

Figure 21 Cut-out mark dimensions

Dim.	Designation	Dim. in mm
A	Label distance	> 2
AZ	Distance between print zones	> 2
N	Width of cut-out mark for marginal cut-out	> 5 > 8
P	Height of cut-out mark	2 - 10
XM	Distance mark - middle of paper track	-58 - 0
Y	Sensor recognized virtual label front edge with gap sensor recognition	Rear edge cut-out
Z	Distance recognized front edge - actual label front edge ▶ Adjust software settings	0 up to A-P

Table 11 Cut-out mark dimensions

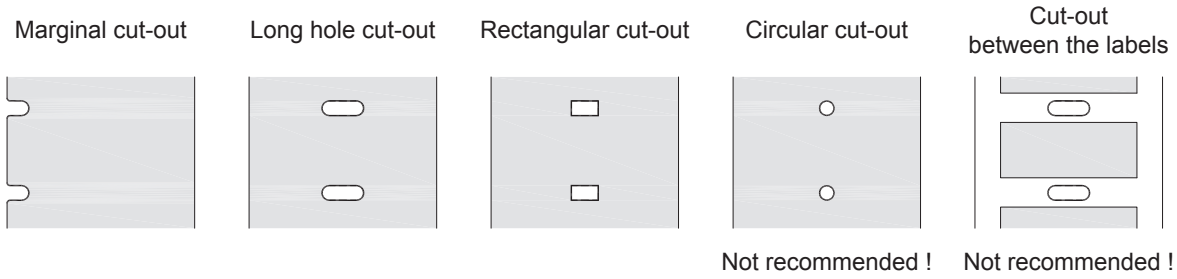


Figure 22 Samples for cut-out marks

9 Licenses

9.1 Reference to the EU Declaration of Conformity

The printers EOS2 and EOS5 comply with the relevant fundamental regulations of the EU Rules for Safety and Health:

- Directive 2014/35/EU relating to electrical equipment designed for use within certain voltage limits
- Directive 2014/30/EU relating to electromagnetic compatibility
- Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment

EU Declaration of Conformity

▷ https://www.cab.de/media/pushfile.cfm?file=3309

9.2 FCC

NOTE : This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. The equipment generates, uses, and can radiate radio frequency and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user may be required to correct the interference at his own expense.

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