

TRANSLATION OF THE ORIGINAL VERSION

CE



Operating Manual

Roller & measuring conveyor with automatic stop positioning system

EXAKT ELG/DC with P40 control unit



Basic roller conveyor: **EXAKT STANDARD**
Optional: **EXAKT ES or EXAKT MES**

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Space for notes:

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| <h1>Handover Certificate</h1> | | |
|--|--|------------------------------|
| Machine type: | | |
| Machine no.: | | |
| Construction year: | | |
| Customer address (location of the roller & measuring conveyor): | | |
| Name: | | |
| Street: | | |
| Postcode/City: | | |
| Phone: | | |
| E-mail: | | |
| Warranty: | | |
| On the basis of our Terms and Conditions of Sale, Delivery and Payment of the respective current status, we assume a warranty of 12 months , calculated from the day of delivery, for material defects and defects of title in connection with the delivery for the above-mentioned roller & measuring conveyor. | | |
| Warranty claims: | | |
| Warranty claims against R. Beck Maschinenbau GmbH are only valid if this handover declaration has been completed, signed and handed over to R. Beck Maschinenbau GmbH and the roller & measuring conveyor has been properly put into operation. | | |
| Important: Please read and follow the instructions in chapter ⇨ 1 " Liability and Warranty ". | | |
| Confirmation of the buyer: | | |
| <ul style="list-style-type: none"> ✓ The roller & measuring conveyor described above was purchased by the buyer. ✓ The roller & measuring conveyor was handed over with the corresponding operating manual, edition: _____ ✓ The contents of the operating manual are acknowledged by the buyer. ✓ Persons who are commissioned to work on this roller & measuring conveyor will be provided with the operating manual and will receive safety training. | | |
| _____ | _____ | _____ |
| Name and position | Date | Signature of the customer |
| Address of the dealer (company stamp): | The roller & measuring conveyor, including the operating manual, was handed over to the buyer and installed according to the specifications in the operating manual. | |
| | _____ | _____ |
| | Date | Signature - Customer Service |

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| Warranty claims: | |
| <p>Warranty claims against R. Beck Maschinenbau GmbH are only valid if this handover declaration has been completed, signed and handed over to R. Beck Maschinenbau GmbH and the roller & measuring conveyor has been properly put into operation.</p> | |
| <p>Important: Please read and follow the instructions in chapter ⇨ 1 "Liability and Warranty".</p> | |
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| _____ | _____ |
| Name and position | Date |
| _____ | |
| Signature of the customer | |
| Address of the dealer (company stamp): | <p>The roller & measuring conveyor, including the operating manual, was handed over to the buyer and installed according to the specifications in the operating manual.</p> |
| | _____ |
| | Date |
| | _____ |
| | Signature - Customer Service |

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| Revision | Autor | Modification | Date |
|----------|-------|----------------------------|------------|
| 001 | AG | Original manual translated | 12.09.2023 |

1 Liability and Warranty

When purchasing this roller & measuring conveyor with automatic stop positioning system, the General Terms and Conditions of Sale and Delivery of Reinhold Beck Maschinenbau GmbH apply as a matter of principle. These are provided to the purchaser or operator at the latest when the contract is concluded.



IMPORTANT NOTE: Liability and warranty claims shall only commence from the point in time at which the signed handover certificate (see ⇒ page 3 resp. page 5) from the dealer and/or end customer for the delivered machine has been submitted to Reinhold Beck Maschinenbau GmbH in written form.

Liability and warranty claims for personal injury and property damage are generally excluded if they are due to one or more of the following causes:

- Commissioning of the basic roller conveyor without prior machine instruction by an authorised and adequately trained specialist who is familiar with the function and dangers of the basic roller conveyor.
- Electrical connection as well as repair and/or maintenance work on electrical components by personnel who do not have the appropriate qualifications.
- Connection and repair and/or maintenance work on hydraulic or pneumatic components by personnel who do not have the appropriate qualifications.
- Non-observance of the instructions in the operating manual, in particular the chapter "Safety".
- Improper use or operation in an unauthorised area of application.
- Improper assembly, commissioning, operation and maintenance of the basic roller conveyor.
- Unauthorised conversions or modifications to the basic roller conveyor or additional components.
- Operating the basic roller conveyor without using all the protective equipment available for the operation.
- Inadequate monitoring and maintenance of the basic roller conveyor components and protective devices.
- Continuing to operate the basic roller conveyor when faults, damage or defects are present.
- Processing materials that do not correspond to the basic roller conveyor's area of application.
- Carrying out operations that are not permitted for the basic roller conveyor supplied.
- Use of tools that are not permitted for the basic roller conveyor supplied.
- Operating the basic roller conveyor outdoors or in damp, wet or potentially explosive environments.
- Operation of the basic roller conveyor outside permissible ambient temperatures or humidity.
- Grossly negligent behaviour when handling or operating the basic roller conveyor.
- Impact by foreign bodies, e.g. stones, metal parts, etc.
- Improperly carried out repairs.
- Catastrophic events due to force majeure.


2 Introduction

The information in this operating manual enables safe, proper and economical operation of your roller & measuring conveyor. Please observe all the explanations, notes and regulations

- to avoid dangers and malfunctions,
- to reduce repair costs and downtimes
- and to increase reliability and service life

of your roller & measuring conveyor.

The operator must ensure that this operating manual is read by the persons entrusted with the operation, maintenance and repair of the roller & measuring conveyor. This operating manual as well as any appendices and additional documents must be kept easily accessible at the roller & measuring conveyor's place of use.

| | |
|---|---|
|  | <p><i>Ignorance or non-observance of these operating instructions may result in certain accident hazards during <u>handling</u> with the roller & measuring conveyor. Before commissioning, this operating manual and any appendices and additional documents must be read thoroughly. All instructions, in particular the safety regulations, must be observed!</i></p> <p><i><u>Handling</u> the roller & measuring conveyor in the sense of these instructions means</i></p> <ul style="list-style-type: none"> • <i>the installation and commissioning,</i> • <i>the operation and proper usage,</i> • <i>the influence on operating conditions, as well as the maintenance, troubleshooting and repair.</i> |
|---|---|

Apart from the operating manual and the legally binding accident prevention provisions applicable in the country and place of use, the recognized technical regulations for safe and proper work must also be observed.

2.1 Legal notice




All contents of these operating instructions are subject to the rights of use and copyright of Reinhold Beck Maschinenbau GmbH. Any reproduction, modification, further use and publication in other electronic or printed media, as well as their online publication, requires the prior written consent of Reinhold Beck Maschinenbau GmbH.

2.2 Illustrations

All photos, figures and graphics contained in this document are for illustration and better understanding only and may differ from the current state of the product.

3 Symbols

3.1 General Symbols

| Symbol | Meaning |
|---|---|
|  | Indicates passages within this operating manual that must be particularly observed in order to prevent malfunctions or damage to the roller & measuring conveyor. |
|  | Refers to chapters, sections, or figures within this document. |
|  | Refers to an external document or a third-party source. |

3.2 Symbols in Safety Instructions

Safety instructions are provided with corresponding danger symbols which have the following meanings:

| Symbol | Safety Instruction |
|---|---|
|  | Reading and applying the operating manual is mandatory for the operating personnel. <i>Failure to abide by the following precautions could lead to serious or acute injury.</i> |
|  | General danger symbol, which requires the highest attention! <i>Failure to observe may result in damage to the equipment, acute injury or even death.</i> |
|  | Reference to a prohibited zone under a lifted load! <i>Do not enter! There is an increased risk of injury or even death.</i> |
|  | Reference to a prohibited zone on a platform! <i>Do not enter! There is an increased risk of injury or even death.</i> |
|  | Reference to a possible crushing hazard! <i>Non-observance increases the risk of injury to hands and fingers!</i> |
|  | Reference to a possible crushing hazard! <i>Non-observance increases the risk of injury to feet and toes!</i> |
|  | Possible dangerous crushing hazard in the area of stationary objects! <i>Risk of personal injury and possibly additional equipment damage.</i> |
|  | Reference to a possible hazard due to forklift traffic! <i>Non-observance can result in life-threatening injuries.</i> |
|  | Reference to a possible danger under suspended loads! <i>Non-observance can result in life-threatening injuries.</i> |
|  | Reference to possible tripping and slipping hazards on the floor! <i>Non-observance may result in minor or severe injuries.</i> |
|  | Reference to possible environmental pollution! <i>Non-observance poses a risk of pollution of the environment and groundwater!</i> |
|  | Reading and applying the operating manual is mandatory for the operating personnel. <i>Non-observance of the above precautions can lead to serious or possibly fatal injuries.</i> |
|  | Note on the obligation to wear tight-fitting protective work clothing! <i>Non-observance may result in increased risk of injury or even death!</i> |
|  | Reference to the obligation to wear safety shoes resp. protective gloves! <i>Non-observance may result in increased risk of injury to feet & toes or hands & fingers!</i> |
|  | Note on the obligation to wear protective goggles/face protection resp. hearing protection! <i>Non-observance increases the risk of injury to eyes/face resp. ear canals.</i> |
|  | Note on the obligation to wear a dust protection resp. respiratory mask! <i>Non-observance increases the risk of injury to the respiratory tract.</i> |
|  | Note on the obligation to wear a safety helmet! <i>Non-observance may result in increased danger of head injuries or even death!</i> |
|  | Fire hazard! Do not smoke and do not ignite open fire. |
|  | Access for unauthorized persons prohibited! <i>Risk of personal injury and additional equipment damage.</i> |

4 General



The operating manual must be read carefully and understood before handling the roller & measuring conveyor! If anything is unclear, please contact the manufacturer.

The automatic stop and positioning system of the EXAKT ELG/DC series has been specially developed for production areas where absolute precision and repeatability are required. The EXAKT STANDARD model serves as the basic roller conveyor. Optionally, the basic models EXAKT ES (optimised for wood construction) or EXAKT MES (optimised for applications in mechanical engineering and metal construction) are also available.

Stop positioning is performed precisely and quickly via the integrated P40 positioning control, which is also equipped with a generous program memory with up to 1,000 program blocks. The respective target and actual values are visualised via an easy-to-read, backlit LCD display.

