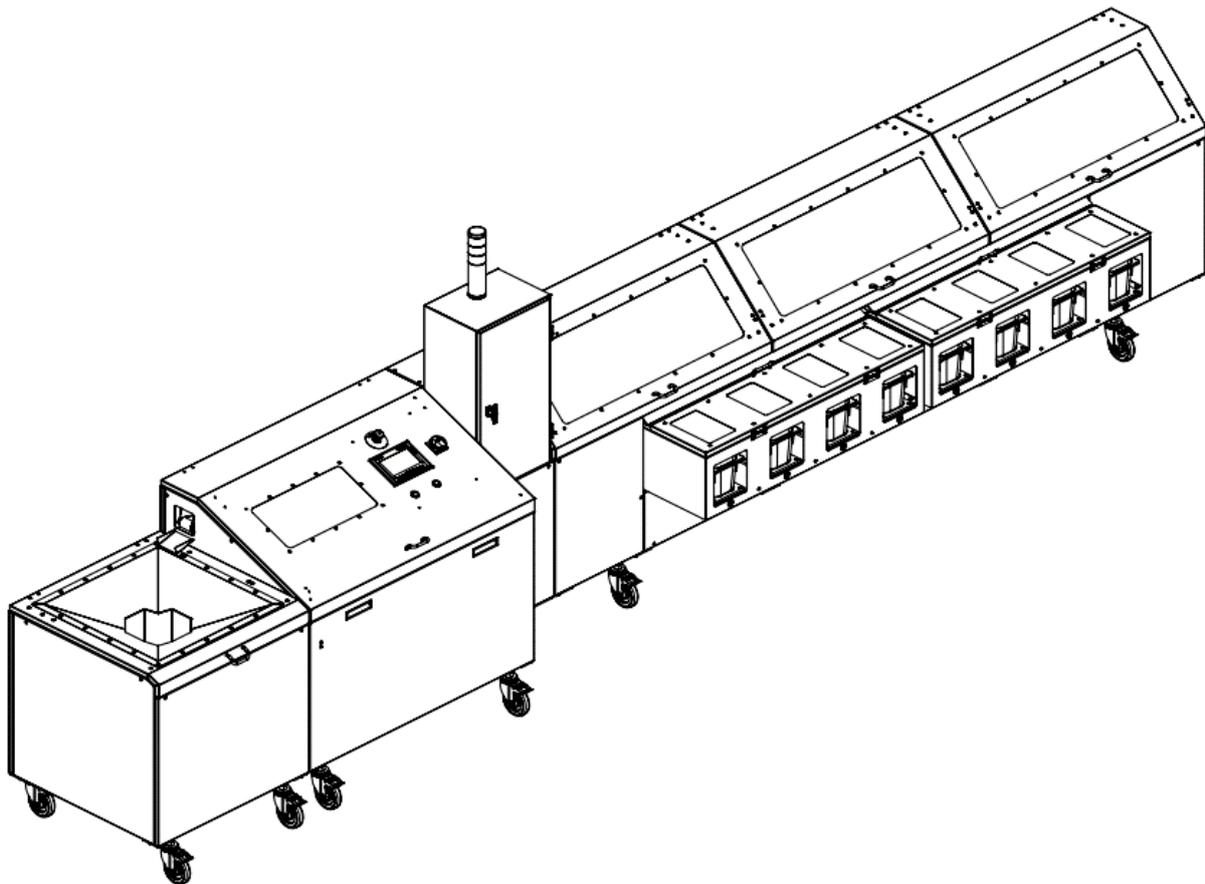


# Operating Manual

## Cutlery sorting machine BSM-8 M25





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# 1 General information

## 1.1 Preliminary remark

This operating manual is a translation of the original operating instructions.

This operating manual is intended for all persons who carry out work on the machine. It contains important information on safe and proper handling during transport, storage, set-up, installation, commissioning, operation, cleaning, troubleshooting and disposal of the BSM-8 M25 cutlery sorting machine.

All illustrations used in this operating manual are for illustrative purposes only and are not to scale.

We accept no liability for consequential damage resulting from use.

- ▶ Keep the operating manual within reach.
- ▶ Observe the safety instructions.
- ▶ If the machine is passed on to other persons, this operating manual must also be handed over.



### Note

- *If you have any questions or require further information, please contact THOMAS DÖRR customer service.*

## 1.2 Operator obligations

As the operator, ensure that basic safety instructions are observed.

As the operator, ensure that this operating manual is available in a legible condition. Ensure that persons responsible for the machine and its operation, as well as persons who work on the machine under their own responsibility, have read and understood the operating manual in full.

## 1.3 Symbols used

- [...] Designation of keys, buttons or displays
- Cross reference
- ▶ Measure, instruction
- Listing

## 2 Safety

### 2.1 Qualification of personnel

All persons working on this machine must have been adequately trained/instructed for the respective activity. The table below describes the required qualification level.

Activity	Qualification
Transport	Trained specialist personnel
Installation and commissioning	Instructed personnel with specialised training
Operation	Instructed operating personnel
Cleaning	Instructed operating personnel
Troubleshooting	Instructed operating personnel
Waste disposal	Trained specialist personnel

Persons working in the vicinity of the machine must be familiar with the safety instructions.

Persons, including children, who are unable to operate the appliance safely due to their physical, motor or mental ability/inexperience or lack of knowledge must not use the appliance without supervision or instruction by a responsible person.

Persons who are unable to read or understand the language used in the operating manual must be informed of the contents of this manual by appropriate persons or trained on this machine in accordance with the operating manual.

## 2.2 Intended use

The cutlery sorting machine is designed - using THOMAS DÖRR polishing granulate - to sort cutlery in commercial kitchens/canteens/restaurants or similar.

It is used exclusively for sorting the following cutlery:

- Spoon
- Fork
- Knife

This cutlery may only consist of the following materials:

- Steel
- Silver
- Chrome

This machine may only be operated inside buildings and within its technical specifications (→ p. 38).

### Note



- *Further cutlery can be sorted on request. If you wish to change the cutlery, please contact THOMAS DÖRR customer service for the necessary program changes.*

## 2.3 Improper use

The introduction of other objects or media of any kind is not permitted.

Independent modification or repair measures are not permitted.

## 2.4 Operating conditions

Operation in potentially explosive atmospheres is prohibited.

Operation at ambient temperatures outside +15°C - +40°C is prohibited.

## 2.5 Safety and protective devices

Ensure that all safety and protective devices belonging to the machine are present, properly installed and fully functional.

Do not change the position of safety devices, bypass them or render them ineffective.

Ensure that all safety and protective devices and interlocks are accessible at all times.

The operator must familiarise themselves with the spatial position and arrangement of the safety and protective devices.

The following safety and protective devices are fitted to the system:

Name	Function
Emergency stop switch	Shutting down the machine in an emergency

## 2.6 Personal protective equipment

The required protective equipment must be provided by the operator in sufficient quantities.

Command sign	Meaning
	Use suitable hand protection

## 2.7 Structure of the warnings

### 2.7.1 Meaning of the signal words

The following table shows the categorisation and meaning of the signal words of the safety instructions.

