

Collamat® 9100

Operating instructions

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Important warnings



Before installing and operating the Collamat® 9100 read following safety instructions:

- The Collamat® 9100 labeler is exclusively decided for labelling products. It must exclusively be controlled and driven by a 9100 monitor.
- The installation of a Collamat® 9100 has to be done by a trained specialist. For this you have to consider the national specific regulations of
 - prevention of accidents
 - mechanical stability
 - construction of electrical and mechanical systems
 - noise suppression
- Take notice to the technical data of the Collamat® 9100. Especially the environment conditions must be observed.
- The operation of the Collamat® 9100 must be done by trained personnel.
- In case of non-authorized modification, guarantee will fall.
- Before connecting non-standard products, ask your competent technical supporter.

Danger indications

- The safety symbols and danger advices on the Collamat® 9100 and in this manual must strictly be observed.
- Before connecting or disconnecting the labeler to or from the monitor 9100 the monitor must be switched off.
- The monitor and the distribution box may only be opened by authorized personnel.
- Before opening the distribution box, the monitor must be separated from the mains power.
- It exists danger of pinching hair, jewelry, ties, clothes etc. into the traction unit.
- It exists danger of injury by cutting fingers in the area of the paper web.
- It exists danger of injury in the area of the dancers of the rewinder and unwinder of the Collamat® 9100.
- It exists danger of injury in the area of the paper stockcontroller of the Collamat® 9100.
- To operate on the Collamat® 9100 the operating personnel must keep to a safely place to prevent injury by the products being labeled.

Symbol description

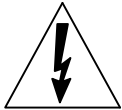


ATTENTION

Indicates danger of damaging the Collamat® 9100 or other system components, with a potential consequential danger of injuries.

DANGER

Indicates an immediate hazard for persons.



DANGER

Shock hazard due to high voltage at component.



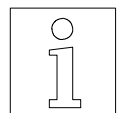
DANGER

Hazard due to high temperature component.



ATTENTION

ESD warning (Electro Static Discharge). The PC boards or component may only be touched in an electrostatically protected environment.



NOTE

Important or additional information to Collamat® 9100 or to the documentation.

General information

Special characteristics of the Collamat® 9100 system:

- Technical advanced design with ability to adapt to future developments in the control system and driving technology
- High performance labelling accuracy even with maximum dispensing speed and product speed fluctuation
- Resistant to wear, no clutch/brake system
- Rugged construction for application in the industry
- Easy handling due to modular construction
- Secure, due to a simple design and operational monitoring system
- Free of services, rugged and a fail-safe monitor
- Monitor controllable through control signals from outside
- Simple to adjust, modern menu guided operating
- Easily moved between product lines with simple fitting and setting up times
- Storage for 20 labelling programs

The modular system allows the addition of the peripheral appliances on a module rail. The complete electronic operating and electronic control system for the traction unit are installed into a modern, elegant box. The connection to the particular peripheral appliances takes place through a connection box on the module rail. An essential advantage is the expandability of the system without extra expenditure in the basic system itself. A micro-processed electronic system, a multiple line LCD and a neatly arranged keyboard grant a comfortable operating of the Collamat® 9100. All parts are surface treated or made of rust resistant material. The traction unit is specially coated in order to avoid slippage of the paper during the turning moment. The un- and rewinder, which are equipped with an own driving motor, are provided with a electronic controlled turning moment.

The Labeler C9100

The traction unit as well as the other peripheral units are mounted on a modular rail. The force of the paperbrake is adjustable. The tractionroller turns free while power off for easy threading and installation of the paperweb.



The installation of the Collamat® 9100 must be done by a trained personnel. For this you have to consider the national specific regulations of

- **prevention of accidents**
- **noise suppression**
- **mechanical stability**
- **construction of electrical and mechanical systems**

Thread up of the labels



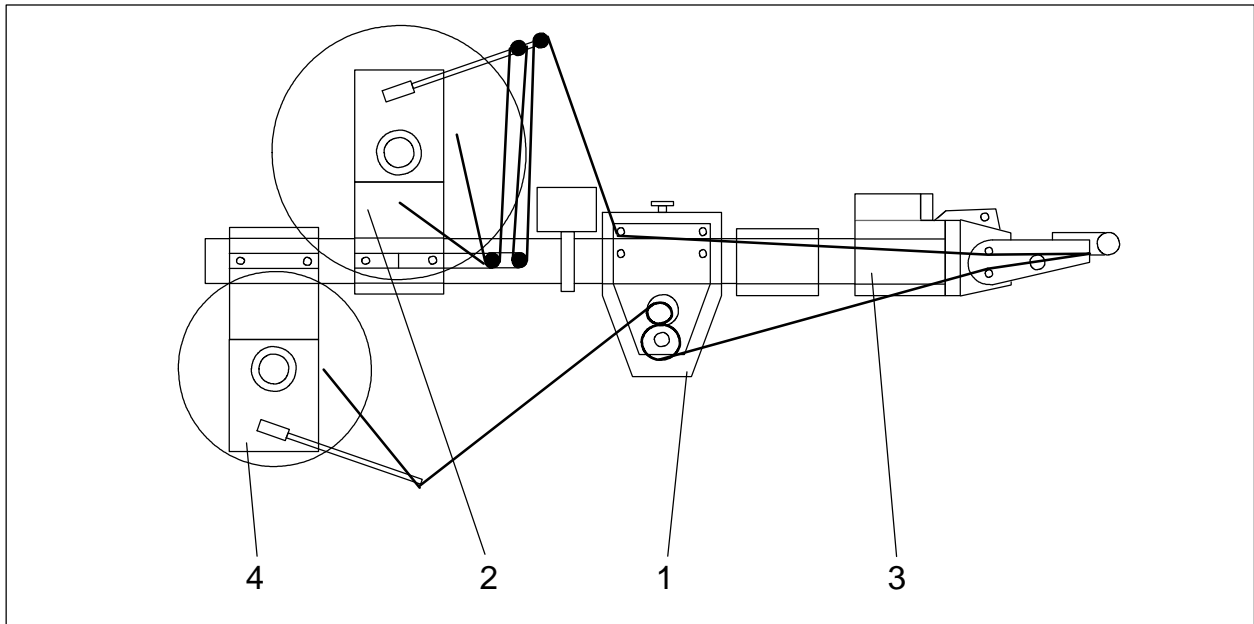
The labeller may only be opened by trained personnel. It contains no parts to be handled by the operator.



