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Collamat 9100

Operating instructions

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1 Safety advices

1.1 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.

1.2 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.

1.3 Symbol description

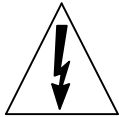


ATTENTION

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.



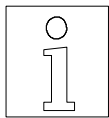
DANGER

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.

2 Introduction

2.1 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.

2.2 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**

3 Operating manual

3.1 Thread up of the labels



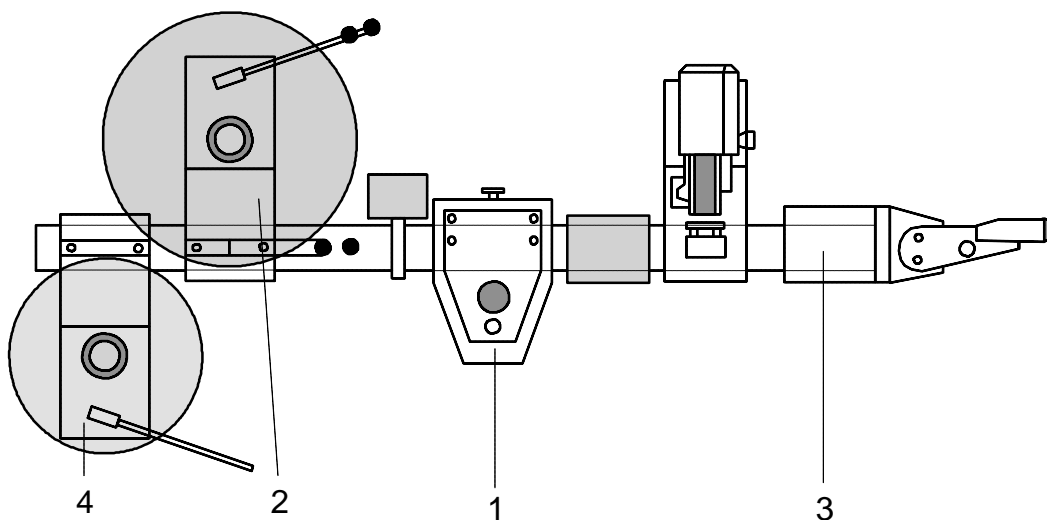
The labeller may only be opened by trained personnel. It contains no parts to be handled by the operator.



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

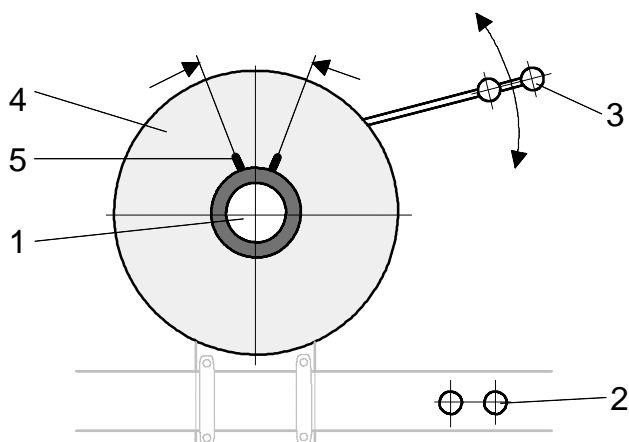
2. Midi-unwinder or electric unwinder
4. Electric rewinder



