Operating Instructions

Collamat NG Series

This manual is a translated English version. The only mandatory Operating Instruction Manual for this product is the German version – signed as the Original-/Reference-Version.

These operating instructions are to be read before start up, and before any work are done on the machine.
Translated English version

Lawful direction:

This manual is a translated English version. The only mandatory Operating Instruction Manual for this product is the German version – signed as the Original-/Reference-Version.

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1 General

1.1 Operating Instructions

These operating instructions provide important information about using the machine. The prerequisite for safe work is the observation of all the safety information and operating instructions given here.

In addition, for the use of the machine, the local accident prevention regulations and the general safety regulations are to be observed.

These operating instructions must be read carefully before all work! They are part of the product, and must be kept near to the machine and accessible to the personnel at all times.

If the machine is passed on to third parties, the operating instructions must also be passed on.

The illustrations in these instructions serve to provide better a demonstration of the circumstances. They are not necessarily to scale, and may be slightly different from the actual machine.

In addition to these operating instructions, the instructions in the Appendices for the installed components also apply. The information which they contain – in particular the safety information – must be observed!
1.2 Symbols in the instructions

Warnings

In these operating instructions, warnings are indicated by symbols. The warnings are introduced by words which indicate the extent of the hazard. Observe the warnings and act carefully, in order to avoid accidents, personal injury or material damage.

DANGER!

… indicates a dangerous situation, which may cause death or serious injury if it is not avoided.

WARNING!

… indicates a possibly dangerous situation, which may cause death or serious injury if it is not avoided.

ATTENTION!

… indicates a possibly dangerous situation, which may cause slight injury if it is not avoided.

BEWARE!

… indicates a possibly dangerous situation, which may cause material damage if it is not avoided.

Hints and recommendations

INFORMATION!

… highlights useful hints and recommendations for the efficient and trouble-free operation of the machine.
1.3 Limitation of liability

All statements and information in these operating instructions were compiled by taking into account the valid standards and regulations, the stat-of-the-art and our long years of expertise and experience.

The manufacturer accepts no liability for damages due to:
- Not observing these operating instructions
- Use of the machine for purposes for which it was not intended
- Employment of untrained personnel
- Unauthorized modifications
- Technical changes
- Use of unauthorized replacement and wearing parts

The actual scope of delivery may differ from the explanations and illustrations described here in the case of special constructions, additional ordering options, or due to the latest modifications.

As well as this, the obligations agreed in the Supply Contract, the General Conditions of Business and the manufacturer’s conditions of Supply, and the statutory regulations valid at the time of conclusion of the contract apply.

**Warranty**

The manufacturer warrants the functionality of the process methods and the specified performance parameters.

The term of warranty begins at the time of delivery of the machine to the customer.

**Wearing parts**

Wearing parts are all components which come into direct contact with the processing material or the material to be processed.

These components are excluded from the warranty and from claims for defects, insofar as these concern wearing parts.

1.4 Copyright protection

The operating instructions are to be treated as confidential. They are exclusively intended for personnel involved with the machine. The transfer of the operating instructions to third parties without the written permission of the manufacturer is not permitted.

**INFORMATION!**

The contents, texts, drawings and other illustrations are protected by copyright and are subject to commercial protective rights. Any misuse may be prosecuted.

Reproduction in any manner or means – even of excerpts – as well as the utilization and/or communication of the contents without the written permission of the manufacturer is not permitted. Offences will attract claims for compensation. We reserve the right to other claims.
1.5 Replacement parts

**WARNING!**
Danger of injury due to incorrect replacement parts!
Incorrect or faulty replacement parts may cause damage, faulty function or total breakdown, as well as impairing safety.
Therefore:
- Only use original replacement parts made by the manufacturer.

Obtain replacement parts from an authorized dealer or directly from the manufacturer. For addresses, see page 2.
The Appendix contains a list of replacement and wearing parts.

1.6 Conditions of warranty

The warranty conditions are contained as a separate document in the sales documents.

1.7 Customer service

Our customer service is available to provide technical information.
Information about the contacts responsible can be obtained at any time by telephone, fax, e-mail or on the Internet. See the manufacturer’s address on page 2.
In addition, our staff is always interested in receiving new information and experiences resulting from the application, and which can be valuable for the improvement of our products.

1.8 CE Declaration of Conformity

Manufacturer’s declaration (as per EU Guideline for Machinery 2006/42/EG Appendix II): see Appendix.
2 Safety

This section gives an overview of all the important safety aspects for the optimum protection of personnel, and for safe and fault-free operation.

Considerable hazards may result from the non-observance of the instructions and safety information listed in these operating instructions.

2.1 Intended use

The machine is exclusively designed for the intended purpose described here.

The Collamat NG is a label dispensing unit for the application of labels, and is usually used in automated packaging lines for application of adhesive labels.
The machine operates fully automatically.
The working area of the machine should be protected against unauthorized access.

WARNING!
Danger due to incorrect use!

Any use which exceeds the intended use and/or different use of the machine, can lead to dangerous situations.

Therefore:

– The machine should only be used as intended.
– All instructions in the operating instructions should be strictly observed.
– In particular, do not use the machine for the following purposes, as these are considered to be not intended:
  – Use of the machine in unsecured areas.
  – Labeling with other than the products stated above.
  – Use of unsuitable labels.

Claims of any kind due to damage caused by incorrect use are excluded.

The operator is entirely liable for all damage due to incorrect use.
2.2 Responsibility of the operating company

The machine will be used in a commercial area. The company operating the machine is therefore subject to the statutory obligations of industrial safety.

In additions to the safety instructions for operation contained in these operating instructions, the valid regulations for safety, accident prevention and environmental protection for the area of use of the machine must be observed. In particular, the operator must:

- Obtain information concerning the valid industrial safety regulations.
- Determine the additional hazards resulting from the special conditions at the site of operation of operation of the machine, by means of a risk assessment.
- Implement the necessary regulations of conduct as instructions for the operation of the machine at the particular site.
- During the entire period of operation of the machine, examine whether the operating regulations which he has produced conform to the current status of the written regulations.
- Insofar as necessary adapt the operating regulations to the new regulations, standards and conditions of use.
- Unambiguously regulate the responsibilities for the installation, operation, maintenance and cleaning of the machine.
- Ensure that all employees involved on or with the machine have read and understood the operating instructions. In addition, he must train the personnel in the use of the machine at regular intervals, and inform them of the possible hazards.

In addition, the operator is responsible that the machine is

- always in a technically perfect condition.
- maintained according to the stated service intervals.
- all safety features are regularly inspected with regard to completeness and functionality.
2.3 Operating personnel

2.3.1 Requirements

**WARNING!**
Danger of injury if insufficiently qualified!
Incorrect use can cause considerable personal injury and material damage.
Therefore:
- All activities should only be carried out by the persons designated.

The following qualification requirements for the various areas of activity are designated in the operating instructions:

- **Instructed persons**
  are those instructed by the operating company with regard to the task with which they are entrusted and the possible dangers of incorrect conduct.

- **Specialist personnel**
  are in a position to carry out the tasks with which they are entrusted and to independently recognize possible hazards due to their specialist training, experience, and knowledge of the relevant regulations.

- **Qualified electricians**
  are in a position to carry out work on electrical equipment and to independently recognize possible hazards due to their specialist training, experience, and knowledge of the relevant standards and regulations.
  - Qualified electricians are specially trained for the field of work in which they are active, and have knowledge of the relevant standards and regulations.
  - In Germany, a qualified electrician must fulfill the regulations of the accident prevention regulations BGV A3 (e.g. master electrical installation craftsman). In other countries, the corresponding regulations apply.

Only personnel may be employed, who can be expected to carry out their work in a reliable manner. Persons whose reactions are impaired, e.g. due to drugs, alcohol or medication are not permitted.

In addition, the specific regulations regarding age and profession applicable at the place of use are to be observed in the selection of personnel.
2.3.2 Unauthorized persons

WARNING! Danger to unauthorized persons!

Unauthorized persons are unaware of the dangers which may result from the machine. Therefore:

- Unauthorized persons must be kept away from the working area.
- In case of doubt, speak to them and instruct them to leave the work area.
- Interrupt work as long as unauthorized persons are in the work area.

2.4 Personal protective equipment

For the use of the machine, it is necessary to wear personal protective equipment in order to minimize hazards to health. Therefore:

- For all work, correctly put on the stated personal protective equipment and wear it while working.
- In addition, signs in the work area concerning personal protective equipment must be observed.

To be worn

For all work, the following must be worn:

**Industrial safety clothing**

is closely fitting work clothing with low resistance to tearing, closely fitting sleeves and with no parts which hang out. This is primarily for protection against being caught by moving parts of the machine.

No rings, chains or other jewelers.

**Protective gloves**

for protection of the hands against contact with substances hazardous to health, or hot or cold surfaces.

**Safety footwear**

for protection against falling objects and slipping on slippery surfaces.

**Protective goggles with side protection**

to protect against hazardous substances and splashed liquids coming into contact with the eyes.
2.5 Industrial safety and special hazards

In the following section the residual risks will be stated, which result from the risk analysis.

Observe the safety information and the warnings in this and other chapters in order to reduce hazards to health and avoid hazardous situations.

Warning symbols on the machine

The particular danger areas on the machine are indicated by these symbols:

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<th>DANGER!</th>
<th>Danger of death due to electrical current!</th>
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<td>… indicates situations with danger of death due to electrical current. If the safety information is not observed, there is danger of death or serious injury.</td>
<td></td>
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<tr>
<td>The work should only be performed by a qualified electrician.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>WARNING!</th>
<th>Danger of crushing!</th>
</tr>
</thead>
<tbody>
<tr>
<td>During operation, moving components and objects may cause crushing with very serious injuries and permanent physical damage.</td>
<td></td>
</tr>
<tr>
<td>Therefore:</td>
<td></td>
</tr>
<tr>
<td>– Do not enter the danger area while the machine is in operation.</td>
<td></td>
</tr>
<tr>
<td>– Adjustment and maintenance work, as well as measures to remedy faults must always be carried out with particular care and attention with regard to crushing.</td>
<td></td>
</tr>
<tr>
<td>– Personal protective equipment for protection against crushing must be worn for all work.</td>
<td></td>
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</tbody>
</table>
Danger symbols in the operating instruction

In the operating instructions the following symbols are used in connection with safety information:

**Electrical current**

![DANGER!](image)

Danger of death due to electrical current!

There is direct danger of death on touching live components. Damage to the insulation or individual components may cause danger of death.

Therefore:

- In case of damage to the insulation, switch off the power supply immediately, and have repairs carried out.
- Only have work on electrical equipment carried out by qualified electricians.
- Switch off the power before undertaking any work on electrical equipment. Check that no voltage is present!
- Before carrying out regular maintenance, cleaning and repair work, switch off the power supply and secure against switching on again.
- Never bypass fuses or put them out of action.
- Observe the correct current rating when replacing fuses.
- Keep dampness away from live components, as this may cause short circuits.

**Sharp edges and pointed corners**

![BEWARE!](image)

Danger of injury on edges and corners!

Sharp edges and pointed corners can cause cuts and grazes to the skin.

Therefore:

- Always take care when working near sharp edges and pointed corners.
- Wear gloves in case of doubt.
Moving parts

WARNING!
Danger of injury due to moving parts!
Driven, rotating or linearly moving components can cause extremely serious injuries!
Therefore, during operation:
– The presence of persons in the danger area or the immediate vicinity is strictly forbidden!
– Covers such as flaps, doors, hatches or maintenance covers must not be removed.
– Safety devices and/or functions must not be put out of action, made unusable, or bypassed.
– Never operate the machine without the covers closed or without functioning safety devices.
– Never reach into the moving equipment.
Before entering the danger area:
– Switch off the power supply and secure against switching on again.
– Wait until moving parts have come to a standstill.
– Wait for the self-acting reduction and/or discharge of residual energy.

Pneumatic system

WARNING!
Danger of injury due to pneumatic energy (compressed air)!
Pneumatic energy can cause very serious injuries. Pneumatically driven components may move without warning.
In case of damage to individual components, air may escape under high pressure and e.g. cause damage to the eyes.
Therefore:
– Only have work on the pneumatic system carried out by trained specialist personnel.
– Release the pressure before starting work on the pneumatic equipment. Beware of pressure reservoirs. These must also be fully depressurized.
– Do not adjust the pressure beyond the maximum values.
Collamat NG Series

Safety

Sharp paper edges

BEWARE!
Danger of injury due to sharp paper edges!
Sharp paper edges can cause slight to moderate cuts.
Therefore:
– For all work, the prescribed personal protective equipment must be worn.
– Always perform work with particular care and attention.

Falling objects

WARNING!
Danger of injury due to falling objects!
During operation, objects in the work area may drop without warning and cause injuries.
Therefore:
– Do not enter the danger area while the machine is in operation.
– For adjustment and maintenance work, orremedying faults, personal protective equipment should be worn.

Dirt and scattered objects

BEARE!
Danger of tripping due to dirt and scattered objects
Dirt and scattered objects can be the cause of slips and trips, which may cause considerable injuries.
Therefore:
– Always keep the work area clean.
– Remove objects which are no longer needed.
– Indicate sources of tripping with yellow - black warning tape.

Signs

WARNING!
Danger of injury due to illegible symbols!
Stickers and signs may get dirty or become illegible in the course of time.
Therefore:
– Always keep warning and operating signs in a legible condition.
– Replace damaged or illegible signs and stickers immediately.
2.6 Conduct in emergencies and accidents

Preventive measures

- Always be prepared for accidents or fires!
- Keep first-aid equipment (first aid box, blankets etc.) and fire extinguishers so that they can easily be reached.
- Familiarize the personnel with first-aid and rescue equipment
- Keep access for emergency vehicles clear.

In case of emergency: Act correctly

- Trigger the emergency stop (if available)
- Begin with first-aid measures.
- Remove people from the danger area.
- Inform those responsible at the site of the emergency.
- Call a doctor and/or the fire brigade.
- Clear access routes for emergency vehicles.

2.7 Safety equipment

**WARNING!**

Danger of death due to non-functioning safety devices!

Safety devices ensure that the operation is as safe as possible. Even if work processes are made more complicated by safety devices, under no circumstances may they be put out of action. Safety is only ensured by intact safety devices. Therefore:

- Before starting work, check that the safety devices are functional and correctly installed
- Safety devices must never be put out of action.
- Do not hinder access to safety devices such as emergency stop buttons, lanyards etc.

The following safety devices must be installed by the company operating the machine:

- Emergency stop button in the vicinity of the labeling device or the entire machine
- Main valve
2.8 Assure against power on

**Lock main control switch**

The main switch should be locked with a padlock to avoid an unwanted (unauthorized) power on - if there is a main switch within the safety chain.

**WARNING!**

Danger of life caused by unauthorized power on!

Only with the mains control switch in position „0“ and locked, individuals are allowed to be in the area of danger. A not authorized switching on of a locked mains control switch can bring individuals into serious danger of life.

Therefore:

– Never remove a lock without authorization.
– Be sure no individuals are in the area of danger before removing the lock.

**Protection against unauthorized switching-on:**

1. Switch off mains power.
2. If possible lock mains switch with a padlock and mark the switch with an eye-catching tag (see left side: Safety tag 1).
3. The key of the padlock has to be kept in a save place by the person having permission to switch-on the machine.

4. If there is no possibility to lock the mains switch with a padlock, mark the switch with an eye-catching tag (see left side: Safety tag 2).
5. After all work has been done in the area of danger, check the area of danger again before starting the switch-on procedure. All individuals have to leave the area of danger!
6. Be sure all safety facilities are installed and are working properly.
7. Remove the safety tag and switch on the machine.
3 Technical specifications

3.1 Dimensions of Collamat NG Series

NG – S – X:
1 = 326 mm (100)
2 = 1182 mm
3 = 612 mm

NG – S – Y:
1 = 406 mm (180)
2 = 1182 mm
3 = 612 mm

NG – S – Z:
1 = 476 mm (250)
2 = 1182 mm
3 = 612 mm

Measurements Collamat NG 50 X L respectively NG 100 X L with 410mm-unwinder discs and 250mm modular rail.

1 Width can vary – depending on specifications (W= 100, 180 or 250mm)
2 Length depends on length of modular rail and size of unwinder discs
3 Height dependent on size of rewinder disk size
4 Standard - applicator (Applicator depends on specification)
3.2 Condition at delivery

Type designation  **Collamat NG S W P B**

NG  Collamat NG Series

S  Nominal Speed /Dispensing speed
   30 (in construction) - see corr. performance data 3.10 + 3.11
   50 - Light version (passive rewinder)
   100 - Labeler with passive Rewinder
   - Labeler with active Rewinder

W  Width: max paper width
   X = 100mm
   Y = 180mm
   Z = 250mm

P (optional)  Position:
   T = Top - Labeling from top (from top to the product)
   S = Side - Labeling lateral (laterally to the product)
   B = Bottom - Labeling from top (from bottom to the product)
   L = Left - Left Collamat version
   R = Right - Right Collamat version
   W = Wrap - Wrap around station
   A = Align - Alignment station

B (optional)  Branch:
   P = Pharma products
   F = Food products
   C = Chemical products
   O = others

Explanations

Depending on the mounting version of the labeling unit (normal - vertical, over head – vertical or lying down – horizontal) and the corresponding width version (W = 100 ...250) - an optional active rewinder has to be used to achieve the desired labeling speed (see performance sheet in the chapter 4.10).

Not all optional - respectively accessory- or customized- equipment can be shown on the type designation (type specification plate). Normally the fist two or three parameters will be listed in the field “Type:”.

The parameter speed (S) - e.g. 50 - indicates a labeler with passive rewinder unit. Nominal labeling speed for this type of labeler will be 50m/min (see performance sheet in chapter 4.10).
Example

Collamat NG 50 X L - denotes to:
- Collamat NG with passive Rewinder unit (50)
- for a max. paper width of 100mm (X)
- In left version (L)

- all other (customerdesigned) optional equipment will be shown in the corresponding order- or delivery papers.

Mains connection

The mains voltage can be set to 115VAC or 230VAC.
Please check the voltage selector on the power input module (side connection plate „POWER“.

The voltage selector is set to 230V respectively to 115 V - depending on the country of delivery (delivery address) or according to the specification in the purchase order: 230V = 230VAC / 50Hz
115V = 115VAC / 60Hz

Ask a skilled labor to change the voltage selector (and the corresponding primary fuses) if necessary.

INFORMATION!
Changing the mains voltage requires the replacement of the two mains fuses (primary fuses).
For 230V mains voltage: 2 x micro-fuse 5x20mm – 3.15AT
For 115V mains voltage: 2 x micro-fuse 5x20mm – 6.3AT
(see side connection plate „POWER“)

Good sensor
The M8 good sensor plug „GSC“ on the side connection plate „SIGNALS“ is set by default to PNP-Sensors. The optional control line (Pin 2) is not connected (open).
Please – only - use original good sensors from Collamat AG or ask a skilled labor to connect an external product to your labeler.

Incremental encoder (optional)
The M12 incremental encoder plug „TACHO“ on the side connection plate „SIGNALS“ is set by default to PNP (used to control the labeling unit if the dispensing speed is set to variable speed). Please – only - use original incremental encoder units from Collamat AG or ask a skilled labor to connect an external product to your labeler.

Electrical rewinder (active rewinder) (optional)
You have to use the optional electrical rewinder unit (active rewinder) if fast labeling or/and labeling with wide labels is requested.
A standard Collamat NG is by default equipped with a ribbon driven rewinder unit and friction clutch (NG 50 ....).
The type specification plate on the side connection plate “POWER” indicates the rewinder type of your labeling unit (Collamat „NG S W“ – see above – parameter R).
A Collamat NG with a passive Rewinder unit (S = 50) can be equipped with an active rewinder - if necessary. Please ask for the corresponding upgrade set “electrical Rewinder for Collamat NG“.
**Connection box**

The 25-pin DSUB plug „Connection box“ on the side connection plate „SIGNALS“ is used to connect an **optional** connection box or an optional connection module.

The connection box/module is used to connect auxiliary equipment to the labeler.

Ask skilled labor only to connect sensors and/or actuators to the connection box/module.

Caution: wrong wired actuators to the open collector outputs can destroy the output transistors on the main board (HMC0601)!

**Applicator + Modular rail**

The applicator unit and the modular rail will be delivered pre wired and pre mounted (see also chapter “Mounting” in this manual).

- Conduct flat ribbon cable(s) + PE-wire through the modular rail
- Fix modular rail on traction unit housing (4 screws)
- Slide applicator unit onto modular rail
- Connect flat ribbon cable (applicator cable 10-pin ) to X1 connector (applicator board)
- Connect flat ribbon cable (optional applicator cable 20-pin) to X3 connector (applicator board) – if available
- Connect PE-wire (green/yellow) to PE blade terminal (applicator board)
- Fix applicator housing on modular rail (4 screws)
- Screw cover to applicator housing (4 screw)

**Dancer**

Unwinder unit:
- Single dancer: standard for Collamat NG 30, NG 50 and NG100
- Double dancer: **optional** for Collamat NG 50 and Collamat NG 100

Rewinder unit:
- Single dancer: standard for Collamat NG 30, NG 50 and NG 100
- Double dancer: **optional** for Collamat NG 50 and Collamat NG 100

**Remarks:** The **optional** double dancer has to be used:
- in high product cadence applications
- and / or with (very) long labels

**Lying down set**

The optional „Lying Down Set“ will be used for installation where the product has to be labeled to the side.

The optional „Lying down set equipment“ is made up of:
- Rewinder disc Ø280mm
- Unwinder dancer ring(s) - 1 ring for single or 2 rings for double dancer
- Aluminium unwinder disc (bottom)

**Label low sensor**

Checks the volume of the labels on the unwinder unit. The sensor will be activated if the label volume on the unwinder is low (LLO=label low).

Error setting: Warning, error or ignore.
3.3 Technical data

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage (AC)</td>
<td>115 / 230</td>
<td>VAC</td>
</tr>
<tr>
<td>Phases</td>
<td>1~ Ph</td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>60 / 50 Hz</td>
<td></td>
</tr>
<tr>
<td>Maximum energy input</td>
<td>340 / 460 VA</td>
<td></td>
</tr>
<tr>
<td>Internal mains fuse</td>
<td>6.3 / 3.15 AT</td>
<td></td>
</tr>
<tr>
<td>External mains fuse</td>
<td>10 AT</td>
<td></td>
</tr>
<tr>
<td>Protection type (digit 1 – 3)</td>
<td>standard 402</td>
<td>IP</td>
</tr>
<tr>
<td>(explanation see below)</td>
<td>optional 542</td>
<td>IP</td>
</tr>
<tr>
<td>Compressed air (optional maintenance unit)</td>
<td>6 bar</td>
<td></td>
</tr>
<tr>
<td>Compressed air quality class as per ISO 8573-1</td>
<td>Class 5 Oil-free and dry</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation to the IP protection:**

The Collamat NG in standard finish will be delivered with IP40 resp. IP402.

The Collamat NG can be upgraded to IP54 resp. IP542 with the “optional” IP set.

The standard applicator unit with integrated applicator interface electronic and label sensor (sender with light tube and receiver) can **NOT** be upgraded to a higher IP-class.

We are using a special side connection plate „POWER“ in the IP54 Collamat NG version (rewiring to another input power voltage 115/230VAC only by trained specialists!).

We are using two different versions of side connection plate „SIGNALS“ in the IP54 Collamat NG version:

Version 1: with GSC- and TACHO-connector only – or
Version 2: IP54/65-version of the standard side connection plate „SIGNALS“ with all standard connectors.