4.1 Features

- 300 kg load per meter roller conveyor with EXAKT STANDARD and EXAKT ES for timber construction
- 450 kg load per meter roller conveyor with the optional EXAKT MES for metal construction
- Automatic stop positioning system with roller & measuring conveyor in closed design
- Convenient operation via eye-level control mounted on swivel arm
- Drive for sliding carriage via DC motor with worm gear transmission
- Working height 880 mm (feet height adjustable by ± 60 mm)
- Roller & measuring conveyor lengths 1 to 10 meters (special lengths are available)
- Positioning optionally in manual, single or programme mode
- Program memory (max. 50 programs and 1,000 program blocks)
- Simple and fast input of target values and piece counts
- Guide profile with toothed rack and magnetic tape measuring system
- Absolute and incremental positioning
- Tool thickness calculation
- Offset measurement functions
- Reference run

4.2 Application

The roller & measuring conveyor can be used for all work that corresponds to its intended use in section \Rightarrow 5.2. It is suitable for fencing and transporting workpieces in order to bring them into a specific position for machining. The roller & measuring conveyor must not be used for pushing or pulling workpieces.

- The roller & measuring conveyor must not be used for work that does not correspond to its intended use (refer to section \Rightarrow 5.2).
- The roller & measuring conveyor is intended exclusively for commercial use.

4.3 Target group and previous experience

This operating manual is intended for the operating and maintenance personnel of the roller & measuring conveyor. The operating personnel is to be determined by the operator and must further meet the following requirements:

- Basic technical and mechanical knowledge as well as knowledge of the associated technical terms
- Reading and understanding these operating and maintenance instructions

In order to acquire the knowledge required to operate this roller & measuring conveyor, the operator must ensure the following measures:

- Product training for every operator (also possible external personnel)
- Regular safety instruction

4.4 Requirements for the operators

- ⚠ The operator is responsible for the safe use of the roller & measuring conveyor!
- ⚠ The roller & measuring conveyor may only be operated by trained personnel who have also read this manual.
- ⚠ Inspection, maintenance, cleaning and repair may only be performed by technical specialists with product-specific training and mechanical and/or electrical training.
- ⚠ Specialists with product-specific training are to be commissioned and held responsible for planning and checking the work.
- ⚠ The national protective regulations for employees must be observed
- ⚠ The legal minimum age must be observed.

4.5 Accident prevention

To avoid accidents, the following rules must be observed for operation:

- ⚠ Prevent unauthorised persons from having access to the roller & measuring conveyor.
- ⚠ Keep unauthorized persons away from the danger areas.
- ⚠ Repeatedly inform other persons present about existing residual risks (see ⇒ 5.8).
- ⚠ Conduct recurring training and instructions for persons who have to be in the area of the roller & measuring conveyor, which are also recorded.
- ⚠ New employees must be trained internally for working on a roller & measuring conveyor and this training must be documented.
- ⚠ It is forbidden to enter the roller & measuring conveyor or to climb or sit on the roller & measuring conveyor.

4.6 General safety regulations

In general, the following safety regulations and obligations apply when handling the roller & measuring conveyor:

- ⚠ The roller & measuring conveyor may only be operated when in perfect working order.
- ⚠ It is prohibited to remove, modify, bypass or bypass any protective, safety or monitoring device.
- ⚠ Defective or missing safety devices must be repaired resp. replaced immediately by authorised qualified personnel! The roller & measuring conveyor must not be operated during this time!
- ⚠ It is forbidden to modify or change the roller & measuring conveyor without the written approval of the manufacturer / supplier.
- ⚠ Malfunctions or damage must be reported to the operator immediately. In case of malfunctions, proceed as follows: Take the roller & measuring conveyor out of operation, eliminate the cause of the malfunction, eliminate the malfunction, check the roller & measuring conveyor for safe condition and only then put it back into operation!
- ⚠ Repair and maintenance work on electrical and pneumatic components may only be carried out by authorised and trained personnel.
- ⚠ Maintenance work must be carried out and documented according to the maintenance instructions.
- ⚠ Only original spare parts from the roller & measuring conveyor manufacturer may be used for repairs.
- ⚠ Additional electronic components may only be purchased from the roller & measuring conveyor manufacturer.
- ⚠ Only instructed, trained or qualified persons may work on and with the roller & measuring conveyor.
- ⚠ It is not permitted to enter the roller & measuring conveyor or to transport persons.
- ⚠ For the operation of the roller & measuring conveyor, the respective national safety regulations for employees as well as the national safety and accident prevention regulations apply.

5 Safety

5.1 Basic safety instructions

Roller & measuring conveyors can cause hazards if used improperly. Therefore, observe the safety instructions listed in this chapter and the accident prevention regulations of your employer's liability insurance association!



The manufacturer accepts no liability for damage and malfunctions resulting from failure to observe these operating instructions.

5.2 Application area and intended use

With their conformity to the Machinery Directive 2006/42/EC, the roller & measuring conveyors of the EXAKT series are suitable as technical aids for operational/commercial applications.



Improper use may endanger persons and lead to a defect or damage. and to a defect or damage of the roller & measuring conveyor.

- ⚠ The roller & measuring conveyor is primarily intended for operation in covered indoor areas.
- ⚠ The roller & measuring conveyor is suitable for transporting workpieces to a specific holding position before machining.
- ⚠ Work on the roller & measuring conveyor may only be carried out in sufficiently illuminated working areas.
- ⚠ The maximum load capacity (section ⇒) of the roller & measuring conveyor must not be exceeded.
- ⚠ The roller & measuring conveyor may only be operated on horizontal floors.
- ⚠ The roller & measuring conveyor is not intended for moving and transporting persons.
- ⚠ The roller & measuring conveyor must not be operated in potentially explosive working areas.
- ⚠ Any other use is considered improper and is prohibited.

5.3 Improper use

Improper use is when the roller & measuring conveyor is used for purposes other than those prescribed in this operating manual and in section ⇒ 5.2, for example

- ⚠ use and application for private or non-commercial purposes,
- ⚠ use in disregard of the regulations in the operating manual,
- ⚠ use after unauthorized conversions or modifications,
- ⚠ exceeding the maximum permissible load (refer to section ⇒ 7),
- ⚠ non-compliance with the permissible workpiece dimensions,
- ⚠ transporting persons or stepping on the roller & measuring conveyor
- ⚠ or feeding or pulling of workpieces.

In case of improper use of the roller & measuring conveyor, any warranty, liability and other claims for damages of the operator against the manufacturer are excluded!

5.4 Consequences in case of disregard


If the roller & measuring conveyor is not operated, maintained or repaired in accordance with the safety regulations, not as intended, improperly or in an abusive manner, the following will result:

- ⚠ Dangers to the health of the operating personnel
- ⚠ Dangers to the roller & measuring conveyor and objects in its vicinity
- ⚠ Impairment of the roller & measuring conveyor function


In case of improper use of the roller & measuring conveyor, any warranty, liability and other claims for damages of the operator against the manufacturer are excluded!

5.5 Conversions and modifications of the roller & measuring conveyor

- ⚠ Only use the roller & measuring conveyor in its original condition, i.e. as delivered!
- ⚠ The components of the roller & measuring conveyor must not be changed in their type and condition.
- ⚠ Only original spare parts and accessories from the manufacturer may be used.
- ⚠ Deviations are not permitted.








| | |
|---|--|
|  | <i>Unauthorized modifications or conversions by the operator, without the written consent of the manufacturer, are prohibited. This excludes any warranty, liability and other claims for damages by the operator against the manufacturer!</i> |
|---|--|

5.6 Supplementary safety equipment

| | |
|---|---|
|  | <i>The functionally safe provision and installation of supplementary machine protection fences and protective grilles for the roller & measuring conveyor supplied is the responsibility of the operator! These measures are not part of the scope of delivery of Reinhold Beck Maschinenbau GmbH.</i> |
|---|---|
















5.7 Personal protective equipment

To minimise the risk of injury in case of danger, personal protective equipment must be worn when working on and with the roller & measuring conveyor. The operator of the roller & measuring conveyor is generally obliged to wear the protective equipment required for the respective work!

| | |
|---|--|
|  | Close-fitting protective clothing with low tear resistance, tight sleeves and no protruding parts must be worn for all work on and with the roller & measuring conveyor. The main purpose is to protect against being caught by moving parts of the installation. Do not wear watches, rings, chains or other jewellery. Wearing long open hair is prohibited during work. |
|  | Safety shoes with non-slip soles must be worn for all work on and with the roller & measuring conveyor. These serve to protect against falling parts and at the same time to prevent slipping on slippery surfaces. |
|  | Wearing protective gloves serves to protect the hands from abrasions, puncture wounds or deeper injuries, as well as from irritating and corrosive substances and from burns. |
|  | Hearing protection protects the hearing from the effects of noise that is harmful to health. As soon as the workplace-related noise emission values exceed 85 dB(A), personnel must be provided with suitable hearing protection! |
|  | Safety goggles protect the eyes from injuries caused by dust, chips and flying off parts on a processing machine as well as from compressed air and irritating resp. corrosive or toxic liquids. |
|  | A respiratory respirator resp. dust mask protects the respiratory tract from respiratory air contamination (e.g. from wood dust etc.) and from toxic exhaust gases (e.g. from a forklift truck). |
|  | The safety helmet serves to protect against falling parts and head injuries. It is mandatory to wear a safety helmet especially when unloading the roller & measuring conveyor by means of a forklift truck. |



