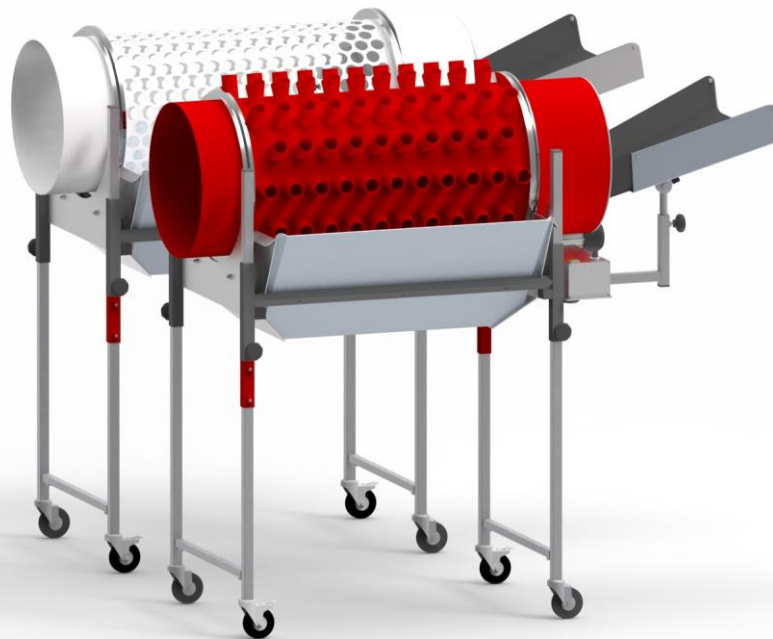


# Operating instructions and spare parts list

## Perforated/hedgehog separation drum

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## 1 General

### 1.1 Use and storage

Compliance with the following points is mandatory:

- These operating instructions are indispensable for the safe start-up, operation, and maintenance of the unit/machine in line with its intended purpose.
- These operating instructions apply solely to the product that is stated on the cover sheet.
- We reserve the right to change these operating instructions due to further technical developments.
- These operating instructions are part of the scope of supply.
- These operating instructions apply from the transport phase up to final disposal and must be observed.
- Maintain these operating instructions in a clearly legible state and keep them readily available to the operating personnel near the unit/machine. Hand over the document along with the machine if it is resold.
- These operating instructions are intended solely for briefed and authorized personnel with the necessary qualifications.
- The operator must ensure that all of the persons involved read and understand the operating instructions prior to commencing their work.
- The "Safety" chapter provides an overview of all of the important safety aspects in order to ensure the optimum protection of the operating personnel and the safe and trouble-free operation of the system.
- The manufacturer accepts no liability for damage resulting from non-compliance with these operating instructions.
- Substances that are harmful to the environment or hazardous to health must be correctly and separately disposed of.
- Reprints, translations or reproductions in any form, either entirely or in parts, are not permissible unless authorized in writing by the publisher.
- The copyright is held by the manufacturer.

### 1.2 Information about the manufacturer and contact address

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### 1.3 Symbols and abbreviations

The following is a list of the most important abbreviations used in these operating instructions.

Abbreviation	Designation
Fig.	Figure
BA	Operating instructions
EC	European Community
EU	European Union
EEA	European Economic Area
IP	Ingress protection
Pos.	Position number
ProdSV	Ordinance to the Product Safety Law (Machine Directive)
pcs.	Pieces
Tab.	Table
VDE	Verband der Elektrotechnik Elektronik Informationstechnik e.V. (Association of Electrical Engineering, Electronics and Information Technology)

Tab. 1: Abbreviations

The following is a list of the most important units used in these operating instructions.

Unit	Designation	Physical quantity
°C	Degree Celsius	Temperature
rpm	Revolutions per minute	Speed
A	Ampere	Magnitude of the electric current
kW	Kilowatt	Power
mm	Millimeter	Length
Pa	Pascal	Pressure
V	Volt	Electrical voltage

Tab. 2: Units

The following elements form parts of these operating instructions:

Numbered lists in handling instructions:

1. Step 1
2. Step 2
3. ...

Numbering in figures and legends:

- 1 Component 1
- 2 Component 2
- 3 ...

Bullet point list for information without a particular sequence:

- Information
  - Sub-item
  - Sub-item
  - ...
- Information
- ...

#### NOTE



- The signal word **Note** marks additional information concerning the machine or its accessories.
- See the chapter **Depiction of Warning Instructions** for further signal words and symbols.



#### Internal reference:

This is used to mark references within the document leading to additional information.



#### External reference:

This is used to mark references to external documents in which additional information can be found.



#### Disposal of used electrical and electronic devices

The symbol on the product or packaging indicates that this product should not be treated as normal household waste. Instead, it must be handed over to a reception point for the recycling of electrical and electronic devices. Further information can be obtained from your local council, local waste disposal operators, or specialized traders.

## 1.4 Scope of application

- The product complies with the directives of the European Union.
- Please observe:
  - the enclosed CE declaration of conformity,
  - the information about the intended use and
  - the information about any improper use which is not in line with the intended purpose.



## **1.5 Further applicable documents**

These further applicable documents are relevant for the utilization of this product and these operating instructions:

- CE declaration of conformity
- General terms and conditions, including warranty information
- Drawings
- Sound measurement report
- Information about accessories
- Documentation provided by third-party manufacturers
- Electrical documentation
- Safety data sheets
- Project drawings

## **1.6 Warranty**

Warranty claims must be submitted to the manufacturer immediately after a defect or fault has been detected.

- The warranty becomes null and void in all cases in which liability claims cannot be enforced.
- The information, data and notes included in these operating instructions were up to date at the time of printing.
- No claims for the modification of systems and components that have already been supplied may be made on the basis of the information, illustrations and descriptions in these operating instructions.
- The information in these operating instructions describes the characteristics of the product without guaranteeing them.
- No liability will be accepted for damage and malfunctions resulting from:
  - Failure to observe the operating instructions
  - Unauthorized modifications to the system
  - Operating errors
  - Failure to perform the specified maintenance tasks

## 2 Safety

### 2.1 General safety information

The "Safety" chapter provides an overview of all of the important safety aspects for the optimum protection of the personnel and for the safe and trouble-free utilization of the machine from the transport phase and system operation up to its disposal.

Non-compliance with the instructions and safety notes in these instructions for use may lead to substantial hazards to persons and damage to the machine.

The machine has been designed and manufactured in line with the state of the art and the recognized safety regulations and standards. The machine is safe to operate.

The machine may present residual risks if

- the machine is not used in line with its intended use.
- the machine is operated improperly by untrained or uninstructed personnel.
- the machine is repaired or maintained improperly.
- the safety instructions and warnings that are stated in this instruction manual are not adhered to.
- the machine is modified or converted improperly.
- the prescribed maintenance tasks are not performed in due time.

### 2.2 Compliance with the operating instructions

#### NOTE



Any person who is ordered to work on or with the machine must have read and understood these operating instructions, in particular, the "Safety" chapter.

- Knowledge of, and compliance with, the content of these instructions is absolutely necessary for the protection of persons against hazards and for avoiding machine faults.
- This is why compliance with all of the safety instructions is mandatory in the interest of your own safety.
- The operating instructions are an integral component of the machine and must be available at the machine at all times. The personnel must read, understand and follow the operating instructions when performing any tasks.
- Please contact the manufacturer without delay if any questions are left open or if parts of these operating instructions are unclear ..
- Apart from the safety instructions in this manual, compliance with the following rules and regulations is also mandatory:
  - Intended use
  - The relevant accident prevention regulations
  - Occupational health regulations
  - Generally recognized safety rules
  - Country-specific provisions
  - The documentation concerning any attachments or attachments
  - The documentation provided by third-party manufacturers that is supplied with the machine
  - The information (safety data sheets) provided by the various manufacturers and suppliers of process materials (oils and greases), auxiliary materials, and chemical substances

These rules and regulations can additionally be complemented by specific operating procedures to cover any intra-plant provisions or special operating features.

As a complement to these operating instructions, intra-company briefing must be provided, taking into consideration the professional qualification of the persons attending this briefing.

The product-accompanying documentation provided by MTF Technik does not invalidate the safety regulations of the operator of the overall system, which instead take precedence.

### 2.3 Intended use

The machine is intended solely for the following uses:

- The separation drum is used to separate parts with different dimensions, for example injection moldings and their sprues.
- Parts weighing up to 300g can be separated. The total weight of all parts in the drum cage must not exceed 1,000g
- The material being separated is fed into the drum cage via an inlet chute
- In the separation process, the smaller parts fall out of the drum cage through the size-adjustable separating gap. The large parts reach the discharge end due to the inclination and the superimposed rotation of the drum cage.
- The falling parts are collected in/on suitable boxes, conveyor systems (e.g. conveyors) or further processing systems.
- Only drum cage and support combinations that have been approved by MTF Technik may be used. If you are uncertain, please contact MTF Technik.
- The separation drum is intended solely for **commercial use** and not for domestic use.

All of the products of MTF Technik as well as all of the other parts that are included in the scope of supply of MTF Technik are intended solely for the purpose that is described in this manual in combination with the technical specification. The technical specification is part of the contract. In particular, the technical data and the provisions concerning the permissible use (assembly, connection, ambient conditions and operating conditions) shall apply. They can be found on the type plate and in the further applicable documents (order documents).

The intended use also includes compliance with the operating instructions and the fulfillment of the inspection and maintenance conditions.

The product-specific documentation can only refer to the intended use of the machine on which the order is based. The operating instructions cannot cover any specific situations arising from special local conditions or special applications that the manufacturer was not aware of. In this case, the operator must ensure the safe operation of the machine or shut the machine down until appropriate measures for the safe operation have been coordinated or implemented in consultation with the manufacturer or other competent authorities.

## 2.4 Improper use

Any use other than the one described in the chapter "Intended use" and in these operating instructions, and any use going beyond these stipulations, shall be considered as improper use.

The machine is **NOT** intended for the following uses:

- Modifying the machine in any way is strictly prohibited.
- Using the machine if the safety devices and guards have been bypassed or disabled is strictly prohibited.
- Using the machine for the transport of persons is strictly prohibited.
- Transporting loads or materials other than the ones specified in this instruction manual is strictly prohibited.
- Using the machine in potentially explosive atmospheres is strictly prohibited.
- Using the machine in areas which may be subject to the ingress of water of any type (rain, splash water, flooding, etc.) is strictly prohibited.

The following fundamental rules apply at all times:

Any use other than the intended use is an improper use.

The manufacturer cannot be held liable for any resulting damage. The risk for such use shall be borne solely by the user/operator.

Moreover, the use of the device in compliance with applicable international and national safety instructions, and in compliance with the safety instructions in the operating instructions is classed as intended use.

## 2.5 Foreseeable misuse

The following points describe a foreseeable misuse of the system:

- Set-up on unsuitable surfaces
- Attachment of transport equipment to the housing
- Non-compliance with the operating data
- Non-compliance with the maintenance intervals
- Switching on during rundown of the machine
- Operation without (or with damaged) components that ensure the safety of persons and the machine

## 2.6 Warnings in the instruction manual

Warning notes are marked by a signal word panel in this instruction manual. The warning notes are preceded by signal words indicating the severity of the hazard. Compliance with the warning notes is imperative in order to avoid accidents, injuries and damage to property.

The following keywords and symbols are used in this instruction manual:



This is the general hazard symbol. It warns of life-threatening dangers.

Measures that are marked with this symbol indicate a danger to persons. Compliance with these warning notes is mandatory in order to avoid injuries or death.

### **DANGER**

**Death or serious injuries *will result*** if the corresponding safety precautions are not taken.

### **WARNING**

**Death or serious injuries *may result*** if the corresponding safety precautions are not taken.

### **CAUTION**

This keyword indicates a potentially hazardous situation that may result in **minor injuries** if it is not avoided.

### **ATTENTION**

This keyword indicates a potentially hazardous situation that may result in **damage to property** if it is not avoided.

## 2.7 Safety and warning signs on the machine

Any notes or symbols that are affixed to the machine, e.g. safety labels or signs, must be complied with. Do not remove them and ensure that they are legible at all times.

## 2.8 Operating requirements

As the manufacturer, MTF Technik has no information about any possible interdependence with other systems and devices. This has to be reviewed separately by the operator.

Furthermore, the following conditions must be fulfilled for the normal operation of the machine if they are not part of our area of responsibility:

- Assembly completed as specified.
- Successful test run, including all of the necessary adjustments.
- Briefing of the operating personnel concerning the operation of the machine and the relevant safety regulations.
- If hazards are caused by hot or cold machine parts, these machine parts must be provided with guards to prevent contact.
- Exclusion of hazards caused by electrical energy (see the relevant VDE regulations or the regulations of the utility companies for details).
- Easy access to the machine must be guaranteed.
- Appointment of a person who shall be responsible for the proper operation of the machine.

### 2.9 Safety devices and guards

There is an increased risk of injury if the safety devices and guards are damaged, modified, removed or disabled. Do not use the machine unless it is fully equipped with all of the protective devices and safety devices and guards.

- Ensure that the safety devices and guards are absolutely fault-free and in perfect working condition.
- The protective devices, safety devices and guards must not be removed, disabled or modified. This also applies to test runs.

#### NOTE



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- Qualified personnel, must check for the trouble-free functioning of the safety equipment, especially after maintenance, repair or overhaul.
  - If the machine must be run temporarily without a safety device during maintenance, repair or overhaul, it must be absolutely ensured that no persons are present in the cordoned-off hazard area.
- 

The responsible person (shift supervisor, foreman, etc.) must be informed immediately of any faults concerning the safety devices and guards.

The machine is equipped with the following safety devices and guards:

- Mechanical protection and covers
- Emergency-STOP push-button (can be implemented using the mains switch).



## **2.10 Duties of the operator**

### **2.10.1 General requirements**

The machine must be operated in such a way that it reliably fulfills all of the requirements concerning its intended use and the expected load. The machine must be inspected by a qualified and competent person prior to its initial start-up and also after any type of maintenance, repair, overhaul or structural modification.

### **2.10.2 Operating instructions**

The operating instructions are an integral part of the system. The operator must ensure that the operating instructions are read by every person working on or with the machine. The operating instructions must be accessible at the location of use of the machine at all times.

MTF Technik shall not accept any liability for damage resulting from non-compliance with the product-accompanying documentation.

The operator is required to complement the operating instructions with specific operating procedures in line with the applicable local regulations. Next to the regulations specified hereinafter, this also includes information about the supervisory responsibilities and reporting obligations. The aim is to take into consideration any operational peculiarities concerning the organization of work, the workflow and the appointed personnel.

### **2.10.3 Local statutory regulations**

The operator is responsible for compliance with the binding laws, provisions and decrees and with the existing national regulations concerning the prevention of accidents and with any internal work, operating or safety instructions that are valid at the location of use of the machine.