Collamat does recommend:

- replace the standard applicator unit with a rugged and waterproof dispensing edge – or use the standard applicator unit without electronic parts.
- replace the standard label sensor with a external IP (IP54-68) fork sensor (Sick, Leuze, Lion, ....) – with a special holding and adjusting construction.
- The applicator-interface-electronic has to be mounted into the main Collamat NG housing (with an additional M8-connector for the external label sensor). Ask also for the “optional” mounting-and connector set.
Collamat NG Series

Technical specifications

**Explanation - IP protection 1st. digit:**
Protection against touching and against intrusion of foreign particle

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection against mass. foreign particle &gt;1mm</td>
<td>4</td>
<td>IP</td>
</tr>
<tr>
<td>Protection against dust deposit (dustproof)</td>
<td>5</td>
<td>IP</td>
</tr>
</tbody>
</table>

**Explanation - IP protection 2nd. digit:**
Protection against intrusion of water

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>No particular protection</td>
<td>0</td>
<td>IP</td>
</tr>
<tr>
<td>Protection against splash water from all direction</td>
<td>4</td>
<td>IP</td>
</tr>
</tbody>
</table>

**Explanation - IP protection 3rd. digit:**
Mechanical protection

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>No particular mechanical protection</td>
<td>0</td>
<td>IP</td>
</tr>
<tr>
<td>Power of impact: 0.375 Joule (Test: 250g – 15cm)</td>
<td>2</td>
<td>IP</td>
</tr>
</tbody>
</table>

**Operating conditions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>+5 ... +40</td>
<td>°C</td>
</tr>
<tr>
<td>Temperature fluctuation, max.</td>
<td>10</td>
<td>°C/h</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-10 ... +60</td>
<td>°C</td>
</tr>
<tr>
<td>Relative humidity, max. non-condensing</td>
<td>20 - 85</td>
<td>%</td>
</tr>
<tr>
<td>Environment</td>
<td>avoid direct sunlight, dampness and dust</td>
<td></td>
</tr>
</tbody>
</table>

**Caution: IP54 –version** - Only well trained specialists are allowed to change the input power voltage. This is done inside of the Collamat NG main housing (rewiring the connector from the transformer (primary lines))

**3.4 Weight**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traction unit with Rewinder P</td>
<td>23.2</td>
<td>Kg</td>
</tr>
<tr>
<td>Traction unit with Rewinder A</td>
<td>24.7</td>
<td>Kg</td>
</tr>
<tr>
<td>With unwinder and applicator (++)</td>
<td>+ 4.9</td>
<td>Kg</td>
</tr>
</tbody>
</table>
3.5 Emissions

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise level, max.</td>
<td>≤ 70</td>
<td>dB(A)</td>
</tr>
</tbody>
</table>

3.6 Performance values

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. labeling speed (S)</td>
<td>50*</td>
<td>m/Min</td>
</tr>
<tr>
<td>Max. labeling speed (S)</td>
<td>100*</td>
<td>m/Min</td>
</tr>
<tr>
<td>Label width max.</td>
<td>100-250</td>
<td>mm</td>
</tr>
<tr>
<td>Label width min.</td>
<td>ca. 20</td>
<td>mm</td>
</tr>
<tr>
<td>Label length min.</td>
<td>ca. 15</td>
<td>mm</td>
</tr>
</tbody>
</table>

* depending on rewinder (S = 100 = active or S = 50 = passive)
** depending on width version (W = X, Y or Z)

3.7 Label material

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrier strip roll (max. Ø)</td>
<td>350 or 410</td>
<td>mm</td>
</tr>
<tr>
<td>Carrier strip roll core (Ø)</td>
<td>min. 40</td>
<td>mm</td>
</tr>
<tr>
<td>Label width (max.)</td>
<td>100, 180 or 250</td>
<td>mm</td>
</tr>
</tbody>
</table>

3.8 Mounting

<table>
<thead>
<tr>
<th>Description</th>
<th>Project specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamp unit</td>
<td></td>
</tr>
</tbody>
</table>

3.9 Identification plate

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>NG S W P</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>06/2010</td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>115 / 230</td>
<td>VAC</td>
</tr>
<tr>
<td>Fuse</td>
<td>6.3 / 3.15</td>
<td>AT</td>
</tr>
<tr>
<td>Without/with electr. rewinder</td>
<td>340/460</td>
<td>VA</td>
</tr>
<tr>
<td>S/N (Serial-Number)</td>
<td>00001</td>
<td></td>
</tr>
</tbody>
</table>
3.10 Performance data – labeler with passive Rewinder

(yellow – NG 50 X, violet = NG 50 Y, blue = NG 50 Z)

Maximum dispensing speed [m/min] depending on the paper width [mm]

Example: A Collamat NG 100 Z with 140mm paper width (label width) is able to run with a max. speed of 60m/min (with the standard adjustment of the motor ramp parameters).

3.11 Performance data - labeler with active Rewinder

(yellow – NG 100 X, violet = NG 100 Y, blue = NG 100 Z)

Maximum dispensing speed [m/min] depending on the paper width [mm]
4 Construction and function

4.1 Overview of components

4.1.1 Front view

1 Pressure roller applicator
2 Dispensing edge applicator
3 Applicator housing
4 Modular rail clamp 40x40
5 Side connection plate „SIGNALS“
6 Pressure roller - traction unit
7 Paper break adjustment knob
8 Operator panel (keyboard and LCD)
9 Unwinder dancer (single / double)
10 Unwinder unit
11 Front disc – unwinder (adjustable)
12 Modular rail (40x40)
13 Traction roller
14 Rewinder dancer (single / double)
15 Rewinder core
16 Side connection plate „Power“
4.1.2 Back view

1 Pressure roller - applicator
2 Dispensing edge - applicator
3 Applicator housing
4 Modular rail clamp 40x40
8 Operator panel (keyboard and LCD)
9 Unwinder dancer (single / double)
10 Unwinder unit
11 Front disc – unwinder (adjustable)
16 Side connection plate „Power
17 Mounting screws – label sensor head (receiver)
18 Rear disc – unwinder (fix)
19 Adjustment of dispensing edge angle
   (+ optional spring load)
20 Spring load unwinder dancer
21 Traction unit housing (VZW)
4.1.3 Detail view – traction unit

Traction unit in detail

The drive

1. Operator panel (keyboard and LCD)
2. Paper break button
3. Paper break
4. Side connection plate „SIGNALS“
5. Pressure roller – traction unit
6. Flange modular rail 40x40
7. Modular rail 40x40
8. Traction roller
9. Rewinder dancer (single or double)
5.1.4 Side labeling – optional -

Accessory:
“Lying down set”
or
“Side labeling set”
(optional)

1 Unwinder dancer disc
2 Unwinder disk (optional in aluminum)
3 Rewinder disk

This mounting example shows a “side labeling unit” in IP54 (protection class) version - with adjustable (optional) forksensor (label sensor LSC) and modular rail clamping piece (KFX).

IP54 – see 4.3.

Side labeling = lateral labeling (parameter S)
4.2 Variations

The Collamat NG is available in the following variations:
(see also type name Collamat NG S W P B)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>type</th>
<th>value</th>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collamat Series</td>
<td>NG</td>
<td>NG</td>
<td></td>
</tr>
<tr>
<td>max. speed</td>
<td>S</td>
<td>30 / 50 / 100</td>
<td>m/min</td>
</tr>
<tr>
<td>max. paper width</td>
<td>W</td>
<td>X-Z =100-250</td>
<td>mm</td>
</tr>
<tr>
<td>Position</td>
<td>P</td>
<td>T,S,B,L,R,W,A</td>
<td></td>
</tr>
<tr>
<td>Branch</td>
<td>B</td>
<td>P,F,C</td>
<td></td>
</tr>
</tbody>
</table>

The Collamat NG is available with the following applicator types:
The different types of applicators are available in left or right completion (make).

<table>
<thead>
<tr>
<th>Applicator</th>
<th>type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicator - fix</td>
<td>FXA</td>
<td>Fixed dispensing edge</td>
</tr>
<tr>
<td>Applicator - spring loaded</td>
<td>SLA</td>
<td>Spring loaded disp.edge</td>
</tr>
<tr>
<td>Air-Vacuum Applicator</td>
<td>AVA</td>
<td>Suction plate + piston(s)</td>
</tr>
<tr>
<td>Magnet-Flap-Applicator</td>
<td>MFA</td>
<td>Magnet driven applicator</td>
</tr>
<tr>
<td>Blow-Applicator</td>
<td>BLA</td>
<td>Blow label to product</td>
</tr>
</tbody>
</table>

The mounting (fixation) of the Collamat NG unit can be done with different clamps on different places:

<table>
<thead>
<tr>
<th>Clamp</th>
<th>type</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>on modular rail - fix</td>
<td>KFX</td>
<td>Modular rail to applicator</td>
</tr>
<tr>
<td>on modular rail - rotatable</td>
<td>KVA</td>
<td>Modular rail to applicator</td>
</tr>
<tr>
<td>on bottom of housing</td>
<td>KBO</td>
<td>With single - or twin - clamp</td>
</tr>
<tr>
<td>on flange bottom / rear</td>
<td>KNG</td>
<td>Standard NG flange</td>
</tr>
<tr>
<td>on flange top / front</td>
<td>KNG</td>
<td>Standard NG flange</td>
</tr>
</tbody>
</table>
4.3 Assembly of the unit

Description
The central point of a Collamat NG unit is the traction unit housing. All peripheral equipments are connected to the traction unit housing (flange connectors). All peripheral parts are protected against corrosion (powder-coated / anodized). The traction roller is coated with a special sand paper like surface allowing a non-slippery transport of the paper web. The torque of the passive rewinder is adjustable (friction clutch). The strength of the dancer arm of the rewinder (active or passive) is adjustable. The traction roller is easy turnable (by hand) - in the switch off state of the labeler. The Collamat NG can be mounted to an adjustable stand (vertical and/or horizontal position adjustment).

4.4 Function

Description
The Collamat NG is a label dispenser used to dispense /apply labels to products. The paper web will be feed from the unwinder - across different deflect rollers - to the dispensing edge – controlled by a special dancer arm – to the products. The unwinder can be setup to unwind paper web rolls with a max. diameter of 310, 350 or 410mm. The brake and the strength of the dancer arm can be adjusted. The dispensing edge is the place where the label will be stripped from the backing paper. This is done by pulling the backing paper around the dispensing edge. A controlled stepper motor is fulfilling this job. The backing paper is then guided to the rewinder unit where the waste of the paper web (backing paper) is spooling onto the rewinder core.

There are two different rewinder units available:
Passive rewinder (S = 50): The passive rewinder unit is a ribbon driven drive with friction clutch – powered by the traction unit stepper motor.
Active rewinder (S = 100): The active rewinder unit is a DC-motor driven drive – controlled by the rewinder dancer arm.

Dispensing a label:
The product triggers the good sensor (GSC-input) which starts the dispensing sequence. The paper web will be guided over a sharp dispensing edge. The label on the dispensing edge will be removed from the backing paper and will be pushed/guided to the applicator pressure roller. As soon as this label reaches the pressure roller, the label will be caught by the product. The pressure roller’s main function is to gently wipe/roll on the label to the product surface. The backing paper is pulled by the traction roller und guided to the rewinder (see above). The following label on top of the dispensing edge will be pushed forward until the leading edge of the label reaches the so called predispensing distance (end of labeling sequence).

4.5 Operator panel + indicators

Description
Operating controls are found on the operator panel, on the side connector plate POWER and on the applicator housing. An optional tower lamp unit (RUN, WARNING, ERROR) can be connected to the side connector plate "SIGNALS" (Connection box).

- operator panel - operator-/ supervisor-/ factory-operation
- side connection plate “POWER” - switch on/off unit (main switch)
- applicator housing - FEED - button

The optional connection box/module is used to supervise/control other inputs / outputs.
5 Transport, packaging and storage

5.1 Safety information for transport

Incorrect transport

**DANGER!**
Danger of the machine falling down or tipping over!
The weight of the machine can cause injury and severe crushing!
Therefore:
- According to the size and weight of the machine, use a pallet on which the machine can be moved with a forklift truck.
- Use suitable lifting equipment for lifting the machine (straps etc.) which is designed for the weight of the machine.
- When placing the straps, take care that individual components are not unduly loaded.

**BEWARE!**
Damage due to incorrect transport!
Incorrect transport may cause considerable damage. Therefore:
- When unloading the packages and transporting them on site, always proceed with the greatest care and caution.
- Observe the symbols on the packaging.
- Only use the attachment points provided.
- Only remove the packaging immediately before assembly.

5.2 Symbols on the packaging

**Up**
The arrowheads indicate the top of the package. They must always point upwards. Otherwise the contents could be damaged.

**Fragile**
Indicates packages with fragile of sensitive contents.
Treat the package with care. Do not drop or subject to impact.
Protect against moisture
Protect the package against moisture and keep dry.

Protect against heat
Protect packages from heat or direct sunlight.

5.3 Transport inspection
Inspect the delivery for completeness and transport damage on receipt.

In case of externally visible damage, proceed as follows:
- Do not accept the delivery, or only accept it provisionally.
- Note the extent of the damage on the transport documents or on the delivery note of the transport company.
- Initiate complaint.

INFORMATION!
Complain of all faults, as soon as they are apparent. Only in this way can claims for compensation be made within the applicable periods.

5.4 Transport
Transport of the Collamat NG must be performed with a forklift truck or suitable straps. The lifting equipment must be designed for the weight of the machine.

For future transport:
- Close all open connections with protective caps (to prevent entry of dirt and water)
- Secure loose cables
- Protect against vibrations
- Blow out all process and operating media
- Secure the machine before transport (e.g. screw onto a pallet)
- Transport the machine with a forklift truck and set down, or secure with straps and lift with suitable lifting equipment.
5.5 Packaging

Packaging

The individual packages are packed according to the transport conditions to be expected. Only environmentally compatible packaging material is used for packaging.

The packaging should protect the individual components from transport damage, corrosion etc until they are assembled. Therefore, do not destroy the packaging and only remove it shortly before assembly.

Handling of packaging materials

If no agreement has been made for the return of the packaging, separate the materials according to type and size, and re-use or recycle them.

BEWARE!
Environmental damage through incorrect disposal!

Packaging materials are valuable raw materials, and in many cases can be re-used or processed and recycled.

Therefore:
- Dispose of packaging materials in an environmentally-friendly manner
- Observe local regulations for disposal. If necessary commission a specialist company with disposal.

5.6 Storage

Storing the packages

Store the packages under the following conditions:

- Do not store in the open.
- Store in a dry dust-free place.
- Do not expose to aggressive media.
- Protect from sunlight.
- Avoid mechanical shocks.
- Storage temperature: -10 to +60 °C
- Relative humidity: 95% not condensing
- For storage of longer than 3 months, check the general condition of all components and packaging. If necessary refresh or renew the conservation.

INFORMATION!
In some circumstances the packaging has information on storage, which exceeds the requirements stated here. These are to be observed accordingly.
6 Installation and assembly

6.1 Safety

Basics

**WARNING!**
**Danger of injury due to incorrect installation!**
Incorrect installation can cause serious injury or damage.
Therefore:
- All installation work may only be carried out by qualified personnel authorized and instructed by the operator.
- Before starting work, sufficient space for assembly should be made.
- Pay attention to tidiness and cleanliness at the assembly site! Loose, stacked or scattered components and tools are a source of accidents.
- During assembly:
  - take care that all components are in the correct location and are correctly seated.
  - Install all fixing elements correctly.
  - Observe the correct screw-tightening torques.
- Before switching on, ensure that all covers and safety devices are correctly installed and function correctly.

**DANGER!**
**Danger of death due to electrical current!**
Contact with live components can cause danger of death.
Electrically driven components can start to move without warning and cause extremely serious injuries.
Therefore:
- Before starting work, disconnect the power supply and secure it against being switched on again.
- All work on the electrical equipment, on individual electrical components and on the connections may only be performed by qualified electricians.
Personnel

- The installation may only be performed by trained specialist personnel.
- Work on electrical equipment may only be carried out by qualified electricians.

Personal protective equipment

For all work during installation and start-up, the following personal protective equipment should be worn:

- Industrial safety clothing
- Protective gloves
- Safety footwear
- Eye protection

Securing against switching on again

**DANGER!**

**Danger of death due to unauthorized switch-on!**

During installation, there is a danger that the power supply will be switched on again without authorization. This causes danger of death for those in the danger area.

Therefore:

- Before starting work, disconnect all power supplies and secure them against being switched on again.

6.2 Preparation

Before starting assembly, check:

- that the local power supply corresponds to the details on the identification plate and the specifications in the technical data.
- that the installment conditions are complied with (→Requirements of the installation location).
- that the local ambient conditions are complied with (→Operating conditions)
- the assignment of responsibilities for installation and start-up.
- that all the necessary documents are available.
- the completeness and good condition of all the required tools and aids.
- compliance with local safety regulations
6.3 Requirements of the installation location

Foundations
The surface where the machine is installed must:
- be sufficiently load-bearing
- have a non-slip surface
- be level

Installation conditions
The machine must be installed so that:
- it stands securely.
- the safety of personnel is ensured.
- adequate illumination is available.
- all parts of the machine are freely accessible, and sufficient space is available for maintenance work and measures to remedy faults.

With regard to the space for movement and the escape routes, the regional or national regulations for the installation site must be observed.

Stability
A Collamat NG mounted on a movable stand (adjustable or fix) has to be stable.
The stability of the complete unit has to be guaranteed for an inclination of +/- 10° - see drawing below.

Stability of a Collamat NG unit mounted on a mobile column
6.4 Assembly

The Collamat NG is - by default – not shipped in a complete assembled condition – depending on the type of packaging and the order volume. The different sub-assemblies have to be attached to the traction unit housing at the operating company. This is normally done by the Collamat dealer of your region.

**Unwinder unit**

Screw the unwinder unit to the traction unit housing. Use the attached four mounting screws (M4x16).

The unwinder flange is located just above the side connection plate „POWER“.

**Modular rail and applicator**

If not already done - screw the square flange to the modular rail. Use the attached four mounting screws (M6x25).

Screw the square flange (see above) to the traction unit housing. Use the attached mounting screws (M6x16). The place of installation is the flange located just below the side connection plate „SIGNALS“.

Before fixing the modular rail to the traction unit housing, the different cables and wires going to the applicator unit have to be feed through the modular rail. This are:

- Applicator cable - flat ribbon cable (10-pin with connector)
- Grounding wire - green/yellow (PE)
- Special applicator cable - flat ribbon (20-pin w. connector) – optional
- Slide mounting clamp to the modular rail (if the mounting point for the labeling unit is the modular rail).

Connecting the applicator unit to the modular rail:

- The applicator unit is already pre-mounted.

Connect the applicator cable (10-pin connector) to the X1 plug (on the applicator board).

Connect the special applicator cable (20-pin connector) to the X3 plug on the applicator board (optional).

Connect the grounding wire (green/yellow) to the blade terminal (PE mark) on the applicator board.

Do not twist the flat ribbon cables!

Now - fit the applicator unit to the modular rail. Push the applicator unit against the end of the modular rail. If the cables and wires are too long to fit into the applicator housing, fold the cables and push them into the modular rail. Be careful not to injure / squash any cable/wire.

Fix the applicator with the tensioning piece to the modular rail. Use the four attached mounting screws. Screw the applicator cover (yellow) to the applicator housing.
INFORMATION!

The maximum load an operator of a Collamat NG unit is allowed to lift has been regulated in the corresponding directives EG 90/269/EWG respective 89/391/EWG.

Label rolls - depending on outer diameter and paper width - can reach a total weight of up to 28kg.

The operating company is responsible for the health of their operators.

Please use lift equipment or use optional paper deflection tools - if the weight of the used paper roll exceeds 15kg.

To ensure the stability of the labeling unit, the unwinder unit has to be fixed / supported with a special reinforcement set - if the weight of the used paper roll exceeds 15kg.

(see attachment in the Technical Manual).

6.5 Mounting

INFORMATION!

Directives / Standards / References:

According to the machine directives 2006/42/EG:
- a machine is a „not complete machine“, if the unit is not able to fulfill all functions the unit has been build for.

This are - by default - units designated as part of a bigger unit. Mounting parts, controlling parts, safety devices and all the other parts combining the “bigger unit” are normally delivered by the operator or a commissioner of the operator. Collamat AG is responsible only for the delivered parts of the „bigger unit“ (see also the corresponding EG-Declaration of Incorporation of this unit – you will find an example of this declaration in the attachment of this manual).

- a machine is a “machine”, if the unit is able to fulfill all functions the unit has been build for - without attaching additional devices to the unit (see also the corresponding EG-Declaration of Conformity of this unit – you will find an example of this declaration in the attachment of this manual).
Mounting – step by step

1. Remove all transportation safety devices/locks and tapes.

2. Bring unit to the designated location.

3. Mount unit on the designated support (column, frame of another unit). Be sure the unit is aligned in parallel to the other units – like conveyor belt, pick&place devices, frames, …).

4. Be sure moving are not blocked by other parts.

5. Install a safety fence (if required → Safety equipment).

6. Install a pressure air line (if required). Make sure the line is save (tripping hazards).

INFORMATION!
The safety equipment (optional) makes sure no labeling sequence can be triggered without explicit permission.

This can be done with the following technical und/or organizational sanction:

– A safety switch in the safety chain disables the carriage of goods (conveyor belt).
– The carriage of goods can only be enabled after a specific acknowledge command has been given.
– The location where a acknowledge command can be triggered is a location outside of the safety area..
– Before triggering the acknowledge command - be sure no person is in the safety area.
6.6 Electrical connections

Mains power

1. Check the voltage selector on the power inlet module (side connection plate „POWER”). If you have to change the voltage selector, the two primary fuses in the power inlet module have to be replaced too.

   Please use ONLY slow blow fuses with the correct value. Slow blow fuses are marked with a “T” - for example 6.3AT.

   The fuses are located underneath the voltage selector cover. Use a screwdriver to open the cover. Remove the red fuse holder. Replace the fuses. Slide in the fuse holder. Close the cover.

2. The power outlet plug is designated to connect Collamat NG peripherals ONLY!

3. Plug in power cord (line cord) into a local power outlet. The power outlet has to be secured with 10A.

   Don’t create stumble traps with the line cord!

4. Connect control lines, good scanner cable and (optional) incremental encoder cable to the side connection plate and/or to the (optional) connection box/module.

   Don’t create stumble traps with the cables!

<table>
<thead>
<tr>
<th>Supply voltage</th>
<th>Fuse</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>115 VAC (50/60 Hz)</td>
<td>6.3 A</td>
<td>Slow blow (T)</td>
</tr>
<tr>
<td>230 VAC (50/60 Hz)</td>
<td>3.15 A</td>
<td>Slow blow (T)</td>
</tr>
</tbody>
</table>

Side connection plate „POWER“ standard version and IP54 (optional) version
6.7 Wiring

For a fail-safe operation of the Collamat NG a few important points have to be remembered:

- Installation only by skilled labor.
- Ambient air temperature, dirt, dust, splash water
- Respect the specific mounting directions of the optional conveying equipment and other user specific subassemblies.
- Respect the Collamat NG installation- and mounting - directions
- Electromagnetic/electrostatic interfering fields
- Directives of the safety chain

Electromagnetic/electrostatic interfering fields can lead to unexpected errors in the unit. Clumsy wiring during the installation phase or while servicing a unit is often the cause of an unstable unit.