5.8 Residual risks

The roller & measuring conveyor is built according to the latest state of the art and the recognised safety rules. Nevertheless, the use of the roller & measuring conveyor may cause danger to life and limb of the user or third parties or damage to the roller & measuring conveyor and other equipment. Due to the construction of the roller & measuring conveyor, the following residual risks can occur even when used as intended and despite compliance with all relevant safety regulations:

| | |
|--|---|
|  | The operating personnel must read and apply the operating manual. Furthermore, the operating manuals of additional third-party components must be observed. |
|   | Be alert to possible crushing hazards: a) when transporting the roller conveyor by forklift truck: between forks & pallet / roller conveyor b) when picking up the roller conveyor: between roller & measuring conveyor / pallet and floor c) when lowering the roller conveyor: between roller conveyor and fixed equipment In addition, be aware of possible crushing hazards when setting down the roller conveyor (from the freight pallet to the ground) using a forklift truck. Wearing protective gloves and safety shoes is mandatory when transporting and setting up the roller & measuring conveyor. |
|  | Toxic exhaust gases are produced by forklift trucks or comparable vehicles with combustion engines. Generally wear a respiratory protection mask in working environments with the above-mentioned exhaust gas development. |
|  | Be aware of the danger from falling objects such as workpieces, tools or similar. Therefore wear safety shoes, especially when transporting and setting up the roller & measuring conveyor. |
|  | Climbing or sitting on the roller & measuring conveyor during a lifting operation (by means of forklift truck or overhead crane) is strictly prohibited. There is a danger of falling! |
|  | Increased risk of injury or even death. Entering the danger zone under a suspended load during transport or installation by means of a forklift truck is prohibited! Generally wear a safety helmet in working environments with suspended loads. |
|  | Increased risk of injury or even death. It is forbidden to enter the forklift platform during transport or installation! |
|  | Unauthorised persons are not allowed to enter the installation area of the roller & measuring conveyor. Compliance with this regulation is the responsibility of the operator. |
|  | Danger of electric shock on models with digital position indicator! Work on the electrical components may only be carried out by qualified personnel. |
|  | Be aware of possible tripping and slipping hazards on the floor. Prevent possible hazards by keeping the floor dry and clean and by using anti-slip floor coverings around the roller & measuring conveyor. |
|  | Risk of injury due to crushing, jamming as a result of reaching between moving parts! There is an increased risk of accidents with loss of limbs or even death. Observe the handling instructions and follow the warnings! Wear protective gloves if necessary. |
|  | Risk of injury from compressed air components! Do not exceed the permissible operating pressure (max. 6 bar)! Wear protective goggles when handling compressed air. |
|  | When using additional machines on the roller & measuring conveyor, read the respective operating manual of the machine used beforehand and comply with the safety instructions contained therein. |
|  | Be aware of the fire hazard during the processing of wood due to wood dust, in connection with flying sparks and/or open fire! |

5.9 Observe the Environmental Protection Regulations

During all work with the roller & measuring conveyor, the environmental protection regulations, obligations and laws for waste avoidance and proper recycling and/or disposal applicable at the place of use must be observed. This applies in particular to installation, repair and maintenance work involving substances that could pollute the groundwater (e.g. hydraulic oils and cleaning agents and liquids containing solvents). In any case, prevent them from seeping into the ground or entering the sewage system.

| | |
|---|--|
|   | <p>Store and transport the above-mentioned hazardous substances only in suitable containers. Avoid leakage of hazardous substances by using suitable collection containers. Ensure that the above-mentioned substances are disposed of by a qualified disposal company.</p> |
|---|--|

5.10 Organisational measures

- ⚠ Always keep this operating manual within easy reach and at the place of use of the roller conveyor.
- ⚠ In addition to the operating manual, observe and instruct on generally applicable legal and other binding regulations for accident prevention and environmental protection.
- ⚠ Supplement the operating manual with further instructions, including supervisory and reporting duties, to take account of special operational features (e.g. with regard to work organisation, work processes, personnel employed).
- ⚠ Before starting work on the roller & measuring conveyor, the person responsible for its operation must have read the operating instructions, especially the chapter "Safety". This applies in particular to personnel who only occasionally work on the roller & measuring conveyor.
- ⚠ Check that work is carried out in a safety-conscious and hazard-conscious manner and in compliance with the operating manual.
- ⚠ When using additional machines on the roller & measuring conveyor, read the respective operating instructions and keep them handy. Pay particular attention to the respective safety and hazard information.
- ⚠ In case of safety-relevant changes to the roller & measuring conveyor or its operating behaviour, shut down the entire system immediately and report the fault to the responsible office/person.
- ⚠ Use personal protective equipment as necessary or required by regulations (see section ⇨ 5.7).
- ⚠ Do not make any modifications, additional attachments or conversions to the roller & measuring conveyor without the manufacturer's approval! This will compromise safety and invalidate the manufacturer's warranty and any liability claim.
- ⚠ Spare parts must meet the technical requirements specified by the manufacturer. The exclusive use of original spare parts ensures this. Therefore, only use original spare parts from the manufacturer.
- ⚠ Observe the fire alarm and firefighting possibilities. Make the location and operation of fire extinguishers (fire class ABC) known. Do not use water!

5.11 Personnel selection and qualification - basic duties

- ⚠ The design and operation of the roller & measuring conveyor is equally suitable for right- and left-handers.
- ⚠ The roller & measuring conveyor is designed to be operated by a single person. Other persons in the vicinity of the roller & measuring conveyor must keep a suitable safety distance.
- ⚠ Work on and with the roller & measuring conveyor may only be carried out by reliable personnel. Observe the legal minimum age!
- ⚠ Only use trained or instructed personnel. Clearly define the responsibilities of the personnel for operating, setting up, maintaining and repairing!
- ⚠ Ensure that only authorised personnel work on the roller & measuring conveyor.
- ⚠ If personnel to be trained or apprenticed have to work on the roller & measuring conveyor, this may only be done under the constant supervision of an experienced resp. qualified person.
- ⚠ Work on pneumatic equipment of the roller & measuring conveyor may only be carried out by authorised and trained personnel.
- ⚠ Work on electrical equipment may only be carried out by a qualified electrician or by instructed persons under the direction and supervision of a qualified electrician in accordance with the electrotechnical rules.

6 Components and product description

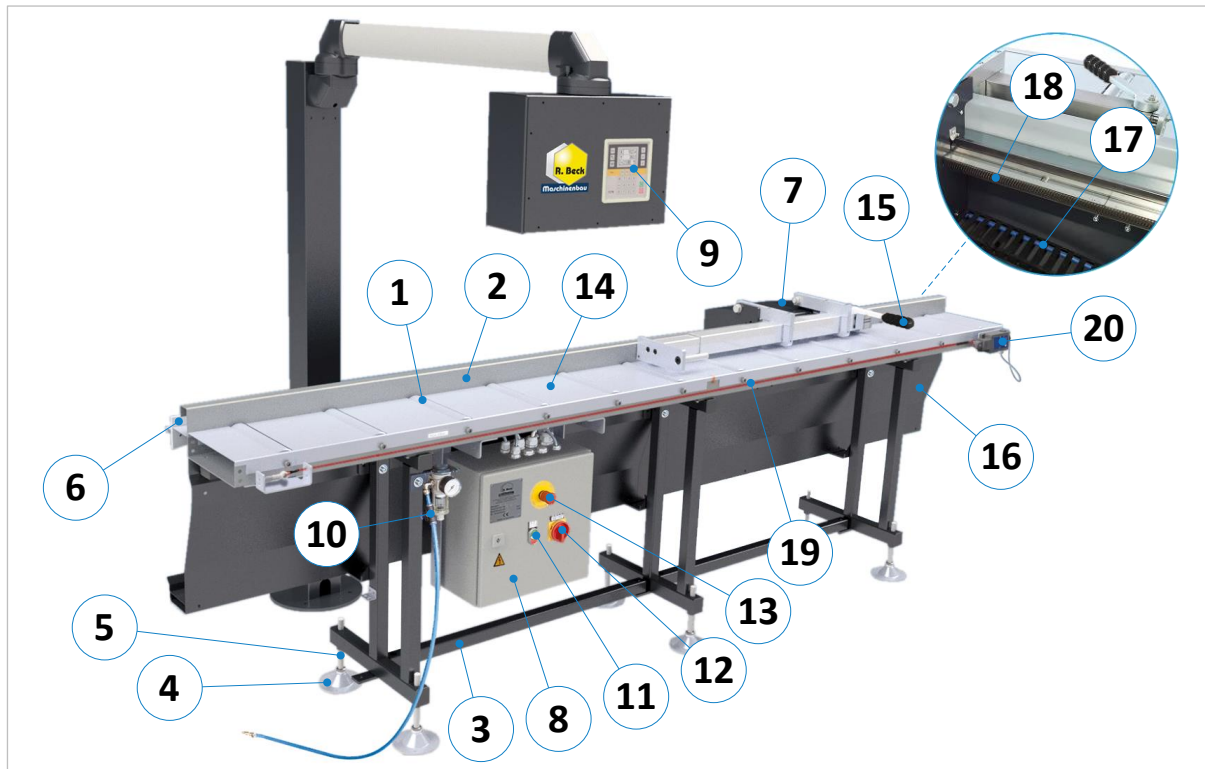


Figure 1: Components of the EXAKT ELG/DC roller & measuring conveyor

| Pos. | Description | Pos. | Description |
|------|----------------------------------|------|---------------------------------------|
| 1 | Carrying roller | 11 | ON/OFF switch for positioning control |
| 2 | Roller track trough | 12 | Main switch (lockable) |
| 3 | Spacer tube | 13 | Emergency stop push-button |
| 4 | Height adjustment (± 60 mm) | 14 | Cover plate segment |
| 5 | Foot plate (anchorable) | 15 | Lever for clearance stroke |
| 6 | Precision guide profile 80/10 | 16 | Guide plate for energy chain |
| 7 | Sliding carriage 80/10 DC | 17 | Energy chain |
| 8 | Control cabinet | 18 | Toothed rack (helical toothing) |
| 9 | Positioning control P40 | 19 | Emergency stop rip cord |
| 10 | Compressed air connection | 20 | Rip cord switch |

Additional features in the standard version of this model:

- Roller & measuring conveyor based on the roller conveyor model EXAKT STANDARD
- Robust sliding carriage (7) with 12-fold ball bearing, integrated DC drive motor and pneumatic scissor brake (holding force approx. 3,000 N at 6 bar operating pressure)
- Stop arm 850 mm long, fence plate adjustable to the 0-point and foldable backwards
- Positioning of the sliding carriage (7) by electric motor via P40 positioning control (9)
- Attached precision guide profile (6) with toothed rack (18) and magnetic tape measuring system
- Position sensing via wear-free magnetic sensor (absolute accuracy ± 0.1 mm/m)
- Closed design; the cover plates (14) are included as standard

Optional equipment:

- Basic roller conveyor EXAKT ES (for timber construction) or EXAKT MES (for metal/mechanical engineering)
- Stop arm spring-mounted, fixed, not adjustable, can be folded up backwards manually (Art. No. BELG-04)
- Stop arm spring-mounted, adjustable, can be folded up backwards manually (Art. No. BELG-05)
- Pneumatic arm retraction, stroke 10 mm (Art. No. BELG-06). **Note:** Only in combination with BELG-05!