The following points are part of the applicable local regulations and laws:

- Safety of personnel (accident prevention regulations)
- Safety of work equipment (protective equipment and maintenance)
- Product and material disposal (Waste Management Act)
- Cleaning (cleaning agents and disposal)
- Environmental protection requirements

The operator must ensure that the following tests are performed:

- Test of the machine in terms of its operational safety
- Functional test of the safety devices and guards
- All of the tests that are specified in the maintenance plan

#### 2.10.4 Personnel requirements

The operator must ensure that the following conditions are fulfilled:

- Only trained personnel who are familiar with the fundamental occupational health and safety regulations and who have been instructed in the handling of the machine must be deployed.
- Compliance with the legal minimum age limit.
- Only personnel who have been charged by the operator to do so, are authorized to operate, maintain, repair, and overhaul the machine.
- The area of responsibility, scope of competence and supervision of the personnel must be clearly defined and specified by the operator in order to avoid any ambiguities concerning these points.
- No access to the area of the system for unauthorized persons.
- Compliance with the supervisory responsibilities and reporting obligations as well as with any operational peculiarities.
- Explanation of instructions governing the correct procedures in the event of an emergency. Among other things, knowledge of first-aid measures and the local emergency facilities must be ensured.
- Explanations concerning the handling of hazardous substances.

##### NOTE



The responsibility for the accident-free operation of the machine lies with the operator or with the personnel authorized by the operator. If the personnel lack the necessary knowledge, corresponding training and instruction must be provided.

#### 2.10.5 Conversions and unauthorized modifications

Any additions or conversions to/of the machine by the operator must be checked for any significant changes. If the change in question is significant, the issued CE declaration of conformity is no longer valid and the operator legally becomes the machine manufacturer. In this respect, please see the machinery directive 2006/42/EC (EEA, Switzerland and Turkey) as well as the machine directive (9th ProdSV, Germany) and, as necessary, national laws and guidelines.

In addition, welding work on load bearing components is not permitted.

#### 2.10.6 Testing

The operator must not start the machine unless a qualified and competent person has performed a test of the machine. This applies to the first start-up of the machine and also to the start of the machine after maintenance, repairs, overhauls or structural modifications.

Based on self-imposed or locally specified regulations, the operator must have the system checked in terms of its operational safety at regular, specified intervals by a qualified and competent person. The results must be recorded in a test log.

### **2.10.7 Cleaning, maintenance, repair and overhaul**

The operator must ensure that the machine and safety devices and guards are kept in a functional state. The control devices as well as the safety devices and guards must be checked in terms of their effectiveness.

Only specialized and trained personnel are authorized to perform maintenance, repairs and overhauls.

The maintenance, repair and overhaul requirements are described in the instructions for use.

### **2.10.8 Briefing**

The operator must protect personnel against any accidents and health hazards and instruct the personnel accordingly before the first performance of a task.

#### **NOTE**

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The briefing must be repeated at specified intervals (at least once yearly).

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- The personnel must read the operating instructions.
- The personnel must attend the briefing.
- The personnel must confirm awareness of the content through their signature.

## 2.11 Qualification of the personnel

Any work on the machine must be performed by qualified and instructed personnel and strictly in line with the existing rules and statutory regulations. The following points must be fulfilled:

- The personnel must have special knowledge and experience in the respective field of specialization. This applies, in particular, to overhauls and repairs of the electrical, mechanical, hydraulic and pneumatic systems of the machine.
- The personnel must have knowledge of the relevant standards, provisions, accident prevention regulations and operating conditions.
- The personnel must be appointed to perform the required tasks by the person responsible for safety.
- The personnel must be able to identify and avoid any potential hazards.

Depending on the location of use, the necessary qualification of the personnel may be subject to varying statutory provisions. The operator must ensure compliance with the relevant laws. Unless regulated by law, the following list is used to define the permissible personnel and their minimum qualification.

Persons	Task	Qualification	Phase (life cycle)
Qualified personnel for transporting loads	Lifting/lowering and transport of the system	Proven experience in the handling of suspended loads and in the securing of loads <sup>1)</sup>	Transport, assembly, disassembly and removal
Qualified personnel (mechanics)	Mechanical work during: installation, start-up, elimination of faults and malfunctions, maintenance and shutdown	Training as an industrial mechanic or an equivalent professional qualification (in-house training and/or external training) <sup>1)</sup>	Installation, start-up, elimination of faults and malfunctions, maintenance, shutdown, disassembly and removal
Qualified personnel (trained electricians)	Electrical work	Specialized electrical training or an equivalent professional qualification (in-house training and/or external training) <sup>1)</sup>	Installation, start-up, elimination of faults and malfunctions, maintenance, shutdown, disassembly and removal
Qualified personnel (machine operators and fitters)	Operation and set-up of the system	Person who has been trained and instructed by the operator based on the operating instructions	Start-up, operation, elimination of faults and malfunctions
Qualified personnel (disposal specialists)	Proper disposal of the system	Knowledge about the disposal regulations applicable on site	Shutdown, disassembly and removal, disposal
Qualified personnel (safety specialists)	Implementation of the applicable safety regulations	Knowledge about the safety regulations applicable on site	All phases
Visitors	Site inspection	Person under the supervision of a safety specialist	–

Tab. 3: Qualification of the personnel

<sup>1)</sup> Minimum of 3 years of work experience

## 2.12 Safety instructions for the personnel

Avoid any working practice that:

- puts the health and safety of the user or third parties at risk.
- is detrimental to the machine or other material assets.
- impairs the safety or functionality of the machine.
- does not comply with the safety instructions.

In addition:

- Do not perform any work on running machines.
- Do not perform any work on machine parts under electric voltage.
- Always wear personal protective equipment when working on the machine.

There is a risk of injury if the safety devices and guards are disabled. Never dismantle or disable any safety devices or guards.

- Check the safety devices and guards daily for correct operation.
- Report all the malfunctions and defects concerning the safety devices and guards to the operator without delay.
- Keep covers (e.g. panels, shields, housings) closed during operation.
- Observe the respective supplier's safety data sheets and disposal instructions as well as all of the local safety regulations when using chemicals.
- Wear protective clothing.
- Only perform tasks that you are familiar with, assigned to carry out and that belong to your working area.
- When handling process materials (e.g. oils, greases and other chemical substances), comply with the suppliers' specifications and safety information for the respective product.

There is a risk of damage to property if the machine is operated improperly.

- Comply with the description of any attachments or ancillary equipment (if included). See also the supplier documentation or the separate documentation provided by the third-party suppliers.

### 2.12.1 Operation of the system

- Operation is permissible only if all of the components are in a perfect technical state and proper operational condition and if they are used in line with the intended purpose.
- Avoid any operation that compromises the safety of the machine.
- The operator must ensure that unauthorized persons cannot work on the machine.
- Do not transport any persons with the machine.
- Prior to switching the machine on, the machine operator must ensure that no persons are put at risk by the start of the machine.
- During operation, the entire hazard area must be observed or closed off so that no one can enter this area without being noticed.
- Use the machine only if all of the guards and safety devices are present and fully functional.
- The machine operator must ensure a clean and clearly arranged workplace at and around the machine by issuing corresponding instructions and performing checks.
- The operating personnel must be briefed about the location and use of fire extinguishers. The fire detection and firefighting procedures must be observed.

### 2.12.2 Personal protective equipment

Failure to wear personal protective equipment may result in serious injuries or death.

- Wear the prescribed personal protective equipment, e.g. ear protection, eye protection, safety footwear, hard hats, protective clothing, safety gloves, and respiratory protective equipment, whenever working on the machine.



- Long hair must be tied back. Do not wear any loose-fitting clothes or jewelry. There is a risk of injury if these items get caught in or are pulled into any moving components of the machine.
- Ensure that no unauthorized persons are present in the hazard area.

### 2.13 Transport and assembly

There is an increased risk of injury for persons who perform tasks for which they are neither qualified nor trained. Only appropriately trained persons should be entrusted with the fastening of loads and with acting as banksmen for the crane operators. Compliance with the accident prevention regulations is particularly important.

- The shipping company and MTF Technik must be informed immediately in writing about any damage that is noticed after the delivery. The start-up of the machine must be suspended, if necessary.
- Use only suitable lifting devices, transport equipment, load handling attachments and lifting accessories and ensure that they are in a perfect technical state and have a sufficient load-bearing capacity.
- Lift the machine or parts thereof only via the attachment points that are intended for this purpose.
- Check all of the suspension points, e.g. lifting eyes, prior to using them. This applies particularly to the later transport of the machine after a long period of utilization. suspension points that no longer correspond to the delivery state of the machine must not be used.
- Do not add any additional attachment points to the machine by welding, flame cutting or drilling. There is a risk of cracking due to the notch effect of the weld seam or flame-cutting spot or bore.
- Never work or stand under suspended loads. There is a risk of fatal injuries from falling loads.
- If parts of the system or large assemblies need to be replaced, fasten and secure them thoroughly on the lifting devices.
- The banksman must be within the range of vision of the operator or have voice contact with the operator.
- If parts of the system need to be disassembled for transport, they must be reinstalled and fastened properly prior to restarting the system.

## 2.14 Safety checks

There is an increased risk of injury for persons who perform tasks for which they are neither qualified nor trained.

- Only persons who are familiar with the tasks, who have been informed about the associated hazards and who have the necessary qualifications are authorized to start the machine.
- All technical safety conditions must be fulfilled prior to the start-up.

Safety checks to be performed for the start-up:

- Continuity check of the protective conductor system
- Functional check (check of the safety devices and guards, e.g. protective hoods)
- Insulation test
- Voltage test
- Protection against residual voltages
- Correct operation of the electrical equipment, particularly relating to the applicable safety and protection measures.

## 2.15 Notes concerning specific hazards and residual risks

The instructions and notes given here are to be considered as fundamental safety instructions and notes for specific types of hazards. These fundamental safety instructions must be observed during any type of work on the machine.

This is to prevent health hazards and dangerous situations. Special safety instructions and warnings are stated in the respective chapters and must also be observed.

Residual risks are determined by way of a risk assessment. Persons working on and with the machine must be informed about these residual risks. Intra-company briefing must be provided, taking into consideration the professional qualification of the persons attending this briefing. The instructions must be followed in order to avoid accidents or damage due to the residual risks.

### 2.15.1 Hazards caused by untrained personnel

Inexperienced and unqualified personnel put themselves and other persons at risk.

- Only persons who are familiar with the tasks that they are appointed to and who have been informed about the associated hazards are authorized to perform the tasks.
- The areas of responsibility of the personnel for the different life cycle phases must be clearly defined.
- Use only personnel who are sufficiently trained and authorized. The necessary qualifications are described in the personnel requirements.
- Personnel in training may work on the machine only under the permanent supervision of an experienced and qualified person.



### 2.15.2 Hazards caused by electrical energy

There is danger to life in the event of contact with live components. Serious injuries or even death may result. In addition, active electrical components may perform uncontrolled movements.

- Work on the electrical systems and operating equipment must be performed by qualified electricians and in accordance with the electrical engineering regulations. Prior to working on the electrical system:
  - Disconnect the machine from the power supply so that it is completely voltage-free.
  - Lock it so that it cannot be switched on again.
  - Ensure that the motors/drives and moving parts of the system are at a complete stop.
  - Close the working area off with a red-and-white barrier chain and mark the area with a warning sign.
  - Check whether the equipment is completely voltage-free.
  - Ground and short-circuit the equipment.
  - Cover any adjacent live parts.
- Only use insulated tools.
- Check the electrical equipment for signs of damage at regular intervals. Loose connections and scorched cables are a safety hazard. Eliminate any defects immediately.
- Keep the control cabinets closed at all times. Permit access only to authorized personnel.
- When working on live parts, always bring in a second person who can actuate the Emergency-STOP push-button or the mains switch to shut off the voltage supply in the event of an emergency. Immediately switch the machine off if there are malfunctions or faults concerning the energy supply.

### 2.15.3 Hazards caused by compressed air

Pressurized pneumatic components can cause severe injuries or even death.

- Only personnel with special knowledge and experience of pneumatic systems are allowed to work with pneumatic machines.
- Depressurize system sections and compressed air lines that are to be opened prior to beginning repair work. Do not open any pressurized air lines and do not tighten any compression couplings of lines under pressure. There is a risk of injury due to parts that may fly out.
- Correctly route and install the compressed air lines. Do not interchange the connections. The fittings, length and quality of the hose lines must fulfill the requirement.
- There is a risk injury and first if leaks occur. Regularly check all lines, hoses and fittings for leaks and externally apparent damage. Rectify any damage immediately.
- After cleaning the air lines, check them for leaks, loose connections, rubbing points and damage. Immediately rectify any identified defects.

### 2.15.4 Hazards caused by hot spots

There is a risk of burns due to the hot surface temperatures of motors and machine components.

- Keep a safe distance to hot components.

When working on or near hot spots of the machine:

- Wear suitable protective clothing.
- Switch parts of the machine off, if necessary.
- Let the components cool down.

### 2.15.5 Hazards when handling chemical substances

Contact with oils, greases and other auxiliary substances may cause chemical reactions.

- When handling chemical substances, observe and comply with the applicable regulations and safety data sheets of the suppliers.
- If there is contact with the skin or eyes, immediately rinse out the affected area with plenty of water. Suitable equipment (e.g. an eye wash bottle) must be available in the vicinity of the workplace.

### 2.15.6 Hazards caused by moving components

Moving machine parts that are freely accessible are dangerous spots that may lead to serious injuries or even death. There is an entanglement and crushing hazard caused by getting caught in or pulled into any moving components.

If the dangerous spots cannot be physically separated from the working area, the following safety measures must be taken:

- Maintain a safe distance from any moving parts.
- Wear tight-fitting clothes.
- Do not wear any rings, necklaces or other jewelry.
- In the case of long hair, wear a hairnet.
- Wait until the machine has stopped completely prior to performing any maintenance, repair or overhaul tasks. If necessary, depressurize the components.
- Lock the machine or parts of the machine so that they cannot be reactivated in order to prevent unintended movements of the machine parts. Close the working area off and mark it with a warning sign.

### **2.15.7 Hazards caused by environmental conditions**

#### Insufficient lighting

Poor visibility due to insufficient lighting increases the risk of accidents.

- Ensure sufficient lighting prior to performing any tasks.

#### Insufficient access

Insufficient or unsafe access to the working area increases the risk of accidents, e.g. by falling.

- Access to hazard areas must be closed off by way of suitable measures.

#### Noise pollution

The noise level that could occur in the working area could increase the risk of accidents and harm the health of the personnel.

- When working with an increased noise level, wear effective ear protection.
- Only stay in the hazard area as long as this is absolutely necessary.

#### Contamination and soiling

The operation of the system leads to soiling, which presents a risk of slipping and injury to the personnel.

- Wear personal protective equipment and, in particular, safety shoes during all work.
- Eliminate any contamination and soiling immediately.

