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Original Instructions

Labelling System

AXON 1

Instructions
for the following products

Type	
Labeling system	AXON 1.1/300
	AXON 1.1/600
	AXON 1.2/300
	AXON 1.2/600

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Further documentation

Configuration Manual cab Printers

▷ https://www.cab.de/media/pushfile.cfm?file=3257

Programming Manual cab Printers

▷ https://www.cab.de/media/pushfile.cfm?file=3047

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 Intended Use

- The device is intended exclusively for printing suitable labels and applying the labels onto tubes. 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.
- 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 that manual.
- Usage for the intended purpose also includes complying with that manual.

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.
- 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.
- 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.
- 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.
- 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 device enables it to be easily disassembled into its component parts.
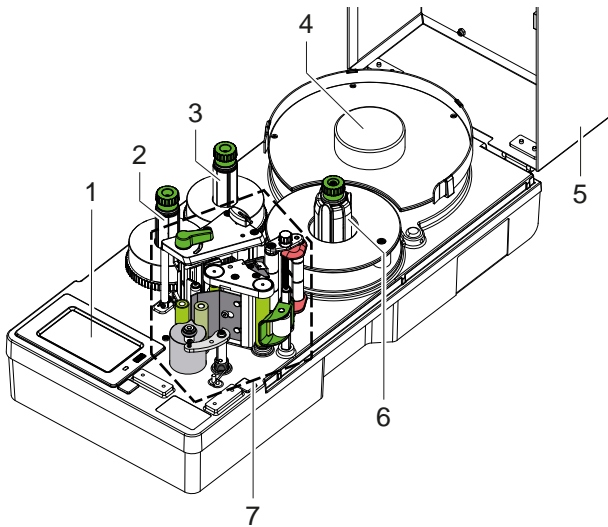▶ Send the parts for recycling.

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

AXON 1.1

1 Touchscreen display
2 Ribbon take-up hub
3 Ribbon supply hub
4 Roll retainer
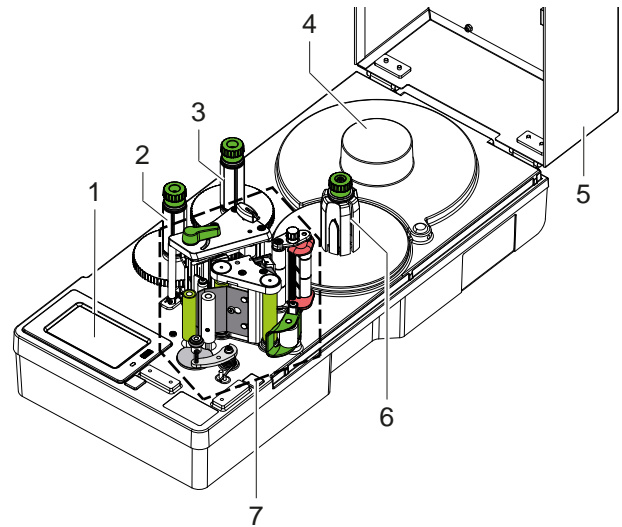
5 Cover (Option)
6 Internal rewinder
7 Print unit

AXON 1.2

Figure 1 Overview
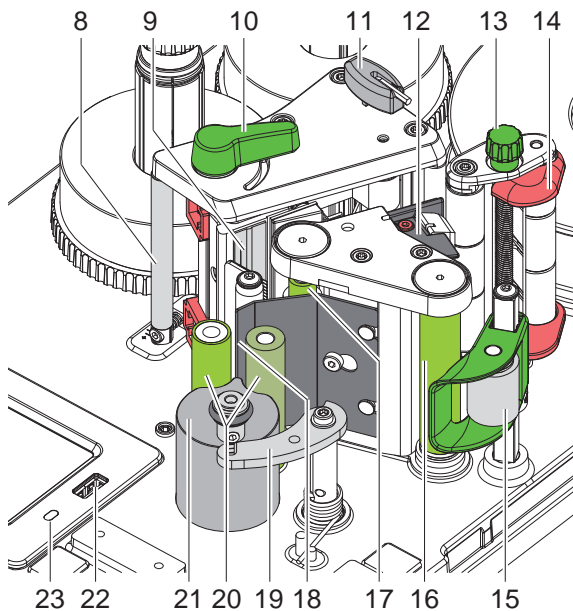
AXON 1.1

AXON 1.2

8 Ribbon deflection
9 Printhead retainer with printhead
10 Printhead locking lever
11 Allen key
12 Label sensor
13 Guide adjusting knob
14 Guide
15 Locking lever with pinch roller
16 Rewind assist roller
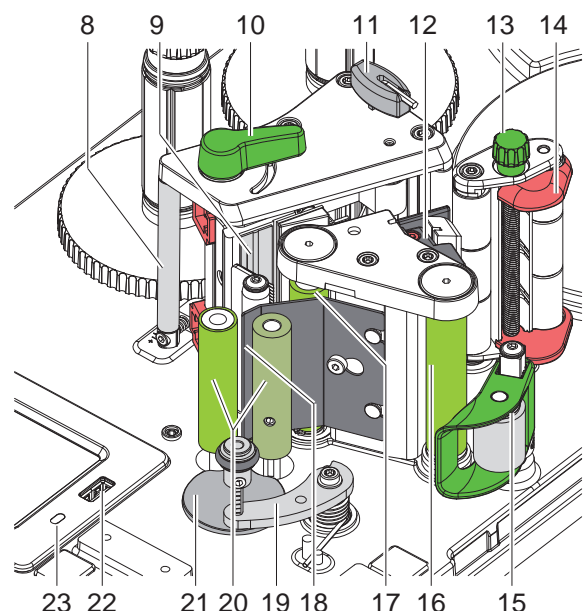
17 Print roller
18 Dispense plate
19 Lever with pressure roller
20 Transport roller
21 Supporting plate
22 USB host interface for USB memory stick or service key
23 LED "Power on"

Figure 2 Print unit

Conection 240 VAC

24   25

31   30 29 28 27   26

Conection 36-60 VDC

32   25

31   30 29 28 27   26

24 Power connection jack
25 Power switch
26 Slot for SD card
27 2 USB host interfaces for keyboard,
   scanner, USB memory stick, Bluetooth
   adapter or service key
28 USB Hi-speed device interface
29 Ethernet 10/100 Base-T
30 Serial RS-232 port
31 Slot for I/O interface (Option) or 2 Port
   Ethernet Switch (Option)
32 Connector 36-60 VDC male

Figure 3   Connections

2.2   Unpacking and Setting-up

Note!
Please keep the original packaging.