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

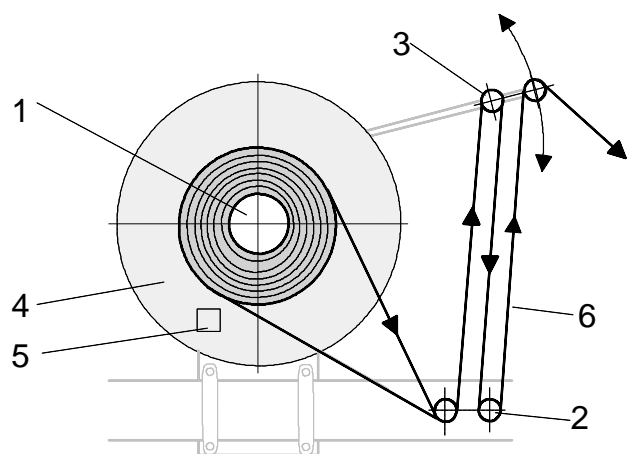
3.2 Midi-unwinder or electric unwinder

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

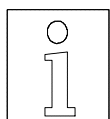


- 1. Unwinder core
- 2. Deflection pulley
- 3. Dancer
- 4. Holding disk
- 5. Handles

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.



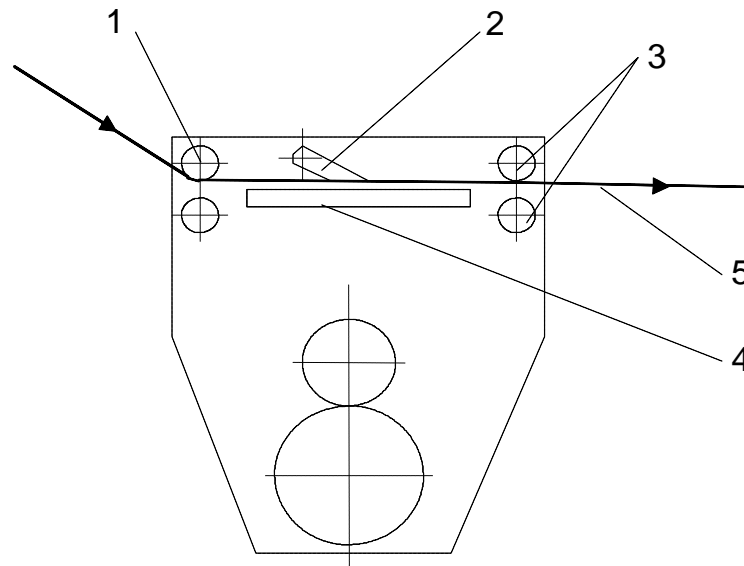
- 1. Unwinder core
- 2. Deflection pulley
- 3. Dancer
- 4. Holding disk
- 5. Direction switch
- 6. Label web



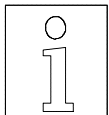
Note:
Adjustment of the spring force see under "Adjustment of the dancer"

3.3 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



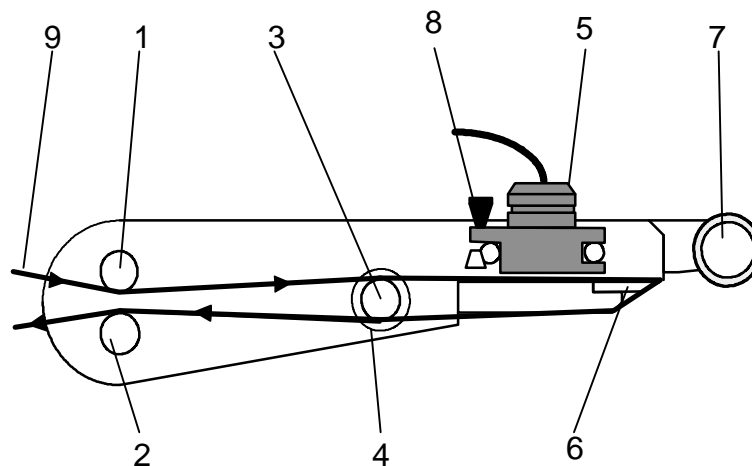
NOTE:

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

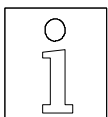
3.4 Flap adapter

Pull the label web between the two deflection pulleys **1** and **2** as well above the stopping shaft **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 shaft **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. Upper deflection pulley
- 2. Lower deflection pulley
- 3. Stopping shaft
- 4. Label guide
- 5. Optical label scanner
- 6. Dispensing edge
- 7. Pressing roll
- 8. Knurled screw
- 9. Label web



