



**Mechanical engineering  
Scalding, slaughtering and  
stunning systems**



**With  
pneumatic lid**

**Scalding- and  
dehairing machine  
CAT 157SK20**

**Instruction manual**

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# 1 General directions

## 1.1 Using the operating instructions

The operating instructions are a part of the product. They contain important information for operation and service. The operating instructions are addressed to all persons who are instructed to carry out work on the machine / system. for example:

- Operation, including setup, troubleshooting during the work processes, removing production waste, maintenance and care, disposing of supplies and auxiliary material
- Maintenance (service, inspection, repair)
- Transport

A readable copy of the operating instructions must be accessible at the place where the system / machine is used. Ensure that the persons responsible for the system and its operation as well as persons who, in their own responsibility, work at and with the machine / system have read and understood the entire operating instructions. Please contact Mitchell Engineering Food Equipment if you need further clarification or additional information.

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## 1.2 Structure of the safety instructions

The safety information in these operating instructions is structured as follows:



Indicates a potentially dangerous situation which will lead to death or severe injuries if not avoided.

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Indicates a possibly dangerous situation which can lead to death or injuries if not avoided.

---



Indicates a potentially dangerous situation which can lead to minor or light injuries if not avoided.

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Indicates a potentially dangerous situation which can lead to damage to objects and the environment if not avoided. Provides helpful information about the products.

## 2 Legal information

### 2.1 Legal information

General information about safety and accident prevention can be found in the "Basic principle of prevention" (BGV A1) of the professional association. In addition to the operating instructions, the following regulations must be observed by the personnel employed:

- Generally applicable specifications for accident prevention
- Binding regulations for environmental protection
- Supervisory and notification obligations regarding the consideration of special features in the operation (e.g. with regard to work organization, workflows, personnel employed etc.)

In addition, all national provisions for accident prevention, as well as the other generally-recognised safety and occupational health rules and provisions for the operation of machines and plant are to be observed.

#### **! NOTICE**

Only expressly authorised and trained staff may operate, maintain or repair the machine. The legally-prescribed minimum age is to be observed. The training of staff should include theoretical information about technology and safety, as well as practical training on the machine.

It must be ensured that the operating staff have read and understood the operating instructions and, if necessary, the additional instructions for optional extras. For staff undergoing training, teaching, instruction or general instruction, at the machine they should be under the constant supervision of an experienced person. The work by staff, while conscious of safety and hazards with observance of the operating instructions, must be regularly checked by the operator. The competence of staff for operating or tooling, maintenance and overhaul must be clearly established.

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#### 2.1.1 Warranty claims

The conditions of guarantee for the machine/plant are governed by the contracts. In order not to lose claiming under guarantee, all upkeep, maintenance and inspection work according to the maintenance instructions are to be carried out at the intervals given there.

The preconditions for claiming under guarantee are also those prescribed set-up and connection conditions from the Mitchell Engineering company.

Damage/suspensions of service, which can be traced back to incorrect usage/application, incorrect replacement parts or modification by the customer, does not lead to the Mitchell Engineering company assuming any liability and the guarantee is void.

### 2.1.2 Exclusion of liability

Observing the operating instructions is the basic requirement for a safe operation of the machine / system and for reaching the specified product properties and features. Mitchell Engineering Food Equipment do not accept any liability for injuries, property damages, or pecuniary losses that result from non-observance of the operating instructions. Any liability for defects is excluded in such a case.

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### 2.1.3 Warranty claims

Observance of the operating instructions is the precondition for trouble-free operation and the fulfilment of potential warranty claims. Therefore, please first read the operating instructions, before working with the machine/plant.

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## 2.2 Operating instructions



#### **Danger from improper use**

Every use of the machine beyond the intended use and/or different use of the machine can bring about dangerous situations.



- All users must read and understand the enclosed operating manual.
  - The staff must attend regular training.
- 

### 2.2.1 Intended use



Incorrect use can result in hazards.

Pay particular attention to the basic safety instructions of these operating instructions.

The additional usage instructions in the documentation of the sub-suppliers are valid provided that a reference can be established to the use of the scalding equipment described here.

The equipment is for the dehairing of pigs in the context of slaughter in conformance with the Animal at Slaughter Regulation (German abbreviation TierSchIV)

It complies with the legal requirements of the "Accident prevention regulation for abattoirs and slaughterhouses" (BGV-C13) of the German federation of institutions for statutory accident insurance and prevention.

Specified animals:

- Pigs of all the breeds common in Europe with a living weight between 25 and about 300 kg. The stated throughputs and performance data of the scalding equipment can

vary when processing long-haired pig breeds. In some cases, the operation of the equipment can be limited when processing unusual breeds of pigs.

- Carcasses stunned and bled in conformance with the regulations
- Mechanical pre-cleaning of the animals before the processing is not essential for the operation of the equipment but may be necessary for hygienic reasons in the case of very soiled animals.

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## 2.3 Personnel qualification



### WARNING

#### **Risk of injury in case of inadequate qualification!**

Inappropriate handling can lead to severe personal injuries and/or considerable material damage.

- Have special activities carried out only by those persons designated in the respective chapters of this operating manual.
- It is the responsibility of the operator to instruct and train the staff in the individual areas of responsibility.
- The staff must attend regular training.

Trained personnel must fulfil the following requirements during operation:

- No influence of alcohol, drugs or other narcotics
- Wear the prescribed protective equipment (gloves, slip-resistant footwear, splash guard, etc.)
- No use of headphones, incl. music players or other devices where its use could impair hearing (limited perception of acoustic signalling devices)

In the operating instructions, the following qualifications are designated for the different spheres of activities:



#### **Specialist personnel**

Specialist personnel are in a position to carry out the work assigned to them due to their specialist training, knowledge and experience, as well as know ledge of the relevant stipulations, and are able to identify and avoid possible dangers independently. In these operating instructions, differentiation is made between the three various types of specialist personnel:

1. Qualified technical personnel (mechanical work)
2. Qualified electrical personnel (electrical work)
3. Cleaning personnel (cleaning)

**Instructed person:**

Instructed persons have been taught in instruction sessions by the operating company about the tasks assigned to them, and about the possible dangers involved in inappropriate behavior.

**Trained personnel:**

Trained personnel have been made familiar with the functionality of the machines and their possible dangers in training sessions by the manufacturer.

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## 2.4 Requirements of the work space

**! NOTICE**

The scope of this information is only the equipment supplied by the company MEFE.  
Use this information in setting up the factory work areas for the whole plant.

The operating area includes the following parts of surfaces and necessary equipment

- The feeding-in of the carcasses to be processed including the feed equipment
- Work routes and surfaces used for feeding-in and removal
- Scalding equipment
- Water supplies and drains for contaminated water
- Energy supply

The operations scheduled for the slaughtering are to be performed within an immediate vicinity to ensure a direct sequence of the operations required for the slaughtering. It is the operator's particular responsibility to observe the local requirements for operating the slaughter plant.



### 3 Safety

General information about safety and accident prevention can be found in the "Basic principle of prevention" (BGV A1) of the professional association. In addition to the operating instructions, the

- generally applicable specifications for accident prevention,
- binding regulations for environmental protection,
- supervisory and notification obligations regarding the consideration of special features in the operation (e.g. with regard to work organization, workflows, personnel employed etc.),

must be complied with by the personnel employed.

Furthermore, all national stipulations regarding accident prevention, as well as other generally recognized safety engineering and occupational health regulations and stipulations for the operation of machines and systems must be observed.

Before taking up work, the personnel assigned to work on the machine/system must have read attentively and understood the operating instructions, in particular the chapter "Safety".

#### **! NOTICE**

#### **Warranty and liability claim**

**Failure to observe the safety instructions in the operating manual makes warranty and liability claims null and void!**

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### 3.1 **Personal protective equipment**

During work, personal protective equipment must be worn in order to minimize dangers to health.

- Always wear the personal protective equipment that is necessary for the work you are doing.
- Comply with the signs regarding personal protective equipment put up with in the working area.



#### **Protective clothing**

For certain tasks, personnel must wear special protective clothing in order to protect themselves against a number of risks.

If special protective clothing must be worn at a workplace, corresponding instruction signs must be put up.



#### **Safety glasses**

Safety glasses are intended to protect the eyes against potential damage, for example from strong light, chemicals, dust, chips, weather impact etc.



### **Safety helmet**

Wear a safety helmet during all work that involves the risk of head injuries from falling, toppling or ejected objects, from swinging loads, or from knocking against obstacles. Always wear a safety helmet when staying or working at the machine.



### **Safety gloves**

Safety gloves are intended to protect the hands from injuries when working at the system.



### **Non-slip safety shoes**

Safety shoes are used for protection against heavy falling parts and slipping on slippery ground.



### **Ear protection**

Ear protection protects against noise. In case of non-compliance, there is the risk of a reduction of hearing ability (hearing loss reversible after prolonged rest), and with longer exposure, risk of irreversible loss of hearing.

## **⚠️ WARNING**

### **Risk of injury from improper clothing!**

Severe or fatal injuries can be caused when clothes or jewelry are seized or pulled in.

- Wearing long hair open, or wearing loose clothing is forbidden for persons who work at the machine.
- Risk of injury for example by getting caught in moving or stationary system components.
- Wearing jewelry (rings, necklaces), wristwatches or similar objects can lead to accidents.
- Tie your hair back and wear a cap/hat.
- Remove jewelry, wristwatches, etc.
- Wear tight-fitting clothing.

## **⚠️ CAUTION**

### **Do not clean working clothes with compressed air!**

It is forbidden to clean working clothes with compressed air; risk of injury as the air escapes at a high speed.



## 3.2 Information about specific hazards

### 3.2.1 Electricity

**NOTICE!** Only qualified electricians are allowed to work on electrical components.

**DANGER!** In case of faults in the electrical power supply, switch off machine/system immediately!

**CAUTION!** Prior to starting any inspection, maintenance or repair work, it is mandatory, if required, to de-energize the machinery and plant components to be worked on. First verify that the switched-off parts are deenergized and then ground and short-circuit and isolate any adjacent live parts!

**CAUTION!** The electrical equipment of a machine/system must be inspected/checked regularly. Defects such as loose connections or scorched cables must be repaired immediately.

**NOTICE!** If working on live components is inevitable, a second person must be present so that someone can press the main switch with shunt tripping function in an emergency. Cordon the working area off with a red-and-white safety chain and put up a warning sign. Use insulated tools only!

**WARNING!** When working at high-voltage assemblies, disconnect the power supply. Then connect the supply cable to ground and short-circuit the components e.g. capacitors with a grounding rod!

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### 3.2.2 Pneumatic/hydraulic

**NOTICE!** Only qualified experts are allowed to work on the pneumatic /hydraulic equipment.

**CAUTION!** Regularly check all lines, hoses, and screwed connections for leaks and externally visible damage! Immediately repair all defects!

**CAUTION!** Prior to starting any repair work, depressurize the system sections and pressure lines (compressed air/hydraulic system) that need to be opened according to the assembly descriptions!

**CAUTION!** Compressed-air lines / hydraulic lines must be installed and mounted in an expert manner! Do not mix up the connections! The fittings as well as the length and quality of the hoses must comply with the requirements.  
Noise

**CAUTION!** Noise insulation equipment at the machine/system must be in protection position during operation.

### 3.2.3 Noise

**CAUTION!** Noise insulation equipment at the machine/system must be in protection position during operation.

**NOTICE!** Wear the specified personal ear protection!

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### 3.2.4 Oil, greases and other chemical substances

**NOTICE!** Comply with the applicable safety regulations when handling oils, greases and other chemical substances!

**WARNING!** Be careful when handling hot operating materials and additives (risk of burning and scalding)!

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## 3.3 General hazards

Comply with the safety instructions in this document and the warnings in further chapters to mitigate health risks and avoid dangerous situations.

 **DANGER**



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

There exists a danger to life if live parts are touched. Insulation damage or individual parts can be dangerous to life.

- Touching of damaged insulation or live parts
- Basically, the electric control must be separated from the network prior to each intervention in the electrical or mechanical part of the plant.
- Some circuits (e.g. Lightings of the switch cabinet) are also live when the main switches are switched off.
- If it is necessary due to technical reasons to implement work on the live parts of electronics, then insulating mats and insulating tool must be used. Such work may only be executed by at least two skilled electricians. In case of emergency, the plant must be switched off such that it is zero potential (with the main switch).

---

 **WARNING**



#### **Warning - risk of getting pulled in!**

Risk of getting pulled into the machine during rotating or translational movements of the machine. This can cause severe, irreversible injuries.

**Warning against the danger of getting squashed**

There exists a danger of getting squashed that can lead to injuries.

- There is a danger of getting squashed while working on the machine.
  - While working on the machine, the safety distances against getting squashed and getting squeezed must be complied with.
- 

### 3.4 Safety devices

Safety devices are provided to ensure optimum safety during the entire service life of the machine. It is strictly forbidden to disable the safety devices, even in cases where they make work processes more tiresome. Safety is only ensured when all safety devices are intact and installed according to their intended use.

**Risk of death in case of inoperative safety devices!**

Severe or fatal injuries if the machine does not stop.

- Safety devices must be functional at all times.
  - Check whether the safety devices are functional and installed correctly before starting to work.
- 

**Risk of death from uncontrolled restart.**

Severe or fatal injuries from uncontrolled restart.

Before restarting the machine:

- The cause of an emergency stop must be removed.
- Safety devices must be completely re-installed as intended.
- All safety devices must be fully functional.
- Ensure that no persons are in the danger zone of the machine.

### 3.5 Safety instructions for the whole equipment

Particularly in the case of scalding equipment with galvanised housings, cleaning and disinfecting substances must only be used when it can be determined that metallic surfaces will not be attacked.

**Technical experts**  
Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves



Unsupervised operation of the equipment is not permissible. If unusual noises occur, the equipment should be halted manually and the cause corrected.

**Danger of burns from hot water. The operating temperature is >60°C. Avoid contact with heated water. Protective gloves may be required.**



**Heating up the scalding equipment without an adequate filling of water will cause severe damage to the equipment.**

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### 3.6 Safety instructions for maintenance



There is an increased risk of wounding during maintenance. Carry out maintenance only with the equipment switched off.

**Technical experts**  
Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves



**Attention: During a pause in operation, put the main switch in the OFF ("AUS") position.**

Work on the electrical installation must be done only by briefed personnel trained for electrical work. Before the start of work on the electrical installation the main switch must be off and the machine must be secured against being switched on again. Then the work on the electrical components can begin!

Opening the door of the control cabinet is not allowed for personnel without electrical training.

There is a danger to life due to falling into a crushing machine.

Maintenance must be done only on equipment that is switched off and secured!

Do not touch damaged electrical cables! Replace loose frayed cables immediately!

After adjustment or maintenance work the protective equipment must be immediately set up again!

### 3.6.1 Safety instructions for maintenance



**Attention: For filling, topping up or replacing the thermal oil, use only the oil that is suitable for this purpose from the manufacturer MEFE (part no. 448). If unsuitable oils are used there is a danger of explosion.**

- Ensure adequate ventilation. There are particular dangers if the product leaks or is spilled. Keep away from sources of ignition. Do not allow it into the environment. Use a suitable binder (binder class I, II or III for areas with traffic, class II or III for inland or coastal waters) to absorb it and dispose of it in accordance with regulations.
- Keep away from sources of ignition and heat.
- Store only in the original container, tightly closed.
- Do not store with oxidising or spontaneously ignitable substances.
- Observe the usual precautions for handling chemical substances.
- Keep away from foodstuffs.
- Use gloves of a suitable material, protective goggles and work clothes. Change wetted clothing immediately.
- Preventive skin protection with a skin protection cream. Avoid contact with the eyes.
- Wash the hand before breaks and after work, and do not carry in the pockets any cleaning cloths soaked with the product.

According to experience and the documentation available to us, the product will not cause any health-damaging effects if it is correctly handled and used according to the instructions.



**Recommended storage temperature range: +5 to +30°C**

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### 3.7 Behavior in dangerous situations and after an accident

#### Preventive measures

- Always be prepared for possible accidents!
- Keep first-aid equipment (first-aid box, blankets, etc.) at hand.
- Keep access routes for rescue vehicles free.

#### If an accident does happen: Do the right things

- Press the emergency stop button at once.
- If danger to your own health is excluded, rescue other persons from the danger zone.
- Initiate first aid actions

In case of an Accident	
Keep Calm	
1. Report the accident	<b>Phone: 000</b> WHERE did it happen? WHAT happened? HOW MANY injured persons? WHAT TYPES of injuries? Wait for further inquiries!
2. Provide First Aid	Secure the accident site Take care of te injured Follow instructions
3. Further Arrangements	Instruct the emergency services Keep away onlookers

Illustration: Accident plan

Behaviour in case of Fire	
Keep Calm	
1. Report the fire	<b>Activate the fire alarm</b> <b>Phone: 000</b> WHERE is the fire? WHAT is burning? HOW MUCH is burning? WHICH DANGERS exist? Wait for further inquiries!
2. Seek Shelter	Take vulnerable people with you Close doors, DO NOT use lifts Follow marked escape routes Follow instructions
3. Attempt to extinguish the fire - if safe to do so	Use fire extinguishers, fire hoses and other means/devices for fire fighting

Illustration: Rescue plan

**! NOTICE**

We point out that the operating company must install all the information signs (such as fire extinguishers, first-aid box, ...) that are required to take efficient first-aid or fire-fighting actions in the event of an accident or hazard.

**FIRST-AID actions for accidents with thermal oils.**

<b>After inhalation:</b>	Supply fresh air; call a doctor if there are problems.
<b>After skin contact</b>	Wash with water & soap and rinse well. Use protective skin cream
<b>After eye contact</b>	Rinse eyes with lid open for several minutes in running water and consult a doctor.
<b>After ingestion</b>	Take for medical treatment. Do not induce vomiting.
<b>Information for the doctor</b>	Chemical characteristics: Mixture of paraffin and naphtha-based hydrocarbons and additives. Free of organically bound chlorine.

**! NOTICE**

Replacement of the oil filling is only required if there is a technical fault. Before handling thermal oils, ask for a safety data sheet according to EC directive 2001/EC from the equipment manufacturer.



### 3.8 Hazards due to inappropriate operation



<b>Danger of burns from hot water.</b>	Inappropriate operation without hand or body protection	Wear protective gloves and if appropriate suitable work clothing, or avoid contact with water.
<b>Trapping or severing body parts</b>	Operation without training or with reduced attention. Disregard for the safety regulations.	Prohibition of drugs and alcohol at the workplace, knowing and obeying the safety regulations.
<b>Fire hazard</b>	Oil level too low because of leakage	Observe the maintenance intervals and regularly check the oil level in the compensation reservoir.

## 4 Transport

### **Danger! Transport by untrained personnel!**

The operation of the lifting means by untrained personnel can result in fatal injuries.



- Only trained personnel may operate the lifting means.
- Check the qualifications of staff prior to starting work.
- It is sensible to have at least one banksman on site to make transportation safer and easier.

### **Caution: Suspended loads!**

Working under suspended loads can result in serious injuries.



- Nobody is allowed to stay under a suspended load.
- The operator must ensure that nobody enters the danger zone.

### **Squeezing hazard.**

Carelessness can result in body parts being pinched off.



- Body parts can get between the lifted loads.
- To protect yourself from contusions or pinching, observe the safety distances specified during transport and storage of lifted loads.

### **Risk of damage from improper transport!**

Improper transport can cause significant damage to the machine and other objects.



- To make transportation and storage safe, observe the following:
  - When unloading packages during delivery and transport within the factory, proceed with care and comply with the symbols attached on the machine.
- For all machine transport, only use the equipment intended for the purpose (fork lift pockets, transport lugs etc.).
- Never exceed the permissible maximum lifting capacity of the lifting gear.
- Observe the icons on the packaging.
- Intermediate storage only under tarps, in sheds, on wood or other bases, dry and free of frost.
- Theft-proof storage place.

#### 4.1 Unpacking / Packaging material

When unpacking, make sure not to damage the package. Use of strong force is therefore not permitted.

Dispose of the used packaging material in accordance with the local regulations.

---

#### 4.2 Transport inspection

Check the delivered goods immediately upon receipt for completeness and transport damage.

Use the following procedure if you detect a transport damage:

- Do not accept the delivery, or accept it with reservation.
- Note down the extent of the damage on the transport documents or on the delivery note of the forwarding company.
- The manufacturer must be informed immediately.

#### **! NOTICE**

**Lodge a complaint immediately after detection of a defect. Compensation for damage can only be claimed inside the valid complaint time.**

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#### 4.3 Environmental protection

When disposing waste created

- during delivery
- during installation and assembly
- of the machine/system

comply with all national regulations.

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#### 4.4 Weight for transport

Weight according to machine type ca. 600 – 750 kg (empty weight)

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#### 4.5 Lifting gear

#### **! NOTICE**

**Use only suitable lifting gear for transport. Do not exceed the maximum carrying capacity of the lifting gear.**

## 5 Installation

### Warning of dangerous electrical voltage!

There exists a danger to life if live parts are touched. Insulation damage or individual parts can be dangerous to life.



#### Technical experts

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves



- Touching of damaged insulation or live parts
- Basically the electric control must be separated from the network prior to each intervention in the electrical or mechanical part of the plant.
- Some circuits (e.g. Lightings of the switch cabinet) are also live when the main switches are switched off.
- If it is necessary due to technical reasons to implement work on the live parts of electronics, then insulating mats and insulating tool must be used. Such work may only be executed by at least two skilled electricians. In case of emergency, the plant must be switched off such that it is zero potential (with the main switch).

### Danger to life from incorrect installation

Incorrect installation can cause severe and even fatal injuries.



- Install carefully and follow the instructions.
- Observe the instructions in the operating instructions
- Follow the instructions to perform installation.

---

### 5.1 Electrical connection

#### Technical experts

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves



Installation and connection of the machine must only be carried out by skilled electric personnel considering the effective regulations for electric installation and electric connection.

## 5.2 Initial start up

The machine was tested in the company. Check proper electric assembly as per the directives of the customer and the local regulations. Before initial start-up check if

- The machine is cleaned from the dirt of the building phase.

**Technical experts** 

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves

**! NOTICE**

Start-up is to be done only by persons familiar with the operation of this machine.

For operations that must take place in sequence in the works, the operator must make available, for the start-up, personnel trained in operating the preceding and following process steps.

Prior to commissioning the machine/plant is to be checked in accordance with the safety rules in the operating instructions, in particular to ensure that all safety and protection devices are installed and in working order.

All bolted connections are to be checked that they are mechanically secure.

---

### 5.2.1 Recommissioning after storage

**Technical experts** 

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves

**! NOTICE**

If the equipment is taken back into service after being shut down for a long period, the following rules must be followed:

- Clean and disinfect the equipment
  - Carry out a thorough maintenance
  - Check moving parts (motors, bearings etc.) for ease of movement.
  - All of the equipment is present
  - Check (only by a specialist) the electrical supply connection.
  - Check the states of wear (seals, shaft clearance)
- Ensure that all repair and maintenance work has been carried out and completed.
  - Check the oil level in the reservoir (when cold may be only 2 cm above the floor)
  - If the equipment has been transported, remove any devices used to secure it during transport and adjust the peripheral devices to suit the possibly changed operational environment. Regulation-conforming connection to the electrical power supply is required. The documentation of the manufacturer and the operating instructions should be adapted if necessary.

### 5.3 Shutdown

#### ! NOTICE

- Before shutting down for a long period, remove all residual substances from the entire equipment, organic material in particular.
- Disconnection from supplies (electricity, water, perhaps compressed air depending on the model).
- After cleaning thoroughly, carefully disinfect the entire equipment.
- Secure the equipment against unauthorised access in accordance with the local regulations. The owner may need to request insurance cover of risk for work on the shut-down equipment.

---

### 5.4 Storage

#### ! NOTICE

When it is shut down for a long period the equipment should be stored dry and frost-free. Storage in the open is not permissible.

The electrical equipment in particular should be protected from environmental effects.

Before it is put into storage, all bearings of the machine should be re-greased or full maintenance carried out on the equipment.

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### 5.5 Decommissioning

**Please enquire with the manufacturer for possibilities of returning old appliances.**

When equipment reaches the time for its final shutdown, pay particular attention to the following points for decommissioning the machine.