### **2.15.8 Hazards for the environment**

Process materials, such as greases and oils, contain toxic substances that may contaminate the soil and groundwater. Process materials (grease, oil and other chemical substances) must not be released into the environment.

- Oils and greases must be disposed of in an environmentally sound manner.

The local disposal regulations must be observed.

- The disposal must be performed by a specialist disposal company.
- Observe the information provided by the suppliers and the safety data sheet of the substances.
- In addition, ensure to also observe the information in the supplier documentation.

## 2.16 Spare parts and wear parts

In the event of maintenance, repairs and overhauls, the operator must ensure that appropriate spare parts in compliance with the technical specifications of the manufacturer are used. This is ensured if original spare parts are used.

Spare parts and wear parts that are not supplied by MTF Technik have not been tested or approved. The installation or use of these components may have a negative effect on the specified design characteristics of the machine and thus compromise the safety of the machine.

MTF Technik shall not accept any liability for damage resulting from the use of non-original parts and accessories.

- Only use the original parts and original accessories that have been supplied by MTF Technik.
- We recommend keeping the most important spare parts and wear parts in stock on site.

## 2.17 Procedures in the event of an emergency

In the event of danger to life, the machine or parts thereof can be stopped by actuating an Emergency-STOP push-button (can also be implemented using the mains switch).

### NOTE



In the event that a separate Emergency-STOP push-button and a mains switch are present:

- An Emergency-STOP push-button should be actuated only in situations in which the safety of persons or of the machine is at risk.
- An Emergency-STOP push-button must not be used for switching the machine off in normal situations.
- An Emergency-STOP push-button does not disconnect the machine from the power supply.

After an emergency stop, authorized personnel must be brought in immediately in order to determine and eliminate the cause of the emergency.

An emergency stop of the machine interrupts the automatic process sequence. The machine must not be switched on again until the cause of the emergency stop has been eliminated.

To restart the affected part of the system, proceed as follows:

- Eliminate the hazard or malfunction.
- Unlock the Emergency-STOP push-button that has been pressed.
- If necessary, acknowledge the fault message via the control unit.
- Start machine operation.

## 2.18 General safety information

Malfunctions of the machine may be caused by a single, simple fault that can be localized and eliminated.

- In the event of an imminent danger, immediately press the Emergency-STOP push-button (can also be implemented using the mains switch).
- Switch the machine off and lock it so that it cannot be switched on again. The machine must also be switched off in case of any unusual behavior of the machine. For example:
  - unusual noise, vibrations, smells,
  - faulty behavior and false indications,
  - high temperature.
- Disconnect the machine from the power supply so that it is completely voltage-free and authorize only trained and qualified personnel to eliminate the faults and malfunctions.
- If the malfunction cannot be eliminated, contact the service of MTF Technik.

### 3 Technical data

#### 3.1 Technical data

Feature	Value
General technical data	
Product name	See the technical data in the product order confirmation.
Order confirmation no./Pos.	
Separating lengths	
Drum cage, type	
Cage inlet, worm type	
Separating dimension (hole diameter)	
Power supply	
Electrical connection data	See the technical data in the product order confirmation.
Drive motor	
Electrical connection data	See the technical data in the product order confirmation.
Noise emission	
Emission noise pressure level at workstations	Dependent on the customer's material being separated, the device is to be measured as part of a hazard assessment, even if it itself has no notable emissions.
Operating conditions	Normal operation at rated power
Environmental conditions	
Operating range	-20 to +40°C
Humidity	< 80 %
Vibrations	Not applicable (2006/42/EC Machinery Directive)
Dimensions	
	See the technical data in the product order confirmation.

Tab. 4: Technical data

### 3.1.1 Type plate

The type plate is usually attached in the vicinity of the drive and contains information about the respective machine type and its technical details. Do NOT remove the type plate.

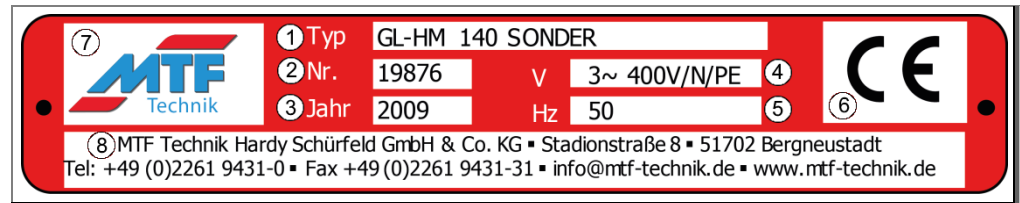


Fig. 1: Type plate (example)

No.	Description
1	Type designation
2	Serial no.
3	Year of manufacture
4	Supply voltage [V]
5	Connection frequency [Hz]
6	CE conformity marking
7	MTF Technik Logo
8	MTF Technik contact data

Tab. 5: Type plate descriptions

## 4 Layout and function

### 4.1 Brief description

- The perforated/hedgehog separation drum is used to separate parts with different dimensions, for example injection moldings and their sprues.
- Parts weighing up to 300g can be separated. Where the total weight of all parts in the separation drum can reach 1000g.
- The small parts fall through the separating openings made in the drum (green arrow), the large parts reach the outlet end (red arrow) due to the superimposed rotation (yellow arrow) of the drum cage.
- The parts to be separated are added via an inlet chute and fall out either underneath the drum cage or at the end of the outlet area.
- The falling parts are collected in/on suitable boxes, conveyor systems (e.g. conveyors) or further processing systems.

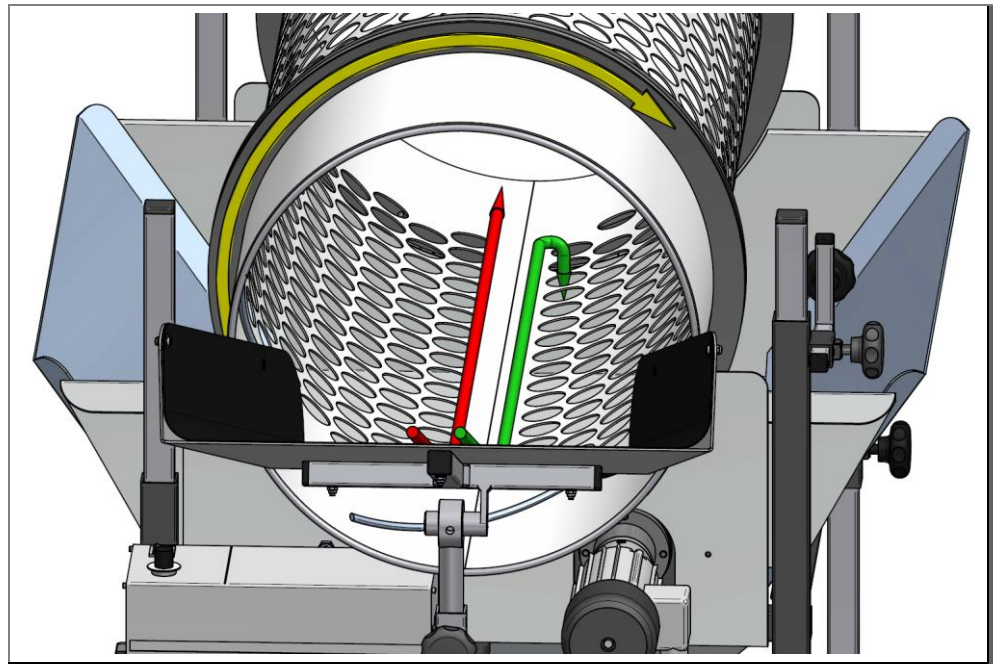


Fig. 2: Operating principle and direction of part through-flow



## 4.2 Overview

The separation drum essentially comprises the following components:

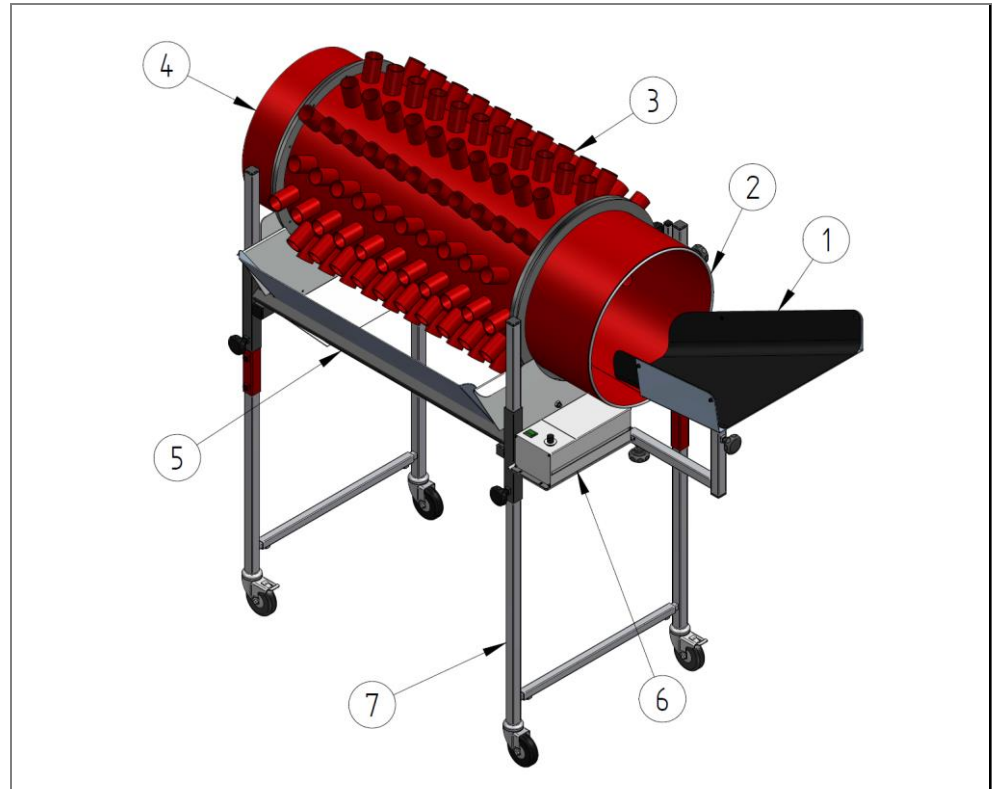


Fig. 3: Perforated and hedgehog separation drum

- |   |             |   |                  |
|---|-------------|---|------------------|
| 1 | Inlet chute | 5 | Discharge hopper |
| 2 | Inlet ring  | 6 | Switching device |
| 3 | Drum cage   | 7 | Support          |
| 4 | Outlet ring |   |                  |

### 4.3 Functional description

#### 4.3.1 Operating mode

The separation drum essentially comprises the support with the discharge hopper attached to it, the drum cage on top of it, and the inlet chute.

The material being separated is fed into the inlet chute. Typically this can take place from a production machine, a conveyor belt or manually. The material being separated then slides into the drum cage.



#### **Caution - incorrect conveying direction!**

Observe the direction of rotation of the motor!

The drive motor must only be operated in one direction of rotation (exception knocking-off drum), with pre-assembled separation drums this has already correctly preset by MTF. Viewed in the conveying direction, the direction of rotation is clockwise. Likewise, the webs in the inlet ring feed into the drum cage. You can find further information in this respect in the chapter → Start-up.

As the separation drum rotates, the material being separated is circulated and repeatedly falls onto the separating gap. Smaller components that pass through the separating gap fall and end up, for example, in a provided box or on a conveyor. Larger parts are gradually transported towards the outlet ring and ejected there due to the continuous rotation combined with the inclined position of the drum cage.

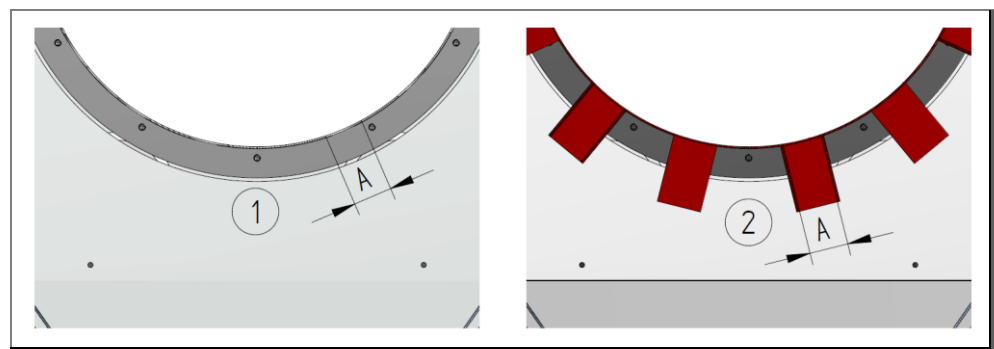


Fig. 4: Perforated and hedgehog separation drum

- |   |                            |   |                          |
|---|----------------------------|---|--------------------------|
| 1 | Perforated separation drum | 2 | Hedgehog separation drum |
| A | Separation opening         |   |                          |

The separation opening (A) is adapted to the material being separated and already designed accordingly in the factory. Therefore, it is not possible to change the drum cage subsequently if there is a change to the material being separated.

The drum cage is mounted on rollers, of which one is driven and transmits the drive torque to the drum cage as a friction wheel.

The separation drum is available in different diameter versions and also length versions. The drum is available in different materials such as plastic, rubber, stainless steel and galvanized steel.

You can find further information in this respect in the chapter → Start-up.

Optional covers are also available for various purposes. Thus, for example, a sound-absorbing hood or protective cover for protection against sharp-edged material being separated.

## 4.4 Modes of operation

### 4.4.1 “Constant”

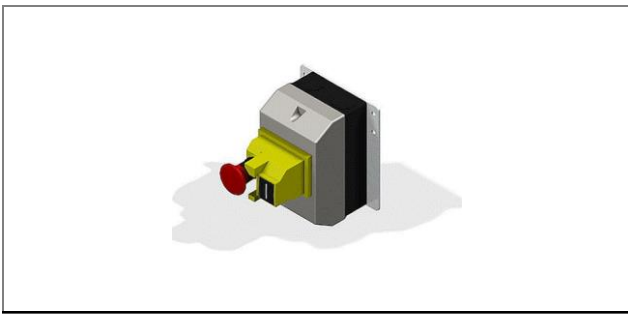


Fig. 5: Mains switch with detent function

#### “Constant” mode of operation

The speed of the drive is set to a fixed rpm in the “Constant” mode of operation. As a result, the rotation speed is constant. The actual speed can, depending on the motor load, differ from the theoretical speed. A mains switch with detent function is fitted as standard.

### 4.4.2 “Continuously variable”



Fig. 6: Speed adjuster with mains switch

#### “Continuously variable” mode of operation

In the “continuously variable” mode of operation, a speed controller is installed together with a mains switch. Consequently the rotating speed can be set within an adjustment range dependent on the motor used.

The actual speed can, depending on the motor load, differ from the theoretical speed.

