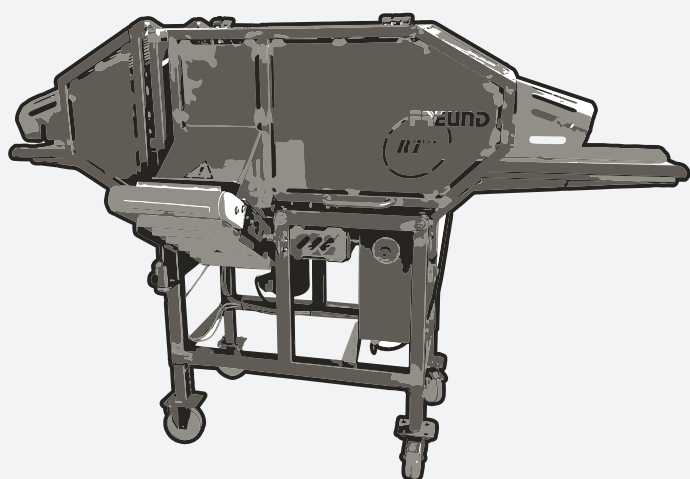
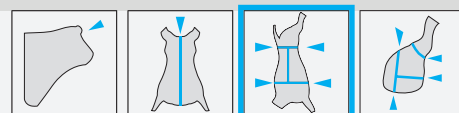


# OPERATING MANUAL RIB-TOP-CUTTER

Translation of original manual





## Imprint

|              |                                                                                        |
|--------------|----------------------------------------------------------------------------------------|
| Home address | FREUND Maschinenfabrik GmbH & Co. KG<br>Schulze-Delitzsch-Str. 38<br>D-33100 Paderborn |
| Fon          | +49 (5251) 1659-0                                                                      |
| Fax          | +49 (5251) 1659-77                                                                     |
| E-Mail       | mail@freund.eu                                                                         |
| Internet     | www.freund-germany.com                                                                 |
| Sales        | +49 (5251) 1659-0<br>sales@freund.eu                                                   |

EN

© FREUND Maschinenfabrik GmbH & Co. KG, 09.2018

The reproduction, distribution and utilization of this document as well as the communication of its contents to others without express authorization is prohibited. Offenders will be held liable for the payment of damage. All rights reserved in the event of the grant of a patent, utility model or design.

Technical changes reserved

This operating manual was compiled with the greatest care. However if you notice incompleteness and/or mistakes, please inform us.

## Contents

|          |                                                        |           |
|----------|--------------------------------------------------------|-----------|
| <b>1</b> | <b>About this Manual .....</b>                         | <b>7</b>  |
| 1.1      | Target group .....                                     | 7         |
| 1.2      | Liability and warranty .....                           | 7         |
| 1.3      | Storing the operating manual .....                     | 8         |
| 1.4      | Symbols and layout elements .....                      | 8         |
| 1.4.1    | Layout elements .....                                  | 8         |
| 1.4.2    | Safety signs .....                                     | 9         |
| <b>2</b> | <b>For your safety .....</b>                           | <b>11</b> |
| 2.1      | Warning notes .....                                    | 11        |
| 2.1      | Site Operator's Responsibilities .....                 | 12        |
| 2.2      | Employee Responsibilities .....                        | 13        |
| 2.3      | Personal protective equipment .....                    | 14        |
| 2.4      | Electrical safety to DIN VDE 0701-0702/EN60204-1 ..... | 14        |
| 2.5      | Requirements on the installation location .....        | 14        |
| 2.6      | Safety devices .....                                   | 15        |
| 2.6.1    | Location of safety devices .....                       | 15        |
| 2.6.2    | Main switch .....                                      | 15        |
| 2.6.3    | EMERGENCY OFF switch .....                             | 16        |
| 2.6.4    | Indicator light .....                                  | 16        |
| 2.6.5    | Protective hoods .....                                 | 17        |
| 2.7      | Intended use .....                                     | 17        |
| 2.8      | Improper use .....                                     | 17        |
| 2.9      | Residual risks .....                                   | 18        |
| <b>3</b> | <b>Technical Description .....</b>                     | <b>19</b> |
| 3.1      | Technical Data .....                                   | 19        |
| 3.1.1    | Main drive .....                                       | 20        |
| 3.1.2    | Belt motors .....                                      | 20        |
| 3.2      | Machine overview .....                                 | 21        |
| 3.3      | Dimensions .....                                       | 23        |
| <b>4</b> | <b>Transport und Storage .....</b>                     | <b>24</b> |
| 4.1      | Safety information .....                               | 24        |
| 4.2      | Personal protective equipment .....                    | 24        |
| 4.3      | Transporting the machine .....                         | 24        |
| 4.4      | Unpacking the machine .....                            | 24        |
| 4.5      | Storing the machine .....                              | 25        |

|          |                                                 |           |
|----------|-------------------------------------------------|-----------|
| <b>5</b> | <b>Installation and Commissioning.....</b>      | <b>26</b> |
| 5.1      | Safety information .....                        | 26        |
| 5.2      | Personal protective equipment.....              | 27        |
| 5.3      | Adjusting the working height .....              | 27        |
| 5.4      | Checking the safety devices .....               | 27        |
| 5.5      | Tensioning the conveyor belt .....              | 28        |
| 5.6      | Carry out test run. ....                        | 29        |
| <b>6</b> | <b>Operating .....</b>                          | <b>30</b> |
| 6.1      | Safety information .....                        | 30        |
| 6.2      | protective equipment.....                       | 30        |
| 6.3      | Rib-Top-Cutter .....                            | 31        |
| 6.4      | Changing circular cutting knife .....           | 32        |
| 6.5      | Sharpening circular cutting knife .....         | 33        |
| <b>7</b> | <b>Cleaning and Disinfection.....</b>           | <b>35</b> |
| 7.1      | Safety information .....                        | 35        |
| 7.2      | Personal protective equipment.....              | 35        |
| 7.3      | Preparing to cleaning the machine .....         | 36        |
| 7.4      | Cleaning and Disinfection .....                 | 37        |
| 7.4.1    | Cleaning the machine .....                      | 37        |
| 7.4.2    | Cleaning the discharge belt.....                | 38        |
| 7.4.3    | Cleaning the internal conveyor belt .....       | 39        |
| 7.4.4    | Disinfecting the machine .....                  | 40        |
| 7.5      | Recommended detergents.....                     | 40        |
| 7.6      | Recommended disinfectants.....                  | 40        |
| <b>8</b> | <b>Disposal and Recycling .....</b>             | <b>42</b> |
| 8.1      | Disassembling and disposing of the machine..... | 42        |
| 8.2      | Disposing packaging material .....              | 42        |



## 1 About this Manual

The operating manual also refers to the Rib-Top-Cutter as the “machine”.

This operating manual was prepared to enable you to work quickly and safely with your machine.

The operating manual is a component of the machine and contains important recommendations, notes and information

- to install the machine safely and properly.
- to operate the machine safely.
- to rectify simple faults yourself.
- for maintenance and cleaning.

Before you start operating the machine, read this entire operating manual thoroughly and carefully. In particular, follow all written safety and warning information.

EN

### 1.1 Target group

This operating manual is intended for operators of slaughtering facilities and the staff employed there, as well as for butchers and small businesses and their apprentices.

The operating manual is intended in particular for qualified personnel for assembly, installation, maintenance and repair and for the cleaning staff.

The target group must have basic technical knowledge of how to handle the machine described herein.

### 1.2 Liability and warranty

All information and instructions regarding the operation and maintenance of the machine contained in this manual are provided to the best of our knowledge, taking into account our experience and know-how.

We will accept no liability for claims that extend beyond the scope of the warranty agreed in the main contract.

The original version of this operating manual was written in German. The translation was created with the best care and knowledge, but we assume no liability for translation errors. In the event of inconsistency or conflict between the English and the German version, the German version shall prevail.

Exclusion of liability We assume no liability and warranty:

- on spare parts.
- if damage occurs during slaughtering.

Furthermore, we expressly point out that we do not assume any liability for damages attributable to the following causes:

- not observing the information provided in this operating manual at all or to the necessary extent

- non-intended use
- unsuitable or improper handling
- using spare parts or parts which have not been approved by FREUND Maschinenfabrik GmbH & Co. KG
- changing functions or materials without prior approval
- operating the machine incorrectly or operation by unqualified personnel
- safety devices being removed or manipulated
- cleaning the machine incorrectly or unprofessionally
- chemical or mechanical overloads
- maintenance and repair work not being carried out according to instructions or maintenance intervals not being adhered to

Modifications and/or adjustments to the machine are possible in certain cases. In these cases, prior written approval must be obtained from FREUND Maschinenfabrik GmbH & Co. KG - subsequently referred to as FREUND Maschinenfabrik.