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

▶ Lift the labelling system out of the box.
▶ Check the labelling system for damage which may have occurred during transport.
▶ Remove foam transportation safeguards near the printhead.
▶ Check delivery for completeness.
Contents of delivery:
• Labelling system
• Power cable
• USB interface cable
• Instructions

▶ Set up the labelling system on a level surface.

2.3   Connecting the Device

2.3.1   Connecting to the Power Supply

▶ Check that the device is switched off.

▶ Plug the power cable into the power connection socket (24).

▶ Plug the power cable into a grounded socket.

2.3.2   Connect DC-DC Converter 36-60 VDC (Option)

▶ Check that the device is switched off.

▶ Connect a suitable cable with XLR3 socket female at the connector (32).
Pin 1: -
Pin 2: GND
Pin 3: 36 - 60 V

▶ Connect the cable to a DC power supply.

2.3.3   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 device are grounded.

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

For details of the configuration of the individual interfaces ▷ Configuration Manual cab printers

2.4   Switching on the Device

When all connections have been made:

▶ Switch the device on at the power switch (25).
The device performs a system test, and then shows the system status *Ready* in the display (1).

The user can control the operation of the device 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 cab printers,
- Control stand-alone operation with a memory module ▷ Configuration Manual cab printers,
- Update the firmware ▷ Configuration Manual cab printers.
- Many functions and settings can also be controlled by software applications or by direct programming with a computer using the printer's own commands. For details ▷ Programming Manual cab printers.

Settings made on the touchscreen display make the basic settings of the device.

i **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 | 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	✋	Short touch: Cancel the current print job Long touch: Cancel all print jobs
⏸	Continue the print job	⬇	Feed a blank label
🔄	Starting a labelling cycle or a pre-defined step within a labelling cycle		

Table 1   Symbols on the start screen

i **Note!**
Inactive symbols are shaded.

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

Figure 5   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 cab printers All received data are stored in a .lbl file.
![]	Warning ribbon end ▷ Configuration Manual cab printers 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	abc program active
09:45	Clock time

Table 2   Widgets in the start screen

3.2 Navigation in the Menu

Start level	Selection level	Parameter/function level
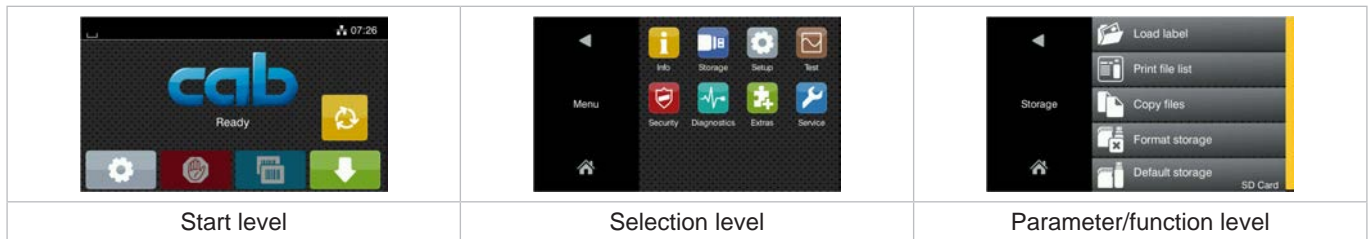
Figure 6 Menu levels

▶ 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
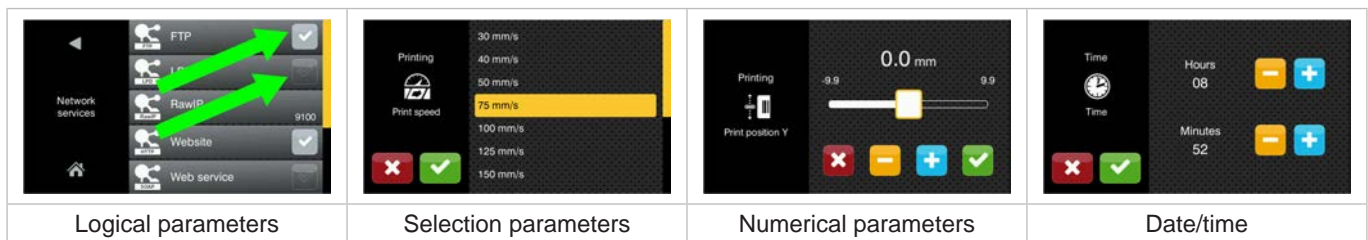
Figure 7 Samples for parameter setting

Scroll bar	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 3 Buttons for parameter setting

ℹ **Note!**
For adjustments and simple installation work, use the accompanying Allen key located in the top section of the print unit. No other tools are required for the work described here.