ATTENTION:

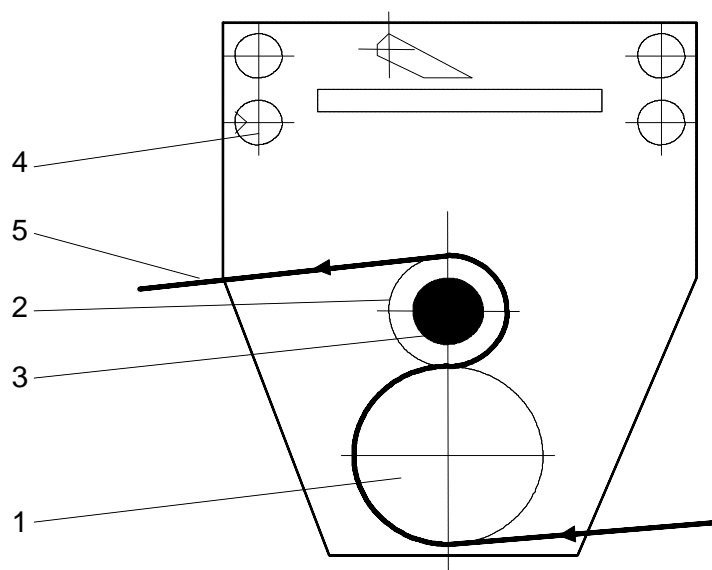
If the slope of the flap adapter so big, that the two paper webs between the two deflection pulleys **1** and **2** touch each other, then the returning backing paper has to be guided under the second deflection pulley.

3.5 Traction roll, traction unit

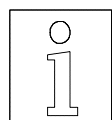
Turn the knurled knob **3** by 90° in order to ease the back pressure roll **2** at the traction roll **1**.

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

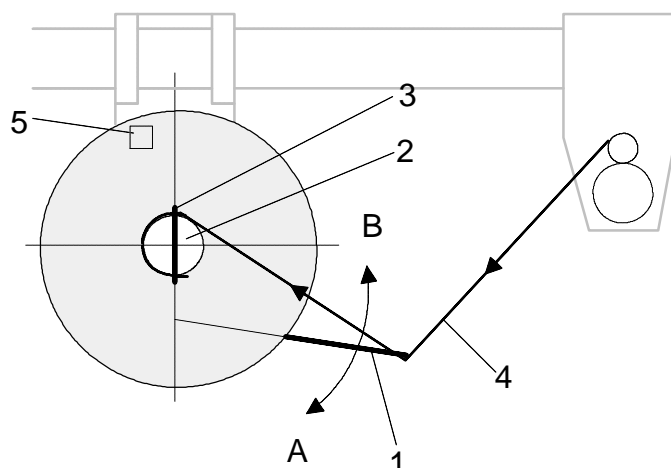


Note:
If the back pressure roll **2** is not under tension an error message appears: "Paper traction / -end"

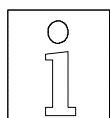
3.6 Electric rewinder

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.

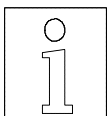
In order to remove the backing paper pull out the clamp strap **3** and take off the paper from the rewinder core **2**.



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



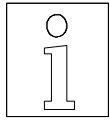
If the Collamat 9100 is switched on without having fixed the backing paper, or if the backing paper is torn apart during the application, the dancer will shoot up to the stop A. The rewinder drives to the maximum speed and will stop after 8 rotations. It can only be restarted when the dancer 1 is reset 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.