- Disassembly of the machine
- Disposal of the waste items

**Carrying out the decommissioning:**

#### ! NOTICE

**This must be done only by people with the required specialist knowledge. It must be performed with due regard for the country-specific laws regarding environment and**

**waste disposal applicable at the time of the decommissioning. The appropriate approvals for transport, evidence of disposal etc. must be agreed with the responsible authority and provided.**

When the machine is disassembled the following components must be removed or separated:

<b>Stainless steel</b>	Machine body, rotor shafts, covers,	Dismantling →materials recovery / recycling
<b>Galvanised steel</b>	Machine body, unloading lever	Dismantling →materials recovery / recycling
<b>Pressure cast aluminium</b>	Gear casing of the rotor shafts	Dismantling → return to manufacturer for reconditioning
<b>Thermal oil</b>	Filled at the works, about 30 litres in the body	Drain with the aid of the drain plug →materials recovery / recycling
<b>Gear oil</b>	Drive unit filled at the works	Drain with the aid of the drain plug → materials recovery / recycling
<b>Plastics</b>	Rubber dehairing blocks, seals	Dismantling →materials recovery / recycling
<b>Electrical parts</b>	Cables, relays & other electrical components	Dismantling →materials recovery / recycling

## ! NOTICE

**All information corresponds to the time of plant manufacturing. Enquire about the legal rules valid at the time of the final decommissioning of the system. On your own authority. This information can be obtained free of charge of your waste authority in charge.**

The dismantled parts of the overall system divided into the waste categories must be transported, recycled or supplied to mandatory disposal according to the country-specific environmental and waste disposal laws valid at the time of decommissioning.

## 6 Operation

 **DANGER**

### **Danger to life from improper operation!**

Improper operation can lead to severe or fatal injuries.

- **Danger to life from falling into the machine. During operation, all persons other than the operative and support staff must stay away from the machine! Before switching on, check whether there are people in or next to the machine that is to be switched on.**
- Storing utensils in or on the scalding machine is prohibited.
- Comply with operating steps.
- Covers and protective devices must be installed and functional.
- Repair faults only when the machine is in a safe state.
- Carefully read the manual and operate the machine exactly as specified in the operating instructions.
- Prior to starting work, ensure that all covers and protective devices are installed and function correctly.

 **WARNING**

**DANGER**

**The Scalding and dehairing machine can however cause dangers, if it is improperly used by unskilled personnel or if it is used for inappropriate application.**

The equipment is for the dehairing of pigs in the context of slaughter in conformance with the Animal at Slaughter Regulation (German abbreviation TierSchIV)

 **WARNING**

### **Warning - risk of getting pulled in!**

Risk of getting pulled into the machine during rotating or translational movements of the machine. This can cause severe, irreversible injuries.



 **DANGER**

**When the unloading button is pressed (only for models with pneumatic unloading) or on manually raising the rotor drums, the dehairing rotors (sensor-controlled) start automatically.**

Observe the required safety distances and do not reach into the running machine. Beware of loose clothing items (apron strings, belts, wide sleeves etc.). They cause a serious risk of being pulled in.





### Warning against the danger of slipping

Slipping in the machine area can lead to injuries



- There exists a danger of slipping due to injuries and/or cleaning water on the floor.
- Always wear skid-proof safety shoes while working in the machine area.



### Warning against the danger of getting squashed



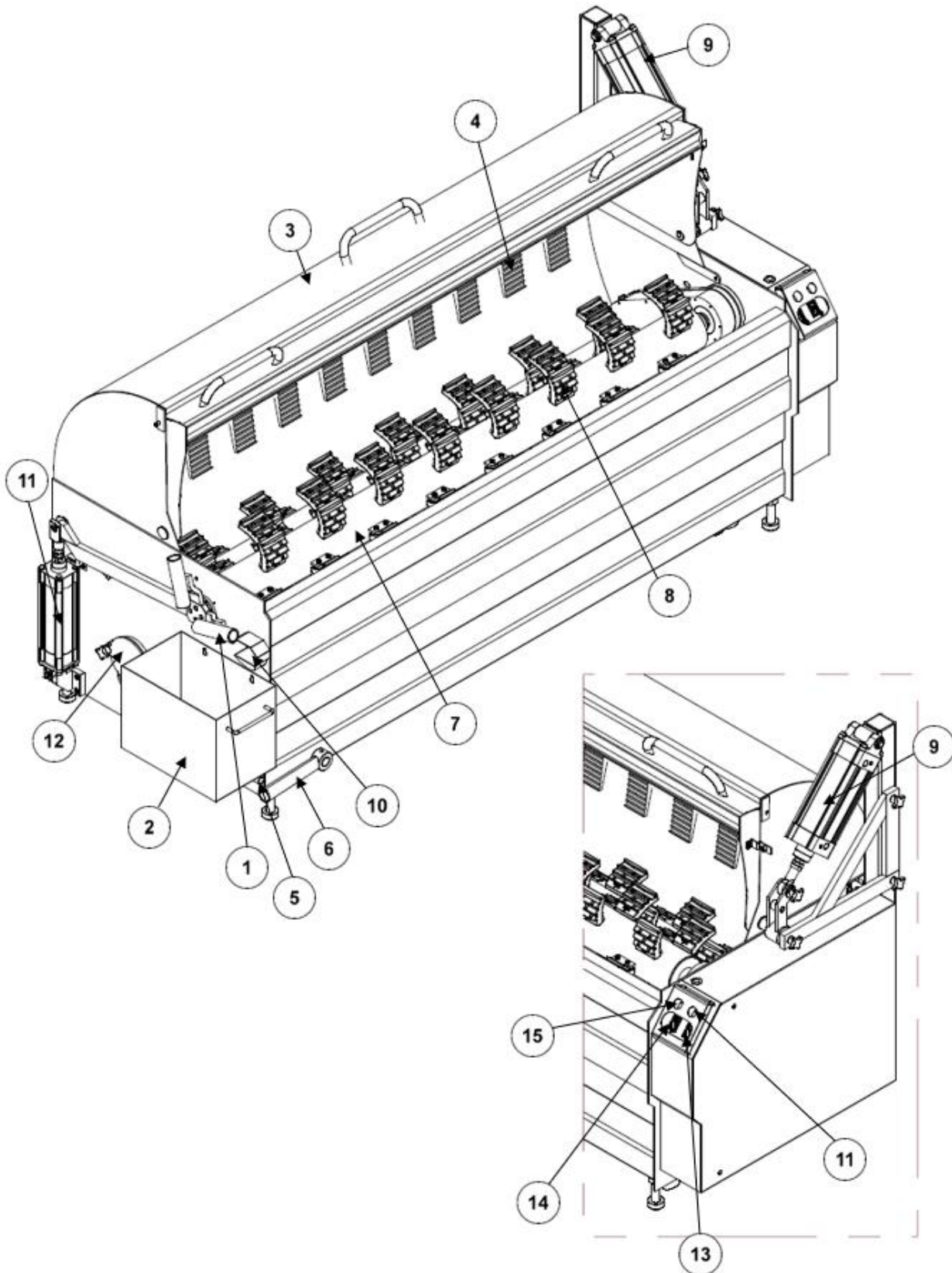
- There exists a danger of getting squashed that can lead to injuries.
- There is a danger of getting squashed while working on the machine.
- While working on the machine, the safety distances against getting squashed and getting squeezed must be complied with.



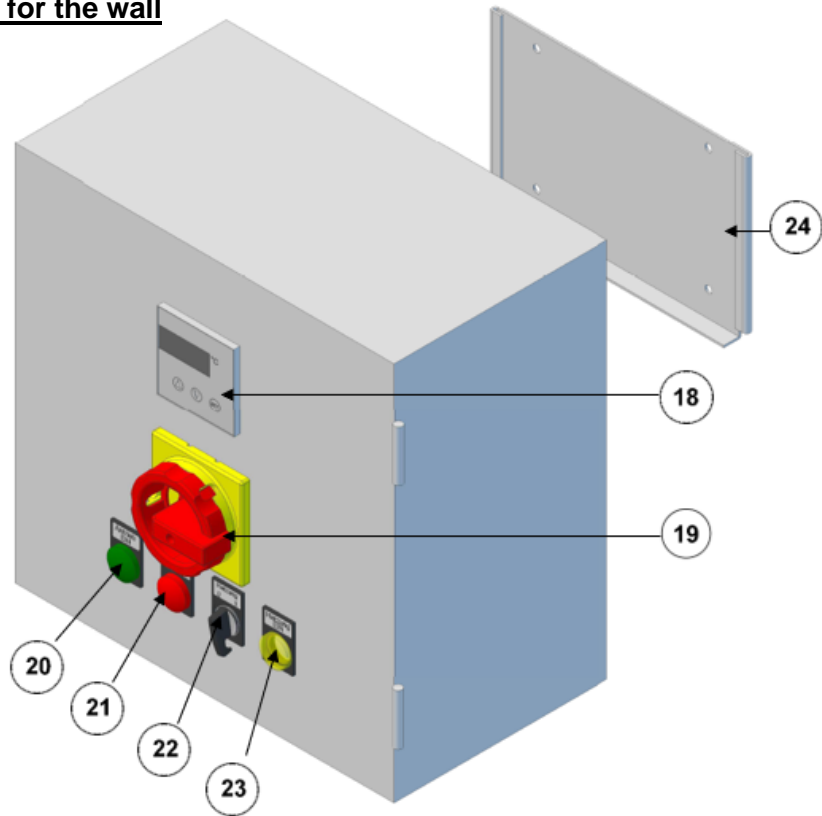
**By working with pneumatic lid there is an increased risk of crushing fingers or hands. This danger causes serious injuries, including loss of body parts such as fingers or hand. Never put your fingers, hands, feet or other limbs into the danger area while the machine is running and the lid is automatically closing.**

## 6.1 Overview figures

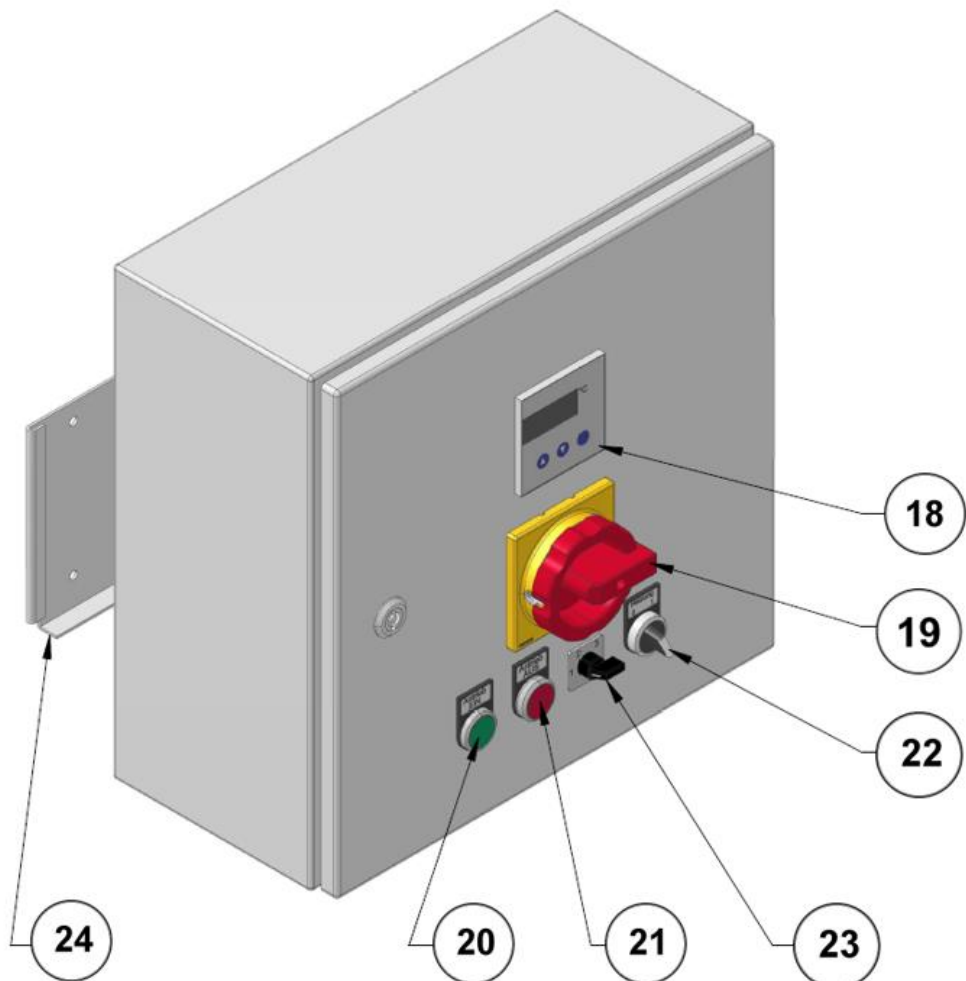
### Pneumatic lid – pneumatic ejection



**Electric control unit for the wall**



**Option: Electric control unit for the wall with frequency converter**



Item no:	Description
1	Roller lifter
2	Hair collector box
3	Machine cover
4	Headscrapper paddles
5	Wheel lock locking lever
6	Lowering mechanism
7	Roller (2 pcs.)
8	Scrapper paddles
9	Pneumatic lid
10	Automatic hair spiral remover
11	Pneumatic ejection
12	Outlet water
13	Automatic start The lid closes and the dehairing process begins automatically
14	Knob switch lip „open/close” Lid can be opened or closed manually
15	Roller drive „ON” Dehairing process could start manually
16	---
17	---
18	Thermostat
19	Main switch
20	Push button „ON”
21	Push button „OFF”
22	Heating „ON”
23	Control lamp heating „ON” <b>Option with frequency converter:</b> Speed regulation with control lamp heating “ON”
24	Holder for the wall

## 6.2 Operation/Switchin ON



**Danger to life from falling into the machine. During operation, all persons other than the operative and support staff must stay away from the machine! Before switching on, check whether there are people in or next to the machine that is to be switched on.**

**Storing utensils in or on the scalding machine is prohibited.**

- Assure yourself that the equipment is ready for operation. The equipment feet are adjusted so that the equipment is horizontal and all 4 feet provide good contact with the floor.

- Switch on the main switch <sup>19</sup> on the wall control cabinet.
- Open the lid <sup>3</sup> manually by pressing the toggle switch <sup>14</sup>.
- If not already done, fill with water without additives up to a water level about 3-5 cm above the upper edge of the axle tube of the rear dehairing shaft.
- Rotate at the wall control cabinet “heating ON” <sup>22</sup> to pos. I and wait until the water in the equipment has reached the desired temperature (62°C; yellow indicator light turns <sup>23</sup> off).
- Introduce an animal, stunned and bled as prescribed, onto the scalding equipment filled with heated water and with the rotor shafts stationary. Use a suitable lifting device for this.
- Position the animal centrally relative to the dehairing rollers and position the head below the head holding-down appliance (head holding-down appliance not in all model variants)
- Close the lid and press the green button “Automatic start” <sup>15</sup>. The lid closes automatically and the dehairing process starts automatically, too. When the dehairing process is over, the lid opens automatically!
- After the present time has elapsed (about 3-4 min) the dehairing process stops automatically.
- The lid opens automatically when the dehairing process has finished.
- Place a suitable device by the scalding equipment to receive the treated carcass
- With the sliding cover open, operate the button for the pneumatic unloading action <sup>11</sup>.
- After this process, take the carcass for prompt further processing.
- Top up with fresh water as required and repeat the procedure.



**When the unloading button is pressed (only for models with pneumatic unloading) or on manually raising the rotor drums, the dehairing rotors (sensor-controlled) start automatically. Observe the required safety distances and do not reach into the running machine. Beware of loose clothing items (apron strings, belts, wide sleeves etc.). They cause a serious risk of being pulled in. By working with pneumatic lid there is an increased risk of crushing fingers or hands. This danger causes serious injuries, including loss of body parts such as fingers or hand.**

**Never put your fingers, hands, feet or other limbs into the danger area while the machine is running and the lid is automatically closing.**

### 6.3 Switch off

**Instructed personnel** 

Protective gear:

-  - Slip resistant Protective shoes
-  - Safety helmet

At first the main switch <sup>19</sup> must switch to 0 to turn off the Dehairing machine.

## 7 Cleaning

### Warning from irritants or harmful substances!

Cleaning substances contain chemicals that can irritate your skin or damage your health.



- Observe the instructions of the manufacturer of the chemical products when using chemicals (acids, lyes) and solvents.
- Use only chemical products that can not lead to corrosion when they are used as intended. Such substances have a caustic effect (protective clothing, protective goggles) and can produce noxious vapors and affect the safety of electric equipment by biting into insulation material.
- When working with detergents, be sure to wear the protective clothing recommended by the detergent manufacturer.

### Warning against the danger of slipping

Slipping in the machine area can lead to injuries



- There exists a danger of slipping due to injuries and/or cleaning water on the floor.
- Always wear skid-proof safety shoes while working in the machine area.

### ! NOTICE

Only persons who have thoroughly been trained in handling the machine are allowed to clean the machine.




On the basis of the operating instructions, cleaning personnel must be informed of the risk of injuries, and must be trained and instructed accordingly.

All safety regulations must be observed when cleaning the machine.

## 7.1 Cleaning work

**Cleaning personnel**

Protective equipment:

-  - Non-slip safety shoes
-  - Safety helmet
-  - Protective clothing



### ! NOTICE

You had to pay attention when you clean the electric elements (switch, Tableaus, drive) with water that they never be cleaned with high pressure. Defects or malfunctions due to improper cleaning of electrical devices with high-pressure equipment shall exclude any liability!

Cleaning interval	Cleaning work	Personnel
<p>Clean the equipment at the end of each working day. The cleaning should be done immediately after the last operation.</p>	<ul style="list-style-type: none"> <li>• Switch the equipment off and disconnect the machine from the electrical supply (main switch <sup>19</sup> to “0”, take the plug out of the socket). For pneumatic equipment ensure the compressed air supply is securely stopped.</li> <li>• Open the cleaning flap <sup>12</sup> and completely empty the machine.</li> <li>• Wash the equipment with plenty of hot water. Use a high-pressure cleaning device; please note that for some models with additional electronic devices installed, treatment with high-pressure water is not permitted.</li> <li>• Use cleaning or disinfecting substances; ensure that the cleaning solution has a pH value between 6 and 8.</li> <li>• If necessary, pull the double sliding cover <sup>3</sup> forwards for better access to the machine interior.</li> <li>• Push the lever rod into the receiving pipe of the roller lifter <sup>1</sup> and press the lever down to swivel the dehairing roller into the cleaning position. This gives an easy access to all the sub-assemblies within the equipment.</li> <li>• Rinse with clean mains water.</li> <li>• When cleaning is complete close the discharge flap <sup>12</sup> and bring the rollers with the dehairing blocks, and the sliding cover <sup>3</sup>, back to the normal position.</li> <li>• Allow the open equipment to dry.</li> </ul>	<p>Cleaning personnel</p>



## 8 Maintenance

### **Danger of injury by incorrectly executed maintenance work!**

Incorrect maintenance can lead to severe personal or material damage.



- Prior to the beginning of the work on the machine and its control, the drives and additional devices must be secured against unintended switching on.
- Ensure adequate installation clearance before beginning the work.
- Take care of the orderliness and cleanliness on the installation site! Loose parts lying on or around each other and tools are accident sources.
- Maintenance on the machine may only be undertaken by persons who were trained accurately in the handling of the machine.

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### **Warning against the danger of slipping**

Slipping in the machine area can lead to injuries



- There exists a danger of slipping due to injuries and/or cleaning water on the floor.
- Always wear skid-proof safety shoes while working in the machine area.

### **! NOTICE**

Never modify any of the switching elements, control or regulation devices. This can affect the operability of the system. Company Mitchell Engineering will not accept

any resulting damage and liability claims.

Note the following for environmental safety instructions while implementing maintenance work:

- Remove the escaping or excess fat at the lubrication points and dispose as per the locally applicable regulations.
- Catch the replaced oils in suitable containers and dispose as per environmental regulations.
- Dispose any incidental packaging material properly.

## 8.1 Maintenance table

Maintenance cycle	Further informations	
Daily	8.3.1	Main switch
	8.3.2	Entire plant
Weekly	8.4.1	Visual check
	8.4.2	Water connection
	8.4.3	Lubricate bearing points
Monthly	8.5	Dehairing rollers
Twice a year	8.6.1	Gearbox for the rollers
	8.6.2	Drive chain
Per year	8.7.1	Oil compensation reservoir
	8.7.2	Lubrication of the bearings
As required	8.8.1	Dehairing beaters
	8.8.2	Drive chain
	8.8.3	Oil change

## 8.2 General maintenance information

### ! NOTICE

Like all technical devices, this equipment is subject to usage-dependent wear.

To keep this as low as possible, it is necessary to carry out the following maintenance work at the stated intervals.

All the required operations can be divided into a number of basic categories:

- Continual observation of the machine's operation during running
- Maintenance work at the regular maintenance intervals
- Maintenance related to wear
- Work to be done by the manufacturer

All maintenance operations are for the safe operation of the equipment. They must therefore be carried out with great care in accordance with the manufacturers' instructions.

### ! WARNING

For any servicing work such as repairs and maintenance, and including cleaning, the equipment must be shut down first.

All maintenance intervals relate to single-shift operation of the equipment with an assumed throughput of 100 scalding cycles per month. Longer periods of operations, work with carcasses of unusual breeds or other factors that increase the rate of wear, can result in maintenance intervals becoming significantly shorter in some cases. It is therefore necessary for the maintenance personnel to take responsibility for being attentive in checking that the equipment is in a satisfactory condition. For all maintenance work the manufacturer's literature attached in the appendix are to be used. All maintenance work must be entered in a

maintenance record of the operator. If there is damage, maintenance work that is not recorded will be assumed not to have been done (loss of warranty).

### Maintenance work includes:

The tabulated actions on the whole plant that result from the individual functional units. These are contained in the following maintenance plan and the instructions from the sub-suppliers of the component items of equipment. The documentation of the manufacturers, together with the chronological maintenance plan, are the maintenance instructions. Maintenance must be carried out only by persons with the required specialist training. The maintenance instructions should be added to by the operating personnel on the basis of their own observations. Changes to the maintenance intervals and values resulting from experience are to be documented and discussed with the manufacturer.

## 8.3 Daily maintenance work

### 8.3.1 Main switch (Optional wall control)

<p><b>Instructed personnel</b></p> <p>Protective gear:</p> <ul style="list-style-type: none"> <li> - Slip resistant Protective shoes</li> <li> - Safety helmet</li> </ul>	
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#### Carry out functional testing

In case it is defective, change the main switch (Qualified electrical personnel).



Illustration: Main switch

### 8.3.2 Entire plant

<p><b>Instructed personnel</b></p> <p>Protective gear:</p> <ul style="list-style-type: none"> <li> - Slip resistant Protective shoes</li> <li> - Safety helmet</li> </ul>	
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#### Checking the material of the seals

- **Discharge flap gasket – round:** Front side, below. Two knurled screws to open, without tools.
- **Flat rubber cover gasket:** Longitudinal edge at the rear of the equipment body. Access by sliding forwards the two-part cover flap.
- **Rubber cover of adjustable feet:** Rubber shells on the underside of the 4 adjustable feet. Access by lowering the castors.

## 8.4 Weekly maintenance work

### 8.4.1 Visual Check

**Technical experts** 

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves

#### Visual check

- Replace damaged parts immediately.

### 8.4.2 Water connection

**Technical experts** 

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves

#### Check water connection for leakage

- Check the water connection for leakage, if necessary replace defective parts.
- Check the function of the mixed battery if necessary replace it.
- Check water hose for leakage.

### 8.4.3 Lubricate bearing points

**Technical experts** 

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves

#### Check bearings

- Acoustic check of bearings.  
In case of unusual running noises, check bearing and replace immediately if defective.

## 8.5 Monthly maintenance work

### Technical experts

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves



### Checking the clearance of the bearings of the dehairing rollers

The bearing shafts of the dehairing blocks are fitted with permanently lubricated bearings. From the constant effect of the hot water for the scalding, and possible fat-dissolving substances, regular lubrication of the bearing is scheduled.

Depending on the frequency of use and the water quality, the lifetime of the shaft bearings can vary considerably. The prescribed monthly check can, for a given usage pattern, be adjusted according to experience using the judgement of the operator.

#### Proceed as follows:

- Switch the equipment off and disconnect the machine from the electrical supply. For pneumatic equipment ensure the compressed air supply is securely stopped.
- Open the cleaning flap <sup>(12)</sup> and completely empty the machine.
- Test the front shaft when it is stationary by grasping it on the right with both hands near the bearing and check the bearing clearance. The bearing should have no detectable clearance.
- Repeat this procedure on the left of the shaft.
- With the machine stationary and the cover open, use the lever to move the rear dehairing roller into the top position and lock it there.
- Now repeat the test procedure on the second dehairing shaft that is now accessible.
- Check, as far as visibility allows, for discharge of oil or grease in the area of the bearing. If there are visible traces of oil or bearing grease, the gaskets are damaged and should be replaced with the bearing.