4.1 Loading Labels
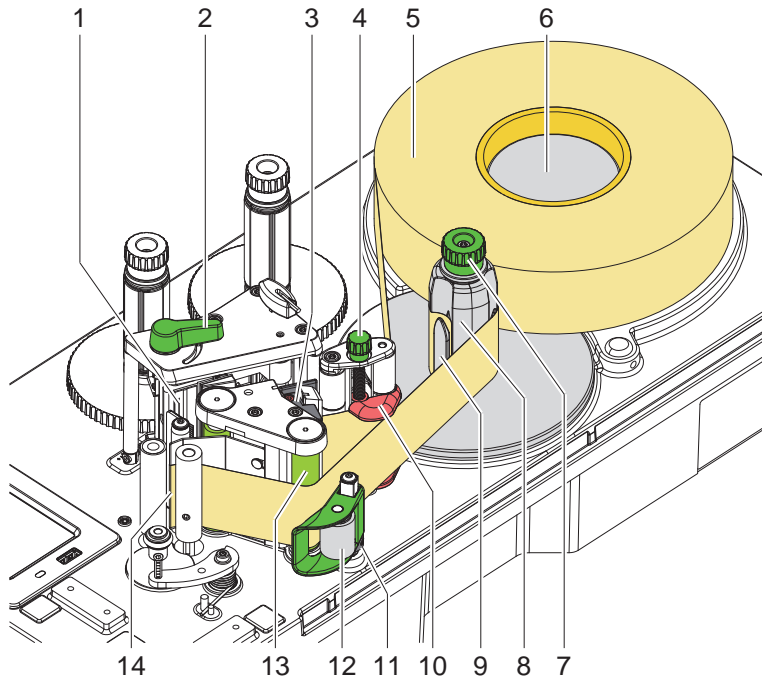
Figure 8   Loading media
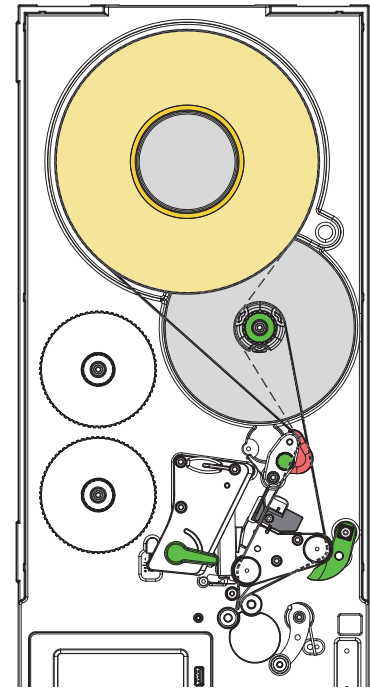
Figure 9   Label feed path

1. Put the label roll (5) onto the roll retainer (6).
2. Unroll a label strip of approx. 60 cm.
3. Turn lever (2) counterclockwise to lift the printhead (1).
4. Unlock the pinch roller (12) from the rewind assist roller (13).
5. Remove the labels from the 30 cm of the label strip.
6. Guide the label strip as shown in Figure 9 trough the label sensor (3), around the dispense plate (14) and the rewind assist roller (13) to the rewinder (8).
7. Adjust the guide (10) with the knob (4) in such a way that the label strip will be guided without clamping.
8. Hold rewinder (8) firmly and turn knob (7) clockwise until it stops.
9. Push label strip under a bracket (9) of the rewinder (8) and align the outer edge of the label strip to the label roll.
10. Turn knob (7) counterclockwise until it stops.
    The rewinder is fully spread, thus gripping the label strip firmly.
11. Turn rewinder (8) counterclockwise to tighten the label strip.
12. Align the locking system (12) to the middle of the liner.
13. Position the adjusting ring (11) directly below the locking system (12) and tighten it with the set screw.
14. Swing the pinch roller (12) to the rewind assist roller (13).
15. Turn lever (2) clockwise to lock the printhead.

4.2 Removing the Wound Roll

▶ Cut the label strip.
▶ Hold rewinder (8) firmly and turn knob (7) clockwise.
  The rewinder spindle relaxes and the wound roll is released.
▶ Remove wound roll from rewinder (8).

4.3   Loading Transfer Ribbon
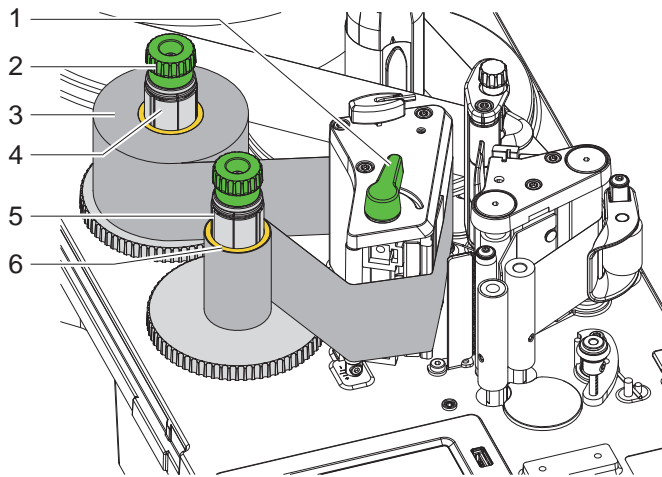
Figure 10   Loading transfer ribbon

1. Clean printhead before loading the transfer ribbon ($\triangleright$ 7.3 on page 21).
2. Turn lever (1) counterclockwise to lift the printhead.
3. Slide transfer ribbon roll (3) onto the ribbon supply hub (4)
4. Hold ribbon supply hub (4) firmly and turn knob (2) counterclockwise until the transfer ribbon roll is secured.
5. Slide suitable transfer ribbon core (6) onto the transfer ribbon take-up hub (5) and secure it in the same way.
6. Guide transfer ribbon through the print unit as shown in Figure 11.
7. Secure starting end of transfer ribbon to the transfer ribbon core (6) with adhesive tape. Ensure counterclockwise rotation direction of the transfer ribbon take-up hub here.
8. Turn transfer ribbon take-up hub (5) counterclockwise to smooth out the feed path of the transfer ribbon.
9. Turn lever (1) clockwise to lock the printhead.
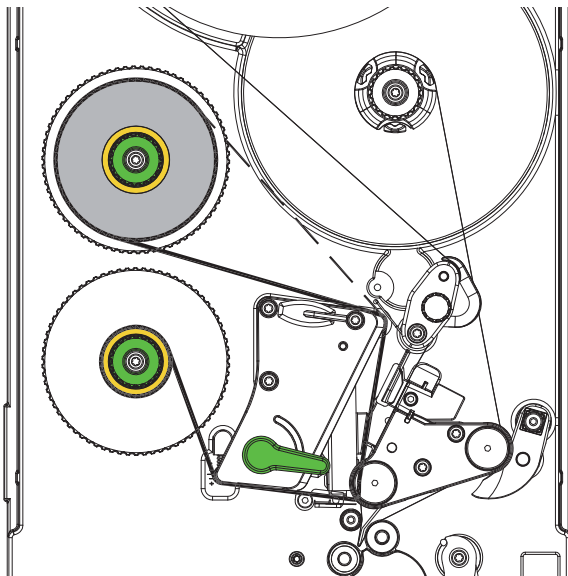
Figure 11   Transfer ribbon feed path