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

3.7 Adjustment of the dancer

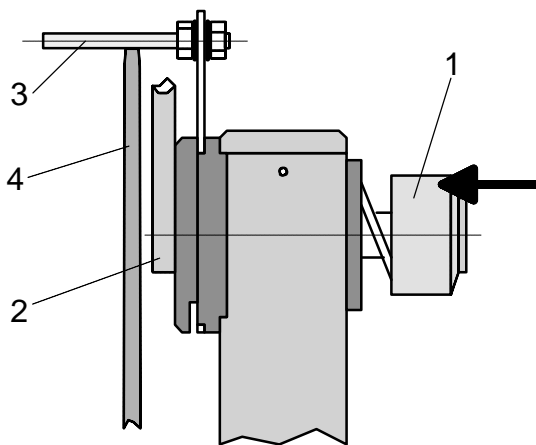
3.7.1 Spring force



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.

3.7.2 Adjusting the spring force at midi-unwinder

For the adjustment, push in knurled knob **1** and adjust corresponding to the desired force. Then release knurled knob so that it stops in a new locking position.

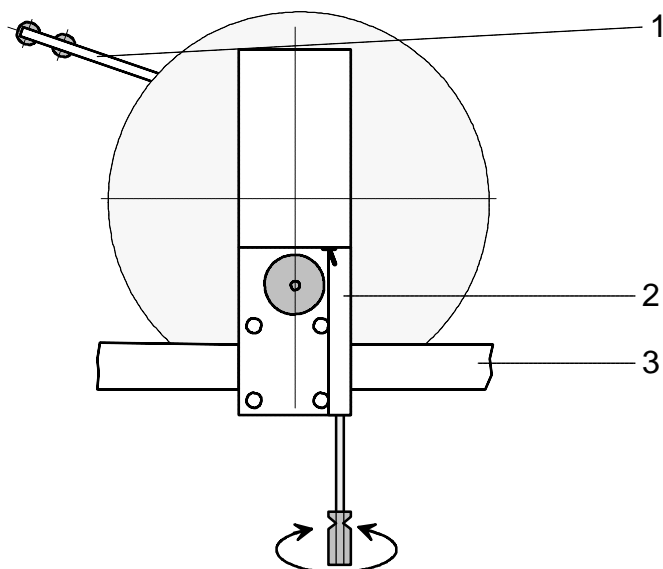


1. Knurled knob
2. Dancer roller
3. Brake shaft
4. Lateral disk

3.7.3 Adjusting the spring force at the electric winder

For adjustment of the spring force, use a 5mm hex screw driver. The dancer spring 2 can be accessed from the bottom of the winder.

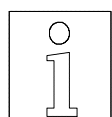
- To increase the dancer force tighten the dancer spring clockwise
- To decrease the dancer force loosen the dancer spring anti clockwise



1. Dancer roller
2. Tension spring
3. Modular rail

3.7.4 Dancer roller position

When mounting the installation or erecting the Collamat 9100 labeller, the dancer roller position has to be adjusted by a specialist (see Collamat 9100 Technical Handbook).



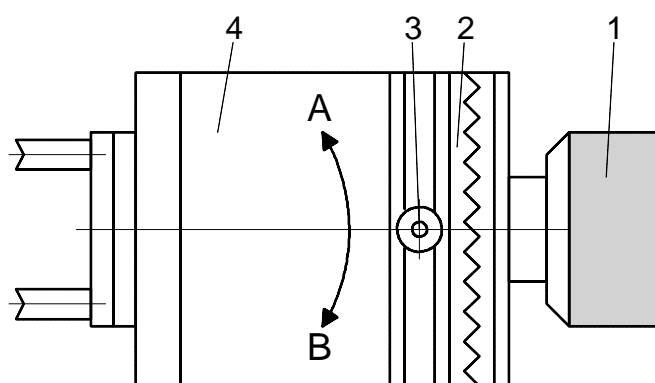
A wrong adjustment leads to a lack of capacity and lack of accuracy.