### 4.4.3 “Continuously variable and reversible direction of rotation”



Fig. 7: Speed adjuster with mains switch

#### **“Continuously variable and reversible direction of rotation” mode of operation**

In the “Continuously variable and reversible direction of rotation” mode of operation, a speed controller is installed together with a mains switch. In this way, the rotational speed can be adjusted in an adjustment range. Similarly, a start-up ramp can be set via an externally connected control unit with a display, which enables gentle starting and braking of the separation drum.

The actual speed can, depending on the motor load, differ from the theoretical speed.

Another function is activation of the automatic change of the direction of rotation. In doing so, the time during which the separation drum rotates counterclockwise can be set independently of the duration of clockwise rotation.

This mode of operation is usually used for devices that are used as a knocking-off drum.

## 4.5 Connections

### 4.5.1 Electrical connection

All received electrical components are correctly connected and linked to each other upon first assembly by MTF Technik.

The power supply to the machine is created by connecting the mains plug to a suitable power socket.

#### **NOTE**

- Mains voltage: 230V AC ( $\pm 15\%$ ), 50-60Hz
- The power supply must be correctly earthed!

## 5 Packaging and transport

### 5.1 Safety

Only specialized personnel with proven qualification (see the “Safety” chapter) are authorized to perform work on the system. Compliance with the following is mandatory:

- this instruction manual
- all other instruction manuals pertaining to the system (further applicable documents, including the documents provided by the suppliers)
- the applicable local regulations and laws.

There is an increased risk of injury and damage to property if unqualified personnel and unsuitable or damaged lifting devices, lifting accessories and transport equipment are used. This is why the persons responsible for the transport must be trained at regular intervals.

Compliance with the safety instructions in the “Safety” chapter is mandatory for transport.

#### NOTE



The transport must be performed by the operator or by personnel who are appointed by the operator. When transporting the system to its destination, all of the applicable local regulations and laws must be observed.

#### DANGER

##### Suspended loads

Tipping or falling loads may cause serious or even fatal injuries.

- Never step or stand under suspended loads.
- Only use approved lifting devices and lifting accessories that are rated for the total weight of the suspended load.
- Keep the suspension points and the center of gravity of the load in mind.
- Only use lifting accessories and load-handling equipment that are in a perfect technical state.
- Secure the loads with suitable means.
- If transport locks are used, do not remove them until the assembly is complete.
- Close the loading areas off against unauthorized access.
- Ensure sufficient lighting of the loading areas.
- Move loads only under supervision.
- Set the load down when leaving the workplace.

#### WARNING

##### Crushing of limbs between components

Loads falling down during transport may crush limbs and cause serious injuries.

- Only use suitable means of transport.
- Secure the loads adequately during transport.
- Wear personal protective equipment.

### **⚠ CAUTION**

#### **Risk of tripping and falling**

There is a risk of tripping and falling at the supports due to projecting frame parts.

- The machine, and in particular the support, must not be set up and operated near to walkways.
  - If necessary, existing walkways must be changed accordingly.
- 

### **ATTENTION**

#### **Damage to property due to improper load handling**

Improper handling of the load during loading or unloading may cause damage to property.

- Use suitable lifting devices.
  - Loads that can be dismounted or mounted and that are too heavy to be carried manually must be kept in place using suitable devices (ropes or a block and tackle).
  - Chafing of ropes and webbing slings on sharp edges and corners must be prevented by way of special devices, e.g. intermediate layers of a softer material, corner protectors or edge protectors.
  - Components and their attachments must not be compressed by ropes or chains pulling at angles.
  - Avoid strong impacts when setting the load down.
  - Loads may be set down only on firm and level ground.
-

## **5.2 Check of the delivery**

1. Remove the transport packaging of the machine or of the individual components.
2. Check the machine for signs of transport damage.
  - Notify the shipping company and the manufacturer immediately in writing of any damage.
  - Provide protection against further damage.
3. Check the delivery for completeness against the bill of delivery.

## **5.3 Unloading, transport into a building, setting-down**

1. Only use suitable lifting devices with a load-bearing capacity that corresponds to twice the total weight of the load.
2. Check the integrity of the ropes and chains.
3. Position the crane centrally above the goods to be transported.
4. Attach ropes to the attachment points that are intended for this purpose.
5. Lift the load slowly and keep an eye on the environment.
6. If necessary, use additional control ropes in order to hold the load in position.
7. Set the conveying goods safely down on a sufficiently load bearing surface.

## **5.4 Unpacking**

### **ATTENTION**

#### **Risk of environmental damage**

The environment will be harmed if the disposal is not performed properly.

- Comply with the local regulations and statutory provisions for the disposal.

1. Remove the packaging material prior to the installation.
2. Dispose of the packaging material in a proper manner.

## 6 Installation and first start-up

### 6.1 Safety

Only specialized personnel with proven qualification are authorized to perform work on the system. Compliance with the following is mandatory:

- this instruction manual
- all other instruction manuals pertaining to the system (further applicable documents, including the documents provided by the suppliers)
- the applicable local regulations and laws.

#### NOTE



The manufacturer does not accept any liability for damage resulting from improper start-up.

#### **DANGER**

##### **Danger to life due to electric current**

There is danger to life in the event of contact with live components.

Active electrical components may perform uncontrolled movements. Serious injuries or even death may result.

- All work on the electrical components of this machine must only be carried out by qualified specialist personnel (electricians or persons trained in electrical engineering in accordance with DIN EN 60204-1).
- Switch the machine off during maintenance and repair work and secure to prevent unexpected switching back on.
- Close the working area off and mark it with a warning sign.

#### **WARNING**

##### **Fall hazard when working at height**

Work at height may cause slipping, falling, and serious injuries.

- Wear personal protective equipment.
- Ensure safe working conditions in time.
- Always use fall protection equipment when secure footing cannot be guaranteed.
  - Use, for example, work platforms, scaffolds, personnel elevators, or cherry pickers.
- Protect the installation area against falling objects.
- Never work alone.



**⚠ WARNING****Risk of crushing**

If the height and inclination adjusters are unsecured, crushing may occur.

- Two people are always required to adjust the height and inclination! Alternatively, high weights must be secured using a crane (or similar lifting devices) to prevent them from falling!
- If the changes in height and inclination are only minor, where possible adjust the inlet and outlet end ONE AFTER the OTHER.
- Only completely release the inlet and outlet ends, if the frame is being held at this point by at least one other person or a crane. The frame must be held by the holding person (if it is not being held by a crane or similar) in such a way that their limbs cannot be crushed underneath the clamp brackets!

**⚠ CAUTION****Risk of crushing, being pulled in and shearing**

The form rings on inlet and outlet ends can cause injuries in the inlet area of the hopper plates.

- Do not reach into the inlet area if the drum cage is rotating!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

**⚠ CAUTION****Risk of being pulled in**

Limbs and loose clothing can be pulled in by the drum cage.

- Do not reach into the area between the drum cage and the discharge plates!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

**⚠ CAUTION****Heightened physical exertion possible**

The execution of setup work using purely physical force can result in fatigue and disruptions of the musculoskeletal system.

- When changing the drum cage, always use suitable lifting devices as a support!
- Where possible, carry out height and inclination adjustment using suitable lifting devices as an aid!

**⚠ CAUTION****Sharp edges**

Sharp edges may cause cutting.

- Wear personal protective equipment.
- Be careful when handling objects with sharp edges.

### ATTENTION

#### **Damage to the equipment due to incorrect voltage**

If the equipment is connected to an incorrect voltage supply, the electrical equipment may be destroyed.

- The voltage supply should be connected by skilled electricians only.
- Observe the local rules and regulations concerning the energy supply. The electrical equipment complies with the European safety standards.

### ATTENTION

#### **Equipment damage to the machine due to unsuitable cleaning agents**

The machine may be damaged if solvents are used for cleaning.

- Do not use solvents for cleaning.
- Remove normal dirt with lukewarm water.
- Remove greasy stains with white spirit.
- Contact the manufacturer if you have any questions concerning suitable cleaning agents.

### ATTENTION

#### **Damage to property due to improper load handling**

Improper handling of the load during loading or unloading may cause damage to property.

- Use suitable lifting devices.
- Loads that can be dismounted or mounted and that are too heavy to be carried manually must be kept in place using suitable devices (ropes or a block and tackle).
- Chafing of ropes and webbing slings on sharp edges and corners must be prevented by way of special devices, e.g. intermediate layers of a softer material, corner protectors or edge protectors.
- Components and their attachments must not be compressed by ropes or chains pulling at angles.
- Avoid strong impacts when setting the load down.
- Loads may be set down only on firm and level ground.

## 6.2 Initial assembly

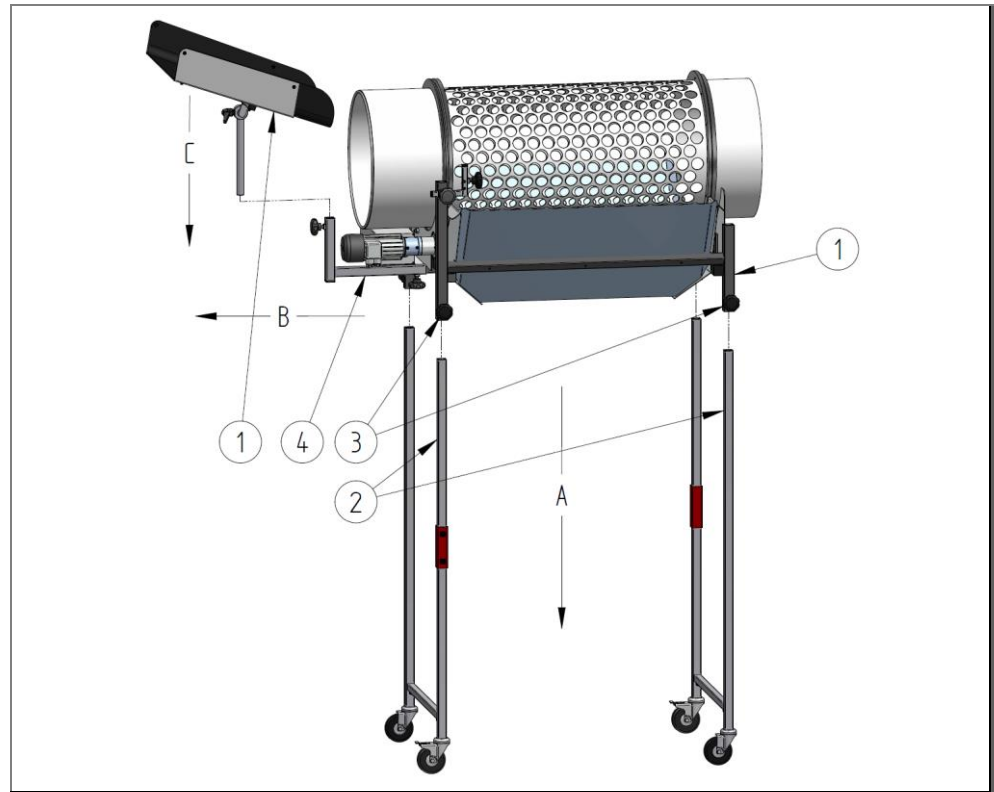


Fig. 8: Assembly

- 1 Base frame
- 2 Racks
- 3 Star knobs for racks
- 4 Bracket for inlet chute
- 5 Inlet chute

The racks (2) and the inlet chute (5) from part of the supply. Therefore, they must be assembled before start-up.



### Caution – heavy and bulky components

Only mount the separation drum using several people and/or load-carrying equipment (crane, etc.).

Raise the base frame (1) above the racks (2) and insert the racks into the provided guides of the base frame (A).

Fix the base frame to the racks by tightening the star knobs (3). The base frame and the drum cage lying on it must have a slight inclination in the through-flow direction from the inlet to the outlet. The necessary inclination depends on the material being separated.

Pull out the inlet chute bracket (4) and secure it with the bottom star knob (B).

Secure the inlet chute (5) on the inlet chute bracket and fix it with the side star knob (C). Ensure that the inlet chute does not drag against the inlet ring of the drum cage.

### 6.3 First start-up



#### **Caution – health hazards and damage to components!**

Carry out the following steps completely and conscientiously in the specified sequence.

- 1 Ensure that the separation drum with its support is standing securely and horizontally on the ground.
- 2 Ensure that the area around the machine is free from tools or other foreign objects that had to be used for the installation or assembly.
- 3 Clean the system to remove all traces of moisture and dirt.
- 4 Ensure that the mains switch is in the “Off” position.
- 5 Turn the speed adjuster counterclockwise to minimum speed.
- 6 Make sure that mains power is available and reliable. To do so, connect the machine mains plug to the mains via a suitable power socket.
- 7 Switch the machine on at the mains switch.
- 8 Set the desired worm speed via the speed adjuster. The change in speed can take place with the worm roller rotating.
- 9 The system is now operational.

## 6.4 Setting the separating parameters



### Warning - general hazards!

The steps described in this chapter may only be performed if the machine is switched off and the mains plug has been pulled out!

### 6.4.1 Adjusting the height and inclination

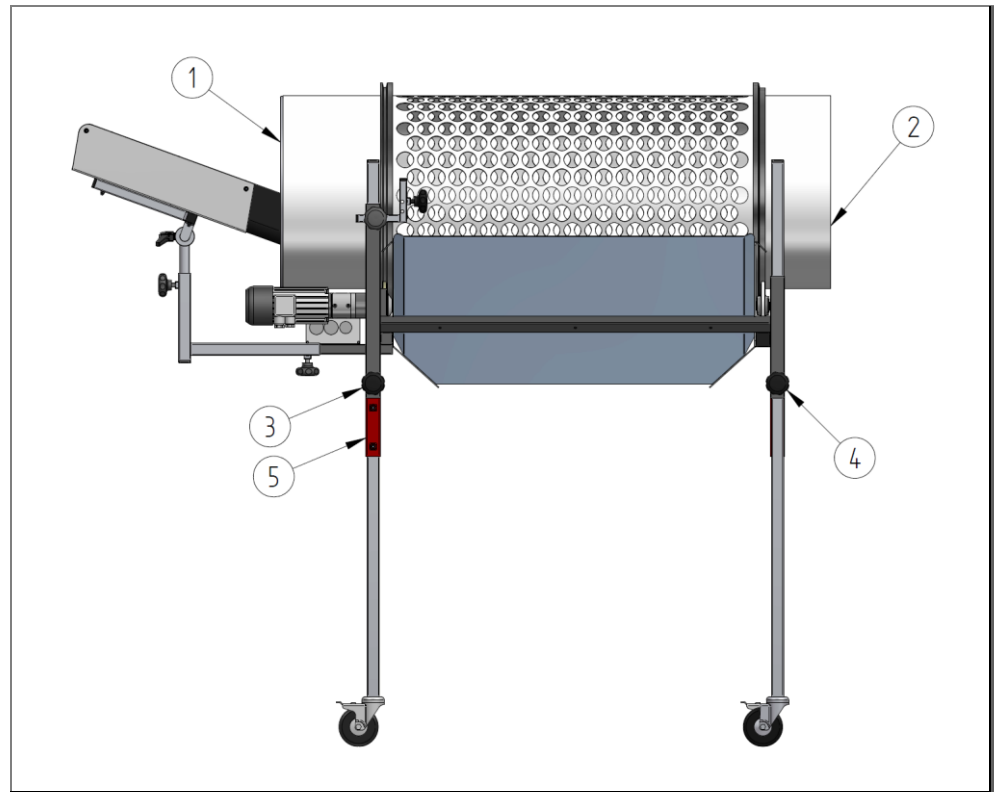


Fig. 9: Adjustment of the height and inclination



### Warning - general hazards!

Before any adjustment to the support, secure it to prevent its falling down. Securing can be achieved by use of a suitable lifting accessory or a second person.

