



Operation manual



**Maltman 220, Maltman 220 S, Maltman 400, Maltman 400 S,
Maltman 500, Maltman 500 S**

Copyright law

This operation manual is a document or instrument in the sense of the Law on Unfair Competition. The copyright remains with

Egon Sommer Maschinenbau GmbH & Co. KG
Pagenstecherstraße 146
D-49090 Osnabrück
Telefon: +49 (0)541 125085
Telefax: +49 (0)541 129557
E-Mail: service@sommer-maschinenbau.de
Internet: www.sommer-maschinenbau.de

This operation manual is intended for the user/owner of the machine and its staff. It contains texts, pictures and drawings that, without the express permission of Egon Sommer Maschinenbau GmbH & Co. KG, may not be

- reproduced,
- disseminated or
- disclosed in any other.

Permission is granted for internal use to the user/owner of the machine.

© Copyright Egon Sommer Maschinenbau GmbH & Co. KG 28.02.2018

The manufacturer reserves the right to make technical changes and improvements at any time without prior notice.

Table of contents

1	General description	4
1.1	Information about this Operation manual	4
1.2	Layout of the Operation manual.....	4
1.3	Use of the Operation manual.....	4
1.4	Obligations of the machine owner.....	4
1.5	Personnel requirements	5
1.6	Intended use	5
1.7	Unintended use	5
2	Safety instructions	6
2.1	Safety symbols used in this Operation manual.....	6
2.2	Warning labels on the Machine.....	6
2.3	Safety guidelines.....	7
3	Technical data	10
4	Setup and function	11
5	Safety devices	12
5.1	Shutdown in case of power outage	12
5.2	Protective grid	12
5.3	Protective cover	12
6	Transport/Setting up/Assembly of the Machine	13
6.1	Installation and assembly	13
6.1.1	Attaching the Machine	13
7	Initial start-up	14
7.1	Connecting the power supply.....	14
7.1.1	Check for the correct direction of rotation.....	14
8	Operation	14
8.1	Basic checks before and after operations	14
8.2	Operating elements	14
8.3	Operating procedure/Crushing cereals	15
8.3.1	Adjust the feed regulator.....	15
8.3.2	Adjusting the crushing gap.....	16
8.3.3	Reduce the crushing gap.....	16
8.3.4	Ejecting foreign bodies	16
9	Maintenance and care	17
9.1	Maintenance schedule.....	17
9.2	Special Maintenance Work	18
9.2.1	Retightening the V-belt	18
9.2.2	Replace the V-belt	18
10	Malfunction	19
10.1	List of malfunctions.....	19
11	EC Declaration of Conformity	20

1 General description

This chapter contains notes on this manual, along with general safety instructions for handling the machine of the Maltman-series.

The Maltman is referred to as the machine in the following.

1.1 Information about this manual

This manual is an integral part of the user documentation for the machine. Observe all instructions, data, and directives contained in the manual. The manual will help you to operate the machine safely, and with a high level of availability.

We reserve the right to make changes designed to improve the machine described in the manual at any time without notice.

1.2 Layout of the manual

Safety-relevant instructions are identified by the appropriate symbols.

Steps that must be performed in the specified order are enumerated and the results of the steps are shown in italics.

Example:

1. Step 1 to be performed
Result of step 1
2. Step 2 to be performed
 - 2.1 Sub-step of step 2 to be performed

1.3 Use of the manual

The manual is to be supplemented by existing national directives concerning accident prevention and environmental protection.

Ensure that the manual is always available at the usage site of the machine and in a legible condition.

In addition to the manual and the binding regulations for accident prevention applicable in the country and site of implementation, the recognised industry-specific rules for safety and professional work must be complied with.

1.4 Obligations of the machine owner

The machine user/owner is obliged to only permit persons to work on the machine, who

- Observe the basic directives concerning health and safety at work and accident prevention,
- Are regularly instructed in difficulties, hazards, and other particular rules of conduct.