### 1.3 Storing the operating manual

This operating manual is part of the machine and must be accessible at all times to the operating, maintenance and cleaning staff during the entire service life of the machine.

Therefore, always keep the operating manual near the machine's place of use.

### 1.4 Symbols and layout elements

#### 1.4.1 Layout elements

- Enumerations
  - Individual, independent instruction step  
*Result arising from the instruction step*
  - 1. Step-by-step sequences in a specific order
  - 2. The numbers indicate that the instruction steps follow each other
  - 3. *Result arising from the instruction steps*
- References to another chapter



Important additional information or special details regarding the use of the machine



Embedded warning note - shows type and source of the danger and the measure to avoid the danger

## 1.4.2 Safety signs

### Warning signs



#### **Warning of a danger point**

Caution! At this point there is an increased danger to your safety.



#### **Warning of rotating cutting tools**

Danger to limbs from cutting or severing.



Danger of entanglement of loose clothing, jewellery and long hair due to the rotational movement.



#### **Warning of dangerous electrical voltage**

Danger to life from electric shocks to the body.



#### **Warning of cutting tools running-on or restarting**

Danger to limbs from cutting or severing.

Danger of entanglement of loose clothing, jewellery and long hair due to the rotational movement.



#### **Warning of substances harmful to health and irritants**

The information on the packaging and containers must be observed.  
Keep separate from food.



#### **Warning of suspended load**

Danger to the body from falling loads or machines.



#### **Warning of hand injuries**

Danger to the hands and fingers from crushing due to the sinking or downward movements of machine parts.

### Mandatory signs



#### **Wear protective gloves**

protect the hands against friction, abrasions, and cuts:

- during the changing of sharp or cutting tools,
- during cleaning,
- while touching hot surfaces.



#### **Wear safety spectacles**

protect the eyes against flying parts, fragments and squirting liquids:

- during operation,
- while the machine is cleaned.



#### **Wear hearing protection**

protect hearing during operation of the machine.



**Wear safety shoes or rubber boots**

protect the feet against crushing, falling objects and guarantee secure support:

- during operation,
- while the machine is cleaned.



**Wear a hair net or use a blade guard**

protect long hair against entanglement in the machine.



**Wear a protective apron**

protects the body against humidity, blood and other fluids.



**Wear head protection**

protect the head against injuries from contact with oscillating objects and machines and during work beneath suspended loads.



**Pull out the power plug**

disconnect the machine from the mains power supply before all servicing, maintenance and cleaning work.

Prohibition signs



**General prohibition signs**

This sign is only used in connection with an additional sign or text, which describes the prohibition in greater detail.



**High-pressure cleaners forbidden**

Do not use high-pressure cleaners to clean the machine.  
Parts of the machine could be damaged.

## 2 For your safety

This chapter describes the safety procedures and safety equipment. It is intended to make you aware of safety issues relating to use of the machine.

Safety instructions are for occupational health and safety and the prevention of accidents. Follow all the safety instructions described here and in the introduction to each section.

Be sure to read the sections on safety and the instructions they contain carefully before starting and using the machine.

EN

### 2.1 Warning notes

While you are using the machine, dangers may occur in certain situations or as a result of certain behaviours.

In this operating manual, warning information is given at the start of the respective chapter or life phase that involves danger of personal injury or property damage. It relates to all following actions of the chapter or life phase.

The precautions described must be observed to avoid the danger.

Structure of a  
warning note



#### Signal word!

#### Type and source of the imminent danger.

Possible consequences of the danger.

➤ Measures to avoid the danger.

| Signal word | Meaning                                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------------------|
| DANGER      | indicates an imminently hazardous situation which, if not avoided, will result in danger to life or death.           |
| WARNING     | indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.          |
| Caution     | indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.         |
| Attention   | indicates a potentially hazardous situation which, if not avoided, could result in damage to machine or environment. |

## 2.1 Site Operator's Responsibilities

In accordance with the rules and regulations of the employers' liability insurance association relating to the safety and health when working for a business in the meat industry (BGR 229), the site operator may only allow insured persons who are 18 years old and are familiar with the equipment and the handling of the equipment to operate slaughter equipment.

Young people over 16 years may be employed only if this is required as part of their vocational training and if they have read and understood the safety instructions. Their safety must be ensured by a supervisor.

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating staff               | <p>The site operator, as a higher level legal person, is responsible that the machine is used in accordance with its intended use and is responsible for training and for assigning authorized and qualified operating, maintenance and cleaning staff.</p> <p>The site operator is obliged to ensure that each employee is properly trained in the operation of the machine.</p> <p>Staff undergoing training may only work at the machine under the supervision of properly qualified staff.</p>                                                                |
| Safety of the machine         | <p>The site operator must ensure that the machine is only operated and used in perfect and functional condition.</p> <p>The site operator must ensure that safety devices are regularly serviced and checked for proper function.</p>                                                                                                                                                                                                                                                                                                                             |
| Workplace                     | <p>The site operator must ensure that the lighting intensity is at least 500 lux.</p> <p>The workplaces must be designed so that clearance of 1.5 m in width and 1 m in depth per person is provided so that each person can move around freely. All persons working at these workplaces must be able to maintain an upright and neutral body posture.</p> <p>The material of the floor must be such that the risk of slipping on wet, greasy or soiled floors is reduced.</p> <p>The workplace must comply with the local hygiene and workplace regulations.</p> |
| Escape routes                 | <p>The site operator must ensure that sufficient escape routes are available for the staff and that these are clearly marked. The site operator must make sure that escape routes are not obstructed and that their function is not impaired (e.g. that doors open towards the escape route).</p>                                                                                                                                                                                                                                                                 |
| Personal protective equipment | <p>The site operator must provide suitable personal protective equipment for operating staff and make sure this equipment is used.</p> <p>For hygienic reasons, each employee must have his/her own personal protective equipment.</p>                                                                                                                                                                                                                                                                                                                            |
| Cleaning                      | <p>The site operator must ensure that working equipment can be cleaned easily and without any risk. The site operator must provide suitable detergents and define suitable cleaning procedures.</p>                                                                                                                                                                                                                                                                                                                                                               |
| Instruction of staff          | <p>The site operator is obliged to instruct employees regularly and in light of certain events (e.g. if an accident has occurred) in safe work procedures and occupational safety and health. We recommend that the instruction and the content covered should be documented by the employee's signature.</p>                                                                                                                                                                                                                                                     |

- Risk assessment** The site operator must inform operators of possible dangers, symptoms and preventative measures. Relevant occupational safety conditions have to be complied with.
- Ensure eye and ear protection is worn at all times when operating the machine.

## 2.2 Employee Responsibilities

- Operating staff** The operating staff must be properly instructed and trained by the employer. Staff who have read and understood the safety instructions and have been properly familiarized with the operation of the machine can be regarded as trained.
- Operating staff must be familiar with the operating manual and the applicable OHS and accident prevention regulations.
- Qualified personnel** Qualified personnel are defined as skilled employees who, due to their vocational training, have the knowledge and experience required in their field of work.
- Assembly, maintenance and repair work as well as troubleshooting may only be carried out by qualified personnel.
- Qualified personnel must be familiar with the operating manual and the applicable OHS and accident prevention regulations.
- Safety at the workplace** Maintain a stable upright position and keep your balance. Avoid awkward postures.
- Keep your workplace clean and tidy. Untidy workplaces can cause accidents.
- Always wear the personal protective equipment provided.
- Keep children, young persons and untrained staff away from the machine.
- Machine safety** Before starting any work, carefully check the machine for proper function in accordance with the intended use.
- Do not set the machine into operation if it does not work correctly.
- Switch off the machine immediately if it no longer works correctly and have it checked.
- Have defective safety devices, switches or other defective machine parts repaired.
- Notify your employer or his authorized representative of any changes to the machine which may affect your safety.
- Emergency procedures** In case of an accident provide first aid and call a doctor and emergency medical services.
- Notify your employer or his authorized representative of every accident.

EN

## 2.3 Personal protective equipment

The staff must carry the customary personal protective equipment. The personal protective equipment is dependent on the respective field of work.

The personal protective equipment must be provided by the operator. For hygienic reasons, each employee gets his/her own personal protective equipment.

## 2.4 Electrical safety to DIN VDE 0701-0702/EN60204-1



Fig. 2-1

All our electrical equipment is checked by an electrician and an inspection sticker affixed before initial start-up and after a change or maintenance at our plant in accordance with electro-technical standards of DIN VDE 0701-0702/EN 60204-1 (Fig. 2-1).

The inspection sticker indicates the date of the next inspection.

The inspection period for plant and machinery used in abattoirs and cutting plants is six months.