4.4 Setting the Feed Path of the Transfer Ribbon

Transfer ribbon wrinkling can lead to print image errors. The transfer ribbon deflection (3) can be adjusted so as to prevent wrinkles.
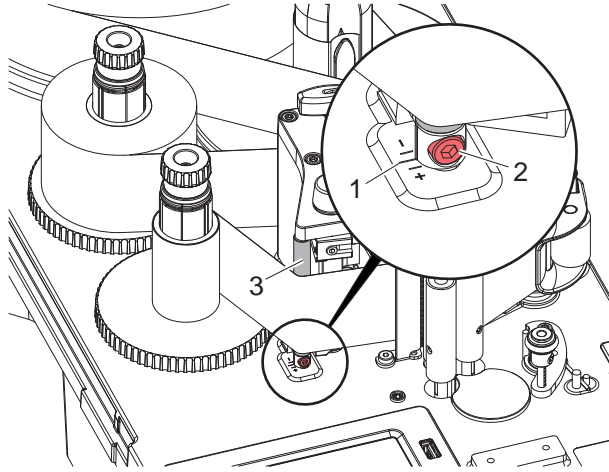
Figure 12   Setting the feed path of the transfer ribbon

ℹ️ **Note!**
The adjustment is best carried out during printing.

▶ Read current setting on the scale (1) and record if necessary.
▶ Turn screw (2) with Allen key and observe the behavior of the ribbon.
   In the + direction, the inner edge of the ribbon is tightened, and the outer edge is tightened in the - direction.

5.1   Adjusting the Supporting Plate

The supporting plate (2) can be set vertically to adjust the position of the label on the tube and therefore to adjust the measure E.

AXON 1.1   AXON 1.2
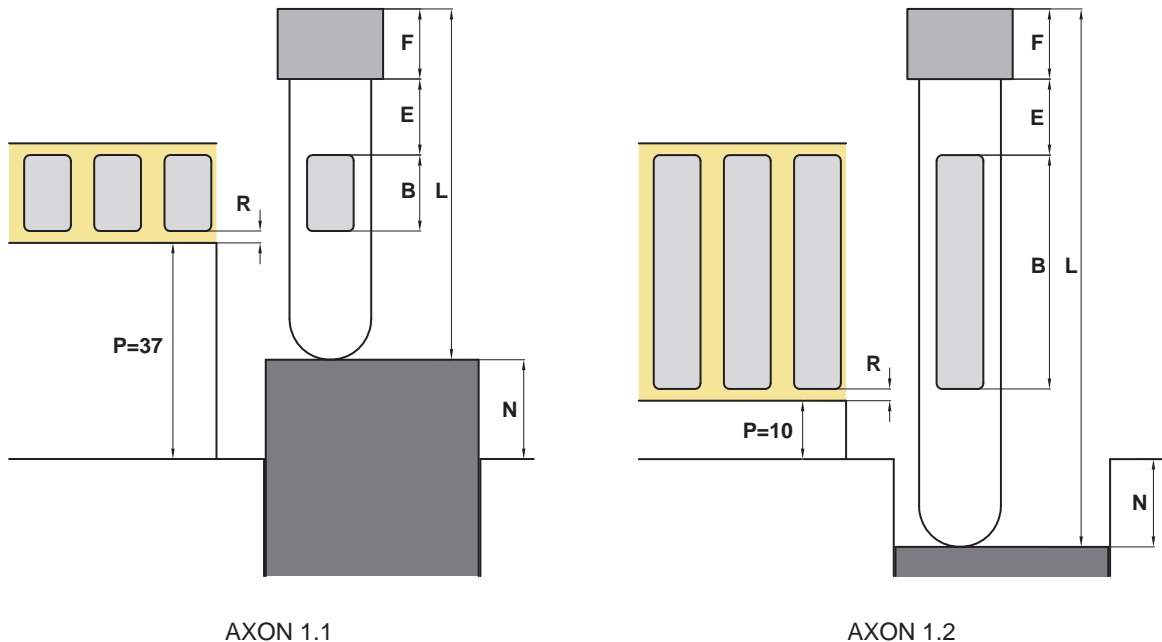
L   Tube length
F   Length of tread or cap
E   Distance label - upper edge labeling area
R   Distance label - liner edge
P   Distance paper guiding edge - chassis
N   Distance chassis - supporting plate
            Supporting plate over chassis - N > 0
            Supporting plate under chassis - N < 0

The following correlation can be deduced from the figure:

$$L + N = F + E + B + R + P$$

The measure for the positioning of the supporting plate results in:

$$N = (F + B + R + P - L) + E$$

Figure 13   Measures for supporting plate positioning

▶ Set the supporting plate (2) by turning the spindle (1) to the measure **N**.
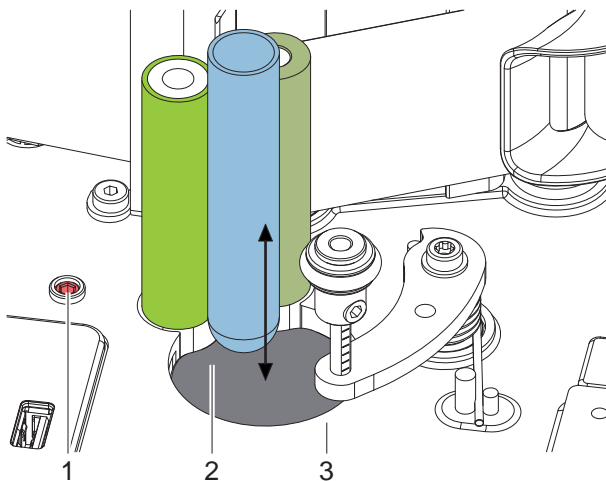
Figure 14   Setting the supporting plate

5.2 Adjusting the Transport Rollers
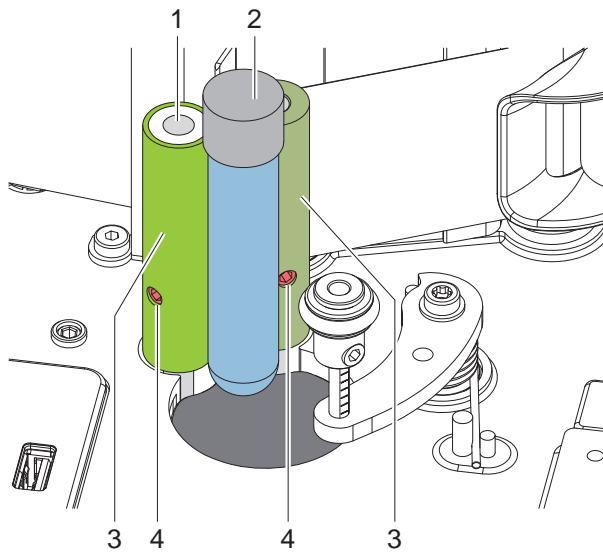
Figure 15   Adjusting the transport rollers

The transport rollers (3) can be shifted on the axles (1).

