

OPERATION MANUAL

**Mix master Garant SS and
Favorite**



Keep it in a safe place for future use!

www.agro-center.de (D)

10/2015



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EG declaration of conformity

in terms of the EG machine regulation 2006/42/EG, attachment II, 1.A

Manufacturer:

Fliegl Agro-Center GmbH
Maierhof 1
D-84556 Kastl

Person who is established in the community and who is authorized to put together the technical documents which are relevant:

Christian Krauss, Fliegl Agro-Center GmbH, Maierhof 1, D-84556 Kastl

Description and identification of the machine

Product: Mixer Garant SS and Favorite
Versions: MFV600, MFV 800, MSS400, MSS600, MSS800, MSS1000
Serial number: MSSFLAXXXXXX or MVLFLAXXXXXX
Project number: PRJ-2012-06-22-0001
Function: For mixing products which are in liquid, powder or granulate form, for example concrete, mortar, peat, compost, fertilizer and feed. It is also suitable for pickling of seed.

It is expressly declared that the exchangeable equipment complies with any relevant regulations of the following EG regulations:

2006/42/EG:2006-05-17 EG machine regulation 2006/42/EG
2006/14/EG: Directive 2000/14/EG from the European Parliament and the council of 8th of May 2000 on the approximation of the laws of the member states relating to the noise emission in the environment by equipment for use outdoors
2000/42/EG: (Machine directive) Directive 2006/42/EG of European council of 17th May 2008 about machines and the change of the directive 95/16/EG (new version) (1).
2006/95/EG: (low-voltage directive) Directive of the European parliament and the council of 12th December 2008 on the approximation of the laws of the member states relating to electrical equipment for use with certain voltage limits (codified version)(1).
2004/108/EG: (Electromagnetic compatibility) Directive 2004/108/EG from the European Parliament and the council of 15th December 2004 on the approximation of the laws of the member states relating to electromagnetic compatibility and repealing directive 88/336/EWG.

Reference to the harmonized standards

EN ISO 12100:2010-11: Safety of machines – General design principles – Risk assessment and risk reduction (ISO 12100:2010).
EN ISO 13857:2008 Safety of machines- safety distances to prevent hazard zones being reached by upper and lower (ISO 13857:2008).
EN 12151:2007 Machine and system for the preparation of concrete and mortar – safety requirements.

Reference to other technical harmonized standards and specifications:

EN 982:2008 Safety related requirements for fluid technical systems and their components
DIN EN 12965:2003 Tractors and machines for agriculture and forestry – drive shafts and their safety.
+A1:2004
EN 60204-1:2006 Safety of machines – electric equipment of machines – part 1: general requirements

Kastl, den 24.06.2012



Signature
Graf Johann
Technical consulta

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1 Preface

Dear customer

We would like to thank you for purchasing the mix master “Garant and Favorite” from the house of Fliegl-Agro Center.

Fliegl produces machines and devices with care under constant control. The mix master “Garant and Favorite” is a product which is produced according to the highest quality standard.

It is highly advisable to read and to follow the precautions and warnings included in this operation manual and on the device before use or maintenance of the device to prevent accidents (injuries and damage for property) from happening. Therefore, please pass this operation manual onto the operating personnel.

Before commissioning of the mix master “Garant and Favorite” each operator needs to familiarize himself with the operation manual. The safety regulations have to be strictly followed. The valid safety regulations for your country are also binding.

The Fliegl mix master “Garant and Favorite” is a device which can be used in different places. The device can be upgraded with e-drive, discharge chute, support feet, platform and the bagging device.

The application limits are described in this operation manual. All operation types and conditions which are not included in this operation manual and the application limits intended by the manufacturer are strictly forbidden.



IMPORTANT NOTE!

Read this manual carefully before using the device and follow the instructions to assure safe and trouble-free function of the device.

2 Identification

Identification data

Manufacturer:	Fliegl Agro-Center GmbH
Product:	Mix master Garant or Favorite
Versions:	400 liters, 600 liters, 800 liters, 1000 liters
Serial number:	see name plate
Year of manufacture:	see name plate
Article number:	see name plate
Weight:	see name plate

Manufacturer

Address:
Fliegl Agro-Center GmbH
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Formalities of the operation manual

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3 Instructions

3.1 General information of the operation manual

The operation manual is aimed people who possess basic technical knowledge about use of devices like the one described here. If you do not have any experience with such devices, please seek from competent specialists. In case the machine is sold or hired, please pass on the documents of the device. The operation manual is an important document and describes the operation and the maintenance of the mix master “Garant and Favorite”. The manual is created as detailed as possible. For further questions please contact the advice service of your distributor or the responsible representative of the company Fliegl Agro-Center GmbH. We would like to remind you that the content included in the operation manual does not constitute part of a pre-existing or existing agreement or confirmation or part of a legal relationship and should not modify the latter.

Any obligations of the company Fliegl Agro-Center GmbH result from the respective purchase contract which also includes the complete and solely valid warranty regulation. Those contractual warranty provisions are neither upgraded nor limited by the executions of this operation manual. Any information included in this information is based on the latest product information at the time of the printing.

Fliegl Agro-Center GmbH reserves the right to put out changes at any time without any form of advance notice and without undertaking any obligation.