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## 8.6 Maintenance work twice a year

### 8.6.1 Inspection / replacement of the gear unit

#### Technical experts

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves



The drive unit of the equipment consists mainly of three sub-assemblies.

- Geared motor in the lower part of the equipment, external
- Sprocket-wheel step-down gear unit at the front of the equipment, external, protected in the drive box.
- Internal gear unit for distributing motor power to the two dehairing rollers.

The internal gear unit is in an enclosed gear box. This is designed to be maintenance-free for the lifetime of a scalding equipment. A twice-yearly visual inspection is recommended for externally visible damage (state of the shaft sealing rings, grease discharge, housing corrosion etc.). Excessive stress and the addition of aggressive substances to the scald water can make it necessary for the manufacturer to replace the gear unit.

<b>Gear unit, complete</b>	On operating side, internal in the scald chamber. Replacement by manufacturer.
<b>Exchange gear unit, complete</b>	On operating side, internal in the scald chamber. Replacement by manufacturer.

## 8.6.2 Chain tension

### Technical experts

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves



### Checking the chain tension

#### Proceed as follows:

- Switch the equipment off and disconnect the machine from the electrical supply. For pneumatic equipment ensure the compressed air supply is securely stopped.
- Depending on the equipment type (control unit left or right) the drive unit is at the front of the machine, external, in the protective housing of the control unit.
- Check the state of wear of the chain and the pinion. The chain tension is adequate if the middle of the chain between the pinions can be pressed max. 1 cm with two fingers.

## 8.7 Maintenance per year

### 8.7.1 Oil level



<b>Technical experts</b>	
Safety equipment:	
 - Skid proof Safety shoes	
 - Safety helmet	
 - Safety gloves	

#### Check oil level in reservoir

**Never connect the equipment to the power supply when the amount of oil is not adequate. Please ensure that the oil level remains constant as described below.**

The manufacturer provides one oil filling for the equipment. In normal use the equipment does not consume oil. Therefore, the oil level should be checked at least once per year. If any loss of oil is noticed during maintenance or at any other time, this always indicates a fault. The machine should be immediately shut down and disconnected from the mains. Establish the cause of the oil loss and correct the fault before bringing the machine back into use.

#### Proceed as follows:

- Switch the equipment off and disconnect the machine from the electrical supply. For pneumatic equipment ensure the compressed air supply is securely stopped. The equipment must be fully cooled down.
- Open the cleaning flap <sup>12</sup> and completely empty the machine.
- Undo two Allen bolts (M8) on the switch box of the control unit and swivel the front cover up (hinge).
- Open the screw cover of the compensation reservoir (no tools required).
- Take a clean metal or plastic rod and insert it vertically into the container, with no other movement, until it touches the bottom.
- Withdraw the rod from the reservoir and measure the height of the oil. There is enough oil in the system if the oil-wetted height on the rod is 2 cm.
- Close the reservoir cover and the side panel of the control unit with the correct bolts.

### 8.7.2 Greasing the bearings of the dehairing rollers

The need to lubricate the bearings can become significantly more frequent as a result of substances in the scald water. The clearance in the bearings should therefore be carefully monitored. Adjust the maintenance intervals as required.

<b>Technical experts</b>	
Safety equipment:	
 - Skid proof Safety shoes	
 - Safety helmet	
 - Safety gloves	

#### Proceed as follows:

- Switch the equipment off and disconnect the machine from the electrical supply. For pneumatic equipment ensure the compressed air supply is securely stopped.
- Open the cleaning flap <sup>12</sup> and completely empty the machine.
- On the housing of the shaft there is at each end, one on the right and one on the left, a hole for lubrication. These are firmly closed with a size M6 Allen bolt.


- Open the first bolt and replace it, for the duration of the greasing procedure, with a grease nipple (e.g. straight grease nipple H1 M6x1 to DIN 71412).
- Squeeze grease 2-3 times into the lubrication point.
- Remove the grease nipple and seal the greasing hole again with the M6 Allen bolt.
- Repeat this procedure on both shafts. For greasing the rear shaft it can be useful to use the lifting mechanism to fix it in the upper maintenance position

## 8.8 Maintenance work as required

### 8.8.1 Replacing the dehairing beaters

**Instructed personnel**

Protective gear:

-  - Slip resistant Protective shoes
-  - Safety helmet

If the dehairing performance deteriorates or mechanical damage is evident on the dehairing blocks, replace them immediately. It is possible to replace individual dehairing blocks. However, it is preferable always to replace them as a set. Different levels of friction from dehairing blocks in different states of wear can cause problems in operation.

#### Process as follows:

- Switch the equipment off and disconnect the machine from the electrical supply. For pneumatic equipment ensure the compressed air supply is securely stopped.
- Open the cleaning flap <sup>12</sup> and completely empty the machine.
- For mounting the dehairing blocks, each dehairing roller has mounting lugs. Each of these has 2 through-holes. The dehairing blocks are attached to the lugs by means of 2 x M8 threaded bolts and 2 x M8 lock nuts. Attachment is done in the direction of rotation at the front of the fixing lugs.
- Fix the dehairing blocks on their holders only in the direction of rotation, pointing forwards. Use only the manufacturer-supplied VA-quality threaded bolts and lock nuts.
- For fixing the dehairing blocks it can be useful to use the lifting mechanism to fix it in the upper maintenance position.

### 8.8.2 Adjustment of drive chain tension

**Technical experts**

Safety equipment:

-  - Skid proof Safety shoes
-  - Safety helmet
-  - Safety gloves

#### Proceed as follows:

- Switch the equipment off and disconnect the machine from the electrical supply. For pneumatic equipment ensure the compressed air supply is securely stopped.
- Depending on the equipment type (control unit left or right) the drive unit is at the front of the machine, external, in the protective housing of the control unit.



- Check the state of wear of the chain and the pinion. The chain tension is adequate if the middle of the chain between the pinions can be pressed max. 1 cm with two fingers.
- Undo two Allen bolts (M8) on the switch box of the control unit and swivel the front cover up (hinge).
- Use a size 19 open spanner to loosen the four flange bolts of the motor-gear unit. Ensure that the bolts are not removed, only loosened.
- The motor's own weight now maintains the chain tension. Press the motor-gear unit downwards until the desired tension is reached. Now re-tighten the previously loosened nuts.
- Then check the chain tension after the nuts have been tightened.

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### 8.8.3 Oil change



**The need to refill or top up the thermal oil always indicates previous damage. – Only top up with the same oil.**



**Operating the equipment without an adequate oil level will always cause the destruction of the equipment and represents a significant danger for the operating staff.**



Before the thermal oil is topped up or replaced, any damage that has occurred must be corrected competently.

The applicable protection regulations for handling thermal oil can be found in the safety data sheet compliant with EC directive 2001/58/EC. If necessary, ask the manufacturer for this.

All repairs on the equipment body and any oil change required as a result of damage must be done by the manufacturer. A consultation with the manufacturer is necessary.

#### Procedure for topping up:

- Switch the equipment off and disconnect the machine from the electrical supply. For pneumatic equipment ensure the compressed air supply is securely stopped. The equipment must be fully cooled down.
- Open the cleaning flap <sup>⑫</sup> and completely empty the machine. Undo two Allen bolts (M8) on the switch box of the control unit and swivel the front cover up (hinge).
- Open the screw cover of the compensation reservoir (no tools required).
- Take a clean metal or plastic rod and insert it vertically into the container, with no other movement, until it touches the bottom.
- Withdraw the rod from the reservoir and measure the height of the oil. If the oil-wetted height on the rod is below 3 cm, there is not enough oil in the system.
- Add thermal oil until the height is about 2 cm above the reservoir bottom when the equipment is cold.
- Close the reservoir cover and the side panel of the control unit with the correct bolts.

A black warning triangle icon with a white exclamation mark inside, set against a yellow background.

**WARNING**

It is important to avoid over-filling the oil. The reservoir that appears to be almost empty when the machine is cold will fill during operation as the oil naturally expands when it is heated. This will take nearly all the free reservoir space.

Overfilling can cause damage to the scalding equipment.

## 9 Malfunction

### Warning of dangerous electrical voltage!

There exists a danger to life if live parts are touched. Insulation damage or individual parts can be dangerous to life.

 **DANGER**



- Touching of damaged insulation or live parts
- Basically the electric control must be separated from the network prior to each intervention in the electrical or mechanical part of the plant.
- Some circuits (e.g. Lightings of the switch cabinet) are also live when the main switches are switched off.
- If it is necessary due to technical reasons to implement work on the live parts of electronics, then insulating mats and insulating tool must be used. Such work may only be executed by at least two skilled electricians. In case of emergency, the plant must be switched off such that it is zero potential (with the main switch <sup>19</sup>)

### Warning of missing safety devices!

 **DANGER**

Safety devices dismantled for troubleshooting must be re-installed at their specified position after the fault has been fixed as otherwise serious or even fatal injuries can result from this negligence.

### Risk of injury from improper fault rectification!

Improper fault rectification can cause severe injuries to persons and damage to material.

 **WARNING**

- Before beginning work, ensure that there is sufficient assembly space.
- Keep the assembly site clean and tidy! Loosely stacked or lying around, components and tools pose accident risks.
- Only personnel who received very detailed instructions about the handling of the machine are allowed to rectify faults.

### Warning against the danger of slipping

Slipping in the machine area can lead to injuries

 **CAUTION**

- There exists a danger of slipping due to injuries and/or cleaning water on the floor.
- Always wear skid-proof safety shoes while working in the machine area.

### Warning against the danger of getting squashed

There exists a danger of getting squashed that can lead to injuries.



- There is a danger of getting squashed while working on the machine.
- While working on the machine, the safety distances against getting squashed and getting squeezed must be complied with.

### Warning against collision danger!

Light injuries in the head area



- There exists a danger of collision in case of! carelessness at the protruding parts.
- Always wear a safety helmet.
- It is not allowed to make changes to the switching! elements or control module and controlling system.!The functional efficiency could be limited.
- The resulting damage and casualty claims are not! covered by the company Mitchell Engineering.

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## 9.1 Behavior in case of a fault

The following basic rules apply:

- Ù In the event that faults present an immediate danger to persons or material, press the! EMERGENCY STOP button.
- Ú Determine the cause of the malfunction.
- Û Inform the person(s) responsible on site.

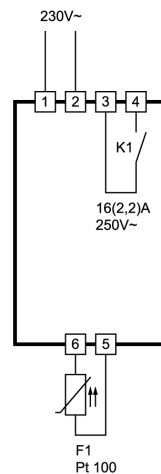
## ST73-31.10

Temperature controller

Order number 900206.006



## Wiring diagram



## Product description

The controller ST73-31.10 was developed for simple thermostatic applications. The round housing allows applications at locations in which formerly only mechanical controls were in use. The unit is supplied with 230V AC. The installed relay has a maximum electric Ohm load of 16A. Inductive loads can be switched up to 2,2A.

**Sensor:** Pt100-2 wire

**Range:** -80...400°C

**Front size:** 72mm x 72mm

**Panel cut-out:** 60,5mm round

**Tightness:** front IP65

**Connector:** flat plug 6,3mm

## Technical data of ST73-31.10

### Measuring input

**F1:** Resistance thermometer Pt100-2L  
Measuring range: -80...400°C  
Measuring accuracy: +/- 1K or +/- 0.5% of measuring range

### Outputs

**K1:** Relay 16(2,2)A 250V~, normally-open contact

### Display

One 3-digit LED display, height 13 mm, Colour red

### Power supply

230V, 50Hz / 60Hz, power consumption max. 20mA

### Connectors

Pins 1 ... 4: flat plug 6,3 x 0,8 mm  
Pins 5 ... 6: flat plug 2,8 x 0.5 mm

### Ambient conditions:

Storage temperature: -20...+70°C  
Operating temperature: 0...+55°C  
Relative humidity: max. 75% without dew

### Weight

ca. 200g

### Enclosure

Front IP65

### Installation data

Front size: square, 72 mm x 72 mm  
Panel cut-out: round, diameter 60.5 mm  
Installation depth: ca. 65 mm with connector  
Mounting by fixing strap.

## SOFTWARE .10

### Description

**UP key**

By pressing this key the parameter or parameter value is increased.

**DOWN key**

By pressing this key the parameter or parameter value is increased.  
The alarm buzzer can be cancelled by this key.

**SET key**

The display normally shows the actual value. When the SET key is pressed , the display changes to show the control setpoint.

### First control level:

#### Adjusting the setpoint

Pressing the SET key, the setpoint S1 shows on the display.

If the setpoint is to be changed, the SET key is to be kept pressed while adjusting the setpoint with the keys UP and DOWN

Parameter	Function	Adjustable Range	Standard setting	Customer setting
S1	Setpoint	P4...P5	0.0°C	

### Second control level (P-Parameters):

#### Adjusting the control parameters

Simultaneously pressing the UP and DOWN key for at least 4 seconds opens a parameter list containing control parameters.

With the UP and DOWN keys the list can be scrolled in both directions.

Pressing the SET key will give you the value of the respective parameter. Pressing also the UP or DOWN key at the same time the value can be adjusted. Release the UP or DOWN button before releasing the SET button and the new value is saved into the non-volatile memory.

Return to the initial position takes place automatically, if no key is pressed for 60 seconds, or by simultaneously pressing the UP and DOWN key for approx. 4 seconds

Parameter	Functions	Adjustable range	Standard Setting	Customer setting
P0	Display of actual value			
P2	Hysteresis K1	0.5 ... 99.9 °K	1.0 °K	
P4	Control range limitation – minimum setpoint	-99...P5	-99 °C	
P5	Control range limitation – maximum setpoint	P4...999 °C	999 °C	
P6	Actual Value Correction	-20.0 ... +20.0 °K	0.0 °K	
P19	Keyboard lock	0: not locked 1: locked	0	
P30	Lower alarm value	-99...999 °C	-99 °C	
P31	Upper alarm value	-99...999 °C	999 °C	
P32	Hysteresis alarm circuit (one-sided)	0.5 ... 99.9 °K	1.0 °K	
d0	Defrosting interval	1...99 hours 0: no defrosting	0	
d2	Defrosting temperature	-99.0 ... 999.0 °C	10.0 °C	
d3	Defrosting time limit	1...99 min 0: without time limit	30 min	



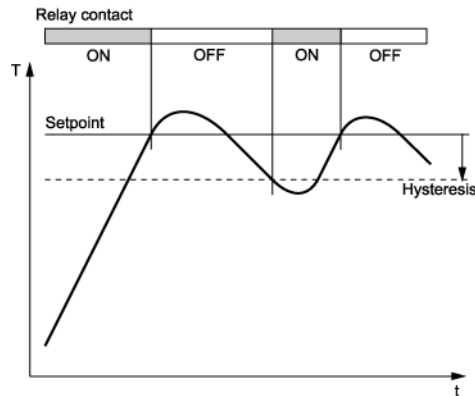
### Parameter description second control level

#### P0: Actual value

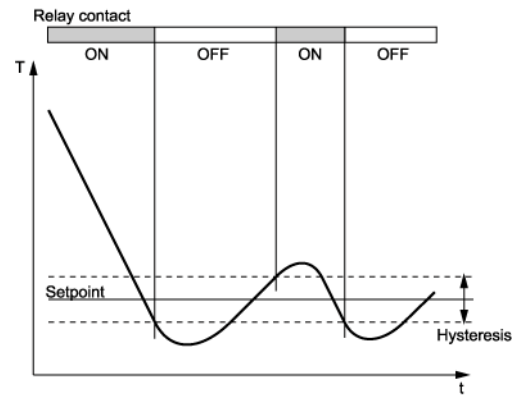
The here indicated temperature presents the actual measured value. If the control setpoint is indicated by the help of parameter A32, the actual value can only be seen with this parameter.

#### P2: Hysteresis contact K1

The hysteresis can be set symmetrically or one-sided at the setpoint (see A40). At one-sided setting, the hysteresis works downward with heating contact and upward with cooling contact (see fig. 1 – 2).



**Fig. 1:** Heating controller,  
one-sided hysteresis



**Fig. 2:** Cooling controller,  
symmetrical hysteresis

#### P4: Control range limitation – minimum setpoint

#### P5: Control range limitation – maximum setpoint

The adjustment range of the setpoint can be limited in both directions. This is to prevent the end user of a unit from setting inadmissible or dangerous setpoints.

#### P6: Actual value correction

This parameter allows the correction of actual value deviations caused for example by sensor tolerances or extremely long sensor lines. The regulation measure value is increased or decreased by the here adjusted value.

#### P19: Key-lock

The key-lock allows blocking of the control keys. In locked condition parameter adjustments with keys is not possible. At the attempt to adjust the parameters despite key-lock the message "===" appears in the display.

#### P30: Lower alarm value

#### P31: Upper alarm value

The exit alarm is a boundary alarm or a range alarm with symmetrical hysteresis (see parameter P32). Both at the boundary alarm and the range alarm, limit values can be relative, i.e. going along with the setpoint, or absolute, i.e. independent of the setpoint. At boundary alarm the hysteresis works one-sided inwardly, and at range alarm outwardly.

Boundary alarm function (see fig. 3):  
The alarm contact is closed if the process temperature is above the upper or below the lower boundary value.

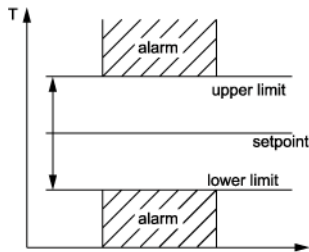


Fig. 3: Boundary alarm, rel. boundaries

Range alarm function (see fig. 4):  
Opposite switching behaviour to the boundary value alarm. The alarm contact is closed if the actual value remains between the boundary values.

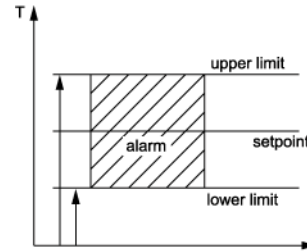


Fig. 4: Range alarm, abs. boundaries

### P32: Hysteresis alarm circuit

Hysteresis is set one-sided at the adjusted limit value. It becomes effective depending on alarm definition.

### d0: Defrosting interval

The "defrosting interval" defines the time, after which a defrosting process is started. After each defrosting start, this time is reset and runs the next interval.

### d2: Defrosting temperature limit

This permits to terminate defrosting when the adjusted desired temperature value is reached. The defrosting time set with "d3" nevertheless runs at the same time, i.e. it functions as safety net to terminate the defrosting process in case the defrosting temperature is not reached.

### d3: Defrosting time limit

After the here set time the defrosting process is terminated.

### Third control level (A-level)

Access to the third control level is granted when selecting the last P-parameter on the second control level. Continue to press the UP key for approximately 10 seconds until "PA" appears. Continue to press the UP key and additionally press the DOWN key for about 4 seconds and the first A-parameter of the third control level is indicated.

With the keys UP and DOWN you can scroll the list in both directions. Pressing the SET key will give you the value of the respective parameter. By pressing the UP or DOWN key at the same time the value can be adjusted.

Return to the initial position takes place automatically, if no key is pressed for 60 seconds, or by simultaneously pressing the UP and DOWN key for approx. 4 seconds.

Parameter	Functions	Adjustable Range	Standard Setting
A1	Switch mode K1	0: heating contact 1: cooling contact 2: function alarm K1 3: function alarm K1 inverted	Pt100: 0 PTC: 1
A3	Function of contact K1 at sensor error	0: relay off 1: relay on	0
A8	Display mode (all parameter indications are presented in 0,1°K)	0: integrals 1: decimals in 0.5°C 2: decimals in 0.1°C	1
A19	Parameter lock	0: no lock 1: A-parameter locked 2: A- and P-parameter locked	0
A30	Function alarm exit	0: boundary alarm, relative 1: boundary alarm, absolute 2: range alarm, relative 3: range alarm, absolute	0
A31	Other alarm functions	0: without function 1: display flashing 2: buzzer active 3: display flashes and buzzer active	0
A32	Setpoint display	0: display shows actual value 1: display shows setpoint S1 (S1')	
A40	Hysteresis mode contact K1	0: symmetrically 1: one-sided	1
A50	Minimum action time contact K1 "On"	0...999 sec.	0 sec.
A51	Minimum action time contact K1 "Off"	0...999 sec.	0 sec.
A54	Time delay relay K1 after mains ON	0...999 sec.	0 sec.
A56	Alarm suppression after mains ON	0...60 min	20 min.
A60	Sensor type	11: PT100 2-wire 21: KTY81-121 2-wire 22: PT1000 2-wire	Dependent on hardware
A70	Software filter	1: inactive <b>average value with:</b> 1...128: 1..128 measuring values	
A80	Temperature scale	0: Fahrenheit 1: Celsius	1
Pro	Program version	-	-

## Parameter description third control level

*The following values can change the equipment characteristics and are therefore to be set with utmost care:*

### **A1: Switch mode contact K1**

The switch mode for the relay, i.e. cooling or heating function, can be programmed independently at works. Heating function means that the contact opens as soon as the setpoint is reached, thus power interruption. At cooling function the contact closes, if the actual value is above the required setpoint.

### **A3: Function of contact K1 at sensor error**

At sensor error the selected relay falls back into the condition pre-set here.

### **A8: Display mode**

The value can be indicated in integrals or with decimals in 0,5°K or 0,1°K. At indication in 0,5°K the value is rounded up or down. In general, all parameter indications are presented in 0,1°K.

### **A19: Parameter lock**

This parameter enables locking of each parameter level. If third level is locked, only parameter A19 may be changed.

### **A30: Function alarm exit**

The alarm exit evaluates an upper and a lower limit value (see parameters P30 and P31), whereas a selection is possible as to whether the alarm is active if the temperature lies within these two limits, or whether the alarm is released if the temperature lies beyond them. In the case of sensor error, the alarm is activated independently of this adjustment. The exit can also be inverted with parameter A1, so that it functions like a release

### **A31: Other alarm functions**

Here can be selected whether, in the case of an alarm, the indication to flash and/or the buzzer is to start. Sensor alarm (display F1L or F1H) is indicated independently thereof by flashing display and the buzzer.

### **A32: Setpoint display**

A32=0 indicates the actual value, A32=1 statically indicates the setpoint in the display. Therefore, the current actual value can only be indicated with parameter P0.

### **A40: Hysteresis mode contact K1**

These parameter allows selection as to whether the hysteresis value which is adjustable with P32, is set symmetrically or one-sided at the respective switching point. At symmetrical hysteresis, half of the hysteresis' value is effective below and half of the value above the switching point. The one-sided hysteresis works downward with heating contact and upward with cooling contact.

### **A50: Minimum action time contact K1 "On"**

### **A51: Minimum action time contact K1 "Off"**

These parameters permit a delay in switching on/off the relay in order to reduce the switching frequency. The adjusted time sets the entire minimum time period for a switching-on or switching-off phase.

### **A54: Delay after "Power-on"**

This parameter allows a switching-on delay of relays after switching-on the mains voltage. This delay corresponds with the time set here.

### A56: Alarm suppression after "Power-On"

This parameter allows a switching-on delay of the alarm contact after switching on the mains voltage or setpoint change-over. This delay corresponds with the time set here.

### A60: Sensor type

This parameter permits selection of the sensor type, if the needed hardware prerequisites are available.

### A70: Software filter

With several measuring values, it is possible to obtain an average value. This parameter can determine by how many measured values an average value is to be formed. If a sensor with a very fast reaction to external influences is used, an average value ensures a calm signal process.