## 2.5 Requirements on the installation location

Only set up the machine in enclosed and frost-free rooms. The ambient temperature is between -25°C to +4°C.

The ground must be level, solid and load-bearing.

Set up the machine in a manner that all control elements and bolt connections are always freely accessible.

Operation and all maintenance and repair work must be carried out safely and without obstacles.

## 2.6 Safety devices

### 2.6.1 Location of safety devices

The machine is equipped with the following safety devices: Rib-Top-Cutter RTC34

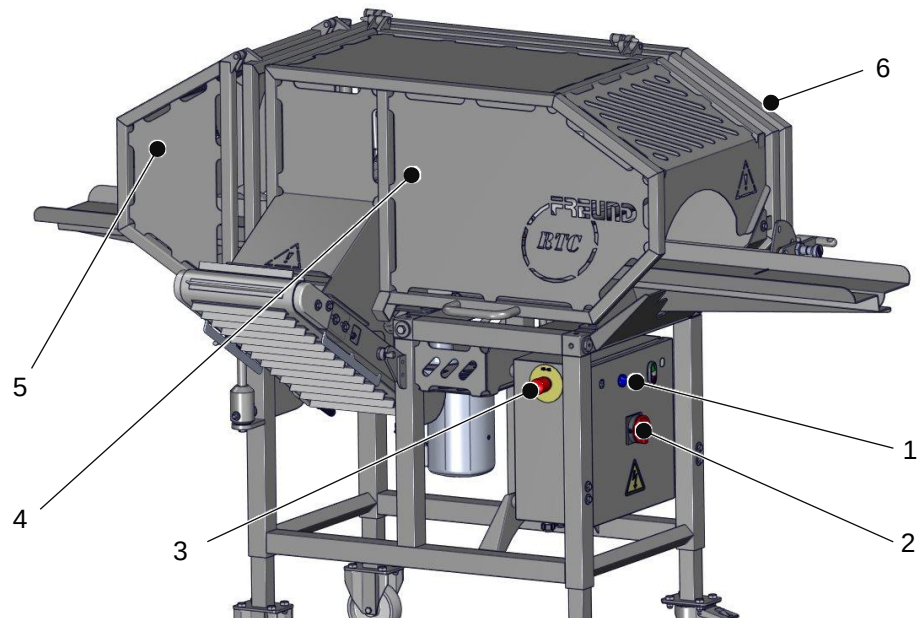


Fig. 2-2

| Element | Designation          |
|---------|----------------------|
| 1       | Indicator light      |
| 2       | Main switch          |
| 3       | EMERGENCY OFF switch |
| 4       | Main hood            |
| 5       | End hood             |
| 6       | Hood, rear side      |

### 2.6.2 Main switch



Fig. 2-3



Fig. 2-4

The main switch disconnects the complete power supply from the machine. The main switch must be turned to "0" (OFF) and the machine checked to ensure it has been powered down before any work is carried out.

The main switch can be locked in position "0" (OFF) with a padlock (Fig. 2-4). This ensures that the machine cannot be switched on without authorisation or accidentally, such as during maintenance work.

### 2.6.3 EMERGENCY OFF switch



Fig. 2-5

The red EMERGENCY OFF switches on a yellow background are located on the front and rear of the machine's control cabinet. If either EMERGENCY OFF switch is pressed, the machine stops immediately. After an EMERGENCY <NonBreakingHyphen/>OFF switch has been activated, the machine can only be switched on again by pressing the ON/OFF switch.

- Only switch the machine on again if
  - the cause of the fault has been eliminated.
  - there is no danger to people or property if the machine is switched on.

### 2.6.4 Indicator light



Fig. 2-6

The yellow indicator light indicates whether the protective hood and conveyor belt hood are open.

The light goes out once the open parts have been closed.

### 2.6.5 Protective hoods

The main hood, end hood and rear-side hoods cover the conveyor belts and the cutting area. They prevent the operator inadvertently reaching into the conveyor belts or the knife.

The hoods have pneumatic struts which hold the hoods open.

Each hood has a magnetic sensor for safety purposes. The machine cannot be started and operated without a protective hood or with an open hood.

The machine stops immediately if a protective hood is opened when the machine is running.

If a hood is opened, the yellow indicator light on the machine illuminates. The machine can only be switched on again by pressing the ON/OFF -switch.

EN

## 2.7 Intended use

The Rib-Top-Cutter RTC34

- is designed for separating the bones from the loin.
- is only intended for use with fresh, non-frozen pieces of meat.
- may be operated by one operator only at any given time.
- should only be used with the specified and functional safety equipment.

Intended use also includes:

- adherence to safety guidelines and requirements
- proper execution of repairs and maintenance
- regular cleaning

Any other use is improper and endangers the safety of the operating personnel.

Safety  
Requirements

The machine should only be operated in the breaking down area of the slaughterhouse. Operation in slaughter rooms is forbidden.

Disclaimer

FREUND Maschinenfabrik accepts no liability for damage resulting from improper use.

Warranty claims will not apply in the case of any other use of the machine.

## 2.8 Improper use

Every use other than those described as → chapter *Intended use* is deemed to be non-intended and is thus inadmissible.

The operator is solely responsible for risks in the case of improper use. Consult the manufacturer in case of doubt.

The following are also deemed as improper use:

- the cutting and sawing of other materials such as wood, plastic or stone.
- the cutting of frozen products.

- the use of the machine in slaughter rooms.
- the use of the machine without functional safety devices.

## 2.9 Residual risks

The machine has been built according to the scientific and technological state of the art and complies with the basic occupational health and safety requirements of the European Union.

The machine is operationally safe, assuming compliance with the operating manual, the company-specific instructions and the accident prevention regulations.

However, there are still dangers involved which cannot be eliminated by design measures. These include:

- danger of injury to fingers and hands.
- danger of injury from flying pieces of meat and bone fragments.
- danger of injury from breakage or ejection of fragments of the cutting tool.
- risk of accident through toppling machine.
- risk of injury from negligent handling of personal safety equipment while operating the machine, during maintenance and repair work and during cleaning and disinfection

It should also be noted that, despite all precautionary measures, residual risks may remain which are not evident.

You can minimise these residual risks by observing the safety instructions given at the beginning of the individual chapters and observing the instructions in the entire operating manual.

### 3 Technical Description

The Rib-Top-Cutter RTC34

- is used to separate the bones from the loin.
- was constructed in accordance with the current state of science and technology and complies with the basic health and safety requirements of the European Union and the FDA-H1 regulations.
- is safe to operate if the operating instructions, specific operating regulations and accident prevention regulations are followed.

Features

- Easy processing of left and right cutlet loins
- Automatic separation, removal and collection of product and bone fragments
- High-quality finished goods because of clean, smooth and even cut
- No force required from the operator
- Safe work (especially compared to an open band saw)
- Fast and easy to clean
- Low space requirement

EN

#### 3.1 Technical Data

|                                              |                                              |
|----------------------------------------------|----------------------------------------------|
| Type                                         | RTC34                                        |
| Weight                                       | approx. 250 kg                               |
| Dimensions (L x W x H) closed                | 2,200 x 1,140 x 1,500 (+/-80) mm             |
| Dimensions (L x W x H) open                  | 2,200 x 1,723 x 2,211 (+/-80) mm             |
| Circular cutting knife Ø                     | 345 mm                                       |
| Rotational speed                             | 380 rpm                                      |
| Rated current                                | 5 A                                          |
| Rated capacity<br>(main drive + drum motors) | 2.6 kW                                       |
| Voltage                                      | 400 Volts                                    |
| Current frequency                            | 50 Hz                                        |
| Protection type (motor)                      | IP 65                                        |
| Noise emission                               | ≤ 83 dB (A),<br>during operation ≤ 95 dB (A) |
| Vibration                                    | < 2.5 m/s <sup>2</sup>                       |
| Fuse on operator side                        | 16 A                                         |

### 3.1.1 Main drive

|                |                |
|----------------|----------------|
| Motor type     | Gear motor 08B |
| Rated capacity | 2.3 kW         |
| Speed          | 1,410 rpm      |
| Rated current  | 4.3 A          |

### 3.1.2 Belt motors

|                |            |
|----------------|------------|
| Motor type     | Drum motor |
| Drum Ø         | 82 mm      |
| Rated capacity | 0.12 kW    |
| Torque         | 14.7 Nm    |
| Rated current  | 0.34 A     |

### 3.2 Machine overview

The illustration below shows the standard design of the Rib-Top-Cutter RTC34. Your version may be different.