The mix master “Garant and Favorite” is designed for safe and reliable operation as long as it is operated in accordance with this operation manual. The instructions for the operation and the maintenance included in this manual must be observed. On this basis the mix master “Garant and Favorite” is going to work to your full satisfaction for many years.




Important note!

Disregard of this operation manual may result in serious injuries and damage to the device.

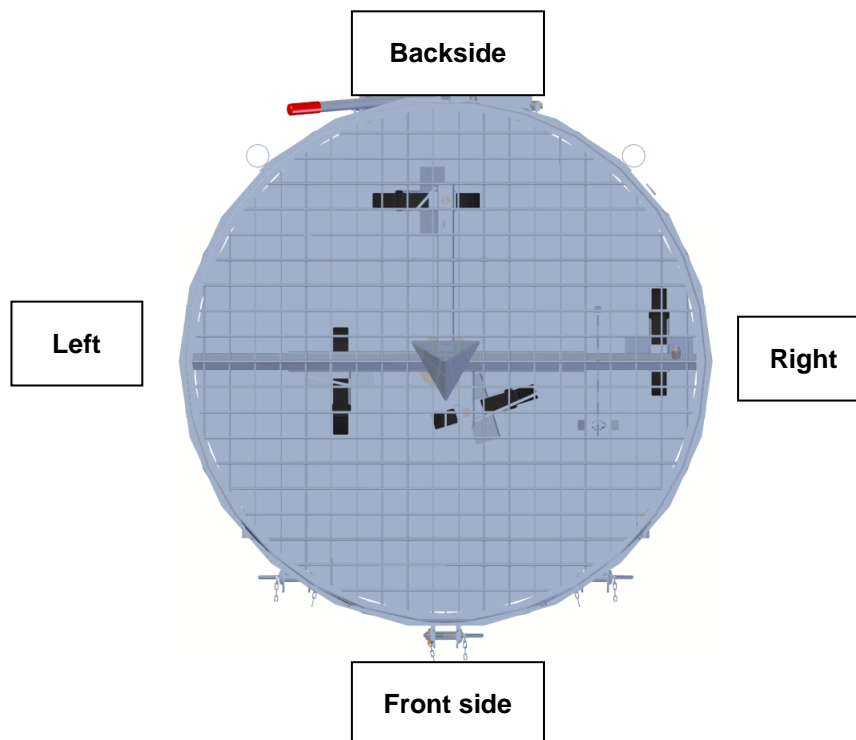
Please pass this operation manual on to the operation staff. For requests, correspondence, problems and orders for spare parts please always inform us about the type and the serial number of the mix master “Garant and Favorite”.

4 User advice

	<p>ATTENTION!</p> <ul style="list-style-type: none"> • Operation only from the operation place in the carrier vehicle. • Read and understand the operation manual • It is forbidden to open the protection grid during running mixing star
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4.1 Indications of location in the operation manual

All indications of location and directions in this manual refer to the work place of the operator.



4.2 Terms used

- **Rotation direction:** direction into which the drive and the mixing star with three-phase current is rotating (only 400 volt).
- **Explosive atmosphere:** The portion of inflammable substances in the room air is high enough to be fired with open fire or a spark at any time.
- **FI circuit breaker:** Specially marked power distributor with special protection function which protects against fault currents (fault current switch).
- **Feed point:** socket, place where extraction takes place.
- **Viscosity:** Flow property of the material corresponds to low viscosity = thin flow and high viscosity.
- **Supply:** power cable
- **Scraper:** Tool which is permanently running on the side of the tank and forces the material back to the middle of the tank.
- **Compulsory mixer:** Mixing device with mixing tools working in opposite directions and a scraper which is running uniform through the mix.

4.3 Illustrations used

Instructions and system response

Action steps which need to be done by the operation personnel are shown in a numbered list. The order of the steps must be followed. The system response to the particular operation is marked with an arrow.

Example:

1. Operation action step 1

Reaction of the system to operation step 1

Numerations

Numerations with indispensable order are shown in a list with numeration points.

Example:

- Point 1
- Point 2


4.4 Objective of the document

This operation manual describes the working method, the operation and the maintenance of the device, gives important notes for safe and efficient handling of the mix master “Garant and Favorite”.

4.5 Intended use

The compulsory mix master “Garant and Favorite” is a hydraulically or electrically driven, mobile mixing device. It can be coupled to a carrier vehicle or be driven solely electrically. Its construction enables the application outside and in closed rooms. It can process thin flowing, tough material as, for example, concrete, mortal, peat, compost, fertilizer and feed. It is used in agriculture and construction industry and in industry.

Any use going beyond the intended use and/or different use of the device is forbidden and is considered as improper use.


	<p>The mix master „Garant and Favorite“ may only be used for its intended purpose and in properly safe condition! The operation safety of the mix master “Garant and Favorite” is only assured if used for its intended purpose.</p>
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4.6 Reasonably foreseeable misuse

Any use other than that defined in chapter “intended use” or which goes beyond that use is considered improper use!

For damages resulting from this

- the operator bears sole responsibility,
- the manufacturer does not assume any liability.

	<p>DANGER! In case of misuse hazards can occur! The following misuses are not acceptable!</p>
---	--

- Use in explosive environment.