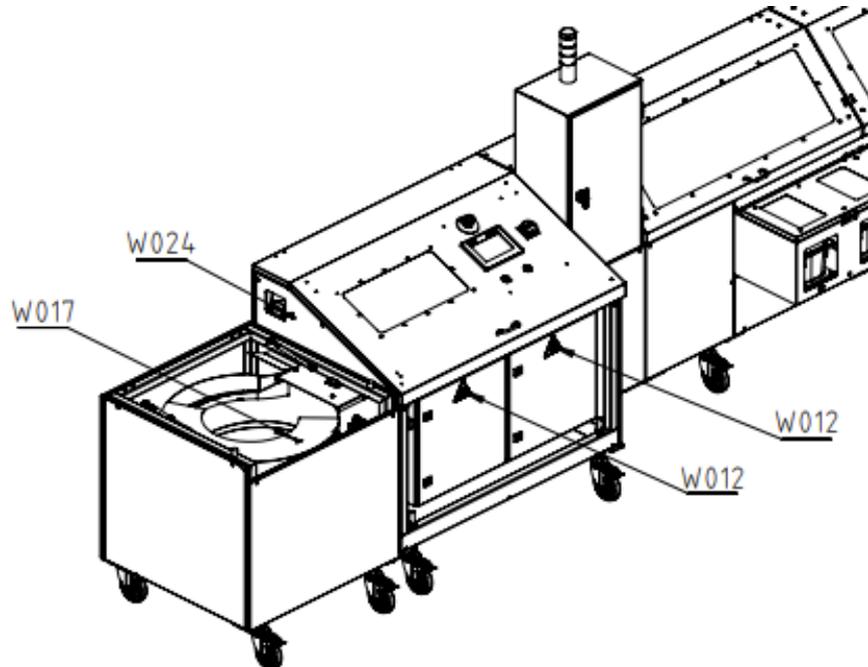
Signal word/ Signal colour	Meaning	Consequences of non-compliance
 <b>Danger!</b>	Immediately dangerous situation	Serious injuries or death
 <b>Warning!</b>	Potentially dangerous situation	Serious injuries or death
 <b>Caution!</b>	Potentially dangerous situation	Minor injuries
<b>Attention!</b>	Possible material damage	Material or product damage
Note	Useful tips	Facilitates handling

### 2.7.2 Meaning of the safety signs

The safety symbols used in this operating manual are explained below:

Safety sign	Register no.	Meaning
	W001	General warning of hazard point
	W005	Warning of non-ionising radiation
	W012	Warning of electrical power
	W017	Warning of hot surface
	W024	Warning of hand injuries

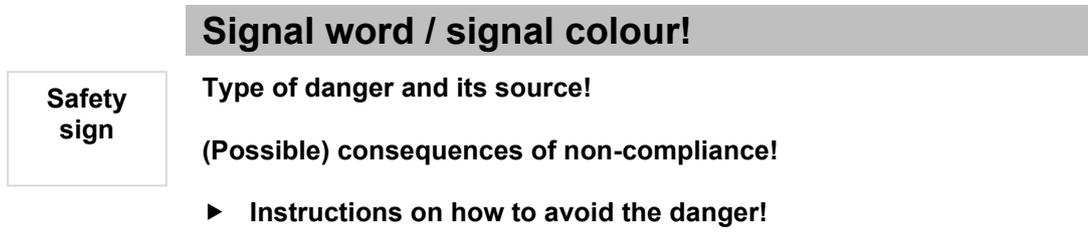
The following safety signs are attached to the machine:



### 2.7.3 Structure of the section-related warnings

The section-related warnings apply to several actions within a topic. The safety signs used indicate general or specific hazards.

They are structured as follows:



### 2.7.4 Structure of the embedded warnings

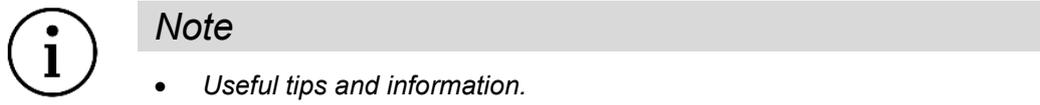
The embedded warnings apply to specific actions. They are integrated before the dangerous action.

They are structured as follows:

 **Signal word!** Type of danger and its source! (Possible) consequences of non-compliance! Instructions on how to avoid the danger!

## 2.8 Structure of the notes

The notes are structured as follows:



## 2.9 Safety instructions

### 2.9.1 General

**Handling** Incorrect handling of the machine can cause a variety of injuries and/or damage.

Therefore:

- ▶ Only carry out work that is described in this operating manual!
- ▶ Carry out the work steps in the specified sequence!

### 2.9.2 Installation and commissioning

**Mains cable** Power is supplied via a mains cable. Defects in the mains cable can cause **fatal electric shocks**.

Therefore:

- ▶ Ensure that the mains cable is in flawless condition!
- ▶ Ensure that the mains cable is not pinched, rubbing against sharp edges or close to hot surfaces!
- ▶ If there are any indications or suspicion of damage - e.g. scorching odour - disconnect the machine from the power supply immediately!

### 2.9.3 Operation

**Flaps** The machine has flaps that allow easy access to the inside of the machine. Closing or unintentional releasing can cause crushing injuries.

Therefore:

- ▶ Always open the flaps as far as they will go!
- ▶ Before closing, make sure that no limbs - yours or others - are in the closing area!

**Separating unit** The polishing granulate is sterilised using a UV-C lamp. Exposure to skin or eyes may cause damage.

Therefore:

- ▶ Do not reach into the separating unit!
- ▶ Avoid direct contact with skin or eyes!

**Feed hopper** Some cutlery falls from the return conveyor into the separating unit. Reaching in or catching can cause hand injuries.

Therefore:

- ▶ Do not catch cutlery by hand!
- ▶ Do not reach into the separating unit!

### 2.9.4 *Cleaning and care, maintenance, troubleshooting*

**Electronics** The machine has live components. Contact with liquids can cause **fatal electric shocks**. Damage can be caused to the electronics even when the machine is switched off.

Therefore:

- ▶ Do not expose the machine to water jets or splashes!
- ▶ Do not clean the machine with steam-generating appliances (e.g. steam jet)!
- ▶ Do not clean the machine with a dripping wet cloth!

**Motors** The electric motors have an increased temperature immediately after operation. Contact can cause burns.

Therefore:

- ▶ Allow motors to cool down for some time after turning them off!
- ▶ Use suitable protective gloves!

**Polishing tray** The polishing trough of the separating unit is heated and has an increased temperature immediately after operation. Contact can cause burns.

Therefore:

- ▶ Allow polishing tray to cool down for some time after turning it off!
- ▶ Use suitable protective gloves!