7 Technical specifications

| General technical specifications | |
|----------------------------------|--|
| Load per meter | STANDARD and option EXAKT ES: 300 kg Option EXAKT MES: 450 kg |
| Roller conveyor length | 1- 10 m (or customised special length) |
| Working height | 880 mm |
| Height adjustment | ± 60 mm via adjustable feet |
| Carrying roller material | galvanised steel tubes |
| Carrying rollers | STANDARD and option EXAKT ES: Roller- \varnothing = 60 x 2 mm, ball bearing, axle- \varnothing = 15 mm Option EXAKT MES: Roller- \varnothing = 89 x 3 mm, ball bearing, axle- \varnothing = 20 mm |
| Idler spacing | 250 mm |
| Roller track width | STANDARD and option EXAKT MES: 300 / 400 / 500 mm Option EXAKT ES: 400 / 500 mm |
| Usable roller width | STANDARD and option EXAKT MES: 250 / 350 / 450 mm Option EXAKT ES: 350 / 450 mm |
| Maximum measuring length | = track length minus 490 mm |
| Energy chain guide | included as standard |
| Sliding carriage | 12-fold ball bearing sliding carriage with pneumatic scissor brake |
| Optional exemption stroke | 10 mm clearance stroke via eccentric lever (BELG-05) or pneumatic release (BELG-06) |
| Pneumatic connection | via quick coupling (operating pressure max. 6 bar) |
| Drive for sliding carriage | DC motor 24 V with worm gear drive |
| Holding force scissor brake | approx. 3,000 N at 6 bar |
| Measuring and positioning system | |
| Measuring system | wear-free magnetic linear measuring system (magnetic tape + magnetic sensor) |
| Measuring accuracy | ± 0.1 mm per meter |
| Positioning control | single-axis control type P40 with E ² Prom data memory |
| Positioning modes | manual, single or program operation |
| Program memory | up to max. 50 programs and 1,000 program blocks |
| Controls | membrane keyboard |
| Display | LCD dot matrix 120 x 80 pixels with backlighting |
| Protection class P40 control | IP 43 (front, when installed) / IP 00 (rear) |
| Supply voltage | 24 VDC +10 / -20% |

7.1 Manufacturer









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 Fax: +49 (0) 7576 / 962 978 - 90
 Email: info@beck-maschinenbau.de

Note: Before using the unit in a way that deviates from the described suitability (see section ⇔ 5.2), it is essential to consult the manufacturer. Otherwise all warranty, liability and other claims for damages of the operator against the manufacturer will be voided!

8 Transport to the installation site



Only trained unloading personnel may be used for the work listed in this chapter!

Note: Roller & measuring conveyors longer than 6 meters are usually shipped in single segments and are packed either on two separate freight pallets or on top of each other.

| | |
|---|---|
|  | <p>There is an increased risk of accidents when unloading and transporting the roller & measuring conveyor! The roller conveyor can fall or tip over due to its weight!</p> |
|  | <p>Only use approved, tested lifting gear and load handling attachments with a load capacity of at least <u>200 kg per meter</u> of roller conveyor length. Only transport the roller conveyor on level, solid ground!</p> |
|  | <p>When setting up, pay attention to the possible danger of crushing in the area of stationary objects around the roller conveyor!</p> |
|  | <p>Increased risk of crushing and impact to hands, feet and head! To avoid serious injuries, wear protective gloves, safety shoes and safety helmet!</p> |
|   | <p>Warning: Increased risk of injury and death! Never stand under the load when lifting and setting it down! Instruct bystanders to leave the danger zone!</p> |
|   | <p>Warning: Increased risk of injury and death! Do not enter or climb onto the forklift platform during transport!</p> |

8.1 Unloading with a forklift truck

- With the forks set wide enough, drive centrally under the intended places on the freight pallet of the roller and measuring conveyor and carefully lift only a few centimetres. Lift the roller measuring conveyor including the pallet carefully and consistently from the truck and transport it to the desired installation site in accordance with the general safety regulations.
- Only use a forklift truck whose fork length is suitable for the width of the roller conveyor and whose load capacity is suitable for the weight of the roller conveyor (approx. 100 kg per meter of roller conveyor length).



| | |
|---|---|
|   | <p>Danger to life when using a forklift truck! Keep a sufficient distance from the forklift truck and watch its speed. Vehicles with internal combustion engines also produce toxic exhaust gases. Wear a breathing mask if necessary.</p> |
|---|---|

8.2 Check delivery condition

Check for completeness and transport damage. In case of transport damage or missing parts, document these immediately on the consignment note of the transport company → Inform the manufacturer of the situation.

8.3 Unpacking and placing

Unpack the roller conveyor and remove the packaging material. Lift the roller conveyor from the transport pallet with a forklift truck (see procedure in section ⇨ 9.1). Drive under the centre of the long side of the roller conveyor with appropriately adjusted forks and lift carefully. Then lift carefully from the pallet, remove the pallet and place the roller on the ground.

| | |
|---|--|
|  | <p>Fire hazard! Do not smoke or light an open fire.</p> |
|  | <p>Dispose of the packaging material in an environmentally friendly manner!</p> |

8.4 Transport to the place of use

After unpacking, the roller conveyor can be moved to the installation site using a lift truck. When doing so, the general safety regulations must be followed and observed. For procedure refer to section ⇒ 9.1.1.

8.5 Requirements for the installation site

The following guidelines apply with regard to space requirements, load-bearing capacity and the condition of the substrate:

- Space requirements: L x H x W = Length according to customer requirements x 1800 x 700 mm
- Load capacity: Concrete of classification B 15
- Conditions: Level, smooth, non-slip and tilt-free

8.6 Temporary storage

If the roller & measuring conveyor is not put into operation immediately after delivery, it must be stored carefully in a protected place. Carefully cover the entire roller & measuring conveyor so that neither dust nor moisture can penetrate.

8.6.1 Short term storage

- Dry environment
- Protect components at risk of corrosion
- Park in a stable place


8.6.2 Long term storage

- Dry environment
- Protect components at risk of corrosion
- Protect roller & measuring conveyor from dirt
- Park in a stable place
- Dismantle roller & measuring conveyor into individual segments if required

8.7 Lashing on a transport vehicle

For further transport, the roller conveyor must be lashed to the loading area of the transport vehicle on a pallet. For this purpose, a sufficient number of lashing straps with the appropriate load-bearing capacity must be used.

The responsibility for safe loading is borne by the respective shipper!

| | |
|---|---|
|  | <p><i>A separate lashing strap must be used for each lashing and must be tensioned individually on the floor of the loading area of the vehicle! The pallet must also be secured against slipping.</i></p> |
|---|---|

Please note the following when lashing in the transport vehicle:

- The loading area of the transport vehicle must always be clean and dry.
- The lashing straps used and their number must be suitable for the total weight of the roller & measuring conveyor and distributed accordingly. The weight is approx. 100 kg per meter of roller conveyor length.
- Loose and moving parts must be secured against slipping or packed in separate boxes if necessary.
- Fastening on the loading area is done by lashing down: This means that the transport pallet is secured by frictional locking. The load is pressed so firmly onto the loading surface that it can no longer slip. The clamping tool should have a high STF value at the frictional connection, e.g. long-lever ratchets.
- In addition, anti-slip mats should be used to provide even more safety.
- The ideal lashing angle (α) for tie-down lashing is 83° to and 90°. Therefore, the lashing straps should pull downwards approx. vertically. As the angle decreases, the pretensioning force of the lashing is reduced.
- Observe the permissible total weight of the transport vehicle.
- Ensure that the permissible axle loads of the transport vehicle are observed. The load must be distributed evenly on all axles of the vehicle.

9 Installation

The roller & measuring conveyor must be installed by a competent person. Make sure that the roller & measuring conveyor is stable and installed in such a way that no crushing or shearing points occur between the roller & measuring conveyor and objects in the vicinity. Therefore, ensure sufficient space around the roller & measuring conveyor in advance. When operating the roller & measuring conveyor as intended, it must always be possible to carry out activities on the roller & measuring conveyor without obstructions.



Before commissioning the roller & measuring conveyor, it must be levelled with a machine spirit level and anchored to the ground at the designated points by a competent person.

The following installation and operating requirements must be observed:

- ⚠ The roller & measuring conveyor must be integrated into the existing machinery in such a way that the basic safety requirements of the EU Machinery Directive 2006/42/EC are met. This must be checked and ensured by the operator of the roller & measuring conveyor.
- ⚠ The environment must not be explosive.
- ⚠ This operating manual and any supplementary documents must be read carefully and understood. All safety instructions and regulations must be observed and complied.



Note for EXAKT MES A: At the end of the installation, the power supply lines required for operation must still be routed to the roller conveyor in a hazard-free and proper manner.

9.1 Setting up the roller & measuring conveyor

The roller conveyor is lifted off the pallet by means of a forklift truck. Depending on the length of the roller conveyor, a second forklift truck is required to prevent the roller conveyor from bending and being damaged.

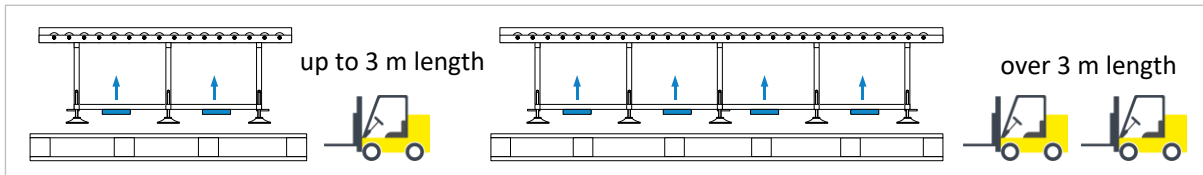


Figure 2: Lifting from the pallet with forklift truck

- For roller conveyors up to 3 meters long, one forklift truck is sufficient.
- Guide the appropriately spaced forks to the points marked in ⇒ Figure 2 (left).
- Then lift the roller conveyor only a few centimetres and park it in the immediate vicinity of the place of use.
- For lengths over 3 meters, two forklift trucks are required for the lifting process due to the weight.
- Guide the appropriately spaced forks to the points marked in ⇒ Figure 2 (right).
- Then lift the roller conveyor with both forklift trucks as consistently as possible and only a few centimetres to protect the mechanics at the joints. Now park the roller & measuring conveyor in the immediate vicinity of the place of use.