- Use and operation of the mix master “Garant or Favorite” without having read and understood the operation manual
- Use of the mix master “Garant and Favorite” outside the specified limits
- Remove of the safety devices
- Remove of the warning signs

4.7 Warranty

The warranty does not apply if the device has been operated improperly or not for its intended use.

5 General information about safety

5.1 General safety measures



Most accidents are caused by disregard of the general safety regulations. You should have read and understood especially the cautions and warnings in this operation manual of the carrier vehicle to prevent accidents.



The CE mark which is attached by the manufacturer indicates outwardly the conformity of the machine with the regulations of the machinery directive and with the other relative EG regulations.

Below you will find the usual provisions which should be known to you already.

- Work only in safe standstill of the device
- A premature or mistaken commissioning needs to be avoided by proper measures.
- Mechanical fixture of the moving parts.
- Use protection clothes and personal protection equipment in accordance with the activity.
- Only use electrical tools with low voltage protection (25 v) or electrical tools with supply voltage and protection separation (isolation transformer outside of the tank)
- Recommissioning analogous in reversed order
If protection devices need to be remove for maintenance and cleaning works the device must only be put into operation again as soon as the protection devices are reattached again.
Release of the recommissioning by local representatives
- Only original accessory parts or spare parts guarantee a trouble-free function of the mix master “Garant and Favorite”.
- It is recommended to get help from a person who already has experience with the mix master when first commissioning the device.
- The operation manual needs to be stored near to the mix master “Garant and Favorite” and be available for everyone who operates the device at any time
- Ensure sufficient installing space before starting the works
- Ensure cleanliness at the installing place! Components and tools which are laying on each other or around are causing accidents.

5.2 Proper use

The mix mater “Garant and Favorite” must only be used as described in chapter “intended use”

The risk for this bears solely the operator. Pay attention to the corresponding safety notes and work regulations in this operation manual.

They are also included in proper use.

5.3 Display of safety notes

Safety notes are marked with a pictogram and a signal word. The signal word describes the seriousness of the imminent risk.



DANGER

Immediate imminent risk for life and health of people (serious injuries or death).



WARNING

Possible imminent risk for life and health of people (serious injuries or death).

ATTENTION

Possible dangerous situation (slight injuries or material damage)



NOTE

Application tips and especially useful information.



IMPORTANT






Obligation of a particular behaviour or an activity for safe handling of the machine.










ENVIRONMENT

This symbol shows important environmental friendly information.

5.4 Special risk warning

	<p>Before maintenance and cleaning remove the ignition key!</p>
	<p>Risk by lifted load!</p>
	<p>Danger of crushing limbs!</p>
	<p>Risk by electric shock</p>
	<p>Risk by unintended drawing in!</p>

5.5 Safety stickers on the mix master „Garant und Favorite“

	<p>Warning from risks by electrical voltage. Maintenance works on electrical components are only allowed by electronic professional personnel.</p>
	<p>CE mark certifies the conformity with valid EU regulations</p> <ul style="list-style-type: none"> concerning the product and prescribe a CE mark. <p>Short instruction about the operation of the mix master in general. Safety regulations in short form. Pay careful attention to this information of the maintenance works and follow them. It prevents device damage.</p>
	<p>Pay attention! The noise can rise up to 91 dB, if necessary, use hearing protection!</p>
	<p>When filling the product do not exceed the maximum filling level which is marked with a red arrow. Disregard causes damage of the device!</p>
	<p>Sticker gives instructions about running maintenance during and after operation!</p>
	<p>Ensure that the sticker is signed and has a date on it!</p>
	<p>ATTENTION! Danger of drawing in by the mixing star! Ensure that all protection grids are exactly attached. The operation without protection grid is forbidden!</p>

5.6 Name plate

CE mark, address
 Article number: _____
 product description.: _____
 Serial number.: _____
 Year of manufacture: _____ weight: _____
 Maximum oil pressure: _____