The labeller contains live parts. Hazard of contact due to high voltages of the assemblies.

The paper web will be pulled from the unwinder **2** over the dancer of unwinder to the traction unit. It will be conducted under the paper brake and pulled to the flap adapter **3** right to the dispensing edge. Now the paper web should be pulled up approx. **1 m** over the dispensing edge, so that the importation backward through the flap adapter into the traction unit would be easier. After that the paper web must be pulled through the traction unit **1** around the dancer of the rewinder up to the rewinder **4** and clamped on the rewinder core.

Before labelling, the complete paper web must be stretched to avoid label errors.



1. Traction unit
3. Flap adapter

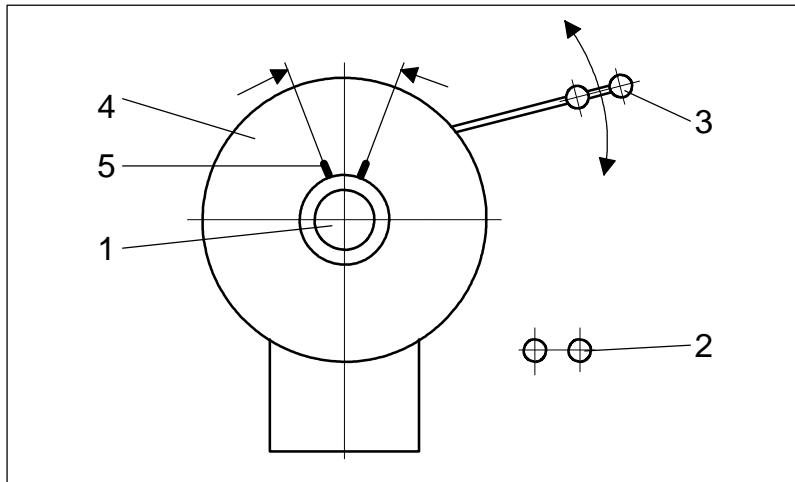
2. Midi-unwinder or electric unwinder
4. Electric rewinder



Attention:
It exists danger of injury by cutting in the area of the paperweb.

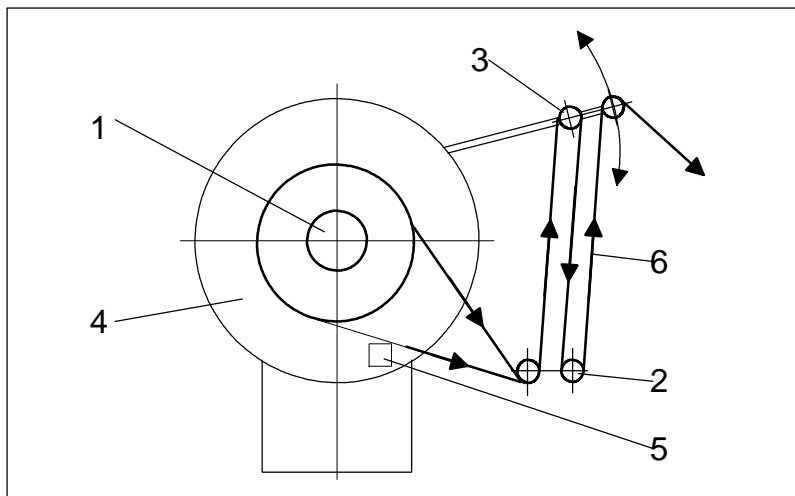
Midi-unwinder or electric unwinder

Pull of the holding disk 4 from unwinder core 1 by compressing the two handles 5.

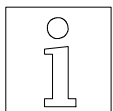


1. Unwinder core
2. Deflection pulley
3. Dancer
4. Holding disk
5. Handles

Insert the label roll on the unwinder core 1 and fix it with the handling disk 4. Thread up the label web as shown per picture. The direction of the unwinder can be changed with the direction switch 5, which is found behind the holding disk 4.