### A80: Temperature scale

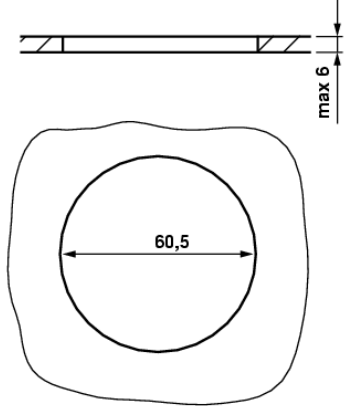
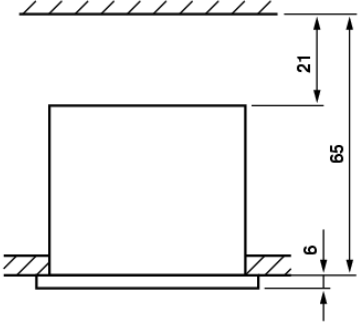
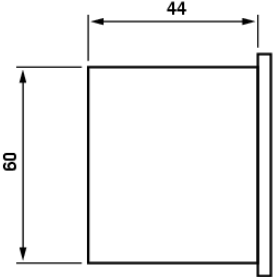
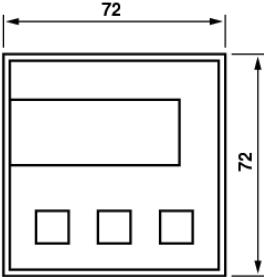
Indication can be switched between Fahrenheit and Celsius. At conversion, the parameters and setpoints maintain their numerical value and adjustment range. (Example: A controller with the desired value of 0°C is switched to Fahrenheit. The new desired value is then interpreted as 0°F, which corresponds to a temperature of -18°C).

NOTE: Indication limits with °F can be smaller than the actual measuring range!

### Error codes

Display	error	What to do
F1L	sensor short circuit	new sensor
F1H	sensor failure	new sensor
F3L	Boundary alarm	Temperature low
F3H	Boundary alarm	Temperature high
F3	Range alarm	Temperature in between boundaries
---	Keyboard lock active	see Parameter P19 or A19
display flashing, buzzer	Temperature alarm (see A31)	cancel buzzer with ▽ button
EP	lost of data in EE-Prom	repair of controller

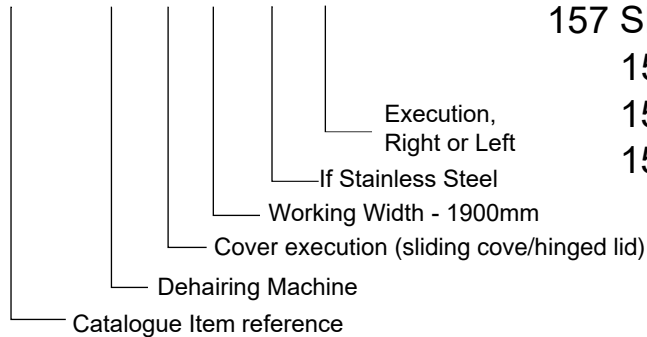
ST 73 ...



## 10 Technical data

Type code

CAT 157SK20(SS)R/L Optional: 157 SK20 HB - Hair collector box



157 SK20 HS - Bristle screw

157SK22 - Special length (inside length 2200 mm)

157SK25 - Special length (inside length 2500 mm)

157SK28 - Special length (inside length 2800 mm)

	157SK20R/L	157 SK20 HB Hair collector box	157 SK20 HS Bristle screw	157SK22R/L Special length	157SK25R/L Special length	157SK28R/L Special length
Area (mm)	2.200x1.000			2.500x1.000	2.800x1.000	3.100x1.000
Working width (mm)	1.900			2.200	2.500	2.800
Electrical connection	17,2 KW CEKON socket IEC60309, 32A 3P+N+PE, 3x35A (intern)			19,7 KW CEKON socket IEC60309, 32A 3P+N+PE, 3x35A (internal)	27 KW fixed connection at least 40A 3P+N+PE, 3x50A	29 KW fixed connection at least 50A 3P+N+PE, 3x50 A
External fusing	3 x 32A and FI-switch300 mA			At least 3x40A		At least 3x50A
Protection class	IP55					
Engine power	2,2 KW			3,0 KW		
Heating capacity	13,5-15 KW			16-17,5 KW	20-24 KW	26 KW
	Oel-gas machine ca. 22 KW					
Empty/ operating weight	ca. 570 kg			ca. 640 kg	ca. 720 kg	ca. 870 kg
Fillingn volume water	ca. 200 Liter			ca. 250 Liter	ca. 300 Liter	ca. 350 Liter
Maximum weight carcases	ca. 250 kg			ca. 330 kg	ca. 350 kg	ca. 400 kg
Quantity scraper paddle	78 pcs.			90 pcs.	104 pcs.	120 pcs.

## 11 Service

<b>Mitchell Engineering Food Equipment</b>	
Street	23 Storie Street
City	Clontarf, QLD, AUS, 4019
Phone	1800 669 006 - Australia Only
	+617 3283 4536 - Global
E-Mail	info@mefe.com.au
Internet	www.mefe.com.au

### **! NOTICE**

If non-original spare parts and non-original accessories are used, all warranty and liability claims against Mitchell Engineering Food Equipment will lapse.



## 12 EC Declaration of conformity

### EC Declaration of conformity

in the sense of EC machinery directive 2006/42/EG

We hereby declare that the

#### Scalding and dehairing machine

Type designation \_\_\_\_\_

was in its development, design and manufacture the sole responsibility of the company

Mitchell Engineering Food Equipment

The equipment complies with the safety requirements based on the applicable standards. Modifications to the equipment may only be carried out by agreement with the company **MEFE**, failing which the above declaration becomes invalid.

The rules for the correct operation of the equipment stated in the operating instructions must be complied with.

Information about the equipment:

The whole of the supplied equipment consists of a self-contained functional unit. Operation takes place in conjunction with preceding and following units of process equipment with self-contained process control.

Standards applied:

EC Directives

2006/42/EG - Machinery directive

2014/30/EU:2014-02-26; EMC:2014-02-26; EMV:2014-02-26- Electromagnetic compatibility

DIN EN ISO – Standards:

DIN EN ISO 12100:2011-03 Machinery safety – principles for risk assessment

DIN EN ISO 13857 Safety distances to prevent danger zones being reached by the upper limbs

DIN EN 349 Minimum distances to avoid crushing of body parts

DIN EN ISO 13850:2016-05 Safety of machines; Emergency stop devices, functional aspects

DIN EN ISO 13857:2008-06 Safety distances to prevent danger zones being reached by the lower limbs

DIN EN ISO 14120:2016-05 Isolating safety devices

DIN EN ISO 13849-1:2016-06 Safety of machines; safety-related parts of control systems (ISO 13849-1)

DIN EN ISO 4414:2011-04 Safety of machines - safety-related requirements for fluid power systems and their components - pneumatics

DIN EN ISO 12100-1, 12100-2 Machinery safety – fundamental terms, general design guidelines

DIN EN ISO 14122-1, 14122-2, 14122-3 Safety of machines

DIN EN 60204-1:2014-10; VDE 0113-1:2014-10 Safety of machines, electrical equipment of machines (VDE 0113 part 1)

Accident prevention regulations

VBG19 Meat-processing machines

Documentation:

The associated technical documentation is fully available.

The operating instructions for the equipment are available in German.

## 13 Warranty

# Guarantee

**We take it upon to do guarantee for the following machine for free objection materials manufacturing, professionally installation and free objection function of 1/2 year.**

**Left out of the warranty:**

- Electrical Equipment
- Parts which are defeated the attrition
- Damages which are reduce to an improper treatment

Date of sale \_\_\_\_\_

Machine type \_\_\_\_\_

Machine number \_\_\_\_\_



## 14 Manufacturer reference

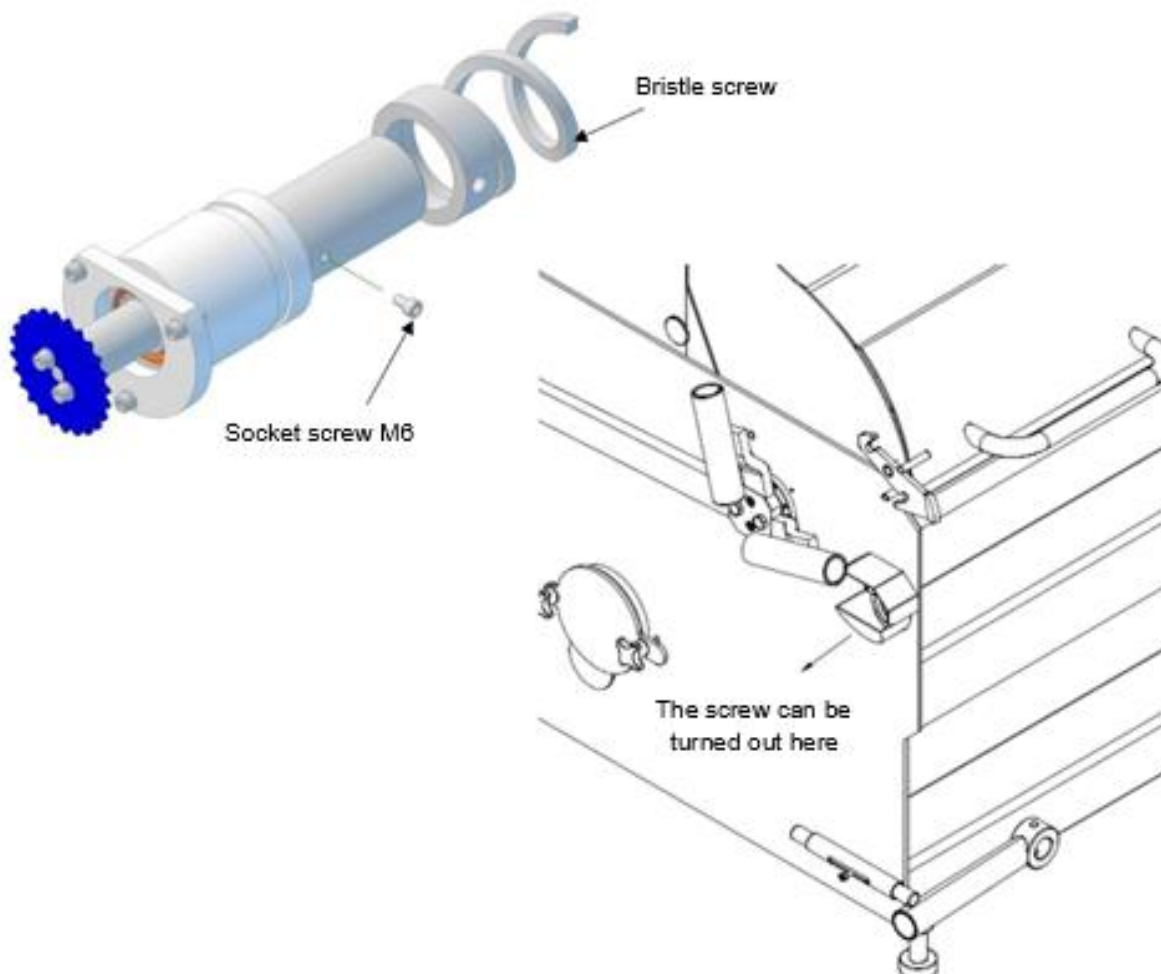
Do not scald or dehair woolly pigs/mangalitsa pigs on machines with a bristle auger. The long hairs block the auger spiral and can lead to deformation.

If you still want to slaughter woolly pigs, the auger spiral must be unscrewed from the machine. By loosening the hexagon socket screws M6, the spiral can be detached from the drive shaft and then unscrewed.

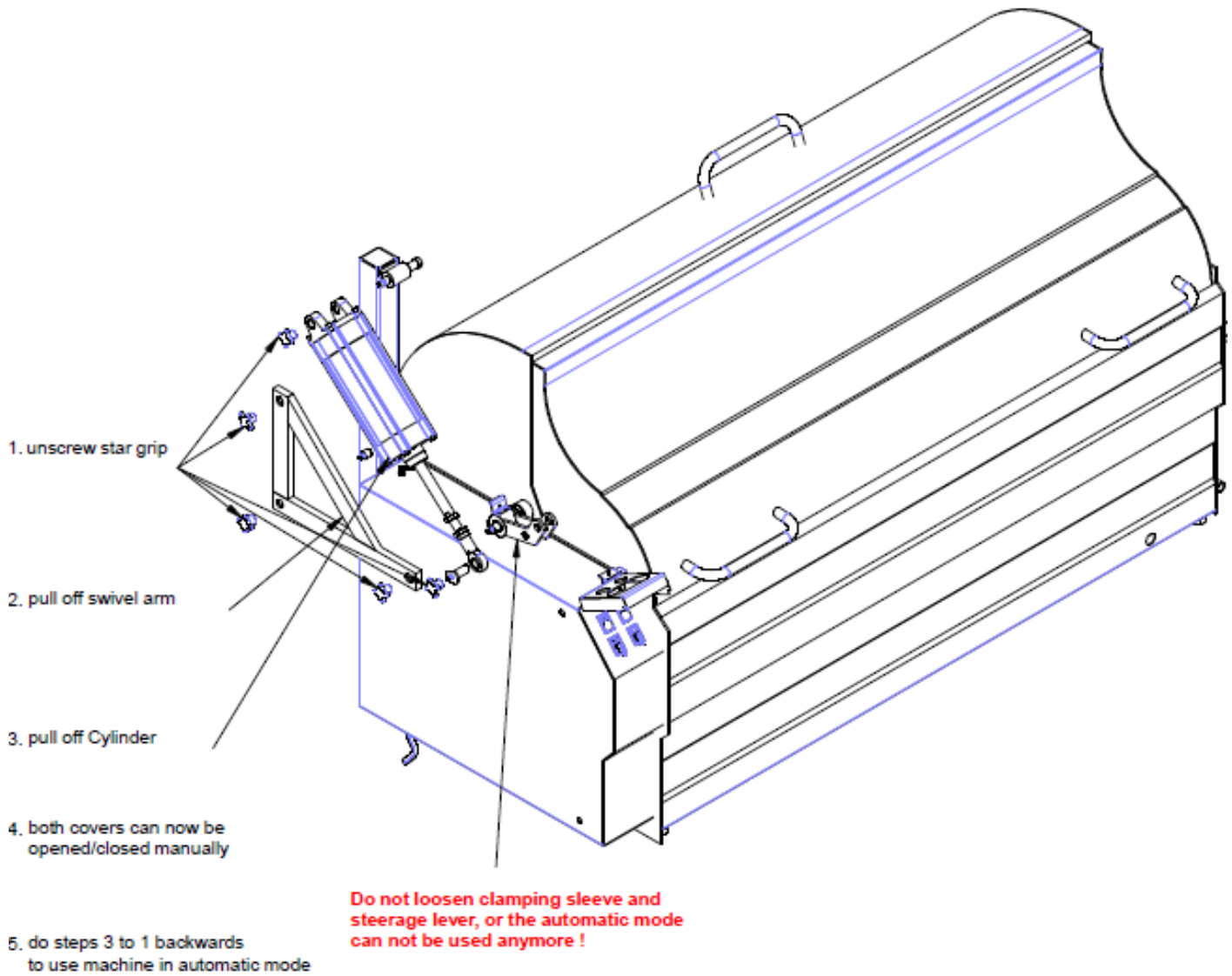
After finishing the scalding and dehairing processes with woolly pigs, put the auger back into the machine and retighten the hexagon socket screw M6 with an Allen key.

We as the manufacturer cannot monitor the observance of these instructions and the conditions and methods during operation, use and maintenance of our scalding and dehairing machines.

Therefore, we, the company Mitchell Engineering., do not accept any responsibility or liability for damage or costs resulting from or in any way connected with improper operation and incorrect use and maintenance.



## 15 Manufacturer reference





**Mechanical engineering  
Scalding, slaughtering and  
stunning systems**



**made in Germany!**

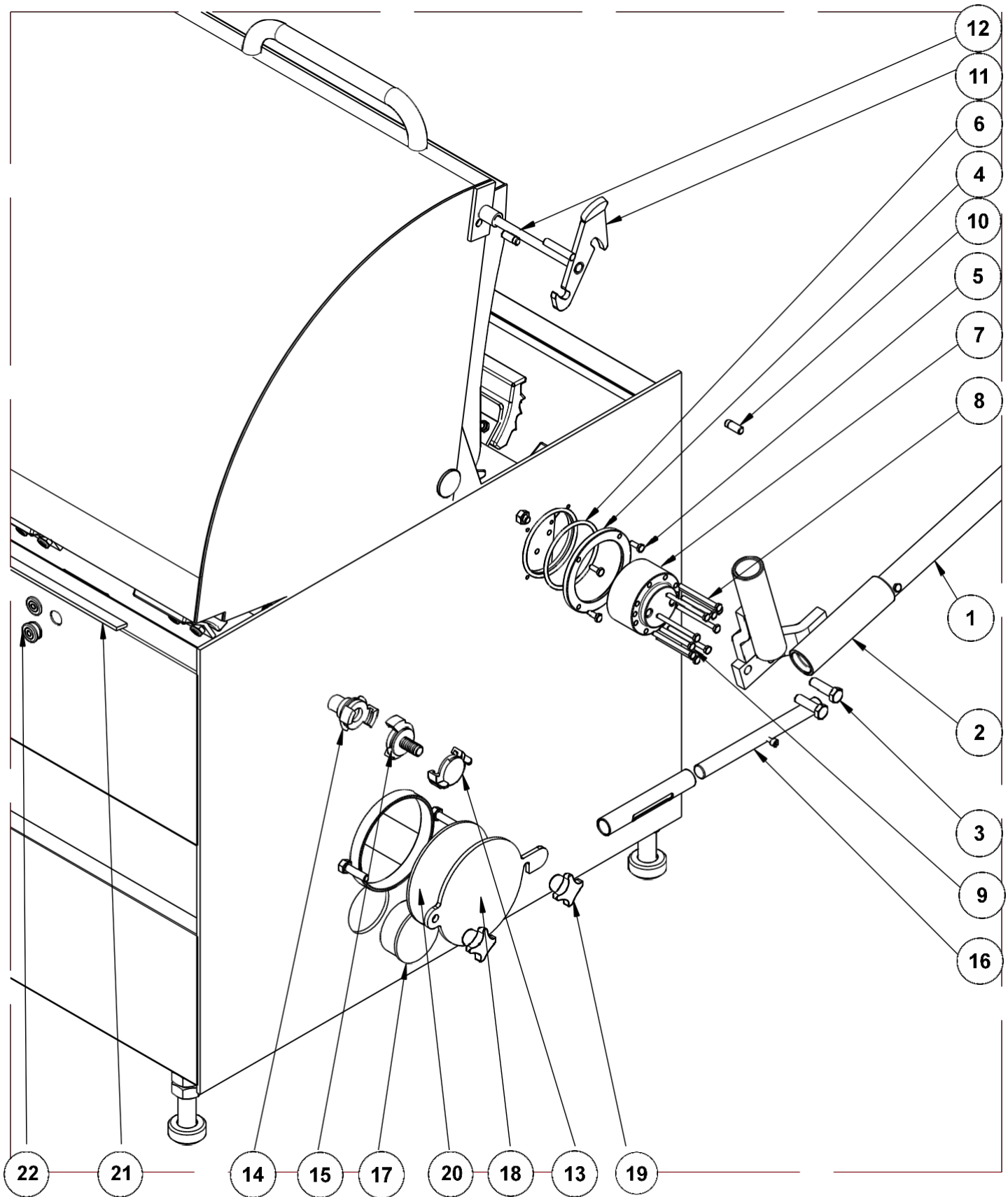
**with  
speed regulation**

**Spare parts**

# Ersatzteile / Spare parts



## Anbauteile / Attachment parts



## Anbauteile / Attachment parts

Pos.	Anzahl Quantity	Art.Nr. Item no.	Bezeichnung	Description
1	1	6315 6320	Auswerferrohr verzinkt V2A	Ejector duct Galvanized steel stainless steel
2	1	6325 6326 6329 6330	Auswerferhebel links verzinkt V2A Auswerferhebel rechts verzinkt V2A	Roller lifter to the left Galvanized steel stainless steel Roller lifter to the right galvanized stainless steel
3	2	6104	Schrauben M12x40 DIN 933 V2A	Screws M12x40 DIN 933 stainless steel
4	1	6340	Dichtring 90 x 120 x 8 V2A	Seal 90 x 120 x 8 stainless steel
5	4	6341	Schraube M6 x16 DIN 933 V2A	Screws M6 x 16 DIN 933 stainless steel
6	1	6345	O-Ring	O-ring
7	1	6105	Auswerferbolzen	Ejector bolt
8	8	6106	Schraube M6 x 70 DIN 933 V2A	Screws M6 x 70 DIN 933 stainless steel
9	2	6107	Schraube M6 x 55 DIN 933 V2A	Screws M6 x 55 DIN 933 stainless steel
10	4	6430	Riegelstehbolzen	Bolt stud M10 V2A
11	1	6440	Deckelriegel doppelt V2A	Bolt for cover double stainless steel
12	1	6445 6450	Riegelstange verzinkt V2A	Lock bar galvanized stainless steel
13	1	6342	GEKA Schnellkupplung Kappe	GEKA quick coupling cover
14	1	6343	GEKA Schnellkupplung IG 3/4"	GEKA quick coupling internal thread 3/4"
15	1	6344	GEKA Schnellkupplung mit Schlauchanschluss	GEKA quick coupling with hose connection 3/4"
16	1	6635	Riegelbolzen	Locking bolt
17	1	6390	PVC-Blinddeckel	PVC-clip-cover
18	1	6350 6355	Ablaufdeckel verzinkt V2A	Outlet cover galvanized stainless steel
19	2	6365	Sterngriff	Star grip
20	1	6360	Ablaufdichtung 150	Overflow seal 150



# Ersatzteile / Spare parts

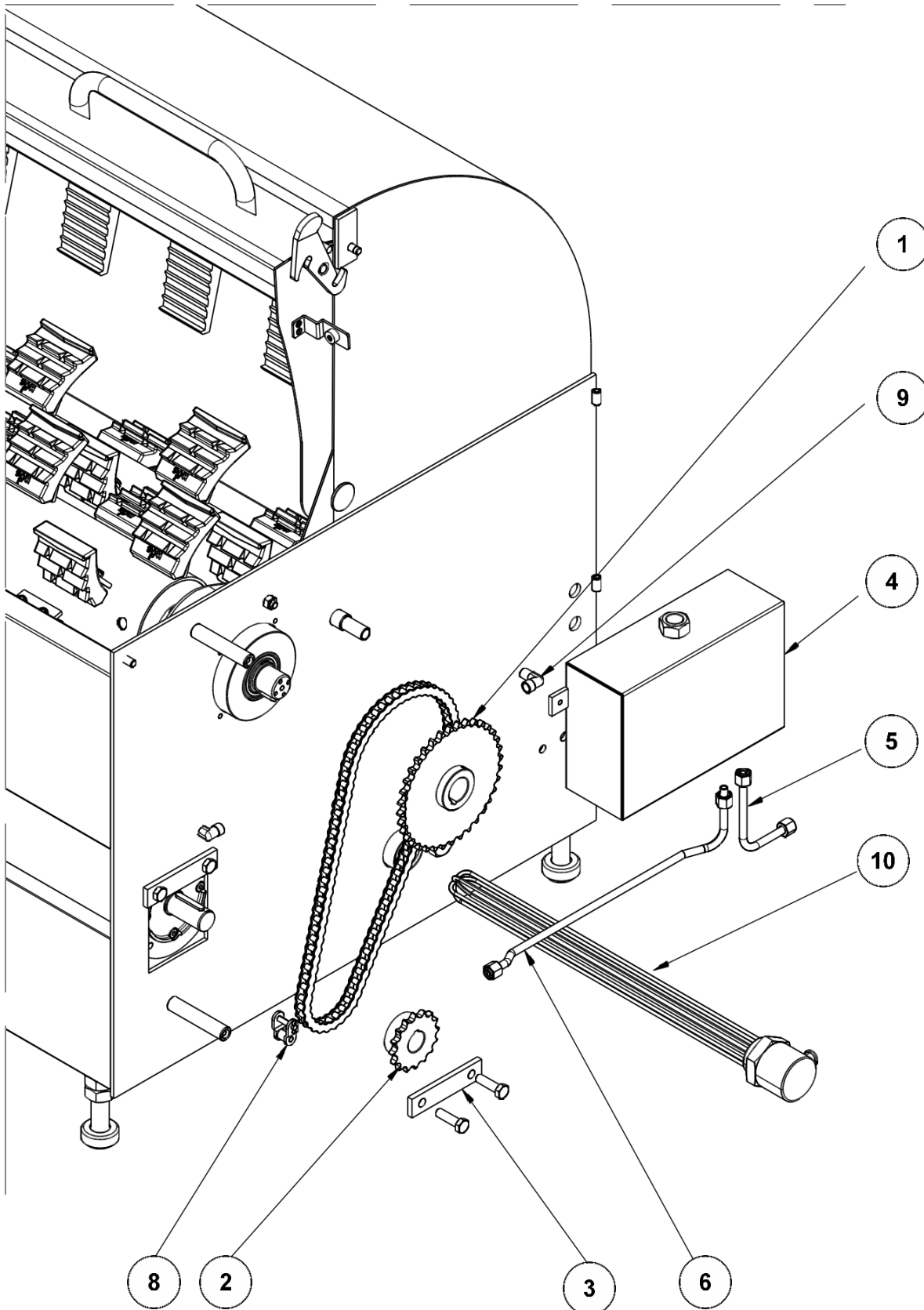


Pos.	Anzahl Quantity	Art.Nr. Item no.	Bezeichnung	Description
21	1	6545 6546 6547	Deckelgummi 1950mm 2250mm 2550mm	Rubber for cover 1950mm 2250mm 2550mm
22	16	6675	Gummistopfen KT13,5	Rubber plug KT13,5