### 2.9.5 *Decommissioning, disassembly, disposal*

**Environmental protection** Some components of the machine have environmentally hazardous properties.

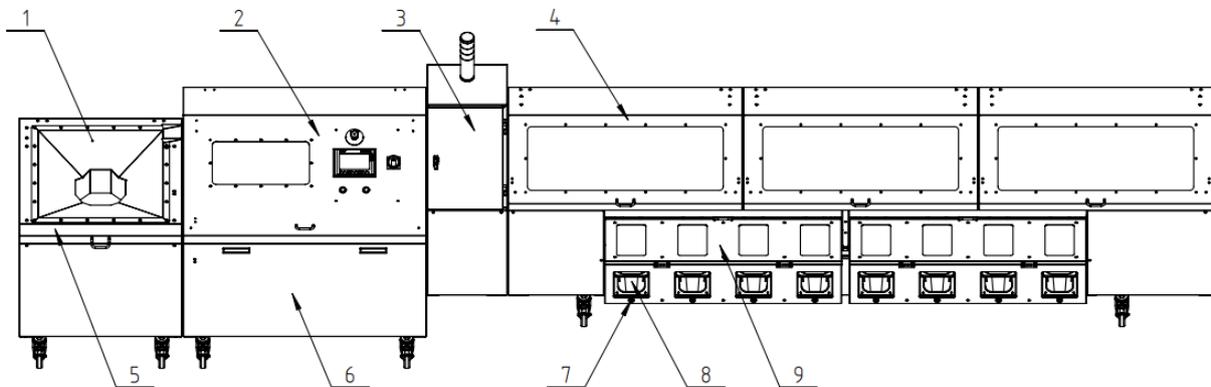
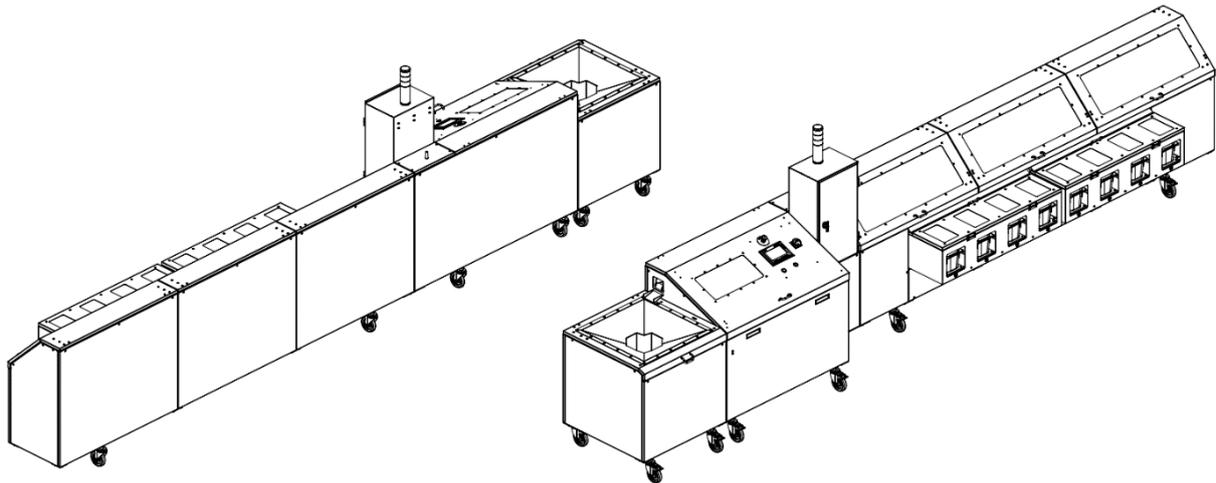
Therefore:

- ▶ Dispose of components properly and in an environmentally friendly manner!
- ▶ Observe national and regional regulations for proper disposal!

### 3 Machine overview

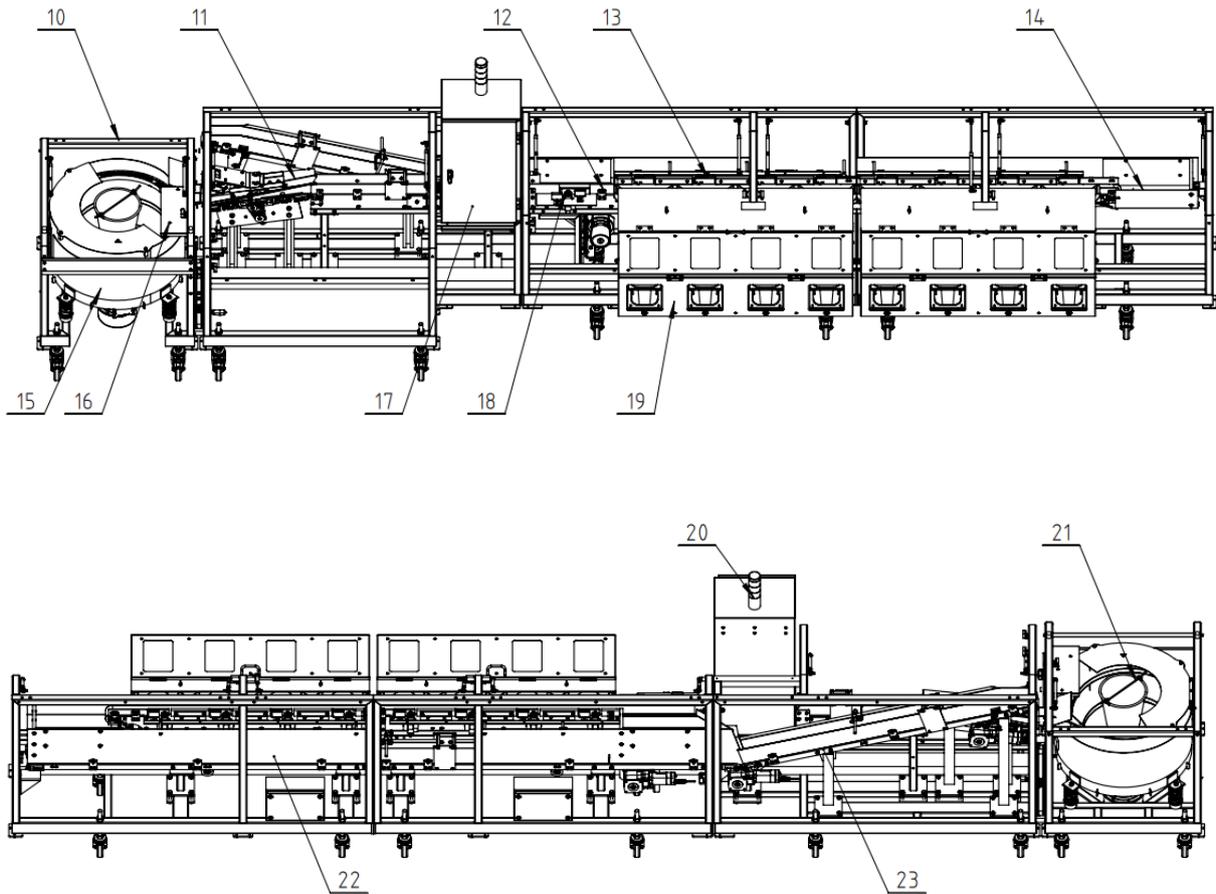
#### 3.1 Overview drawings

##### 3.1.1 General view with cladding



- |   |                      |   |                       |
|---|----------------------|---|-----------------------|
| 1 | Feed hopper          | 6 | Electric cabinet flap |
| 2 | Control panel flap   | 7 | Button                |
| 3 | Camera unit flap     | 8 | Cutlery tray          |
| 4 | Sorting unit flap    | 9 | Sound insulation flap |
| 5 | Separating unit flap |   |                       |

### 3.1.2 General view without cladding



- |                     |                                         |
|---------------------|-----------------------------------------|
| 10 Separation unit  | 17 Camera unit                          |
| 11 Separating belts | 18 Ejector                              |
| 12 Camera conveyor  | 19 Container tray with sound insulation |
| 13 Flipper unit     | 20 Signal light                         |
| 14 Return slide     | 21 Polishing tray                       |
| 15 Heating          | 22 Return conveyor 1                    |
| 16 UVC lamp         | 23 Return conveyor 2                    |

## 3.2 Machine description

### 3.2.1 Brief description

The cutlery is fed into the separating unit via the feed hopper. From there, it is transported to the separating belts, where it is roughly separated and polished. The separating conveyors further separate the cutlery and transport it onto the camera conveyor. There, the respective cutlery item is identified, taken to the sorting unit and conveyed to the corresponding cutlery container.