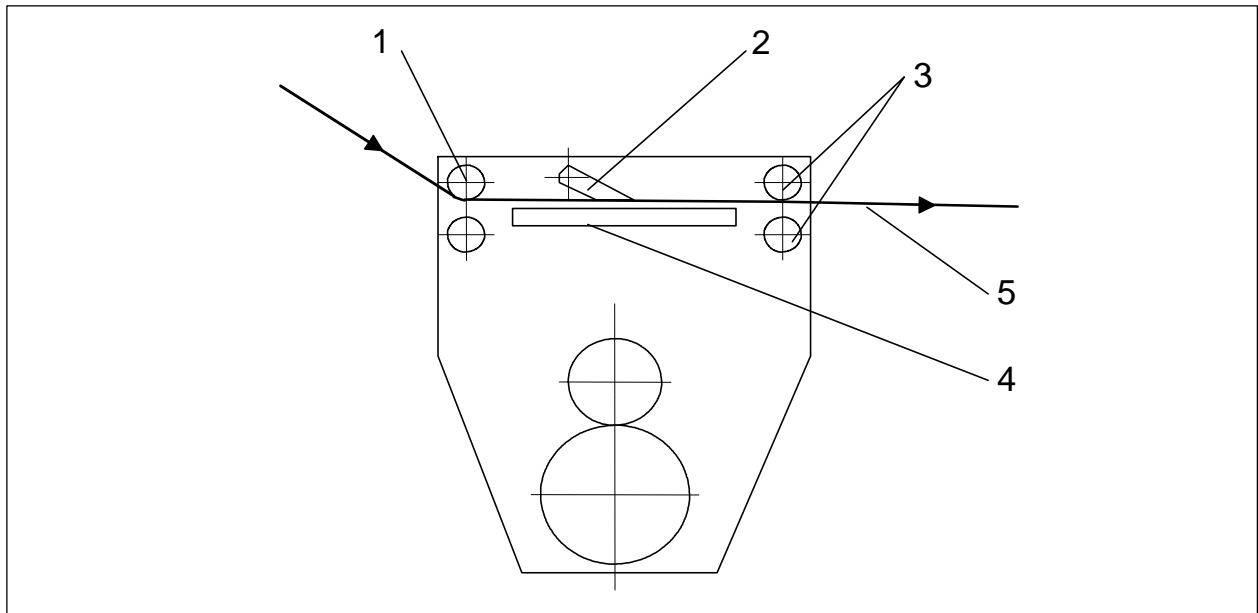
1. Unwinder core
2. Deflection pulley
3. Dancer
4. Holding disk
5. Direction switch
6. Label web



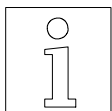
Note:
Adjustment of the spring force see under "Adjustment of the dancer"

Paper brake, traction unit

Thread up the label web around the deflection pulley **1**. Lift the paper brake **2**. Thread up the web between the paper brake and the brake plate under the front deflection pulley. Pull it to the flap adapter. Put down again the paper brake.



1. Deflection pulley
2. Paper brake
3. Front deflection pulley
4. Brake plate
5. Label web

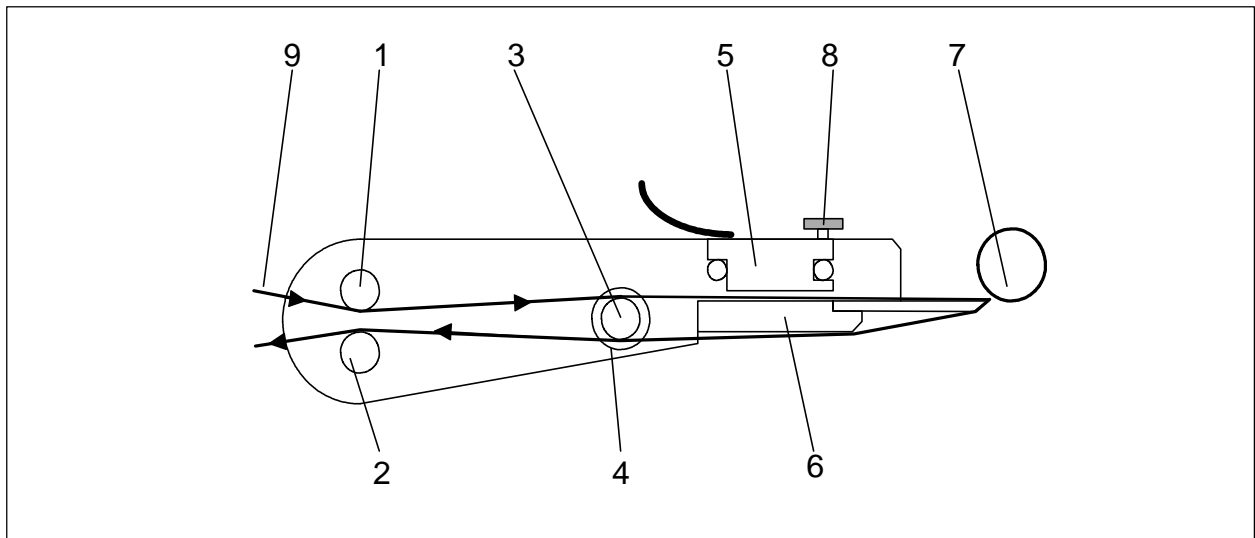
**Note:**

If the paper brake **2** is not correctly fixed, an error message takes place at the beginning of labelling:
"Error paper traction /-end"

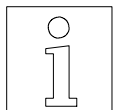
Flap adapter

Pull the label web between the two deflection pulleys **1** and **2** as well above the stopping axle **3**. Conduct the label web under the label scanner **5** and pull up approx. **1 m**. Take off the labels from the backing paper. Put the backing paper around the dispensing edge **6** and conduct it again under the stopping axle **3** and the two guiding rolls **1** and **2**.

In order to change the optical label scanner **5** transversely, the knurled screw **8** has to be detached.



1. Deflection pulley above
2. Deflection pulley below
3. Stopping axle
4. Stop
5. Optical label scanner
6. Dispensing edge
7. Pressing roll
8. Knurled screw
9. Label web



Attention:

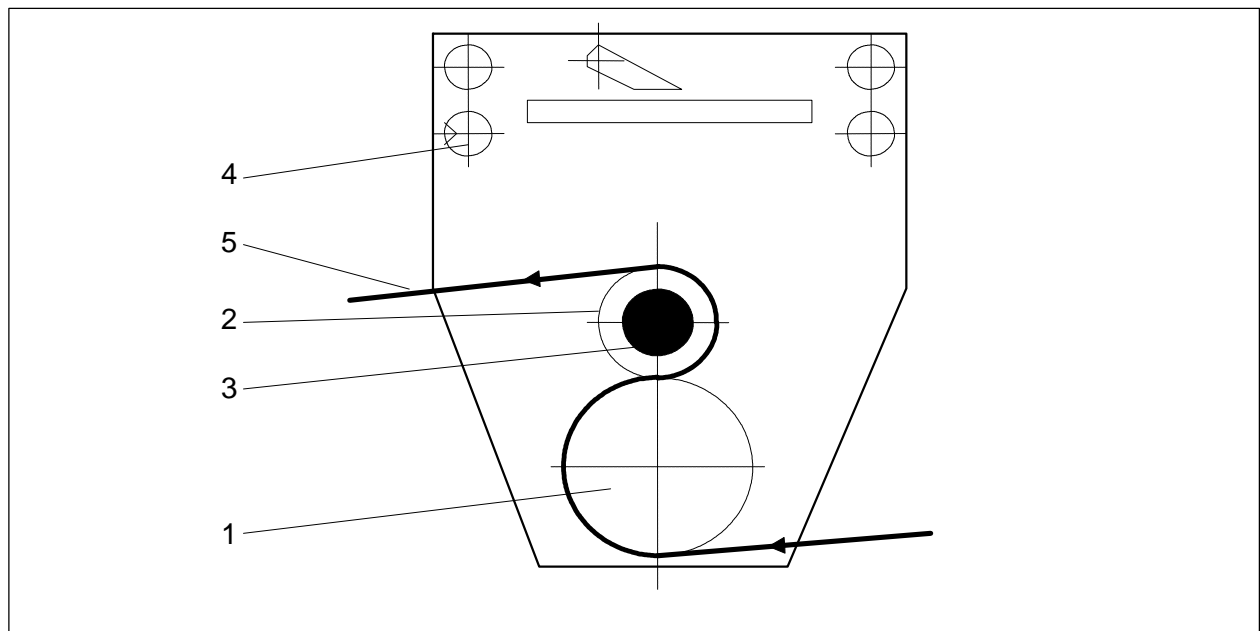
If the slope of the flap adapter so big, that the two paper webs between the two deflection pulleys **1** and **2** touch each other, then the returning backing paper has to be guided under the second deflection pulley.

Traction roll, traction unit

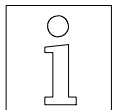
Turn the knurled knob **3** by 90° in order to ease the back pressure roll **2** at the traction roll **1**.

Right-hand version: turn clockwise
Left-hand version: turn counterclockwise

Position the back pressure roll **2** in the middle of the backing paper (for this the set screw has to be released in order to move the back pressure roll **2**). Wind the backing paper around the traction roll **1** and the back pressure roll **2** as shown per picture, re-tension the back pressure roll.



1. Traction roll
2. Back pressure roll
3. Knurled knob
4. Deflection shaft
5. Backing paper web



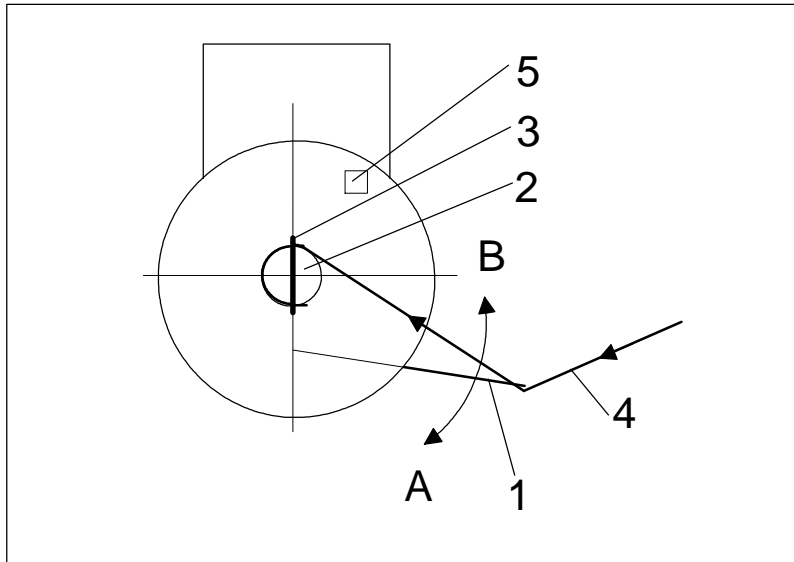
Note:

If the back pressure roll **2** is not under tension an error message appears: "Paper traction / -end"

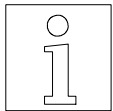
Electric rewinder

Pull out the clamp strap **3**. Pull the backing paper over the dancer **1** to the rewinder core **2**. Wind the backing paper around the rewinder core **2** and fix the clamp strap **3** again.

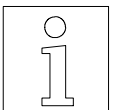
In order to remove the backing paper pull out the clamp strap **3** and take off the paper from the rewinder core **2**.



1. Dancer
2. Rewinder core
3. Clamp strap
4. Backing paper web
5. Direction switch



If the Collamat® 9100 is switched on without having fixed the backing paper, or if the backing paper is torn apart during the application, the dancer will shoot up to the stop A. The rewinder drives to the maximum speed and will stop after 8 rotations. It can only be restarted when the dancer 1 is reset to the stop B (reset of the stop command). The zero position takes place at the stop B of the rewinder, the rewinder core does not turn anymore.



Adjustment of the spring force: see under "adjustment of he dancer".