The owner/operator undertakes to:

- observe and communicate to staff the current mandatory regulations on accident prevention, environmental protection and handling of dangerous goods in addition to the instructions in this manual, as required by law.
- provide personal protection equipment.
- Establish the authority of the machine operator to enable the machine operator to reject third party instructions that contradict safety considerations.
- assure safety-aware work of personnel at regular intervals.
- observe legal requirements and rules at the site of the machine.

1.5 Personnel requirements

The machine may only be operated by persons of a minimum age of 16 years.

Before commencing work, all persons tasked with working on the machine undertake to:

- observe the basic directives concerning health and safety at work and accident prevention,
- Read the safety and warning instructions in this manual and to confirm with their signature that they have understood them,
- Use personal/workplace-specific protective clothing and auxiliary materials that serve occupational safety while working, where these are required from a safety/technical point of view.
- comply with specifications of competence.

1.6 Intended use

The machine is used exclusively to process various grain types (such as oats, barley, wheat, maize, spelt, etc.) so that their form is beneficial for animal feed.

The machine must be operated exclusively within the performance limits stated in chapter 3 "Technical data".

Uses other and beyond this shall be deemed improper and unintended. Egon Sommer Maschinenbau GmbH & Co. KG will not be held liable for any damage caused by unintended use.

Intended use also includes:

- Observing all information and directives in the manual and all accompanying documents.
- Observing the mandatory service and maintenance intervals, or the service and maintenance intervals specified in the manual and applicable documentation.

1.7 Unintended use

Unintended use particularly includes:

- Using the machine for purposes other than crushing cereals.
- Crushing of materials with a high moisture content/that are very sticky will cause them stick to the rollers of the crusher (exception:) Use of scrapers).
- Operating the machine with bridged safety devices.
- Operating the machine with incomplete protection.
- Operation of the machine by more than one person.
- Operating, maintaining and repairing the machine by non-authorized and non-instructed persons.
- Operating the machine in an area with a risk of explosion.

2 Safety instructions

2.1 Safety symbols used in this Fehler! Verweisquelle konnte nicht gefunden werden.

	<p style="text-align: center;">DANGER</p> <p>"DANGER" identifies an immediate danger which can cause severe or even fatal injury.</p>
	<p style="text-align: center;">WARNING</p> <p>"WARNING" identifies a potentially dangerous situation which can cause severe or even fatal injury.</p>
	<p style="text-align: center;">CAUTION</p> <p>"CAUTION" identifies a potentially dangerous situation which could to minor injury.</p>
	<p style="text-align: center;">NOTE</p> <p>"NOTICE" identifies a potentially dangerous situation that can harm property and the environmental. This signal word is also used for application instructions and other useful information.</p>

2.2 Warning labels on the machine

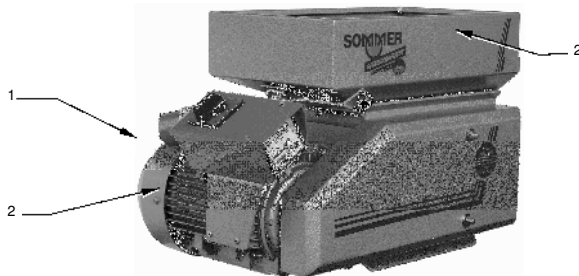


Fig. 2-1: Warning labels on the machine

Pos.	Label	Description
1		Warning of hazardous electrical voltage.

2		Risk of drawing in, crushing.
---	--	-------------------------------

2.3 Safety guidelines

	DANGER
	<p>Risk to persons and the machine!</p> <ul style="list-style-type: none"> ▪ Only qualified and authorised persons are permitted to operate the machine. ▪ Only qualified and authorised persons are permitted to operate the machine. ▪ Maintain all safety and hazard instructions at and on the machine in a complete and legible condition! ▪ Always exercise care and attention in the entire work area of the machine. ▪ Exercise great care when carrying out setup and troubleshooting work requiring the disabling of safety equipment and/or covers. ▪ Dismantled safety equipment must be refitted after completing the work. ▪ Avoid any unsafe methods of working. ▪ Keep the operating manual available at the machine site at all times. ▪ The machine's operator must have read and understood the Operating Instructions. ▪ Stop the machine immediately and report the fault to the responsible department/person when safety-relevant modifications are made to the machine line or the operating behaviour of the machine changes! ▪ Stop the machine immediately and report the fault to the appropriate office/person if safety-relevant modifications have been made or the operating behaviour of the machine changes! ▪ The applicable worker's compensation association (BG) rules for Occupational Safety and Health. ▪ Do not remove or modify safety devices and warning signs from the machine. ▪ Do not convert machine components without our approval. ▪ Access to the workplace on the machine is not permitted for unauthorised persons. ▪ Always exercise care and attention in the entire work area of the machine.