If the identification fails, the ejector forces the affected cutlery item onto the return conveyor. From there, it is transported back to the separating unit and the cycle starts all over again.

If the target cutlery container has already reached the maximum number of cutlery, the respective cutlery is transferred to the return conveyor. From there, it is transported back to the separating unit and the cycle starts all over again. The signal light lights up yellow, the operator must change the container.

### 3.2.2 Scope of delivery

1x	Cutlery sorting machine
1x	Operating manual for the machine
8x	GN-standard tray
1x	Collection container
1x	SG-BSM granulate
1x	Rubbing alcohol
4x	Wool felt holders
5x	Wool felt cutting

### 3.2.3 Consumables

#### **Polishing granulate**

For the separation unit.  
Art. no.: 1019521

#### **Rubbing alcohol**

For cleaning all surfaces of the machine.  
Art. no.: 0015204

#### **Wool felt cutting**

For cleaning the conveyor belts.  
Art. no.: 1019586

#### **UVC lamp**

For sterilising the granulate.  
Art. no.: 0011859



#### **Note**

- *You can order the necessary consumables from THOMAS DÖRR customer service.*
- 

### 3.2.4 Accessories

#### **GN standard tray sizes 1/3**

Plastic collection container for sorted cutlery.  
Art. no.: 1015535



#### **Note**

- *You can order the necessary accessories from THOMAS DÖRR customer service.*
-

## 4 Transport and storage

### 4.1 Transport

#### Attention!

**Damage to the machine due to improper transport!**

**Material damage!**

- ▶ **Do not lay the machine down!**
- ▶ **Do not place any other transport goods on the machine!**

Check the machine for any transport damage immediately upon receipt. If the product is damaged, it must not be assembled, installed or commissioned.

Observe the following instructions when (re)transporting the machine:

#### Offsite

1. Pack the machine.

 **Caution!** Risk of injury from falling objects! Use suitable anti-slip pads when transporting with a forklift truck!

2. Load the machine onto an HGV using a forklift truck.
3. Secure the machine in accordance with regulations.
4. Transport the machine to its destination.

 **Caution!** Risk of injury from falling objects! Use suitable anti-slip pads when transporting with a forklift truck!

5. Unload the machine from the HGV using a forklift truck.

#### On-site

1. Release the castor locks.

 **Caution!** Risk of injury due to the machine rolling away! Only move the machine on a level and firm surface!

2. Move the machine to the destination by hand.

 **Caution!** Risk of injury due to tripping! Position the castors so that they do not protrude from under the machine!

3. Lock the swivel castors.

## 4.2 Storage

### Attention!

**Damage to the machine due to improper storage!**

**Material damage!**

- ▶ **Store the machine in a stable position!**
  - ▶ **Take the machine's weight into account (e.g. for load limits of shelves)!**
  - ▶ **Do not store any other objects on the machine!**
- 

The storage location must be covered and closed. It must also:

1. Have a constant temperature between +5°C and +50°C.
2. Have a humidity level that is always below 50%.

## 5 Installation and commissioning

### 5.1 Setting up

#### **Caution!**



**Hazards due to improper installation!**

**Crushing, shearing, pushing, tripping!**

- ▶ **Place the machine on a firm, level and secure surface!**
- ▶ **Position the machine so that it can be operated and cleaned from a safe position!**
- ▶ **Position the castors so that they do not protrude from under the machine and lock them!**

We recommend installing the cutlery sorting machine in the hygiene area or in the area of the dishwasher.

- ▶ When setting up, leave at least 500 mm (= 1/2 metre) space between the machine and the wall so that cleaning around the machine is possible.

### 5.2 Installation

#### **Danger!**



**Danger due to damaged live parts!**

**Fatal electric shock!**



- ▶ **Ensure that the mains cable is in flawless condition!**
- ▶ **Ensure that the mains cable is not pinched, rubbing against sharp edges or close to hot surfaces!**

#### **Caution!**



**Danger due to loosely hanging or lying cables!**

**Slips, trips and falls!**

- ▶ **Secure the mains cable!**
- ▶ **If necessary, draw attention to the cable!**

Insert the mains plug of the cutlery sorting machine into a mains socket that complies with the regulations (→ p. 38).

### 5.3 Commissioning

#### **Caution!**



**Danger from moving parts!**

**Entanglement or catching!**

- ▶ **Do not wear any jewellery (e.g. necklaces, bracelets, finger rings etc.)!**
  - ▶ **Wear tight-fitting clothing!**
  - ▶ **Do not reach into the running machine!**
- 

#### **Procedure**

1. Carry out a visual inspection.
2. Fill granulate into the separating unit (→ p. 27).
3. Switch on the machine.
4. Place the cutlery containers in the tray (→ p. 25).
5. Enter the cutlery parameters.
6. Set the maximum number of cutlery pieces per container (→ p. 25).
7. Carry out a test run (→ p. 24).

## 6 Operation

### **⚠ Caution!**



**Danger from moving parts!**

**Entanglement or catching!**

- ▶ Do not wear any jewellery (e.g. necklaces, bracelets, finger rings etc.)!
- ▶ Wear tight-fitting clothing!
- ▶ Do not reach into the running machine!

### **⚠ Caution!**



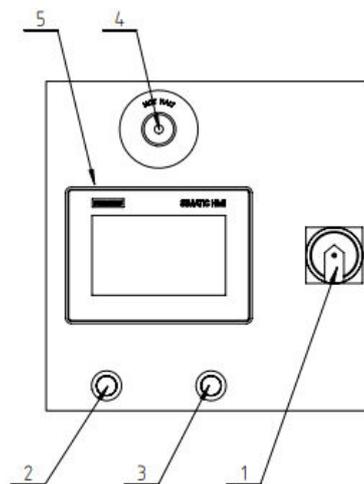
**Danger from sharp pieces of cutlery falling from the return conveyor into the separating units!**

**Cut!**

- ▶ Do not catch cutlery by hand!
- ▶ Do not reach into the separating unit!

## 6.1 Control and displays

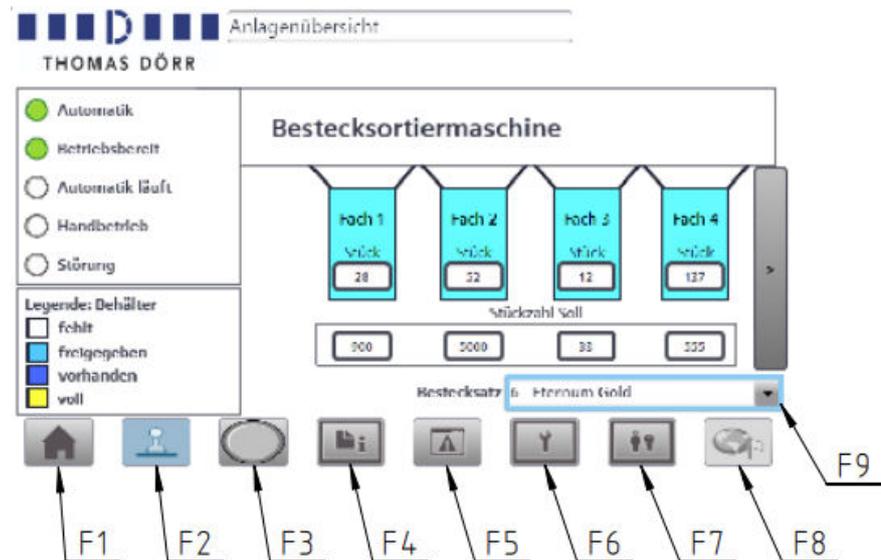
### 6.1.1 Control panel



- 1 Main switch
- 2 Start
- 3 Stop
- 4 Emergency stop
- 5 HMI panel

### 6.1.2 HMI panel

The machine is controlled via an HMI panel. It has a touchpad for input/output. Faults are also displayed here.