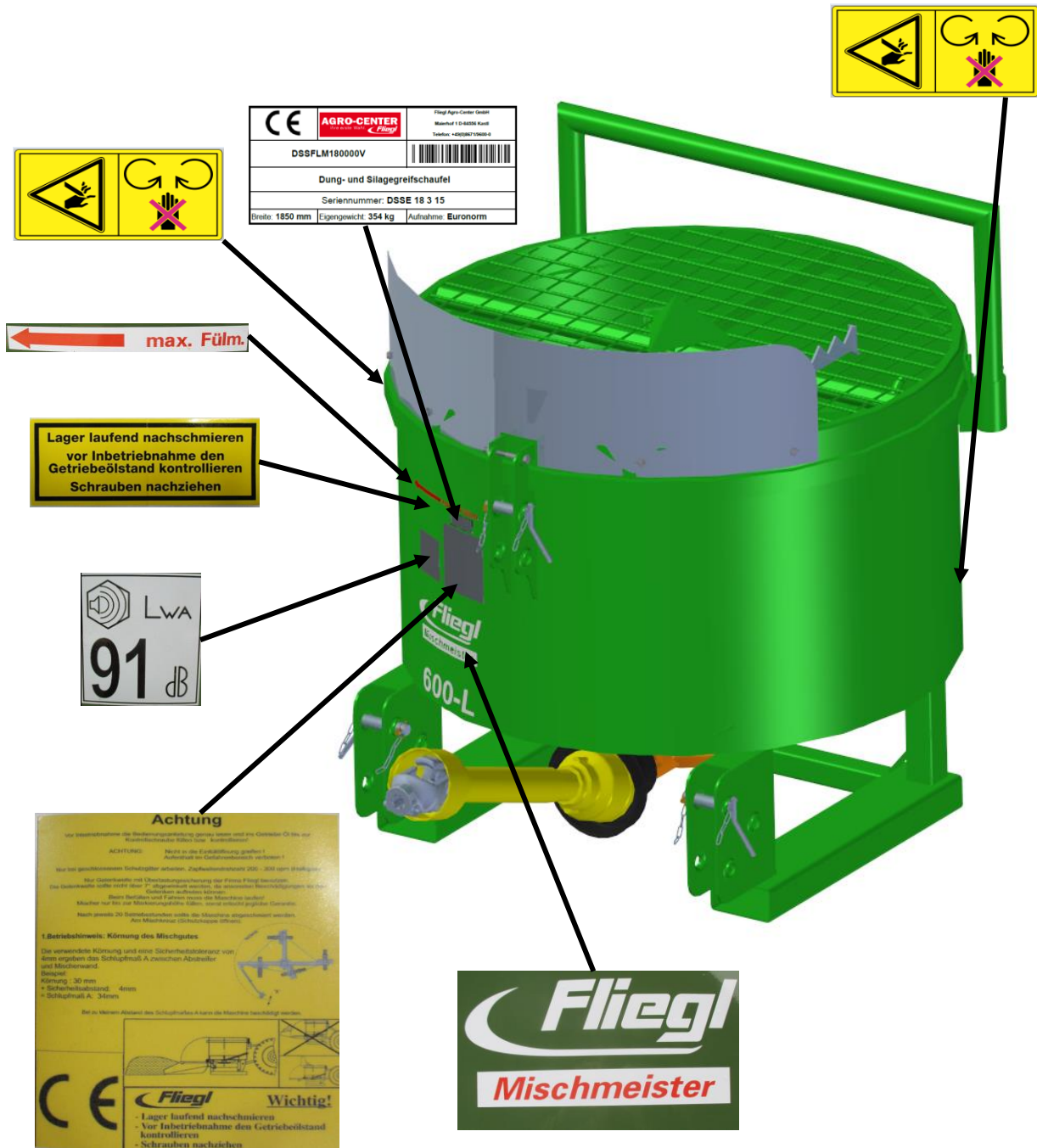
CE	AGRO-CENTER <small>Ihre erste Wahl.</small> 	Fliegl Agro-Center Maierhof 1 84556 Kastl
Pattern Mischmühle 1002 SS		
Seriennummer: MSSFLA		
Baujahr: 2015	Eigengewicht: 820 kg	Maximaler Öldruck: 180 bar

Enter your data here to ensure that you always have the information ready to hand.



The name plate is legally a certificate for your attachment. In case of damage or faults the marks need to be replaced.

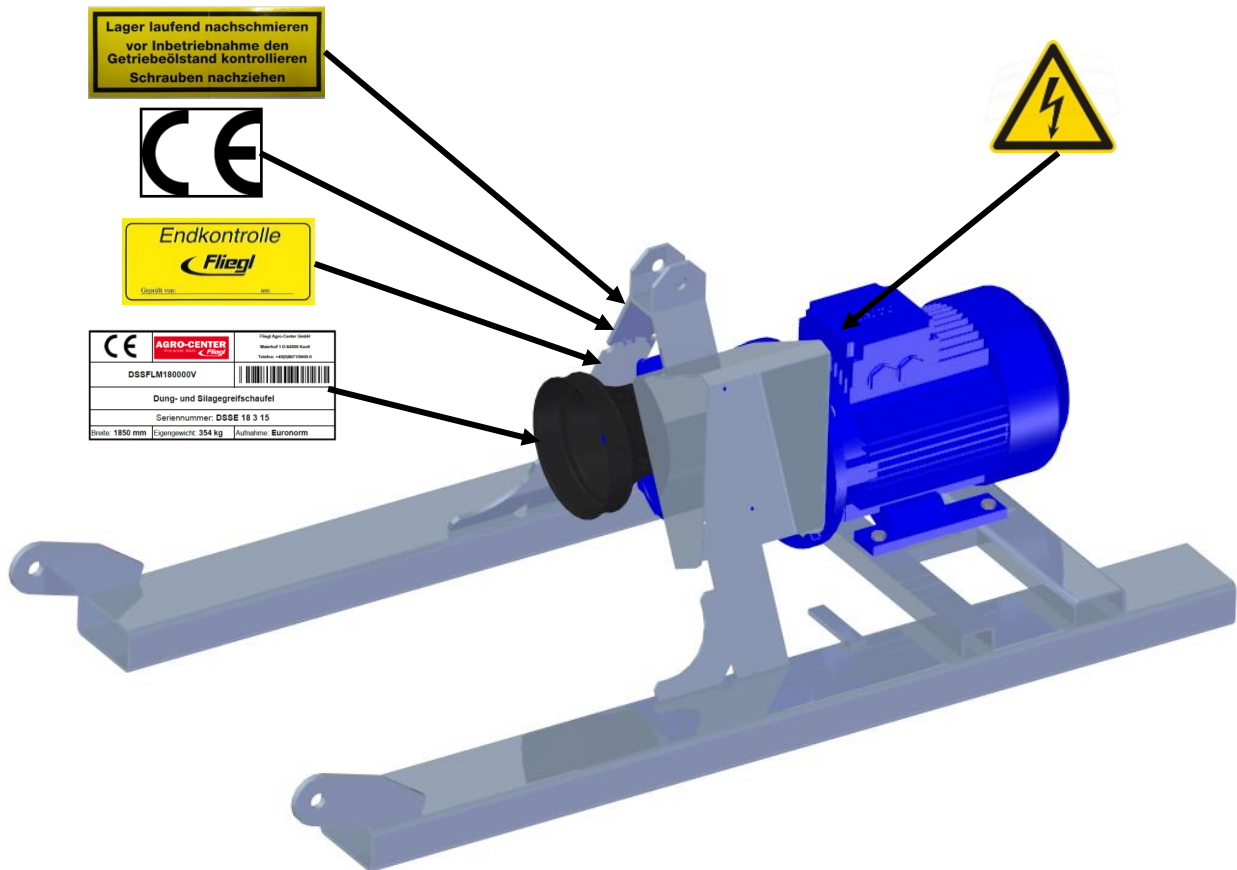
5.7 Overview of safety pictograms mix master “Favorite”