Therefore, the following points have to be observed while working on the wiring:

- Separate installation of control- and power- lines
- Use shielded cables
- Ground all peripherals (PE)
- Use peripherals which fulfill the EMC directives
- Use additional power filters (dirty power line)
- Connection of good scanner and optional incremental encoder – see chapter 9 – Connections + buildup

6.8 Inspection on conclusion of installation work

- Check that the installation is correct.
- Check the operator’s own safety devices for completeness, condition and safe functioning.
- Instruct operating personnel and establish the place on the machine where the operating instructions are to be kept.
- After complete installation and checking of the machine and instruction of the operating personnel, the machine is ready for start-up.
7 Start-up and operation

7.1 Safety

Basics

WARNING!
Danger due to incorrect start-up!
The start-up requires trained specialist personnel
Errors in start-up can cause dangerous situations or considerable damage.
Therefore:
- Only have start-up work performed by the manufacturer’s employees or his representatives, or by trained personnel.

WARNING!
Danger of injury due to incorrect operation!
Incorrect operation can cause serious injury or damage.
Therefore:
- Operation may only be carried out by sufficiently qualified personnel authorized and instructed by the operating company.
- All operating steps must be performed according to these operating instructions
- Before starting work, ensure that all covers and safety devices are correctly installed and function correctly.
- Safety devices must never be put out of action during operation.
- Pay attention to tidiness and cleanliness in the work area! Loose, stacked or scattered components and tools are a source of accidents.

After start-up and performance of test operation by the manufacturer, the machine is handed over to the operating company.

After this, the intended use by the operating company with the observation of these operating instructions is permissible.

Personal protective equipment

For all work during operation, the following must be worn:
- Industrial safety clothing
- Protective gloves
- Safety footwear
- Eye protection
7.2 Adjustments

Safety

WARNING!
Danger caused by „powered ON“ labeling unit!

Before you do all the necessary mechanical adjustments on the labeling unit, the unit has to be “switched off”. Remove the power cord to prohibit an unauthorized “power ON” of the unit!

Before you turn the mains power switch, check the following items:

- Visual check of the traction unit an all peripherals
- If available: hook up the safety switch (LOCK input)
- Adjust the height of the unit (distance between dispensing edge (and pressure roller) and expected good surface
- Thread up the labels (paper web)
- Adjust the declination of the dispensing edge and the applicator unit
- Adjust the pressure roller (applicator)
- Align the label sensor receiver head
- Align the operator panel (turnable)
- Power-on the Collamat NG (mains switch)
- Check the operator panel (background illumination on?)
- A few seconds after power-on: see message on operator panel
- Error message ? (see error handling)
- Blue LED (and maybe white LED) on operator panel?

Adjustment of the height of the dispensing edge above the product

To get a perfect placement of the label on the good, the correct adjustment of the height of the dispensing edge has an important influence.

- Dispensing edge to high (above good): the label tends to glide on the good or generates bubbles.
- Dispensing edge to low (above good): dispensing edge tends to scratch on the good or/and tends to hold back the moving goods.

The correct high adjustment of the dispensing edge (and the pressure roller) has to be checked with a test run.
Thread up the labels

Load the labeler with the required paper web (see drawing below):
- Unwind the paper web from the paper roll (about 1m).
- Remove all labels on this 1m piece.
- Remove the pressure roller from the traction roller by turning the button (1) on the pressure roller axle.
- Wind the backing paper around the dispensing edge (see drawing below).
- Wind the backing paper around the traction roller (see drawing).
- Wind the backing paper around the rewinder core (2).
- Secure the paper in its position with the rewinder clamp.
- Close the pressure roller (turning the button (1) on the pressure roller axle).
- Adjust the unwinder disc(s) and the paper guide rings (slide to the outer edge of the paper web).

Thread up the paper web (Collamat NG S W P=L)

1 – Red paper web: outside labels
2 - Blue paper web: inside labels
Thread up the labels

Right version

Thread up the paper web (Collamat NG S W P=R)

Red paper web: outside labels
Blue paper web: inside labels

Paper path Collamat NG LEFT
Paper path Collamat NG RIGHT
7.3 Control and display elements

Operator panel

The operator panel is used to operate and configure the Collamat NG. The operator panel is mounted on the top deflection roller (roller between unwinder and paper break). For a perfect few and an ergonomic access - the panel is turnable (0…360°).

If the standard mounting of the operator panel is not suitable (horizontal - or over head installation), the panel can be place on an adequate place elsewhere around the labeler. The optional set: "external operator panel set" contains all the necessary parts for an easy installation.

![Operator panel image]

1 run LED  green
2 stop LED (pause or error)  blue
3 optional LED  white
4 LCD display with background illumination  green

Technical Data - Operator Panel

Display:
- 4 lines a 20 characters
- Black font on green or white background
- Illuminated background

LED:
- green LED: unit in RUN mode (Online)
- blue LED: unit in STOP mode (Pause)
- white LED: special function

Nonstop function: Nonstop sub functions will be indicated with additional LED combinations (see chapter NONSTOP)

Key:
- run / stop - switch between RUN- and STOP-mode
- - switch between STOP- and RUN-mode
- feed: feed a label, special function, ...
- enter: enter into menu, confirm selection/value, ...
- esc: exit from menu, reject selection/value, ...
- arrow up: increase value, selection upwards, ...
- arrow down: decrease value, selection downwards, ...
7.4 The most important mechanical adjustments

Applicator - Adjustments

Inclination of the dispensing edge

For a perfect relieve of the label from the backing paper - at the tip of the dispensing edge - the inclination / down tilt of the dispensing edge has to be adjusted accordingly. Prevent a too large inclination of the dispensing plate by lifting or lowering the whole dispensing unit.

Course of action:

Open wing nut (2) to loosen the turning part (3), pull dispensing unit forward until the whole unit can be turned. Adjust to the desired tilt angle, fasten the wing nut.

INFORMATION!

A too big tilt angle adjustment of the applicator can cause unwanted friction of the incoming and leaving paper web. In this case - guide the leaving paper web dispensing edge to traction roller) underneath the 2nd. deflection roller.
Pressure roller of the applicator unit

The pressure roller has to be adjusted according to the label length and label width:

**Course of action:**
- Horizontal displacement lever fixed with two displacement screws 2.
- Vertical adjustment of pressure roller fixed with hexagonal nut 1

![Diagram of pressure roller adjustments](image)

1. Hexagonal nut
2. Displacement screws

Applicator
Label sensor receiver (position) adjustment

The optical label sensor is responsible for an accurate label stop. The label sensor receiver head (1) can be slide laterally or can be removed for cleaning.

The optimal alignment position is in the middle of the paper web (this is true for neutral labels – not preprinted labels).

The distance between label sensor receiver head and label sensor sender light tube is about 1.2mm to 2.7mm. Try to keep this distance as small as possible. The label sensor receiver head should not scratch the surface of the label.

**Adjustment:**

Loosen the two black knurled head screws (3). Hold the sensor head in the required distance above the label sensor sender housing. Tighten the two screws to keep the sensor head constantly in this position.
Applicator

Label sensor receiver (position) adjustment

1  Label sensor receiver head
2  Label sensor sender housing
3  Knurled head screws

**INFORMATION!**

To reach a high switching accuracy, the paper web has to be kept under slight tension (see adjustment of paper break).

**Applicator**

Replacing dispensing edge rail

A corrupted or outworn dispensing edge rail has to be replaced. Procedure:

- remove the pressure roller unit (holding bow and roller) – 2 screws.
- remove the four holding screws on the dispensing edge rail (two on each side)
- replace the dispensing edge rail (1) with a new one.

**INFORMATION!**
The sharper edge of the dispensing edge rail has to be on top!
7.4.1 Traction unit - Adjustments

**Traction unit**

Positioning of the pressure roller

1. Fixing screw
2. Pressure roller

**INFORMATION!**
The pressure roller contains a self-aligning ball bearing (tumbler bearing). That’s why it is very important to align the pressure roller in the middle of the paper web.

**Traction unit**

Paper break

1. Paper break spring
2. Lift up lever
INFORMATION!
Always center justify the paper break spring on the deflection roller (middle of the label – between the two black paper guides/rings).
Use the lever (with black handle) to lift the spring for paper mounting and cleaning.

7.4.2 Unwinder unit - Adjustments

Unwinder unit

Adjust force of dancer spring

The spring force of the unwinder dancer arm can be easily adjusted.

Don’t apply to much force to the dancer arm – just enough to bring the arm in its release position (top).

Adjustment procedure:
Press the turning-button (1) and turn it into the desired position (hold the dancer arm with the other hand during this procedure to feel the force applied to the arm). By releasing the turning button now, the new position will be locked.

1 Turning button to adjust the dancer arm spring force (torque)
Unwinder unit
Adjust the break force

Released dancer arm: no paper is pulling on the dancer arm – the dancer is in the waiting position = **maximum brake force** – the unwinder is stopped by the break.

Dancer arm forced down by the paper web: the traction unit is pulling on the paper web – asking for paper from the unwinder. As soon as the dancer arm leaves the waiting position (released position), the break has to open – enabling the unwinder to supply paper to the traction unit.

**Adjustment:**
- Open the two fixing screws (1) on the break lever (use an open-end wrench nbr. 8).
- Place dancer arm (2) in to the release position (top arrester)
- Strongly press brake lever (3) to the rear unwinder disc (4)
- Fasten the two fixing screws (1)
- Check the break function

---

7.5 Operator panel adjustments

Operation and configuration of a Collamat NG is done on the operator panel – by default – mounted on the top deflection roller of the traction unit. The meaning of the different parameter is explained in the following chapter.

The most important parameters are:
- Labeling speed (m/min)
- Predispensing (mm)
- Position (mm)
- Dispense / eject a single label (test/adjustment) with the feed key (on operator panel or applicator housing)

Description of the most important parameters:
**Adjust dispensing speed**

The speed parameter has to be set equal to the speed of the good (conveyor belt).

- Dispensing speed lower than good speed: good can be overturned/tilt over by the "slow" label. The good tends to rip of the label from the backing paper. The backing paper could break – erroneous labeling!
- Dispensing speed too fast: results in bubbles and or crinkles on the label placed to the good = poor labeling quality – inaccurate labeling.

The dispensing speed can be set to a fixed value (dispensing speed = good speed) or the dispensing can be synchronized with the good speed (incremental encoder on conveyor belt).

Adjustment of the dispensing speed:
The setup is done on the operator panel

**Labeling parameter -> Speed**

The maximum dispensing speed depends on the Collamat NG version (30...100m/min)

Be sure there is a big enough gap between the goods. Goods with no or too little gap have to be separated.

**Adjust predispensing**

The dispensing distance is the distance from the dispensing edge to the leading edge of the label placed directly above the dispensing edge.

Adjustment of the predispensing distance:
The setup is done on the operator panel:

**Labeling parameter -> Predispensing**

The predispensing of the label is done (corrected)
- if the value has been enlarged: immediately
- if the value has been reduced: after dispensing one label.

A minimum predispensing value is needed to decelerate the stepper motor from the dispensing speed to the stop position.

**HINWEIS!**

A dispensing value larger than the label length value can generate faulty labeling results!
Adjust position

The **Position** value is a delay value indicating the distance between triggering the good sensor (start the labeling cycle) and triggering the stepper motor (start moving the label). Changing the position value will change the placement of the label on the good. A tedious mechanical position adjustment of the good sensor is not needed anymore.

Adjustment of the position distance:
The setup is done on the operator panel:

**Labeling parameter -> position**

A minimum position value is needed to accelerate the stepper motor to the desired dispensing speed.

**INFORMATION!**

A position value larger than the gap between two goods can generate faulty labeling results!
7.6 Label scanner (LSC) - technical explanation

Automatic label scanner - LSC

The Collamat NG has a built-in automatic label sensor function. This function is able to calibrate/teach the label sensor (called LSC). The function of a LSC is to detect the beginning/end of the label on the backing paper (paper web). The LSC is a special designed photo sensor consisting of a reader part (called the LSC receiver or LSC head) and a sender part (called the LSC light tube transmitter bar). The LSC receiver is used to measure the transmitted light passing through the backing paper (gap values) or passing through the backing paper and the label (label values).

This measurement is done every 34.7us. The measured light value in the LSC receiver is called LSC-Level (an ADC value between 0 and 4095 (12 bit resolution), whereas higher values show gap readings and lower values show label readings.

Again: transmitted light from the LSC sender passing through the gap part of the paper web will show a larger reading on the LSC receiver then transmitted light passing through the backing paper + label - see diagram!

Diagram

1. Leading edge of the label on the dispensing edge stopped at the predispensing position - adjustment of the LSC_Threshold values after calculation based on the old LSC_Threshold values, the LSC_max value and the Stop criteria - waiting for good scanner signal (GSC) ……
2. Leading edge of gap = trailing edge of the label
3. Leading edge of the label = trailing edge of the gap  
whereas:  Stop criteria = LSC_max – LSC_ThresholdL  
and:  LSC_ThresholdH – LSC_ThresholdL = Stop criteria / 4
Normal operation

The automatic threshold adjust and detect function is used to define whether gap values or label values are read by the LSC receiver. The threshold levels will be adjusted automatically (up and down) based on the measured values of the labels passing the LSC. LSC levels higher than LSC_ThresholdH are identified as gap values and LSC levels lower than LSC_ThresholdL are identified as paper (paper = backing paper + label) values.

The LSC_max value (measured within the gap phase) and the actual LSC_Threshold values will be used as reference values to adjust the according LSC threshold levels. The threshold levels are normally set to a level between the normal paper level and the maximum level (LSC_max). This adjustment is done after each label being feed through the LSC ( = in stop position).

Label out situation

If the leading edge of a label is not detected within a defined distance (2,5 times label length), the system will be stopped and the “label out” flag will be set (resulting in an error- or warning-message). This situation is normally cleared by pressing the Feed button on the operator panel or on the applicator housing. Pressing the feed button in a “label out” situation is going to start the automatic adjust function = feeding 1,25 * label length through the LSC = one label gap will pass through the LSC. After this the threshold level is recalculated and set according to:
- LSC_ThresholdL = LSC_max – LSC_Stop criteria
- LSC_ThresholdH = LSC_ThresholdL + (LSC_Stop criteria / 4)

The paper is now forwarded (feed) until the next leading edge of a label has been detected – plus an additional distance (defined as the predispensing position distance) = label stop position.

Summary: pressing the FEED button in a label out situation will normally feed two labels to get a proper recalibration and a correct positioned label on the dispensing edge. If the “label out” situation comes up again, check the following situations:

Label length - the defined label length value is set too short. This is solved by entering the correct label length in the “Labeling parameter” – “Label length” - menu … or …

Stop criteria - the Stop criteria level is not set to an appropriate value. This may be solved by editing the Stop criteria value in the “Service” – “LSC” - menu or by running the “Calib. Lbl. Scanner” in the “Labeling parameters” - menu.
Label scanner calibration

If the labels are not detected correctly (more than one stop per label+gap sequence or stop with label out situation), the label sensor may be out of calibration. To solve this problem, the Label scanner calibration function can be used (“Label parameter” – “Calib- lbl. Scanner” – menu). This function will do a complete new configuration of all important label sensor parameters – like the LSC_Thresholds, the Stop criteria and ….

Press the Enter-key on the operator panel to start the calibration and keep pressing it until at least 3 label gaps have passed the LSC. During this period the average- (LSC_Average) and maximum - level (LSC_Max) is measured and updated continuously. These two figures are used to set the threshold levels according to this formulas:

- LSC-Stop criteria = (LSC_max – LSC_Average) / 2
- LSC_ThresholdL = LSC_max – LSC-Stop criteria
- LSC_ThresholdH = LSC_ThresholdL + (LSC-Stop criteria / 4)

The LSC Average is an average of all sampled values (paper and gap). The defined label length has no influence in this calibration mode.

The values are recalculated continuously (each 34.7 us) and if a correct value has been found this will be shown by flashing the white LED on the operator panel while gap values are measured (LSC level higher than LSC_ThresholdH).

There might be situations where the Label scanner calibration will not work – this could be if the contrast (= difference between Average level and Max level) is too low.

Solution: Try to manually edit the Stop criteria Value in the “Service” – LSC” - menu. Verify the function by pressing the FEED-key.

- One stop per label- and gap- distance forward feed.
- Check the predispening position distance = Label scanner to leading edge of label on the dispensing edge.
Example:
Manually enter the Stop criteria value

Find out the correct Stop criteria Level for a label with black imprint bar.
- Open the LSC read function in the menu “Service” – “LSC” – “LSC VALUE”
- Slowly slide the label through the LSC (S) - see above
- Note the limit values like – LSC_Max (H), LSC_Label (M) and LSC_Min (L)

Example:
LSC_Max (H) = backingpaper (gap) – see number 2 in above diagram
LSC_Label (M) = backingpaper + label (paper) = look for brightest spot on label
LSC_Min (L) = backingpaper + label with imprint = darkest point on label

Measured values: LSC_Max = 3450
LSC_Label = 1910
LSC_Min = 1480

Calculation of Stop criteria value = (LSC_Max – LSC-Label) / 2
= (3450 – 1910) / 2 = 770

LSC_Threshold is around: LSC_Max – Stop criteria = 3450 – 770 = 2680

Modify the measured/calculated Stop criteria value in the “Service” – “LSC” – “Stop criteria” – menu of the operator panel.
Verify the proper function of this change by pressing the FEED-key.
Optionaler digitaler Etikettenensor

Bei bestimmten „heiklen“ Etiketten ist eine automatische „Etikettensensor-Kalibrierung“ des/der eingebauten analogen Collamat Sensor(en) unter Umständen nicht möglich (zB. wenn der Kontrastunterschied zu klein ist (Differenz zwischen LSC_Average und LSC_Max Level). Hier empfehlen wir die Verwendung eines speziellen optionalen Etikettensensors, der für diese Aufgaben speziell konzipiert wurde (Kapazitiver Sensor, Ultraschall Sensor, …). Dieser Sensor wird an den Sensoranschlüssen „Sensor 2“ auf dem Applicator Interface Board HMC0605 resp HMC0606 angeschlossen (siehe Kapitel 9.5.2 – Anschlüsse X2-10 bis X2-12).

Hinweis:


Label length auto function

The label length value may be either manually entered or set by the Auto function. This is done in the “Labeling param.” – “Label length” – menu.

Note: The Auto function will not work if the labels scanner has not been correctly calibrated.

Press the Enter-key on the operator panel to start the Auto function and keep pressing it until at least 2 label gaps have passed the LSC. After the Enter key is released the label is forwarded to the predispensing position and the measured distance between two gaps is saved in the label length parameter. The speed used during this function is the speed configured as the start speed of the stepper motor.

Dispense a label (test) FEED - key

Pressing the FEED key on the operator panel or on the applicator housing will start a single labeling sequence (one label) without triggering the good scanner. The FEED speed can be adjusted on the operator panel.

This function is used to test the parameter adjustments before switching the unit to RUN mode.
7.7 Nonstop Etikettierung (NS)

Nonstop Function  The nonstop function is used to control and supervise an interrupt-free labeling. The function controls the flow of goods between the first unit in the line (MASTER) and the second (backup) unit (SLAVE) und is changing the control of the units in the respective right time from master to slave or from slave to master (from the working (ready) unit to the waiting (standby) unit).

The function for master and slave are different.

You will find detailed information’s to the nonstop cabling and to the nonstop course of action in the „Technical Handbook – Collamat NG Series“.

Installation (assembly) of the two units in nonstop mode (unit type: right)

left: Master – right: Slave

1 = Good sensor (Master GSC)
2 = Good sensor (Slave GSC)
3 = Incremental encoder (Master- + Slave-TACHO)
4 = Nonstop-Cabling (HMC06CA29)
Nonstop Display

Master

The special Nonstop-Display dynamically shows the condition/state of the nonstop unit. The display of the Master unit is the main- and control display. The Master is the first unit in good flow direction. The display shows the actual setting (MASTER) and the status of the Master, the value of the Nonstop-Counter – as well as some operator directions.

- 1. Line: designates the unit as Master and shows its status. The Master is the first unit in direction of the good flow.
- 2. Line: shows the value of the Nonstop Counter **GOODS MA-SL**. The Nonstop-Counter counts the number of products between master and slave (between the corresponding good sensors). Editing the Nonstop-Counter: The editing window will be opened by pressing the \( \downarrow \) key (arrow key downward) on the operator panel (see Edit Nonstop-Counter).
- 3. Line: operator direction: how to change-over from Master to Slave
  \( \uparrow \) = arrow-key upward (\( \uparrow \)) = changeover from active (Ready) Master to passive (Standby) Slave.
- 4. Line: operator direction: how to switch from this „Nonstop Info“ display to the standard „Info display“. \( \langle \text{esc} \rangle \) = esc-key on operator panel

Nonstop Display

Slave

The Nonstop display of the Slave dispenser is different to the one of the Master. The second line „GOODS MA – SL“ will not been shown, because the Master „only“ is able to count and control goods.

- 1. Line: designates the unit as Slave and shows its status. The Slave is the second unit in direction of the good flow.
- 2. Line: empty line
- 3. Line: operator direction: how to change-over from Slave to Master
  \( \uparrow \) = arrow-key upward (\( \uparrow \)) = changeover from active (ready) Slave to passive (standby) Master.
- 4. Line: operator direction: how to switch from this „Nonstop Info“ display to the standard „Info display“. \( \langle \text{esc} \rangle \) = esc-key on operator panel
Nonstop Details

**Status** (Nonstop Info-Display - 1. Line right):
- **ready** = dispenser is active
- **standby** = dispenser is passive (ready for „changeover“)
- **changeover** = changeover from active (ready) to passive (standby) unit
- **stopped** = dispenser stopped

**White LED** (above feed-key – operator panel):
- **White ON** = dispenser is active (ready)
- **White OFF** = dispenser passive (standby) or stopped (stopped)
- **White blinking** = there is an active warning input or a not confirmed warning message on the unit in question:
  → A warning on an active unit (ready) will be indicated as:
  - long pulse (LED 0.96s ON / 0.04s OFF)
  → A warning on a passive unit (standby) will be indicated as:
  - short pulse (LED 0.04s ON / 0.96s OFF)

**Green + Blue LED** (near run/stop-key – operator panel):
- **Green+Blue blinking** = changeover from active to passive unit (changeover)
- **Green ON and Blue OFF** = dispenser not stopped (ready or standby)
- **Green OFF and Blue OFF** = dispenser stopped (stopped)

**Dispenser-Changeover** (changeover):
Changeover from Master to Slave resp. from Slave to Master – can be activated with the following conditions:
- **Error:** Dispenser error (set to „stop“ in the menu CONFIGURATION - Error Handler)
- **Warning:** Dispenser warning (set to „warning“ in the menu CONFIGURATION - Error Handler)
- **run/stop:** run/stop-key on operator panel (if ever possible – use the „Start changeover“-key (верх) to start the changeover procedure – see Nonstop-Display MASTER)
- **STOP:** external STOP-input – only on active dispenser (ready)
- **START:** external START-input – only on stopped dispenser (stopped)
- **CH-OV:** external CH-OV-input (COUNTER) = equal to function used by pressing the upward arrow-key (верх) on the operator panel (changeover)!
  This function/input is enabled (assigned as “change-over-function) only if the nonstop mode is set to master or to slave. If the nonstop mode is set to OFF, this input will be assigned as COUNTER-input (default).

**Control signals** (Nonstop-cabling / wiring):
Master- and Slave-dispenser are connected together with a special 15 wire nonstop cable. This cable is used to interchange all the control- and status-signals between master and slave. More to that can be found in the „Technical Manual Collamat NG Series“.

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Collamat NG Series

Start-up and operation

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66
Activate the sub menu „Nonstop–Counter” (GOODS MA – SL) - from the „Nonstop Display” Master – by pressing the arrow-key downward (▼).

This sub menu can also be accessed through the normal menu path „LABELING PARAMETER“–„NONSTOP COUNTER“.