9.1.1 Moving the roller conveyor to the place of use

Then use one resp. two lift trucks to move the roller conveyor to the final place of use (e.g. processing machine) and feed the forks in at the marked points (see ⇒ Figure 3).

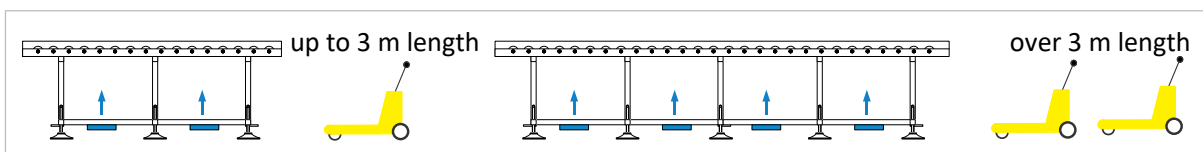


Figure 3: Moving the roller & measuring conveyor to the place of use with a lift truck

Make sure to use two lift trucks and to lift the roller conveyor consistently if it is longer than 3 meters. Then move it to the installation site and align it according to section ⇒ 9.1.2.

9.1.2 Aligning and levelling the roller & measuring conveyoy

To align the roller & measuring conveyoy optimally to the processing machine, proceed as follows:

- Align the roller & measuring conveyoy both in line and level with the existing processing machine (saw, drill etc.). If the roller conveyoy is supplied in several segments, always start with the roller conveyoy part on which the operating switches are mounted (right or left of the machine, depending on the configuration).
- For levelling and height adjustment, an open-end spanner SW 24 (for EXAKT STANDARD) resp. SW 30 (for basic roller conveyoy EXAKT ES and EXAKT MES) is required.

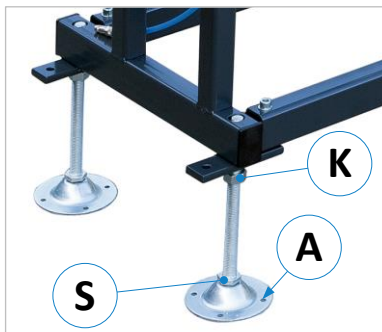


Figure 4: Levelling feet

- Adjust the feet so that the roller & measuring conveyoy stands securely and horizontally on all levelling feet. Level the roller & measuring conveyoy exactly with a spirit level and adjust it to the level of the processing machine. To do this, loosen the lock nut (K) and adjust the height with the set screw (S). Then tighten the lock nuts (K) again.
- Then firmly join the processing machine with the roller & measuring conveyoy.
- Boreholes (A) see section ⇒ 9.2.

9.1.3 Joining roller & measuring conveyoy segments together

In the case of a roller & measuring conveyoy delivered in sections, the roller & measuring conveyoy segments must be joined together.

- Before mounting, first remove the cover plates that are already pre-assembled on delivery in order to access the corresponding mounting holes at the joints of the roller track segments from above.
- First align roller & measuring conveyoy segment 1 correctly → Then place the roller & measuring conveyoy segment 2 against the already aligned roller & measuring conveyoy segment 1 and align it exactly to it.

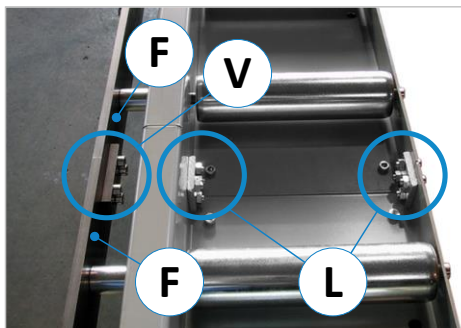


Figure 5: Connecting flat bar and segments

- Afterwards the delivered roller & measuring conveyoy segments must be connected to each other on the front and rear side with the two connecting lugs (L) by screwing them together (see ⇒ Figure 5).
- Screw the vertically mounted guide flat bars (F) of the roller & measuring conveyoy tightly together with the screwed-on connecting bracket (V), see ⇒ Figure 5.
- When attaching the connecting bracket (V), make sure that the flat bars are exactly flush with each other → The air gap between the flat bars should be as small as possible.

9.2 Anchoring in the ground

When all parts are assembled and aligned to the machine, anchor the roller & measuring conveyoy to the floor via the four holes (A) in the foot plates with heavy duty dowels (see ⇒ Figure 4).

9.3 Setting up the swivel column with positioning control

In the state of delivery, the P40 positioning control is already installed in the switch box of the supplied swivel column and electrically connected to the roller conveyoy via cable.

- Select the installation location so that the control unit is optimally aligned for your work area.
- **Important:** Anchor the swivel column in the ground using the holes in the base plate with heavy-duty dowels.

9.4 Mounting the magnetic tape for position measurement

The magnetic tape supplied is stuck onto the guide flat bar of the stop roller guide - starting from the processing machine - at a distance of 18 mm from the upper edge of the flat bar. The magnetic tape contains the incremental coding for position detection of the stop system. In order to achieve the maximum measurement accuracy, the magnetic tape may only be applied after the roller conveyor has already been set up, aligned and anchored.



The magnetic tape must not be rolled up tightly or bent, otherwise it will be destroyed.

The magnetic tape must not be exposed to direct contact with other magnetic fields (e.g. magnetic metal parts, electromagnets, holding magnets, etc.). The influence of foreign magnets will destroy the coding, falsify the measurement result and render the magnetic tape unusable.

9.4.1 Magnetic tape installation with EXAKT MES A

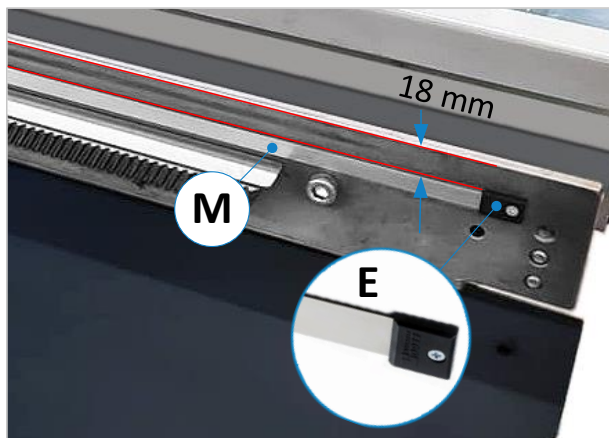


Figure 6: Magnetic tape installation

1. In this version, the magnetic tape (**M**) is glued to the vertical flat bar guide.
2. First remove the two plastic end caps (**E**) from the magnetic tape → These are required for mechanical protection and must be refitted later.
3. There are already two holes for the end caps in the guide flat bar guide and the correct position of the top edge of the magnetic tape is marked with a scribe mark at the factory (distance to the top edge of the flat bar guide = 18 mm).
4. Before gluing, clean the flat bar guide in the gluing area with a grease-dissolving agent.

5. First push the magnetic tape through the sliding carriage (do not remove the protective film yet).
6. Orientate yourself to the two factory holes in the flat bar guide and the scribe mark (⇒ lower red line).
7. Then peel off the protective adhesive film a little (slightly longer than the approximate width of the sliding carriage) and stick the magnetic tape only at this point for the time being.
8. Now move the sliding carriage to the position of the magnetic tape that has already been stuck on.
9. Peel off the remaining protective adhesive film, stick on the magnetic tape over the entire length and press on well.
10. Then stick the supplied steel cover tape flush onto the magnetic tape so that it is protected from mechanical influences.
11. Now slide the two plastic end caps (**E**) onto the two magnetic tape ends and fix them in the factory holes with the screws supplied.
12. To enable exact positioning, the position indicator must be referenced with the stop system to the processing machine (for procedure see section ⇒ 10.2).

9.5 Connecting the roller & measuring conveyor

- The electrical connection is made by plugging the 230 V earthed plug (resp. a 400 V CEE power plug in case of a different version) into the corresponding socket.
- The compressed air supply is established by connecting the unit to a suitable compressed air supply via a quick coupling. The maximum operating pressure is 6 bar.

9.6 Presetting the stop system

9.6.1 Defining the zero point

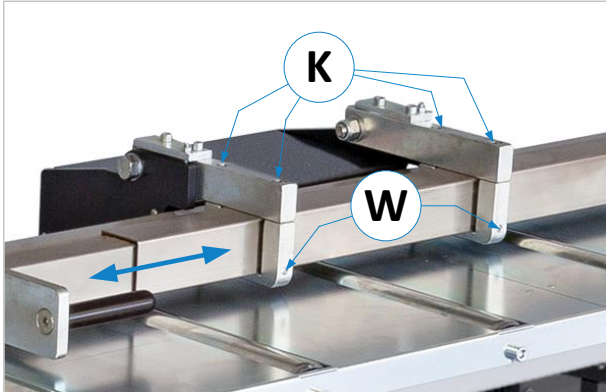


Figure 7: Defining the zero point of the stop system

Before using the stop system, the desired zero point must be defined:

- Loosen the upper 4 clamping screws (**K**).
- Loosen the two lateral grub screws (**W**) only slightly so that the stop arm can be moved.
- Move the stop arm so that the position corresponds to your desired zero point.
- Tighten the two grub screws (**W**) again. Ensure an exact 90° angle (see section ⇨ 9.6.3).
- Tighten the 4 clamping screws (**K**) again moderately (do not overtighten!).

9.6.2 Adjusting the height

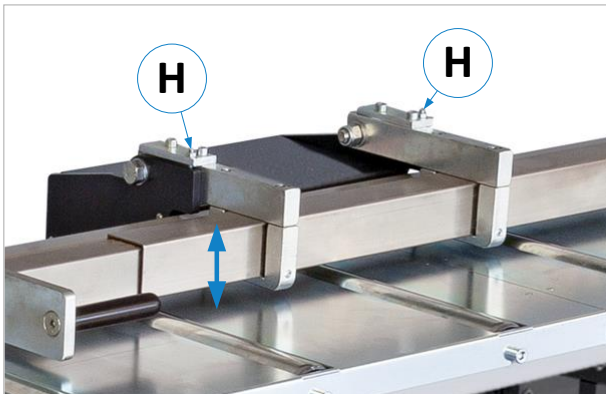


Figure 8: Adjusting the height of the stop system

In some cases it may be necessary to adjust the height of the stop system (distance to the roller conveyor):

- Loosen the lock nuts on the two grub screws (**H**) with an open-end spanner.
- Adjust the desired height with a pin spanner consistently over the two grub screws.
- Ensure parallelism downwards by re-measuring the distance to the roller track on both sides.