5.8 Overview of safety pictograms mix master „Garant“



5.9 Overview of safety pictograms mix master “Garant” in electric drive



6 General safety notes



IMPORTANT GENERAL INFORMATION

- ONLY MAKE MOVEMENTS WITHOUT LOAD WHEN THE MIXING STARS ARE TURNED OFF:
- INSTRUCT UNAUTHORIZED PEOPLE TO LEAVE THE DANGER ZONE.

Everybody who is working in company of the user with the commissioning, operation, maintenance, cleaning and reparation needs to have read and understood the manual and especially the chapter “safety”. We recommend to the company, if necessary, to make an internal instruction in consideration of the already known professional qualifications of the operator and to get the receipt of the instruction and the operation manual or the participation on an instruction or a training confirmed in a written confirmation.

SAFETY-CONSCIOUS WORK MEANS:

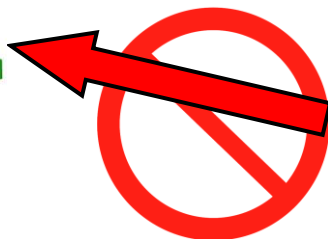
The mix master “Garant and Favorite” must only be driven, operated and maintained by trained and authorized personnel.

The responsibility for the different works within the scope of the operator and the reparation or maintenance of the device need to be regulated and followed carefully to ensure that no unclear competences are arising in aspect of safety.

For any works concerning the commissioning, operation, modifications of the application conditions and operation modes, maintenance, inspections and reparation pay attention to the regulations and tips indicated in the manual.

SAFETY NOTES FOR DE OPERATION AND/OR THE PERSONNEL

- Refrain from any risky action which could pose a risk for safety of the mix master “Garant and Favorite”.
- The operator is obliged to check safety relevant parts like protection devices etc before commissioning and to eliminate faults.
- The operator needs to ensure that no unauthorized people can operate the mix master “Garant and Favorite”.
- The operator needs to pay attention to further people who could stay in the working area and in this cause to tell them to leave the working area (especially kids).
- Generally it is forbidden to unmount safety devices or to decommission them (already in this case we point out the there is a danger of imminent serious injuries like crushing, loss of limbs, fractures and danger to life).
- If it is necessary to unmount the safety devices for reparation and maintenance, it is necessary to remount the safety devices after the reparation and maintenance works.
- It is forbidden to transport people on fixtures which are not suited for this.
- Operate the mix master “Garant and Favorite” only with original accessory parts and spare parts – The use of foreign parts can cause danger.
- Check and maintain the mix master “Garant and Favorite” in the indicated intervals.
- Operate the mix master only in mentally normal state, not under the influence of drugs or alcohol.
- It is forbidden to mix or transport food processing products with the mix master “Garant and Favorite”!



- It is forbidden to disregard the request of the operator to leave the working areas
- It is forbidden to grip into the mixing opening when the outlet slide is open.
- Stop the machine.
- Only use a drive shaft with proper protective and safety devices
- Machine size plus 2 meters around the machine into any direction.
- Repair the parts before recommissioning.
- Electric connection only by professional personnel.
- Make working breaks after longer, stressful operation.
- Only operate the mix master in mentally normal state, not under the influence of drugs or alcohol.
- Check ignorance of the operation before commissioning in empty function.
- Store the ignition key of the carrier vehicle safely.
- Do not grip into the outlet.