▶ Loosen the screws (4).

▶ Set the transport rollers in such a way that

• the tubes to be labeled are guided over the longest possible length and

• the top edges of the transports rollers are below the thread or cap (2) of the tube respectively the area over the transport rollers is long enough to insert and remove the tubes.

▶ Tighten the screws (4).

5.3 Adjusting the Pressure Roller
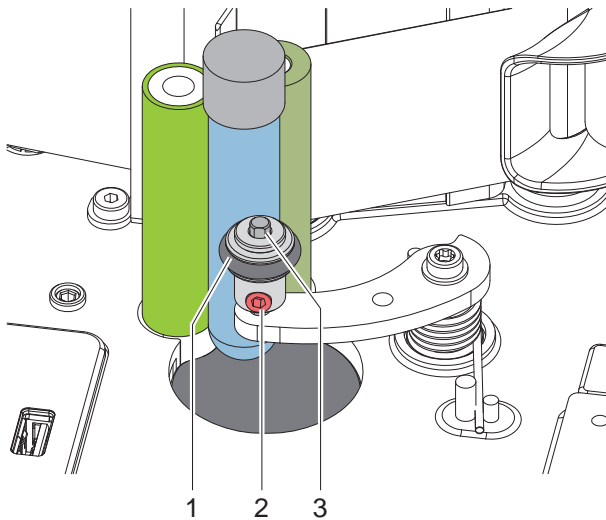
Figure 16   Adjusting the pressure roller

The pressure roller (1) can be shifted on the axle (3).

▶ Loosen the screw (2).

▶ Set the pressure roller in such a way, that the roller can grasp the tube in the middle.

▶ Tighten the screw (2).

5.4   Adjusting the Scanner
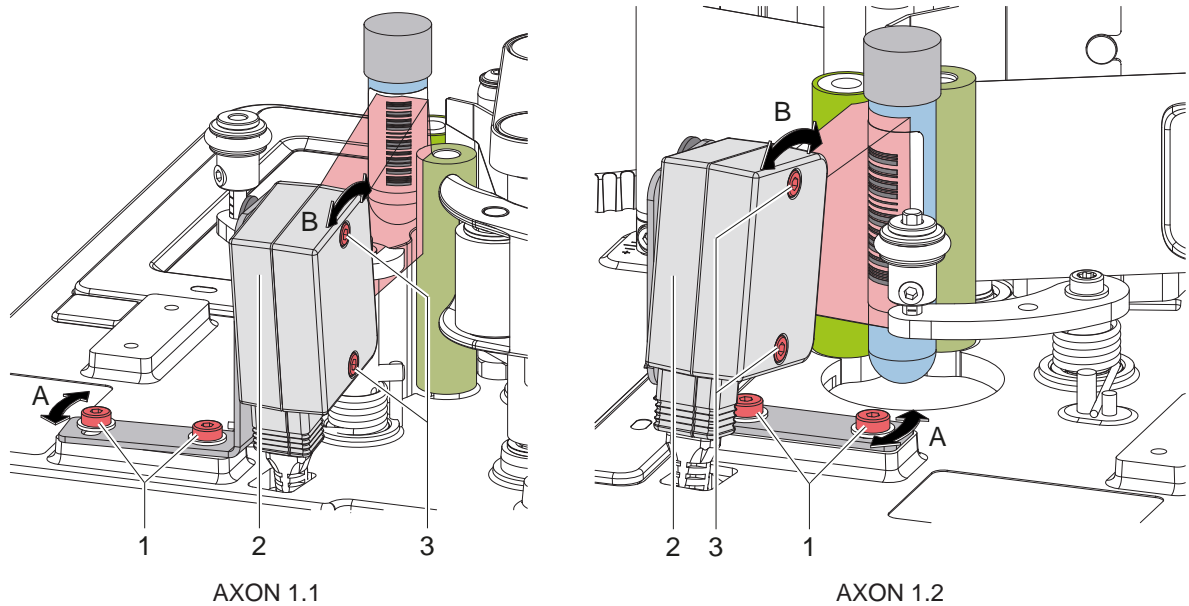
Figure 17   Adjusting the scanner

The optional barcode scanner must be aligned in such a way that the barcode to be scanned can be covered completely by the scan area:

Displaying the scan area

▶ Turn the tube after labeling with the barcode to the scanner direction.

▶ Start menu.

▶ Select ⚙ *Setup >* 📷 *Verifying >* 📊 *Code checker*.

▶ Start function *Live image*.
    The scan area will be shown on the display.

Horizontal adjustment

▶ Loosen the screws (1).

▶ Adjust the scanner (2) in direction A.

▶ Tighten the screws (1).

Vertical adjustment

▶ Loosen the screws (3).

▶ Adjust the scanner (2) in direction B.

▶ Tighten the screws (3).

ℹ **Note!**
    More information about the scanner ▷ **Assembly Instructions CC200-SQ**.

5.5   Menu Settings

ℹ️ **Note!**
In that chapter are described the specific applicator parameters of the menu *Labelling* **only.**
For more information about the configuration ▷ Configuration Manual cab printers**.**

▶ Start menu.