# Ersatzteile / Spare parts



## Antriebsselemente / Drive-elements



# Ersatzteile / Spare parts

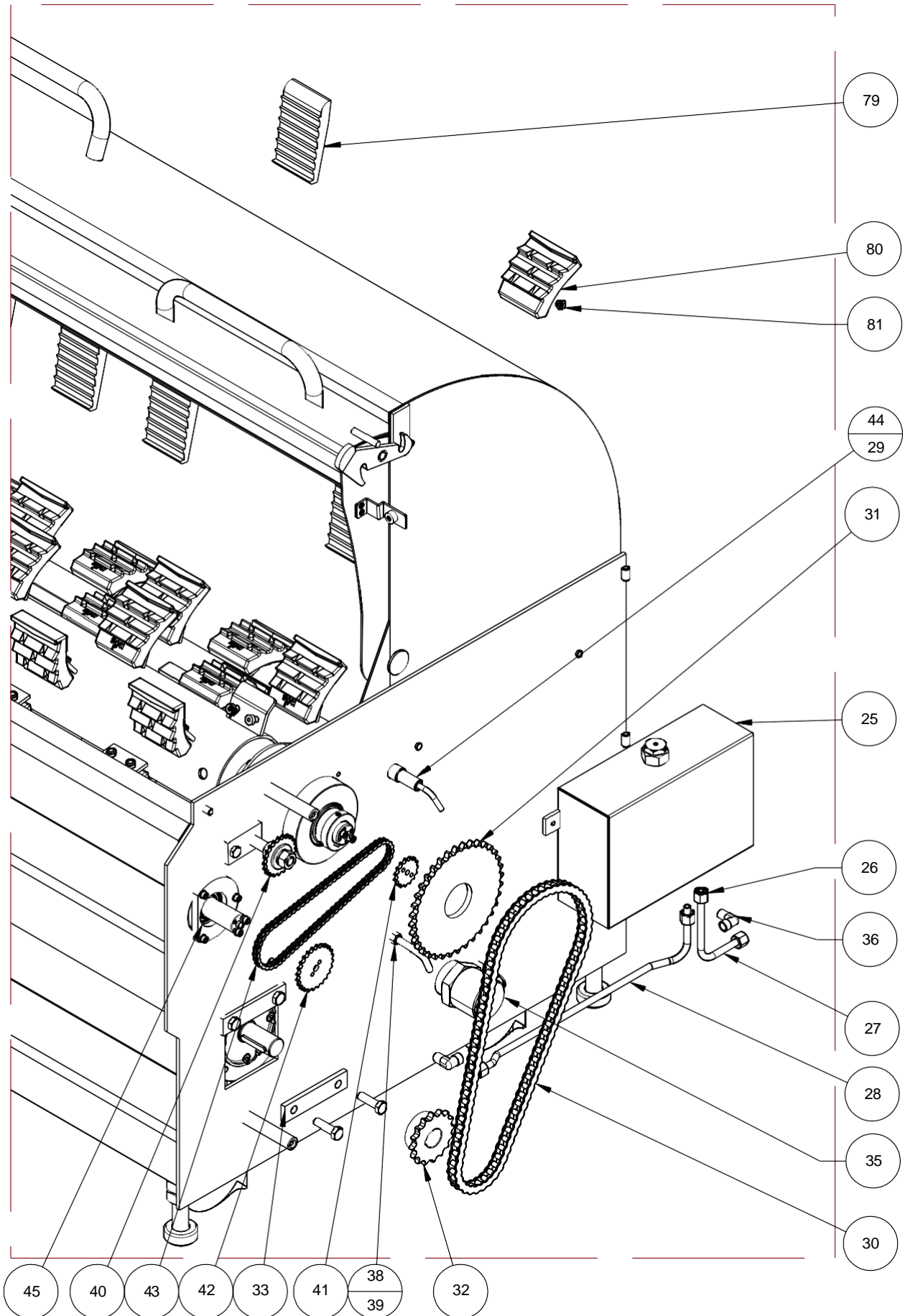


## Antriebselemente / Drive elements

Pos.	Anzahl Quantity	Art. Nr. item no.	Bezeichnung	Description
1	1	5810	Antriebsrad Z36	Drive-wheel Z36
2	1	5815	Mororritzel Z16	Motor-bevel Z16
3	2	6305 6310	Motorenlasche verzinkt V2A	Motor-clip galvanized steel stainless steel
4	1	6480 6485	Tank verzinkt V2A	Tank galvanized steel stainless steel
5	1	6510	Ölleitung kurz	Oil circuit short
6	1	6515 6516	Ölleitung lang rechte Maschine linke Masch.	Oil circuit long for right machine left machine
7	1	5820	Antriebskette	Drive-chain outside
8	1	5835	Kettenschloß gekröpft	Chain-pivot cranked
9	2	6500 6505	Ermetowinkel verzinkt V2A	Ermeto bracket galvanized steel stainless steel
10		5310 5315 5320 5325 5326	Heizkörper 6 kW 7,5 kW 10 kW 12 kW 16 kW	Heating 6 kW 7,5 kW 10 kW 12 kW 16 kW

# Ersatzteile / spare parts

## Maschinenantrieb / machine drive

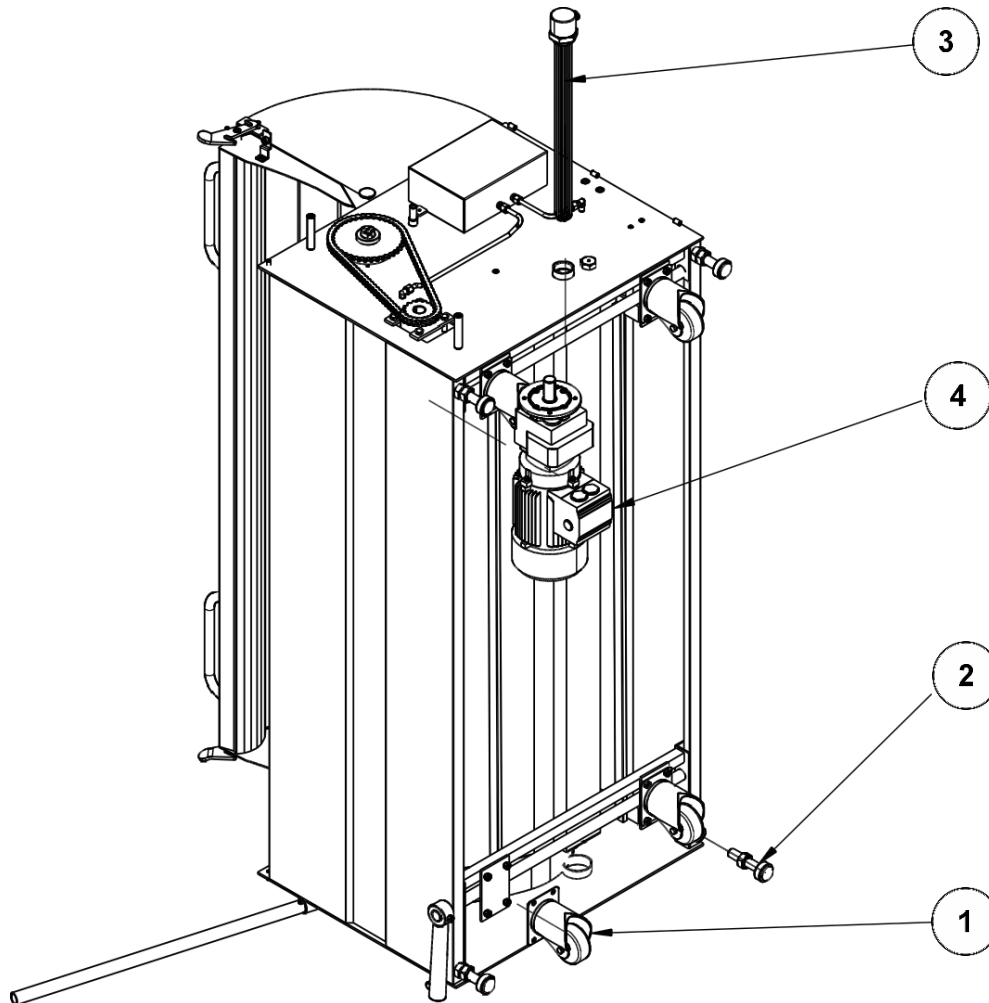


# Ersatzteile / spare parts

## Maschinenantrieb / motor drive

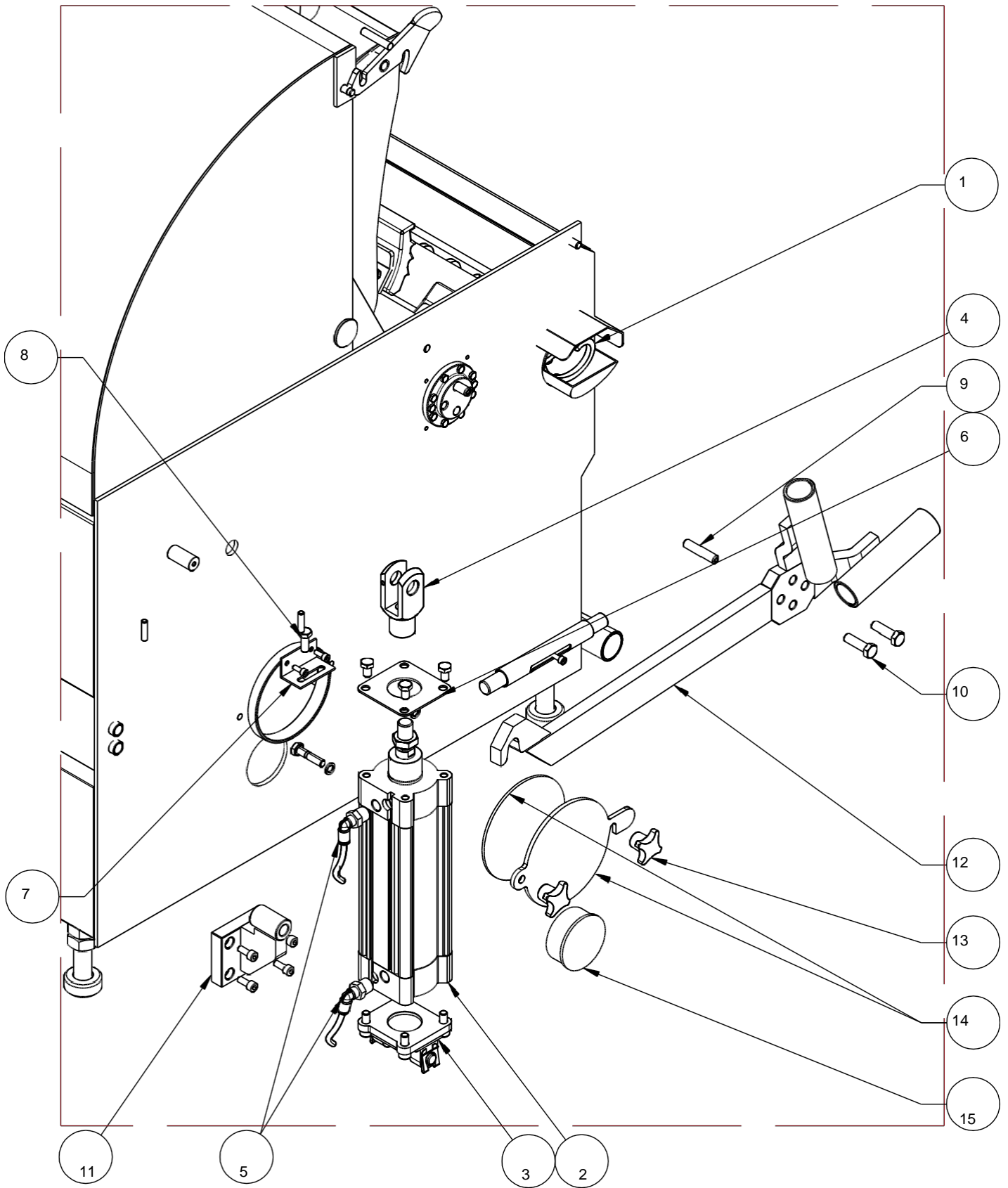
Pos.	Anzahl Quantity	Art.Nr. item.no	Bezeichnung	Description
25	1	6485	Tank V2A	tank V2A
26	2	6505	Ermetowinkel V2A	ermeto bracket stainless steel
27	1	6510	Ölleitung kurz	oil tube short
28	1	6515	Ölleitung lang	oil tube long
29	1	5200	Auswerferschalter	ejector switch
30	1	5820	Antriebskette	chain
31	1	5810	Antriebsrad Z36	chain wheel Z36
32	1	5815	Motorritzel Z16	motor bevel Z16
33	2	6310	Motorenlasche V2A	motor clip stainless steel
34				
35	1	5310 5315 5320 5325 5326	Heizkörper 6 kW 7,5 kW 10 kW 12 kW 16 kW	heater 6 kW 7,5 kW 10 kW 12 kW 16 kW
36	2	2015	L-Steckverschraubung QSL 1/4-8	L-threaded union QSL 1/4-8
38	1	5290	Verschraubung für Fühler PT 100	fitting for sensor PT 100
39	1	5280	Fühler PT 100	sensor PT 100
40	1	6050 6053 6054	Kettenspanner komplett Kettenspanner (Platte mit Gewindestange) Zahnrad Z21-3-8	chain tensioner compl. chain tensioner (panel with threaded bolt) gearwheel Z21-3-8
41	1	6040	Kettenrad Z15	chain wheel Z15
42	1	6045	Kettenrad Z24	chain wheel Z24
43	1	6055	Antriebskette Schnecke	drive chain
44	1	5220	Endschalterhülse f. Auswerferschalter	end-switch-hall for ejector switch
45	1	6035	Borstenschnecke kompl.	bristle screw compl.
79	8	6810	Deckelschläger HAAS	headscraper paddle
80	78	6805	Gummischläger HAAS	scraper paddle HAAS
81	156	6815	Stopmutter für Gummischläger	locknut for scraper paddles

## Maschinenunterteil / Bottom part



Pos.	Anzahl Quantity	Art.Nr. Item no.	Bezeichnung	Description
1	4	6405	Lenkrolle aus V2A	Castor wheel stainless steel
2	4	6395	Brühmaschinenfuß V2A mit Einlegegummi	Feet stainless steel with rubber
3	Je nach Ausführung/ individual	5310 5315 5320 5325 5326	Heizkörper 6kW 7,5kW 10kW 12kW 16kW	Heating 6 kW 7,5 kW 10 kW 12 kW 16 kW
4	Je nach Ausführung	5805 5806	Getriebemotor 2,2kW Getriebemotor 3,0kW	Gear motor 2,2kW Gear motor 3,0kW

**Pneumatik / pneumatic**

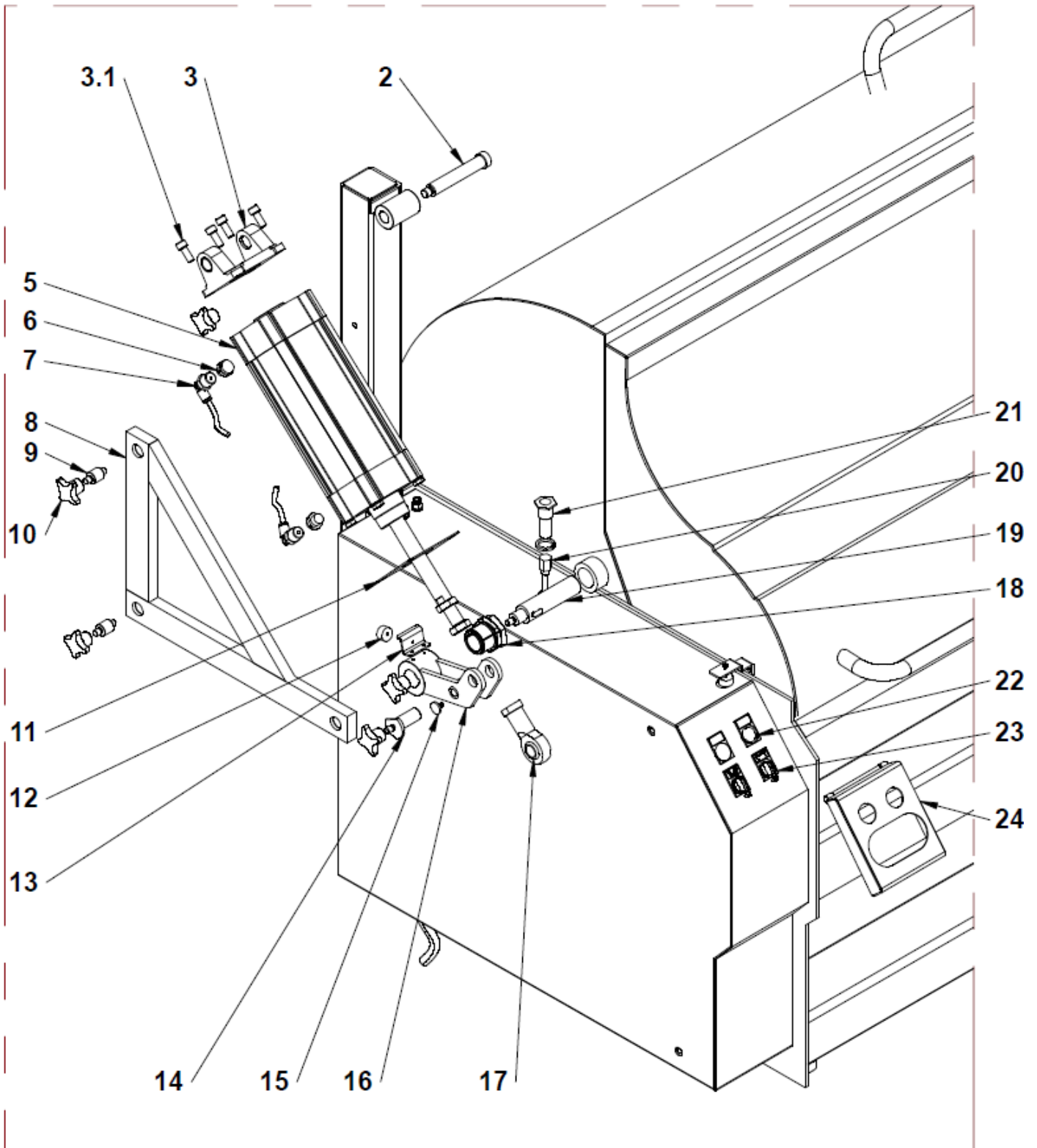


## Pneumatik / pneumatic

Pos.	Anzahl Quantity	Art. Nr. item no.	Bezeichnung	Description
1		6035	Borstenschnecke kompl.	Bristle screw
2	1	2017	Normzylinder DNCB-80-200-PPV-A	Standard cylinder DNCB-80-200-PPV-A
3	1	2018	Schwenkflansch SNCB-80	Swivel flange SNCB-80
4	1	2019	Gabelkopf SB-M20x1,5	Fork head SB-M20x1,5
5	2	2028	L-Steckverschraubung NPQH-L-G38-Q8-P10	L-fitting NPQH-L-G38-Q8-P10
6	1	8220	Abdeckblech V2A für Zylinder	Cylinder cover plate V2A
7	1	8205	Blechwinkel V2A mit Langloch	Metal angle V2A
8	1	8210	Exzentrerschraube V2A	Exxentric screw V2A
9	2	8225	Zylinderstift V2A v12 mit Innengewinde	Pin V2A with internal thread v12
10	2	8230	Schrauben M12 x 40 V2A DIN 933	Screw M12 x 40 V2A DIN 933
11	1	8250	Bock für pneumatischen Auswurf V2A	Clevis foot for pneumatic ejection V2A
12	1	8245	Hebel für pneumatischen Auswurf V2A	Lever for pneumatic ejection V2A
13	2	6365	Sterngriff	Star grip
14	1	6350 6355	Ablaufdeckel verzinkt V2A	Outlet cover galvanized stainless steel
14	1	6360	Ablaufdichtung 150	Overflow seal 150
15	1	6390	PVC-Blinddeckel	PVC-clip-cover



**Deckelautomatik / Pneumatic lid**



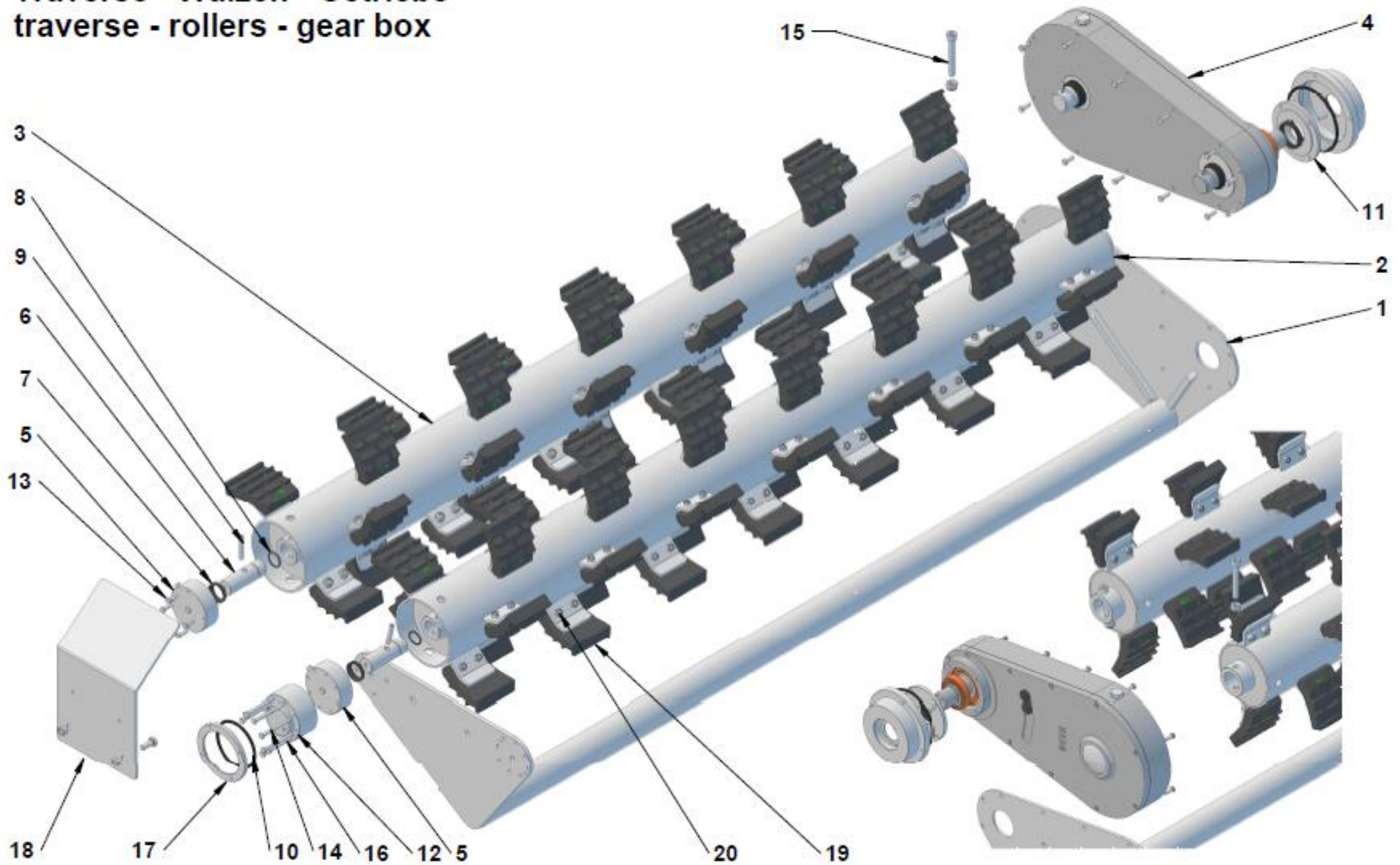
# Ersatzteile / Spare parts



Pos.	Anzahl Quantity	Art. Nr. item no.	Bezeichnung	Description
2			Bolzen (Aufhängung Zylinder)	Bolt (cylinder suspension)
3	1	8401	Schwenkflansch SNBC-100	Swivel flange SNBC-100
3.1	4	8401	Zylinderkopfschrauben Schwenkflansch	Cylinder-head bolts
5	1	8400	Zylinder DSBC-100-200-PPVA-N3	Cylinder DSBC-100-200-PPVA-N3
6	2		Reduzierung 1/2" - 3/8"	Reduction 1/2" - 3/8"
7	2	2028	L-Steckverschraubung NPQH-L-G38-Q8-P10	L-fitting NPQH-L-G38-Q8-P10
8	1		Schwenkarm verzinkt / V2A	Swivel arm galvanized/V2A
9	1	8410	Verschraubungsbolzen M10	Stud bolt M10
10	2	6365	Sterngriff	Star grip
11	5	8406	Zylinderplatte	Cylinder plate
12	1	5215	Magnet für Deckelschalter blaue Kappe	Magnet for top cover switch with blue cap
13	1	8408	Anschlagblech (für Deckelmagnet)	Stopper plate (for top cover magnet)
14	1		Griffbolzen	Handle bolt
15	1		Anschlagbolzen	Stopper bolt
16	1		Hebel Steuerung rechts verzinkt / V2A links verzinkt / V2A	Steerage lever Right version galvanized / V2A Left version galvanized / V2A
17	1	8402	Gelenkkopf CRSGS M20x1,5	Swivel head CRSGS M20x1,5
18	1	8405	Spannhülse S3042K	Clamping sleeve S3042K
19	1	8404	Achse für Hebel	Level axis
20	1	5205	Deckelschalter	Top cover switch
21	1	5220	Endschalterhülse Deckelautomatik	End switch sleeve
22	1	5111	Drucktaster "grün"	Push button "green"
23	2	5170	Knebelschalter 0-1	Knob switch 0-1
24	1		Schutzklappe Deckelautomatik	Protective cover