Before starting a nonstop unit you have to check a few points:
Count the amount of products between master and slave.
If there are products between master and slave:

- you have to remove the products and clear the Nonstop-Counter
- if the products are NOT removable (endless products, foil, film, forms,…), the Nonstop-Counter has be edited accordingly.

<table>
<thead>
<tr>
<th>LABELING PARAMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOODS MA-SL ▲</td>
</tr>
<tr>
<td>2 ▼</td>
</tr>
</tbody>
</table>

Error handler in Nonstop Mode

- a **WARNING** on one of the two dispensers will automatically start the changeover mode (switching from the active unit to the standby unit). The correct timing of the switching procedure will be controlled by the master unit only. The cause of the warning will be shown on the erroneous unit by displaying a corresponding warning message and the power output **WAR** will be set.
- With one of the units in „stopped“ condition and the active (ready) unit getting into a **WARNING** condition -> the active unit is not able to start the changeover procedure – meaning the active unit will continue with labeling until an error will stop the unit or the other unit will get from stopped- to standby- state.
- an **ERROR** on one of the two dispensers will automatically start the changeover mode (switching from the active unit to the standby unit). The correct timing of the switching procedure will be controlled by the master unit only. The cause of the error will be shown on the erroneous unit by displaying a corresponding error message and the power output **ERR** will be set.
- With an active master getting into an error situation -> the passive (standby) unit is normally be able to take over.
- However – if an active slave getting into an error situation (and the master is in standby) -> the master is able to take over ONLY if there are NO products between master and slave.
- With an active slave getting into an error situation - and products between master and slave-, the so called NONSTOP-ERROR will be activated – meaning that both units will be set to stop mode (stopped) immediately and the corresponding nonstop error messages are shown on both units.
- Also with an active slave getting into an error situation and the master is in stopped condition, the NONSTOP-ERROR will be activated.
- A nonstop error condition will be communicated form slave to master by sending a short pulse on the NSTP-OUT line from the slave to the master.

More operator panel settings will be shown in the next section of this chapter!
7.8 Menu structure navigation

7.8.1 Startup - power up

Display shown directly after power-up of the unit:

Line 1: COLLAMAT AG
Line 2: OFFLINE
Line 3:
Line 4:

Display is shown a few seconds after power-up:

Line 1: Version x.xxx
Line 2: Comp.: dd/mm/yyyy
Line 3: Booting....
Line 4:

Display a few seconds later = info display – for example:

Line 1: Position 30
Line 2: Predispensing 22.0
Line 3: Speed 38.00
Line 4: Status ready

With the “enter-key”: back to the main selection menu.
With the “feed-key”: a label will be dispensed.
With the „run/stop-key“: switching between stop- and run- mode
With the “esc-key”: always back to the Info-Display (and toggle between Info-Display and Nonstop-Info)

7.8.2 The menu tree

The main selection menu

The root of the menu tree is the main selection menu. This is the junction point to the different sub menus. Equal to most of all other menu structures, the cursor (arrow sign on the left hand side of the display) shows the selected menu line. The cursor can be moved up and down with the arrow keys.

- Labeling parameter
- Labeling memory
- Configuration
- Equipment/settings
- Password
- Service
The sub menus (selection and value input)

A selected line in the menu tree has to be confirmed with the „enter-key“ = entry into the corresponding sub menu.

A sub menu can again contain other sub menus. The Collamat NG menu structure applies up to six menu layers (layer 1 = main selection menu = root menu).

A sub menu can be an adjustment selection, for example:

- Menu: Service
- Sub menu: Stepper motor
- Sub-sub-menu: Turning direction
- Selection: > * Right
  - Left

Information: The * -sign in a selection menu shows the actual selection (this is Right in the example above)

A new selected line can be confirmed by pressing the “enter-key”

A wrongly made selection can be rejected by pressing the „esc-key”

A sub menu can be an adjustment of a value, for example:

- Menu: Service
- Sub menu: Stepper motor
- Sub menu: Step length ▲
- Parameter: * 0.05738 mm ▼

The value of the corresponding parameter (here 0.05738 mm) can be increased/decreased with the two arrow keys (▲/▼). The program does always fulfill a range check on the entered parameter.

Information: The * -sign shows the current stored value of the corresponding parameter.

A wrongly set value can be rejected by pressing the „esc-key“

The new set value can be confirmed by pressing the “enter-key”

In the following next pages the six menus will be graphically shown (menu by menu).

Menu layers 1 …6 (from left to right) = from top down to the bottom in the menu tree.
## Menu: Labeling Parameter

### Layer 1
- **Labeling param.**
- Labeling memory
- Configuration
- Equipment/settings

- **Level 1**
  - Operator 1

- **Level 2**
  - Operator 2

- **Level 3**
  - Supervisor

- **Level 4**
  - Factory

### Layer 2
- **LABELING PARAM.**
  - Label position
  - Speed selection
  - Predispensing

### Layer 3
- **LABELING PARAM.**
  - Label position
  - Position
  - * 30 mm

- **SPEED SELECTION**
  - Tacho
  - Fixed speed
  - Speed
  - * 38.00 m/min

### Layer 4
- **LABELING PARAM.**
  - Predispensing
  - * 22.0 mm

### Layer 5
- **LABELING PARAM.**
  - Label position
  - Predispensing
  - Speed selection
  - Predispensing
  - * 22.0 mm

### Layer 6
- **LABEL LENGTH**
  - Label suppression
  - Good suppression

- **LABEL LENGTH**
  - Auto
  - Label length

- **LABEL LENGTH**
  - Auto
  - >Label length
  - * 300 mm
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<td>&gt; Sel pred. speed</td>
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<td>&gt; Predisp delay</td>
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</tbody>
</table>

**Delays**

- Sel pred. speed
  - As product speed
  - > Fixed speed

- * 25.00 m/min

- Predisp delay
  - * 0 mm
Menu: Labeling memory

Layer 1
- Labeling parameter
  - > Labeling memory
    - Configuration
    - Equipment/settings
  - Password
  - Service

Layer 2
- Labeling memory
  - > Load program
  - Save program
  - Clear program

Layer 3
- Labeling memory
  - > Save program
  - Reset program
  - Program Name
  - Name: XYZ……. 1
  - *300 mm

Layer 4
- Labeling memory
  - > Reset program
  - Program Name

Layer 5
- Labeling memory
  - Save program

Layer 6
- Labeling memory
  - > Program name
  - Program name esc - abort
  - Prg. name enter - continue
  - max. 10 characters
  - Finish after 10 chars.
### Menu: Configuration

#### Layer 1
- Labeling param.
- Labeling memory
- **Configuration**
- Equipment/setting

#### Password
- Service

#### Layer 2
- **Configuration**
  - INFO DISPLAY
    - >Info line 1
    - Info line 2
    - Info line 3
  - Nonstop
  - Counter
  - Tacho puls length
  - Error handling

#### Layer 3
- **Language**
  - >English
  - German
  - Danish
  - French
  - Italian
  - Spanish
  - Finnish
  - Dutch
  - Swedish
  - Polish
  - Turkish
  - Portuguese
  - Language 13-19

#### Layer 4
- **Nonstop Mode**
  - >Label position
  - >Sensor 1
  - >Sensor 2
  - >Off
  - Master
  - Slave

#### Layer 5
- **Product Start Edg e**
  - >Normal
  - Inverted

#### Layer 6
- **Language**
  - >English
  - German
  - Danish
  - French
  - Italian
  - Spanish
  - Finnish
  - Dutch
  - Swedish
  - Polish
  - Turkish
  - Portuguese
  - Language 13-19
## Collamat NG Series

### Start-up and operation

<table>
<thead>
<tr>
<th>Layer 2</th>
<th>Layer 3</th>
<th>Layer 4</th>
<th>Layer 5</th>
<th>Layer 6</th>
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<tbody>
<tr>
<td><strong>CONFIGURATION</strong></td>
<td><strong>COUNTER</strong></td>
<td><strong>COUNTERINPUT</strong></td>
<td><strong>CONFIGURATION</strong></td>
<td><strong>ERROR HANDLING</strong></td>
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<tr>
<td>Nonstop Mode</td>
<td>COUNTER input?</td>
<td>*Labels</td>
<td>Tacho pulse length</td>
<td>&gt; Out of stock</td>
</tr>
<tr>
<td>&gt; Counter</td>
<td>Reset at pwr. ON</td>
<td>Products</td>
<td>&gt; Tacho pulse length</td>
<td></td>
</tr>
<tr>
<td>Tacho pulse length</td>
<td></td>
<td>Counter input</td>
<td>* 0.027489 mm</td>
<td>Rewinder stop</td>
</tr>
</tbody>
</table>

- (0.024599 mm blue encoder)

- Rewinder full
- Traction unit open
- Label low
- Motor error
- PIC offline
- Position delay
- Printer error
- Error input
- Dispenser locked
- No ready input
- Counter reached
- Predisp. to short
- max. speed
- Prod.dist. too short
- Predisp. too long
- Missed label
- Nonstop error
- Fast speed mode
### Start-up and operation

**Menu: Equipment/settings**

<table>
<thead>
<tr>
<th>Layer 1</th>
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<tr>
<td>Configuration</td>
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<tr>
<td>&gt; Equipment/settings</td>
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<tr>
<td>Password</td>
<td></td>
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<tr>
<td>Service</td>
<td></td>
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<table>
<thead>
<tr>
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<th>Layer 4</th>
<th>Layer 5</th>
<th>Layer 6</th>
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<tbody>
<tr>
<td><strong>EQUIPMENT/SETTINGS</strong></td>
<td><strong>EQUIPMENT/SETTINGS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; Manual feed speed</td>
<td>Manual feed speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicator type</td>
<td>Polarity IFEE</td>
<td>5.00 m/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EQUIPMENT/SETTINGS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual feed speed</td>
<td><strong>EQUIPMENT/SETTINGS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; Applicator type</td>
<td>APPLICATOR TYPE</td>
<td>WITH FLAP MAGN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polarity IFEE</td>
<td>Without magnet</td>
<td>&gt; Magnet control</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EQUIPMENT/SETTINGS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual feed speed</td>
<td><strong>EQUIPMENT/SETTINGS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; Applicator type</td>
<td>POLARITY IFEE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polarity IFEE</td>
<td>&gt; Active when feed</td>
<td>&gt; Active when stopped</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EQUIPMENT/SETTINGS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polarity IFEE</td>
<td><strong>EQUIPMENT/SETTINGS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stepper motor</td>
<td>REWINDER MOTOR</td>
<td>ETIKETTEN-BREITE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewinder motor</td>
<td>&gt; Label width</td>
<td>&gt; Normal labels</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wide labels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Password Service
Menu: Password

Layer 1
Labeling parameter
Program data

Configuration
Equipment/settings
> Password
Service

Layer 2
Layer 3
Layer 4
Layer 5
Layer 6

ROOT
Password

XXXX

PASSWD
> Select level
Change password***

SELECT LEVEL
Level 1
Level 2
> "Level 3
Level 4

PASSWD
> Select level
Change password***

ROOT
Password

XXXX

CHANGE PASSWORD
Level 2
Level 3
> "Level 4

CHANGE PASSWORD
Level 4

*** possible only in level 4

Info - Displays

The user definable “Info Display” can be accessed by pressing several times the <esc>-key. The contents of this display can be composed - line by line - in the menu “Configuration” – “Info display”. There will be a second “Info Display” - called the “Nonstop info display” or “Nonstop info” - if the nonstop mode is enabled (set to master or to slave). Toggling the <esc>-key = switching between (“standard info” and “nonstop info”).

Example of an Info-Display (standard info):

<table>
<thead>
<tr>
<th>Ebene 2</th>
<th>Ebene 3</th>
<th>Ebene 4</th>
<th>Ebene 5</th>
<th>Ebene 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>30.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>0.95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counter</td>
<td>678</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>50.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example of a nonstop-displays (Master-dispenser)

- use the arrow-key downward (▼) to start the sub-menu „Edit Nonstop Counter“!

Example of a nonstop-displays (Slave-dispenser)
Menu: Service

Layer 1

- Configuration
- Equipment/settings
- Password
- Service

Layer 2

- SERVICE
  - Stepper motor
  - Wake up mode
  - Lbl len tolerance

Layer 3

- STEPPER MOTOR
  - > Turning direction
    - Start speed
    - Acceleration

Layer 4

- MOTOR DIRECTION
  - > Right
    - Left

Layer 5

Layer 6

- SERVICE
  - Wake up mode
  - Lbl len tolerance

Last errors:
- Stop speed
- LSC
- Deceleration
- PIC DIST (STEPS)
- Step length
- Read PIC reg 0-50
- Inputs
- Outputs
- Set outputs
- Encoder speed
- Version
- Status

- SERVICE
  - Wake up mode
  - Lbl len tolerance

- WAKE UP MODE
  - > Paused
    - Ready

- SERVICE
  - Stepper motor
  - Wake up mode
  - Lbl len tolerance

- SERVICE
  - Tolerate number of missing labels
    - 1 labels

- SERVICE
  - Wake up mode
  - Lbl len tolerance
### Collamat NG Series

#### Start-up and operation

<table>
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<tr>
<th>Layer 2</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SERVICE</td>
<td>Last errors:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wake up</td>
<td>0 0 0 0 0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length tolerance</td>
<td>0 0 7 0 7 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;Last errors:</td>
<td>7 0 7 0 7 0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<tr>
<td>SERVICE</td>
<td>Last errors:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;LSC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC DIST (STEPS)</td>
<td></td>
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</thead>
<tbody>
<tr>
<td>SERVICE</td>
<td>LSC</td>
<td>LSC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;Stop criteria</td>
<td></td>
<td></td>
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<tr>
<td>LSC MAX</td>
<td></td>
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</tr>
<tr>
<td>LSC MIN</td>
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<tr>
<td>LSC VALUE</td>
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<tr>
<td>LSC THRESHOLD</td>
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<tr>
<td>Stop criteria</td>
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<tr>
<td>&gt;LSC MAX</td>
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<td>LSC MIN</td>
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<td>&gt;LSC MIN</td>
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<td>&gt;LSC VALUE</td>
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</tr>
<tr>
<td>LSC MIN</td>
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<tr>
<td>&gt;LSC VALUE</td>
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<th>Layer 6</th>
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</thead>
<tbody>
<tr>
<td>SERVICE</td>
<td>PIC DIST (STEPS)</td>
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</tr>
<tr>
<td>*</td>
<td>500</td>
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<tr>
<td>SERVICE</td>
<td>PIC DIST (STEPS)</td>
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<td></td>
</tr>
<tr>
<td>*</td>
<td>500</td>
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<th>Layer 6</th>
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</thead>
<tbody>
<tr>
<td>SERVICE</td>
<td>Read PIC reg 0-50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inputs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outputs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>1</td>
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<tr>
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<th>Layer 5</th>
<th>Layer 6</th>
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<td>SERVICE</td>
<td>Read PIC reg 0-50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inputs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>1</td>
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<tr>
<th>Layer 2</th>
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<th>Layer 4</th>
<th>Layer 5</th>
<th>Layer 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUTS</td>
<td>Ext. Input (CS0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ext. Input (CS2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ext. Input (CS4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>11111111</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Start-up and operation

### Layer 2
- **SERVICE**
  - Read PIC reg 0-50
- **Inputs**
- **>Outputs**
- **>Set outputs**
- **Motor test**
- **SET OUTPUTS**
  - Ext. Output (CS1)
  - Ext. Output (CS3)
  - Ext. Output (CS5)
  - * 00000000
- **Motortest**
- **>Motor test Interv.**
  - Motor test cont.
- **>Run**
  - Interval timer
- **>Interval timer**
- **MOTORTEST CONT.**
  - >Stop with <esc>

### Layer 3
- **OUTPUTS**
  - Ext. Output (CS1)
  - Ext. Output (CS3)
  - Ext. Output (CS5)
- **>Ext. Output (CS1)**
  - Ext. Output (CS3)
  - Ext. Output (CS5)
  - * 00000000
- **Outputs**
  - >Ext. Output (CS1)
  - Ext. Output (CS3)
  - Ext. Output (CS5)
- **Internal PB bit 0**
  - >Ext. Output (CS7)
- **Internal PB bit 0**
  - >Ext. Output (CS7)

### Layer 4
- **OUTPUTS**
  - Ext. Output (CS1)
  - Ext. Output (CS3)
  - Ext. Output (CS5)
- **Set outputs**
  - Ext. Output (CS3)
  - Ext. Output (CS5)
  - * 00000000
- **Set outputs**
  - Ext. Output (CS5)
  - >Internal PB bit 0
- **Motor test**
  - Ext. Output (CS5)
  - >Internal PB bit 0
  - * 0

### Layer 5
- **MOTORTEST**
  - Motor test cont.
- **MOTORTEST INTER**
  - Stop with <esc>
- **MOTORTEST INTER**
  - Up-/down-key = timer
  - Stop with <esc>
  - 60

### Layer 6
- **SERVICE**
  - Encoder speed
  - >Version
  - Status
- **Encoder speed**
  - >Version
  - Status
- **Encoder speed**
  - >Version
  - Status
- **Status**
  - Motor error

**RCM = Master**
- Version 0.78
**PIC = Slave**
- Version 1.26
7.9 Explanation of the menu structure

LABELING PARAMETER

7.9.1 Labeling param. - label position

Label position

The **Position** function is used to set a speed dependent labeling delay. This delay 2 causes a speed-independent positioning of the label 3 on the good 5 in feed direction 4. With this function it is not necessary to shift the goods scanner 1 to obtain a change of the label position on the goods.

1  Good sensor (GSC)  
2  Position  
3  Label  
4  Moving direction  
5  Good (product)

**INFORMATION!**

If the value of the position adjustment exceeds the goods distance, a malfunction will occur, because not each good is labeled. Predispensing and position influence the placement of the label on the goods. For a good result, first adjust the predispensing and then the position of the labels. (If afterwards the predispensing is changed, the position of the goods will also be changed.)

**INFORMATION!**

The position setting must not be used to compensate long distances. Otherwise goods will not be labeled correctly if the goods distance is shorter than the position setting. The position value is speed-independent. If with high speed the calculated position value is too small this will be indicated as an error. See diagram 'Position' in the Technical Appendix.
7.9.2 Labeling param. - Speed

Speed selection

Selection of the labeling speed mode:

**Fixed speed**
The dispensing speed of the unit is fixed to the adjusted value – set in m/Min.

**Tacho (variable speed)**
Set to Tacho speed mode and adjust the max. allowed speed in Tacho speed mode. The dispensing speed will be synchronized with the product speed (for example the conveyor belt). The measuring of the product speed is done with a (optional) incremental encoder attached to a conveyor belt (or to a similar moving part in the product line). The adjustment of the step length is done in the chapter „CONFIGURATION“.

7.9.3 Labeling param. - Predispensing

This function is used to adjust the predispensing parameter. The predispensing length (5) is the length between label sensor (3) and the leading edge of the label - placed on the dispensing edge (1).

1 dispensing edge  
2 label (on dispensing edge)  
3 label sensor line  
4 backing paper  
5 predispensing

**INFORMATION!**
The predispensing value has to be shorter than the label length value (including gap)!

7.9.4 Labeling param. - Label length

This parameter is used (among other things) to detect missing labels – due to bad label quality, air dried paper, old paper, ....

Value = label length + gap between two labels

- see also chapter 8.6 Label scanner (LSC) - explanation
7.9.5 Labeling param. - Label suppression

Label suppression

This function is used to enter the length forcing the label scanner to suppress the signals from the backing paper web and the label after having detected the leading edge of the label. This function is used above all when relatively transparent labels are used, for which the optical label scanner is disturbed by the print on the labels. This function also allows suppressing the rebounding signals of mechanical label scanners.

7.9.6 Labeling param. - Goods suppression

Goods suppression

The Good Suppression function is used, when a good (e.g. cartons for eggs) can supply more than one start pulse for labeling. The distance in mm indicates the section (mm) of product moving where the good scanner is disabled.

7.9.7 Labeling param. - Calib. lbl scanner

Calibrate label scanner

The function Calibrate label scanner is used to auto adjust the label sensor unit (sensor 1).
- see chapter 8.6 Label scanner (LSC) - explanation

7.9.8 Labeling param. - Counter

Counter

The menu counter is used to set / clear the counter variable and to activate / deactivate the counter.

- Reset to 0
- Start value (of the counter)
- Batch size (end value of the counter)

Reset to 0: set counter to 0.

Start value: set start value of the counter (0 – 1’000’000)

Batch size: set the end value of the counter (0 – 1’000’000)

The variable is used to adjust/set the job size. Once the counter has reached the end value, the labeler will act according to the setting of the error handler for error #14 – stop, warn or ignore.

The counter is activated if the “Batch size” value (end value) is > zero.
### 7.9.9 Etikettenparameter – Nonstop-Zähler

**Nonstop-Zähler editieren**

Dieser Menueeintrag dient zum Editieren des Nonstop-Zählers.

**Verwendung:** im Nonstop-Mode (nur beim MASTER Spender).

Bevor eine im Nonstop-Mode konfigurierte Anlage gestartet werden darf, müssen alle Produkte die sich noch zwischen dem MASTER und dem SLAVE befinden entfernt werden und der Nonstop-Zähler muss mit dieser Funktion auf Null (0) gestellt werden. Können die Produkte zwischen MASTER und SLAVE nicht entfernt werden (z.B. bei Formularetikettierung) so muss der Nonstop-Zähler entsprechend editiert werden:

**Nonstop-Zähler:** Anzahl der Produkte zwischen MASTER und SLAVE.

### 7.9.10 Labeling param. - labeling mode

**Normal labeling**

Select the labeling mode:
- Normal
- Multiple
- Corner

**Multiple labeling**

**Function of Multiple labeling:**

Two or more labels will be placed on the good 4 (product 2). The distance label to label 3 on the good is always the same. This labeling technique will mainly be used for formular labeling or for multiple packaging labeling.

**Procedure:**

Activate multiple labeling, set amount of labels per product, set distance label to label 3 – this will result in a physical label to label distance on the product of: label to label value 2 plus the gap value (this is the label to label distance 1 on the paper roll 1).

The smallest label to label distance on the product is equal to the gap value 1 – if the label to label value 2 is set to 0. (see drawing below).
Delayed predispensing

Delay predicted is also called “corner edge labeling.

Start position:
Label position on the dispensing plate: Delayed predispensing position „1“ (Delayed predisp pos – in menu) (see drawing).

Start:
- good triggers a new labeling sequence (GSC).
- wait for „Label position“ delay
- start moving the label -> apply label to product.
- the feeding of the label stops, as soon as the following label has reached the dispensing edge (length „2“ in the drawing – this is the standard “Label position” value).
- as soon as the product leaves the good scanner area (GSC), the delay function (adjustable in the menu – called Predisp delay) starts to run (delay in mm).
- After the defined “Predisp delay” (in mm) has been run off, the next label will be moved from the dispensing edge (leading edge of the next label) to the the predispensing position (“1”).
- The predispensing speed can be adjusted (see menu – Sel pred. speed)
  - like product speed
  - ix speed (adjustable)

Remarks:
- It is NOT possible to combine multiple labeling mode with delayed predispensing mode!
LABELING MEMORY

7.9.11 Labeling memory - Load program

Load program

The Load program function allows to load an existing labeling parameter-/configuration- set into the working area of the controller. There are 99 parameter-/configuration- sets selectable. Use the arrow keys to select the desired number. Abort a mistaken selection with the esc key.

7.9.12 Labeling memory - Save program

Save program

The Save program function allows to memorize labeling parameters under a program number. 99 memory locations or program numbers are available. The actual program number is indicated as proposal. It can be changed on the keyboard. Entering can be aborted by the esc key. By depressing the enter key, the data are memorized under the entered program number.