▶ Select *Setup > Labelling.*

Parameter		Meaning	Default
📄	*Device info*	Applicator information: Software revision, hardware revision, diameter of the last product, number of label applications, error notes, number of rotations	
⚙️	*Teach-in product*	Function to teach the applicator to the tube diameter. The result is transferred to the *Tube diameter* parameter.	
⊕	*Calibrate device*	Calibration of the swing arm movement.	
🏷️	*Peel-off position*	Shift the position of the dispensed label relative to the dispensing edge. The setting can also be adjusted by the software. The settings of configuration and software are added together.	0.0 mm
⭕	*Tube diameter*	Manual setting of the tube diameter	7,0 mm
📑	*Opening width*	Setting the distance between the transport rollers and pressure rollers for tube input	1,0 mm
🔄	*Tube rotations*	Number of tube rotations within the labelling cycle	2,0
☑️	*Check diameter*	Checking the tube diameter before labelling	On
🔒	*Tube locking*	Mode of tube locking before labeling *START signal:* A START signal must be sent to lock the tube *Automatic:* Locking occurs automatically	Automatic
🔓	*Tube unlocking*	Mode of tube unlocking after labelling *START signal:* A START signal must be sent to unlock the tube *Automatic:* Unlocking occurs automatically	Automatic
🧪	*Check tube removal*	Checking the tube removal after labelling ✱ only for *Tube unlocking = START signal*	On

Table 4   Parameters of the *Setup > Labelling* menu

Teach-in product

▶ Select *Teach-in product*.
    The display shows *Step 1/2 Remove tube*.

▶ Remove the tube from the applicator and select *Continue*.
    After a short applicator movement the display shows *Step 2/2 Insert tube*.

▶ Insert a tube and select *Continue*.
    After a next applicator movement the display shows *Product successfully taught-in*.
    If the result is out of the specification an error message will appear.

▶ Select *Continue*.

Calibrate device

▶ Select *Calibrate device*.
    The display shows *Step 1/1 Remove tube*.

▶ Remove the tube from the applicator and select *Continue*.
    After an applicator movement the display shows *Device successfully calibrated*.
    If the result is out of the specification an error message will appear.

▶ Select *Continue*.

> **!**
>
> **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 device is ready for operation when

- all connections have been made,
- labels and, if applicable, the transfer ribbon have been loaded,
- the system has been adapted to the tube dimensions.

6.1   Synchronization of the Paper Feed

After the label stock has been inserted, for peel-off or cutting mode a synchronization of the paper feed is required. That way the first label, which is detected by the label sensor, will be transported to the print position and all labels in front will be fed out of the device. So the synchronization avoids, that blank labels are peeled-off together with the first printed label or that the first cut label would be too long. Both effects can cause useless first labels.

▶ Select to start the synchronization.
▶ Remove the blank labels peeled-off or cut during the synchronization.

> **ℹ**
>
> **Note!**
> **Synchronization is not necessary if the printhead was not opened between different print jobs, even if the device was switched off.**

6.2 Standard Operation

⚠️ **Warning!**
Risk of injury by rotating parts!
During operation, rotating parts are freely accessible.
Ensure that people's clothing, hair, jewelry etc. do not come into contact with the exposed rotating parts.

❗ **Attention!**
Peel-off mode must be activated in the software.
This is done with the "P command" in the direct programming. ▷ **Programming Manual cab printers**

ℹ️ **Note!**
The labelling process can be modified by setting the following parameters ▷ **page 18:**
- *Setup > Labelling > Tube locking*
- *Setup > Labelling > Tube unlocking*
- *Setup > Labelling > Check tube removal*

❗ **Attention!**
The following steps can be released by selecting 🔄 or sending the IO signal START.
Within one cycle only that release method will be accepted which was used for the first step.
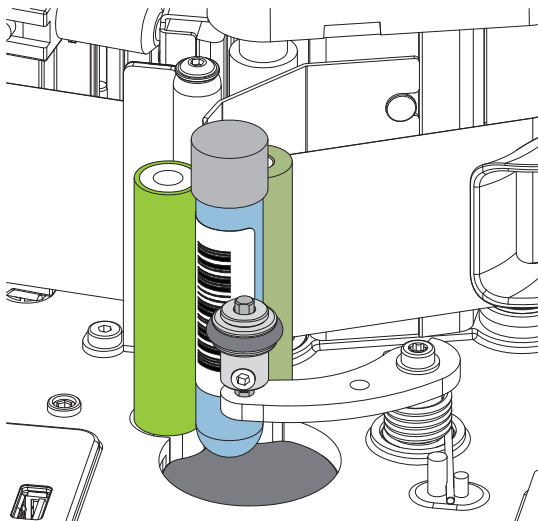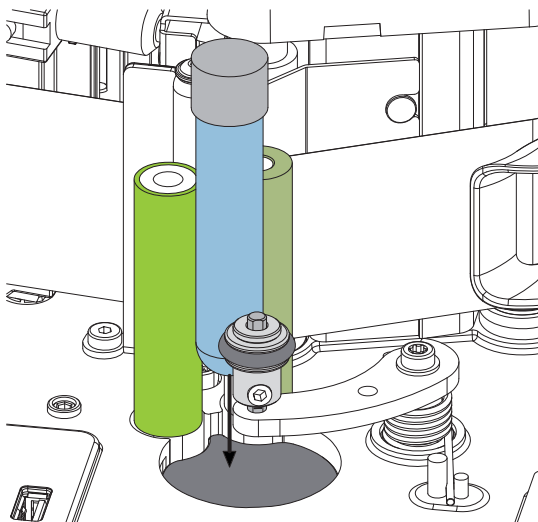
▶ Send a print job.
▶ Insert the first tube.

▶ Press 🔄.
The tube will be pressed against the transport rollers.

▶ Press 🔄.
The first label will be printed and applied onto the turning tube.

▶ Press 🔄.
The pressure roller will be unlocked
▶ Remove the tube.

▶ Press 🔄.
The tube removal will be checked.
▶ Insert the next tube.
▶ Press 🔄 again to start next cycle.

7.1 Cleaning Information

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

The labelling system 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 labelling system 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 labelling system can be cleaned with a standard cleanser.

7.2 Cleaning the Print Roller

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

▶ Lift the printhead.

▶ Remove labels and transfer ribbon from the labelling system.

▶ Remove deposits with roller cleaner and a soft cloth.

▶ If the roller appears damaged, replace it ▷ Service Manual.