	RISKS
	<p>Risk of electric shock!</p> <ul style="list-style-type: none"> ▪ Leave the danger area immediately if electricity leaks to defective components and wiring. ▪ Only have electrical systems installed on machine components by an expert and according to the wiring diagram. ▪ To protect the machine the power supply must be protected with a residual current circuit breaker provided by the customer.









	RISKS
	<p>Danger of injury due to unexpected actuation!</p> <ul style="list-style-type: none"> ▪ Switch off the machine before setup work, maintenance, repairs and troubleshooting, and protect against unexpected restarting. ▪ Disconnect the mains plug of the machine.

	DANGER
--	--------

SAFETY INSTRUCTIONS



	<p>Risk of explosion!</p> <p>The machine is not explosion-protected as a factory standard. Accumulations of dust can cause an explosive atmosphere.</p> <ul style="list-style-type: none"> ▪ Do not use the machine in areas with a potentially explosive atmosphere. ▪ Ensure sufficient ventilation of the room, as crushing causes dust accumulations. ▪ Ensure good ventilation of the machine to avoid an explosive atmosphere building up. ▪ Regularly clean the machine (especially the drive motor) to avoid a layer of dust accumulating.
	<p style="text-align: center;">DANGER</p> <p>Risk of fire due to V-belt slipping!</p> <p>Slipping belts can overheat and cause fires</p> <ul style="list-style-type: none"> ▪ Make sure the V-belts are tensioned correctly. ▪ Comply with maintenance intervals. First check of V-belt tension after 10-20 hours of operation, then extend the interval gradually to 3-6 months.
	<p style="text-align: center;">WARNING</p> <p>Risk of injury due to trapping or pulling in!</p> <ul style="list-style-type: none"> ▪ Do not wear loose-fitting clothing. ▪ Do not wear ties, necklaces, shawls, scarves or similar. ▪ Tie back long hair (e.g., use a hair net).
	<p style="text-align: center;">WARNING</p> <p>Risk of crushing, drawing in!</p> <p>In particular, on the pinch rollers and drive parts (belts and gears, etc.).</p> <ul style="list-style-type: none"> ▪ Do not reach into rotating/moving machine elements or devices. ▪ Do not reach into the outlet while the machine is running.
	<p style="text-align: center;">WARNING</p> <p>Parts being ejected!</p> <p>There may be foreign bodies in the milled material (e.g. ball bearings). During crushing, they may be propelled upward and out of the hopper with unexpected force by the pinch rollers, thus causing serious injury.</p> <ul style="list-style-type: none"> ▪ Do not bend over the feed hopper on the machine during operation. ▪ Remove any foreign bodies that accumulate from the machine (e.g. foreign body ejector).
 	<p style="text-align: center;">WARNING</p> <p>Risk of injury though noise!</p> <ul style="list-style-type: none"> ▪ Use the mandatory hearing protection.