#### [F1] System overview

User interface of the cutlery sorting machine.

#### [F2] Operating mode

Selection screen for the operating modes.

#### [F3] Manual operation

User interface of the separating unit.

#### [F4] I/O overview

Provides information about active and inactive (switching) signals of the control unit.

#### [F5] Faults

List of faults.

#### [F6] Machine data

User interface of the machine parameters.

#### [F7] No function

No function.

#### [F8] Language selection

Switches between German, English, Spanish, Italian and French.

#### [F9] Program list

Switches between the programs.

### 6.1.3 Signal light

The signal light provides information about the operating status of the machine. It has four colour signals:

- Flashing green
- Steady green
- Steady yellow
- Steady red

Flashing green:

- Warm-up cycle is active
- Machine is ready for operation.
- Post-drying cycle is active.

Steady green:

- Machine is operating.

Steady yellow:

- A cutlery container has reached its maximum number of cutlery pieces.

Steady red:

- There is a fault that prevents the machine from operating (→ p. 33).

## 6.2 Switching on and off

- Switch on**
1. Set the main switch to on ("I").
  2. Unlatch the emergency stop switch.
  3. Press the start button once (switch on the control voltage).

- Switch off**
1. Press the stop button
  2. Wait until the post-drying process is complete.
  3. Operate the emergency stop switch (switch off the control voltage).
  4. Set the main switch to off ("0").

## 6.3 Operating modes

The machine has three different operating modes.

- Manual mode
- Automatic mode
- Cleaning mode

Press the [F2] button to access the operating mode selection screen. Select the desired operating mode using the respective button on the touchscreen.

### 6.3.1 Automatic mode

The cutlery is polished and sorted fully automatically in automatic mode.

A warm-up cycle, which lasts approx. 20 minutes, starts automatically on start-up. No sorting takes place in the meantime.

If no cutlery is added, operation switches off automatically.

When stopping a post-drying cycle, which lasts approx. 20 minutes, starts automatically. Meanwhile, any cutlery left in the machine can be removed using the collection container.

#### Procedure

1. Place empty cutlery containers on the container tray (→ p. 25).
2. Start the machine by pressing the start button.
3. Add cutlery (→ p. 26).
4. Replace the containers as soon as necessary (→ p. 25).
5. Stop the machine by pressing the stop button.
6. Hang the collection container in the separating unit.

#### Note



- *To achieve optimum polishing results, the cutlery must be placed in the machine wet - either directly from the dishwasher or from a water bath. The cutlery polisher will not remove water stains that have already dried on (limescale residues).*
- 

### 6.3.2 Cleaning

Clean the conveyor belts in cleaning mode. The conveyor belts run slowly. Sorting and polishing does not take place.

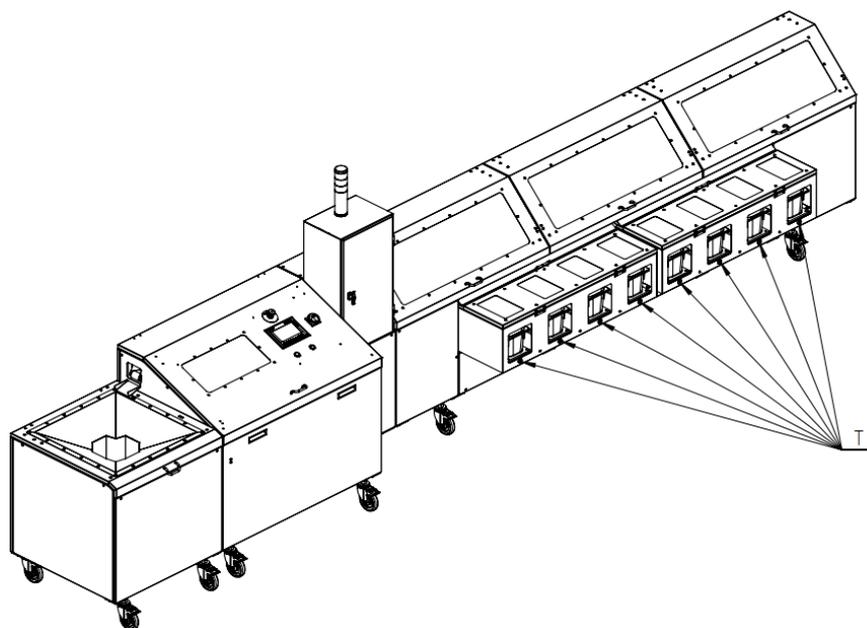
### 6.3.3 Manual mode

Used exclusively as an aid for fault diagnosis. Flippers are controlled manually via the HMI panel.

## 6.4 Replace cutlery tray

You can recognise a full cutlery container by the flashing of the corresponding button and the yellow signal light.

- Procedure**
1. Remove the full cutlery container from the tray.
  2. Place an empty cutlery container on the tray.
  3. Press the yellow flashing button [T] to acknowledge the change.



### Note



- *The container change is only complete when the button stops flashing. As long as it flashes, no further cutlery is placed in this container.*

## 6.5 Change the number of cutlery pieces

Set the maximum number of cutlery pieces in a cutlery container under "Target" quantity.

- Procedure**
1. Press the [F1] button.
  2. Press the respective button under [Number of pieces to be ordered].
  3. Set the desired number of cutlery pieces using the [0] - [9] buttons.

### Note



- *The current actual quantity of the respective container is displayed in the green field.*

## 6.6 Cutlery feeder

### ⚠ Caution!



Danger from optical radiation (UVC lamp inside the separating unit)!

Eye and skin damage!



- ▶ Do not reach into the separating unit!
- ▶ Avoid direct contact with the skin or eyes!

### ⚠ Attention!

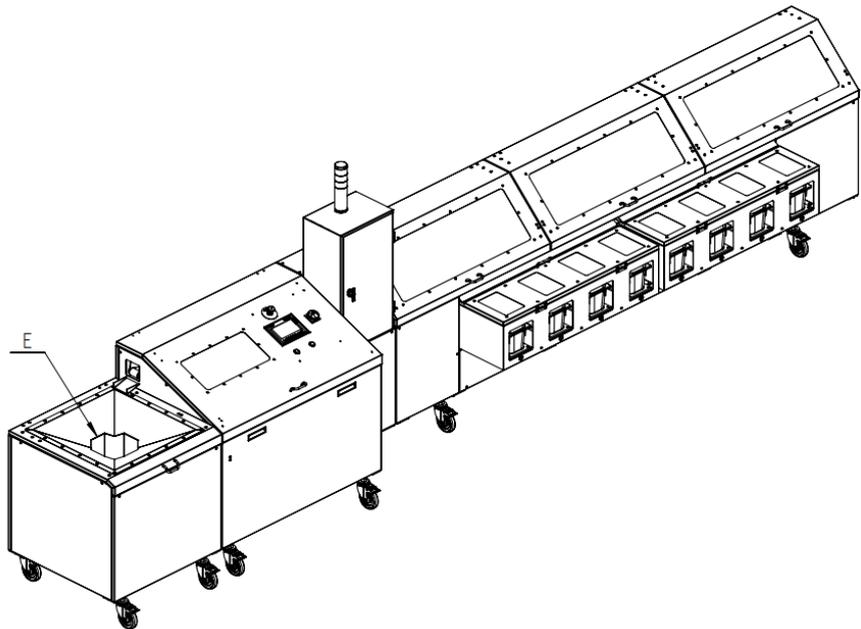


Machine damage due to overfilling!