9.6.3 Adjusting the 90° angle

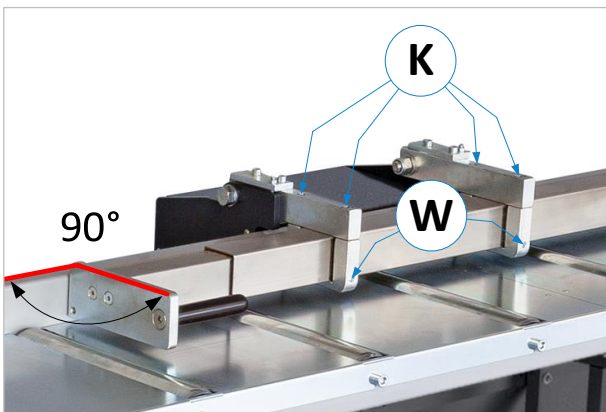


Figure 9: Adjusting the 90° angle of the stop system

Before using the fence, check the 90° angle of the fence to the rear support rail:

- Loosen the upper 4 clamping screws (**K**).
- Adjust the angle to exactly 90° using the grub screws (**W**). Use a suitable tool for this, e.g. protractor or 90° stop angle.
- Tighten the 4 clamping screws (**K**) again moderately (do not tighten too much!).
- Check the 90° angle occasionally and readjust if necessary.

9.7 Operational readiness

The roller & measuring conveyor is ready for operation after it has been properly installed and assembled and the electrical and pneumatic connections have been made by suitably qualified personnel.

10 Operating the measuring and roller conveyor

10.1 Switching the stop positioning system on and off



Figure 10: Control switches and compressed air connection

| Pos. | Description |
|------|----------------------------------|
| 10 | Compressed air connection |
| 11 | Double push-button "P40 control" |
| 12 | Main switch (lockable) |
| 13 | Emergency stop push button |

After proper installation, assembly and connection by appropriate qualified personnel, the stop positioning system can be switched on.

10.1.1 Switching the system ON

- First make sure that the quick coupling for the compressed air connection (10) is connected and an operating pressure of max. 6 bar is set.
- Switch on the entire system with the main switch (12).
- Then switch on the P40 positioning control with the green button of the double push button (11).
- **Important:** Then carry out a reference run for the stop system according to section ⇒ 10.2.

10.1.2 Switching the system OFF

- Before switching off, position the material stop close to the rear limit switch resp. reference point in order to keep the reference run (⇒ 10.2) as short as possible when switching on again.
- Then switch off the positioning control with the red button of the double push button (11).
- If necessary, switch off the entire system with the main switch (12).
- At the end of work and during repair and maintenance work, secure the main switch (12) against unauthorised restarting by locking it with a padlock and remove the quick coupling for the air connection (10).

10.1.3 Emergency stop devices for stopping in case of danger

In case of malfunctions and dangerous situations, the stop positioning system can be stopped quickly and easily accessible over the entire roller conveyor length at any time.

1. By pressing the emergency stop button (13) on the control panel (see ⇒ Figure 10). After the malfunction or dangerous situation has been remedied, the emergency stop button (13) is unlocked by pulling it out.
2. By actuating the emergency stop rip cord (19), which extends over the entire length of the roller conveyor. After the malfunction or dangerous situation has been rectified, the emergency stop state triggered by the pull cord switch (20) can be cancelled by switching the P40 control unit back on. **Note:** The rip cord switch also triggers the emergency stop condition in the event of a rope break or incorrect rip cord tension.

10.2 Referencing the stop system

Each time the positioning control is switched on, the stop system of the measuring & roller measuring conveyor must first be referenced. → The reference run is started via the function key "F2" (refer to ⇒ Figure 11).



- To start the reference run, press the function key "F2" for at least 3 seconds.
- After completion of the reference run, the sliding carriage stops → The stop system is now ready for use.



Acute danger of crushing at the stop system! As soon as the function key (F2) is pressed for at least 3 sec, the sliding carriage starts moving automatically! Keep persons and body parts out of the danger zone. In case of danger, press the emergency stop immediately!

10.3 Stop positioning

The stop position is specified by entering the corresponding target value via the keyboard of the P40 control, whereby the positioning process is triggered by means of the **START** button.

| | |
|---|---|
|  | IMPORTANT! <i>The stop positioning system is not a feed unit! Neither workpieces nor other objects may be fed or transported away with the stop system.</i> |
|  | Caution: Danger of crushing! <i>During automatic stop positioning, pay attention to the existing crushing hazard between the moving parts. Keep persons and body parts out of the danger areas! In case of danger, press the emergency stop immediately!</i> |

10.3.1 Keyboard and display functions of the P40 control unit

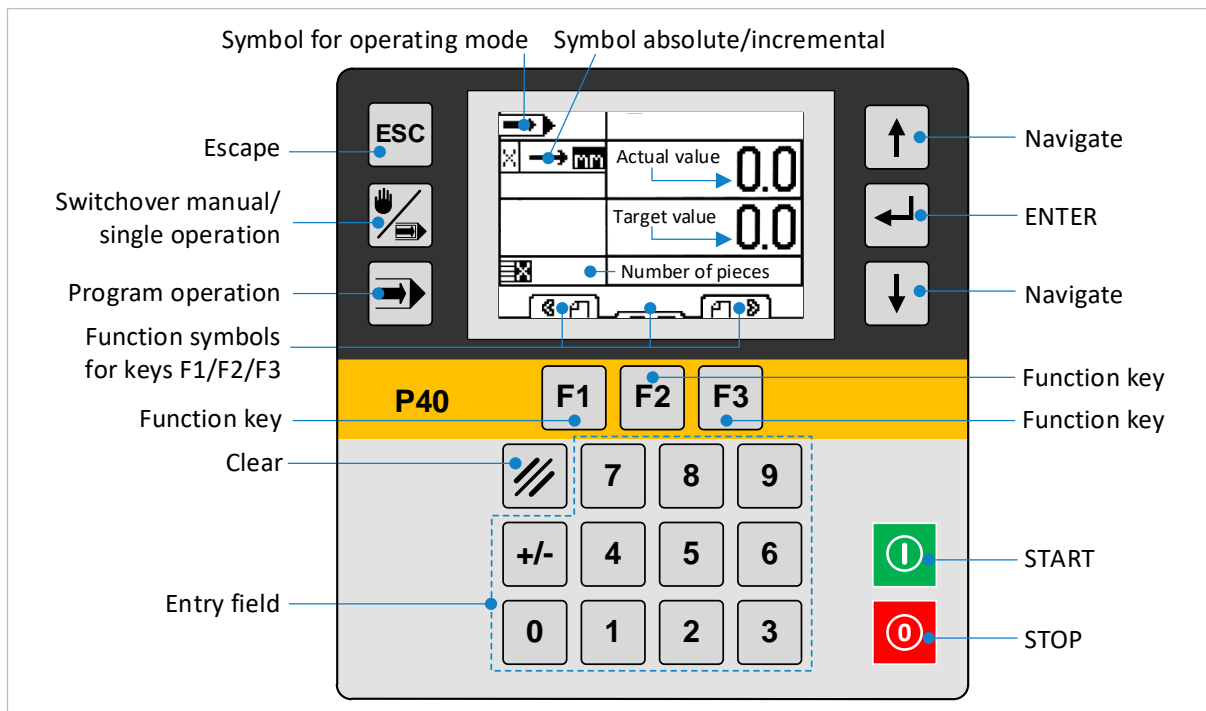


Figure 11: Keyboard and display functions of the P40 control unit

10.3.2 Function keys F1, F2 and F3

The function keys F1/F2/F3 have different functions depending on the operating mode resp. menu. These are shown symbolically in the display directly above the keys. If there is no function, no symbol appears.

Example:

- In manual mode, the “F1” and “F3” keys are used to move the axis in inching operation.
- In single mode, the “F1” and “F3” keys have no function.
- In program mode, the “F1” and “F3” keys are used to scroll through the program blocks.

10.3.3 Operating modes of the control unit

Three different operating modes can be preselected on the P40 control for the positioning process:

- Manual (manual inching mode via function keys “F1” and “F3”, direct positioning without target value). For details see section ⇒ 10.3.3.1.
- Single (positioning to the value entered in the target value window, if required with piece count entry). For details see section ⇒ 10.3.3.2 (absolute) resp. section ⇒ 10.3.3.3 (incremental).
- Program (positioning to different, previously stored target values with different quantities). For details see section ⇒ 10.3.3.4.

10.3.3.1 Manual (inching mode)

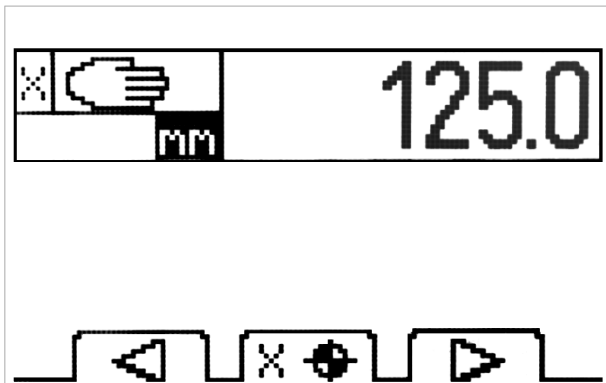




Figure 12: Manual inching mode

- In this mode, the material stop can be moved in manual inching mode.
- Select this mode with the button  → The symbol  appears in the display.
- With the keys “F1” and “F3” the axis can be moved +/- in the desired direction.
Note: The running direction +/- depends on whether the processing machine is on the left or right of the roller conveyor.
- The sliding carriage moves as long as one of the two keys “F1” and “F3” is pressed.

- The stop positioning system initially travels at creep speed and switches to a faster speed after a certain period of time. In the parameter **Axis Menu >> Times >> Manual change** his time span can be set from 0 to 99.9 sec. (refer to P40 original operating manual).
- When the “F1” and “F3” key is released, the sliding carriage stops.
- The stop positioning system can be referenced with the “F2” key (see ⇒ 10.2).



Acute danger of crushing at the material stop! As soon as the F1 or F3 key is pressed, the sliding carriage starts moving automatically! Keep persons and body parts out of the danger areas. In case of danger, press the emergency stop immediately!