 	<p style="text-align: center;">WARNING</p> <p>Risk of injury due to dust!</p> <ul style="list-style-type: none"> ▪ Ensure good supply and exhaust ventilation of the workplace. ▪ Wear the prescribed dust mask/air filter mask if required.
	<p style="text-align: center;">WARNING</p> <p>Risks of damage to the machine!</p> <ul style="list-style-type: none"> ▪ Attach the machine at operation height. ▪ Do not firmly attach hopper enlargements (e.g., avoid welding on). ▪ In case of feeding from a silo: Allow the silo outlet to protrude by 1-2 cm into the hopper of the grain crusher. It must be possible to pull the grain crusher out from below the silo. ▪ When using feed wagons/catchment containers, maintain a short distance to the machine outlet; otherwise the milled material might drop out next to the catchment container.
	<p style="text-align: center;">CAUTION</p> <p>Risk of injury during filling</p> <p>Filling of materials for rolling goods from sacks into the grain crusher may cause back injuries due to incorrect lifting techniques due to lifting heavy loads.</p> <ul style="list-style-type: none"> ▪ Pay attention to correct lifting techniques when lifting heavy loads.
	<p style="text-align: center;">NOTE</p> <p>Pollution!</p> <ul style="list-style-type: none"> ▪ Dispose of replaced parts, consumables and auxiliary materials in a safe and environmentally friendly manner.
	<p style="text-align: center;">NOTE</p> <p>Possible damage due to rain and moisture!</p> <ul style="list-style-type: none"> ▪ Do not set up the machine outdoors without rain and moisture protection. There is a risk of very serious damage to the electrical components and bearings.
	<p style="text-align: center;">NOTE</p> <p>Extended periods of operation in the wrong direction of rotation!</p> <p>Extended periods of machine operation in the wrong direction of rotation, especially under load (milling materials on the rollers) can cause damage to the machine.</p>
	<p style="text-align: center;">NOTE</p> <p>Use only original spare parts.</p> <p>Only use materials and original spare parts recommended by the manufacturer.</p>

3 Technical data

Machine	Malt mill	Malt mill	Malt mill
Type	Maltman 220 & 220 S	Maltman 400 & 400 S	Maltman 550 & 550 S
Grain throughput [kg/h] <small>(depending on the degree of crushing and type and humidity of the material to be crushed)</small>	approx. 300 – 400	approx. 600 – 800	approx. 900 – 1000
Motor output [kW]	2,2	4,0	5,5
Electrical connection	400 V, 3-phase	400 V, 3-phase	400 V, 3-phase
Weight [kg]	112	144	170
Dimensions [cm] (W x H x D)	60 x 58,5 x 41	65 x 58,5 x 53	70 x 58,5 x 56
Degree of protection	IP 54	IP 54	IP 54
Emission sound pressure level at idle speed [dB(A)]	70,2	71,9	72,3
Permissible materials for processing	Grain (such as malt oats, barley, etc.)	See before	See before
Crushing gap [mm]	0 – 2,6	0 – 3,4	0 – 3,4

Kommentiert [MU1]: How loud is the machine when crushing material? Is information on typical milling material available? In case of a sound pressure level above 80 dB(A), the sound power level LW must also be stated.

4 Setup and function

The machine crushes various cereals (oats, barley, wheat, corn, spelt, etc.). The operator fills the material to be crushed into the feed hopper (3). From there, it flows in a metered manner onto the two powered pinch rollers which crush the material between them. The crushing force depends on the size of the material to be crushed relative to the gap set between the pinch rollers. The crushed end product drops out of the outlet opening on the underside of the machine.