7.9.13 Labeling memory - Clear program

Clear program

The Clear program function allows to clear the selected program-/configuration- set. The values will be reset to default (factory) values.

7.9.14 Labeling memory – Program name

Program name

The Program name function is used to give a selected parameter-/configuration- set a user defined name. Select the single characters with the arrow-key and place it in to the name string using the enter key. The maximum string length is 9 characters.
CONFIGURATION

7.9.15 Configuration - Info display

Setup info - display

This function allows the user to compose his own (personal) defined window on the LCD of the operator panel. You are able to select the contents of 4 lines, for example:
- Line 1: shows the program number or name
- Line 2: shows the labeling speed value
- Line 3: shows the predispensing value
- Line 4: shows the label position value

The info display will be shown at power up (top of the menu tree). Pressing the esc key several times will end up in showing the info display.

There will be a second info display on units with nonstop mode set to master or to slave. The <esc>-key will be used to change between “Nonstop info” display and standard “Info display”.

7.9.16 Configuration - Language

Set language

This function is used to select the operator language. Use the arrow-keys to make a selection. Confirm the selection with the enter key.

7.9.17 Configuration – Product start edge

Product start edge

The function Product start edge will be used to describe the product texture and control the product sensor (GSC) accordingly. The important trigger point is the threshold between:
- product not seen by the good sensor
- product just covers the good sensor

If this threshold is a bright to dark change over then the Product start edge will be set to “Normal” – otherwise this parameter is set to “Inverse”.

7.9.18 Configuration - Label sensor type

**Label sensor type**

Selection of the label sensor:

- Sensor 1 is the Collamat-NG sensor
- Sensor 2 is the optional sensor

HM Systems A/S customers may use a special (optional) black mark sensor - select sensor 2.
Collamat AG customers may use any commercially available PNP 24VDC sensor* (optional) – select sensor 2.
* R7 on the HMC0605-PCB or on the HMC0606-PCB has to be removed to operate properly.

An optional sensor will be used (see above), if the standard light pipe sensor (sensor 1) is not able to do its job (clear view labels, black mark labels, ……)

All commercially available sensors (with NPN-output) can be used:

- optical sensors
- capacitive sensors
- ultrasound sensors
- other sensors…..

See also chapter 8.6 Labelsensor (LSC) – explanation.

7.9.19 Configuration - Nonstop mode

Select Nonstop setup:

- Off – unit runs in single (normal) mode (no nonstop)

Nonstop operation (with nonstop wiring):

- Master - Nonstop Master (the unit in the back)
- Slave - Nonstop Slave (the unit in the front)

Setup of the two Collamat NG for nonstop operation

Left unit: Master – right unit: Slave

Nonstop wiring:

- good sensor (Master GSC)
- good sensor (Slave GSC)
- Incremental encoder (Master+Slave - TACHO - optional)
- Nonstop-cable (HMC06CA29)
7.9.20 Configuration – Counter config.

**Counter**

Counter sub menu:
- Counter input?
- Reset at pwr. up (set counter to 0 at power up)

**Counter input?**
The counter is able to show one of three different sources – these are:
- Labels
- Products
- Counter input (COUNTER_INN / COUNTER_INP see connection-box / -module)

This input is configured as “Change-over” input in nonstop mode only (equal to <up>key (⇧) function on operator panel = change dispenser (master to slave or slave to master)

**Direction:** The counter values (Start value (= counter variable) and Batch size can be adjusted or cleared in the menu:
- Labeling param. – Counter

**Reset at power up:**
The counter will be reset at power up (set to 0).

7.9.21 Configuration - Tacho- pulse length

**Tacho pulse length**

Moving distance of the good (product) during the length of one incremental encoder pulse?

*Example-1: Standard “black wheel” incremental encoder:

The standard Collamat incremental encoder has a resolution of 2000 pulses per revolution. The incremental encoder friction wheel is driven by the conveyor belt (friction). The diameter (d) of the friction wheel is 70mm. (Collamat standard version). The outputs phase A and phase B of the incremental encoder will be used to calculate the corresponding product speed.

\[
\text{Step length} = \frac{d \times \phi}{4 \times \text{resolution}} = \frac{70 \text{mm} \times 3.14159}{4 \times 2000 \text{ pulses}} = 0.027489 \text{ mm/pulse}
\]

Whereas: 
- \(d = 70\text{mm}\) - diameter of the friction wheel
- \(\phi = 3.14159...\) - resolution = 2000 pulses/revolution

(see specification of incremental encoder)

*Example-2: Incremental encoder “blue wheel”*

The incremental encoder will output 1 pulse per 0.1mm wheel movement. The incremental encoder friction wheel (blue wheel) is driven by the conveyor belt (friction). The outputs phase A and phase B of the incremental encoder will be used to calculate the corresponding product speed.

\[
\text{Step length} = \frac{0.1\text{mm}}{4 \times \text{resolution}} = \frac{0.1\text{mm}}{4 \times \text{pulse}} = 0.025 \text{ mm/pulse}
\]
7.9.22 Configuration - Error handling

Error handling

Each error- and warning-condition can be set to one of three priority levels:

- **High** priority level: stop the unit with the appearance of these error- / warning- conditions
- **Middle** priority level: set unit to warning state at the appearance of these error- / warning- conditions
- **Low** priority level: Ignore the appearance of these error- / warning- conditions

For example: the unit can react on the appearance of the condition: “Label low” [LLO] as follows:

- **Stop** = stop unit immediately (pause resp. off-line)
  - a corresponding error message will be displayed
- **Warning** = unit will not be stopped
  - a corresponding warning message will be displayed
- **Ignore** = unit just ignores the error- / warning condition
  - no error- or warning- message will be displayed

### Errors / Warnings

<table>
<thead>
<tr>
<th>Nbr. Display</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Out of stock (OOL)</td>
<td>Sensor Paper break?</td>
</tr>
<tr>
<td>02 LSC problem</td>
<td>Adjust label scanner</td>
</tr>
<tr>
<td>03 Rewinder stop</td>
<td>Paper break = dancer up position</td>
</tr>
<tr>
<td>04 Rewinder full l (RWF)</td>
<td>Remove backing paper</td>
</tr>
<tr>
<td>05 Traction unit open (TUO)</td>
<td>Close pressure roller</td>
</tr>
<tr>
<td>06 Label stock low (LLO)</td>
<td>Get new label roll</td>
</tr>
<tr>
<td>07 Motor error</td>
<td>Hardware- / Heat problem</td>
</tr>
<tr>
<td>08 dsPIC offline</td>
<td>Hardware- / firmware problem</td>
</tr>
<tr>
<td>09 Postionto short</td>
<td>Increase position value</td>
</tr>
<tr>
<td>10 Printer error</td>
<td>Check printer</td>
</tr>
<tr>
<td>11 Error input</td>
<td>Check device on Error-input</td>
</tr>
<tr>
<td>12 Labeler locked (LOCK)</td>
<td>Safety switch</td>
</tr>
<tr>
<td>13 no READY input</td>
<td>Blocked while feeding</td>
</tr>
<tr>
<td>14 Counter reached</td>
<td>Batch size reached</td>
</tr>
<tr>
<td>15 Predisp. Too short</td>
<td>Increase predispensing value</td>
</tr>
<tr>
<td>16 Max. speed</td>
<td>Max speed reached</td>
</tr>
<tr>
<td>17 Prod. dist too short</td>
<td>Increase product distance</td>
</tr>
<tr>
<td>18 Predisp. too long</td>
<td>Decrease predispensing value</td>
</tr>
<tr>
<td>19 Label missed</td>
<td>Gap missed (adjust label scanner)</td>
</tr>
<tr>
<td>20 Nonstop error</td>
<td>Both units stopped</td>
</tr>
<tr>
<td>21 Fast speed mode</td>
<td>Fast labeling mode (info)</td>
</tr>
</tbody>
</table>
EQUIPMENT / SETTINGS

7.9.23 Equipment/Setting – Manual feed speed

Manual feed speed
Manually triggered FEED

The command to dispense a label can be given manually with the key „feed“ on the operator panel or the button „feed“ on the applicator housing. The adjustment of the speed is done in this menu. Input in m/Min.

7.9.24 Equipment/Setting - Applicator type

Applicator type

Selection of the applicator type. Select from:
- With magnet (MFA – magnet flap applicator)
- Without magnet (SLA – spring loaded applicator)
- Without Magnet (FXA) – fixed applicator

7.9.25 Equipment/Setting - Polarity IFEED

Polarity IFEED

The IFEED-signal can be set to act like:
- Active - if motor is turning
- Active - if motor is NOT turning
IFEED = isolated FEED signal

7.9.26 Equipment/Setting - Stepper motor

Stepper motor

Set the turning direction of the stepper motor (traction unit drive):
- Right – the label will be moved from left to right across the dispensing edge – view from the front of the unit
- Left – the label will be moved from right to left across the dispensing edge – view from the front of the unit

7.9.27 Equipment/Setting - Rewinder motor

Rewinder motor

Set the actual width of the paper to normal or wide to parameterize the electrical Rewinder unit whereas
Normal = label width up to 100mm
Wide = label width > 100 mm
Rewinder motor width parameter:
- Normal
- Wide
PASSWORD

7.9.28 Password - Input

Password

There are 4 user level accessible on this unit (see 8.7.2 The Menu Tree)

- User Level 1: Operator 1 (minimum access)
- User Level 2: Operator 2 (maximum access)
- User Level 3: Supervisor
- User Level 4: Factory

The Password can be changed in user level 4 only.

Default passwords after factory reset (new unit):

0000 = Level 1 = Operator 1
- Password is the only accessible sub menu.
- feed- and run/stop-key on operator panel are enabled

2222 = Level 2 = Operator 2
- Partly access to Labeling parameter sub menu
- Partly access to Labeling memory menu (Load program)
- Partly access to Configuration menu (Language)
- No access to Equipment/Settings menu
- Partly access to Password menu (Select level)

3333 = Level 3 = Supervisor
- Full access to Labeling parameter sub menu
- Full access to Labeling memory menu
- Full access to Configuration menu
- Full access to Equipment/Settings menu
- Partly access to Password menu (Select level)
- Partly access to Service (see 8.7.2)

4444 = Level 4 = Factory
- Full access to all sub menus
- Access to password change

Selecting a lower level then the current (active) level does not require a password entry.

Selecting a higher level than the current (active) level does require a correct password (see above).

Power off – Power on cycle:
After a power off-on cycle the unit does not change the actual user level!

You can NOT remember your password for level 4:
Ask Collamat AG for a corresponding Reset-Password by sending an authorized E-Mail – including the firmware version numbers of your unit - to:
Collamat AG – TCS – gerard.boeglin@collamat.ch or to
Collamat AG – DVP – paul.schneider@collamat.ch

Firmware version numbers: see Menu SERVICE - Version
SERVICE

7.9.29 Service - Stepper motor

Stepper motor

This function is used to set the dynamic parameters of the traction unit stepper motor – these are:

- **Start speed.** = start speed of the ramp profile
- **Acceleration** = speeding up to disp.-speed
- **Stop speed.** = stop speed of the ramp profile
- **Deceleration** = slow down to stop speed
- **Step length** = moving distance per motor step

<table>
<thead>
<tr>
<th>Fabrikeinstellungen:</th>
<th>Werte:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start-Geschw.</td>
<td>5</td>
</tr>
<tr>
<td>Beschleunigung</td>
<td>25</td>
</tr>
<tr>
<td>Stop-Gewschw.</td>
<td>10</td>
</tr>
<tr>
<td>Verzögerung</td>
<td>60</td>
</tr>
<tr>
<td>Schrittlaenge</td>
<td>0.05738 mm (do not change)</td>
</tr>
</tbody>
</table>

7.9.30 Service – Wake up mode

Wake up mode

Defines the state after power on:

- **Pause**: the unit is stopped after power on (default setting)
- **Ready**: the unit is ready. A good (product) is able to start (trigger) a new labeling sequence.

7.9.31 Service - length tolerance

Length tolerance

The setting **Length tolerance** does parameterize the error/warning function of the system regarding the amount of missing labels on the paper web. Default value is 1 label – this means the system will display a message in case of 1+1 (=two) missing labels.

(missing labels on the paper web = production error, poor label quality, friction in the label path (unwinder to label sensor, ...).

7.9.32 Service - the last errors

The last 21 errors

This display shows the last 21 errors of the system. The display contains the error numbers only – see error explanation).
7.9.33 Service - LSC

Label sensor LSC

The function Label sensor LSC is used to adjust and test the label sensor functions. The following parameter can be set / read:

- Read + set stop criteria: 1…4095
- read LSC MAX: maximal ADC-value
- read LSC MIN: minimal ADC-value
- read LSC WERT: shows the actual analog value of the ADC (read A/D-Converter value 0000 ….. 4048)
- read LSC threshold value

7.9.34 Service - PIC DIST (STEPS)

Read PIC DIST (steps)

This is a factory function:

7.9.35 Service - Read PIC reg. 0-50

Read PIC register 0 .. 50

This is a factory function:

reading of the internal dsPIC registers (0 ….. 50).

- Only for internal use
- Detail – see Technical Handbook Collamat NG

7.9.36 Service - inputs

Read inputs

This is a factory function:

Reading of the RCM4010 input registers:

- (ext.) Register CS0: Piggi-Board [AVA=1, X-WEB=2]
- (ext.) Register CS2: internal I/O-Block
- (ext.) Register CS4: Piggi-Board (AVA or X-WEB)
- (ext.) Register CS6: external / Applicator I/O-Block
- (int.) Register PB: internal register
- (int.) Register PC: internal register
- (int.) Register PE: internal register

- Only for internal use
- Detail – see Technical Handbook Collamat NG

7.9.37 Service - outputs

Read outputs

This is a factory function:

Reading of the RCM4010 output registers:

- (ext.) Register CS1: N.U.
- (ext.) Register CS3: Piggi-Board (AVA or X-WEB)
- (ext.) Register CS5: external / Applicator I/O-Block
- (ext.) Register CS7: el.Rewinder / Nonstop I/O-Block

- Only for internal use
- Detail – see Technical Handbook Collamat NG
7.9.38 Service - Set outputs

Set outputs
This is a factory function - setting the RCM4010 output registers:
- (ext.) Register CS1: N.U.
- (ext.) Register CS3: Piggi-Board (AVA or X-WEB)
- (ext.) Register CS5: external / Applicator I/O-Block
- (ext.) Register CS7: el.Rewinder / Nonstop I/O-Block
- (int.) Register PB–bit 0: START2 to dsPIC

7.9.39 Service - Motor test

Motor test
This is a test function:
- Checking the traction unit stepper motor in
- Continuous operation
- Intermittent operation

7.9.40 Service – Encoder speed

Encoder speed
This is a display function:
- Showing the measured encoder speed of the unit

7.9.41 Service - Version

Firmware version
Shows the firmware version number of the labeling unit:
for example: „RCM 0.78 PIC 1.26“
whereas:
- RCM 0.78 = Master Controller version 0.78
- PIC 1.26 = Slave Controller version 1.26

7.9.42 Service - Status

Status
Shows the status of the labeling unit:
For example: „Status motor-error“

7.10 Placing into operation

Step by Step procedure to place the unit into operation:
- Mount unit with paper (unwinder)
- Thread up the labels as shown in 8.2.
- Switch main switch to on position: „I“
- Check the parameter settings according to chapter 7.2 + 7.3
- Place labeler into run mode (run/stop key on operator panel)
- The unit is now ready for the next labeling job.....

7.11 Switching off

Stop the labeling operation and switch off the main switch on the Collamat NG: Switch main switch to off position: „O“.
8 Connections + buildup [electronic]

8.1 Safety

Basic

WARNING!
Take care while connecting sensors/actors to the Collamat NG inputs and outputs!

Inappropriate handling on the Collamat NG electronic parts can destroy delicate components.

- Wiring jobs and repairs should be carried out by the persons designated (see 3. Safety – 3.3.1 Requirements).
- Organize and take care of your working environment – is there enough room to fulfill your job?
- Always look out for a clean and organized mounting area. A messy place is always a place of danger (cause of accident).
- Open collector- und power-connections have to be current limited – according to the specified max. values (see Technical manual).

8.2 The side connection plate “SIGNALS”

View from the outside and from the inside

<table>
<thead>
<tr>
<th>Connections</th>
<th>Function</th>
<th>Plug - Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonstop</td>
<td>Nonstop labeling with two labelers</td>
<td>15-pin D-Sub plug</td>
</tr>
<tr>
<td>Opt. RS232</td>
<td>Optional serial port (RS232)</td>
<td>9-pin D-Sub plug</td>
</tr>
<tr>
<td>Opt. Operator</td>
<td>Optional operator panel</td>
<td>9-pin D-Sub connector</td>
</tr>
<tr>
<td>Connection-Box</td>
<td>Connection box / connection module</td>
<td>25-pin D-Sub plug</td>
</tr>
<tr>
<td>GSC</td>
<td>Good scanner</td>
<td>4-pin M8 plug</td>
</tr>
<tr>
<td>TACHO</td>
<td>Incremental encoder</td>
<td>4-pin M12 plug</td>
</tr>
</tbody>
</table>
Function of the side connection plate “SIGNALS”

The side connection plate „SIGNALS“ is used as an input/output port for the specific peripherals (see list above). Units in IP-protection class > 40 require the special side connection plate-IP „SIGNALS“.

Good sensor [GSC] jumpers

Remove main housing back cover (in the rear of the unit). Now you will have access to the connection board (just behind the side connection plate „SIGNALS“). There are two jumper groups on the board, used to setup the good scanner (GSC).

Default setting for the good scanner is:
- Sensor type: PNP-good scanner
- Control line: not connected (NC)

These are the possible placements for the jumpers:

**Jumper 1 (JP1)**
- Sensor type: PNP-good scanner
- Sensor type: NPN-good scanner

**Jumper 2 (JP2)**
- Control line: to +24V
- Control line: to GND
- Control line: open

**Jumper 3 (JP3)**
- next version
- next version

**Jumper 4 (JP4)**
- next version
- next version

GSC configuration NPN / PNP

**Jumper 1 (JP1)**
- Jumper setting PNP: 2 x Jumper above (vertical)
- Jumper setting NPN: 2 x Jumper down (vertical)

GSC bright- / dark switching

The control line has to be connected to GND, to +24V or left open - depending on the brand of your good scanner. The most common function for the control line is:

Setting the sensor to bright or to dark switching (see data sheet of your device):

- JP2 – Control line to GND: jumper top (horizontal)
- JP2 – Control line to 24V: jumper bottom (horizontal)
- JP2 – Control line - open - : jumper center (horizontal)

For those good sensors using the control line as a teach line, JP2 has to be set to position -open- (center = nc = not connected).

You don’t have to remove the connection board to setup the jumpers

Self mountings plugs for example from MURR Elektronik::
- M8-plug – male – 4-pin: Part.Nr. 7000-08351-0000000
- M12-plug – male – 4-pin: Part.Nr. 7000-12491-0000000

M8- / M12- plug

M8: resp. M12-Extension cable (male – female) for example from Phoenix Contact:
- M8-Kabel – 3m: Part.Nr. SAC-4P-M8MS/3,0-PUR/M8FS
- M12-Kabel – 3m: Part.Nr. SAC-4P-M12MS/3,0-PUR/M12FS

M8- / M12- cable (1:1)
8.2.1 The „GSC“ M8-plug

The plug type for the good scanner cable is a 4-pin M8-plug.

The pin assignment of this plug is according to the international standard:

- Pin 1: +24V
- Pin 2: Control line (bright- dark-switching or teach)
- Pin 3: GND
- Pin 4: Input GSC (X7-27/29)

8.2.2 The „TACHO“ M12-plug

The plug type for the incremental encoder cable is a 4-pin M12 plug. The pin assignment of this plug is according to the Collamat NG standard:

- Pin 1: +24V
- Pin 2: TACA_P (Signal A – PNP) (X7-26)
- Pin 3: GND
- Pin 4: TACB_P (Signal B – PNP) (X7-25)

8.2.3 The „optional operator“ connector

An alternative place to connect the Collamat NG operator panel is the 9-pin D-sub connector on the side connection plate „ SIGNALS“ - called „Opt. Operator“. The standard display cable HMC06CA06x has to be removed from the connector X1 on the display interface board. Rewrite this display cable from the main board J6 to the connection board X8.

A optional display cable (HMC06CA31x) is needed to connect the operator panel (external) to the “Opt. Operator” connector of the side connection plate.

The pin assignment of the 9-pin D-Sub-connector X2 is according to the Collamat NG standard:

- Pin 1: n.c.
- Pin 2: TXDOUT (X7-40)
- Pin 3: RXDIN (X7-39)
- Pin 4: +24V
- Pin 5: GND
- Pin 6: n.c.
- Pin 7: +24V
- Pin 8: n.c.
- Pin 9: DISP (feed key)
8.2.4 The „optional serial port“ (RS232) plug

Pin assignment

The 9-pin D-Sub plug „optional serial port“ (RS232) X1 is used for special application or to connect user defined peripherals.

The description of this plug is done in the Technical manual and/or in a description of a customer designed application.

Pin assignment according to the international NG standard:

- Pin 1: connected with Pin 4 and Pin 6
- Pin 2: TXFOUT (X8-3)
- Pin 3: RXFIN (X8-4)
- Pin 4: connected with Pin 1 and Pin 6
- Pin 5: GND
- Pin 6: connected with Pin 1 and Pin 4
- Pin 7: connected with Pin 8
- Pin 8: connected with Pin 7
- Pin 9: n.c.

8.2.5 The „nonstop“ plug

Pin assignment

The 15-pin D-Sub plug X3 contains all the necessary signals for the nonstop control.

The pin assignment of the 15-pin D-Sub-connector X3 is according to the special cable HMC06CA29X connects the two labelers Collamat NG „MASTER“ and Collamat NG „SLAVE“.

The two phase signals (A and B) and the power signals +24V and GND are also wired through this cable – if an optional incremental encoder is used (for speed control) – that is to say in a nonstop configuration with incremental encoder for speed control only one incremental encoder is used to control both labelers. Normally the incremental encoder is connected to the M12-plug “TACHO” of the Collamat NG „MASTER“.

- Pin 1: +24V
- Pin 2: +24V
- Pin 3: PRODUCT_OUT (X7-16 - PRINT_C)
- Pin 4: PRODUCT_INP (X7-33 - AUX_INP)
- Pin 5: PRODUCT_INN (X7-35 - AUX_INN)
- Pin 6: TACB_P (X7-25)
- Pin 7: TACA_P (X7-26)
- Pin 8: 2_ND_24V
- Pin 9: +24V
- Pin 10: NSTP_POW (+24V)
- Pin 11: NSTP_INN
- Pin 12: NSTP_INP
- Pin 13: NSTP_OUT
- Pin 14: GND (PRINT_E)
- Pin 15: GND
8.2.6 The „connection box“ plug

Pin assignment
The 25-pin D-Sub plug X4 combines the „external“ control lines with the Collamat NG controller.

The 25-pin D-Sub plug X4 is also used to plug in the cable-connector from the optional connection box or from the optional connection module.