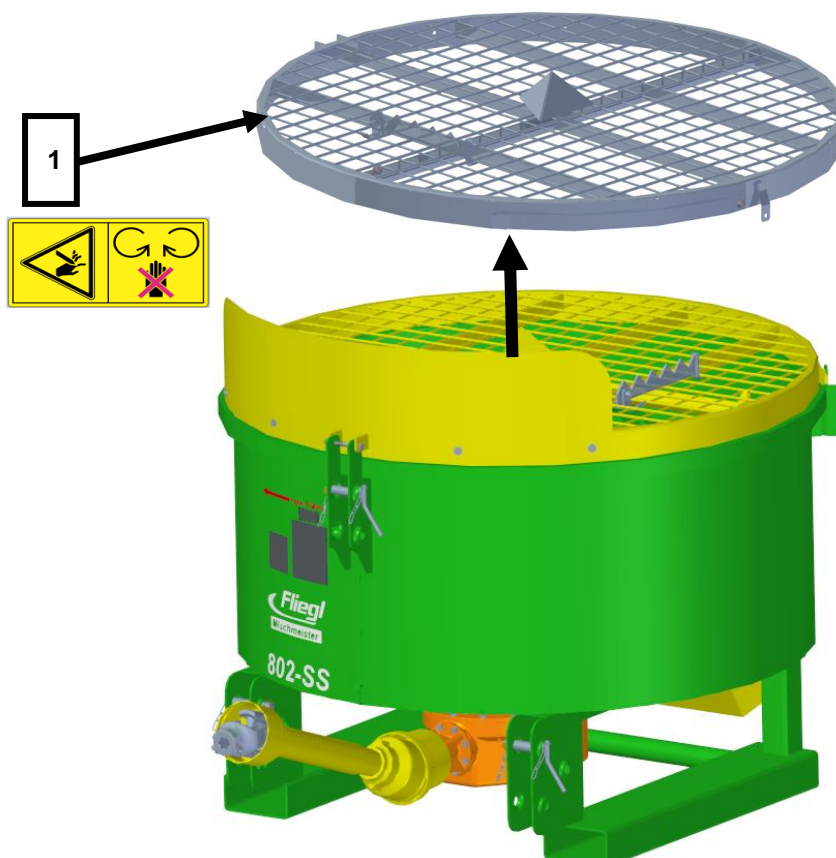
6.1 Safety and protective devices

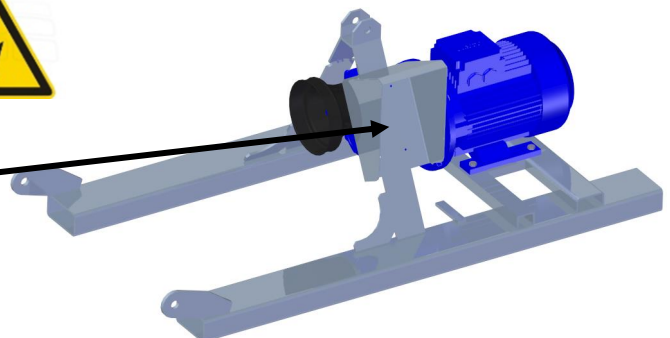
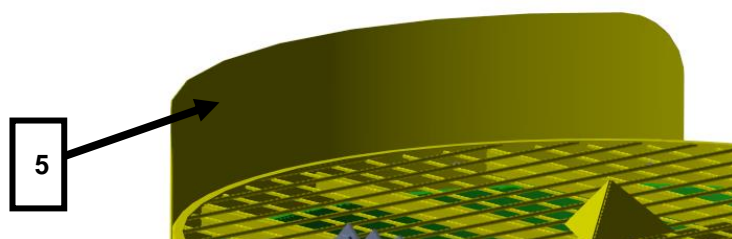
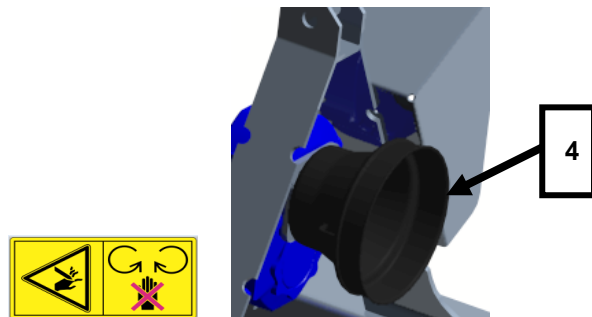
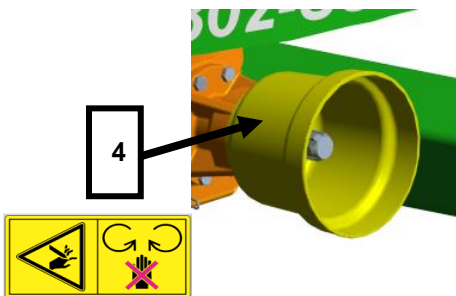
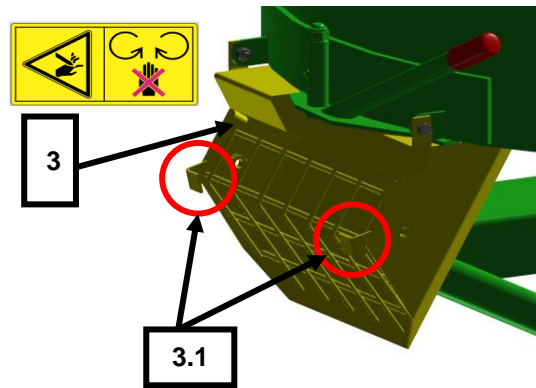
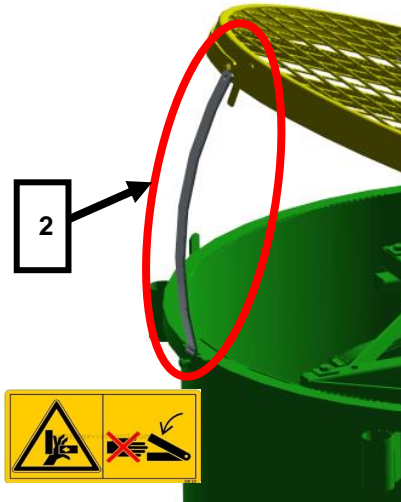


Only operate the machine if all safety and protective devices are completely present and functional.