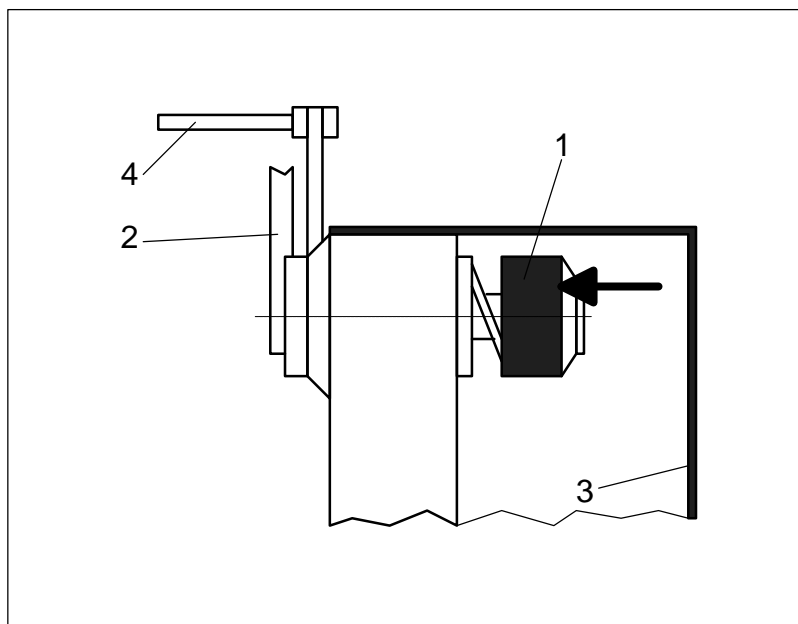
Adjustment of the dancer

Spring force

The spring force has to be fixed in a way, that the backforce is not stronger than the dancer 2 needs to turn back itself.

Adjustment of the spring force

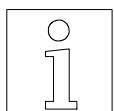
Dismantle the housing 3 (not available at the midi-unwinder). For the adjustment push permanent the knob 1 and turn it up to the desired spring force. Then leave the knob, so that it remains at the new position. Reassemble the housing.



1. Knurled knob
2. Dancer
3. Housing
4. Brake shaft
(only Midi-unwinder)

Adjustment of the dancer

The adjustment of the dancer has to be done by trained personnel during the installation of the system res. during the mounting of the Collamat® 9100 (see technical handbook).



A wrong adjustment leads to a lack of capacity and lack of accuracy.

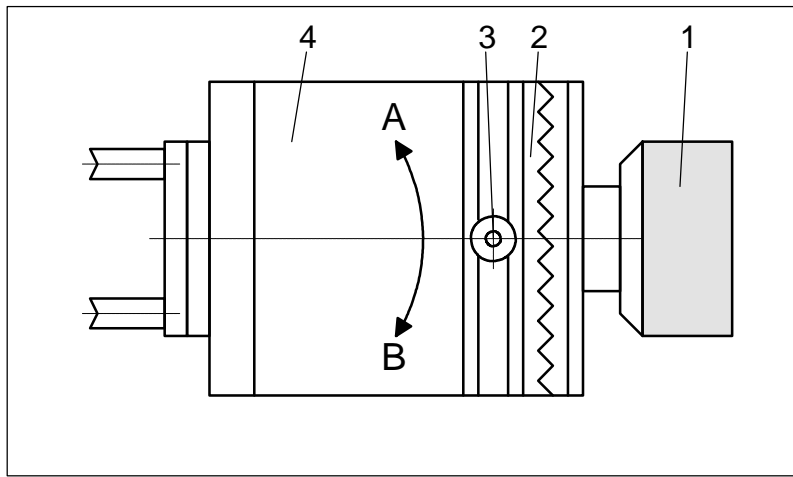
Installation of the flap adapter

The slope of the flap adapter **4** can be changed against the module rail. Release the knurled knob **1** with two turns. Extend the screen **2** by hand, position the adapter **4** in the required position and fix the knurled knob **1** again.

On the spring flap adapter the required spring force can be adjusted with the cylinder head screw **3**.

Direction **A**: stronger

Direction **B**: softer



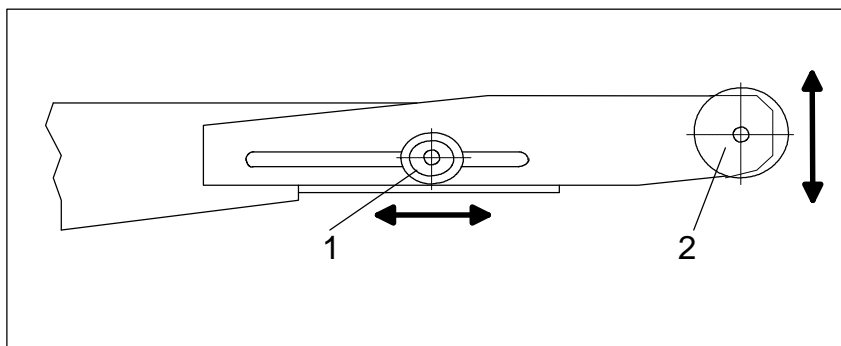
1. Knurled knob
2. Screen
3. Cylinder head screw (adjustment of the spring force)
4. Flap adapter

Adjustment of the press roll

The press roll of the adapter can be adjusted depending on the label and goods.

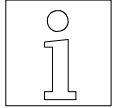
Horizontal adjustment with the knurled knob **1**

Vertical adjustment with the knurled knob **2**



Mechanical label scanner

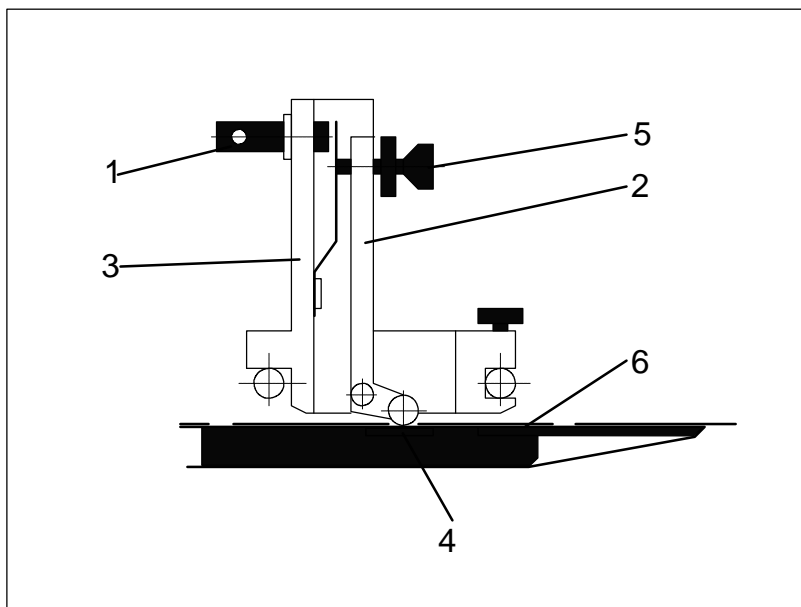
For difficult labels (e.g. translucent blank PVC-labels or translucent labels with light permeability print) it is preferable to use the mechanical label scanner. The mechanical scanner is mounted on the same fixation.