The pin assignment of the 25-pin D-Sub-plug is according to the Collamat NG standard:

- Pin 1: +24V
- Pin 2: START
- Pin 3: STOP
- Pin 4: READY
- Pin 5: COUNTER_INP
- Pin 6: COUNTER_INN
- Pin 7: ERRIN / LOCK_INV
- Pin 8: ERR
- Pin 9: ERR_OPT_C
- Pin 10: ERR_OPT_E
- Pin 11: ADA_HOME_C
- Pin 12: ADA_HOME_E
- Pin 13: LOCK
- Pin 14: +24V
- Pin 15: WAR
- Pin 16: WAR_OPT_C
- Pin 17: WAR_OPT_E
- Pin 18: RUN
- Pin 19: RUN_OPT_C
- Pin 20: RUN_OPT_E
- Pin 21: PROD_OUT_P (PRINT_C)
- Pin 22: PROD_OUT_E (PRINT_E)
- Pin 23: IFEED_C
- Pin 24: IFEED_E
- Pin 25: GND

X7-Connector:
- X7-1
- X7-3
- X7-5
- X7-7
- X7-9 - PRTERR_INP
- X7-11 - PRTERR_INN
- X7-13
- X7-15
- X7-17
- X7-19
- X7-21
- X7-23
- X7-32
- X7-2
- X7-4
- X7-6
- X7-8
- X7-10
- X7-12
- X7-14
- X7-30 - GSC_OUT_C
- X7-31 - GSC_OUT_E
- X7-20
- X7-22
- X7-24,28
8.2.7 The IP54 connection plate „SIGNALS“

Variation 1:
without D-Sub-plugs/connectors

M8-plug: Goodscanner plug – GSC
M12-plug: Incremental encoder plug – TACHO
M8-plug below: Labelsensor (Forksensor) plug – LSC

Picture:
- Modular rail clamping part in the position side labeling
- Mounting
- Labelsensor holder (adjustable in X- and Y-direction)
  and
  IP65-Labelsensor (Forksensor) – LSC

Variation 2:
with IP65 D-Sub-plug/connectors

The “Connector-Board” HMC0602 is assembled with IP65 D-sub connectors/plugs. Unused plugs/connectors on the IP54 Connector-plate have to be covered with special plastic protection caps!
8.3 Applicator – inputs and outputs

Pin assignment

The applicator cable HMC06CA08x is connecting the main control board HMC0601x (in the traction unit housing) with the applicator electronics (in the applicator housing).

The applicator cable (a flat ribbon cable) is guided through the inside of the modular rail to the applicator board (HMC0605x- or HMC0606x-board – inside of the applicator housing).

The pin assignment of the 10-pin flat ribbon plug is according to the Collamat NG – applicator-bus standard:

- Pin 1: +24VF1
- Pin 2: +24VF1
- Pin 3: LSC_R (LSC sensor 2 - receiver)
- Pin 4: LSC_T (LSC sensor 1 - receiver)
- Pin 5: DISP
- Pin 6: LSC_PWM (LSC sensor – sender)
- Pin 7: GND
- Pin 8: FLAP (Control-line for magnet flap adapter)
- Pin 9: GND
- Pin 10: GND

8.4 The connection - box / - module (optional)

Connection module

Several input- and output-lines of the Collamat NG are connected to the side connection plate „SIGNALS“ - to a 25-pin D-sub plug which is called connection box plug.

A single cable HMC06CA30x plugged into this D-sub-plug connects the Collamat NG to the connection box or to the connection module. These units are used to optionally control / monitor the Collamat NG.

The power on the connection box board / connection module board is protected with a micro fuse F1 (1AT = 1A slow blow fuse 5x20mm).

Layout HMC0604-1B PCB
The picture above shows the HMC0604-2R board with the corresponding connections (see also table below). A micro fuse F1 (1AT) prevents an overload or shortcut of the 24VDC power line.

HMC0604-2R board built in Rose housing from Phoenix Mecano. The connection cable to the box are guided through the side cable bushings.
### 8.4.1 Control signals

<table>
<thead>
<tr>
<th>Input- and output - type</th>
<th>SIGNAL</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>OC-input [anode] - cathode(GND)]</td>
<td>LOCK</td>
<td>Lock (disable) labeler</td>
</tr>
<tr>
<td></td>
<td>READY</td>
<td>Peripherals not ready</td>
</tr>
<tr>
<td></td>
<td>START</td>
<td>Start labeler</td>
</tr>
<tr>
<td></td>
<td>STOP</td>
<td>Stop labeler</td>
</tr>
<tr>
<td></td>
<td>ERRIN / LOCK_INV</td>
<td>ERRIN= ext.error input or LOCK_INV= disable labeler</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(only in SIL mode)</td>
</tr>
<tr>
<td>OC-input [anode-cathode]</td>
<td>COUNTER/ CH_OV</td>
<td>COUNTER=Counter input or CH_OV=Change-over input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(in nonstop mode only)</td>
</tr>
<tr>
<td>OC-output [emitter-collector]</td>
<td>IFEED</td>
<td>Traction unit motor turning</td>
</tr>
<tr>
<td>OC-output [emitter-collector-GND]</td>
<td>HOME</td>
<td>Applicator in home position</td>
</tr>
<tr>
<td></td>
<td>GSC_OUT</td>
<td>Good scanner output signal</td>
</tr>
</tbody>
</table>

**Explanation:**
- **OC** = Opto coupler respectively photo coupler
- **COUNTER_INP** = Anode
- **COUNTER_INN** = Cathode
- **PROD_OUT_P** = +24V
- **COUNTER** = externer Zähler Eingang
- **CH_OV** = externter Steuereingang (nur im Nonstop Mode aktiviert) = gleich wie Change-over-Taste (↑) am Bedienteil betätigen

**Current limitation**

**WARNING!**

Open-Collector-outputs have to be **current limited**!  
Each single emitter- and collector-line of an open-collector output (OC) has its own filter – but applies no shunt resistor.  
Be sure to shunt each single used output line with a resistor (if necessary).  
Do not exceed 50mA output current / OC!  
Shunt: min. 480 Ohm / line @ 24VDC
8.4.2 Read operating state

Photo coupler outputs
The following operating states can be read (variant 1 – photocoupler open-collector output) on the connectors:

- **WARNING**: with WAR_OPT_E + WAR_OPT_C
- **RUN**: with RUN_OPT_E + RUN_OPT_C
- **ERROR**: with ERR_OPT_E + ERR_OPT_C

Whereas xxxx_E will describe the corresponding emitter-connector and xxxx_C will describe the corresponding collector-connector.

maximum allowed current load per output: 50 mA

Power output
The following operating states can be read (variant 2 – power-output) on the connectors:

- **WARNUNG**: with WAR und GND
- **RUN**: with RUN und GND
- **ERROR**: with ERR und GND

maximum allowed current load per output: 100 mA

8.4.3 Signal outputs

**ERROR outputs**
With the Collamat NG in error-mode (one or several error-flag(s) are set), this status will be shown with the outputs ERR and ERR_OPT-X.

Error messages can be generated from various sources. The cause of an error will be shown on the operator panel display.

Remove the cause of the displayed error – then confirm by pressing the enter key on the operator panel.

There are two different ways to show an error:

- **Open-Collector Output**: with the ERROR-output activated (min one error-flag is set), the transistor of the photo coupler is conductive (emitter- and collector-lines will be wired separately to the outside).

- **PNP Power Output**: with the ERROR-output activated (min one error-flag is set); the power module(s) will have 24VDC on the output pin(s).

Max load for this output is 100 mA.

The ERR output can be used to control a red indicator lamp/LED (status signalization).
WARNING outputs

With the Collamat NG in the RUN-or STOP-mode and a warning flag set (one or several warning-flag(s) can be set), the status will be shown with the outputs WAR and WAR_OPT-X.

Warning messages can be generated from various sources. The cause of a warning will be shown on the operator panel display.

Remove the cause of the displayed warning – then confirm by pressing the enter key on the operator panel.

There are two different ways to show a warning:

- **Open-Collector Output**: with the WARNING-output activated (min one warning-flag is set), the transistor of the photo coupler is conductive (emitter- and collector-lines will be wired separately to the outside).
- **PNP Power Output**: with the WARNING-output activated (min one warning-flag is set); the power module(s) will have 24VDC on the output pin(s). Max load for this output is 100 mA.

The WAR output can be used to control an orange indicator lamp/LED (status signalization).

RUN outputs

With the Collamat NG in the RUN-mode (not in ERROR- or STOP-mode) the status will be shown with the outputs RUN and RUN_OPT-X.

The RUN-status of the unit is shown on the operator panel with the green LED.

There are two different ways to output the RUN-state to the outside peripherals:

- **Open-Collector Output**: with the RUN-output activated, the transistor of the photo coupler is conductive (emitter- and collector-lines will be wired separately to the outside).
- **PNP Power Output**: with the RUN-output activated, the power module(s) will have 24VDC on the output pin(s). Max load for this output is 100 mA.

The RUN output can be used to control a green indicator lamp/LED (status signalization).

Signal outputs

![Signal outputs diagram]

D-Sub-Stecker (Pinbelegung)

Signallampen-Direktanschluss an der 25-pol. D-Sub Buchse auf der seitlichen Anschlussplatte „Signale“:

- **RUN**: Pin 18 - (Drahtfarbe: grün)
- **WAR**: Pin 15 - (Drahtfarbe: orange/amber)
- **ERR**: Pin 8 - (Drahtfarbe: rot)
- **GND**: Pin 25 - (Drahtfarbe: gelb)
Indicating lamps (optional)

INFORMATION!
Connection of the optional indicator lamp:
- in the optional connection box
- in the optional connection module
- direct on the X4 plug of the „Connection-Board“ (side connection plate „SIGNALS“ (with 25-pin D-Sub connector)

Pin assignment: see „Connection – Box“ plug.

Current limiting

WARNING!
Maximum Current load per output is 100mA!

8.5 Applicator - connections

Applicator connections
There are several applicator versions available. Depending on the expected labeling job you are going to fulfill you have to select one of the following applicators. The table below indicates the applicator type, the 3 letter short name of the applicator and the used applicator board:

<table>
<thead>
<tr>
<th>Nbr.</th>
<th>applicator- / box-description</th>
<th>short</th>
<th>applicator board name</th>
<th>board number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Spring Loaded Applicator</td>
<td>SLA*</td>
<td>AirVacuum Applicator-Board</td>
<td>HMC0605-X</td>
</tr>
<tr>
<td>2</td>
<td>FiXed Applicator</td>
<td>FXA</td>
<td>Air Vacuum Applicator-Board</td>
<td>HMC0605-X</td>
</tr>
<tr>
<td>3</td>
<td>Magnet Flap Applicator</td>
<td>MFA</td>
<td>Magnet Flap Appl.-Board</td>
<td>HMC0606-X</td>
</tr>
<tr>
<td>4</td>
<td>Air Vacuum Applicator</td>
<td>AVA**</td>
<td>Air Vacuum Applicator-Board</td>
<td>HMC0605-X</td>
</tr>
<tr>
<td>5</td>
<td>Applicator Connection Box</td>
<td>ACB***</td>
<td>Applicator Connection-Board</td>
<td>HMC0603-X</td>
</tr>
</tbody>
</table>

Explanation
(*) Standard version (Spring Loaded Applicator - SLA)
(**) to control complex Air Vacuum Applicators (AVA) – will be used together with the standard Air Vacuum Applicator-board HMC0605-x (in the applicator housing) and an additional controller board (called AVA-piggiback board HMC06xx-x – plugged in on the main controller board HMC0601-x in the traction unit housing).
(***) The Applicator Connection Box (ACB) will be used to connect all the sensors/actors from an Air Vacuum Applicator (AVA).
8.5.1 Label sensor

Label sensor
Sender board HMC0611-X
[all apater types]

The label sensor sender unit is located in the dispensing edge plate unit. There is one or two sender unit built in - depending on the „width“ version of the labeling unit. A Collamat NG 100 (max. paper width = 100mm) will have one sender unit built in, the wider version (180mm and 250mm) will have two sender units in the dispensing edge plate unit.

Each sender unit will be placed behind a corresponding light tube module. A Collamat NG 250 (250mm max paper width) will have only two sender units installed – but three light tube modules are used to close the gap in the dispensing edge plate unit (the 3. light tube module will be used as place keeper only).

Label sensor
Receiver OP550A
[all standard applicator types]

The label sensor receiver (photo sensor) is built in in a die cast aluminum housing. This so called receiver head can be moved vertically across the dispensing edge plate (above the sender light tube bar). The distance between receiver head and dispensing plate can be adjusted (booklets). The used cable to the receiver head is a special shielded cable – do not replace this cable with a non Collamat cable!

8.5.2 Electrical connections – applicator boards

Applicator board HMC0605x / HMC0606x - connector X2 [all standard applicator types]

<table>
<thead>
<tr>
<th>pin</th>
<th>name</th>
<th>description</th>
<th>color (cable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2 – 12</td>
<td>24VDC</td>
<td>externer (optionaler) 24VDC PNP Etikettsensor (2.)</td>
<td>brown</td>
</tr>
<tr>
<td>X2 – 11</td>
<td>Input</td>
<td>externer (optionaler) 24VDC PNP Etikettsensor (2.)</td>
<td>black</td>
</tr>
<tr>
<td>X2 – 10</td>
<td>GND</td>
<td>externer (optionaler) 24VDC PNP Etikettsensor (2.)</td>
<td>blue</td>
</tr>
<tr>
<td>X2 – 9</td>
<td>3.3VDC</td>
<td>Standard Transmissive Sensor-Receiver OP550A-collector (1.)</td>
<td>brown</td>
</tr>
<tr>
<td>X2 – 8</td>
<td>Input</td>
<td>Standard Transmissive Sensor-Receiver OP550A-emitter (1.)</td>
<td>white</td>
</tr>
<tr>
<td>X2 – 7</td>
<td>PE</td>
<td>Sensor receiver cable – shield (1.)</td>
<td>black</td>
</tr>
<tr>
<td>X2 – 6</td>
<td>PE</td>
<td>Sensor sender cable - shield</td>
<td>black</td>
</tr>
<tr>
<td>X2 – 5</td>
<td>GND</td>
<td>Standard Sender Board HMC0611 x</td>
<td>green</td>
</tr>
<tr>
<td>X2 – 4</td>
<td>TCY-OUT</td>
<td>Standard Sender Board HMC0611 x (pulse output)</td>
<td>white</td>
</tr>
<tr>
<td>X2 – 3</td>
<td>15VDC</td>
<td>Standard Sender Board HMC0611 x</td>
<td>brown</td>
</tr>
<tr>
<td>X2 – 2</td>
<td>24VDC</td>
<td>FEED – key connector</td>
<td>white</td>
</tr>
<tr>
<td>X2 – 1</td>
<td>DISP</td>
<td>FEED – key connector</td>
<td>brown</td>
</tr>
</tbody>
</table>

This connector row is identical for all applicator boards!
Sensor (1.) = Standard sensor (Collamat AG) / Sensor (2.) = optional (external) PNP-Sensor
Collamat NG Series

Connections + buildup [electronic]

**PE connection**
[all applicator types]

These connectors are identical for all applicator boards:
- PE (1): Connection for the green/yellow ground cable (GND) from the dispensing edge respectively from the applicator housing (HMC06CA26 resp. HMC06CA27)
- PE (2): Connection for the green/yellow ground cable (GND) from the traction unit (HMC06CA05). This cable will be feed from the traction unit trough the modular rail to the applicator board.

**Cable entry**
[all applicator types]

All cables/wires going into the applicator housing (except the cables coming from the modular rail) will be guided trough the cable lead-in clamp (see picture). This is also called the cable safety clamp.

There are two clamps on the applicator housing (top + bottom).

The feed-key (DISP-key) is always placed on the top clamp.

The cables/wires are normally guided trough the bottom clamp (see picture below).

**Applicator board HMC0605-x**

**Connection X3 and X4**

For a sophisticated applicator system an optional applicator control unit can be plugged into the main board (HMC0601x) of the traction unit. This board is called the AVA Piggyback board. The cable (20-pin flat ribbon cable) from this control unit will be guided trough the modular rail to the applicator board HMC0605 – to the X3 connector.

From the X3 connector the control- and data-signals are connected 1:1 to the X4 connector.

The (optional) applicator connection box (ACB) will be interconnected with the X4 connector on the applicator board HMC0605x.

The ACB is used to connect all the necessary sensors actors from the applicator unit (like home sensors, piston valve control lines,..).

- X3 - Input - flat ribbon cable 20-pin from AVA-Piggyback-Board (plugged onto HMC0601x-board – in the traction unit housing)
- X4 - output – flat ribbon cable 20-pin to the applicator Connection box (ACB) - HMC0603x – Board.

The ACB is placed very close to the sensors/actors of the air vacuum applicator (AVA).

Die SteckerX3 und X4 sind bei einem Standardgerät nicht eingelötet (nur bei Geräten mit optionalem Luft-Vakuum-Adapter).
External 24VDC PNP Label sensor [optional]

If the standard optical „Transmissive-Sensor“ (sensor 1) is not able to handle the used label material, a special (optional) label sensor can be used to fulfill this job. This special sensor can be connected to the sensor 2 input of the applicator board HMC0605 resp. HMC0606. A 24VDC – PNP sensor is required. Use connector 12 for the 24VDC wire, connector 11 for the sensor input wire and connector 10 for the GND wire.

A (optional) M8-plug can be built in to the traction unit housing – behind the flange of the modular rail – see also 9.5.4. Applicator special versions.

Applicatorboard HMC0605x - Connector X4 (Air Vacuum Applicator Board (AVA))

<table>
<thead>
<tr>
<th>Pin</th>
<th>name</th>
<th>Description</th>
<th>color (cable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X4 - 1</td>
<td>+24VDC</td>
<td>Power</td>
<td></td>
</tr>
<tr>
<td>X4 – 2</td>
<td>+24VDV</td>
<td>Power</td>
<td></td>
</tr>
<tr>
<td>X4 – 3</td>
<td>BLOW</td>
<td>Output blow valve</td>
<td></td>
</tr>
<tr>
<td>X4 – 4</td>
<td>VALVE1</td>
<td>Output piston 1 valve</td>
<td></td>
</tr>
<tr>
<td>X4 – 5</td>
<td>VACU</td>
<td>Output vacuum valve</td>
<td></td>
</tr>
<tr>
<td>X4 – 6</td>
<td>BLTB</td>
<td>Output blow tube valve</td>
<td></td>
</tr>
<tr>
<td>X4 – 7</td>
<td>VALVE2</td>
<td>Output piston 2 valve</td>
<td></td>
</tr>
<tr>
<td>X4 – 8</td>
<td>VALVE3</td>
<td>Output piston 3 valve</td>
<td></td>
</tr>
<tr>
<td>X4 – 9</td>
<td>FLAP</td>
<td>Output flap valve</td>
<td></td>
</tr>
<tr>
<td>X4 – 10</td>
<td>IFEED_C</td>
<td>Open collector output – collector</td>
<td></td>
</tr>
<tr>
<td>X4 – 11</td>
<td>IFEED_E</td>
<td>Open collector output – emitter</td>
<td></td>
</tr>
<tr>
<td>X4 – 12</td>
<td>DOWN1</td>
<td>Input DOWN sensor 1</td>
<td></td>
</tr>
<tr>
<td>X4 – 13</td>
<td>HOME1</td>
<td>Input HOME sensor 1</td>
<td></td>
</tr>
<tr>
<td>X4 – 14</td>
<td>DOWN2</td>
<td>Input DOWN sensor 2</td>
<td></td>
</tr>
<tr>
<td>X4 – 15</td>
<td>HOME2</td>
<td>Input HOME sensor 2</td>
<td></td>
</tr>
<tr>
<td>X4 – 16</td>
<td>LAPR</td>
<td>Input label present sensor</td>
<td></td>
</tr>
<tr>
<td>X4 – 17</td>
<td>DOWN3</td>
<td>Input DOWN sensor 3</td>
<td></td>
</tr>
<tr>
<td>X4 – 18</td>
<td>HOME3</td>
<td>Input HOME sensor 3</td>
<td></td>
</tr>
<tr>
<td>X4 – 19</td>
<td>GND</td>
<td>Ground (power)</td>
<td></td>
</tr>
<tr>
<td>X4 – 20</td>
<td>GND</td>
<td>Ground (power)</td>
<td></td>
</tr>
</tbody>
</table>
Applicator board HMC0605x (Air Vacuum Applicator (AVA))

Version: air vacuum applicator (AVA) – air vacuum applicator board HMC0605x

Applicator board HMC0606x (Magnet Flap Applicator Board (MFA))

Version: magnet flap applicator (MFA) – magnet flap applicator board HMC0606X

MFA – power connection

The power input (230VAC) for the magnet is taken from the side connection plate „POWER“ – AC-output plug. A special power cable HMC06CA22A is used to bring the AC-power from this plug to the applicator interface board HMC0606x (MFA) - X3-1 and X3-2. The AC part of this board is protected with a micro-fuse F1 (3.15 AT) – 5x20mm.

<table>
<thead>
<tr>
<th>pin</th>
<th>name</th>
<th>Description</th>
<th>color (cable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X3 - 1</td>
<td>230VAC-IN</td>
<td>230VAC power input phase</td>
<td></td>
</tr>
<tr>
<td>X3 – 2</td>
<td>230VAC-IN</td>
<td>230VAC power input neutral</td>
<td></td>
</tr>
<tr>
<td>X3 – 3</td>
<td>CP21OUT</td>
<td>230VAC phase output to CP21</td>
<td></td>
</tr>
<tr>
<td>X3 – 4</td>
<td>CP21OUT</td>
<td>230VAC neutral output to CP21</td>
<td></td>
</tr>
<tr>
<td>X3 – 5</td>
<td>+MAGNET</td>
<td>230VAC behind rectifier – to magnet + line</td>
<td></td>
</tr>
<tr>
<td>X3 – 6</td>
<td>-MAGNET</td>
<td>230VAC behind rectifier – to magnet - line</td>
<td></td>
</tr>
</tbody>
</table>
8.5.3 Applicator function

Function of the MFA

- The good starts the labeling process by triggering the good scanner.
- After a defined position delay – the label will be accelerated to the adjusted labeling speed.
- With the start of the acceleration, the magnet of the magnet flap applicator (MFA) will be activated.
- The magnet pushes now the dispensing edge against the good (product).
- The pressure roller is touching now the good
- As soon as the label has reached the defined product speed (labeling speed), the pressure roller will stitch the label to the product (product speed = labeling speed).
- After the label has been applied to the product, the delay timer starts to run.
- After the expiration of the delay timer, the flap magnet will be deactivated – enabling the flap spring to bring the dispensing edge back to its home position.
8.5.4 Applicator - Special Versions – optional

Customer designed applicator
Applicator with improved IP class

for example:
- Special version Bopack
- Special IP version Meckelborg
- Special version Collamat AG

For applicator applications where the Standard Collamat NG Applicator is not the best choice – for example for
- Customer designed applicator constructions
- Applicator with improved IP class

the corresponding Applicator Board (this is by default the Air Vacuum Applicator Board HMC0605x (AVA-Board)) will be installed inside of the housing of the labeler (traction unit).

The connector for the customer specific label sensor (24VDC-Sensor with PNP output) is mounted on the black blind plate (housing of the labeler = M8-plug). The pin assignment of this M8-plug complies with the international standard – can be changed easily.

- Pin 1: +24V (brown wire – to Connector 12)
- Pin 2: Control pin (bright-/dark-switching or teach)
- Pin 3: GND (blue wire – to Connector 10)
- Pin 4: Input LSC (black wire – to Connector 11)

**INFORMATION!**

For application where an improved IP-class is required, a special peeling edge will be used (fixed or angle position adjustable) – or the standard applicator without the internal electronic parts can be used. This constructions all require special label sensors (in a corresponding IP-class- see above - external 24VDC PNP Label sensor [optional]). Because the label sensor can not be placed close to the dip of the peeling edge (constructive – the label sensor will normally be placed far behind the peeling edge), the error handler is not able to manage all possible errors in the most effective way – resulting in not correct timed error messages. This behavior is also true for “Nonstop-Labeling”.