The height can be adjusted separately at the inlet end (1) and outlet end (2). To set the height on the inlet end, undo both star knobs (3) on this end. At the correct height, retighten the star knobs. For the outlet end loosen both star knobs (4) on this end.

Heavy separation drums are equipped with fall protection devices (5). These ensure that the separation drum does not fall from a great height when the star knobs are undone.

If the height is to be reduced with these fall protection devices, first adjust the fall protection device to the correct height. Then first loosen the star knobs and slowly lower the separation drum until it reaches the protection.

If the height is to be increased, first adjust the separation drum to the correct height and then adjust the fall protection.

The inclination is derived from the difference in height between the inlet and outlet ends.

It must always be slightly sloping toward the outlet end. The inclination influences the dwell time of the material being separated in the separation drum. The smaller the inclination, the longer the dwell time. The optimum gradient depends on the material being separated.

#### 6.4.2 Adjusting the inlet chute



Fig. 10: Inlet chute adjustment options

The inlet chute (1) can be adjusted relative to the worm inlet ring (2) and relative to the inclination.

The position can be changed by loosening the star knobs (3), the inclination can be changed using the clamping lever (4). The inclination of the inlet chute must be set so that the parts to be separated automatically slide into the worm inlet ring.

## 6.5 Start-up after a planned shutdown

The following steps must be performed for each start-up:

- 1 Clean the system to remove all traces of moisture and dirt.
- 2 Make sure that mains power is available and reliable.  
To do so, connect the machine mains plug to the mains via a suitable power socket.
- 3 Switch the machine on at the mains switch.
- 4 If the separation drum is equipped with a speed control unit, set the desired speed using the speed adjuster. Changing of the speed can be performed while the drum cage is rotating.
- 5 The system is now operational.

### NOTE

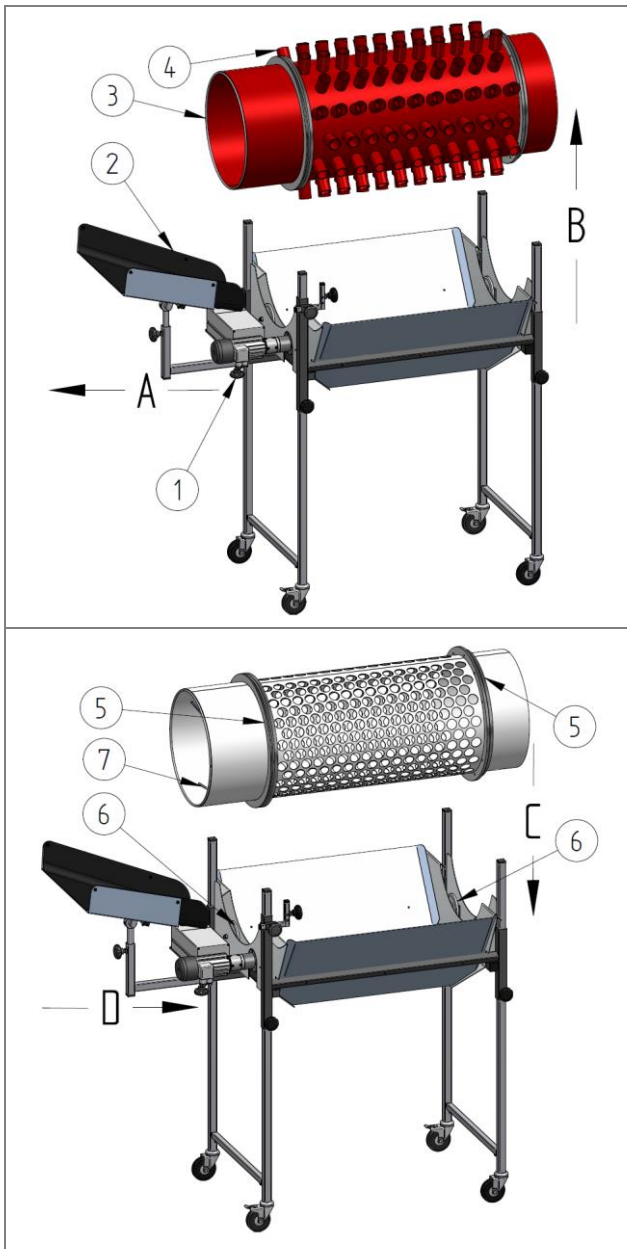


- 
- If the machine is restarted after a longer shutdown of more than one week, repeat the first start-up procedure (see preceding chapter).
-

## 6.6 Replacement of the drum cage

When changing the product, and thus changing the material being separated, replacement of the drum cage may be necessary.

As the drum cage is loose, it can be quickly changed over.



- Loosen the star knob (1) of the inlet chute (2) and pull it out until it no longer protrudes into the inlet ring (3) of the drum cage (4). (A)
- Lift the drum cage out of its bearings. (B)

- Lift the new drum cage into its bearings. Ensure that the form rings (5) of the drum cage rest on the bearing rollers (6). (C) In doing so, ensure correct alignment of the drum cage. The inlet end with its worm (7) must rest on the end of the inlet chute and the drive.
- Push the inlet chute back into the inlet ring and align it. (D)

Fig. 11: Changing the drum cage, the figures shows examples with a perforated drum cage and a hedgehog drum cage

The following tables list the combinations of separation drum types with corresponding supports.



	U 750-500	U 750-700	U 750-1000	U 750-1200
<b>Perforated drum</b>	<b>305 B</b>	<b>307 B</b>	<b>3010 B</b>	<b>3012 B</b>
<b>Perforated drum as knocking-off drum</b>	<b>A 305 B</b>	<b>A 307 B</b>	<b>A 3010 B</b>	<b>A 3012 B</b>
<b>Hedgehog drum</b>	<b>I 305 B</b>	<b>I 307 B</b>	<b>I 3010 B</b>	<b>I 3012 B</b>
<b>Hedgehog drum as knocking-off drum</b>	<b>AI 305 B</b>	<b>AI 307 B</b>	<b>AI 3010 B</b>	<b>AI 3012 B</b>
<b>Rectangular drum</b>	<b>3 R5 B</b>	<b>3 R7 B</b>		
<b>Planetary central adjustment</b>	<b>PZ 255 B</b>	<b>PZ 257 B</b>	<b>PZ 2510 B</b>	<b>PZ 2512 B</b>
<b>Planetary central adjustment as a knocking-off drum</b>	<b>APZ 255 B</b>	<b>APZ 257 B</b>	<b>APZ 2510 B</b>	<b>APZ 2512 B</b>

Tab. 6: Combinations of separation drum types and U 750 supports...

	U 850-500	U 850-700	U 850-1000	U 850-1200
<b>Planetary central adjustment</b>	<b>PZ 355 B</b>	<b>PZ 357 B</b>	<b>PZ 3510 B</b>	<b>PZ 3512 B</b>
<b>Planetary central adjustment as a knocking-off drum</b>	<b>APZ 355 B</b>	<b>APZ 357 B</b>	<b>APZ 3510 B</b>	<b>APZ 3512</b>

Tab. 7: Combinations of separation drum types and U 850 supports...

	U 750-500 E	U 750-700 E	U 750-1000 E	U 750-1200 E
<b>Single adjustment</b>	<b>355 B</b>	<b>357 B</b>	<b>3510 B</b>	<b>3512 B</b>
<b>Single adjustment as a knocking-off drum</b>	<b>A 355 B</b>	<b>A 357 B</b>	<b>A 3510 B</b>	<b>A 3512 B</b>

Tab. 8: Combinations of separation drum types with single adjustment and supports U 750-xxxx E

## 7 Operation

The chapter "Operation" describes the operation of the system under normal operating conditions and provides an overview of the controls and warning devices. After the activation of the system under normal conditions, it runs fully automatically without needing any interventions by the system operator.

### 7.1 Safety

Only specialized personnel with proven qualification are authorized to perform work on the system. Compliance with the following is mandatory:

- this instruction manual
- all other instruction manuals pertaining to the system (further applicable documents, including the documents provided by the suppliers)
- the applicable local regulations and laws.

#### **DANGER**

##### **Danger to life due to electric current**

There is danger to life in the event of contact with live components. Active electrical components may perform uncontrolled movements. Serious injuries or even death may result.

- All work on the electrical components of this machine must only be carried out by qualified specialist personnel (electricians or persons trained in electrical engineering in accordance with DIN EN 60204-1).
- Switch the machine off during maintenance and repair work and secure to prevent unexpected switching back on.
- Close the working area off and mark it with a warning sign.

#### **WARNING**

##### **Risk of crushing**

If the height and inclination adjusters are unsecured, crushing may occur.

- Two people are always required to adjust the height and inclination! Alternatively, high weights must be secured using a crane (or similar lifting devices) to prevent them from falling!
- If the changes in height and inclination are only minor, where possible adjust the inlet and outlet end ONE AFTER the OTHER.
- Only completely release the inlet and outlet ends, if the frame is being held at this point by at least one other person or a crane. The frame must be held by the holding person (if it is not being held by a crane or similar) in such a way that their limbs cannot be crushed underneath the clamp brackets!

**⚠ CAUTION****Risk of crushing, being pulled in and shearing**

The form rings on inlet and outlet ends can cause injuries in the inlet area of the hopper plates.

- Do not reach into the inlet area if the drum cage is rotating!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

**⚠ CAUTION****Risk of being pulled in**

Limbs and loose clothing can be pulled in by the drum cage.

- Do not reach into the area between the drum cage and the discharge plates!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

### NOTE



The accident prevention regulations as well as any internal operating procedures and safety instructions must be observed in addition to the other regulations and instructions.

## 7.2 Prior to operation

Improper use of the system or misconduct may cause life-threatening injuries and damage to property. This is why the information in the “Safety” chapter must be strictly followed when using and operating the system. The persons responsible for the operation of the system must be trained at regular intervals.

Prior to using or operating the system, the following points must be checked and considered:

- Have I read and understood the operating instructions?
- Am I authorized to operate the system based on my training and qualification?
- Have I been authorized to operate the system by the operator?

Moreover, undertake the following preparatory actions for operation and use of the machine:

- Have available and wear personal protective equipment.
- Familiarize yourself with the entire system.
- Familiarize yourself with the applicable rules and regulations.
- Coordinate the operating procedures with all of the persons involved.
- Check the state of the machine for signs of damage prior to starting any work.