Only applicable on fix flap adapter and on scanning holder. This one will be mounted separately on the module rail.

Adjustment

Mount the label scanner on the fixation. Connect the inductive proximity switch with the LSC in the signal distribution box on the module rail. Pull up the label web as far as the label gap will be directly under the scanning roll, then release the screw **5** and turn the inductive proximity switch **1** until it is active (LED is lighting). Now pull on the label web by hand until the scanning strap **2**, res.. the scanning roll rolls on the label. Now the inductive proximity switch should be passive (LED off). For safety reason turn the inductive proximity switch 1/4-turn and repeat the adjustment. Then tighten the screw **5**.

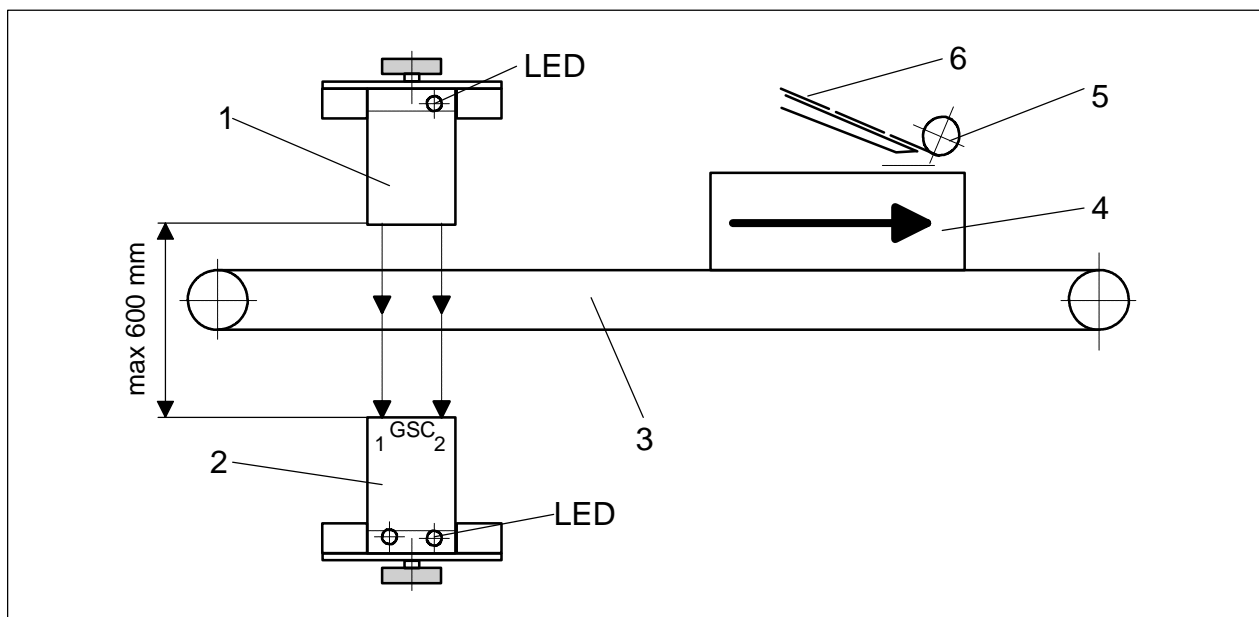


1. Inductive proximity switch with LED
2. Scanning strap
3. Housing
4. Scanning stripe
5. Screw
6. Label

Positioning of the CS mechanical goods scanning

Switch on the control system. At the transmitter 1 the LED shows red. Displace the receiver 2, which is found opposite to the transmitter, until both red LED on the receiver are no more illuminated. For an exact labelling the goods scanning should be mounted very near of the dispensing edge. An exact positioning of the label on the goods takes place by input of the position value on the monitor (see operating Collamat® 9100). If you increase this value the label will displace back on the goods.

Example:

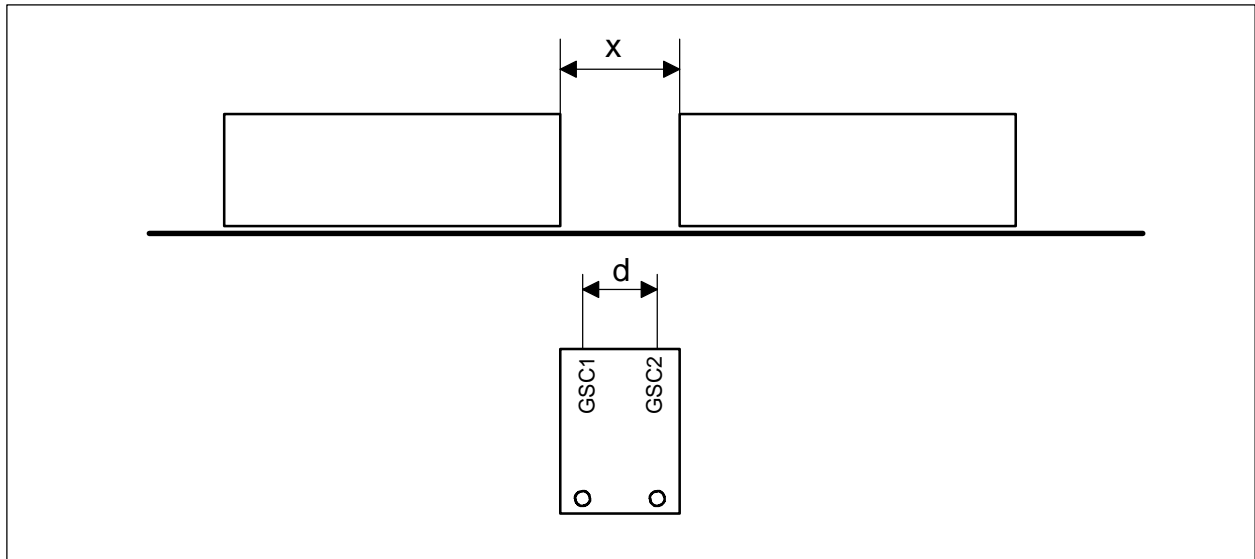


1. Transmitter goods scanner
2. Receiver goods scanner
3. Conveyor belt
4. Goods
5. Press roll of the adapter
6. Label

Minimal goods distance

The minimal distance between the goods is treated differently for the speed measuring with measuring scanner or incremental encoder.

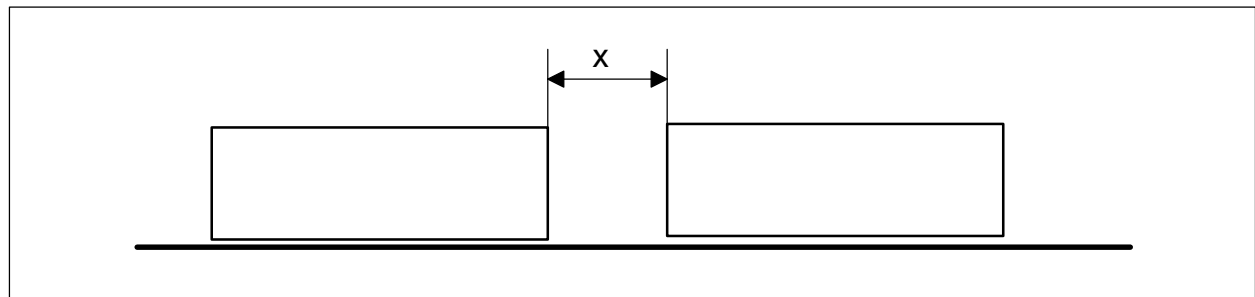
For the measuring scanner the following figure is valid:



d = Distance between GSC1 and GSC2

$$x = d + 2 \text{ mm}$$

For the speed measuring with the encoder the following figure is valid:



$$x = \text{Label length} + \text{Gap} + \text{Position}$$

When:

- Gap = Distance of the labels on the paperweb
- Position = Position setting of the goods scanner (minimum 10 mm)

The labelling speed with encoder follows the goods speed down to zero. The labelling is finished after the goods have started to move again. The labeler can be stopped while the goods are stopped with the **RUN/STOP** key.

Servicing

The Collamat® 9100 is free of servicing. But please note, that the appliance has to be cleaned according on working, especially the paper dust, adhesive remainders and colour remainders of the printing group.

It is very important to clean the paper brake and the label scanner. After each cleaning, all paper guiding elements like rolls (exceptional the traction unit), axles and dispensing edge, have to be sprayed with a silicon spray.

Dependent to the wear of the pinchroller it must be replaced. The description of the exchange is written in the technical handbook of the Collamat® 9100.

Condensations

| | |
|--------------|--|
| ESD | E lectro S tatic D ischarge |
| GND | G rou N D |
| LCD | L iquid C rystal D isplay |
| LED | L ight E mitting D iode |
| nc | n ot c onnected |
| RS232 | standard serial data exchange |

Signals

| | |
|----------------|---|
| ERROR | Error signal caused by an error on stopping the dispenser |
| FEED | Isolated signal which is active during the labelling |
| GND | G rou N D |
| GSC | G oods S Canner |
| HOT | H OT-stamp-connection |
| IFEED | Through photo coupler galvanic insulated FEED -signal |
| LLO | L abel L ow, signal which shows the end of the label stock |
| LSC | L abel S Canner |
| nc | n ot c onnected |
| NOK | N ot O K |
| NSTPIN | N on S T O P I N-put |
| NSTPOUT | N on S T O p O U T -put |
| READY | Ready signal of peripheral units for the Collamat® |
| RWF | R e W inder F ull, rewinder diameter will be too big |
| TCY | T ransparen C Y, current signal to the transmission diode of the label scanner |
| TUNIT | T raction U N I T, signal in order to the observing of the traction unit |

Glossary

Adapter: Part of the dispenser, on which the label will be dispensed by peeling the label from the backing paper (pulling on over an edge)

CE-symbols: Certificate of products "Conformité Européenne"

Collamat®: Trademark of an labelling system produced by Collamat Stralfors AG

9100: Labelling system Collamat® type 9100

Dispensing speed: Speed of the goods on which will be stuck a label

Galvanic isolated: Not conductive electrical, no contact

GSC: Goods scanner

Flap adapter: Adapter, which is bending down to be capable to dispense the labels in a deepening.