## Ersatzteile / spare parts

Traverse - Walzen - Getriebe  
traverse - rollers - gear box

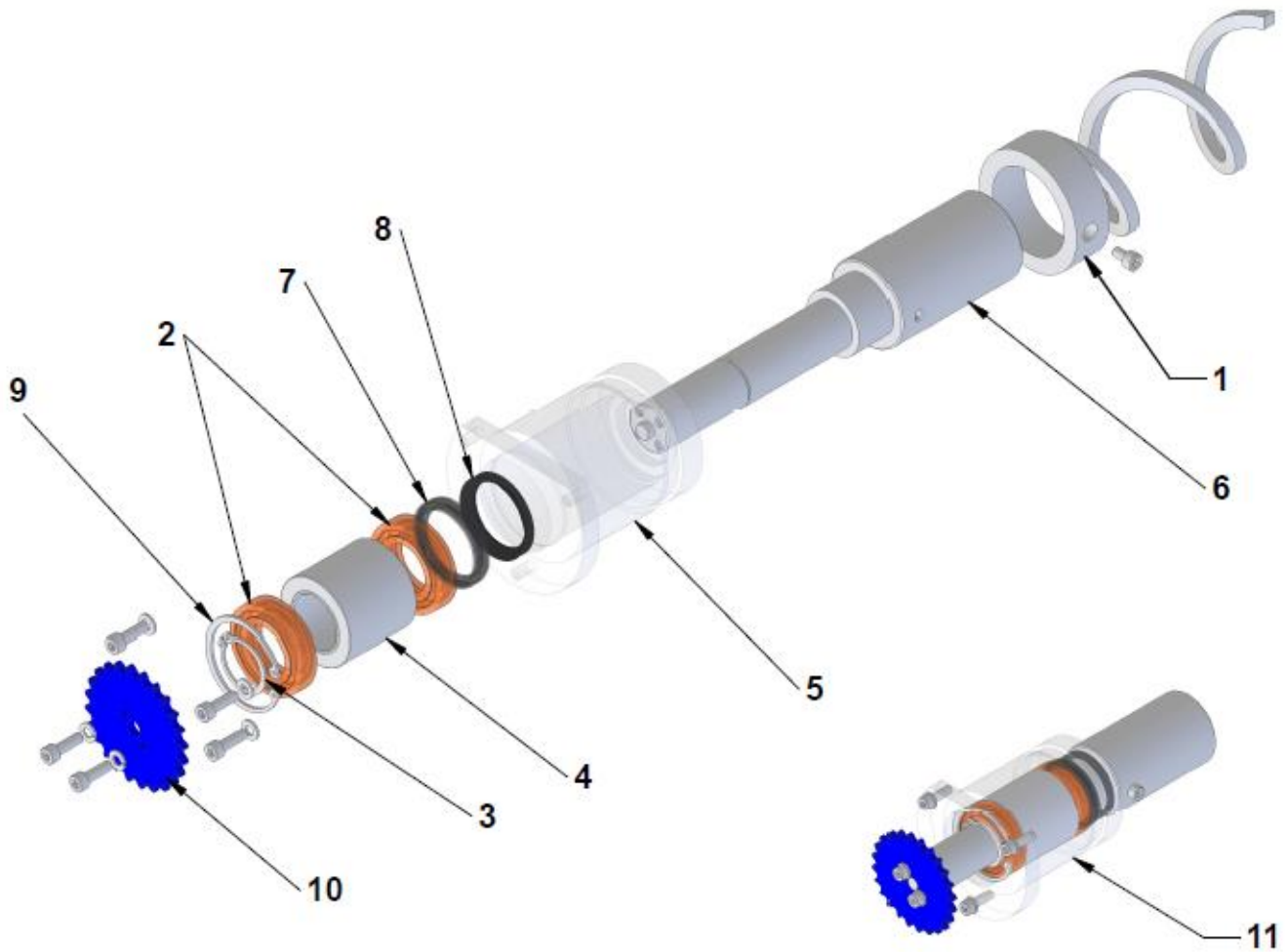


## Traverse - Walzen - Getriebe / Traverse - Rollers - Gear box

Pos.	Anzahl Quantity	Art.Nr. Item no.	Bezeichnung	Description
1	1	6550 6551	Traverse rechts 1900 mm verzinkt V2A	Cross bar right 1900 mm galvanized steel V2A
		6555 6554	Traverse links 1900 mm verzinkt V2A	Cross bar left 1900 mm galvanized steel stainless steel
		6560 6561	Traverse rechts 2200 mm verzinkt V2A	Cross bar right 2200 mm galvanized steel stainless steel
		6565 6566	Traverse links 2200 mm verzinkt V2A	Cross bar left 2200 mm galvanized steel stainless steel
2	1	6570 6580	Walze oben 1900/2200mm verzinkt V2A	Roll on the top 1900/2200 mm galvanized steel stainless steel
3	1	6575 6585	Walze unten 1900/2200mm verzinkt V2A	Roll on the bottom 1900/2200 mm galvanized steel stainless steel
4	1	5523 5524	Getriebe verstärkte Ausführung Ø16 verstärkte Ausführung Ø12	Gear box compl. Reinforced Ø16 Reinforced Ø12
5	2	6520	Alu-Lager 8-Loch	Alu-bearing 8-holes compl.
6	2	6185	Walzenzapfen	Rollpin
7	2	6175	V-Ring 30	V-ring 30
8	2	6190	O-Ring 25x2,5	O-Ring 25x2,5
9	2	6195	Schwerspannstift 8 x 50	Split spin 8 x 50
10	1	6345	O-Ring 90x5	O-ring 90x5
11	1	5631	Getriebedichtflansch V2A	Gear flange for added version stainless steel
12	1	6105 6102	Auswerferbolzen Auswerferbolzen mit Einmalgewinde M12	Ejector bolt Ejector bolt with one M12 thread
13	4	6108	Schraube M6 x 20 DIN933	Hexagon screw M6 x 20 DIN 933
14	8	6106	Schraube M6x70 DIN 933	Hexagon screw M6 x 70 DIN 933
15	2	6538	Walzenschraube Sonderausführung M16 x80V2A	Roller screw special version M16 x 80 stainless steel
16	2	6107	Schraube M6x55 DIN 933	Hexagon screw M6x55 DIN 933
17	1	6340	Dichtring 90 x 120 x 8 V2A	Seal 90 x 120 x 8 stainless steel
18	1	6700 6701	Kopfkratzer verzinkt V2A	Head rabble galvanized steel stainless steel
19		6805	Gummischläger Haas	Scraper paddles Haas
20		6815	Stopmutter für Gummischläger	Screws for scraper paddles

## Ersatzteile / Spare parts

### Antrieb Schnecke / Drive hair spiral

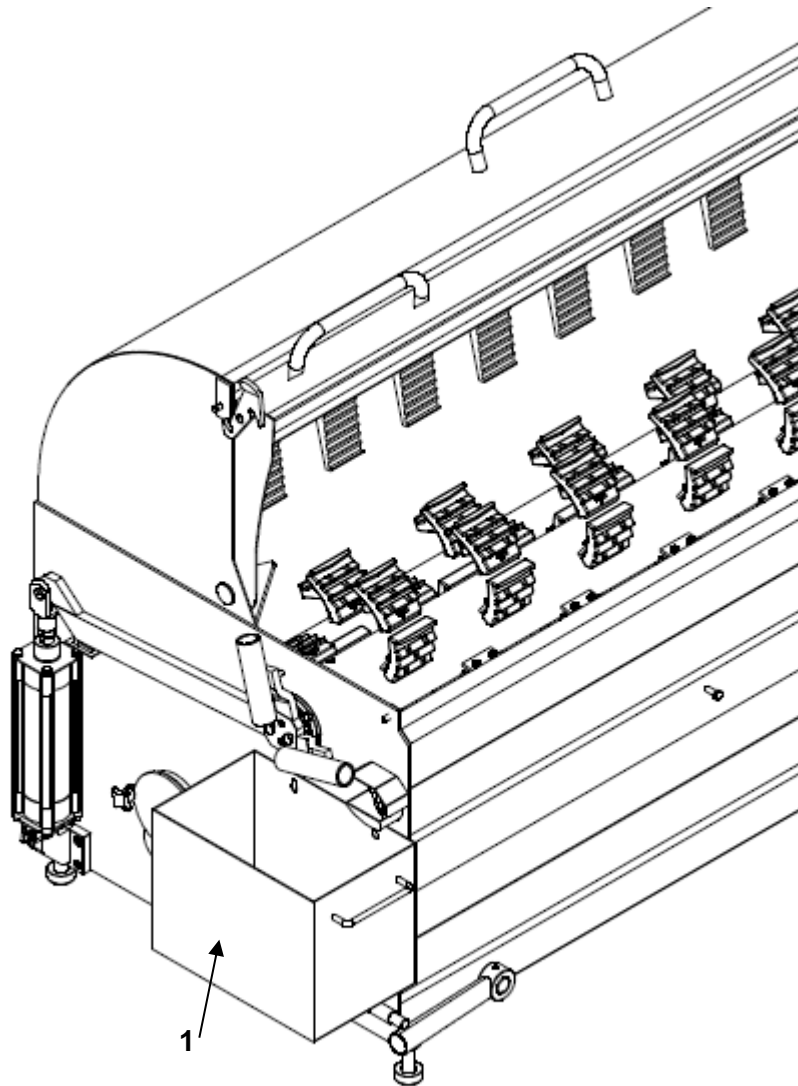


Pos.	Anzahl Quantity	Art.Nr. item no.	Bezeichnung	Description
1	1	6034	Borstenschnecke 1900 mm	Drive hair spiral 1900 mm
	1	6035	Borstenschnecke 2200 mm	Drive hair spiral 2200 mm
	1	6036	Borstenschnecke 2500 mm	Drive hair spiral 2500 mm
2	2	6015	Schneckenlager 6006 2RS	Screw bearing 6006 2RS
3	1	6020	Sicherungsring 54x2 DIN 472	Locking ring 54x2 DIN 472
4	1	6030	Alu-Abstandshülse	Alu distance sleeve
5	1	6010	Kunststofflager	Platic bearings
6	1	6005	Antriebswelle Schnecke V2A	Drive shaft stainless steel

<b>Pos.</b>	<b>Anzahl Quantity</b>	<b>Art.Nr. item no.</b>	<b>Bezeichnung</b>	<b>Description</b>
7	1	5655	Wellendichtring mit NiRo Feder	Shaft seal with stainless steel spring
8	1	6180	Wellendichtring Ø40	Shaft seal Ø40
9	1	6025	Sicherungsring 30x1,5 DIN 471	Locking ring 30x1,5 DIN 471
10	1	6045	Kettenrad Z24	Chain wheel Z24
11	1	6062	Schneckenantrieb kompl.	Hair spiral drive compl.

## Ersatzteile / Spare parts

### Borstensammler (Borstenkiste) / Hair collector box

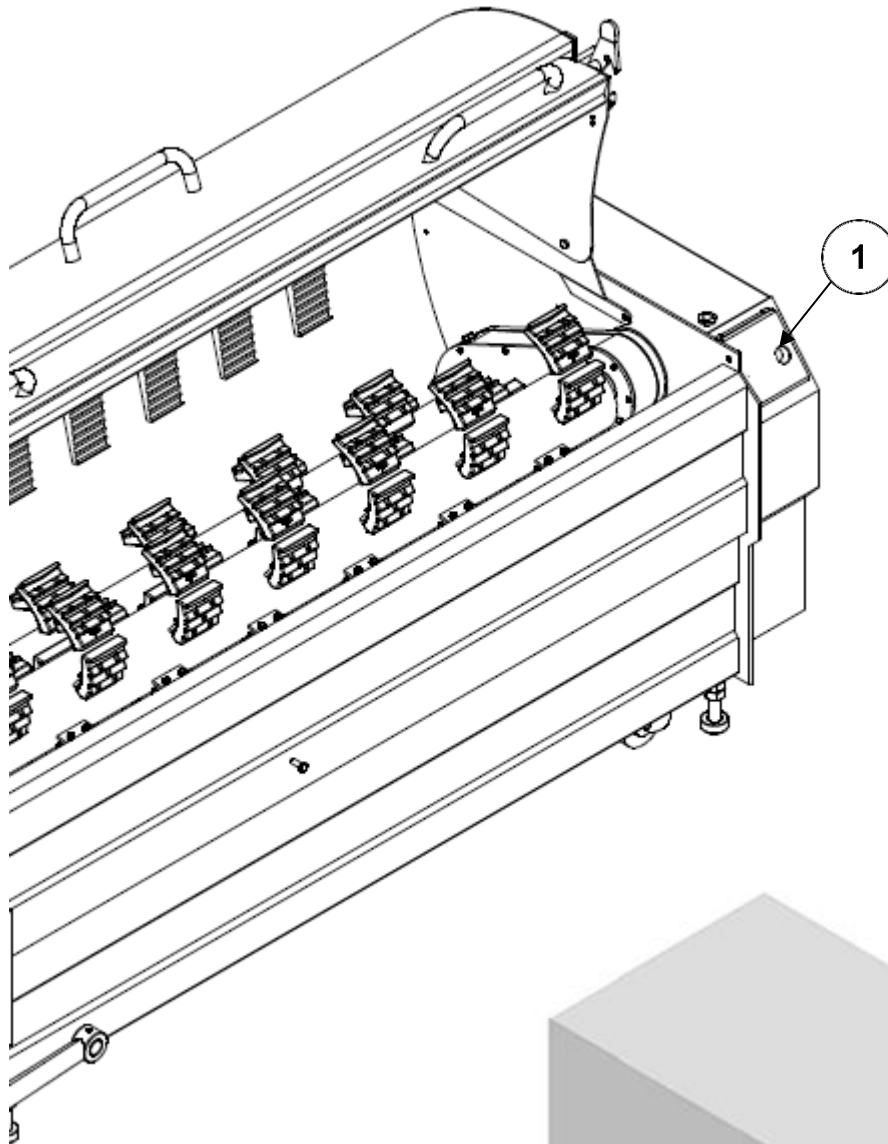


Pos.	Anzahl Quantity	Art.Nr. item no.	Bezeichnung	Description
1	1	6716	Borstensammler (Borstenkiste)	Hair collector box

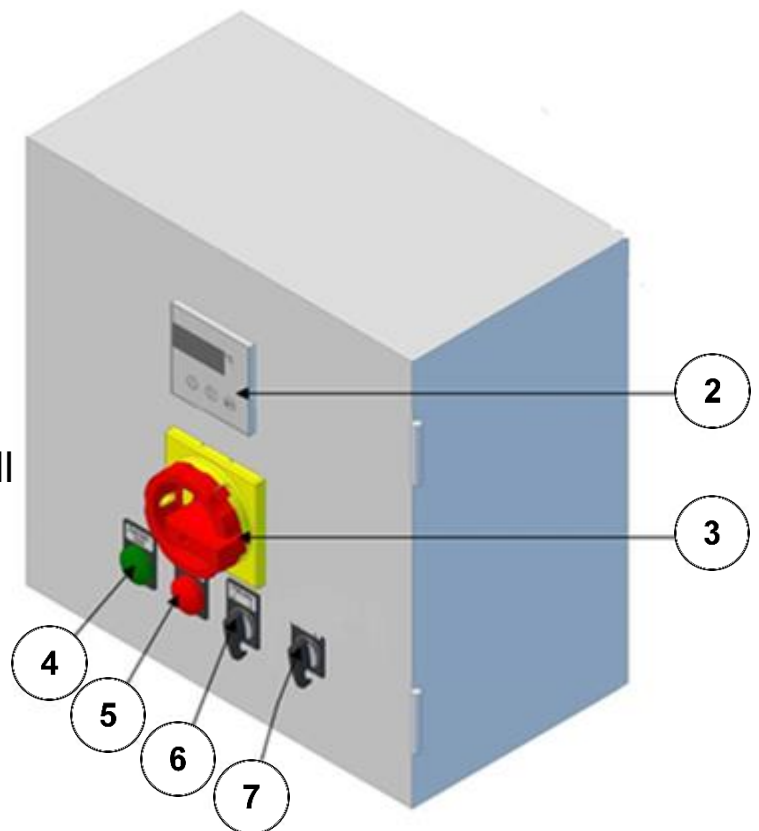
# Ersatzteile / Spare parts



## Elektronische Anbauteile / Electronic attachment parts



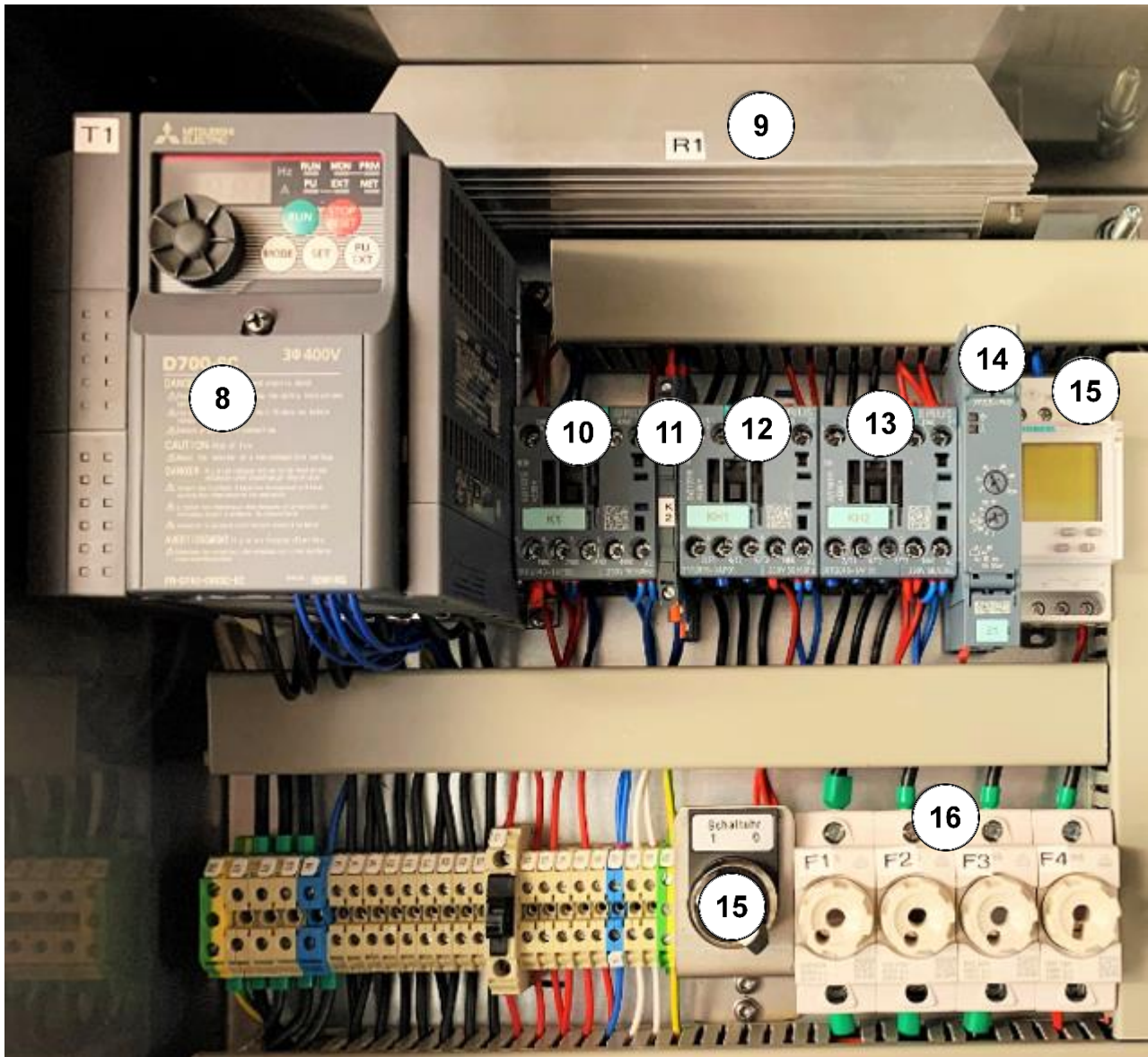
Wandsteuerung  
Electric control unit for the wall





# Ersatzteile / Spare parts

Wandsteuerung / Electric control unit for the wall



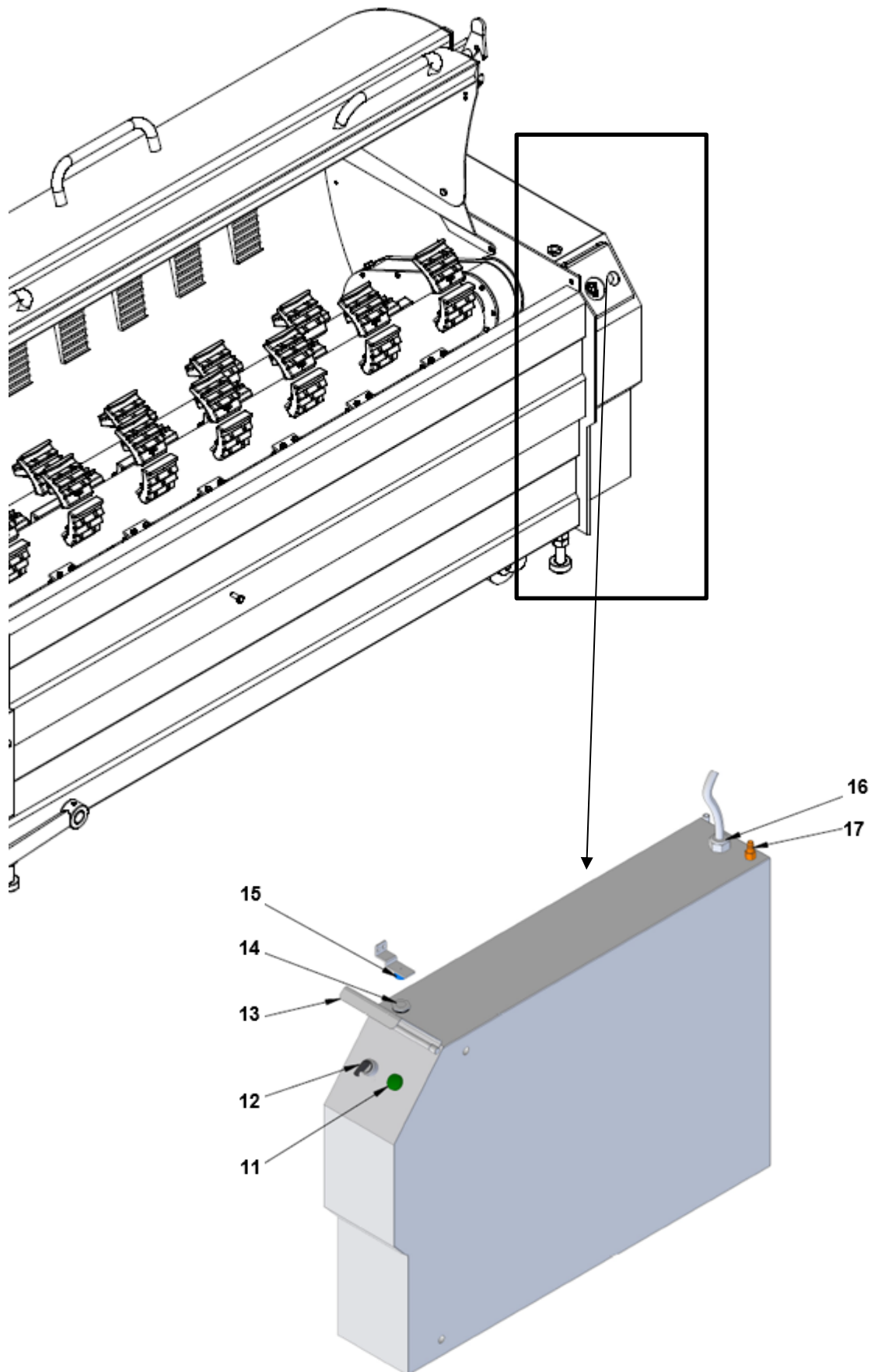
## Elektronische Anbauteile / Electronic attachment parts