10.3.3.2 Single mode (absolute)

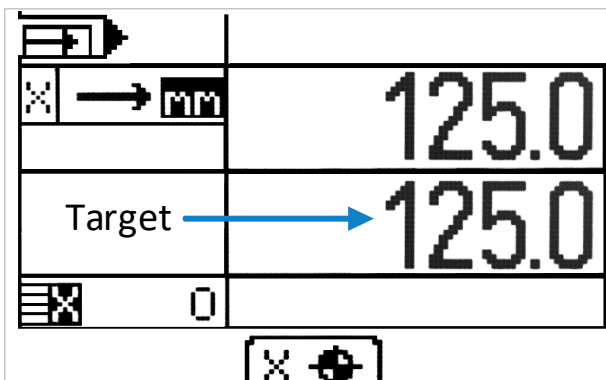






Figure 13: Single mode (absolute)

- The single operation (single set operation) on absolute dimension positions the material stop to the entered set value. The measurement always refers to the defined reference point.
- Select this mode with the button  → The symbol  appears in the display.
- To position to absolute measurement, navigate the cursor to the X window below with one of the two navigation keys ↑/↓ and press **ENTER** ↵ repeatedly until the symbol  appears.

- To enter the target value, navigate the cursor to the “Target” window using one of the two navigation keys ↑/↓. Then enter the target value via the numeric keypad and confirm the entry with **ENTER** ↵.
- If the position is entered incorrectly, you can delete the value with the “Clear” button (see ⇒ Figure 11).
- The positioning of the material stop starts as soon as the green **START** button is pressed.
- The positioning can be cancelled with the red **STOP** button.
- If required, a number of pieces can be entered in the window .
- The stop can be referenced with the “F2” key (see ⇒ 10.2)



Acute danger of crushing at the material stop! As soon as the START key is pressed, the sliding carriage starts moving automatically! Keep persons and body parts out of the danger areas. In case of danger, press the emergency stop immediately!

10.3.3.3 Single mode (incremental)

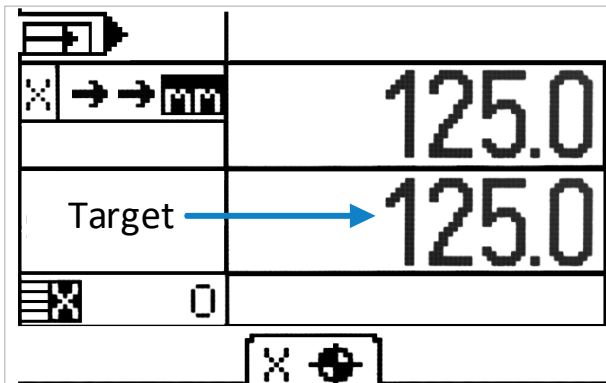









Figure 14: Single mode (incremental)

- Single operation on incremental measurement positions the material stop relatively. This means that the measurement always refers to the previously executed positioning.
- Select this mode with the button  → The symbol  appears in the display.
- To position to incremental measurement, navigate the cursor to the X window below using one of the two navigation keys ↑/↓.
- Press the **ENTER** ↵ button repeatedly until either  or  appears.

- The symbol  signals the running direction to the positive and the symbol  to the negative. **Please note:** However, the actual running direction of the stop must be determined on site, as it depends on whether the roller conveyor is on the left or right side of the processing machine.
- To enter the target value, navigate the cursor to the “Target” window using one of the two navigation keys ↑/↓. Then enter the target value via the numeric keypad and confirm the entry with **ENTER** ↵.
- If the position is entered incorrectly, you can delete the value with the “Clear” button (see ⇒ Figure 11).
- The positioning of the material stop starts as soon as the green **START** button is pressed.
- When the **START** button is pressed again, the stop moves again by the same distance.
- The positioning can be cancelled with the red **STOP** button.
- If required, a number of pieces can be entered in the window .
- The stop can be referenced with the “F2” key (see ⇒ 10.2)



Acute danger of crushing at the material stop! As soon as the START key is pressed, the sliding carriage starts moving automatically! Keep persons and body parts out of the danger areas. In case of danger, press the emergency stop immediately!

10.3.3.4 Program mode

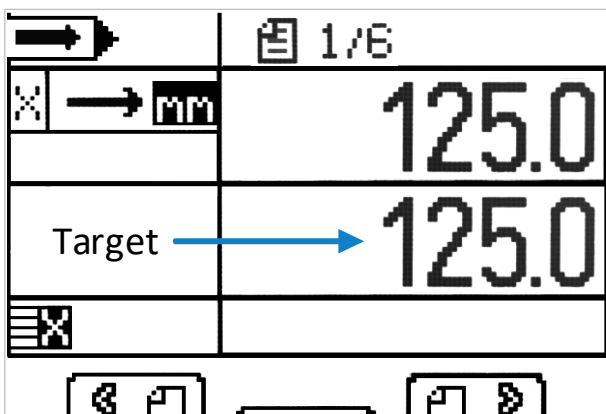






Figure 15: Program mode

- The programme mode enables the operator to combine several individual blocks into one programme and to process them.
- Select this mode with the button  → The symbol  appears in the display.
- First enter a program number (1 - 50) by navigating with the cursor to the window next to the symbol  with one of the two navigation keys ↑/↓.
- Enter the desired number via the keypad.
- Confirm with **ENTER** ↵.

- After entering the program number, the symbol  with two numbers appears to the right (see example 1/6 in ⇒ Figure 15). The left number represents the current block number for the target position of the stop and the right number represents the number of program blocks in the selected program.
- If this field is activated with the cursor via the navigation keys ↑/↓, the existing program blocks can be scrolled forwards and backwards with the “F1” and “F3” keys.
- To change the target value within a program, navigate the cursor to the target value window and change the value using the numeric keyboard. Then confirm with **ENTER** ↵.

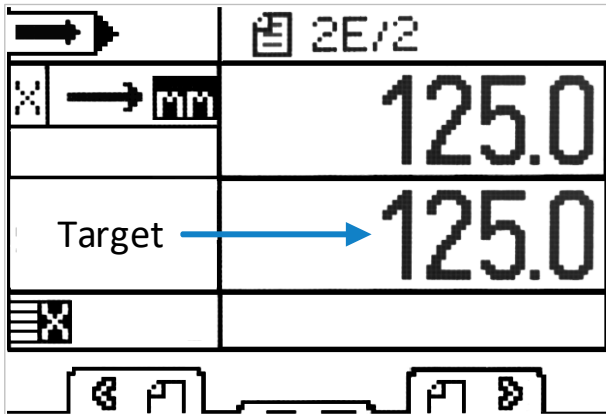









Figure 16: Set program end in program mode

- When the last program block to be executed in the program is reached (this does not have to be the last edited block), it **must be marked** as the **program end**. To do this, mark the field  with the cursor and then press the “F2” key → An E now appears behind the selected block (see ⇨ Figure 16).
- To store a chain dimension in a program block, you can change the method of measurement accordingly, as in single mode (see section ⇨ 10.3.3.3) → The symbol  respectively  must then appear next to the X.

- In the  window a piece count must be entered for the number of incremental dimensions to be processed.
- Finally, use the “F1” and “F3” keys to scroll through all the program blocks again to check them.

| | |
|---|--|
|  | <ul style="list-style-type: none"> • Setting the program end “E” (see above) is mandatory for the automatic sequence. A warning is issued if the end of the program is missing. • Before running the selected program, it is absolutely necessary to scroll back to the first program block in the block number field ! |
|---|--|

- The programmed positioning of the material stop starts as soon as the green **START** button is pressed.

| | |
|--|---|
|  | <p>Acute danger of crushing at the material stop! As soon as the START key is pressed, the sliding carriage starts moving automatically! Keep persons and body parts out of the danger areas. In case of danger, press the emergency stop immediately!</p> |
|--|---|

- After reaching the program end (E), the first block is automatically started again.
- The red **STOP** button can be used to abort positioning at any point. In this case, the program remains in the current program block.

10.4 Calculate saw blade thickness

Press the “ESC” button on the P40 control for at least 3 seconds to enter the parameter settings. In the parameter **Axis Menu >> X-Axis >> Distances >> Tool correction**, the thickness of the saw blade can be entered in the range from 0 to 9999.9 mm for calculation. This value is then automatically added to the target value in incremental measurement mode, i.e. the positioning is increased by this value.

10.5 Offset function

Press the “ESC” button on the P40 control for at least 3 seconds to enter the parameter settings. A positive or negative measurement can be stored in the parameter **Axis Menu >> X-Axis >> Distances >> Displacement** of the control unit. If the “Displacement” input is activated at connector **ST3 pin 10**, the control automatically adds the stored value to the current actual position. The setting range is -9999.9 to +9999.9 mm.

10.6 Supplementary documents for P40 control

The complete operating manual of the P40 positioning control can be found via the following link:

⇨ https://www.elgo.de/fileadmin/user_upload/pdf/manual/controls/P40-000-MA-E.pdf

Please note: If necessary, purchase electronic spare parts exclusively from R. Beck Maschinenbau GmbH. This is the only way to ensure that the correct components are ordered and that compatibility with the roller conveyor is guaranteed. R. Beck Maschinenbau GmbH excludes all liability and warranty for damage to property and personal injury caused by incorrect or incompatible components.

10.7 Fold the stop arm backwards

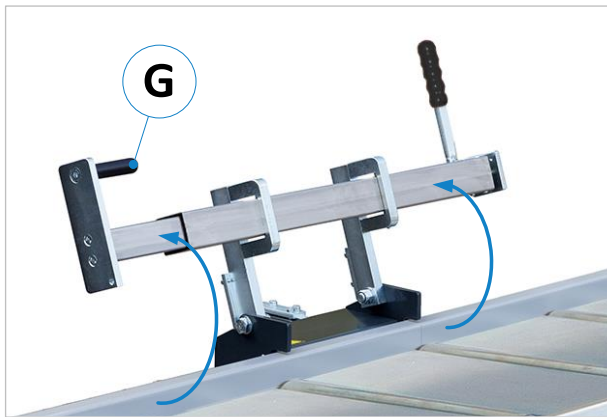


Figure 17: Fold the stop arm backwards

With handle (G) the stop arm can be folded backwards at any position.