Material damage!

- ▶ Do not put more cutlery in the machine than specified!

Pour the cutlery directly from the dishwasher basket (approx. 300 items of cutlery) into the chute [E]. Make sure that the separating unit is not overfilled and repeat this process every 5-6 minutes.



### Note

- Overfilling can reduce the sorting capacity of the machine.

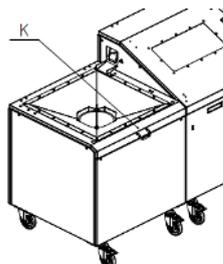
## 6.7 Change granulate

Change the granulate in the separating unit after 200 operating hours or after 2 months at the latest.

Change the granulate sooner if they are contaminated, swollen or greasy.

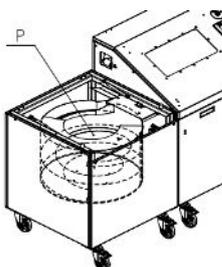
### Procedure

1. Switch off the machine.
2. Secure the main switch against being switched on again.



3. Open the flap [K] of the separating unit.

**⚠ Caution!** Risk of injury from hot surfaces! Burns to arms and hands possible! Allow the polishing tray to cool down for some time after turning off or use protective gloves!



4. Use a vacuum cleaner to completely remove dirty polishing granulate from the polishing tray [P].
5. Spray the polishing tray [P] with rubbing alcohol and wipe it off with a clean, dry cloth.
6. Fill new polishing granulate into the polishing tray [P].
7. Close the flap [K] of the separating unit.
8. Switch on the machine.
9. Press the [F3] button.
10. Press the [Acknowledge granulate change] button.

### Note



- Freshly filled polishing granulate initially creates a little more dust.
- Oily granulate turns dark in colour.

## 7 Cleaning and care

### **Caution!**



**Danger from hot surfaces!**

**Burns on arms and hands!**

- ▶ **Allow the polishing tray and motors to cool down for some time after turning off!**
  - ▶ **Use suitable protective gloves!**
- 

### **Attention!**

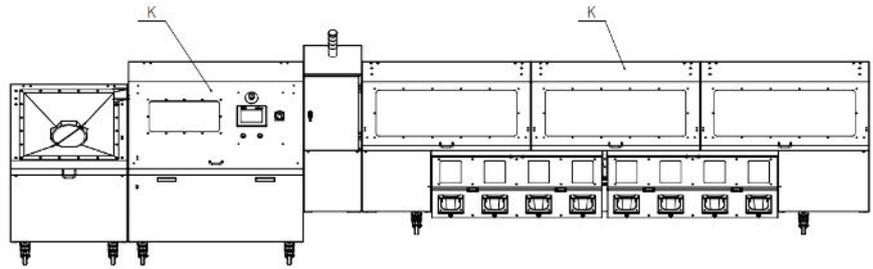
**Damage to live components, even if they are de-energised!**

**Damage to the electronics (water damage)!**

- ▶ **Do not expose the machine to water jets or splashes!**
  - ▶ **Never clean the machine with steam-generating devices such as steam jets or high-pressure cleaners!**
  - ▶ **Do not clean the machine with dripping wet cloths or similar!**
-

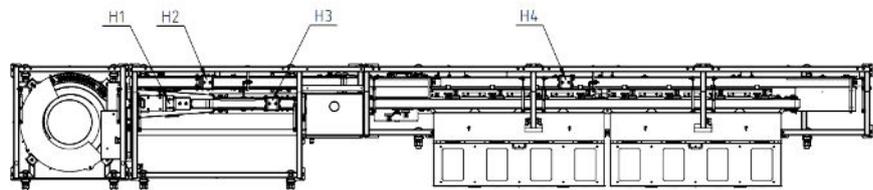
## 7.1 Daily cleaning

1. Switch off the machine.

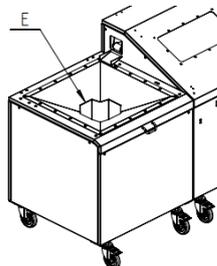


2. Open the flaps [K].

**Attention!** Damage to the conveyor belts due to soiled wool felt cuttings! Do not use the holders with soiled wool felt cuttings!

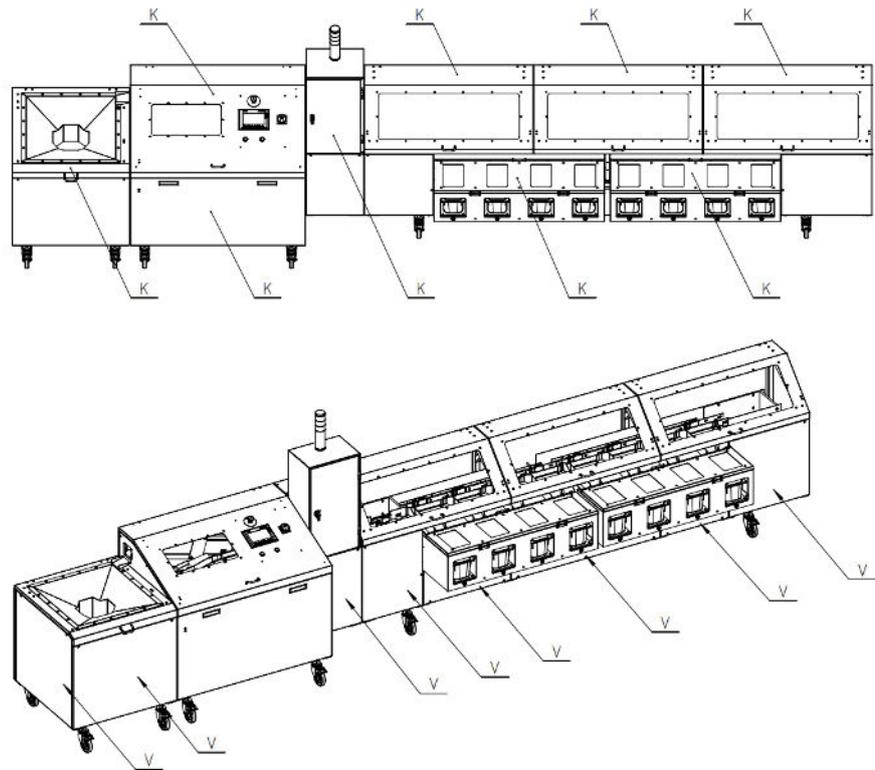


3. Insert the wool felt holders [H1] - [H4] into the guides provided to clean the belts.
4. Close the flaps [K].
5. Switch on the machine.
6. Press the [F2] button.
7. Press the [Cleaning] button to start cleaning mode.
8. Let the machine run in cleaning mode for approx. 2 minutes.
9. Press the [Cleaning] button again to end cleaning mode.
10. Switch off the machine.
11. Remove the wool felt holders.