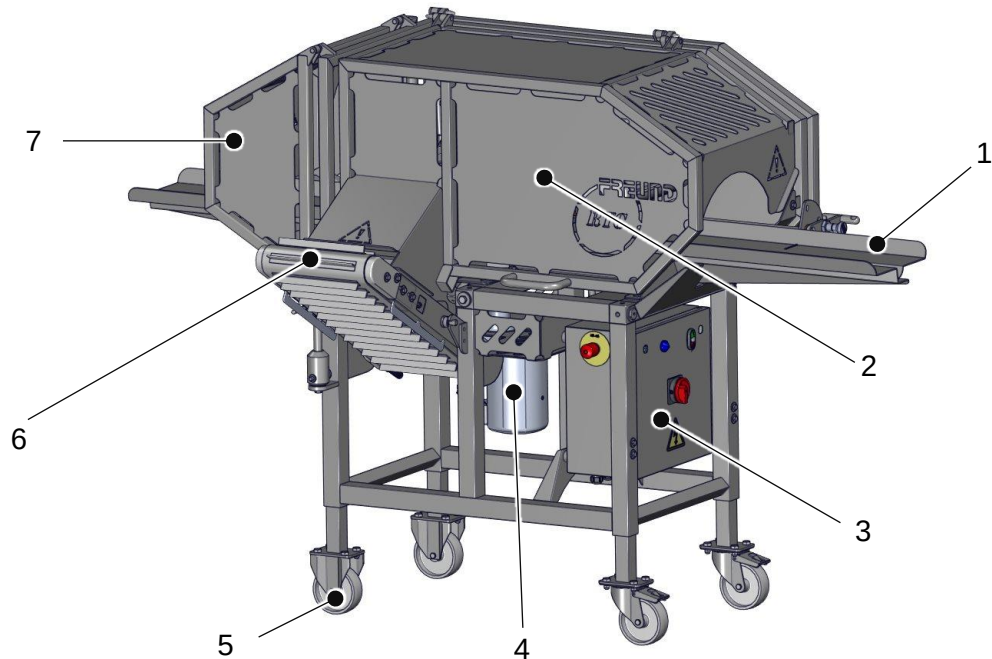


Fig. 3-1

| Element | Designation                           |
|---------|---------------------------------------|
| 1       | Guide rails, meat entry area          |
| 2       | Main hood                             |
| 3       | Control cabinet                       |
| 4       | Main motor                            |
| 5       | Fixed and steering castors with brake |
| 6       | Discharge belt                        |
| 7       | End hood                              |

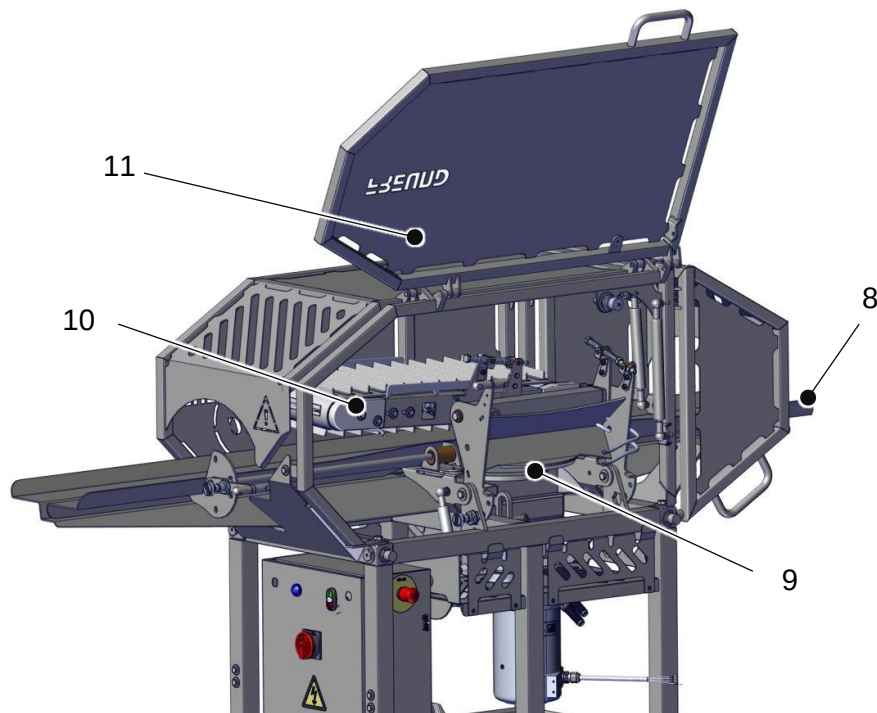


Fig. 3-2

| Element | Designation                      |
|---------|----------------------------------|
| 8       | Guide rails, meat discharge area |
| 9       | Circular cutting knife           |
| 10      | Internal belt                    |
| 11      | Hood, rear side                  |

### 3.3 Dimensions

The figure shown below gives you an overview of the dimensions of the machine. All dimensions are in mm.

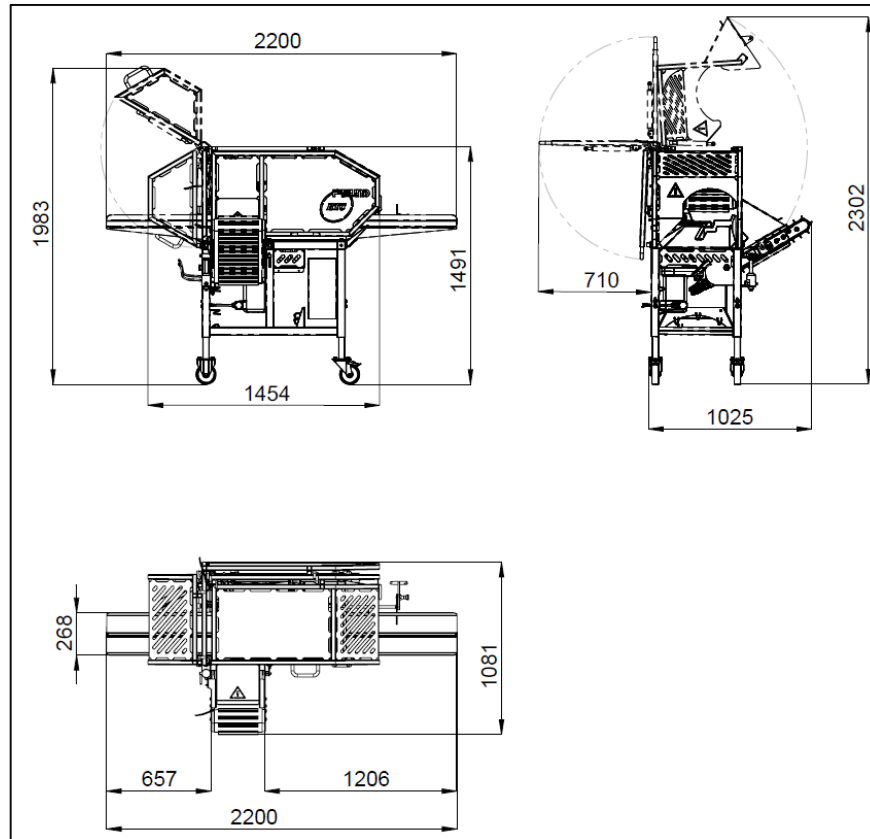


Fig. 3-3

EN

## 4 Transport und Storage

FREUND-machines are intended for shipment via motor truck, train, aircraft, or ship. The secure shipment will be separately or in multiple packages.

Trial run at  
manufacturer

The machine has been thoroughly checked before shipping and has already undergone a trial run in the factory. This check ensures that the machine corresponds to the data specified and works correctly. Despite all the care taken the machine can be damaged in transit.

### 4.1 Safety information



#### **WARNING!**

#### **Danger due to falling or toppling load.**

Death or very serious injuries are possible.

- Only use approved lifting gear and accessories appropriate for the total weight of the machine.
- Never stand under a suspended load.
- Secure the danger zone against unauthorized access.
- Wear a hard hat, protective footwear and gloves.

### 4.2 Personal protective equipment



### 4.3 Transporting the machine

All FREUND-machines can be transported using a fork-lift truck or lift truck. The length of the fork must at least correspond to the depth of the machine.

- Only use lifting equipment and gear that has been approved for the weight of the machine. This includes transporting using a crane, fork-lift truck or lift truck.  
For the weight of the machine refer to → chapter *Technical Data* on page 19.
- Secure the machine during transport to prevent it from tilting and slipping.
- Only use ropes and lifting appliances which ensure sufficient safety and load bearing capacity.

### 4.4 Unpacking the machine

After unpacking, the machine is ready for use.

Recycling and disposal

The original packaging of the machine is made of recyclable material and can be given to the system for collecting recyclables.

For details about recycling and disposal of the package refer to the → chapter *Disposal and Recycling* on page 42.

- Remove all packing materials and dispose of it properly and in an environmentally sound manner.
- Remove any accumulated condensate.
- Check the machine for transport damage.
- Watch the machine during the first hours of operation to check whether any malfunctions occur.