Pos.	Anzahl Quantity		Art.Nr. Item no.	Bezeichnung	Description
1	1		5111	Drucktaster "grün"	Button "green"
2	1		5275	Thermostat digital	Thermostat digital
3	1		5255	Hauptschalter	Main switch
4	1		5111	Drucktaster „grün“	Button "green"
5	1		5126	Drucktaster „rot“	Button "red"
6	1		3SU1052- 2BF-0AA0	Knebelschalter 0-1 beleuchtet	Knob-switch 0-1 illuminable
	1		5161	Halter für Knebelschalter	Holder knob-switch
	1		5121	Element für Knebelschalter	Element knob- switch
	1		3SU1401- 1BB40- 3AA0	LED-Modul	LED-modul
7	1		1115	Wahlschalter 1-2-3	Selector switch 1-2-3
8	1	T1	10002	Frequenzumrichter	Frequency converter
9	1	R1	10003	Bremswiderstand	Brake resistor
10	1	K1	3RH2140- 1AP00	Hilfsschütz	Contactory relay
11	1	K2	3RQ3018- 1AF00	Ausgangskoppelglied	Output coupler
12	1	KH1	5020	Schütz	Power contactor
13	1	KH2	5020	Schütz	Power contactor
14	1	Z1	5040	Zeitrelais	Time relay
16	3	F1-F3	5065	NEOZED Schraubkappe 63A	NEOZED screw cap 63A
	1	F4	5075	NEOZED Schraubkappe 16A	NEOZED screw cap 16A
Optional					
15	1	Z2	7LF4 511-0	Digitale Wochenschaltuhr	Digital 7-day timer
	1	---	5172	Knebelschalter 0-1	Knob-switch 0-1
	1	---	5161	Halter für Knebelschalter	Holder knob-switch
	1	---	5121	Element für Knebelschalter	Element knob- switch

# Ersatzteile / Spare parts



**Elektronische Anbauteile / Electronic attachment parts**  
**Pneumatischer Auswurf / Pneumatic ejection**

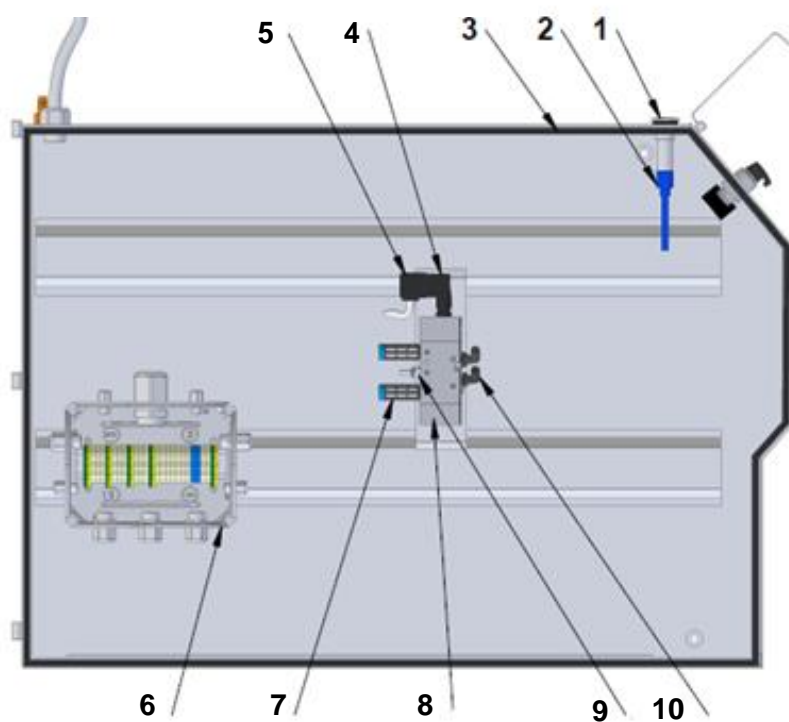
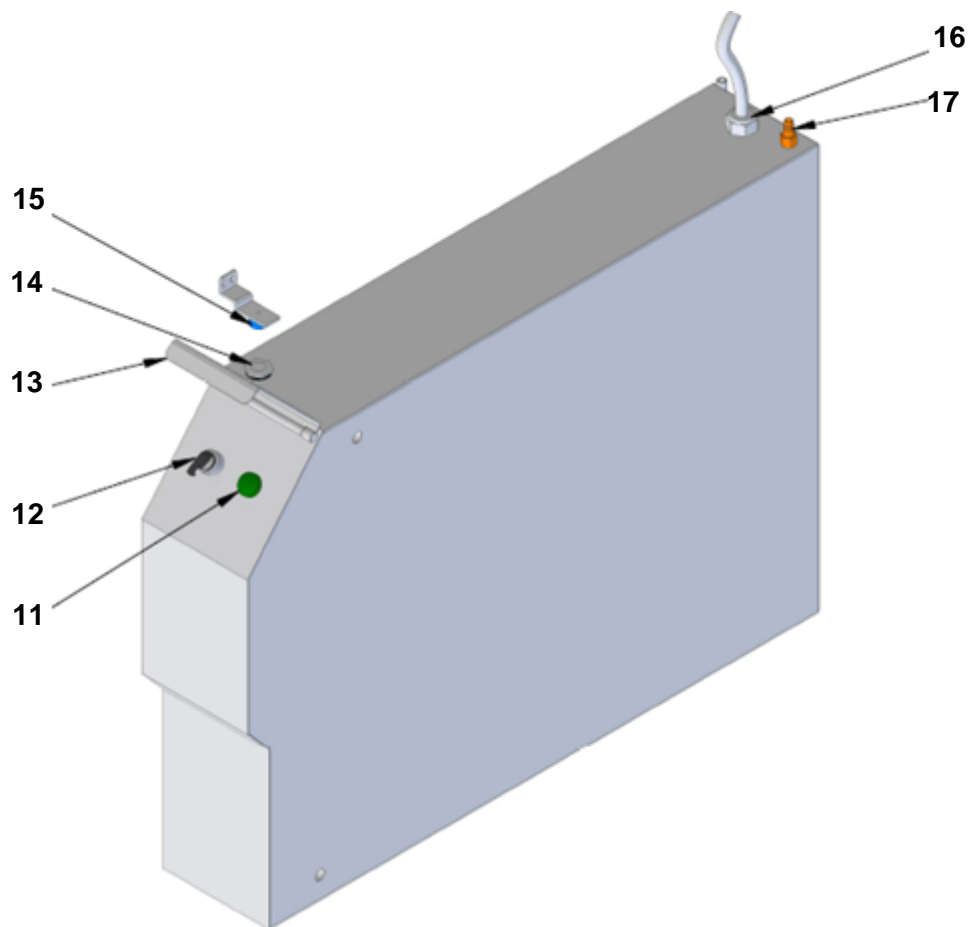


# Ersatzteile / Spare parts

## Schaltkasten / Control box

Optional Wandsteuerung und pneumatischem Auswurf

Optional electric control unit for the wall and pneumatic ejection



## Schaltkasten / Control box

Optionaler Wandsteuerung und pneumatischem Auswurf

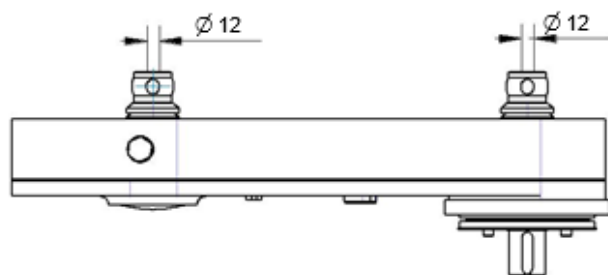
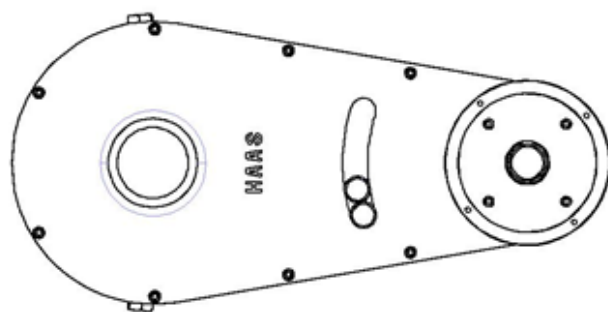
Optional wall control and pneumatic ejection

Pos.	Anzahl Quantity	Art.Nr. item no.	Bezeichnung	Description
1	1	5220	Endschalterhülse	End switch hall for cap- and ejector switch
2	1	5205	Deckelschalter	Cap switch
3	1	6540	Schaltkastengummi	Rubber for control box
4	1	2061	Magnetspule VACF-B-B2-3W	Solenoid coil VACF-B-B2-3W
5	1	2063	Steckdose MSSD-F	Plug socket MSSD-F
6	1	---	Klemmenkasten	Terminal box
7	2	2006	Schalldämpfer U1/4"	Silencer U1/4"
8	1	2021	Magnetventil MFH-5-1/4"	Magnetic valve MFH-5-1/4"
9	2	2015	L-Steckverschraubung QSL-1/4-8	L-Push in fittings QSL-1/4-8
10	1	2008	Steckverschraubung QS- 1/4-8	Push in fittings QS-1/4-8
11	1	5111	Drucktaster grün	Push button green
12	1	5176	Knebelschalter Pneumatik verst. Ausführung	Knob switch for pneumatic ejector strong version without element
13	1	6470	Schutzdeckel	Protective cover
14	1	5220	Endschalterhülse für Deckelschalter	Limit switch for cover and ejector switch
15	1	5215	Magnet f. Deckelschalter mit blauer Kappe	Magnet for cap switch
16	1	8240	Stecknippel NW 7,2 Messing mit Innengewinde 1/4"	Brass plug nipple NW 7,2 with internal thread 1/4"
17	1	---	Kabelverschraubung M25x1,5	Cable screw connecton M25x1,5

# Ersatzteile / Spare parts

## Getriebe / gear-box

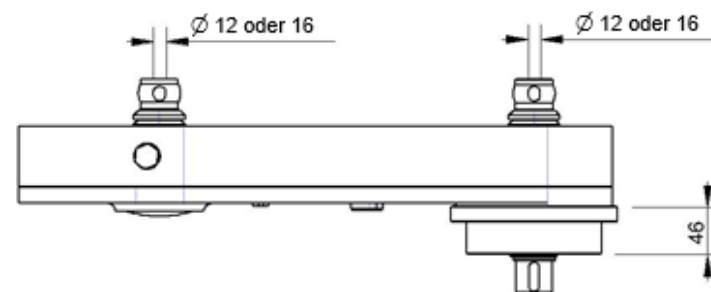
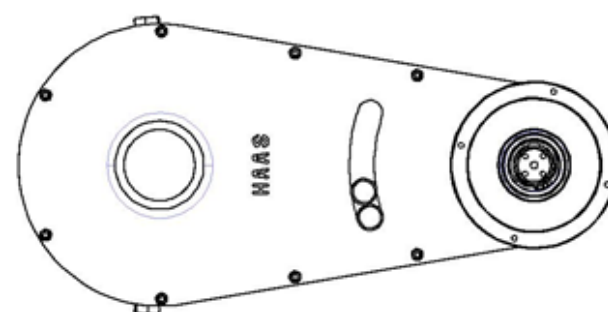
normale Ausführung  
standard version  
Art.Nr. / item no. 5515



verstärkte Ausführung  
reinforced version

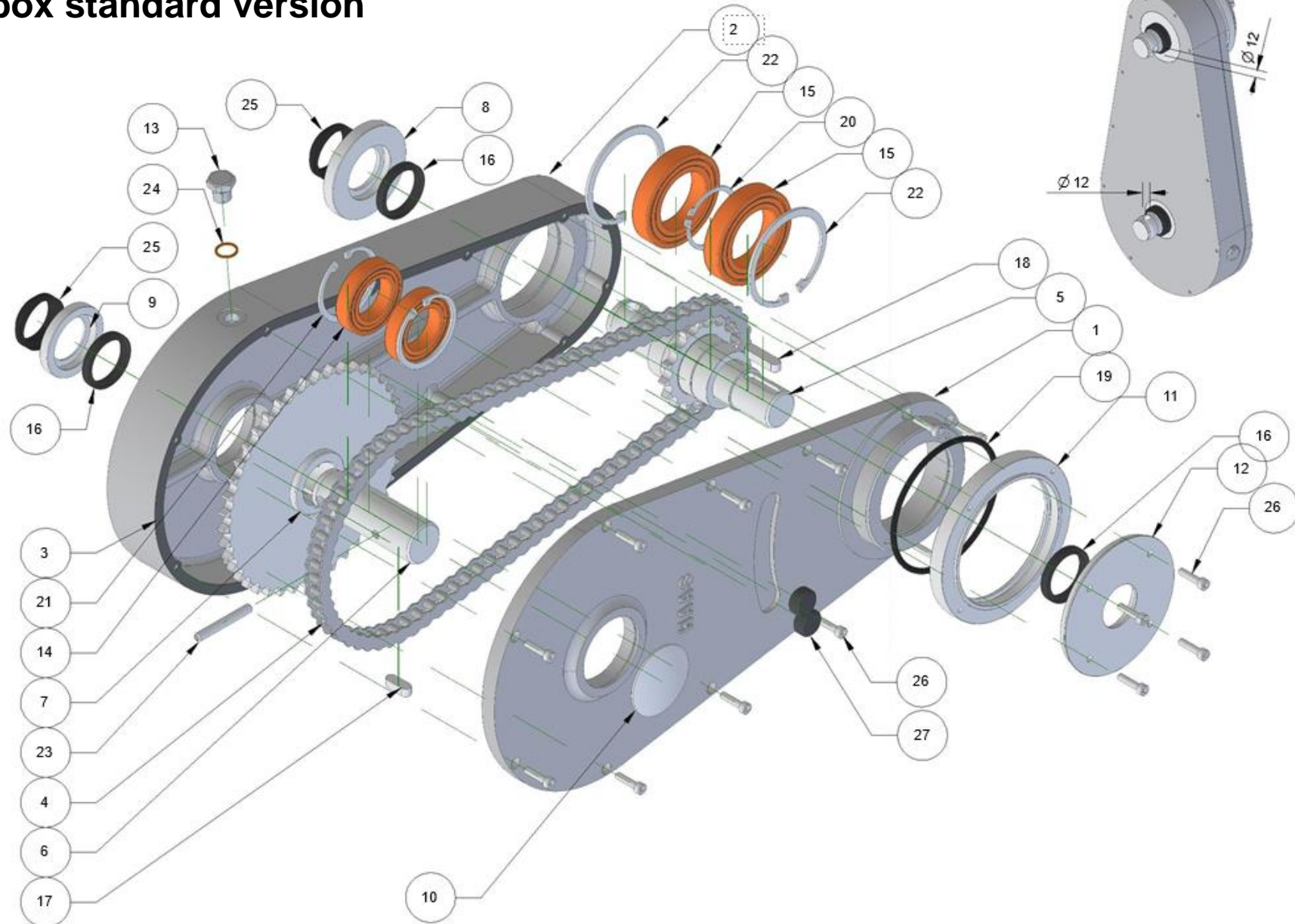
$\varnothing 12$  - Art.Nr. / item no. 5524

$\varnothing 16$  - Art.Nr. / item no. 5523



## Ersatzteile / Spare parts

Getriebe normale Ausführung  
Gear-box standard version



## Getriebe normale Ausführung / Gear box standard

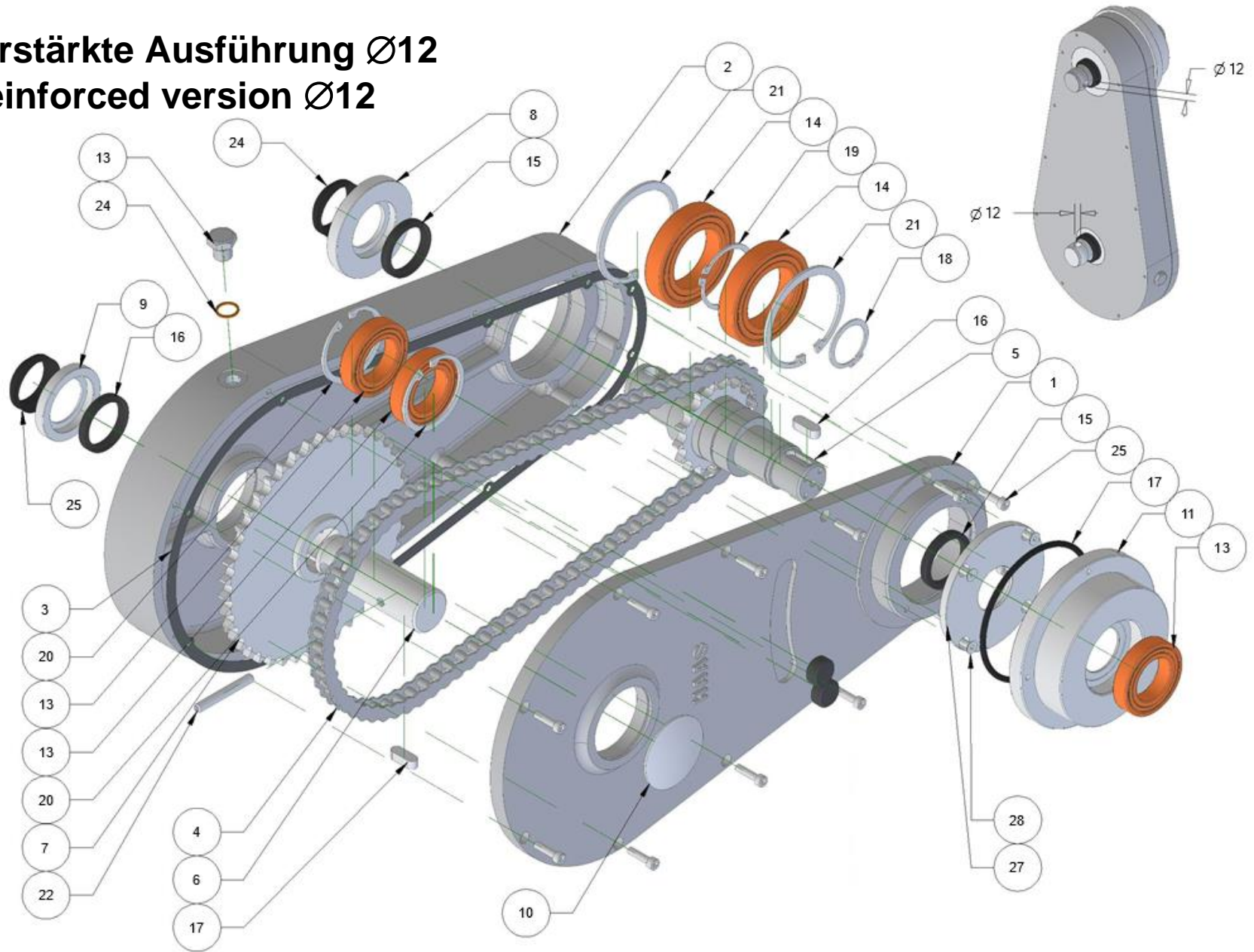
Pos.	Anzahl Quantity	Art.Nr. Item no.	Bezeichnung	Description
		5515	Getriebe kompl. normale Ausführung	Gear box compl. standard version
1	1	5550	Getriebedeckel	Gear cover
2	1	5550	Getriebegehäuse	Gear box
3	1	5635	Getriebedichtung	Gasket seal
4	1	5590	Getriebekette	Gear chain
5	1	5555	Antriebswelle	Drive shaft
6	1	5560	Getriebewelle	Gear shaft
7	1	5585	Kettenrad Z42	Chain wheel Z42
8	1	5600	Alu-Dichtdeckel 90	Gasket seal alu 90
9	1	5595	Alu-Dichtdeckel 68	Gasket seal alu 68
10	1	5605	Dichtdeckel V2A D68	Gasket seal V2A
11	1	5615	Zentrierring V2A	Centering ring V2A
12	1	5630	Getriebedichtflansch	Seal flange
13	2	5675	Ablassschraube	Drain bolt
14	2	5580	Rillenkugellager 40x68x15	Bearing 40x68x15
15	2	5575	Rillenkugellager 55x90x18	Bearing 55x90x18
16	3	5655	Wellendichtring mit Nirofeder	Shaft sealing with niro spring
17	1	5640	Passfeder A10x8x28	Feather key A10x8x28
18	1	5650	Passfeder 10x8x40	Feather key 10x8x40
19	1	5620	O-Ring 120x5	O-Ring 120x5
20	1	5660	Sicherungsring 55x2	Circlip 55x2
21	2	5670	Sicherungsring 68x2,5	Circlip 68x2,5
22	2	5665	Sicherungsring 90x3	Circlip 90x3
23	1	5645	Schwerspannstift 8x50	Split in 8x50
24	2	6180	Kupferdichtung 20/16,5/1,4	Copper sealing 20/16,5/1,4
25	2	6180	V-Ring V40-S	V-Ring V40-S
26	16	5682	Zylinderschraube DIN 912	Cylinder head bolt DIN 912
27	2	5210	Magnet	Magnet