Ask your sales agent about more details to this chapter.
8.6 Applicator Connection Box [ACB – optional]

Electrical connections

The connections on the applicator connection board HMC0603x of the applicator connection box (ACB) are 1:1 identical to the connection of the air vacuum applicator board HMC0605x (see connector X3 / X4).

The cable HMC06CA32xx is connecting the air vacuum board (HMC0605x in the applicator housing) with the air vacuum connection board (HMC0603x in the applicator connection box - ACB).

Not available until further notice:

The following assemblies are in development – and not available at the moment:

- air vacuum applicator (AVA – several types)
- air vacuum applicator connection box (ACB)
- connection cable: applicator to applicator connection box (HMC06CA32)
- AVA driver - piggyback board HMC0615

8.7 Electrical rewinder [option]

Electrical connections

The interface cable HMC06CA16A is used to connect the Rewinder motor controller board HMC0607 with the Rewinder sensor board HMC0608 (10-pin connector).

The interface cable HMC06CA11B is used to connect the main controller board HMC0601 with the Rewinder motor controller board HMC0607 (6-pin connector).

Connection J2 on the Motor Controller Board:

<table>
<thead>
<tr>
<th>pin</th>
<th>name</th>
<th>description</th>
<th>color</th>
</tr>
</thead>
<tbody>
<tr>
<td>J2 – 1</td>
<td>~</td>
<td>Power line from winding 3 of the transformer</td>
<td>black</td>
</tr>
<tr>
<td>J2 – 2</td>
<td>~</td>
<td>Power line from winding 3 of the transformer</td>
<td>black</td>
</tr>
<tr>
<td>J2 – 3</td>
<td>M+</td>
<td>+ DC motor line</td>
<td>red</td>
</tr>
<tr>
<td>J2 – 4</td>
<td>M-</td>
<td>- DC motor line</td>
<td>black</td>
</tr>
</tbody>
</table>
9 Maintenance

9.1 Safety

**Basics**

**WARNING!**
Danger of injury due to incorrectly performed maintenance work!

Incorrect maintenance can cause serious injury or damage.

Therefore:

- All maintenance work may only be carried out by qualified personnel authorized and instructed by the operator.
- Inform the operating personnel before starting maintenance and repair work.
- Before starting work, sufficient space for assembly should be made.
- Pay attention to tidiness and cleanliness at the assembly site! Loose, stacked or scattered components and tools are a source of accidents.
- If components are replaced:
  - Pay attention to correct fitting of replacement parts.
  - Replace all fixing elements correctly
  - Observe the correct screw-tightening torques.
- Before switching on, ensure that all covers and safety devices are correctly installed and function correctly.
- After finishing maintenance work, check that the safety devices function correctly.

**Pneumatic system**

**WARNING!**
Danger of injury due to compressed air!

The compressed air in the pneumatic system can escape without warning and set pneumatically driven components in motion, causing serious injuries.

Therefore, before starting any work:

- Switch off the pneumatic system and secure against switching on.
- Depressurize all components which are under pressure.
CAUTION!

Collamat NG units in IP54 version (optional protection class) have to be brought into the protected (original) state after all maintenance- and repair works.

IP54 units are equipped with special flat-gaskets, O-rings and screw threads (e.g. LOCTITE 511) – and are sealed with silicon (e.g. DELCO-GUM 3697). This special sealing closes the Collamat NG main housings hermetically – preventing the intrusion of water and dust - according to the IP54 declaration. Previous to a new sealing the cured silicon- and screw thread sealing residues have to be removed/cleaned (e.g. with LOCTITE 7063 cleaner). After a proper cleaning of these parts the corresponding parts have to be properly sealed with new silicon compound. (please consider the hardening time of the silicon compound and the screw thread sealing).

Previous to the weekly/monthly (outside) cleaning of the complete unit with a high-pressure yet nozzle the Collamat NG housing has to be protected with a corresponding plastic hood.

The IP54 (protection class) warrants a certain protection against splash water and dust deposit – but NOT against high pressure water (see IP definition 4.3.).

Damages caused by extreme environment conditions or due to improper sealing of the Collamat NG housing will not be covered by the Collamat NG factory warranty!

Collamat NG units in IP54 version have to be inspected annually by a well trained specialist!
Collamat NG Series

Maintenance

Electrical equipment

DANGER!
Danger of death due to electrical current!
Contact with live components can cause danger of death.
Electrically driven components can start to move without warning and cause extremely serious injuries.
Therefore:
– Before starting work, disconnect the power supply and secure it against being switched on again.
– All work on the electrical equipment, on individual electrical components and on the connections may only be performed by qualified electricians.

Personal protective equipment

For all maintenance work, the following must be worn:
- Industrial safety clothing
- Protective gloves
- Safety footwear
- Goggles

Securing against switching on again

DANGER!
Danger of death through unauthorized switching on!
During maintenance, there is a danger that the power supply will be switched on again without authorization. This causes danger of death for those in the danger area.
Therefore:
– Before starting work, disconnect all power supplies and secure them against being switched on again.

Environmental protection

Observe the following environmental protection instructions when carrying out maintenance:
- At all lubrication points which are provided with lubricant manually, remove escaping, used, or surplus grease and dispose of this according to the local regulations.
- Collect drained oil in suitable containers and dispose of according to the local regulations.
9.2 Maintenance schedule

The following sections describe the maintenance work necessary for optimum and fault-free operation. The maintenance intervals are to be observed.

If the regular checks show increased wear of individual components or functional assemblies, the operator must shorten the maintenance intervals according to the actual wear.

Changes compared with normal operation (higher power consumption, temperatures, vibrations, noise etc, or the triggering of monitoring devices) are signs that the functions are impaired. To avoid faults which could cause direct or indirect injuries or damage, the maintenance personnel must be informed immediately.

In case of queries regarding maintenance work and intervals: contact the manufacturer (service address → page 2).

In addition to these operating instructions, the instructions in the Appendices for the installed components also apply. The information which they contain – in particular the safety information – must be observed!

<table>
<thead>
<tr>
<th>Interval</th>
<th>Maintenance work</th>
<th>To be performed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>Clean dirt, dust and adhesive deposits from traction roller, pressure roller, guide roller and dispensing edge.</td>
<td>Operator</td>
</tr>
<tr>
<td></td>
<td>Check ease of movement of moving parts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Visual inspection of condition and damage to the machine</td>
<td></td>
</tr>
<tr>
<td>Monthly</td>
<td>Clean dirt from entire machine</td>
<td>Operator</td>
</tr>
<tr>
<td></td>
<td>Check condition and correct function of electric cables, switches and safety devices (see Technical Manual)</td>
<td>Qualified electrician</td>
</tr>
<tr>
<td></td>
<td>Check pneumatic components and hoses for correct connection and function (units with special applicator only)</td>
<td>Specialist</td>
</tr>
<tr>
<td>Every 6 months</td>
<td>Check all fixing screws for tightness. Tighten if necessary. Observe tightening torque!</td>
<td>Specialist</td>
</tr>
<tr>
<td>Annually</td>
<td>Collamat NG’s with the optional protection have to be maintained and checked annually (see above - IP54 version)</td>
<td>well trained specialist</td>
</tr>
</tbody>
</table>
9.3 Cleaning

On occurrence of superficial dirt, proceed as follows:

1. Switch off the machine and secure against switching on again.

2. Remove dirt correctly. Note:

- Do not use aggressive cleaning agents.
- Absorb oil deposits with oil-absorbing materials (e.g. sawdust).
- Observe local regulations to dispose of cleaning cloths and processing residues in an environmentally friendly manner.
- After cleaning work, check that all opened covers and safety devices are closed and function correctly.

**BEWARE!**
The device can be damaged by incorrect cleaning!

Aggressive cleaning and auxiliary agents can damage or destroy the guide rollers/guide plates, compressed air hoses, electrical cables and nearby components.

Therefore:

- Do not use cleaning agents with aggressive ingredients.
- Never remove adhesive residues with sharp-edged or pointed objects, knives or similar tools.

**INFORMATION!**
Remove adhered labels as soon as possible. The longer they adhere to the machine, the stronger the adhesion!
10 Faults, repair and maintenance work

This chapter describes the possible causes of faults, and the work needed to remedy these.

If there is an increase of similar faults due to greater than average use, the maintenance intervals must be shortened according to the actual use.

Contact the manufacturer in case of faults which cannot be remedied with the aid of the following information (→ S. 2)!

10.1 Safety - Warnings

**Basics**

**WARNING!**

Danger of injury through incorrect remedy of faults!

Incorrect remedy of faults can cause serious injury or damage. Therefore:

– Only have work for the remedy of faults carried out by qualified and instructed personnel.

– Before starting work, sufficient space for assembly should be made.

– Pay attention to tidiness and cleanliness at the assembly site! Loose, stacked or scattered components and tools are a source of accidents.

– If components need to be replaced:
  
  Pay attention to correct fitting of replacement parts.
  
  Install all fixing elements correctly.
  
  Observe the correct screw-tightening torques.

– Before switching on, ensure that all covers and safety devices are correctly installed and function correctly.

**Pneumatic system**

**WARNING!**

Danger of injury due to compressed air!

The compressed air in the pneumatic system can escape without warning and set pneumatically driven components in motion, causing serious injuries.

Therefore, before starting any work:

– Switch off the pneumatic system and secure against switching on.

– Depressurize all components which are under pressure.
Electrical equipment

DANGER!
Danger of death due to electrical current!
Contact with live components can cause danger of death.
Electrically driven components can start to move without warning and cause extremely serious injuries.
Therefore:
– Before starting work, disconnect the power supply and secure it against being switched on again.
– All work on the electrical equipment, on individual electrical components and on the connections may only be performed by qualified electricians.

Personnel

- If not otherwise stated, the work to remedy faults can be carried out by the operator.
- Some work may only be carried out by specially trained personnel, or only by the manufacturer. This will be separately indicated in the particular description of the fault.
- Work on electrical equipment may only be carried out by qualified electricians.
- Replacement of parts and components may only be carried out by specialist personnel.

Personal protective equipment

For all work during remedy of faults, the following must be worn:
- Industrial safety clothing
- Protective gloves
- Safety footwear
- Goggles

Securing against switching on again

DANGER!
Danger of death through unauthorized switching on!
During remedy of faults, there is a danger that the power supply will be switched on again without authorization. This causes danger of death for those in the danger area.
Therefore:
– Before starting work, disconnect all power supplies and secure them against being switched on again.
Environmental protection

Observe the following environmental protection instructions when remedying faults:

- At all lubrication points which are provided with lubricant manually, remove escaping, used, or surplus grease and dispose of according to the local regulations.
- Collect drained oil in suitable containers and dispose of according to the local regulations.

Conduct in case of faults

Always:

1. Activate the Emergency Stop immediately in case of faults which cause a direct danger of injury or damage.
2. Switch off all energy supplies and secure against switching on.
3. According to the type of fault, have the cause determined and remedied by authorized specialist personnel.

10.2 Restarting after remedy of faults

After remedy of the fault or removal of the cause of interruption:

1. Reset the emergency stop device.
2. Acknowledge the error message or fault on the control unit.
3. Ensure that no-one is in the danger area.
4. Start the machine according to the instructions in the chapter "Start-up".
10.3 Error messages

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible cause</th>
<th>Remedy</th>
<th>Execution by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error #1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Out of stock</td>
<td>Out of stock (rewinder)</td>
<td>Mount new labels (spool)</td>
<td>Operator</td>
</tr>
<tr>
<td></td>
<td>Paper brake not in correct position</td>
<td>Position the paper break in the middle of the paper path</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #2:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSC problem</td>
<td>Miss adjustment of the label sensor</td>
<td>Adjust the label sensor</td>
<td>Specialist or Operator.</td>
</tr>
<tr>
<td></td>
<td>Wrong label length adjusted</td>
<td>Adjust label length</td>
<td></td>
</tr>
<tr>
<td>Error #3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewinder stop</td>
<td>Check position of the rewinder pendular</td>
<td>If pendular is in top position - pull on paper web to tighten the paper web – bring down the pendular</td>
<td>Specialist or Operator.</td>
</tr>
<tr>
<td>Error #4:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewinder full</td>
<td>Too much backing paper on rewinder – max diameter reached.</td>
<td>Remove backing paper from rewinder core</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #5:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traction roller open</td>
<td>Pressure roller is lifted/open (up position)</td>
<td>The pressure roller has to be well set onto the traction roller by turning the pressure roller button (left turn)</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #6:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Label low</td>
<td>The label low sensor indicates the minimum amount of labels on the rewinder unit</td>
<td>Mount a new label spool - or wait until error #1 shows up</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #7:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor error</td>
<td>Hardware error (stepper motor driver)</td>
<td>Check fuse SI2 on main board?</td>
<td>Specialist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Status LED motor driver unit?</td>
<td></td>
</tr>
<tr>
<td>Error #8:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIC offline</td>
<td>Hardware error (slave controller)</td>
<td>Communications problem from/to master-/slave-controller on main board</td>
<td>Specialist</td>
</tr>
<tr>
<td>Error #9:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position delay</td>
<td>Positions value to low or dispensing speed to high for the set position value</td>
<td>Increase the position value or decrease the dispensing speed</td>
<td>Specialist</td>
</tr>
<tr>
<td>Error #10:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printer error</td>
<td>Error on the connected printer or on another peripheral unit</td>
<td>Check printer resp. Peripheral unit / remove error</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #11:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error-input</td>
<td>The connected unit on the error input (connection-box/-module) is in error state</td>
<td>Check unit / remove error</td>
<td>Operator</td>
</tr>
<tr>
<td>Fault</td>
<td>Possible cause</td>
<td>Remedy</td>
<td>Execution by</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Error #12: Labeler locked</td>
<td>Labeler is locked by the LOCK-input (e.g. safety stop)</td>
<td>Who did set the labeler into the LOCK state? If you do have the corresponding authorization – remove the LOCK input (safety?)</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #13: no READY signal</td>
<td>A connected peripheral unit is blocking the labeler</td>
<td>Check the connected unit – if the blocking is not disappearing automatically</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #14: Counter reached</td>
<td>The counter has reached the „Batch size“ (end value)</td>
<td>Adjust the “Batch size” or the “Start value” of the counter (Start value &lt; Batch size) or clear the Start value.</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #15: Predisps. too short</td>
<td>Predispsensing value to short or dispensing speed to high for the adjusted predispsensing value</td>
<td>Increase the predispsensing parameter or reduce the dispensing speed</td>
<td>Specialist</td>
</tr>
<tr>
<td>Error #16: Max. speed</td>
<td>Max. dispensing speed reached (with speed mode „Tacho“)</td>
<td>Reduce the speed of the product conveyor belt or increase the max. speed parameter</td>
<td>Specialist or Operator.</td>
</tr>
<tr>
<td>Error #17: Prod.dist. too short</td>
<td>Product distance too short</td>
<td>Separate products</td>
<td>Specialist or Operator.</td>
</tr>
<tr>
<td>Error #18: Predisps. too long</td>
<td>Adjusted predispsensing value to long (compared to label length)</td>
<td>Reduce predispsensing value</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #19: Missed label</td>
<td>Label end (edge) has not been detected (within adjusted/measured label length)</td>
<td>Check adjusted label length Adjust label sensor</td>
<td>Operator</td>
</tr>
<tr>
<td>Error #20: Nonstop error</td>
<td>Master- and Slave-unit in error or stopped (in Nonstop mode)</td>
<td>Remove error on Master and Slave or/and set units to READY/STANDBY</td>
<td>Operator</td>
</tr>
</tbody>
</table>
## 10.4 Table of faults

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible cause</th>
<th>Remedy</th>
<th>Execution by</th>
</tr>
</thead>
<tbody>
<tr>
<td>- No power</td>
<td>No mains power</td>
<td>Check power line</td>
<td>Operator</td>
</tr>
<tr>
<td></td>
<td>Blown fuses</td>
<td>Check main fuses</td>
<td>Specialist</td>
</tr>
<tr>
<td></td>
<td>Fault in electrical system (cable or board)</td>
<td>Establish and remedy fault</td>
<td>Qualified electrician or manufacturer</td>
</tr>
<tr>
<td>Power on</td>
<td>Operator's safety device blocked or faulty</td>
<td>Determine cause and remedy. Then ensure that no-one is in the danger area of the device, and acknowledge the interruption</td>
<td>By specialist authorized by operating company</td>
</tr>
<tr>
<td>- but NO labeling</td>
<td>Fault in the safety chain of the entire plant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power ON</td>
<td>Error/warning message on operator panel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- no correct labeling</td>
<td>Erroneous parameter adjustment</td>
<td>Check parameter settings</td>
<td>Operator</td>
</tr>
<tr>
<td>Traction unit open?</td>
<td>Remove cause of shown error / warning</td>
<td>Action according to error-warning - message</td>
<td></td>
</tr>
<tr>
<td>Label low / Rewinder full?</td>
<td>Traction unit open?</td>
<td></td>
<td>Operator</td>
</tr>
<tr>
<td>Paper break (no paper)?</td>
<td>Label low / Rewinder full?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensors?</td>
<td>Paper break (no paper)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incremental encoder? etc.</td>
<td>Sensors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewinder dancer status?</td>
<td>Check position of (active) rewinder dancer -&gt; paper break stop?</td>
<td></td>
<td>Operator</td>
</tr>
<tr>
<td>Air / vacuum ?</td>
<td>Air / vacuum ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorrect or poor</td>
<td>Collamat NG is not correctly aligned with the goods conveyor</td>
<td>Correctly align Collamat NG. Observe correct height adjustment.</td>
<td>Specialist</td>
</tr>
<tr>
<td>positioning of the labels</td>
<td>Poor label quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor error</td>
<td>Motor overloaded</td>
<td>Check paper web path – too much friction (dirt, glue,...)</td>
<td>Specialist</td>
</tr>
<tr>
<td>Ambient air temperature to</td>
<td>Motor blocked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>Incorrect or poor positioning of the labels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wrong turning direction of</td>
<td>Motor blocked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>motor</td>
<td>Incorrect or poor positioning of the labels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product sensor does not</td>
<td>Broken cable</td>
<td>Check connecting cable</td>
<td></td>
</tr>
<tr>
<td>work</td>
<td>Position and alignment not correctly adjusted</td>
<td>Adjust position and alignment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensor not adjusted</td>
<td>Adjust sensor</td>
<td></td>
</tr>
<tr>
<td>Motor blocked</td>
<td>Too much friction on the paper web path (dirt, glue,...)</td>
<td>Check paper break</td>
<td>Operator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check Rewinder adjustment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clean paper path</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10.5 Maintenance- and Repair- works

The following part lists the maintenance- and repair- works. These are jobs for a skilled labor (spare parts see appendix).

Safety

DANGER!
Danger of life caused by unauthorized power on!

Only with the mains control switch in position „0“ and locked, individuals are allowed to be in the area of danger.

A not authorized switching on of a locked mains control switch can bring individuals into serious danger of life.

Therefore:
– Never remove a lock without authorization.
– Be sure no individuals are in the area of danger

10.6 Taking out of service and disposal

A Collamat NG which can no longer be used should not be disposed of as an entire unit, but rather, should be dismantled into its component parts and recycled according to the type of materials. Materials which cannot be recycled should be disposed of in an environmentally friendly manner.

- Before the Collamat NG is taken out of service and disposed of, it must be completely disconnected from the power supply and the compressed air network.
- The dismantling and disposal of the Collamat NG may only be carried out by specialist personnel.
- If hazardous or poisonous materials have been labeled, the Collamat NG must be decontaminated before disposal.
- The Collamat NG must be disposed of according to the applicable national regulations.
# 11 Abbreviations, signals, terms,…

## 11.1 Abbreviations - general

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESD</td>
<td>ElectroStatic Discharge</td>
</tr>
<tr>
<td>EMC</td>
<td>ElectroMagnetic Compatibility</td>
</tr>
<tr>
<td>GND</td>
<td>GrouND (shield)</td>
</tr>
<tr>
<td>LCD</td>
<td>Liquid Crystal Display</td>
</tr>
<tr>
<td>LED</td>
<td>Light Emitting Diode</td>
</tr>
<tr>
<td>nc / NC</td>
<td>not connected</td>
</tr>
<tr>
<td>RS232</td>
<td>Serial port - standardized, serial data exchange</td>
</tr>
</tbody>
</table>

## 11.2 Signal names

<table>
<thead>
<tr>
<th>Signal Name</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ADA_HOME_X</td>
<td>The applicator is in the start- (home-) position</td>
</tr>
<tr>
<td>COUNTER_INX</td>
<td>Counter input</td>
</tr>
<tr>
<td>DISP</td>
<td>Feed-key on the applicator housing and on the operator panel</td>
</tr>
<tr>
<td>ERR</td>
<td>Error signal – will be set in case of any labeler error condition (labeler in stop)</td>
</tr>
<tr>
<td>ERRIN</td>
<td>ERRor input – from external peripherals</td>
</tr>
<tr>
<td>FEED</td>
<td>FEED-signal, active while traction motor is moving</td>
</tr>
<tr>
<td>FLAP</td>
<td>Magnet flap applicator control signal</td>
</tr>
<tr>
<td>GND</td>
<td>GrouND (shield)</td>
</tr>
<tr>
<td>GSC_X</td>
<td>Goods Scanner input</td>
</tr>
<tr>
<td>GSC_OUT</td>
<td>Goods Scanner output</td>
</tr>
<tr>
<td>HOT</td>
<td>HOTstamp control signal</td>
</tr>
<tr>
<td>IFEED_X</td>
<td>galvanic isolated (photo coupler) FEED signal (feed = paper is moving)</td>
</tr>
<tr>
<td>LLO</td>
<td>Label Low input signal - shows the end of the paper stock</td>
</tr>
<tr>
<td>LOCK</td>
<td>Lock labeler (stop resp. emergency stop)</td>
</tr>
<tr>
<td>LSC_PWM</td>
<td>Puls-signal - to sender diodes of the label receiver</td>
</tr>
<tr>
<td>LSC_T</td>
<td>Label Scanner input - Transmissive (with light tube – Sensor 1)</td>
</tr>
<tr>
<td>LSC_R</td>
<td>Label Scanner input - Reflective (black mark sensor – optional – Sensor 2)</td>
</tr>
<tr>
<td>nc</td>
<td>Not Connected</td>
</tr>
<tr>
<td>NOK</td>
<td>Not OK</td>
</tr>
<tr>
<td>NSTP_INX</td>
<td>NonStoP IN-put</td>
</tr>
<tr>
<td>NSTP_OUT</td>
<td>NonStoP OUT-put</td>
</tr>
<tr>
<td>OOL</td>
<td>Out Of Label input</td>
</tr>
<tr>
<td>READY</td>
<td>READY input from external peripherals</td>
</tr>
<tr>
<td>RTA_DIR</td>
<td>Motor turning direction (output to motor controller)</td>
</tr>
<tr>
<td>RTA_STEP</td>
<td>Puls output to motor controller</td>
</tr>
<tr>
<td>RUN</td>
<td>RUN output (labeler in RUN-mode - not in ERR- resp. STOP-mode)</td>
</tr>
<tr>
<td>RWF</td>
<td>ReWinder Full, rewinder roll diameter will get to large</td>
</tr>
<tr>
<td>RW_ERROR_INX</td>
<td>Rewinder controller error output (open collector - input of main board)</td>
</tr>
<tr>
<td>RW_ENABLE_X</td>
<td>ReWinder controller ENABLE input</td>
</tr>
<tr>
<td>RW_WIDTH_X</td>
<td>ReWinder controller WIDTH input</td>
</tr>
<tr>
<td>START</td>
<td>START input (connection-box)</td>
</tr>
<tr>
<td>STOP</td>
<td>STOP input (connection-box)</td>
</tr>
<tr>
<td>STP</td>
<td>STOP output (labeler in STOP mode)</td>
</tr>
<tr>
<td>TACA_P</td>
<td>Incremental encoder - phase A signal - photo coupler input</td>
</tr>
<tr>
<td>TACB_P</td>
<td>Incremental encoder - phase B signal - photo coupler input</td>
</tr>
<tr>
<td>TUNIT</td>
<td>Traction UNIT, traction roller open (lift up)</td>
</tr>
<tr>
<td>WAR</td>
<td>WAR output – warning output – warning condition of labeler</td>
</tr>
</tbody>
</table>
11.3 Terms - explanations

ACB  
Applicator Connection Box – this box is used together with the AVA

Acceleration:  
Motor parameter. – steepness of the ramp up course (speed increment)

Applicator:  
Part of the labeler where the label will be stripped from the backing paper and moved to the product (good) - by moving the backing paper over the (sharp) dispensing edge. There are several special applicators available: see air vacuum applicator: AVA-1 and AVA-2 see magnet flap applicator: MFA

Air-Vacuum Applicator – 1:  
- Label is moved to vacuum plate.  
- the product (good) triggers the start of the application  
- the label on the suction (vacuum) plate is pushed to the surface of the product (by pneumatic piston(s)  
  a special AVA driver board (Piggyback-Board) is used to control/supervise the applicator.