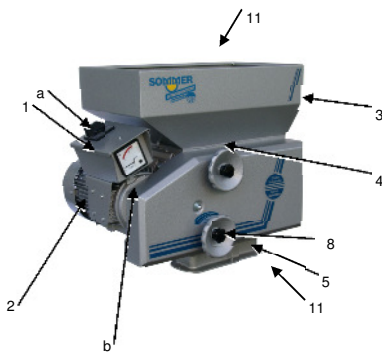


Fig. 4-1: Front side of machine

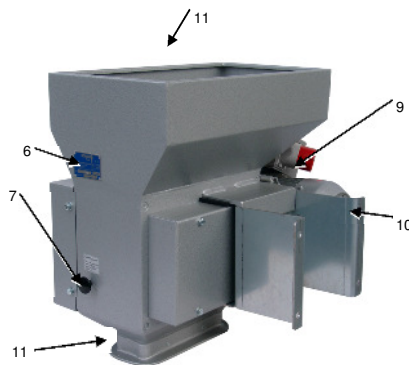


Fig. 4-2: Rear side of machine

Pos.	Description	Function
1	Electronics cabinet	Houses the main switch with motor protection switch, ammeter with load and overload indicator and plug.
2	Drive motor	Drives the machine
3	Hopper	Receives the material to be crushed and feeds it to the pinch rollers.
4	Feed control	Sets the feed gap in the hopper.
5	Outlet angle bracket frame	Holds the catchment sacks. Outlet for crushed grain.
6	Type plate	Shows the machine data.
7	Foreign body ejector	Removes foreign bodies from the pinch rollers.
8	Crushing gap adjustment	Sets the width of the crushing gap between the pinch rollers.
9	Suspension brackets	Attach the machine to the holder (wall hanger bracket, stand).
10	Wall hanger bracket	Holds the machine
11*	Protective grille	Protects against reaching in.
a	Main switch	Switches the machine on/off
b	Ammeter	Shows the machine load.

*Not shown in the figure.

5 Safety devices

5.1 Shutdown in case of power outage

If the power supply is lost by a fuse being tripped, the on/off switch of the machine assumes the off position. This ensures that the machine will not automatically restart when the power supply is restored. The machine must be switched on again by pressing the button.

The machine can only be switched on when the machine is connected to a power supply.

5.2 Protective grid

Protective grilles are located:

- In the hopper as reach-in protection above the feed to the pinch rollers.
- Above the discharge side to prevent reaching into the pinch rollers from underneath.

The protective grilles are removable with tools to facilitate cleaning and maintenance. The protective grilles must be bolted on for operation with the machine.

5.3 Protective cover

Protective covers are located:

- Above the belt drive,
- Above the gearbox on the pinch rollers
- Above the fan on the drive motor

The protective covers are removable with tools to facilitate cleaning and maintenance. The protective covers must be in place during operation.

6 Transport/Setting up/Assembly of the machine

6.1 Installation and assembly

6.1.1 Attaching the machine

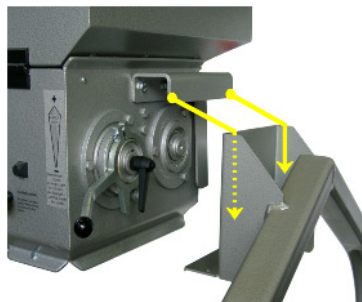


Fig. 6-1: machine Attaching to the head plate of the stand

Requirements:



NOTE

Installation of the wall hanger bracket

- The wall must be able to accommodate the weight of the machine permanently (see section 3 "Technical data").

- The wall hanger bracket is mounted or there is a gantry stand (optional).
- The machine is switched off
- The machine is not connected to the power supply.

Steps:

1. Attach the machine via its rear bracket to the wall hanger bracket or the head plate of the stand.

7 Initial start-up

7.1 Connecting the power supply

Requirements:

- The machine is mounted on the wall/a gantry stand.

Steps:

1. Connect the machine to the wall outlet with the 16 A-CEE device connector using an extension cable with phase shifter.

7.1.1 Check for the correct direction of rotation

Requirements:

- The machine is connected to a power outlet.

Steps:

1. Switch on the machine and then switch off again immediately.
2. Watch the fan blades through the motor ventilation grille.
An arrow above the ventilation grille indicates the correct direction of rotation.
3. In case of an incorrect direction of rotation, rotate the phase inverter in the extension cable through two phases (no electrician required).

8 Operation

The machine must only be deployed for its intended use (see Section 1.6 "Intended use").

The machine is operated in manual mode.

8.1 Basic checks before and after operations

Familiarise yourself with your workplace before starting work. You must check the machine for signs of visible defects at least once a day (visual check). The intervals for inspection and maintenance work as found in section 9 "Maintenance and care" must be observed.

Before switching on the machine and during operation, monitor the whole machine constantly for irregularities. The following features may indicate irregularities when the control system and the machine are switched on:

- increased noise, noise occurring at irregular intervals/unusual noises.
- Unusual smells.
- Smoke development.
- Diminished performance during operation.

Immobilise the machine immediately upon the first signs of any of the above issues. Inform the person responsible immediately in order to evaluate the technical status. If a failure is anticipated due to the damage, perform repairs without delay.

8.2 Operating elements


The Operating elements are described in section 4 "Setup and function".