### 7.3 Operating and display elements

#### 7.3.1 “Constant” mode of operation

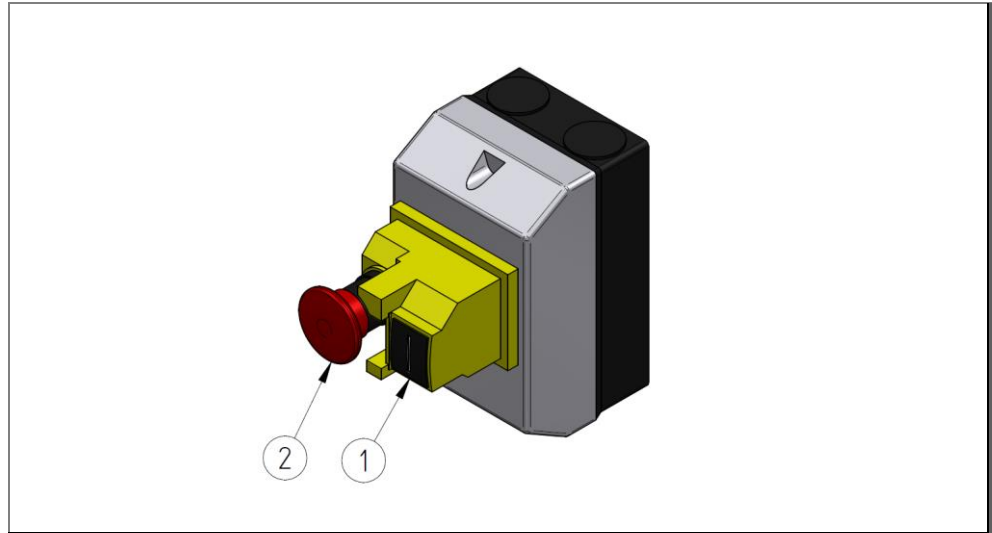


Fig. 12: Operating elements, “Constant” mode of operation

- 1 Start push-button
- 2 Stop push-button with detent function

#### 7.3.2 “Continuously variable” mode of operation

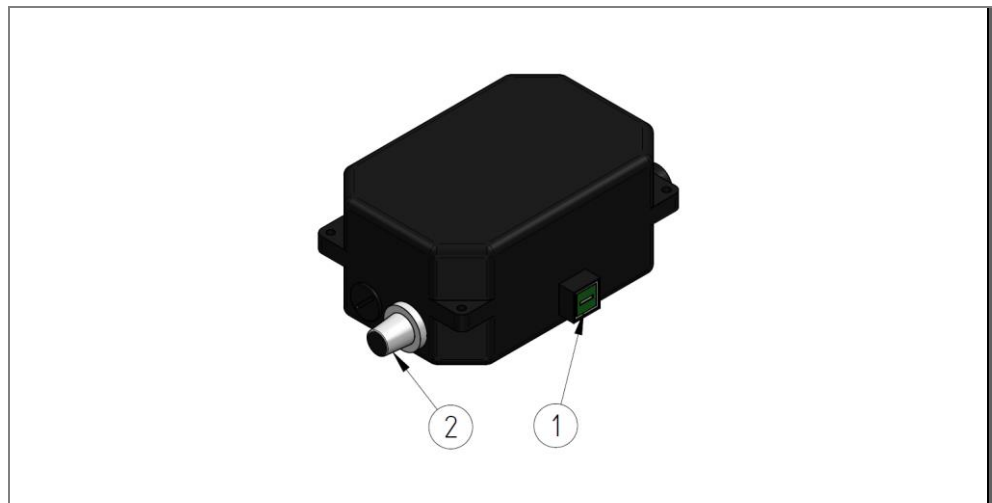


Fig. 13: Operating elements, “Continuously variable” mode of operation

- 1 On/Off push-button
- 2 Rotary speed control knob

### 7.3.3 “Continuously variable and reversible direction of rotation” mode of operation

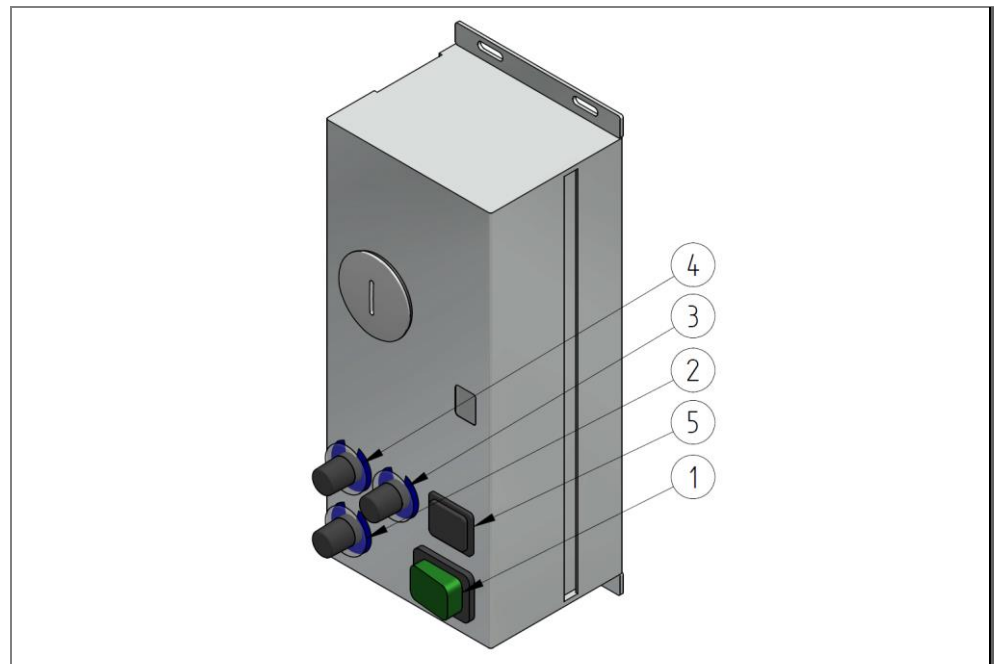


Fig. 14: Operating elements, “Continuously variable and reversible direction of rotation” mode of operation

- 1 On/Off push-button
- 2 Rotary speed control knob
- 3 Rotary knob for clockwise rotation duration
- 4 Rotary knob for counterclockwise rotation duration
- 5 Reversing operation ON/OFF

### 7.4 Switching the machine on

Perform the following steps to switch the machine on:

1. Set the mains switch on the control unit of the machine to "ON".

### 7.5 Modes of operation

The standard mode of operation of the system is automatic mode. After switching on the system, the process starts up. No further intervention is required. The following mode of operations describe the general state of the machine during specific tasks:

No.	Mode of operation	Purpose/function
1	Automatic mode	Automatic mode is the standard mode of operation of the machine after it has been switched on. In this mode of operation, the machine operates fully automatically.
2	Maintenance mode	In maintenance mode, the machine is deactivated via the mains switch. For maintenance tasks involving the electrical system of the machine, the machine must be physically disconnected from the electric current.
3	Test mode	This mode of operation can be used for a test run, for example after the completion of maintenance or overhaul tasks. The machine runs without any piece goods on the belt. Always perform a test run if components have been replaced.
4	Cleaning mode	This mode of operation is used for cleaning. In cleaning mode, the machine is deactivated via the mains switch. For cleaning tasks involving the electrical components of the machine (motors, control cabinet, etc.), the machine must be physically disconnected from the electric current.

## 7.6 Switching the system off

Perform the following steps to switch the system off:

1. Wait until the system has completely transported away all the piece goods it contains.
2. Set the mains switch on the control unit of the machine to "OFF".

## 8 Troubleshooting

### 8.1 Safety

Only specialized personnel with proven qualification are authorized to perform work on the system. Compliance with the following is mandatory:

- this instruction manual
- all other instruction manuals pertaining to the system (further applicable documents, including the documents provided by the suppliers)
- the applicable local regulations and laws.

#### **DANGER**

##### **Danger to life due to electric current**

There is danger to life in the event of contact with live components. Active electrical components may perform uncontrolled movements. Serious injuries or even death may result.

- All work on the electrical components of this machine must only be carried out by qualified specialist personnel (electricians or persons trained in electrical engineering in accordance with DIN EN 60204-1).
- Switch the machine off during maintenance and repair work and secure to prevent unexpected switching back on.
- Close the working area off and mark it with a warning sign.

#### **WARNING**

##### **Risk of injury due to negligent actions during troubleshooting**

Severe injuries such as crushing, abrasion or loss of limbs may result.

- The separation drum must ALWAYS be shut down during troubleshooting and secured to prevent switching back on!
- Do not reach into the inlet area if the drum cage is rotating!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

#### **WARNING**

##### **Risk of crushing**

If the height and inclination adjusters are unsecured, crushing may occur.

- Two people are always required to adjust the height and inclination! Alternatively, high weights must be secured using a crane (or similar lifting devices) to prevent them from falling!
- If the changes in height and inclination are only minor, where possible adjust the inlet and outlet end ONE AFTER the OTHER.
- Only completely release the inlet and outlet ends, if the frame is being held at this point by at least one other person or a crane. The frame must be held by the holding person (if it is not being held by a crane or similar) in such a way that their limbs cannot be crushed underneath the clamp brackets!



## ⚠ WARNING

### Fall hazard when working at height

Work at height may cause slipping, falling, and serious injuries.

- Wear personal protective equipment.
- Ensure safe working conditions in time.
- Always use fall protection equipment when secure footing cannot be guaranteed.
  - Use, for example, work platforms, scaffolds, personnel elevators, or cherry pickers.
- Protect the installation area against falling objects.
- Never work alone.

## ⚠ CAUTION

### Risk of crushing, being pulled in and shearing

The form rings on inlet and outlet ends can cause injuries in the inlet area of the hopper plates.

- Do not reach into the inlet area if the drum cage is rotating!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

## ⚠ CAUTION

### Risk of being pulled in

Limbs and loose clothing can be pulled in by the drum cage.

- Do not reach into the area between the drum cage and the discharge plates!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

## ⚠ CAUTION

### Sharp edges

Sharp edges may cause cutting.

- Wear personal protective equipment.
- Be careful when handling objects with sharp edges.

## ATTENTION

### Damage to the equipment due to incorrect voltage

If the equipment is connected to an incorrect voltage supply, the electrical equipment may be destroyed.

- The voltage supply should be connected by skilled electricians only.
- Observe the local rules and regulations concerning the energy supply. The electrical equipment complies with the European safety standards.

## ATTENTION

### Equipment damage to the machine due to unsuitable cleaning agents

The machine may be damaged if solvents are used for cleaning.

- Do not use solvents for cleaning.
- Remove normal dirt with lukewarm water.
- Remove greasy stains with white spirit.
- Contact the manufacturer if you have any questions concerning suitable cleaning agents.

## 8.2 Procedures in the event of malfunctions

The following fundamental rules apply at all times:

1. In the case of malfunctions or faults presenting a direct danger to persons or property, switch the system off immediately.  
The operator is responsible for the integration of the system into the safety system of the overall system.
2. Determine the cause of the malfunction or fault.
3. If work must be performed in the hazard area in order to eliminate the malfunction or fault, switch the system off and lock it so that it cannot be switched on again.
4. The person at charge on site must be informed about the malfunction or fault immediately.
5. Depending on the type of malfunction or fault, it must be eliminated by authorized personnel with a qualification in the respective field.
6. If components need to be replaced, ensure that they are installed correctly.
  - Adhere to standard-compliant tightening torques.
  - Observe the required lock washers.

## 8.3 Preparations for troubleshooting

1. Switch the mains switch off prior to performing any work on the system.
2. Do not perform any work on the system unless it is at a complete stop.
  - Disconnect the system from the power supply
3. Lock the system so that it cannot be switched on again.
  - Cover the mains switch
  - Attach a warning sign
  - Cordon off a wide area
4. Empty the conveying line and/or remove transported material.

## 8.4 Restart after a malfunction

Do not use the system if there are defects that compromise the safe operation of the system.

1. Ensure that all of the protective covers and guards are in place.
2. Check the safety devices and guards.

### NOTE



Follow the instructions and information provided in the supplier documentation.

## 8.5 Troubleshooting



### Note

- Do not perform any work on the machine unless it is at a complete stop. To do so, disconnect the machine from the power supply.
- Prior to commencing any tasks, ensure that the machine cannot be switched on inadvertently or by unauthorized persons.
- Please contact our after-sales service if you encounter malfunctions or faults that are not described in this manual.

Malfunctions can be rectified according to the following troubleshooting table:

Malfunction/fault	Possible cause	Remedy
The system does not start	• No power supply	Check the position of the mains switch. Check the external fuse. Check whether the power supply cable is damaged or improperly connected. Check the mains supply.
	• Motor connection cable damaged	Renew the power cable
	• Motor defective	Replace the motor
Check whether any of the electrical components are damaged. Machine malfunctions	<ul style="list-style-type: none"> <li>• Damaged cable or switch</li> <li>• Exposed live components</li> <li>• Damaged electrical components</li> </ul>	Shut the system down immediately and repair it
Unsatisfactory separation result	• Separation opening does not match the material being separated	Use the drum cage intended for the material being separated
	• Incorrect speed	Reduce or increase speed
	• Incorrect gradient of the inlet chute	Set a flatter or steeper gradient

## 9 Maintenance

### 9.1 Safety

Only specialized personnel with proven qualification are authorized to perform work on the system. Compliance with the following is mandatory:

- this instruction manual
- all other instruction manuals pertaining to the system (further applicable documents, including the documents provided by the suppliers)
- the applicable local regulations and laws.

#### **DANGER**

##### **Danger to life due to electric current**

There is danger to life in the event of contact with live components.

Active electrical components may perform uncontrolled movements. Serious injuries or even death may result.

- All work on the electrical components of this machine must only be carried out by qualified specialist personnel (electricians or persons trained in electrical engineering in accordance with DIN EN 60204-1).
- Switch the machine off during maintenance and repair work and secure to prevent unexpected switching back on.
- Close the working area off and mark it with a warning sign.

#### **WARNING**

##### **Risk of crushing**

If the height and inclination adjusters are unsecured, crushing may occur.

- Two people are always required to adjust the height and inclination! Alternatively, high weights must be secured using a crane (or similar lifting devices) to prevent them from falling!
- If the changes in height and inclination are only minor, where possible adjust the inlet and outlet end ONE AFTER the OTHER.
- Only completely release the inlet and outlet ends, if the frame is being held at this point by at least one other person or a crane. The frame must be held by the holding person (if it is not being held by a crane or similar) in such a way that their limbs cannot be crushed underneath the clamp brackets!

#### **WARNING**

##### **Fall hazard when working at height**

Work at height may cause slipping, falling, and serious injuries.

- Wear personal protective equipment.
- Ensure safe working conditions in time.
- Always use fall protection equipment when secure footing cannot be guaranteed.
  - Use, for example, work platforms, scaffolds, personnel elevators, or cherry pickers.
- Protect the installation area against falling objects.
- Never work alone.

**⚠ CAUTION****Risk of crushing, being pulled in and shearing**

The form rings on inlet and outlet ends can cause injuries in the inlet area of the hopper plates.

- Do not reach into the inlet area if the drum cage is rotating!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

**⚠ CAUTION****Risk of being pulled in**

Limbs and loose clothing can be pulled in by the drum cage.

- Do not reach into the area between the drum cage and the discharge plates!
- Ensure you keep all limbs clear of the rotating drum cage!
- Wear tight-fitting clothes when working on the separation drum!
- Do not wear gloves!

**⚠ CAUTION****Heightened physical exertion possible**

The execution of setup work using purely physical force can result in fatigue and disruptions of the musculoskeletal system.

- When changing the drum cage, always use suitable lifting devices as a support!
- Where possible, carry out height and inclination adjustment using suitable lifting devices as an aid!

**⚠ CAUTION****Sharp edges**

Sharp edges may cause cutting.

- Wear personal protective equipment.
- Be careful when handling objects with sharp edges.

**ATTENTION****Damage to the equipment due to incorrect voltage**

If the equipment is connected to an incorrect voltage supply, the electrical equipment may be destroyed.

- The voltage supply should be connected by skilled electricians only.
- Observe the local rules and regulations concerning the energy supply. The electrical equipment complies with the European safety standards.

**ATTENTION****Equipment damage to the machine due to unsuitable cleaning agents**

The machine may be damaged if solvents are used for cleaning.

- Do not use solvents for cleaning.
- Remove normal dirt with lukewarm water.
- Remove greasy stains with white spirit.
- Contact the manufacturer if you have any questions concerning suitable cleaning agents.

**NOTE**

▶ The manufacturer does not accept any liability for damage resulting from faulty maintenance, repair or overhaul.

**9.2 Maintenance instructions**

The purpose of maintenance is to maintain the functionality of the machine or to restore it after a malfunction or failure.

The machine must be maintained regularly. Inadequate maintenance may cause malfunctions or damage which in turn will lead to downtimes and repair costs.

This chapter includes information that is intended for trained, qualified, and specialized personnel.

Contact the manufacturer immediately in the event of problems or if anything is unclear.

**When submitting a query, please provide the following:**

- You can find the information on the type plate of the machine
  - Serial no.
  - Type designation
  - Year of manufacture
- A precise description of the fault/malfunction.
- Troubleshooting measures taken so far.

If the machine is sent in to the manufacturer, refer to the chapters, "Disassembly" and "Transport".

### 9.3 Preparation for maintenance

Prior to performing any maintenance, repair or overhaul tasks on the system, observe the following points:

1. Inform the operating personnel prior to commencing the tasks.  
A supervisor must be appointed.
2. Comply with the maintenance intervals that are stated in the maintenance plan.
3. The working area must be closed off against unauthorized access and marked with a warning sign.
4. Do not perform any work on the system unless it is at a complete stop.
  - Disconnect the system from the power supply
5. In order to perform the necessary tasks, switch the system or the affected part of the system off and then lock it so that it cannot be switched on again.
  - Pull out the mains plug
  - Attach a warning sign
  - Cordon off a wide area
6. To avoid electric shock, do not open any electric components, housings or covers. Do not touch any damaged or live parts.
7. Work on the electrical system must be performed exclusively by an authorized and qualified person who has undergone special training in this field.
8. If it is necessary to remove any of the safety devices or guards, they must be reinstalled and checked for correct operation immediately after the completion of the work.
9. If parts of the system or large assemblies need to be replaced, fasten and secure them thoroughly on the lifting devices. Use only suitable lifting devices and load-handling attachments and ensure that they are in a perfect technical state and have a sufficient load-bearing capacity.
10. Use adequate climbing aids and working platforms, which are in line with the safety requirements, when performing overhead installation work. Do not climb or step on any parts of the system.