EN

## 4.5 Storing the machine

To store the machine safely, be sure to observe the following notes:

- Only store the machine in dry and frost-free rooms.
- When storing the machine for a longer period, make sure it is dry.
- Store the machine so that damage to the machine is excluded.
- Protect the machine against corrosion.

## 5 Installation and Commissioning

The installation and connection of the machine is made by the operator.  
For damages, which result from this, the manufacturer FREUND Maschinenfabrik, is not liable.

### 5.1 Safety information



#### **DANGER!**

##### **Live machine parts.**

Danger to life.

- Before starting any work, disconnect the machine from the power supply and secure it against being inadvertently switched back on.



#### **WARNING!**

##### **Risk of accident caused by insufficiently qualified personnel**

Danger to Life and most severe injuries are possible.

- The machine may only be commissioned by instructed and authorized personnel.
- All works to live components may only be performed by approved electricians.



#### **WARNING!**

##### **Sharp-edged machine parts.**

Cutting hazard.

- Never put your hands near moving machine parts.
- Keep your hands away from the saw blade or blade.
- For your own safety, wear protective gloves.



#### **WARNING!**

##### **Machine may unexpected start-up.**

Severe cutting and crushing injuries to hands and arms.

- Turn the main switch to the "0" (OFF) position.
- Secure the main switch against unauthorised access.



#### **Caution!**

##### **Uncontrolled moving machine.**

Risk of injury by not blocked locking device of the machine.

- Check whether the trestle rollers of the machine are blocked by the locking device.

## 5.2 Personal protective equipment



## 5.3 Adjusting the working height

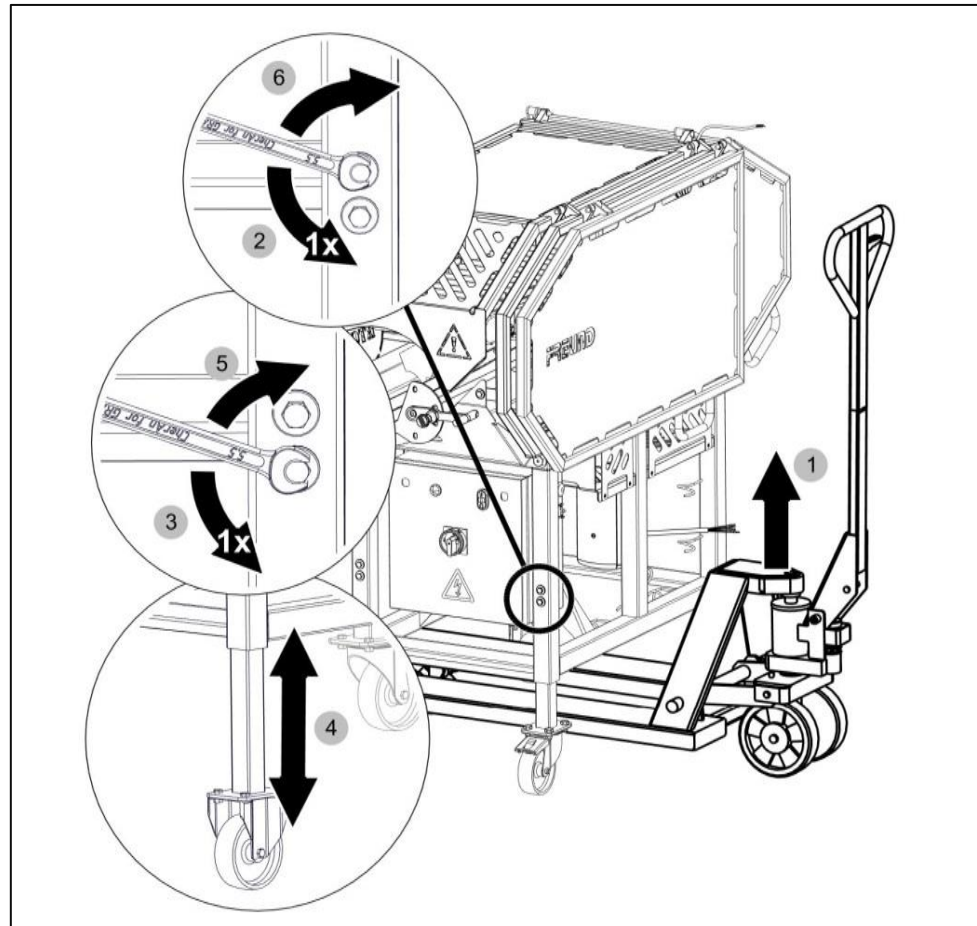


Fig. 5-1 operational steps to adjust the working height

## 5.4 Checking the safety devices

### Check

- all key areas of the machine before performing a test run.
- whether the castor and fixed wheels are blocked.
- the danger zones of the machine.  
No-one should work or remain in the danger zones of the machine.
- the protective cover and conveyor belt hood.  
Both devices must be correctly located in their retainers and be closed.
- whether the EMERGENCY OFF switch is unlocked.

the mounting of  
the circular cutting  
knife.

1. Disconnect the machine from the mains.
2. Remove the safety covers and tip back the housing.
3. Check that the circular cutting knife is firmly seated.

EMERGENCY  
OFF switch-

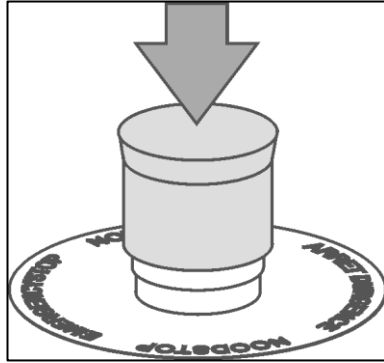


Fig. 5-2

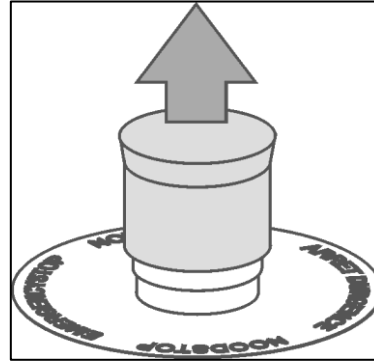


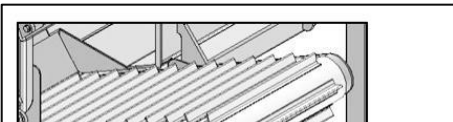
Fig. 5-3

1. During the test run, press the red cap of the EMERGENCY OFF switch<NonBreakingHyphen/> (Fig. 5-2).  
*The machine will stop immediately. The red cap remains in the pressed position.*
  2. Raise the red cap of the EMERGENCY OFF switch- (Fig. 5-3).  
*The EMERGENCY OFF- switch is released.*  
The machine remains off and can only be switched on again by pressing the ON/OFF switch.
- Check the function of the magnetic sensor and the indicator light.

Magnetic sensor,  
conveyor belt  
hood

1. During the test run, raise the conveyor belt hood quickly.  
*The machine will stop immediately. The yellow indicator light next to the ON/OFF switch will illuminate. -*
2. Lower the conveyor belt hood again.  
*The yellow indicator light will turn off.*
3. Press the green "I" button of the ON/OFF switch.  
*The machine will restart.*

## 5.5 Tensioning the conveyor belt



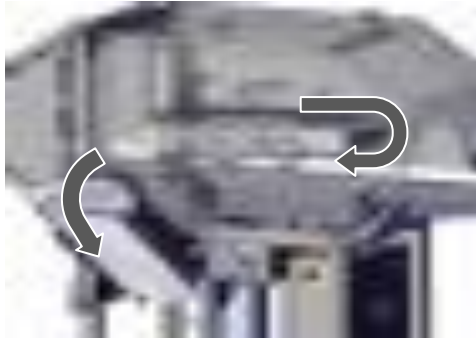
Loosen the bolts (4) on both sides of the conveyor belt.

Adjust the bolts (5) in the slots.

Retighten the bolts (4).

Fig.5-4

## 5.6 Carry out test run.



1. Connect the machine to the mains.
2. Turn the master switch to "I" (ON).
3. Press the green "I" button of the ON/OFF switch.  
*The machine will start.*
4. Check the operation of the EMERGENCY OFF switch and magnetic sensors during the test run (→ Section **Checking the safety devices** on page 27).

Fig. 5-5

5. Check the direction of rotation of the motors.  
The direction of rotation can be checked from the direction of the conveyor belts. All motors are rotating correctly if the belts are moving in the direction indicated (Fig. 5-5).



If the direction of rotation is incorrect, switch the machine off immediately and have it checked by an electrician (→ Appendix B *Circuit diagrams*).