8.3 Operating procedure/Crushing cereals


Requirements:

- The machine is connected to the power supply.
- The machine is switched off
- The inlet gate is fully closed.
- There is no milling material on the pinch rollers.

Steps:

	NOTE
	<p>Stationary pinch rollers!</p> <p>There must be no milling material on or between the pinch rollers while the rollers are stationary. Always close the feed gate first, and then fill the funnel with milling material.</p>

1. Fill the milling material into the hopper or silo feeder.
2. Attach a catchment sack at the machine discharge or a catchment container below machine.
3. Switch on the machine at the main switch.
Allow the pinch rollers to accelerate to final speed.
4. Open the feed gate.
Grain runs onto the pinch rollers and is crushed.

	NOTE
	<p>machine overload. Red zone on ammeter!</p> <p>The red zone indicates a motor overload. Avoid permanent overload of the motor. It is not a problem if the pointer briefly deflects into the red zone.</p>

5. Close the feed gate and allow the rollers to run empty.
6. Switch off the machine at the main switch.

8.3.1 Adjust the feed regulator

Increasing and reducing the milling material feed:

1. Push the wheel of the feed regulator towards the machine

8.3.2 Adjusting the crushing gap

Adjust the gap to match the desired results and the size of the material to be crushed.



NOTE

Damage caused by tools!

Only adjust the crushing gap manually. The use of tools can cause damage to the adjustment gear.

Requirements:

- The machine is switched off
- The feed gate is closed.
- There is no milling material on the pinch rollers.

Steps:

1. Adjust the crushing gap; to do so:
 - 1.1. Push the adjustment wheel towards the machine and then turn the wheel

8.3.3 Reduce the crushing gap



NOTE

Damage caused by accumulations of milling material!

Clogging of the outlet (e.g., due to backlogs) can result in damage to the machine.

Replace catchment sacks or catchment containers regularly with empty ones.

Verify that

- The rolled material can drop freely downwards out of the machine.
- The rolled material does not accumulate up to the bottom edge of the machine outlet.

8.3.4 Ejecting foreign bodies

Remove foreign bodies (e.g., small stones) from the pinch rollers.

Requirements:

- The machine is running.

Steps:

1. Pull the handle on the foreign body ejector while the machine is running.

9 Maintenance and care

9.1 Maintenance schedule

Machine part	Work to be performed	Interval
Overall machine	Check the on/off switch function	In every shift
	Check for orderly condition and cleanliness of the machine. If necessary, clean the machine.	In every shift
	Check function.	In every shift
	Check all screws and tighten as needed.	Weekly
Electrical equipment	Check the electrical equipment. Replace damaged switches/cables immediately.	Every six months/ as needed
V-belt	Check the tension, retension.	Initially after 10-20 h Every 3-6 months
	Check for damage/wear.	Every 3-6 months
Pinch rollers	Remove foreign bodies from the pinch rollers.	As required
Hopper/run-in grille/magnets	Remove foreign bodies (e.g. straw). Remove metal objects from the magnets.	As required Depends greatly on the material to be crushed.
Protective grilles and safety covers	Clean grilles.	As required



NOTE

Do not clean with running water!

Do not clean the machine with running water (e.g., water hose, pressure cleaner).

9.2 Special Maintenance Work

9.2.1 Retightening the V-belt

Requirements:

- The machine is switched off
- The machine is disconnected from power supply (unplugged).

Steps:

1. Remove the V-belt guard.

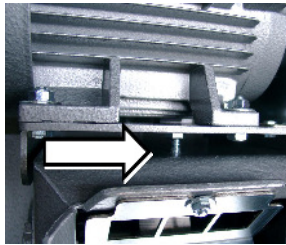


Fig. 9-1: V-belt tensioning screw between motor plate and machine housing

2. To tension the V-belt loosen the clamping screw between motor plate and machine housing. Tension the V-belt until the back of the belt begins to bulge inward on the motor side pulley.
3. Fit the V-belt guard.

9.2.2 Replace the V-belt

	NOTE
<p>Always replace the complete V-belt set! If one V-belt needs to be changed, always replace the complete V-belt set.</p>	

Requirements:

- The machine is switched off
- The machine is disconnected from power supply (mains plug is unplugged).