7.3 Cleaning the Printhead

Cleaning intervals: 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.**

> ❗ **Attention!**
> **Risk of injury from the hot printhead line.**
> **Ensure that the printhead has cooled down before starting cleaning.**

▶ Lift the printhead.

▶ Remove labels and transfer ribbon from the labelling system.

▶ Clean printhead surface with special cleaning pen or a cotton swab dipped in pure alcohol.

▶ Allow printhead to dry for 2–3 minutes before commissioning the labelling system.

8.1 Error Display

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

Figure 18   Error display

The error treatment is pending on the error type ▷ 8.2 on page 22.

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   Buttons in the error display

8.2 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).
Device not conn.	Programming addresses a non-existent device	Either connect this device or correct the programming.
Device not locked	The tube applicator is not in operating position	Fold up the applicator.
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.
Initialization failed	Hardware error tube applicator	Switch off and on the system. If error recurs call service.
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
No label found	There are labels missing on the label material	Press *Repeat* repeatedly until device 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.
	Device 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.
No tube detected	No tube in the labelling area	Insert tube.

Error message	Cause	Remedy
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 ▷ 7.3 on page 21 Load transfer ribbon. Restart print job.
Pinch roller open	Pinch roller at the rewind guide roller is not locked in peel-off mode	Swing the pinch roller against the rewind assist roller.
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 device is set to direct thermal printing	For direct thermal printing remove ribbon.
		For thermal transfer printing set the device 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 ▷ 7.3 on page 21 Load the ribbon correctly.
		Setting does not match to the used ribbon. Correct the setting.
Syntax error	Labelling system has received an unknown or invalid command from the computer.	Press *Ignore* to skip the command or press *Cancel* to cancel the print job.
Tube not ejected	Tube is still in the labelling zone during removal check.	Remove the tube by hand.
Unknown card	Card not formatted, Type of card not supported	Format card, use different type of card.
Voltage error	Hardware error	Switch the labelling system 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.
Wrong tube diameter	The tube applicator has detected a tube with wrong diameter.	Insert a suitable tube.

Table 6   Error Messages and Fault Correction

8.3 Problem Solution

Problem	Cause	Remedy
Transfer ribbon creases	Transfer ribbon deflection not adjusted	Adjust the transfer ribbon deflection. ▷ 4.4 on page 14
	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 ▷ 7.3 on page 21
	Temperature too high	Decrease temperature via software.
	Unsuitable combination of labels and transfer ribbon	Use different type of ribbon.
Device does not stop after transfer ribbon runs out	Thermal printing is chosen in the software	Change to thermal transfer printing.
Device prints a sequence of characters instead of the label format	Device is in monitor mode	Cancel the monitor mode.
Device 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.
Device 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 ▷ 7.3 on page 21
	Printhead is defective (failure of heat elements)	Change the printhead. ▷ Service
Horizontal white lines in the print image	Device is used with the *backfeed > smart* in the cut or peel-off mode	Set the *backfeed > always* in the setup. ▷ Configuration Manual cab printers
Print image is irregular, one side is lighter	Printhead is dirty	Clean the printhead ▷ 7.3 on page 21

Table 7   Problem solution

● typical   ○ possible   ■ standard   □ option

Tube labeling system	Type	AXON 1.1		AXON 1.2	
Print head					
Print method	Thermal transfer	●	●	●	●
	Direct thermal	●	–	●	–
Print resolution	dpi	300	600	300	600
Print speed	mm/s	100	100	100	100
Print width	mm max.	25.4	25.4	56.9	54.1
Material					
Tubes / Vials	Orientation at the time of a label be applied	vertical			
	Diameter mm	7 - 26, 16 - 38 if options are provided			
	Length, closure cap included mm	20 - 130			
	Conicity (change in diameter) % max.	0.8			
Labels[1]	Material	Paper, plastics such as PET, PP			
	Width mm	5 - 25.4		5 - 56	
	Height mm at least	12			
	Thickness mm at least	0.05			
	Roll diameter mm max.	205			
	Core diameter mm	76			
	Winding	outside			
Liner	Width mm	16 - 30		24 - 60	
	Thickness[2] mm	0.045 - 0.05			
Ribbon	Coating	outside or inside			
	Roll diameter mm max.	80			
	Core diameter mm	25			
	Length m max.	600			
	Width mm	25 - 38.1		25 - 60	
Printer dimensions and weights					
Width x Height x Depth	mm	270 x 195 x 560			
Weight	kg approx.	12			
Label sensors / Position indicators					
Transmissive sensor	to detect	labels or punch marks and materials ending, print marks on transparent materials			
Reflective sensor bottom or top reflex	to detect	labels and materials ending, print marks on non-transparent materials			
Sensor to the contact edge left-aligned	mm	8		5 - 12	
distance center to the contact edge centered	mm	-		-	
Interfaces					
RS232-C 1,200 to 230,400 Baud / 8 Bit		■			
USB 2.0 Hi-speed to plug a PC		■			
Ethernet 10/100 Mbit/s		LPD, RawIP printing, SOAP web service, OPC UA, WebDAV DHCP, HTTP / HTTPS, FTP / FTPS, TIME, NTP, Zeroconf, SNMP, SMTP, VNC			
1 USB host on the control panel	to plug a	service key, USB stick			
2 USB hosts on the back of the device	to plug a	keyboard, barcode scanner, USB Bluetooth adapter, USB WLAN stick			
Digital 24 VDC I/O interface		□			
Operational data					
Voltage	100 - 240 VAC, 50 / 60 Hz, PFC	■			
	36 - 60 VDC	□			
Power input		<10 W in standby / 80 W are typical / max. 200 W			
Temperature / Humidity	In operation	+5 - 40°C / 10 - 85 %, not condensing			
	On stock	0 - 60°C / 20 - 85 %, not condensing			
	In transport	–25 - 60°C / 20 - 85 %, not condensing			
Approvals		CE (In-vitro), FCC Class A, ICES-3, cULus, CB			
		further approvals on request			
Control panel					
LCD color touchscreen	Screen diagonal "	4.3			
	Resolution - Width x Height px	272 x 480			

[1] Limitations may apply when using small labels, thin materials or strong adhesive. Critical applications need testing.
[2] Peeling labels off a liner requires liner materials not thicker than the labels.