Position of the safety and monitoring devices.

The picture below shows the most important safety devices and their place of installation on the machine.





6.1.1 Description of the safety equipment

1	Protection grids in the filling area protect arms and fingers from being drawn into the running hub. It is forbidden to operate the mix master “Garant and Favorite” without a protection grid in the filling area.
2	Support bracket for protection grids for cleaning works of the mixing tank. ATTENTION! Danger of crushing! When opening the protection grid in the filling area the protection bracket needs to be hinged down and plugged into the eyelet.
3	ATTENTION! Danger of drawing in the upper and lower limbs! Do not remove protection grids in the outfeed area, do not grip into the tank when the mixing star is in operation. It is also forbidden to dejam stowage with additives, for example shovels, stems or sticks.
4	ATTENTION! Danger of drawing in the upper and lower limbs! Protective caps are attached to any connection point of the PTO shaft. Ensure that the overlapping on both sides between the PTO shaft and the protection cap is at least 50 mm.
5	Do never remove the splash guard sheet when operating the hub, it protects your eyes and face from etching liquids during the mixing process.
6	The switch box is equipped with protection against overloading of 10 x 14 A (11) with a protection type of IP 54. This protection system prevents device damage and injuries caused by electric shocks. It is forbidden to operate the mix master “Garant and Favorite” without these protection measures!

6.1.2 Command device for shut down in emergency

There is **no command device** to the mix master “Garant and Favorite” for shutdown in emergency:

- The **command device** for shut down in emergency **is the operating vehicle.**

6.1.3 Faulty safety devices

Faulty safety devices can cause dangerous situations. For this reason:

- Immediately turn off the machine,
- Secure from restarting.
- If necessary, separate the current from the supply point.
-

6.1.4 Checking safety and protection devices

All safety and protection devices need to be checked regularly.

Safety device	Test interval
Safety grid in the filling area	Visual check for damage and check if the screw connections on the side are mechanically secured before every use.
Safety grid in the outfeed area	Visual check for damage and check if the screw connections on the side are mechanically secured before every use.
Mounting bracket on the safety grid	Visual check for damage and check if the screw connections on the side are mechanically secured, and every 50 hours of operation.
Switch box	Get the overload protection checked from a professional workshop every 100 hours of work.

6.2 Legal notes

- When the mix master “Garant and Favorite” is delivered, check immediately if the device is complete. Make complaints to the carrier and have them certified on the documents of delivery and inform the factory within 14 days (see scope of delivery)
- The manufacturer is liable for technical defects. The owner is liable for defects caused by improper operation. The warranty time is 1 year from date of delivery from the factory.
- The warranty is done at our option either by reparation of the faulty parts or by replacement carriage forward ex works or ex dispatch depot. Claims going beyond the compensation (for example loss or breakdown) are expressly rejected.
- The warranty expires if the device has been changed by incorporation of parts of different origin and without our knowledge as well as our prior consent, especially if improper change has been done.
- The warranty also expires if a defect has been found but not immediately completely and appropriately corrected. Reparations which are done for function require our previous agreement if full or particular reimbursement of the costs are desired.
- For damage on the mix master “Garant and Favorite” which is caused by exceeding the allowed work capacity and the transport speed liability is excluded. Natural wear and damages which are attributed to negligent or improper handling of the device as well as storage and corrosion damage are not subject to warrant.
- For parts which are not produced by us we pass on the warranty given by the manufacturer.
- Device parts for which demands are made within the scope of warranty need to be sent to our address in Kastl and pass into our property if replacement is given. The Fliegl mix master is subject to the legal warranty regulations.

Changes and modifications

In case of unauthorized changes and modifications any liability and warranty for the manufacturer expires. This also applies if supporting parts are welded.

The electromagnetic behaviour of the machine can be influenced by additions or modifications of any kind.

Therefore, do not make any changes or additions on the machine without consultation and written agreement from the manufacturer.

Spare parts, wear party and additives

The use of spare parts and wear parts from third party producers can cause risks. Only use original parts or parts which are authorized by the manufacturer.

For damages resulting from using spare parts and wear parts or additives which were not authorized by the manufacturer the manufacturer does not assume any liability.

6.3 Risks in handling the machine

Risks and impairments can result during using the mix master “Garant and Favorite”

- for life of the operator and third parties,
- for the machine itself,
- to other property.

A basis for safe handling and trouble-free operation of this machine is the knowledge of safety and operation instructions in this operation manual.

**IMPORTANT**

Always store the operation manual near to the place where the machine is used! The operation manual needs to be publicly available for the operators and the maintenance personnel.

A further point to note:

General and local regulations for accident prevention and environment protection.

6.4 Residual risks

**ATTENTION**

The mix master “Garant and Favorite” is constructed in accordance with the state of the art and the generally recognized safety regulations.