3.8 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

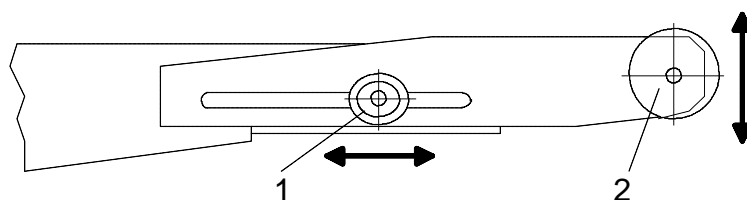


1. Knurled knob
2. Screen
3. Cylinder head screw (adjustment of the spring force)
4. Flap adapter

3.9 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 **Hexnut 2**

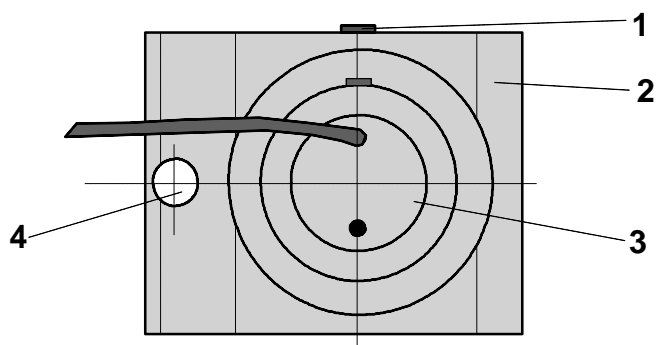


3.10 Optical labelscanner

The optical labelscanner is used to supervise the label length position on the adapter.

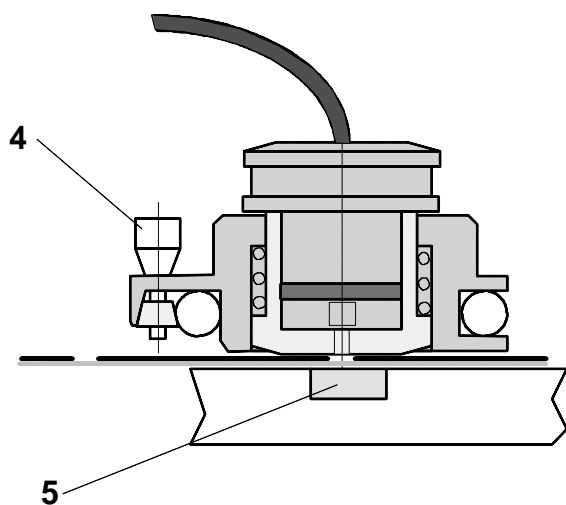
It can be shifted laterally or removed completely by releasing the knurled screw **4**. The optimum lateral position is in the middle of the labels on the paperweb.

The optimum position of the sensorhead **3** above the labels is about 0.1mm. To meet this distance release the fixing screw **1**. Stick one label onto the other labels on the paperweb and place this sandwich under the label scanner while pulling up the sensorhead **3**. Then lower the sensorhead to the labels and fix it with the screw **1**.



Legend

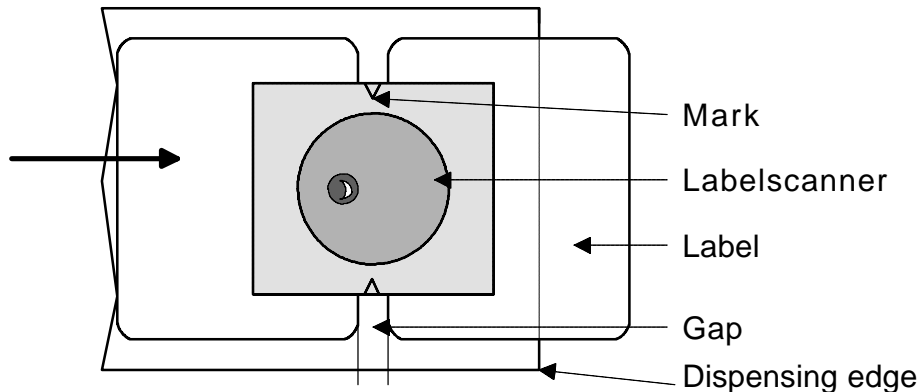
- 1. Fixing screw
- 2. Case
- 3. Sensorhead
- 4. Knurled screw
- 5. Mirror



Now the scanner sensitivity must be adjusted on the Monitor

Adjust:

The labelscanner sensitivity must be adjusted on the monitor. See also **Operating instructions monitor C8600/9100**.