■ standard ☐ option

Setup options

	Print	Region:
	Labels	- Language
	Ribbon	- Country
	Label peel-off	- Keyboard
	Apply labels	- Time zone
	Interfaces	Time
	Error	Display:
		- Brightness
		- Low-power mode
		- Orientation
		Interpreter

Status bar

	Receive data	Bluetooth
	Record datastream	WLAN
	Warning on a ribbon ending	Ethernet
	SD memory card plugged	USB slave
	USB stick plugged	Time

Technical control

	Ribbon winding	Print head voltage
	Warning on a ribbon ending	Print head temperature
	Ribbon ending	Print head open
	Label roll ending	
		Pinch roller open
	Tube / Vial diameter	
	Tube / Vial available	Peripheral error
	Warning on a label roll ending	Code verifier*
	Cover closed*	
		*AXON 1 only

Test routines

System check	when turning on the device	
	print heads are also detected	
Info display, test printout, analysis	Status printout	Test grid
	Fonts list	Label profile
	List of devices	List of events
	WLAN status	Monitor mode
Status notifications	- Printout of device figures, such as print durations or hours of operation	
	- Device status request by software command	
	- Indication of errors related to a network, barcode or periphery, missing links, etc.	

Fonts

Internal	5 bitmap fonts:	7 vector fonts:
	12 x 12 dots	AR Heiti Medium GB-Mono
	16 x 16 dots	CG Triumvirate Condensed Bold
	16 x 32 dots	Garuda
	OCR-A	HanWangHeiLight
	OCR-B	Monospace 821
		Swiss 721
		Swiss 721 Bold
To store	TrueType fonts	
Character sets	Windows-1250 to -1257	
	DOS 437, 737, 775, 850, 852, 857, 862, 864, 866, 869	
	EBCDIC 500	
	ISO 8859-1 to -10 and -13 to -16	
	WinOEM 720	
	UTF-8	
	MacRoman	
	DEC MCS	
	KOI8-R	
	Western European	Cyrillic
	Eastern European	Greek
	Chinese, traditional	Latin
	Chinese, simplified	Hebrew
	Thai	Arabian
Bitmap	Widths and heights 1 - 3 mm	
	Zoom factors 2 - 10	
	0°, 90°, 180°, 270° orientations	
Vector / TrueType	Widths and heights 0.9 - 128 mm	
	Continuous zoom	
	360° orientation in steps of 1°	
Font styles	Bold, italic, underlined, outline, inverse	
	- depending on the font type	
Character pitch	Variable or monospace	

Graphics

Elements	Lines, arrows, rectangles, circles, ellipses - filled and gradient
Formats	PCX, IMG, BMP, TIF, MAC, GIF, PNG

Codes

1D barcodes (linear)	Code 39, Code 93
	Code 39 Full ASCII
	Code 128 A, B, C
	EAN 8, 13
	Interleaved 2/5
2D and stacked codes	DataMatrix
	DataMatrix Rectangle Extension
	QR code
	Micro QR code
	UPS MaxiCode
	Codablock F
	Request for further codes.
	Codes be verified by a CC200 verifier requires approval depending on code types, sizes and contents.
	Check digits, plain text printout and start/stop encoding are options depending on the code type.

Software

Label software	cablabel S3 Lite	■
	cablabel S3 Viewer	■
	cablabel S3 Pro	☐
	cablabel S3 Print	☐
Running also with	CODESOFT	
	NiceLabel	AXON 2 only
	BarTender	
Stand-alone operation		■
Windows printer drivers WHQL-certified for	Windows Vista Server 2008	
	Windows 7 Server 2008 R2	
	Windows 8 Server 2012	■
	Windows 8.1 Server 2012 R2	
	Windows 10 Server 2016	
	Server 2019	
Mac OS X printer drivers	at least version 10.6	■
Linux printer drivers	at least CUPS 1.2	■
Programming	JScript printer language	■
	abc Basic Compiler	■
	ZPL II (Datastream be tested in advance)	☐
Integration	SAP	■
	Database Connector	■
Administration	Printer control	■
	Configuration on the Intranet / Internet	■
	Network Manager (in preparation)	■

*available for AXON 1 from September 2021

Free and Open Source software are part of cab products.
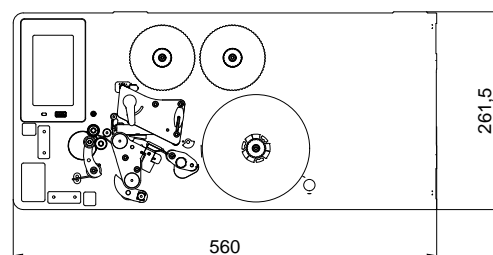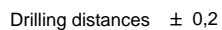For information see **www.cab.de/opensource**

Drilling distances ± 0,2

75

M6 14 deep

230

145

8 H7 (+0,015 +0)

3

45 69

Ø8 H7 (+0,015 +0)

265

350

196

12

261,5

560
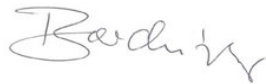
Figure 19 Mounting dimensions

11   Licenses

11.1   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 the following device as a result of design, construction and the version put in circulation complies 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.

Gerät	Labeling System
Typ	AXON 1.1; AXON 1.2
Applied EU Regulations	Applied Standards
Directive 2006/42/EC on machinery	**EN ISO 12100:2010**
	EN ISO 13857:2008
	EN 349:1993+A1:2008
	EN ISO 13849-1:2015
	EN 62368-1:2014
Directive 2014/30/EU relating to electromagnetic compatibility	**EN 55032:2015**
	EN 61000-3-2:2014
	EN 61000-3-3:2013
	EN 61000-6-2:2005
Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment	**EN IEC 63000:2018**
COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances	
Person authorised to compile the technical file	**Marcel Michalski** **cab Produkttechnik Sömmerda GmbH** **Am Unterwege 18 - 20** **D-99610 Sömmerda**
Signed for, and on behalf of the Manufacturer **cab Produkttechnik GmbH & Co KG** **Wilhelm-Schickard-Str. 14** **D-76131 Karlsruhe**	Karlsruhe, 24.02.2021 **Klaus Bardutzky** Managing Director

11.2   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.