## Ersatzteile / Spare parts

Getriebe verstärkte Ausführung Ø12

Gear-box reinforced version Ø12



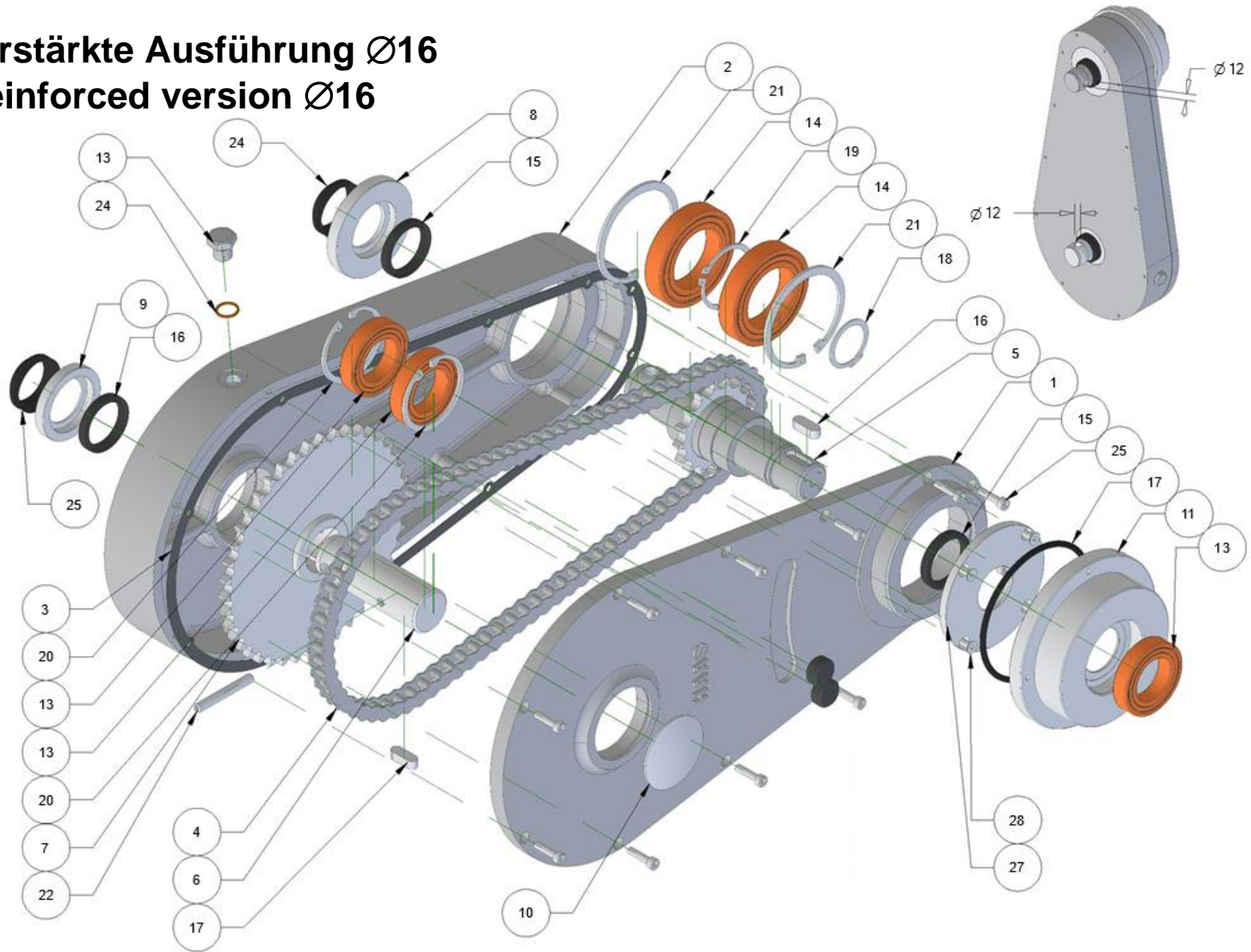
## Getriebe verstärkt Ø12 / Gear box reinforced Ø12

Pos.	Anzahl Quantity	Art.Nr. Item no.	Bezeichnung	Description
		5524	Getriebe kompl. verstärkte Ausführung Ø12	Gear box compl. reinforced version Ø12
1	1	5550	Getriebedeckel	Gear cover
2	1	5550	Getriebegehäuse	Gear box
3	1	5635	Getriebedichtung	Gasket seal
4	1	5590	Getriebekette	Gear chain
5	1	5558	Antriebswelle verst. Ausführung	Drive shaft reinforced version
6	1	5570	Getriebewelle Ø12	Gear shaft Ø12
7	1	5585	Kettenrad Z42	Chain wheel Z42
8	1	5600	Alu-Dichtdeckel 90	Gasket seal alu 90
9	1	5595	Alu-Dichtdeckel 68	Gasket seal alu 68
10	1	5605	Dichtdeckel V2A D68	Gasket seal V2A
11	1	5616	Zentrierring V2A verst. Ausführung	Centering ring V2A reinforced version
12	2	5675	Ablassschraube	Drain bolt
13	3	5580	Rillenkugellager 40x68x15	Bearing 40x68x15
14	2	5575	Rillenkugellager 55x90x18	Bearing 55x90x18
15	3	5655	Wellendichtring mit Nirofeder	Shaft sealing with niro spring
16	2	5640	Passfeder A10x8x28	Feather key A10x8x28
17	1	5620	O-Ring 120x5	O-Ring 120x5
18	1	5659	Sicherungsring 40x1,75	Circlip 40x1,75
19	1	5660	Sicherungsring 55x2	Circlip 50x2
20	2	5670	Sicherungsring 68x2,5	Circlip 68x2,5
21	2	5665	Sicherungsring 90x3	Circlip 90x3
22	1	5645	Schwerspannstift 8x50	Split in 8x50
23	2	5680	Kupferdichtung 20/16,5/1,4	Copper sealing 20/16,5/1,4
24	2	6180	V-Ring V40-S	V-Ring V40-S
25	12	5682	Zylinderschraube DIN 912	Cylinder head bolt DIN 912
26	2	5210	Magnet	Magnet
27	1	5631	Getriebedichtflansch	Seal flange
28	4	5618	Senkschraube M6x16	Countersunk screw M6x16

## Ersatzteile / Spare parts

Getriebe verstärkte Ausführung Ø16

Gear-box reinforced version Ø16

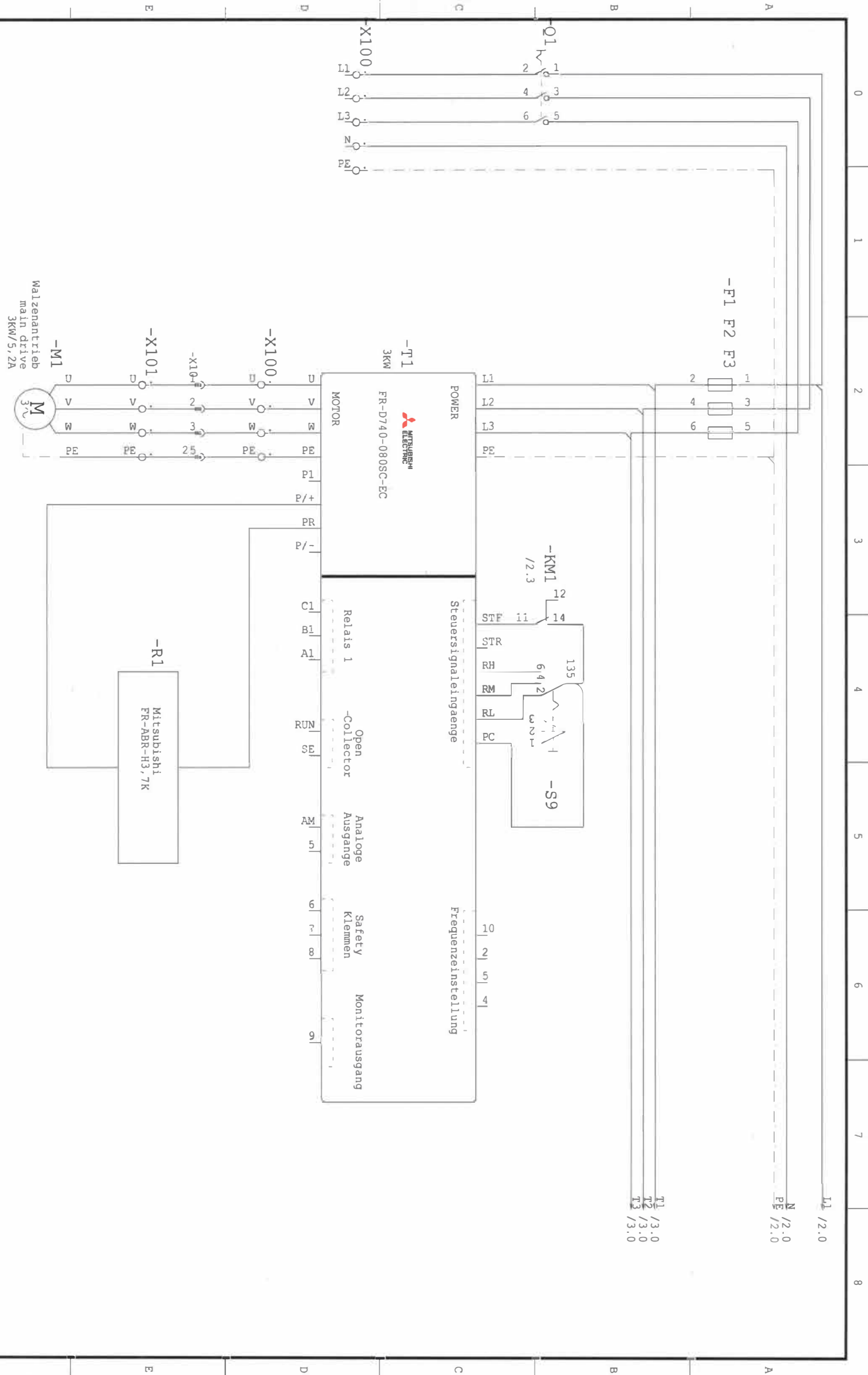


## Ersatzteile / Spare parts

### Getriebe verstärkt Ø16 / Gear box reinforced Ø16

Pos.	Anzahl Quantity	Art.Nr. Item no.	Bezeichnung	Description
		5523	Getriebe kompl. verstärkte Ausführung Ø16	Gear box compl. reinforced version Ø16
1	1	5550	Getriebedeckel	Gear cover
2	1	5550	Getriebegehäuse	Gear box
3	1	5635	Getriebedichtung	Gasket seal
4	1	5590	Getriebekette	Gear chain
5	1	5559	Antriebswelle verst. Ausführung	Drive shaft reinforced version
6	1	5571	Getriebewelle Ø16	Gear shaft Ø16
7	1	5585	Kettenrad Z42	Chain wheel Z42
8	1	5600	Alu-Dichtdeckel 90	Gasket seal alu 90
9	1	5595	Alu-Dichtdeckel 68	Gasket seal alu 68
10	1	5605	Dichtdeckel V2A D68	Gasket seal V2A
11	1	5616	Zentrierring V2A verst. Ausführung	Centering ring V2A reinforced version
12	2	5675	Ablassschraube	Drain bolt
13	3	5580	Rillenkugellager 40x68x15	Bearing 40x68x15
14	2	5575	Rillenkugellager 55x90x18	Bearing 55x90x18
15	3	5655	Wellendichtring mit Nirofeder	Shaft sealing with niro spring
16	2	5640	Passfeder A10x8x28	Feather key A10x8x28
17	1	5620	O-Ring 120x5	O-Ring 120x5
18	1	5659	Sicherungsring 40x1,75	Circlip 40x1,75
19	1	5660	Sicherungsring 55x2	Circlip 50x2
20	2	5670	Sicherungsring 68x2,5	Circlip 68x2,5
21	2	5665	Sicherungsring 90x3	Circlip 90x3
22	1	5645	Schwerspannstift 8x50	Split in 8x50
23	2	5680	Kupferdichtung 20/16,5/1,4	Copper sealing 20/16,5/1,4
24	2	6180	V-Ring V40-S	V-Ring V40-S
25	12	5682	Zylinderschraube DIN 912	Cylinder head bolt DIN 912
26	2	5210	Magnet	Magnet

<b>27</b>	<b>1</b>	<b>5631</b>	<b>Getriebedichtflansch</b>	<b>Seal flange</b>
<b>28</b>	<b>4</b>	<b>5618</b>	<b>Senkschraube M6x16</b>	<b>Countersunk screw M6x16</b>

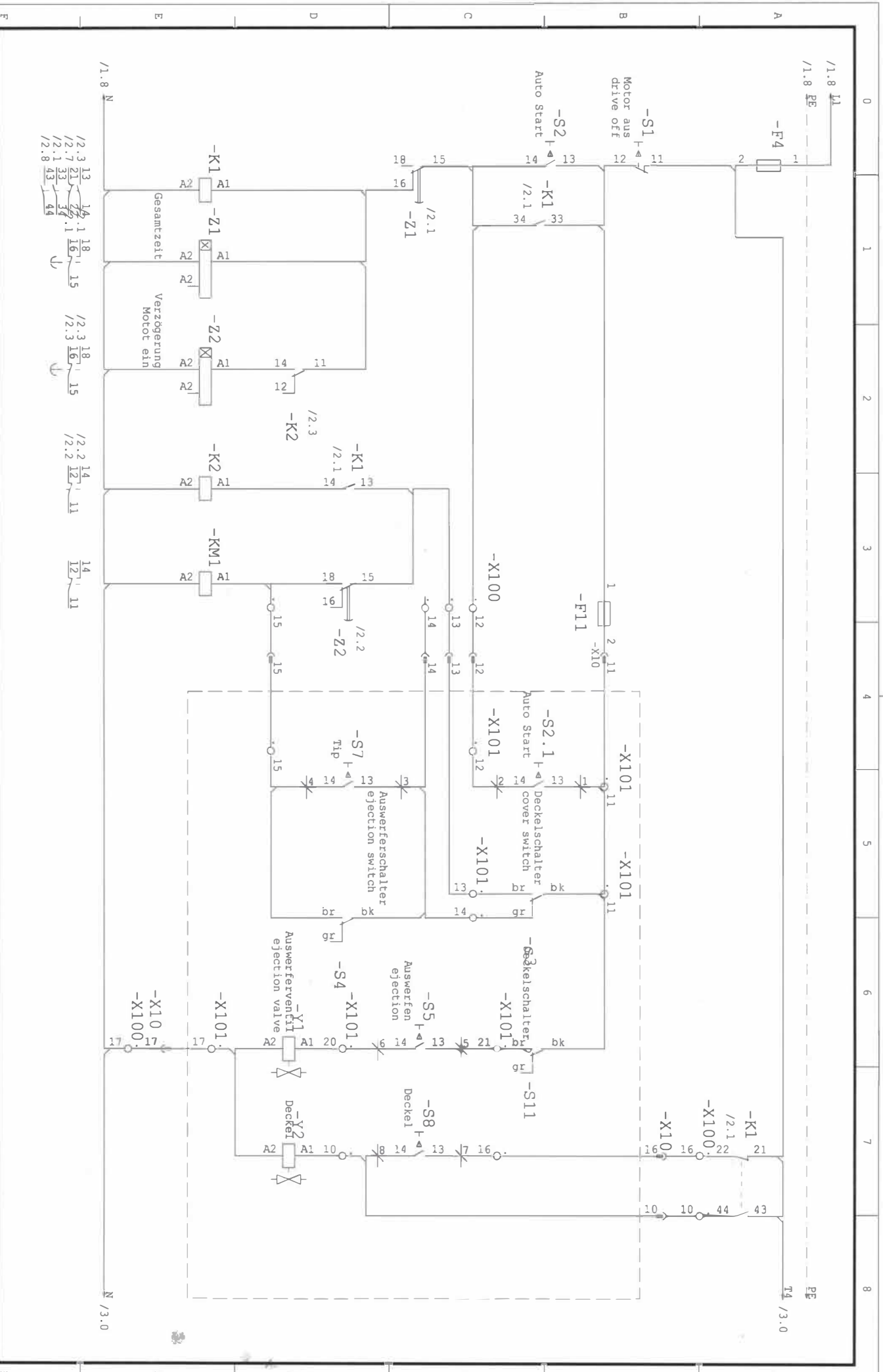


-M1  
 Waizenantrieb  
 main drive  
 3kW/5,2A

-R1  
 Mitsubishi  
 FR-ABR-H3,7K

Zustand		Datum		Deckelautomatik Wandsteuer		Einspeisung/Leistungs		Projekt-Nummer		Anlage	
Anderung		14.02.23		Date		Ers. f.		20.100		Ort	
Name		Norm		DIN 81346		Mitsubishi		FR-ABR-H3,7K		Blatt	
0		1		2		3		4		1	
1		2		3		4		5		3	
2		3		4		5		6		1	
3		4		5		6		7		1	
4		5		6		7		8		1	
5		6		7		8		9		1	
6		7		8		9		10		1	
7		8		9		10		11		1	
8		9		10		11		12		1	





Datum		14.02.23		Deckelautomatik Wandsteuer							
Bearb.		Koch									
Gepr.											
Zustand		Anderung		Datum		Name		Norm		DIN 81346	
0		1		2		3		4		5	
Ers. f.				14		14					



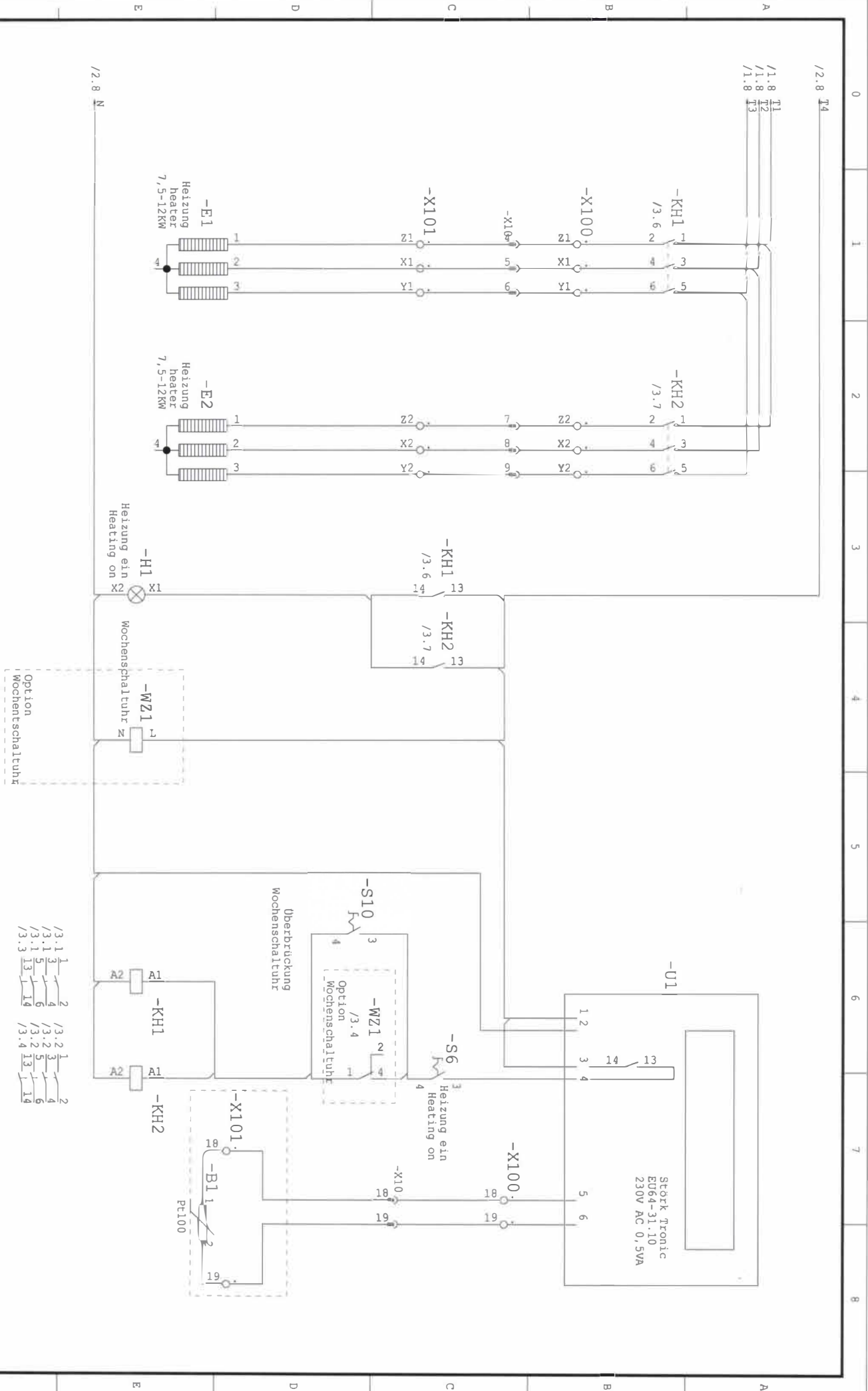
-Steuerung

Projekt-Nummer  
20.100

Anlage  
Ort = +

Zeichnungsnummer  
1

Blatt  
von 2  
3



- /3.1 1 2
- /3.1 3 4
- /3.1 5 6
- /3.1 13 14
- /3.2 1 2
- /3.2 3 4
- /3.2 5 6
- /3.3 13 14
- /3.4 13 14

Datum		14.02.23		Deckelautomatik Wandsteuer		Projekt-Nummer		20.100		Anlage		=	
Bearb.		Koch								Ort		+	
Gepr.										Zeichnungsnummer		1	
DIN 81346				Ers. f.						Blatt		3	
Zustand		Anderung		Datum		Name		Norm		von		3	





## Stecker+Buchsenplan :

-X10

Stecker Stecker->oben				Buchse Buchse->unten				
Blatt/Pfad	Ziel Anschluß	Bezeichnung	Kabel Bezeichnung	Stecker Anschluß	Funktionstext Buchse	Kabel Ader	Ziel Anschluß	Blatt/Pfad
/1.2	0	-X101		1	Kabel 1/19		1	/1.2
/1.2	V	-X101		2	Kabel 2/19		2	/1.2
/1.2	W	-X101		3	Kabel 3/19		3	/1.2
/3.1	Z1	-X101		4	Kabel 4/19		4	/3.1
/3.1	X1	-X101		5	Kabel 5/19		5	/3.1
/3.1	Y1	-X101		6	Kabel 6/19		6	/3.1
/3.2	Z2	-X101		7	Kabel 7/19		7	/3.2
/3.2	X2	-X101		8	Kabel 8/19		8	/3.2
/3.3	Y2	-X101		9	Kabel 9/19		9	/3.3
				10	Kabel 10/19		10	
/2.3	11	-X101		11	Kabel 11/19		11	/2.2
/2.3	12	-X101		12	Kabel 12/19		12	/2.2
/2.3	13	-X101		13	Kabel 13/19		13	/2.2
/2.3	14	-X101		14	Kabel 14/19		14	/2.2
/2.3	15	-X101		15	Kabel 15/19		15	/2.2
/2.3	16	-X101		16	Kabel 16/19		16	/2.2
/2.4	17	-X101		17	Kabel 17/19		17	/2.4
/3.7	18	-X101		18	Kabel 18/19		18	/3.7
/3.7	19	-X101		19	Kabel 19/19		19	/3.7
				20			20	
				21			21	
				22			22	
				23			23	
/1.2	PE	-X101		25	Schirm/PE		25	/1.2

# Prüfprotokoll nach DIN VDE 0113 / EN 60204-1

## Auftraggeber

## Auftragnehmer

Mitchell Engineering Food Equipment  
23 Storie Street  
Clontarf QLD 4019  
Australia



## Angaben zum Prüfling

**Prüflingsbezeichnung:** 323022  
**Prüflingsnummer:** 323022  
**Fabriknummer:** 0323022  
**Typ:** 0113 Basistyp **Typenbezeichnung:** CAT 157SK20SS  
**Geräteart:** Brühmaschine  
Wandsteuerung  
**Baujahr:** 2023  
**Hersteller:** MEFE **Strom:** 28A  
**Spannung:** 400V  
**Abteilung:** Wandsteuerung **Leistung:** H.: 15KW M.:  
2,2KW  
**Bemerkung:** Schaltplan 20.100  
Deckelautomatik mit FU

## Angaben zur Prüfung

**Prüfdatum:** 08.03.2023 **Nächste Prüfung:** 08.03.2025  
**Prüfgrund:** Erstprüfung  
**Prüfer:** Timo Koch **Seriennummer:** 42510010  
**Prüfgerät:** 42510010

Bemerkungen	Prüfschritt	Grenzwert	Messwert	Bestanden
XXXX - 001	PE-Widerstand 10 A AC	Max. 0,3 Ohm	0.11 Ohm	ja
XXXX - 002	PE-Widerstand 10 A AC	Max. 0,3 Ohm	0.16 Ohm	ja
XXXX - 003	PE-Widerstand 10 A AC	Max. 0,3 Ohm	0.16 Ohm	ja
XXXX - 004	Schleifenimpedanz 20 A	Max. 0,65 Ohm	0.50 Ohm	ja
XXXX - 005	Restspannung 1 s	Max. 60 V	0 V	ja
XXXX - 006	Isolationsprüfung	Min. 1 MOhm	> 100 MOhm	ja

Die Prüfung wurde ordnungsgemäß durchgeführt.  
Die Prüfung wurde bestanden

Neuler, 08.03.2023

Ort, Datum

Parameterliste Mitsubishi FU FR740-080SC

Parameter	Werks- einstellung	Wert Einstellen	
P1	120	50	Hz
P2	0	10	Hz
P3	50	50	Hz
P4	50	50	Hz
P5	30	45	Hz
P6	10	40	Hz
P7	5	0,5	s
P8	5	2	s
P9	8	0	A
P72	1	6	

Maximale Ausgangsfrequenz  
 Minimale Ausgangsfrequenz  
 V/f-Kennlinie (Basisfrequenz)  
 Drehzahlvorwahl 3 (RH)  
 Drehzahlvorwahl 2 (RM)  
 Drehzahlvorwahl 1 (RL)  
 Beschleunigungszeit  
 Bremszeit  
 Motorstrom  
 PWM Funktion

P160 muss auf 0 gestellt werden um alle Parameter freizuschalten