When adjusting the sensitivity automatically, the paper web has to be pulled forward by depressing the **up** key, until the label scanner is positioned over the gap. A lateral mark on the scanner head shows the position of the label scanner. The automatic adjustment is started by depressing the **ENTER** key or abandoned by depressing the **ESC** key. After adjustment the found value is indicated. If the scanner can not be adjusted on the paper web, an error message will be issued.

```
AUTO ADJUST
Move Label with ↑
to the Gap and then
press [ENTER] Key
```

```
AUTO ADJUST DONE

TCY-Value      50 %
```

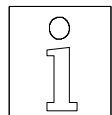
When adjusting the sensitivity manually, the value is entered by hand. Entering can be aborted by depressing the **ESC** key. This function will especially be used above all for the adjustment of labels made of 'difficult' material.

```
LABEL SCANNER SENS.

TCY-Value      50 %
```


3.11 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.

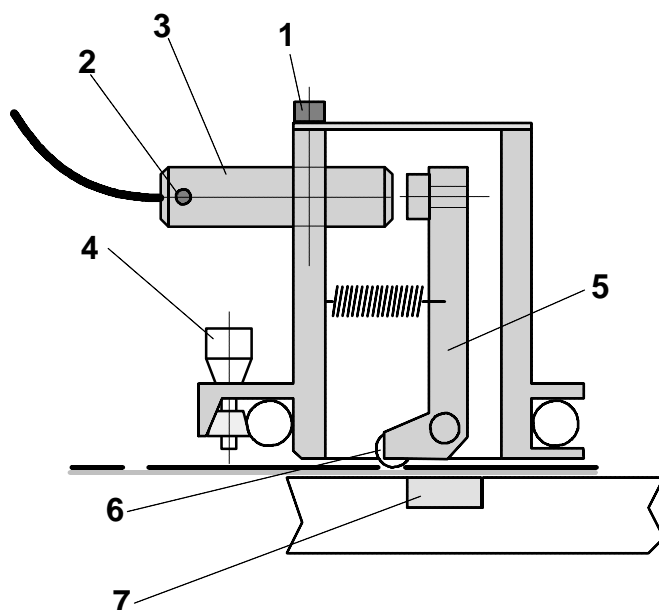


Attention:

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 to the fixation. Connect the inductive proximity switch **3** to the LSC terminals inside the signal distribution box on the module rail. Pull up the label web as far as a label gap will be directly under the scanning roll **6**, then release the fixing screw **1** and turn the proximity switch **3** in or out until it is active (LED **2** is lit). Now pull on the label web by hand until the scanning roll **6** goes onto a label. The inductive proximity switch should be passive (LED **2** is off). For safety reason repeat the adjustment again and finally tighten the screw **1**.