Be aware of the risk of crushing when folding down the stop arm. Hold the stop arm firmly and do not let it fall down. Keep your hands out of the danger zone!



Please note: Automatic positioning is not possible when the material stop is folded up, as the stop is protected by a limit switch for safety reasons.

10.8 Clearance stroke for stop arm (option)



Figure 18: Lever for clearance stroke (Option BELG 05)




Figure 19: Switch for clearance stroke (Option BELG 06)


- **Option BELG 05:** Before starting the cut, create the 10 mm clearance stroke by swivelling the eccentric lever (F) to the rear.
- **Option BELG 06:** The 10 mm clearance stroke is triggered pneumatically → To do this, turn the switch (S2) to the right position.



Note: For technical reasons, the pneumatically operated clearance stroke (option BELG 06) is only available in combination with option BELG 05.

11 Troubleshooting

| | |
|---|---|
|  | <i>Before any troubleshooting, switch off the main switch and secure it with a padlock. After troubleshooting, all safety devices must be put back into operation and checked for functionality!</i> |
|---|---|

| | |
|---|--|
|  | <i>Repair work on electrical, mechanical and pneumatic components may only be carried out by authorised and trained specialist personnel.</i> |
|---|--|

Proceed systematically when searching for the cause of a malfunction. If you are unable to find the fault or remedy the malfunction, call our customer service on the telephone no. 0049 7576 / 962 978 - 0.





Before you call us, please follow these steps:

- Keep these operating instructions and any supplementary documents at hand.
- The more precisely you describe the fault to us, the better we can then remedy the situation.

| Fault | Possible Cause | Remedy |
|--|-----------------------------------|---|
| Stop system does not move | Main switch is turned off | → Turn on the main switch |
| | P40 control is switched off | → Switch on the control |
| | DC drive defective or damaged | → Check DC drive and contact customer service if necessary. |
| | P40 control is defective | → Contact customer service |
| | Motor control card is defective | → Contact customer service |
| | Limit switch is activated | → Push sliding carriage away from limit switch (release pneumatic brake, remove compressed air connection beforehand) |
| | Emergency stop button is active | → Unlock emergency stop button |
| | E-stop pull cord switch is active | → Switch on the control |
| | Measuring system defective | → Contact customer service |
| | Other cause | → Contact customer service |
| The system automatically switches to the emergency stop state. | Emergency stop rip cord is broken | → Replace and tension the rip cord (⇒ 12.1) |
| | Incorrect tension of the rip cord | → Tension the rip cord according to ⇒ 12.1 |
| The stop cannot be braked | No compressed air available | → Connect compressed air |
| | Brake pads worn | → Replace brake pads |
| | Pressure regulator set too low | → Increase pressure (max. 6 bar) |
| | Valve defective | → Replace valve |
| | Pressure regulator defective | → Replace pressure regulator |
| | P40 control output defective | → Contact customer service |
| | Other cause | → Contact customer service |

12 Maintenance and repair

Maintenance and repair work may only be carried out by competent, trained and instructed personnel. If necessary, further operating instructions and/or additional documents must be observed.

| | |
|---|---|
|  | <p>Before starting maintenance or repair work on the roller measuring conveyor, the main switch must be switched off and secured with a padlock.</p> |
|  | <p>If maintenance or repair work has been carried out on the roller & measuring conveyor, a functional test must be carried out afterwards.</p> |
|  | <p>Maintenance and repair work on electrical, pneumatic and mechanical components may only be carried out by authorised and trained personnel.</p> |
|  | <p>Before carrying out any maintenance or repair work, the chapter ⇨ 5 “Safety” must be read carefully and observed!</p> |

- During maintenance and repair work, make sure that the compressed air and power supplies to the roller & measuring conveyor are disconnected.
- The sliding carriage guide must be cleaned daily.
- The toothed rack must be lightly greased once a week.
- The 90° angle of the stop should be checked occasionally and readjusted if necessary (for procedure refer to section ⇨ 9.6.3).
- The tension of the emergency stop pull cord should be checked once a year (procedure see section ⇨ 12.1).

Before using the roller & measuring conveyor, all electrical cables and compressed air hoses must be checked for damage. Damaged parts must be replaced by qualified personnel due to the risk of accidents! Afterwards, the power and compressed air supplies can be restored.

12.1 Checking the tension of the emergency stop rip cord

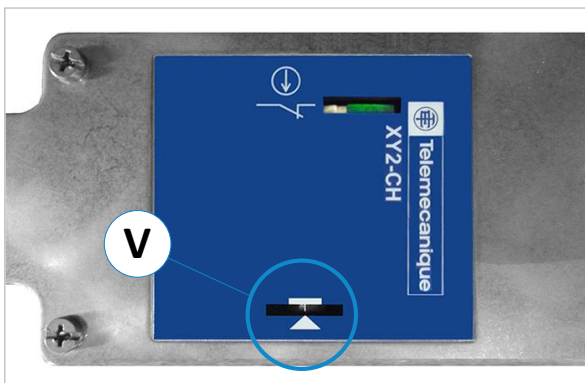



Figure 20: Tension indicator with pointer line


- Check the tension of the emergency stop rip cord directly at the pull cord switch.
- For optimum tension, the small pointer line of the indicator (V) must be exactly in the middle of the white triangle resp. viewing window.
- If the system automatically switches to emergency stop, the tension should be checked and the rip cord correctly tensioned.
- If a new rip cord is installed when the cord breaks, the correct tension can be read here.

13 Disassembly and scrapping


When dismantling and scrapping the roller & measuring conveyor, the current EU regulations or the respective regulations and laws of the country of operation, which are prescribed for proper dismantling and disposal, must be observed. The aim is to dismantle the roller & measuring conveyor and its various materials and components properly, to recycle all possible parts and to dispose of non-recyclable components in the most environmentally friendly way.

| | |
|---|--|
|  | <p>Please pay particular attention to</p> <ul style="list-style-type: none"> • <i>the dismantling of the roller & measuring conveyor in the working area</i> • <i>proper dismantling of the roller & measuring conveyor and accessories</i> • <i>a safe and proper removal of the roller & measuring conveyor</i> • <i>proper separation of all components and materials.</i> |
|---|--|

When dismantling and disposing the roller & measuring conveyor, the laws and regulations in force at the place of use concerning health and environmental protection must be observed.


| | |
|---|---|
|  | <p>Remove all residues of oil, grease and other lubricants and have them disposed of properly by a qualified disposal company.</p> |
|---|---|

When separating, disposing of or recycling the roller & measuring conveyor materials, comply with the environmental protection laws in force at the place of use regarding the disposal of industrial solid waste toxic and hazardous waste.

| | |
|---|---|
|  | <ul style="list-style-type: none"> • <i>Hoses and plastic parts as well as other components that are not made of metal must be dismantled and recycled or disposed of separately.</i> • <i>Electrical components such as cables, switches, connectors, devices etc. must be extended and (if possible) recycled or otherwise disposed of in a qualified manner.</i> • <i>Pneumatic parts such as valves, pressure regulators, hoses etc. must be dismantled and (if possible) recycled or otherwise disposed of in a qualified manner.</i> • <i>Dismantle the base frame and all metal parts of the roller & measuring conveyor and sort them according to material type. Metals can be melted down and recycled.</i> |
|---|---|

In the event of improper disposal of lubricants, the following residual risks to the environment and health exist:

| | |
|---|--|
|  | <p>Pollution of the environment by seepage into groundwater or sewage system.</p> |
|---|--|


| | |
|---|---|
|  | <p>Poisoning of the personnel contracted for the disposal.</p> |
|---|---|

Note: The disposal of lubricants considered toxic and hazardous must be carried out in accordance with the regulations and laws in force at the respective place of use. Only qualified disposal companies that have the appropriate permits for the disposal of used oil and lubricants are to be commissioned with the disposal.

14 Machine card

| | | |
|---------------------------|---|------------|
| Company | | |
| Branch | | |
| Street | | |
| Country / postcode / city | | |
| Phone | | |
| Model | EXAKT ELG/DC - automatic stop and positioning system | |
| Additional remark | | |
| Manufacturer | Reinhold Beck Maschinenbau GmbH, Im Grund 23, DE 72505 Krauchenwies | |
| Working range | by type | mm (L x W) |
| Pressure range | max. 6 | bar |
| Control | electr./pneum. | |
| Connection | 230 / 50 | V / Hz |
| Connected load | | kW |
| Length | by type | mm |
| Depth | by type | mm |
| Height | by type | mm |
| Weight | by type | kg |
| Extras | | |
| Paintwork | Anthracite RAL 7016, traffic grey RAL 7042 | |
| Machine number | | |
| Year of manufacture | | |

15 Options and accessories

| | |
|---|--|
|  | <p><i>Only use original accessories and spare parts specified by the manufacturer. The use of other accessories or spare parts may cause injury to persons and damage to the roller & measuring conveyor. In case of any use of non-prescribed accessories and spare parts or of additional components of third parties, the manufacturer does not assume any liability for resulting damages!</i></p> |
|---|--|

| Article | Description | Art. No. |
|---------------------------------------|--|----------|
| Stop arm spring loaded, fixed | Fixed spring-loaded stop arm, can be folded back manually. | BELG 04 |
| Stop arm spring loaded to zero | Stop arm spring-loaded and adjustable to zero point and manually foldable backwards. | BELG 05 |
| Pneumatic stop arm retraction | 10 mm clearance stroke from the spring-loaded stop arm BELG 05. This option is not available for the stop arm type BELG 04 | BELG 06 |

EU - Declaration of Conformity

in accordance with the EU Machinery Directive 2006/42/EC Annex II A

The manufacturer,

Fa. Reinhold Beck
Maschinenbau GmbH
Im Grund 23
DE-72505 Krauchenwies (Germany)
Phone: 0049 - 7576 962 978 0
Fax: 0049 - 7576 962 978 90

hereby declares that the manufactured machine

Models: **EXAKT ELG/DC - automatic stop and positioning system**
Type designation: Roller & measuring conveyor
Serial number(s):
Year of manufacture:

in the version provided complies with the EU Machinery Directive 2006/42/EC and the following further directives.

The following harmonised standards and instructions have been applied in manufacturing the machine:

- **EN ISO 12100:2010** Safety of machinery - General principles for design - Risk assessment and risk reduction

Name: Beck
First name: Reinhold
Position: Managing Director

Krauchenwies, 12.09.2023

Place and date



Signature