#### 9.4 Maintenance plan

Intervals	Component	Measures	What to do in the event of a defect
	Drive	See the manual provided by the manufacturer.	
Daily	Overall machine	General visual inspection	Shut down the machine. Rectify the defect.
	Safety devices and guards	General visual inspection	Shut down the machine. Rectify the defect.
Weekly	Drum cage	Visual inspection for soiling	Clean the drum cage
Monthly	Mechanical components	Check all screws and nuts for tightness and retighten if necessary.	Replace the component.
	Drum cage	Check for damage	Replace the drum cage
	Electrical installation	General inspection, in particular for damaged cables, connectors	Replace the component.
Every six months	Drive/bearing wheels	Checking of the general state, especially bearing wear	Replace the drive/bearing wheels

Table 1 - Maintenance plan

Dependent on the operating conditions, the intervals may be shorter or longer.



### **9.5 Switching back on after maintenance**

Do not use the machine if there are defects that compromise the safe operation of the machine. After the completion of maintenance and prior to starting the machine, the following points must be observed:

1. Check whether all of the screw connections are tight.
2. Ensure that all of the safety devices, guards and covers that had to be removed are properly reinstalled.
3. Ensure that all of the tools, material and other equipment have been removed from the working area.
4. Clean the working area and remove any fluids or similar substances that may have leaked out.
5. Check whether all of the safety devices and guards of the machine operate correctly.
6. Check the safety devices and guards.

## 10 Disassembly

### 10.1 Safety

Only specialized personnel with proven qualification are authorized to perform work on the system. Compliance with the following is mandatory:

- this instruction manual
- all other instruction manuals pertaining to the system (further applicable documents, including the documents provided by the suppliers)
- the applicable local regulations and laws.

There is a risk of injury and damage to property if the operator fails to disassemble the system in due form and in line with the applicable regulations.

#### NOTE

▶ The disassembly must be performed by the operator or by persons who are appointed by the operator.  
Compliance with the applicable local regulations and laws is mandatory for the disassembly of the machine.

#### DANGER

##### **Danger to life due to electric current**

There is danger to life in the event of contact with live components. Active electrical components may perform uncontrolled movements. Serious injuries or even death may result.

- Work on the system should be performed by authorized and specialized personnel only.
- Prior to performing any work, switch the power supply off at the mains switch on the control cabinet and lock it so that it cannot be switched on again.
- Close the working area off and mark it with a warning sign.

#### WARNING

##### **Fall hazard when working at height**

Work at height may cause slipping, falling, and serious injuries.

- Wear personal protective equipment.
- Ensure safe working conditions in time.
- Always use fall protection equipment when secure footing cannot be guaranteed.
  - Use, for example, work platforms, scaffolds, personnel elevators, or cherry pickers.
- Protect the installation area against falling objects.
- Never work alone.

#### CAUTION

##### **Sharp edges**

Sharp edges may cause cutting.

- Wear personal protective equipment.
- Be careful when handling objects with sharp edges.

**ATTENTION****Damage to property due to improper load handling**

Improper handling of the load during loading or unloading may cause damage to property.

- Use suitable lifting devices.
  - Loads that can be dismounted or mounted and that are too heavy to be carried manually must be kept in place using suitable devices (ropes or a block and tackle).
  - Chafing of ropes and webbing slings on sharp edges and corners must be prevented by way of special devices, e.g. intermediate layers of a softer material, corner protectors or edge protectors.
  - Components and their attachments must not be compressed by ropes or chains pulling at angles.
  - Avoid strong impacts when setting the load down.
  - Loads may be set down only on firm and level ground.
-

### 10.2 Prerequisites for the disassembly

1. Shut the machine down prior to the disassembly and comply with the relevant shutdown procedures.
2. Switch the main switch off and lock it so that it cannot be switched on again.
3. Disconnect the machine from the energy supply and secure this state.
4. Disconnect the entire machine physically from the power supply.
5. Remove any coarse soiling from the machine parts.
6. Disconnect any connections, e.g. pipes.
7. Collect any process fluids and other hazardous substances.
8. Seal any open connections, e.g. pipes.

### 10.3 Disassembly of the electrical system

1. Switch the machine off via the main switch.
2. Ensure that the operator's grid power supply is deactivated.
3. Check whether the machine is completely voltage-free.
4. Disconnect the machine from the line power supply.

### 10.4 Disassembly of the mechanical system

Based on the assembly drawing and set-up plan:

1. Install the transport locks.
2. Release the floor anchors of the machine.
3. Disassemble and remove the modules of the machine based on their respective dimensions and other data.
4. Aim for a low center of gravity
5. See chapters "Packaging and transport" and "Set-up and installation" if the machine needs to be transported to another location.

## 11 Disposal

### 11.1 General notes

Only specialized personnel with proven qualification are authorized to perform work on the system. Compliance with the following is mandatory:

- this instruction manual
- all other instruction manuals pertaining to the system (further applicable documents, including the documents provided by the suppliers)
- the applicable local regulations and laws.

Knowingly or unknowingly using used/worn components, e.g. rolling bearings, toothed belts, etc., may present a hazard to persons, the environment and the system.

The following points must be observed:

- The operator is responsible for proper disposal.
- Only specialized and qualified personnel are authorized to perform the disposal.
- Drain any process fluids (oils, greases, chemical substances) and other consumables off into suitable collecting vessels and ensure their proper disposal.
- At the end of its life cycle, separate the machine into different recyclable materials and hand them over to a professional recycling company.

#### **ATTENTION**

##### **Risk of environmental damage**

The environment will be harmed if the disposal is not performed properly.

- Comply with the local regulations and statutory provisions for the disposal.

## 12 Spare parts

### NOTE



The manufacturer does not accept any liability for damage resulting from the use of third-party parts.

- If parts need to be replaced, use only original parts. The use of third-party parts may cause damage.
- Please contact the service department if you want to order spare parts. Orders can be submitted by e-mail, fax, or phone.
- Please have the data of the type plate (e.g. serial number), order confirmation and/or spare parts list ready.
- MTF Technik recommends keeping the spare parts and wear parts, which are stated on the spare parts list, in stock on site in order to reduce or avoid waiting times and downtimes in the event of faults or malfunctions.
- In all other cases, spare parts should be ordered in good time in order to ensure that they are available for the next scheduled maintenance. Spare parts have varying delivery times. This is why an extensive spare parts order based on the longest delivery time is recommended.

### 12.1 Viewing the spare parts list

The spare parts list of the described conveyor can be accessed online:



<https://mtf-technik.de/de/service/download/download-sprachen/download-daten/d-a-ch>

Fig. 15: Spare parts list: GL conveyor

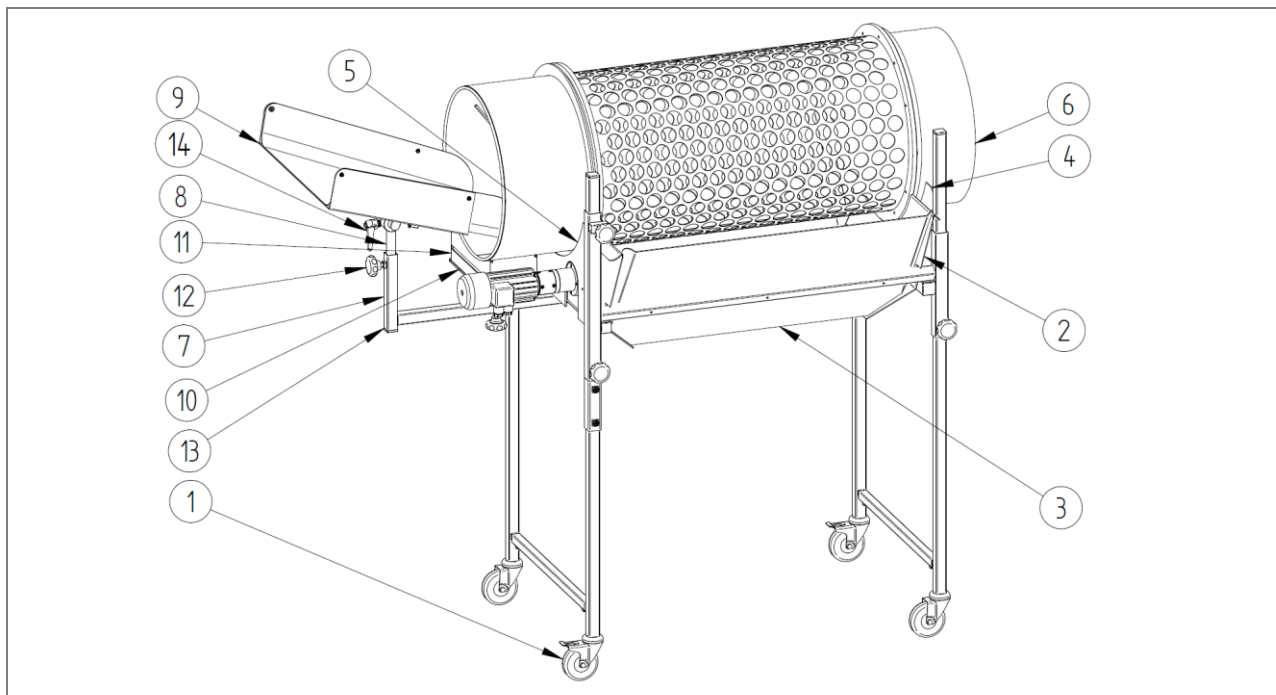
**12.1.1 Parts list: Perforated drum – ZZ.867.0001 ; hedgehog drum – ZZ.867.0002**


Fig. 16: Parts list: Perforated drum – ZZ.867.0001 ; hedgehog drum – ZZ.867.0002

Parts list: Independent from technical data						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
8	1	pcs.	Inlet chute bracket	Central part	1005775	T.865.0004
9	1	pcs.	Inlet chute	-	861057	ZZ.861.0002
12	2	pcs.	Star knob	M8x20	975411	E.975.0003
13	1	pcs.	Plastic plug	25x25x2 (black)	1000831	
14	1	pcs.	Clamping lever	GN 503-63-M8-16-SW	835113	

Tab. 9: Parts list, Perforated drum – ZZ.867.0001 ; hedgehog drum – ZZ.867.0002

Parts list: Dependent on technical data (see also order confirmation)						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
1	1	pcs.	Support - separation drum	Standard	Table --- fehlender Linktext -- -	ZZ.860.0003
				Reinforced	Table --- fehlender Linktext -- -	ZZ.860.0021
2	2	pcs.	Hopper plate		Table	E.860.0010
3	2	pcs.	Discharge plate		Table	E.860.0011
4	1	pcs.	Head plate	Outlet end	Table	E.860.0015
5	1	pcs.	Head plate	Inlet end	Table	E.860.0016

6	1	pcs.	Drum cage			S. purchase order
7	1	pcs.	Inlet chute bracket	Lower part	Table	T.865.0003
10	1	pcs.	Control unit fastening plate		Table	Table
11	1	pcs.	Control unit		Table	

Tab. 10: Parts list, perforated drum – ZZ.867.0001 ; hedgehog drum – ZZ.867.0002

Pos. 2 selection: Hopper plate inlet / outlet end – E.860.0010	
Material	ID no.
AlMg1; anodized	1004557
Steel; galvanized	1004563
V2A (1.4301)	1014267

Tab. 11: Selection: Hopper plate inlet / outlet end

Pos. 3 selection: Outlet plate – E.860.0011			
Type	Al Mg1; anodized	Steel; galvanized	V2A (1.4301)
305 B / I 305 B	861012	1006275	
307 B / I 307 B	861013	1006273	1015046
3010 B / I 3010 B	861014	1006212	
3012 B / I 3012 B		1009488	

Tab. 12: Selection: Discharge plate

Pos. 4 selection: Head plate outlet end – E.860.0015	
Material	ID no.
AlMg1; anodized	1003707
Steel; galvanized	1004558

Tab. 13: Selection: Head plate outlet end

Pos. 5 selection: Head plate inlet end – E.860.0016	
Material	ID no.
AlMg1; anodized	1003708
Steel; galvanized	1004559

Tab. 14: Selection: Head plate inlet end

Pos. 7 selection: Inlet chute bracket lower part – T.865.0003	
Surface	ID no.
Galvanized	861045
Coated RAL 9005	1007613

Tab. 15: Selection: Inlet chute bracket lower part



Pos. 10 and 11	Selection: Control unit	Selection: Fastening plate	
Type of drive unit	ID no.	Drwg no.	ID no.
Motor protection switch (drive "SK")	1004518	E.907.0170	
Speed regulator (drive "SS")	1007371	E.800.1237	1012009
Speed regulator, reversible (drive "SR")	1007588	E.800.1368	