Air-Vacuum Applicator – x:  
see above  
custom designed applicators are available – with up to three pneumatic pistons.

Board:  
An assembled control unit will be called print or PCB in this document

CE-Sign:  
Product certificat - Conformité Européenne

Collamat:  
Brand name for the labeler unit from Collamat AG

Collamat-NG:  
Type identification of the NG series

Connection box  
Inputs/outputs from/to external peripherals (Alu-Box)  
- HMC0604-1x Board

Connection module:  
Inputs/outputs from/to external peripherals (UMK-module)  
- HMC0604-1x Board

Connection plate “SIGNALS”: this is also called side connection plate “DATA”

Dancer:  
moving part of the unwinder- and rewinder-unit controlling the paper flow

Deceleration:  
Motor parameter. – steepness of the ramp down course (speed decrement) (negative acceleration)

Delayed predispensing:  
also called corner edge labeling - the label will be placed over the rear corner of the product.

EMC  
ElectroMagnetic Compatibility (EMV – german)

Ext. operator panel:  
The operator panel will be removed from the original position and moved to a better place close to the labeler (better access of the operator panel for lying down mounting or for over head mounting). Use the ext. operator panel mounting set

Flap applicator:  
see MFA
FXA  | Fixed applicator – the dispensing edge is fixed to the applicator housing. see also SLA, MFA or AVA-x applicator / applicator - the HMC0605x – applicator board is used for FXA

Galvanic isolation:  | electrical NOT conductive connection

GSC:  | GoodSCanner – Product sensor (optical, capacitive, ultrasound, ....) Type and brand depending on product shape and material.....

Head open:  | see TUO

Incremental encoder:  | measures the speed of the product (good) on the conveyor belt - several types and mounting versions available

IP:  | Protection class (e.g. IP54)

Label sensor:  | see LSC

Labeling speed:  | speed of the product (good) on the conveyor belt = labeling speed

LC-Display, LCD:  | Liquid Cristal Display – see operator panel

Left version:  | paper will be drown (dispensed) from right to left (view to the front of the labeling unit)

LLO - Module:  | Label LOw Module = supervising the paper volume on the rewinder unit. The LLO status will be reported (by the LLO-module) to the main controller HMC0601-x.

LSC:  | Label Scanner – part of the applicator. The LSC includes two parts: Label sensor sender unit (LSC sender) Label sensor receiver unit (LSC head)

Magnet Flap Applicator:  | 1- waiting position: dispensing edge is pulled up by a torsion spring

MFA:  | 2- label is moving: the dispensing edge will be pushed down to the product (activated electromagnet)

| 3- label stop: the electromagnet will be deactivated – the dispensing edge moves back to the waiting position the HMC0606x – board is used

Modular rail:  | modular rail 40x40mm, 250 or 500mm in length - or user defined

Mounting stand:  | several mounting stands are available (with corresponding clamping piece) I

Multiple labeling:  | places two to xxx labels on to the product

NG 100 X R:  | labeling unit type: Collamat NG with a max. paper width of 100mm = X (or 180/250mm = Y/Z), 100 = active rewinder unit (or 50 = passive rewinder unit) in R = right version (or L = left version).

| possible variants see: table „Technical data“

Nonstop:  | Interconnection of two labeling units for “nonstop” labeling

OOL:  | Out Of Label - see paper break / paper break check

Operator Panel:  | used to controlled the labeling unit, used to set/check the system parameter
Over edge labeling: also called corner edge labeling or delayed predispensing labeling- the label will be placed over the rear corner of the product.

Paper break: the paper break control unit (see OOL) – integrated in the paper break message to main controller HMC0601-x

Piggyback-Board: optional plug in board for the main controller (HMC0601-x) will be used to control the optional applicators (AVA-1, AVA-x, ….) will be used to control the optional X-web unit (X-WEB) Will be used to control user defined applications

Position: Position of the label on the product

Predispensing: Predispensing of the label on the dispensing edge. Section (mm) of the label on the dispensing edge overlapping the dispensing edge.

Rewinder: Active rewinder: the rewinder will be driven by a DC-motor Passive rewinder: the rewinder will be driven by the main stepper motor (belt driven) – a friction clutch is used to control the movement.

Right version: paper will be drawn (dispensed) from left to right (view to the front of the labeling unit)

RJ45 Port: supervising/controlling the Collamat-NG with the optional ethernet (RJ45) connection

RS232 - optional: supervising/controlling ext. peripherals with the optional RS232 connection (customer design application)

RWF - Module: ReWinder Full Module = supervising the amount of backing paper on the rewinder unit. The RWF-module will send a message to the main controller (HMC0601-x) as soon as the backing paper volume on the rewinder core reaches a diameter of 280mm.

Signal bar: RED / ORANGE / GREEN - LED signal bar showing the ERROR / WARNING / RUN - status of the labeling unit.

Start frequency: max. allowed stepper motor frequency (start from stop to start frequency – without ramp up function)

Status of the labeler: status of the labeling unit – see RUN, ERROR,WARNING (Pause = not RUN)

Step distance: is the distance the paper is moving forward while moving the stepper motor one step forward – also called step resolution

SLA Spring Loaded Applicator — the dispensing edge will be pushed down to the product (spring force)

Stop accuracy: accuracy of the label position on the dispensing edge

Stop frequency: max. allowed stepper motor frequency (stop motor from stop frequency to motor stop – without ramp down function)

TUO: Traction Unit Open – the pressure roller is NOT pressing on to the traction roller (lift up position of the pressure roller)

Traction unit: part of the labeler – stepper motor moving the paper (backing paper) over
the dispensing edge

**Good sensor:** we can offer/recommend different good sensors - depending on the constitution of the product (good): ask for Sick WT150-P460, Sick WL150-P430 or others – see also GSC

**X-WEB unit:** Crossweb unit produced by HM Systems SA.
The optional X-WEB driver (see also Piggyback) will be used to control / supervise the system.
### 12 MENU PARAMETER

<table>
<thead>
<tr>
<th>Name-Eng</th>
<th>Name-Ger</th>
<th>Min</th>
<th>Max</th>
<th>Default</th>
<th>Dec.</th>
<th>Selection / Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label position</td>
<td>Etiketten Position</td>
<td>0</td>
<td>25000</td>
<td>0</td>
<td>1 mm</td>
<td></td>
</tr>
<tr>
<td>Fixed speed</td>
<td>Feste Geschwind.</td>
<td>10</td>
<td>10000</td>
<td>2500</td>
<td>2 m/min</td>
<td></td>
</tr>
<tr>
<td>Tacho</td>
<td>Tacho</td>
<td>10</td>
<td>10000</td>
<td>2500</td>
<td>2 m/min</td>
<td></td>
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<tr>
<td>Predispening</td>
<td>Vorspandung</td>
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<td>5000</td>
<td>0</td>
<td>1 mm</td>
<td></td>
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<td>Label length</td>
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<td>2000</td>
<td>300</td>
<td>0 mm</td>
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<td>Etiketten Unterd.</td>
<td>0</td>
<td>1000</td>
<td>150</td>
<td>0 mm</td>
<td></td>
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<td>Goods supression</td>
<td>Waren Unterd.</td>
<td>0</td>
<td>2500</td>
<td>0</td>
<td>0 mm</td>
<td></td>
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<td>Start value</td>
<td>Start value</td>
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<td>1000000</td>
<td>0</td>
<td>0 cnt. - counter</td>
<td></td>
</tr>
<tr>
<td>Batch size</td>
<td>Batch size</td>
<td>0</td>
<td>1000000</td>
<td>0</td>
<td>0 cnt. - counter</td>
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<td>Number of labels</td>
<td>Anzahl Etiketten</td>
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<td>20</td>
<td>1</td>
<td>0 labels - multi labeling</td>
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<td>Dist. betw. labels</td>
<td>Abst.zw.Etiketten</td>
<td>50</td>
<td>25000</td>
<td>1000</td>
<td>1 mm - multi labeling</td>
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<td>Delayed predisp pos</td>
<td>Uebereck Position</td>
<td>0</td>
<td>2000</td>
<td>0</td>
<td>1 mm - delayed predispensing</td>
<td></td>
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<td>Fixed speed</td>
<td>Feste Geschwind.</td>
<td>0</td>
<td>10000</td>
<td>2500</td>
<td>2 m/min - delayed dispensing</td>
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<td>Predis delay</td>
<td>Verz.Vorspandung</td>
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<td>200</td>
<td>0</td>
<td>0 mm - delayed dispensing</td>
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<td>Tacho pul length</td>
<td>Tacho-Puls Laenge</td>
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<td>1000000</td>
<td>27489</td>
<td>6 mm</td>
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<td>Manual feed speed</td>
<td>man.FEED Geschw.</td>
<td>10</td>
<td>10000</td>
<td>2500</td>
<td>2 m/min</td>
<td></td>
</tr>
</tbody>
</table>

**PROGRAMS**

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**LANGUAGES**

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<tr>
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<th>Englisch 1</th>
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<td>Deutsch 2</td>
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<td>Danish</td>
<td>Dänisch 3</td>
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<td>Französisch 4</td>
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<td>Name-German</td>
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<td>PROD. START</td>
<td>PRODUKT START</td>
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<tr>
<td>LABEL SENSOR</td>
<td>ETI-SENSOR TYP</td>
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<tr>
<td>NONSTOP MODE</td>
<td>NONSTOP MODE</td>
</tr>
<tr>
<td>SELECT COUNTER</td>
<td>ZAEHLEINGANG</td>
</tr>
<tr>
<td>ERROR HANDLING</td>
<td>FEHLEBEHANDLUNG</td>
</tr>
<tr>
<td>ERROR MESS.</td>
<td>FEHLERMELDUNGEN</td>
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<td>Out of stock</td>
<td>Keine Etiketten</td>
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<td>LSC Problem</td>
<td>LSC Problem</td>
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<td>Rewinder stop</td>
<td>Stop Aufwickler</td>
</tr>
<tr>
<td>Rewinder full</td>
<td>Aufwickler voll</td>
</tr>
<tr>
<td>Traction unit open</td>
<td>Anpressrolle offen</td>
</tr>
<tr>
<td>Label stock low</td>
<td>Etikettenvorrat!</td>
</tr>
<tr>
<td>Motor error</td>
<td>Motor Fehler</td>
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<tr>
<td>PIC offline</td>
<td>PIC offline</td>
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<tr>
<td>Position delay</td>
<td>Position Versatz</td>
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<td>Printer error</td>
<td>Drucker Fehler</td>
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<td>Error input</td>
<td>Fehler-Eingang</td>
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<td>Labeller locked</td>
<td>Spender gesperrt</td>
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<td>No ready input</td>
<td>kein READY Signal</td>
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<td>Counter reached</td>
<td>Zaeherstand</td>
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<tr>
<td>Predispo too short</td>
<td>Vorspend. zu kurz</td>
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<tr>
<td>Max. speed</td>
<td>Max. Geschwind.</td>
</tr>
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<td>Prod. dist. too short</td>
<td>Prod. dist. zu klein</td>
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<td>Predispo. Too long</td>
<td>Vorspendung zu gross</td>
</tr>
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<td>Missed label</td>
<td>Fehlende Etikette</td>
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<td>Nonstop Error</td>
<td>Nonstop fehler</td>
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<td>APPLICATOR TYP</td>
<td>APPLIKATOR TYPE</td>
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<td>POLARITY IFEED</td>
<td>Polaritaet IFEED</td>
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<td>MOTOR DIRECT.</td>
<td>MOTOR DREHRICHT.</td>
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<td>LABEL WIDTH</td>
<td>ETIKETTEN BREITE</td>
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<td>PASSWORD</td>
<td>PASSWORD</td>
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<td>Level 1</td>
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<td>Level 3</td>
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<td>Level 4</td>
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<td>WAKE UP MODE</td>
<td>EINSCHLATZUSTAND</td>
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<td>Name-Eng</td>
<td>Name-Ger</td>
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<td>------------</td>
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<tr>
<td>Start speed</td>
<td>Start-Geschw.</td>
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<tr>
<td>Acceleration</td>
<td>Beschleunigung</td>
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<tr>
<td>Stop speed</td>
<td>Stop-Geschw.</td>
</tr>
<tr>
<td>Deceleration</td>
<td>Verzögerung</td>
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# 15 REGISTER
Register A
CE Declaration of Conformity

The manufacturer: Collamat AG
Bodenmattstrasse 34
CH-4153 Reinach - Switzerland

declares that the product: Series: Collamat-NG
Serial number: from 0006 to ....
Year of manufacture: from 2010 to ....

relates to all basic requirements of the below-mentioned directives (including their changes and extensions):
2006/42/EG - directive on machinery
2004/108/EG - electromagnetic compatibility (EMC)

Authorized person to compile the complete technical documentation for this unit according to appendix VII - chapter A of the machinery directive 2006/42/EG is:
Collamat AG, Paul Schneider, Bodenmattstrasse 34, CH-4153 Reinach, Switzerland

Applied harmonized standards, in particular are:
- EN ISO 60204-1 Safety of Machinery - Electrical Equipment of Machines –
  Part 1: General Requirements-IEC 60204-1: 1997;
- EN ISO 12100-1 Safety of machinery -- Basic concepts, general principles for design –
  Part 1: Basic terminology, methodology
- EN ISO 12100-2 Safety of machinery -- Basic concepts, general principles for design –
  Part 2: Technical principles

Issued in Reinach: 01. January 2010

Collamat AG – Bodenmattstrasse 34, CH-4153 Reinach, Switzerland
Authorised persons: CEO Steen Kreinbrink or CFO Eliseo Palmieri
Register B

CE – Declaration of incorporation

The manufacturer: Collamat AG
Bodenmattstrasse 34
CH-4153 Reinach - Switzerland

declares, that the machinery / machinery component named below as:

Series: Collamat NG
Serial number: from 0006 to .....
Year of manufacture: from 2010 to ....

is intended to be assembled with other machinery / machinery components to constitute machinery, which shall not be put into service until the assembled machinery has been declared in conformity with the provisions of the EC Council Directive on Machinery 2006/42/EG (including their changes and extensions):

Appendix I: article: 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4 and 1.5.1.

The above mentioned machinery relates furthermore to the regulations and directives of:
2006/95/EG (low voltage directive) and 2004/108/EG (electromagnetic compatibility directive - EMC).

Applied harmonized standards, in particular are:
EN ISO 12100-1 Safety of machinery -- Basic concepts, general principles for design – Part 1: Basic terminology, methodology
EN ISO 12100-2 Safety of machinery -- Basic concepts, general principles for design – Part 2: Technical principles
EN ISO14121-1 Safety of machinery. Risk assessment. Principles

A technical documentation set of this piece of machinery is available on demand - in electronic form (for governmental use only). The corresponding documentation to this piece of machinery has been issued according to appendix VII part B.

Responsible person for the composition of all technical documents according to Appendix VII – chapter B of the Directive on Machinery 2006/42/EG is:

Collamat AG, Paul Schneider, Bodenmattstrasse 34, CH-4153 Reinach, Switzerland

Issued in Reinach: 01. January 2010-01-14

by:

Collamat AG – Bodenmattstrasse 34, CH-4153 Reinach, Switzerland

Authorized persons: CEO Steen Kreinbrink or CFO Eliseo Palmieri
RoHS Declaration of Conformity

The EU directive 2002/95/EG about the restriction and usage of dangerous/hazardous materials does not allow the following listed substances.

It’s more and more important for many customers to use proper (conform) parts only – even if there is no lawful prohibition for such ingredients parts.

Definition of RoHS Conformity:

RoHS conformity means that the part does not have any forbidden substances above the limit value – as declared in the directive and that the product (part) can be processed with higher temperatures – as required for a lead free soldering process.

The forbidden substances and the max. allowed limits per homogeneous basic material are:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>0.1%</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.1%</td>
</tr>
<tr>
<td>Hexavalent Chrome</td>
<td>0.1%</td>
</tr>
<tr>
<td>Polybrominated Biphenyl (PBB)</td>
<td>0.1%</td>
</tr>
<tr>
<td>Polybrominated Diphenylether (PBDE)</td>
<td>0.1%</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

All material suppliers for this product (Collamat NG – see product details below) have declared, that there parts/subassemblies are consistence with the RoHS conformity standard.

Collamat AG has taken all necessary steps to check and ensure the above statements. The assertion is only valid for products/parts bought at the date of issue or later.

Product details

Order number: xxxxxxxxxx
Description/Manufacturer/Brand: Labeling-System / Collamat AG / Collamat-NG
Manufacturer Identification: Collamat-NG-SS-WWW-D whereas: SS = speed, WWW = width, D = direction

Date: Reinach, April 10th. 2009

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Register D

UL- CSA- Conformity

Concerning: **UL- / CSA- approval** for the Collamat Labeling series: **Collamat-NG**

The manufacturer: 
Collamat AG  
Bodenmattstrasse 34  
CH 4153 Reinach  
Switzerland

**General:**
Together with the clarifications for the “CE-declaration” the potential to reach the “UL-/CSA-approval” standard has been checked. Many of our distributors have already declared the UL- (CSA) status of the concerning parts / assemblies sold to Collamat AG (for the HMC06-serie with UL-CSA- approval). A number of inquiries are still pending – but we hang in there until we have checked the entire part-list of the HMC06-serie. We also tend to use alternative parts/assemblies for those units requiring the “UL-/CSA-approval” standard.

**Cables:**
UL approved cables/wires are particularly not easy available in Europe. There are a few cables required (especially for the LSC) which we do not get in the corresponding UL specification (cable diameter, flexibility, ....).
The cables used for the HMC06-serie are (easy available European) standard cables/wires – which are OK to comply with the CE- conformity / declaration.
In a second step we will prepare a separate cable set with UL approved cables only (this will be done together with our main cable assembler).

**PCB’s:**

**UL- / CSA- approval:**
Print materials according to fire protection class **UL 94 / V0** (category QMZS2)
Production / assembly of PCB according to **UL accredited production process** (ZPMV2)
**UL94** = „Tests for Flammability of Plastic Materials for Parts in Devices and Applications“
Equal to IEC/DIN EN 60695-11-10 and -20 and equal to CSA C 22.2
Our PCB manufacturers and the board assemblers have to prove (individually) their conformity to the above rules and regulations.

**Where/what:**
The status of this inquiry will be listed and continuous updated in the internal electronic part-list of the HMC06-series. The non electronic parts of the HMC06-serie are not covered in this study!

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Register E

Lifting of loads

Heavy lifting and/or heavy labor are relative terms, as individual capabilities are very different. Work that could be performed easily by a young, strong man may be unacceptable exertion for a weaker man, an older man, or for a woman or child.

The EC Directive 90/269/EWR and the Load Handling Regulation make clear statements regarding limit levels and frequencies for load handling (LASI Publication LV 9). The German Federal Ministry recommends that acceptable loads be based on age, lifting frequency and gender. For occasional lifting and carrying, women older than fifteen years of age may move loads of 15 kg; for frequent lifting and carrying, loads of 10 kg are acceptable (occasional = less than twice hourly, max. three or four steps; frequent = more than twice or three times hourly and more than four steps).

For pregnant or nursing female employees, the Mother Protection Laws are valid. In Par. 4 Sect. 1 and Sect. 2 of the Mother Protection Law, general work prohibitions are clarified, including lifting and carrying of loads. Pregnant or nursing female employees may not lift loads of more than 5 kg frequently or 10 kg occasionally by hand.

See also EC Directive 89/391/EWR.

Working with a label dispenser (Collamat NG):

The unwinder of the Collamat NG can accept label rolls that have the following maximum dimensions:

- Roll diameter: 400mm
- Roll width: 250mm

Depending on the type of paper and carrier material, a label roll with these maximum diameters may weight up to 28 kg.

For this reason, label rolls that exceed a weight of 15 kg must be moved with a lifting system onto the unwinder unit or ..... 

..... an alternative assembly of the unwinder unit must be selected, such as in which the label rolls can be loaded onto the unwinder unit near the ground with a forklift. For this, a paper guide unit is generally needed, which moves the label paper from the unwinder unit (near the ground) to the label dispenser Collamat NG (generally at working height / conveyor belt height).

If label rolls of more than 15 kg are loaded onto a standard Collamat NG, the unwinder unit must be supported with a stabilization set.

Collamat AG - Bodenmattstrasse 34, CH-4153 Reinach, Switzerland
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## Register F

### Error Checklist

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<td>Nbr. ……………………</td>
<td>S = speed: 50, 100</td>
<td>Supply voltage (power):</td>
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<tr>
<td></td>
<td>W = width: X,Y,Z</td>
<td>Supply frequency Hz:</td>
</tr>
<tr>
<td></td>
<td>P = position: T,S,B,L,R,W,A</td>
<td>Temperature °C:</td>
</tr>
<tr>
<td></td>
<td>B = branch: P,F,C,O</td>
<td>Degree of radio interference EMC (Burst):</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Degree of radio interference ESD (Static):</td>
</tr>
</tbody>
</table>

### Environment:
- Supply voltage (power):
- Supply frequency Hz:
- Temperature °C:
- Relative humidity %:
- Degree of radio interference EMC (Burst):
- Degree of radio interference ESD (Static):

### Labels:
- Width:
- Length:
- Gap:
- Thickness:
- Transparency:
- Material:

### Backing paper:
- Width:
- Thickness:
- Transparency:

### Good (product):
- Type:
- Material:
- Form:
- Length:
- Width:
- Height:
- Speed: m/min
- Length in transport direction:
- Gap between two goods:

### Labeler:
- Speed: m/min
- Cadence (pcs/min):
- Incremental encoder:

### Adjustment:
- Predispressing mm:
- Position mm:
- GOOD suppression:

### Stop Criteria:
- Label length:
- Label suppression:

### Specials:

### Machine – Environment:
- Good transportation:
- In-feed unit:
- Out-feed unit:
- Other units involved in this process:

### Peripherals:
- 1
- 2
- 3

### Shielding:
- Power lines:
- Sensor lines:

### ESD-behavior:
- Description of problem:

### Description of disturbance reaction:
- Frequency of error occurrence:
- constantly:
- periodically:
- sporadically:
- each …………. sec.
- min.

### Date + Time of error:

### Remarks:

### Error registered by:
- Name:
- Date:
Register G

Wiring – Block Diagram