Steps:

1. Remove the V-belt guard.
2. Tighten the tensioning screw between motor plate and machine housing
V-belts are relaxed.
3. Remove worn V belt.
4. Fit new V belts individually.
 - 4.1 Lay the V-belt over the outside groove on the small, motor-side pulley.
 - 4.2 Pull the V-belt over the outside groove on the large pulley.
 - 4.3 Push the V-belt towards the inside groove by groove.
 - 4.4 Identical procedure for remaining V-belts.

10 Malfunction

10.1 List of malfunctions

Symptoms	Cause	Measure
Poor machine performance/grain not being processed	Rollers blocked	See section 8.3.2 "Adjusting the crushing gap"
	V-belt loose, worn or defective.	See section 9.2.1 "Retightening the V-belt" or section 9.2.2 "Replace the V-belt".
	Incorrect roller travel direction.	See section 7.1 "Connecting the power supply"
	Clogged hopper, foreign bodies on the rollers.	Remove foreign bodies from intake, protective grilles or rollers.
	Rollers worn.	Contact the manufacturer.
	Poor motor performance: Running on 2 phases	Call in an electrician
machine with a substantial performance drop	Clogged hopper, foreign bodies on the rollers.	Remove foreign bodies from intake, protective grilles or rollers.
	Poor motor performance: Running on 2 phases	Call in an electrician
	Rollers not running in sync.	Contact the manufacturer.
	Rollers worn.	Contact the manufacturer.
machine only partially crushing the material	Worn partition panels.	Fit new partition panels (see Fig. 10-1: Partition panels on the face sides of the pinch rollers).
	Foreign body ejector is jammed/defective	Remove foreign body preventing the flap from closing.
	Rollers worn.	Contact the manufacturer.
	Rollers not running in sync.	Contact the manufacturer.
machine not crushing the material at all	Incorrect roller travel direction.	See section 7.1 "Connecting the power supply"
machine smells of burning rubber	V-belt loose, worn or defective.	See section 9.2.1 "Retightening the V-belt" or section 9.2.2 "Replace the V-belt".
Motor humming, ammeter fully deflected at idle speed	Poor motor performance: Running on 2 phases	Call in an electrician

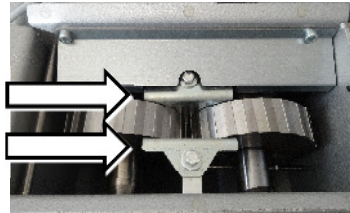


Fig. 10-1: Partition panels on the face sides of the pinch rollers

	NOTE
<p>Make sure the partition panels are correctly fitted! The partition panels must be close to the rollers but must not touch them.</p>	

11 EC Declaration of Conformity

In line with the EU Machinery Directive 2006/42/EC, Annex II A

The Manufacturer: Egon Sommer Maschinenbau GmbH & Co. KG
 Pagenstecherstraße 146
 D-49090 Osnabrück

hereby confirms that the following product: Maltill Maltman

Serial number: XXXXX

Year of manufacture:: 2018

Kommentiert [MU2]: Enter serial number

complies with all pertinent provisions of the Machinery Directive 2006/42/EC. The machine also complies with all provisions of EMC Directive 2004/108/EC.

The following harmonised standards were applied:

- | | |
|---------------------|---|
| EN 349:1993+A1:2008 | Safety of machinery - Minimum gaps to avoid crushing of parts of the human body |
| EN ISO 12100:2010 | Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010) |
| EN ISO 13849-1:2015 | Safety of machinery - Safety-related parts of control systems -- Part 1: General principles for design (ISO 13849-1:2015) |
| EN ISO 13850:2015 | Safety of machinery – Emergency stop – Principles for design (ISO 13850:2015) |
| EN 60204-1:2006 | Safety of machinery – Electrical Equipment of Machines – part 1: General requirements |

Representative for the configuration of the technical documentation: Egon Sommer Maschinenbau GmbH & Co.KG, Pagenstecherstraße 146, D – 49090 Osnabrück

Osnabrück, 28.02.2018

 Place/date

 Martin Esrom, Managing Director