LSC: Label scanner

LC-Display, LCD: Liquid crystal display

Machine status: Operation status of the machine. Examples: STOPPED, OK, ERROR

Midi-unwinder: Unwinder without an electric drive

Monitor: Control box containing all the electronic modules of the label dispenser

Motorstep: Way which travel a label during a motorstep

Paper brake: Brakes the paper web in front of the adapter in order to built up a defined tensile

Pinch roller: Presses the backing paper against the traction roll for transportation

Position: Sticking position of a label on the goods

Predispensing: Predispensing of the label over the dispensing edge in stop position

Press roll: Roll on the adapter to press the label on the goods

Rewinder: Appliance to take on the empty backing paper

Speed: Dispensing speed of the label during the labelling

Start frequency: The highest allowable frequency to start a stepping motor from stop position without loss of steps

Stop accuracy: Says how exact the label is stopped on the dispensing plate

Traction unit: Part of the labeler on which - most over a roll - a backing paper is pulled

Traction roll: It pulls on the paper web in order to dispense a label. It is driven by the stepping motor

Unwinder: Appliance to take on and unwind the full label roll

Technical data

Dispenser general data (standard values)

| System | Units | C9110 | C9120 | C9130 |
|---|-------|----------------------|--------|--------|
| Version | | right/left | | |
| Dispensing speed | m/min | 0.5-80 | 0.5-60 | 0.5-40 |
| Min. label width | mm | 20 | | |
| Max. width of the paperweb | mm | 95 | 160 | 250 |
| Min. label length | mm | 10 | 15 | 20 |
| Min. label length @ max. dispensing speed | mm | 28 | 13 | 10 |
| Stop accuracy | mm | @ 40 m/min \pm 0.5 | | |
| Minimal gap between labels for optical scanner | mm | 3.0 | | |
| Minimal gap between labels for mechanical scanner | mm | 2.0 | | |
| Max. diameter of paperroll | mm | 350 | | |
| Max. weight of paperroll | kg | 20 | | |
| Noise figure max. | dB(A) | < 70 | | |

Traction unit

| System | Collamat® 9100 | | |
|---------------------|---------------------------------|--------|-------|
| Driver | 3-Phase stepper motor 500 steps | | |
| Motor voltage | 120V | | |
| Max. phase current | 5.0 A | | |
| Type of protection | IP40 | | |
| Ambient temperature | +5-40 °C | | |
| Ambient humidity | 15-90%, non condensing | | |
| Noise figure max. | 70 dB(A) @ 1 m distance | | |
| System | C9110 | C9120 | C9130 |
| Weight | 8.2 kg | 9.0 kg | 10 kg |

Midi-unwinder

| | |
|------------------------------------|--------|
| Diameter of the roll core | 42 mm |
| Max. outside diameter of roll | 350 mm |
| Max. weight of roll | 20 kg |
| Empty weight | 4.2 kg |
| Spring dancer with automatic brake | |

Motor driven rewinder and unwinder

| System | Rewinder | Unwinder |
|---------------------------|--|------------------|
| Diameter of the roll core | 42 mm | |
| Max. diameter of roll | 350 mm | |
| Drive | current controlled DC-motor, electromagnetic brake | |
| Electric power | 24 V DC, 3A max. | 24 V DC, 2A max. |
| Type of protection | IP54 | |
| Ambient temperature | +5-40 °C | |
| Ambient humidity | 15-90% non condensing | |
| Weight | 5 kg | |

Flap adapter

| System | C9110 | C9120 | C9130 |
|------------------------------------|---------------------------------------|--------|--------|
| Max. width of paperweb | 95 mm | 160 mm | 250 mm |
| Weight | 4.5 kg | 5.0 kg | 5.6 kg |
| Version | right/left | | |
| Adapter angle | ±90°, with adjustable snap-in locking | | |
| Recuperating spring force | adjustable | | |
| Additional press time of adapter | adjustable | | |
| Max. cadence on max. turning angle | 10'000 cycles/h | | |
| Max. turning angle | 15° | | |
| Ambient temperature | +5-40°C | | |
| Ambient humidity | 15-90% non condensing | | |

Monitor

| System | Collamat® 9100 |
|------------------------|----------------------------------|
| Mains voltage | 110/120V, 220/230/240V, ±10% |
| Power consumption | 480 VA |
| Main fuse | 110V : 8 AT, 230V : 4 AT |
| Display | LCD, 4 lines, 20 characters each |
| Dimensions (LWH in mm) | 375 * 305 * 155 mm |
| Ambient temperature | +5-40°C |
| Max. ambient humidity | 15-90% non condensing |
| Class of protection | IP40 |
| Weight | approx. 15.5 kg |

Label scanner

| |
|------------------------------|
| Optical label scanner |
| Mechanical label scanner |
| Black mark reader (optional) |

**The information in this handbook reflects the state
of the publication date.
We reserve the right to make design modifications.**

Trouble shooting checklist

| | | | |
|--|---|-------------------------------|----------------------------------|
| Machine-Type: | | Ser.No. Monitor: | Ser.No. Labeler: |
| Ser.No Control panel: | Software-Version: | Ser.No. Motordriver: | Ser.No. Interfaceboard: |
| Environment | Mains voltage: | Frequency Hz: | Temperature °C: |
| | Humidity %: | Interference level (Burst): | Interference level ESD (Static): |
| Labels | Width: | Length: | Gap: |
| | Thickness: | Transparency: | Material: |
| Paperweb | Width: | Thickness: | Transparency: |
| Goods | Kind: | Material: | Shape: |
| | Length: | Width: | Height: |
| | Speed m/min: | Length in sense of transport: | Distance between goods: |
| Labeler | Speed m/min: | Pieces / min.: | Measuring: |
| Settings | Predispensing: | Position mm: | Suppression: |
| | TCY value: | Label length: | Suppression: |
| Special: | | | |
| Machine-environment | Conveyor: | Feeder: | Taker: |
| | Other machines around: | | |
| Peripheral units | 1. | 2. | 3. |
| Screening | Mains cables: | Sensor cables: | |
| ESD-Phenomena | Description: | | |
| Description of the malfunctions: | Accumulation frequent: repeated: seconds spontaneous: | | |
| Date / ev. date and time of the last disturbances: | | | |
| Comments: | | | |
| Disturbance registered by Name: Date: | | | |

Please make a copy of this list before using it.