6. Check the direction of rotation of the knife.  
The direction of rotation is indicated by an arrow on the knife. It turns in the same direction as the conveyor belt.
7. Listen for any suspicious or unusual noises when the machine is in operation.  
The speed of the motors should not vary and there should be no suspicious noises.
8. Press the red "0" button of the ON/OFF switch.  
*The machine will stop.*
9. Turn the master switch to "0" (OFF).

EN

## 6 Operating

### 6.1 Safety information

**WARNING!****Risk of accident caused by insufficiently qualified personnel.**

Danger to Life and most severe injuries are possible.

- The machine may only be maintained, repaired and cleaned by qualified personnel.

**WARNING!****Sharp-edged machine parts.**

Cutting hazard.

- Never put your hands near moving machine parts.
- Keep your hands away from the cutting tools.
- Always wear protective gloves for your own safety.

**WARNING!****Forced infeed of the loin.**

Crushing injuries to hands from the infeed slot when drawing in the loin.

- Think ahead and work carefully.
- Do not reach into the infeed slot while feeding the loin.
- Always wear protective gloves for your safety.

**Caution!****Uncontrolled moving machine.**

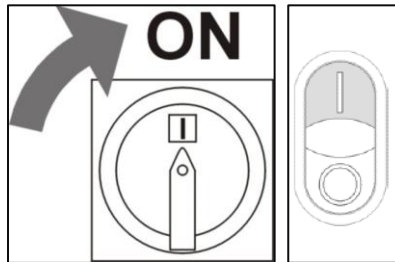
Risk of injury by not blocked locking device of the machine.

- Check whether the trestle rollers of the machine are blocked by the locking device.

### 6.2 protective equipment



### 6.3 Rib-Top-Cutter



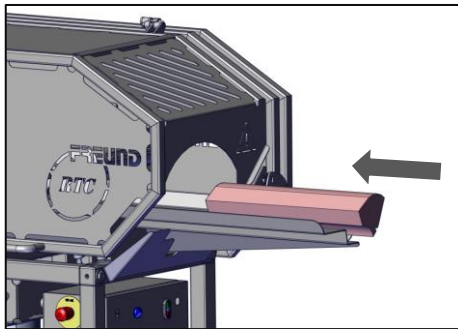
1. Ensure that the collection container for remnants is ready below the discharge belt.
2. Ensure that the brake on the castors and fixed rollers is blocked.
3. Turn the master switch on the machine to "I" (ON).
4. Press the green "I" button of the ON/OFF switch.  
*The machine will start and the knife begin to rotate.*

Fig. 6-1



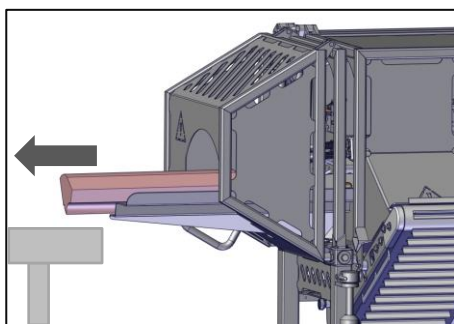
#### **Risk of injury!**

- Do not reach into the machine.



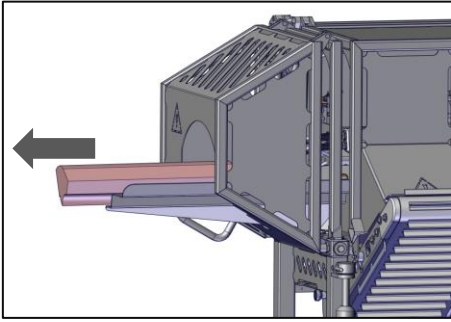
5. Place the loin (1) in the guide rails with the ribs facing down (2).
6. Slide a loin into the machine by hand until about 5 – 10 cm can still be seen.
7. Push in using another loin.  
*The loins are drawn into the machine automatically and the ribs separated.*

Fig. 6-2



- 8.1 With conveyor belt:  
The deboned loins are pushed out behind the machine and fall onto the conveyor belt.

Fig. 6-3



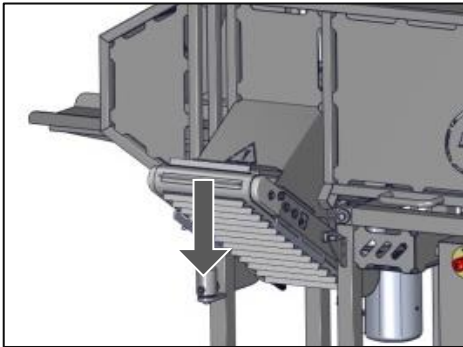
## 8.2 Without conveyor belt:

The deboned loins are pushed out behind the machine and remain on the guide rails in the meat discharge area.



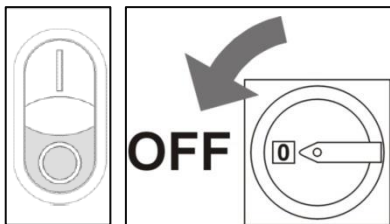
Pull the loins out of the machine without putting your hands inside.

Fig. 6-4



## 9. The remnants are transported by the discharge belt into the collection container.

Fig. 6-5



## 10. Press the red "0" button of the ON/OFF switch. The machine will stop.

## 11. Turn the master switch to "0" (OFF).

Fig. 6-6

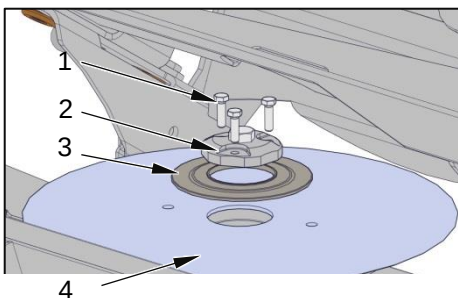
## 6.4 Changing circular cutting knife

- Follow steps 1 – 6 in → Section **Preparing to cleaning the machine** on page 36 to power down the machine, open the protective hoods and swing the conveyor belt upwards.



### Danger of cutting!

- Work only wearing protective gloves.



- Hold the saw blade flange (2) firmly with a suitable spanner (SW 60). This prevents the knife from rotating when the hex-head screws (1) are loosened.
- Use a suitable ring spanner (SW 10) to loosen the three hex-head screws (1) by turning them anticlockwise.

4. Remove the blade flange (2) and the lock washer (3).

5. Remove the knife (4).

Fig. 6-7

6. Clean and check the flange.  
Replace the flange if it is damaged.

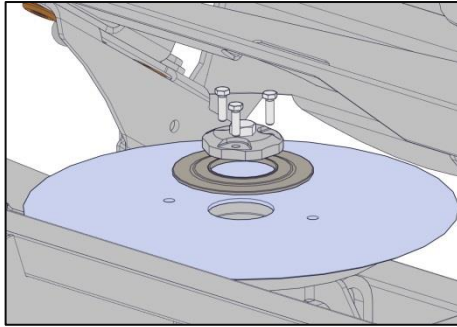


Fig. 6-8

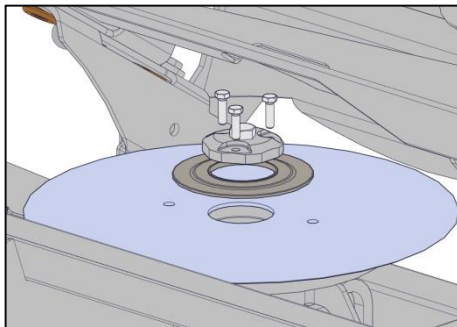


Fig. 6-9

7. Fit a new knife.  
Make sure that the chamfer of the knife is underneath.
8. Place the lock washer and blade flange on the collar of the shaft sleeve.  
Ensure that the pins in the bores of the knife are in the correct position.
9. Tighten the hex-head screws to a torque of 10 - 12 Nm.

## 6.5 Sharpening circular cutting knife

### Caution!

**Improper sharpening can lead to chips along the cutting edge or breakage of the knife.**

- Have the knives sharpened by  
FREUND Maschinenfabrik or a sharpening specialist.

The cutting performance of the machine depends primarily of the sharpness of the knife. Blunt knives are a danger to users and lead to unclean cut surfaces.

Sharpen the knife if burrs can be seen or felt on the knife.