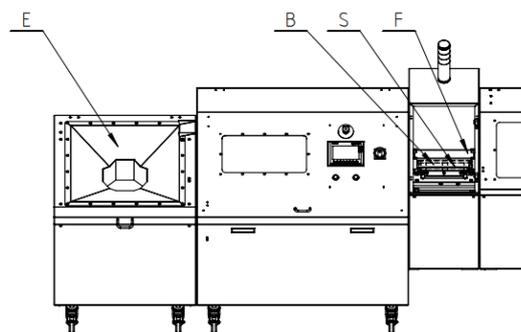
12. Clean the feed funnel [E] with rubbing alcohol.

## 7.2 Weekly cleaning

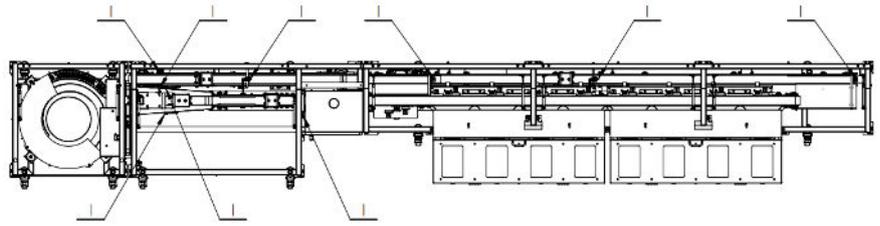


1. Switch off the machine.
2. Secure the main switch against being switched on again.
3. Open all flaps [K].
4. Remove all cladding [V].

**⚠ Caution!** Risk of injury from hot surfaces! Burns to arms and hands possible! Allow the polishing tray and motors to cool down for some time after turning off or wear protective gloves!



5. Clean the feed hopper [E], mirror [S] and window [F] with rubbing alcohol.
6. Fold the belt upwards and clean the lighting [B] underneath with rubbing alcohol.



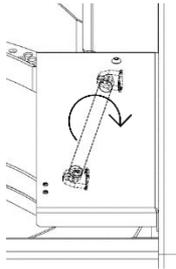
7. Clean the initiators [I] with a dry anti-dust cloth.
8. Clean around the outside of the entire machine.
9. Clean under the machine.
10. Close all flaps [K].
11. Refit all cladding [V].
12. Clean all cladding [V] and flaps [K] with rubbing alcohol and a clean, dry cloth.

### 7.3 Replace UV-C lamp

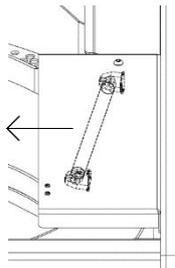
Replace the UV-C lamp after 8000 operating hours to ensure sterilisation of the granulate. You will be reminded of this by a message on the HMI panel.

#### Procedure

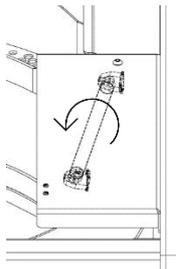
1. Switch off the machine.
2. Secure the main switch against being switched on again.
3. Open the flap of the separating unit.
4. Turn the UVC lamp 90° clockwise.



5. Remove the UVC lamp.



6. Insert a new UVC lamp.
7. Turn the UVC lamp 90° anti-clockwise.



8. Close the flap of the separating unit.
9. Switch on the machine.

## 8 Troubleshooting

You can recognise a fault by the red illuminated signal light. The HMI panel displays additional information. Rectify any faults as described in the following tables.

### Note



- *If you require assistance in rectifying faults, please contact THOMAS DÖRR customer service.*

### 8.1 General

Fault	Solution	Carried out by
Control voltage off	<ul style="list-style-type: none"> <li>• Press the start button</li> <li>• Unlatch the emergency stop</li> </ul>	Instructed operating personnel
Cutlery jam or no cutlery in the polisher	<ul style="list-style-type: none"> <li>• Feed cutlery</li> <li>• Remove jammed cutlery</li> </ul>	Instructed operating personnel
No container released	<ul style="list-style-type: none"> <li>• Release container</li> </ul>	Instructed operating personnel

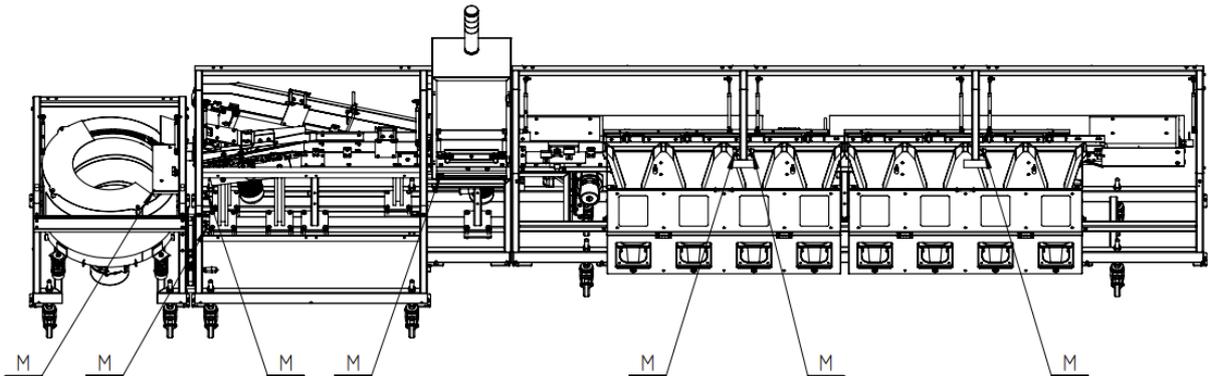
## 8.2 Flaps

The safety switches [M] prevent the machine from starting up with the flaps open. They are always attached in pairs, once on the frame and once on the respective flap.

### Note



- *Dirty safety switches can produce false error messages that prevent the machine from operating.*



Fault	Solution	Carried out by
Flap on operating console open	<ul style="list-style-type: none"> <li>• Close flap</li> <li>• Clean the safety switch</li> </ul>	Instructed operating personnel
Flap on cutlery polishing machine open	<ul style="list-style-type: none"> <li>• Close flap</li> <li>• Clean the safety switch</li> </ul>	Instructed operating personnel
Flap on camera open	<ul style="list-style-type: none"> <li>• Close flap</li> <li>• Clean the safety switch</li> </ul>	Instructed operating personnel
Flap on switch cabinet open	<ul style="list-style-type: none"> <li>• Close flap</li> <li>• Clean the safety switch</li> </ul>	Instructed operating personnel
Left sorter flap open	<ul style="list-style-type: none"> <li>• Close flap</li> <li>• Clean the safety switch</li> </ul>	Instructed operating personnel
Middle sorter flap open	<ul style="list-style-type: none"> <li>• Close flap</li> <li>• Clean the safety switch</li> </ul>	Instructed operating personnel
Right sorter flap open	<ul style="list-style-type: none"> <li>• Close flap</li> <li>• Clean the safety switch</li> </ul>	Instructed operating personnel

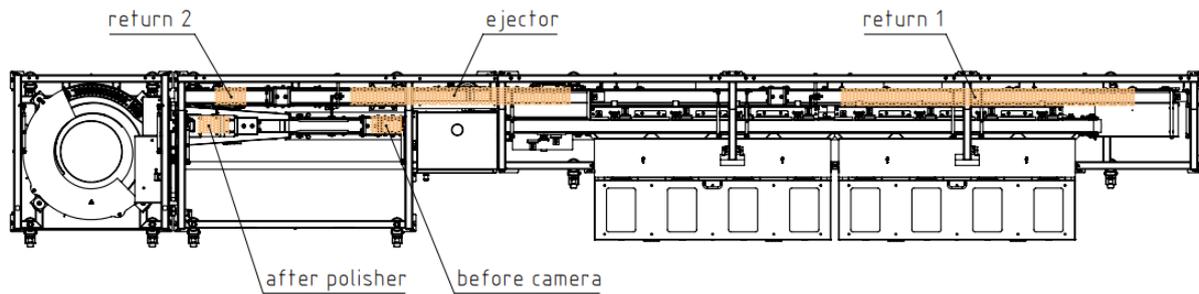
### 8.3 Cutlery jam

The initiators prevent the machine from operating if there is a cutlery jam. Cutlery jams usually occur in the areas marked in orange.