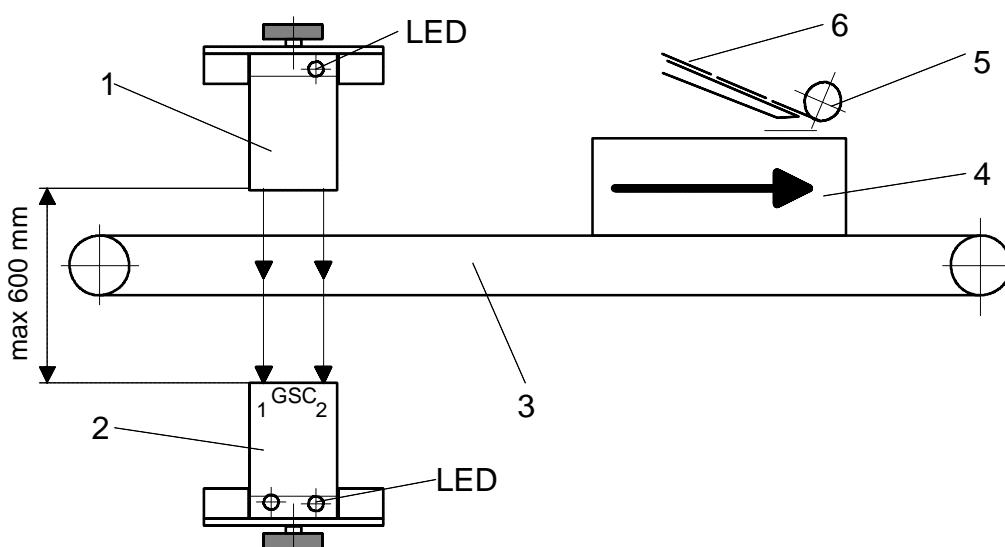
Legend

- 1. Fixing screw
- 2. LED
- 3. Inductiver proximity switch
- 4. Knurled screw
- 5. Scanner arm
- 6. Scanning roll
- 7. Mirror

3.12 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:

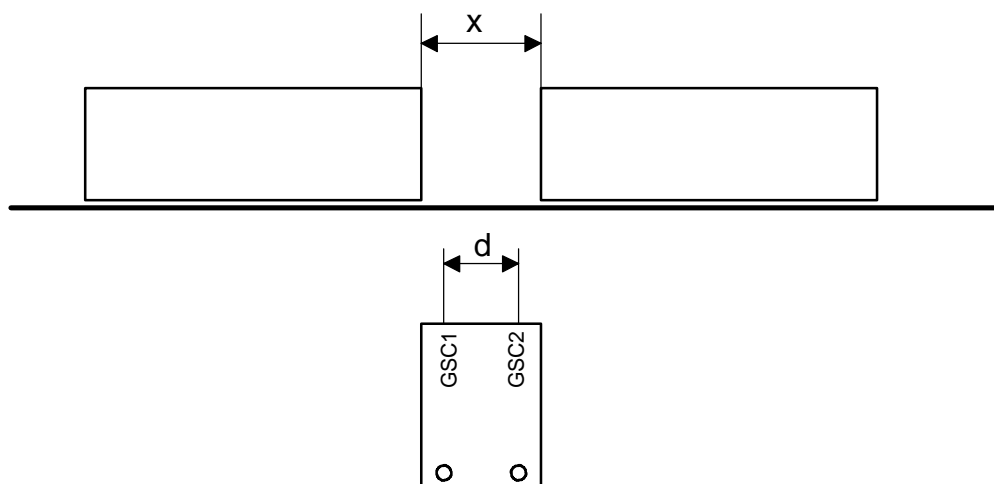


- 1. Transmitter goods scanner
- 2. Receiver goods scanner
- 3. Conveyor belt
- 4. Goods
- 5. Press roll of the adapter
- 6. Label

3.13 Minimal goods distance

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

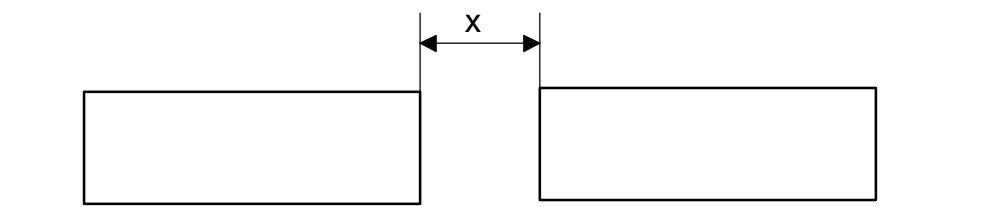
For the measuring scanner the following figure is valid:



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.