Tab. 16: Selection: Control unit and fastening plate

### 12.1.2 Parts list: Support – separation drum ZZ.860.0003

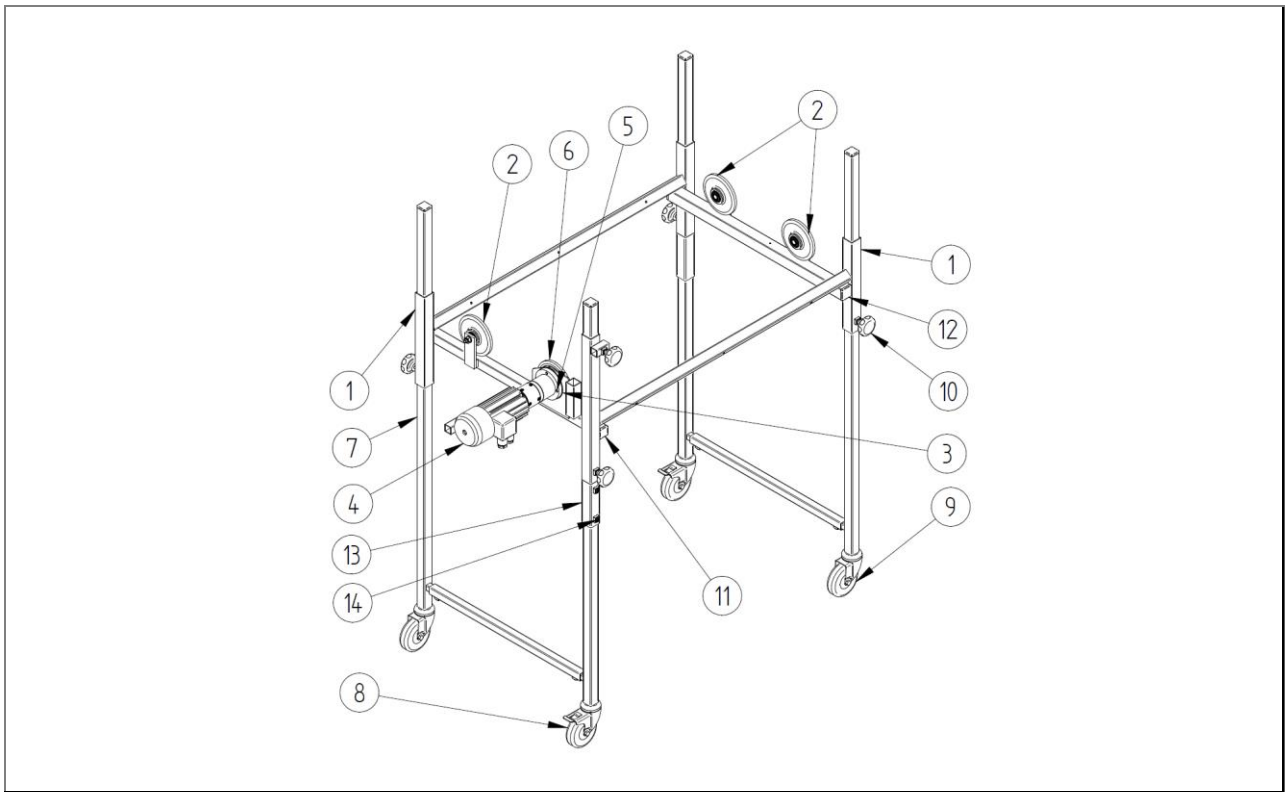


Fig. 17: Parts list: Support – separation drum ZZ.860.0003

Parts list: Independent from technical data						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
2	3	pcs.	Support wheel		861050	T.860.0005
3	1	pcs.	Intermediate layer K		907103	E.907.0009
4	1	pcs.	Gear motor	PLG52.0- DR62.0x80 -2	898061	
5	4	pcs.	Countersunk screw	DIN 7991-M6x16	975311	
6	1	pcs.	Drive sprocket		1008679	T.800.0245
8	2	pcs.	Swivel caster	Ø75 with clamping shoe and arrester	1004576	
9	2	pcs.	Swivel caster	Ø75 with clamping shoe without arrester	1004575	
10	5	pcs.	Star knob	M8x20	975411	E.975.0003
11	2	pcs.	Plastic plug	25x25x2 (black)	1000831	
12	2	pcs.	Plastic plug	30x30x2 (black)	975032	
13*	2	pcs.	Securing tube		1012213	T.860.0151
14*	4	pcs.	Grub screw	DIN 913 - M8x10	975398	

Tab. 17: Parts list, independent part: Support

\*only for heavy weight separation drums

Parts list: Dependent on technical data (see also order confirmation)						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
1	1	pcs.	Frame		Table	U.860.0006
7	2	pcs.	Single rack		Table --- fehlender Linktext -- -	U.860.0005

Tab. 18: Parts list, independent part: Support

Pos. 1 selection: Frame – U.860.0006						
Support type	Nominal length	Frame ID no.	For separation drum type			
U 750-500	500	1006928	305 B	A 305 B	I 305 B	AI 305 B
U 750-700	700	1007166	307 B	A 307 B	I 307 B	AI 307 B
U 750-1000	1000	1006930	3010 B	A 3010 B	I 3010 B	AI 3010 B
U 750-1200	1200	1006927	3012 B	A 3012 B	I 3012 B	AI 3012 B

Tab. . 19: Selection: Frame – U.860.0006

### 12.1.3 Parts list: Support — separation drum – reinforced – ZZ.860.0021

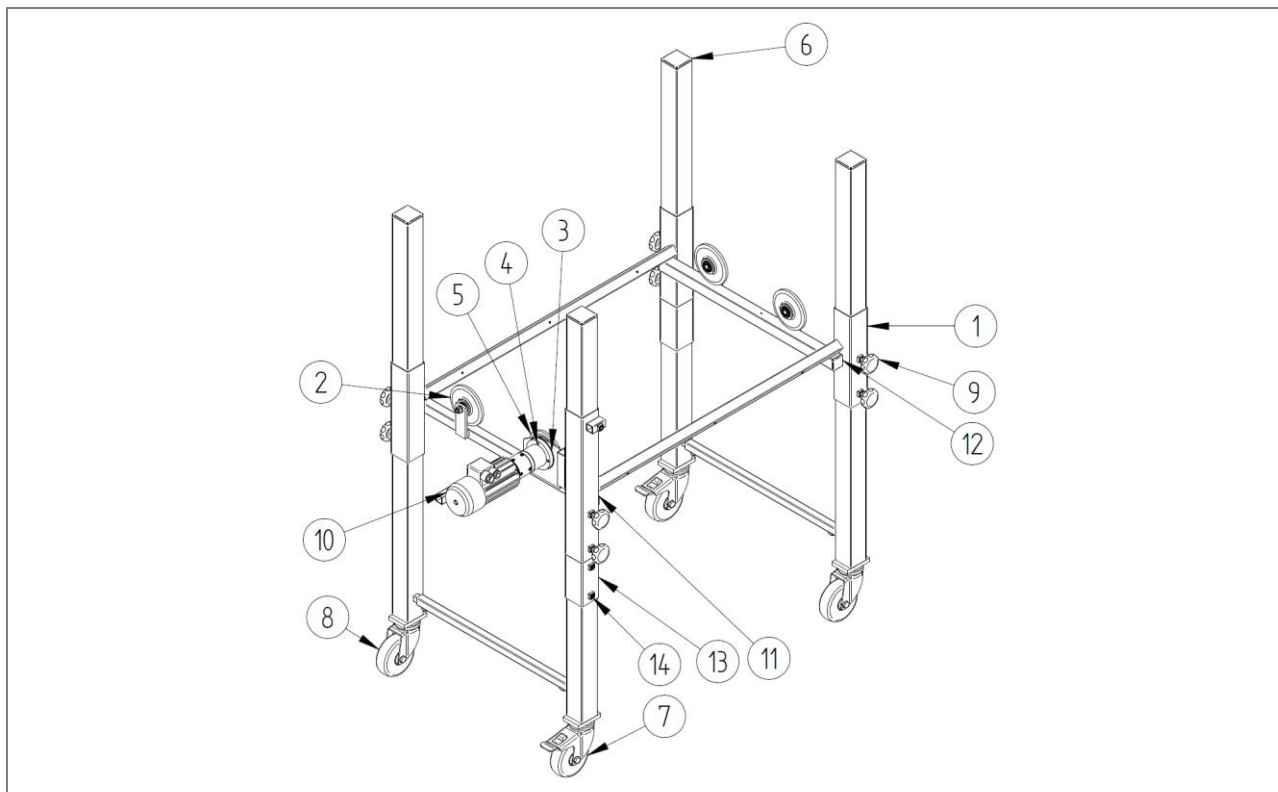


Fig. 18: Parts list: Support – reinforced – ZZ.860.0021

Parts list: Independent from technical data						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
2	3	pcs.	Support wheel		861050	T.860.0005
3	1	pcs.	Intermediate layer K		907103	E.907.0009
4	4	pcs.	Countersunk screw	DIN 7991-M6x16	975311	
5	1	pcs.	Drive sprocket		1008679	T.800.0245
7	2	pcs.	Swivel caster with total lock	Ø 100 x 32 - 90 kg	1007209	E.913.0008
8	2	pcs.	Swivel caster without Allstop locking device	Ø 100 x 32 - 90 kg	1007208	E.913.0007
9	8	pcs.	Star knob	M8x20	975411	E.975.0003
10	1	pcs.	Gear motor	PLG52.0- DR62.0x80 -2	898061	
11	2	pcs.	Plastic plug	25x25x2 (black)	1000831	
12	2	pcs.	Plastic plug	30x30x2 (black)	975032	
13	2	pcs.	Securing tube	Reinforced design	1011923	T.860.0103
14	4	pcs.	Grub screw	DIN 913 - M8x10	975398	

Tab. 20: Parts list, independent part: Support – reinforced – ZZ.860.0021

\*only for heavy weight separation drums

Parts list: Dependent on technical data (see also order confirmation)						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
1	1	pcs.	Frame, reinforced		Table	U.860.0016
6	2	pcs.	Single rack, reinforced		Table --- fehlender Linktext -- -	U.860.0017

Tab. 21: Parts list, independent part: Support – reinforced – ZZ.860.0021

Pos. 1 selection: Frame – U.860.0016						
Support type	Nominal length	Frame ID no.	For separation drum type			
U 750-500	500		305 B	A 305 B	I 305 B	AI 305 B
U 750-700	700		307 B	A 307 B	I 307 B	AI 307 B
U 750-1000	1000		3010 B	A 3010 B	I 3010 B	AI 3010 B
U 750-1200	1200		3012 B	A 3012 B	I 3012 B	AI 3012 B

Tab. . 22: Selection: Frame – U.860.0016

### 12.1.4 Parts list: Single rack – U.860.0005

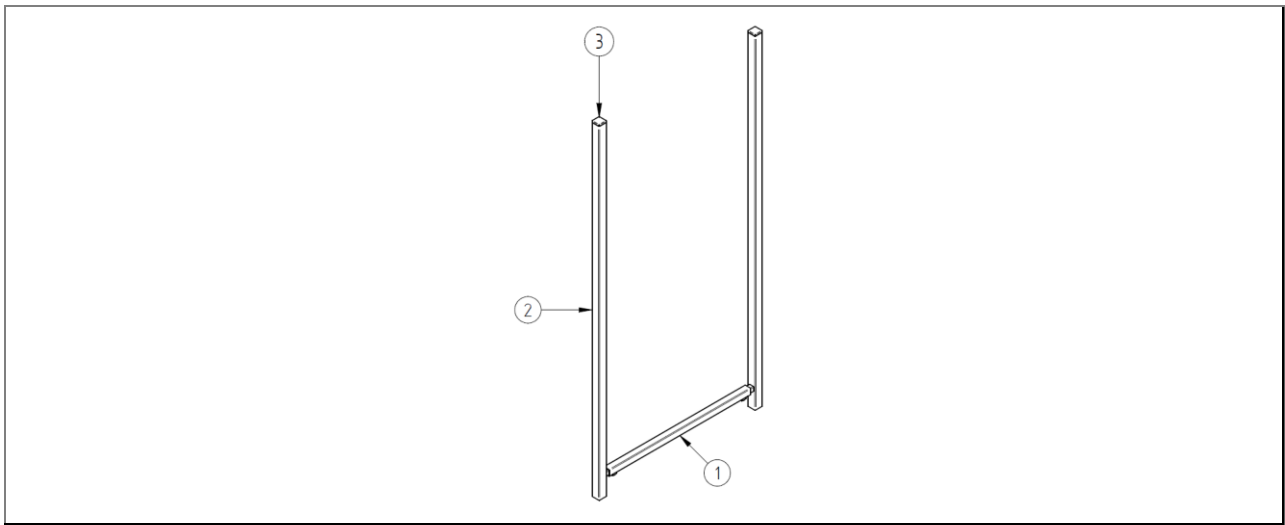


Fig. 19: Parts list: Single rack – U.860.0005

Parts list: Independent from technical data						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
3	2	pcs.	Plastic plug	25x25x2 (black)	1000831	

Tab. 23: Parts list, independent part: Single rack – U.860.0005

Parts list: Dependent on technical data (see also order confirmation)						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
1*	1	pcs.	Crossmember		Table	U.860.0004
2*	2	pcs.	Rack tube	Height, see list	Table	U.860.0003

Tab. 24: Parts list, independent part: Single rack – U.860.0005

Pos. 1 selection: Crossmember - U.860.0004	
Type	ID no.
U 750...	1005378
U 850...	1005377

Tab. . 25: Selection: Crossmember

Pos. 2 selection: Rack tube - U.860.0003	
Rack height	ID no.
800	1005374
1100	1005375
1500	1005376

Tab. . 26: Selection: Rack tube

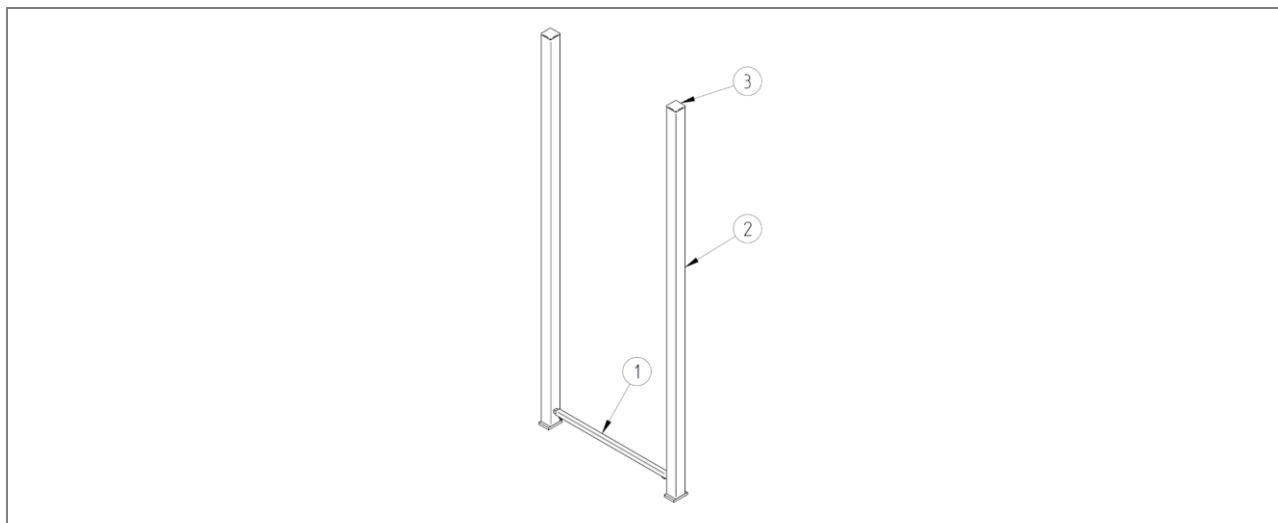
**12.1.5 Parts list: Single rack – reinforced – U.860.0017**


Fig. 20: Parts list: Single rack – reinforced – U.860.0017

Parts list: Independent from technical data						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
1	1	pcs.	Crossmember		1005378	U.860.0004
3	2	pcs.	Plastic plug	50x50x2 mm	975035	

Tab. 27: Parts list, independent part: Single rack – reinforced – U.860.0017

Parts list: Dependent on technical data (see also order confirmation)						
Pos.	Qty	Unit	Name 1	Name 2	ID no.	Drwg no.
2	2	pcs.	Rack tube	Height, see list	Table	U.860.0018

Tab. 28: Parts list, independent part: Single rack – reinforced – U.860.0017

Pos. 2 selection: Rack tube – U.860.0018	
Rack height	ID no.
1100	
1500	
1750	

Tab. . 29: Selection: Rack tube

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## 16 Appendix

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