#### Note



- Contaminated initiators can erroneously produce jam or fault messages that prevent the machine from operating.



Fault	Solution	Carried out by
Cutlery jam ejector	<ul style="list-style-type: none"> <li>Remove jammed cutlery</li> </ul>	Instructed operating personnel
Cutlery jam before camera	<ul style="list-style-type: none"> <li>Remove jammed cutlery</li> </ul>	Instructed operating personnel
Cutlery jam after polisher	<ul style="list-style-type: none"> <li>Remove jammed cutlery</li> </ul>	Instructed operating personnel
Cutlery jam return 1	<ul style="list-style-type: none"> <li>Remove jammed cutlery</li> </ul>	Instructed operating personnel
Cutlery jam return 2	<ul style="list-style-type: none"> <li>Remove jammed cutlery</li> </ul>	Instructed operating personnel

## 9 Waste disposal

### 9.1 Consumables

#### Attention!

**Environmental hazard due to machine consumables!**

**Environmental damage!**

► **Dispose of the consumables properly!**

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**Granulate**

Dispose of with the residual waste.

**Wool felt holders**

Dispose of with the residual waste.

**Rubbing alcohol**

Dispose of at the recycling centre.

**UVC lamp**

Dispose of at the recycling centre.

### 9.2 Machine

For the disposal of the machine, you can request collection from us or register delivery to us.

We charge an allowance for expenses for collection and processing on request.

If you deliver the old appliance personally - or commission a forwarding agent - the allowance for expenses will not apply. Nevertheless, please enclose a completed and signed disposal order with the consignment.

## 10 Service and manufacturer information

### 10.1 Service

We will be happy to help you with any other concerns or questions you may have about our products.

Please contact us to order spare parts or to request our mobile customer service. When ordering spare parts, please state the machine number and year of manufacture.

### 10.2 Manufacturer

Max Dörr GmbH Förderanlagen  
Robert-Bosch-Straße 2  
75050 Gemmingen  
Germany

email [info@max-doerr.de](mailto:info@max-doerr.de)  
Tel: +49 (0)7267 9122-0  
Internet [www.max-doerr.de](http://www.max-doerr.de)

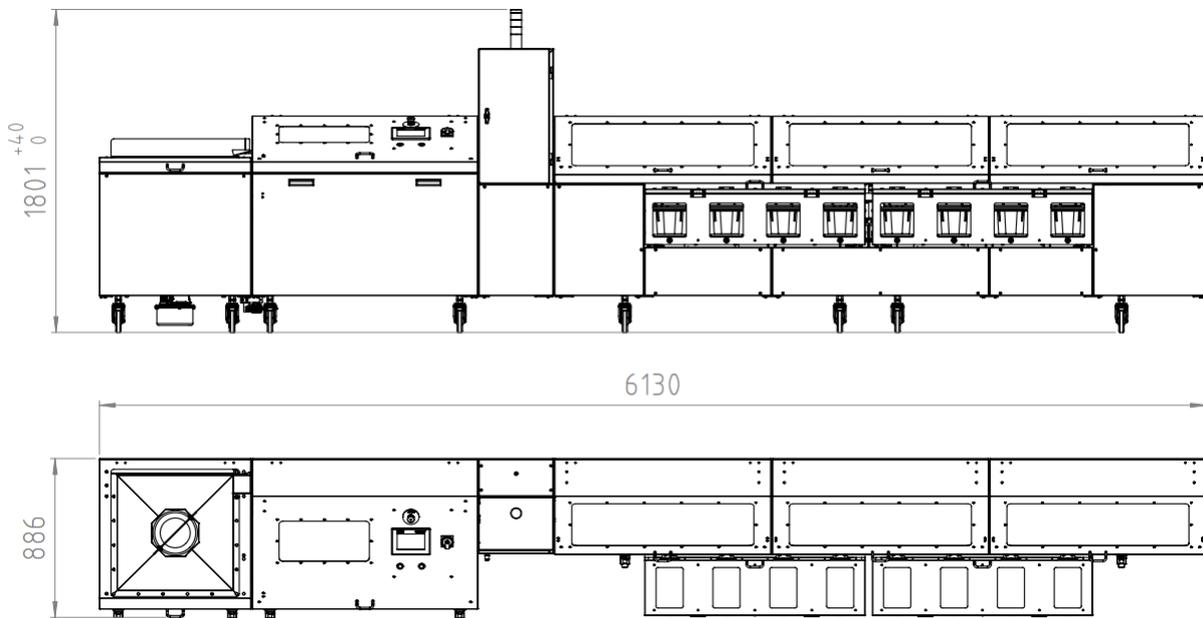
## 11 Technical data

### 11.1 Data sheet

General	
Weight	Approx. 1100 kg
Granulate quantity	14 kg
Noise pressure level	
Normal operation	65dB(A)
Insertion of cutlery (Imp.)	96dB(A)
Cutlery falls into cutlery container (imp.)	85dB(A)
Electrics	
Connection voltage	230 V / 50-60 Hz
Connected load	2,7kW
Protection	16 A
Sorting performance	
Performance	Up to 3000 pieces of cutlery per hour

### 11.2 Dimension sheet

All dimensions in millimetres.



## 12 CE Declaration of Conformity

in the context of the EC Machinery Directive 2006/42 EC



**MAX DÖRR**

Robert-Bosch-Straße 2  
75050 Gemmingen

Tel: +49 (0)7267 9122-0

We hereby declare that the machine designated below, due to its design and construction in the version placed on the market by us, complies with the basic safety and health requirements of the EC directives listed below.

Designation of the machine:	Cutlery sorting machine
Type:	BSM-8 M25
Applicable EC Directives:	EC Machinery Directive (2006/42 EC) EMC Directive (2014/30 EU)

Person established in the Community who is authorised to compile the relevant technical documentation:

**Max Dörr GmbH  
–Förderanlagen–  
Robert-Bosch-Straße 2  
75050 Gemmingen**

Gemmingen, 08.07.2025

Location, Date

Signature  
Thomas Dörr  
Managing Director







THOMAS DÖRR

**Thomas Dörr GmbH & Co. KG**

Robert-Bosch-Strasse 2 ■ 75050 Gemmingen ■ Germany

Tel: +49 (0)7267 / 912291

[www.t-d.de](http://www.t-d.de) ■ [info@t-d.com](mailto:info@t-d.com)