4 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.

For servicing the powered winders please refer to the technical handbook of the Collamat 9100.

5 Glossary

5.1 Short cuts

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

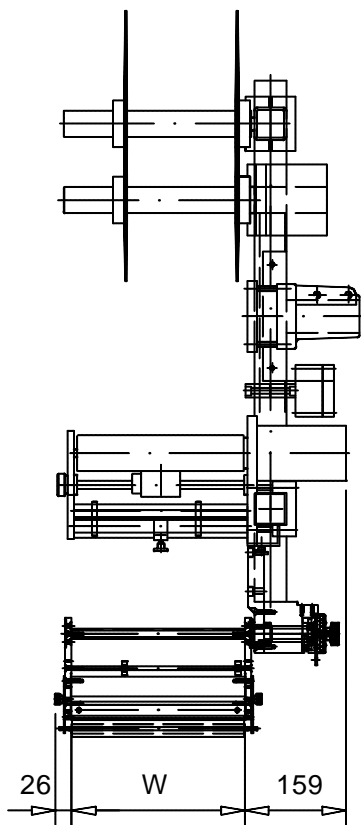
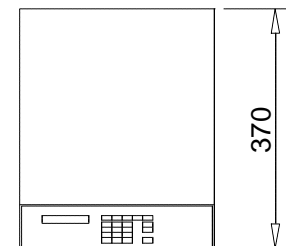
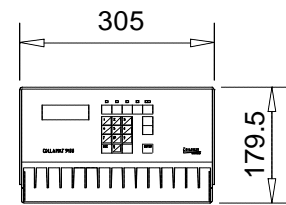
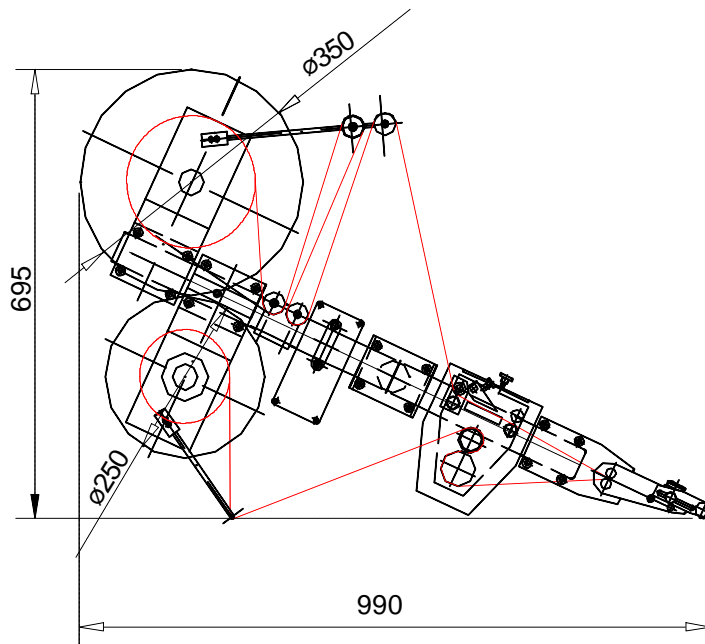
5.2 Signals

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

5.3 Terms

- 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 HM Collamat AG
- C9100:** Labelling system Collamat type 9100
- Dispensing speed:** Speed of the goods on which will be stucked 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

6 Technical data



Dispenser general data (standard values)

System	Units	C9110	C9120	C9130
Version		right/left		
Dispensing speed	Incremental Encoder Measuring Scanner Fixed Speed	0-80 0.5-80 3.0-80	0-60 0.5-60 3.0-60	0-40 0.5-40 3.0-40
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 steppermotor 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	IP40	
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.**

7 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.