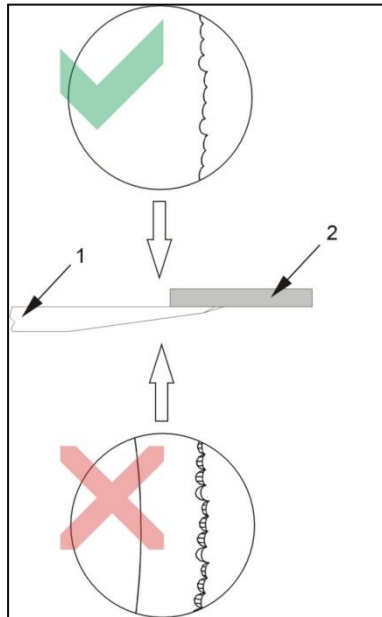


Fig. 6-10

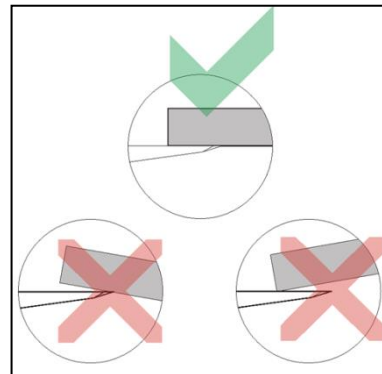


Fig. 6-11

- Sharpen the knife using the whetstone supplied.
  - Sharpen only the smooth side of the knife without micro-serrations (Fig. 6-10).  
The micro-serrations should only be sharpened by FREUND Maschinenfabrik or a sharpening specialist.
1. Turn the master switch to "0" (OFF) and make sure it cannot be switched on accidentally.
  2. Clean the machine before sharpening the knife (→ Section *Preparing to cleaning the machine* on page 36 and → Section *Cleaning and Disinfection* on page 37).



### **Danger of cutting!**

- Work only wearing protective gloves.

3. Place the whetstone flat against the smooth side of the knife (Fig. 6-11).  
Guide the whetstone across the knife without applying excessive pressure.
4. Turn the knife again by hand until you have made three complete revolutions.
5. After sharpening, carefully check the cutting edge of the knife.  
Repeat the sharpening process if not all burrs have been removed.
6. Clean the machine.  
Grinding dust and any metal particles must be removed.

## 7 Cleaning and Disinfection

Cleaning is carried out in order to remove dirt, meat and fat particles from the machine.

For hygienic reasons, the machine must be thoroughly cleaned at least daily after each shift, and in between in case of heavy soiling. All surfaces must be visually clean after cleaning.



Always take note of the safety instructions in the product data sheets issued for the relevant detergents or disinfectants.

EN

### 7.1 Safety information



#### **DANGER!**

##### **Live machine parts.**

Danger to life from electric shock.

- Before starting any cleaning work, disconnect the machine from the power supply and secure it against being inadvertently switched back on.
- Do not use water or a high-pressure cleaner to clean live machine parts.



#### **WARNING!**

##### **Risk of accident caused by insufficiently qualified personnel.**

Danger to Life and most severe injuries are possible.

- The machine may only be maintained, repaired and cleaned by qualified personnel.



#### **WARNING!**

##### **Sharp-edged machine parts.**

Cutting hazard.

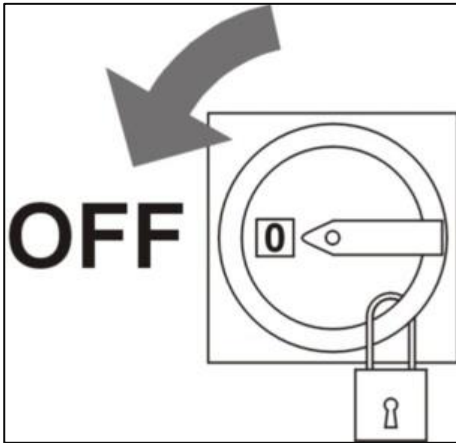
- Never put your hands near moving machine parts.
- Keep your hands away from the cutting tools.
- Always wear protective gloves for your own safety.

### 7.2 Personal protective equipment



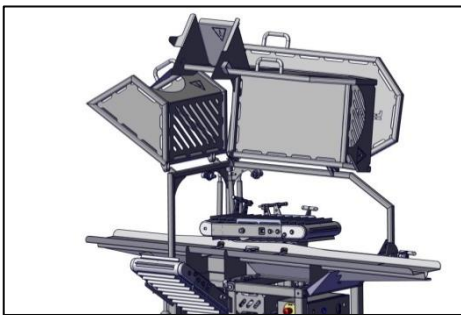
### 7.3 Preparing to cleaning the machine

The safety covers and conveyor belts must be dismantled from the machine to allow you to clean and disinfect all areas of the machine thoroughly.



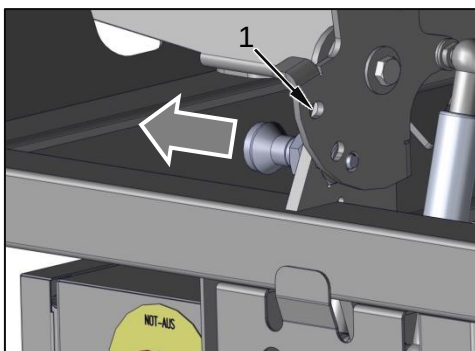
1. Disconnect the machine from the mains.
2. Turn the master switch to "0" (OFF) and make sure it cannot be switched on accidentally.

Fig. 7-1



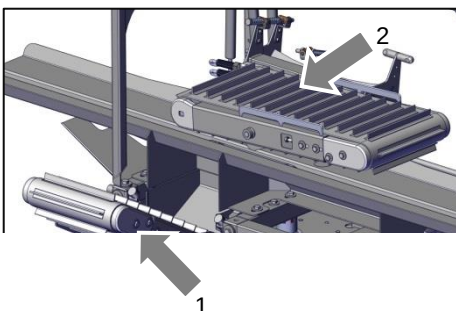
3. Open all three covers.

Fig. 7-2



4. Pull the locking pin at the rear of the machine out as far as the stop and hold it firmly.
5. Swing the inner conveyor belt upwards.  
*The rear guide rail will swing up with it.*
6. Allow the locking pin to lock in bore C (1).  
*The pin will make an audible click and secure the raised conveyor belt.*

Fig. 7-3



10. Clean the discharge belt (1) and conveyor belt (→ Section *Cleaning the discharge belt* on page 38)
11. Clean the internal conveyor belt (2) and internal belt (→ Section *Cleaning the internal conveyor belt* on page 39)

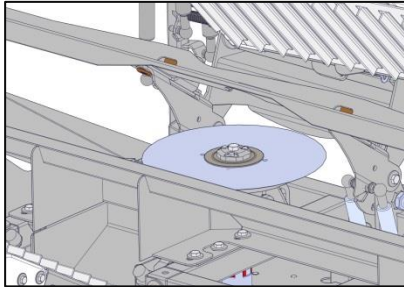


Fig. 7-4

12. Clean the circular slitting knife and the area below it.
13. Remove any rust and other contamination from the circular slitting knife with chemical cleaners.

Fig. 7-5

EN

## 7.4 Cleaning and Disinfection

- Always wear the required personal protective equipment recommended by the cleaning and disinfectant product manufacturer.
- Use only cleaning and disinfectant products approved for the food processing industry.
- Follow the labelling, safety instructions and product data sheets for the cleaning and disinfectant products.
- Store cleaning and disinfectant products in a separate location or special area.  
Make sure they do not come into contact with food items.
- Use only polishing cloths, brushes and other equipment intended exclusively for cleaning.

### 7.4.1 Cleaning the machine

#### **Caution!**

#### **Damage may be caused by high water pressure.**

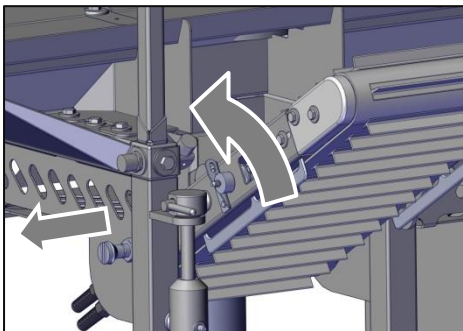
High water pressures damage seals and machine parts.

- Do not use a high pressure cleaner.
- Work only with water pressures  $\leq 6$  bar.

1. Remove any stubborn contamination with a soft brush or plastic scraper and water spray.
2. Use cleaning products in the exact quantities prescribed by the manufacturer.  
It is essential to follow the specified conditions of use of the cleaning product (concentration, application time, temperature).
3. Lather the machine and all removed machine parts and allow the cleaning product time to work.  
Follow the application times given by the manufacturer.

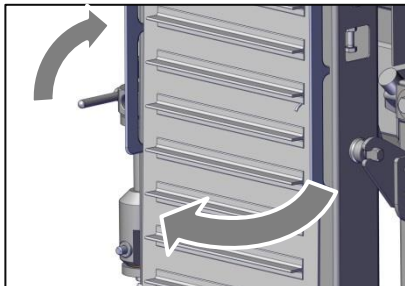
4. In addition to the surfaces and small parts of the machine which come into contact with foodstuffs (food area) also clean other areas such as:
  - the floor of the work area,
  - the external surfaces of the machine,
  - all removed machine parts.
5. Rinse the machine and all machine parts thoroughly with hot water and remove any cleaning product residue.

#### 7.4.2 Cleaning the discharge belt



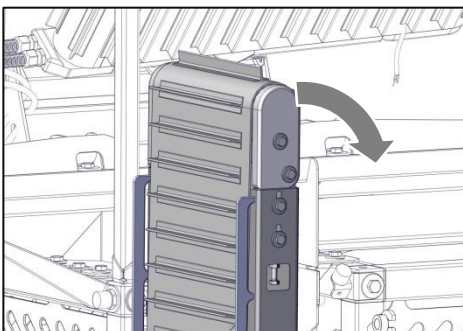
1. Pull the locking pin on the left side of the discharge belt housing out as far as the stop and hold it firmly.
2. Swing the discharge belt upwards until it reaches the stop.  
*The locking pin will make an audible click and secure the raised belt.*

Fig. 7-6



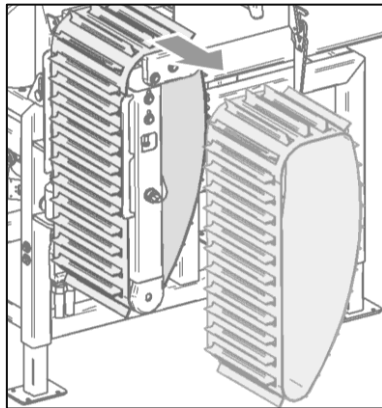
3. Pull the interlock clockwise until it reaches the stop.
4. Swing the discharge belt to the rear end of the machine.

Fig. 7-7



5. Tip the swivel head of the discharge belt. You will have to overcome the initial resistance designed to prevent tipping.  
*The conveyor belt will now be lying without tension on the discharge belt.*

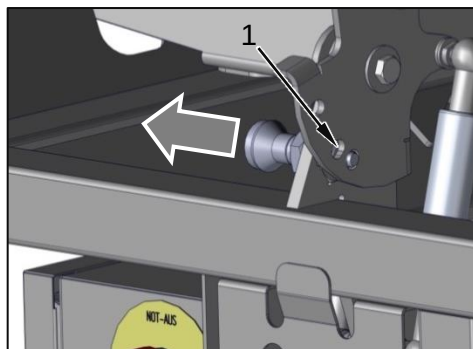
Fig. 7-8



6. Remove the conveyor belt from the discharge belt.
7. Check the discharge belt and the conveyor belt for external damage.
8. Clean both belts.
9. After the entire machine has been cleaned, refit the conveyor belt in the reverse order.

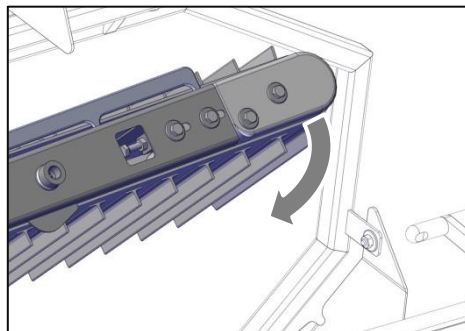
Fig. 7-9

### 7.4.3 Cleaning the internal conveyor belt



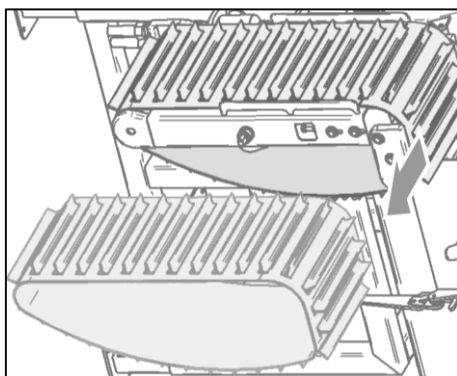
1. Pull the locking pin at the rear of the machine out as far as the stop and hold it firmly.
2. Swing the internal conveyor belt downwards.  
*The rear guide rail will lower and cover most of the blade in order to minimise the risk of cuts.*
3. Allow the locking pin to lock in bore B (1).  
*The locking pin will make an audible click and secure the raised conveyor belt.*

Fig. 7-10



4. Tip the swivel head of the conveyor belt.  
You will have to overcome the initial resistance designed to prevent tipping.  
*The conveyor belt will now be lying without tension on the track.*

Fig. 7-11



5. Remove the conveyor belt from the track.
6. Check the belt and track for external damage.
7. Clean the belt and track.
8. After the entire machine has been cleaned, refit the conveyor belt in the reverse order.

Fig. 7-12

#### 7.4.4 Disinfecting the machine

1. Use disinfectant in the exact quantities prescribed by the manufacturer.  
It is essential to follow the specified conditions of use of the disinfectant (concentration, application time, temperature).
2. Apply the disinfectant to the machine and all removed machine parts at increased temperature or with hot water (up to 82 °C).
3. Also disinfect other surfaces in order to reduce the possibility of cross-contamination:
  - the external surfaces of the machine,
  - the floor of the work area and
  - all removed machine parts.
4. Follow the application times given by the manufacturer.
5. Rinse the machine and all machine parts thoroughly with hot potable water or prepared water of potable quality and remove any disinfectant residue.
6. Reassemble the machine.
7. Let the machine dry in air.

#### 7.5 Recommended detergents

Detergents contain one or several precisely matched active ingredients which fulfil application-specific tasks.

Some active ingredients can be combined in detergent, e.g. active chlorine and alkaline substances, others are incompatible such as alkaline and acid substances.

Choose suitable detergents in accordance with the type of soiling, the corrosion resistance of the materials and the procedures.

Alkaline  
detergents

Use alkaline detergents to remove fat and protein soiling, e.g.:

- P3-topactive LA, P3-topax 12, P3-topax 19, P3-topax 66
- Powerfoam
- Ecolab P3-steril.

Acid detergents

Use acid detergents for mineral deposits such as scaling, e.g.:

- P3-topax 56
- Acifoam
- Somplex.

#### 7.6 Recommended disinfectants

Disinfectants contain one ingredient or several precisely matched active ingredients. They usually also contain specific additives which also affect the efficiency and application conditions.

Choose a suitable disinfectant in accordance with various aspects, e.g. with regard to the material of the equipment or surface to be disinfected or the used detergents.

Only use disinfectants which have been tested for their effectiveness using accepted test procedures and in accordance with DIN-EN standards and which are permitted in the food industry, e.g.:

- P3-alcodes, P3-topax 99, P3-topax 91
- Divosan extra, Divosan active
- Ecolab P3-steril.

EN

## 8 Disposal and Recycling

The machine must be disposed of in accordance with the pertinent national regulations.

More Information For more information about our materials and their disposal please contact our sales staff.  
Please refer to the company information in the imprint for the address and telephone numbers.

### 8.1 Disassembling and disposing of the machine



Old machines contain recoverable materials which you can return for recycling.

When disposing of the machine, make sure to observe local environmental regulations.

1. Disconnect all connections and supply lines from the machine.
2. Completely disassemble the machine.
3. Segregate all materials.
4. Dispose of waste oil and components and materials soiled with oil in accordance with the applicable environmental regulations.
5. Send the individual materials to the appropriate recycling or disposal facilities.
6. Send hazardous waste to a local hazardous waste site.

### 8.2 Disposing packaging material



All packaging materials used by FREUND Maschinenfabrik are environmentally friendly and can be recycled.

You can safely dispose of the packaging materials through your local waste collection system or return them for recycling.

## Conformity

The company FREUND Maschinenfabrik GmbH & Co. KG hereby confirms, for articles and their materials that, when used as intended, come into contact with food comply with the following general requirements.

- Regulation (EC) No. 1935/2004 of 27 October 2004 for articles and materials that are intended to come into contact with food.
- Regulation (EC) No. 10/2011 of 14.01.2011 for plastic articles and materials that are intended to come into contact with food.
- Regulation (EC) No. 2023/2006 of 22 December 2006 for good manufacturing practices for articles and materials that are intended to come into contact with food.
- LFGB - Food, Articles of Daily Use and Feeding Stuff Law, as of 01.09.2005.

This applies to all the following machine types and their spare parts:

### **RTC34 Rib Top Cutter**

| Machine parts that come into contact with food | Material designation | Groups of materials and articles | Notes |
|------------------------------------------------|----------------------|----------------------------------|-------|
| Circular cutting knife                         | 1.4034               | Stainless steel                  |       |
| Conveyor belt                                  | PVC-Band FDA IK2075  | Plastics                         |       |
| Guide rails                                    | 1.4301               | Stainless steel                  |       |
| Housing                                        | 1.4301               | Stainless steel                  |       |

Paderborn, 06.09.2018

  
Head of Development