**DANGER!**

Pay attention to the appearance of the mechanical, hydraulic and electrical residual energies on the machine after operation of the machine for shut down in case of emergency or after turning off the switch box!

Against risks resulting from residual energies appropriate additional countermeasures from the operator need to be initiated in addition with the countermeasures initiated by the manufacturer. The personnel need to be informed about these risks and the countermeasures during the instruction.

6.5 Obligation of the operator

The mix master “Garant and Favorite” is constructed and built in consideration of the danger analysis and after careful selection of the applicable harmonized standards and further technical specifications. Therefore, it corresponds to the state of the technology and guarantees a maximum of safety.

However, the safety in operational practice can only be achieved if all required measures are taken. It is subject to the duty of care from the operator of the device to plan these measures and their execution.

The operator has to ensure that:

- the mix master “Garant and Favorite” is only used as intended
- the mix master “Garant and Favorite” is only operated in trouble-free, functional condition and especially the safety devices are checked regularly for functionality.
- required personal protection equipment for the operation, maintenance and reparation personnel is available and can be used.
- the operation manual is always in readable condition and completely available at the place where the device is used.
- only personnel who is qualified and authorized to operate the device operates, maintains and repairs the device.
- This personnel is regularly answered any applicable questions about work safety and environmental protection and the operation manual, especially about the safety notes included in the manual.

Any safety and caution notes which are attached to the machine must not be removed and need to stay readable.



The operator is obliged to allow people to work with the mix master “Garant and Favorite” only who

- know the general regulations about work safety and accident prevention
- instructed in work with the machine,
- have read and understood this manual.

The requirements of the EG regulation for use of work equipment 2007/30/EG have to be followed.

6.6 Obligation of the personnel

Everyone who operates the mix master “Garant and Favorite” is obliged before starting to work to:

- follow the general regulations about work safety and accident prevention,
- to read and pay attention to the safety chapter and the safety notes in the manual.

For questions please refer to the manufacturer, see page 7.

6.7 Qualification personnel

People	Specially trained personnel	Trained operation personnel	Trained personnel with specific training (mechanic/electrical engineering)
Work			
Transport	X	--	--
Commissioning	X	--	--
Troubleshooting and fault elimination	--	--	X
Set up, assembly	--	--	X
Operation	--	X	--
Maintenance	--	--	X
Troubleshooting and fault elimination	X	--	X
Destruction/recycling	X	--	--

Legend: X allowed --not allowed

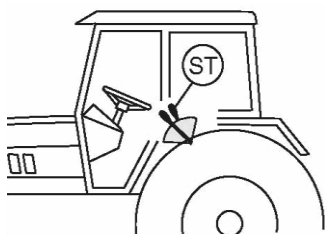
6.8 Personal protection equipment

The operator needs to have the following personal equipment



- Protective gloves
- Safety shoes
- Protective goggles
- Hearing protection
- Skin protection products
-

6.9 Work places operation personnel



The mix master “Garant and Favorite” is only constructed for operation by a person.

- Operation places are, for mechanical filling, in addition to the compulsory mixer and according to the drive or application area in the operation vehicle or stationary for electric drive.

7 Accident prevention regulations

7.1 Special safety regulations for mix master “Garant and Favorite”

- Gripping trough and standing on the protection grid of the mix master is strictly forbidden.
- Maintenance works only in turned off condition
- For work stoppage or at the end of the works the plug needs to be pulled from the power resource.
- In case of bad weather conditions or works at night ensure sufficient lightening.
- Drives on streets and roads only with **unfilled** mixing tank – danger auf rocking.
- Before every commissioning of the mix master “Garant and Favorite” check if it is standing stable.
- During operation unauthorized people (especially kids) need to keep away from the mix master “Garant and Favorite”.
- Wear tight clothes, safety shoes and no jewellery during work, use a hair net for long hair.
- The operation of the mix master “Garant and Favorite” is done only with the switch box or the operation vehicle with the hydraulic control.
- Charge the mix master “Garant and Favorite” only from above.
- Refrain from any procedure which is highly insecure!
- When installing the device pay attention to the electrical regulations at the place of use.
- **In case of non-use of the mix master “Garant and Favorite”, maintenance or mixing tool exchange necessarily pull the mains plug or uncouple from the carrier vehicle.**
- Do not use the supply line to pull the plug from the socket. Protect the cable against heat, oil and sharp edges.
- Do only use authorized and corresponding marked cables outside.
- Do not connect the device to the house socket. Connection only with a special feeding point, for example a construction side power distribution point with a ground fault circuit interrupter.
- If a cable reel is used, the cable needs to be unreeled completely. Danger of cable fires by warming. A loss of power is also possible which is leading to triggering the power sag fuse.
- Before turning on, check if the tool key and any other things are removed from the mixing tank.
- For cleaning do not use solvents with a flash point below 21°C. Danger of explosion! Do not operate the device in rooms with explosive atmosphere. Danger of explosion!
- Only take material samples when the device is standing still.
- **Do not operate the mix master „Garant and Favorite“ if the protection cap in the filling area and in the discharge area as well as the protection cap in the PTO shaft area is missing. Danger of crushing and drawing in!**
- **Before intended decommissioning of the safety function there is acute danger of accidents and injuries, therefore, the warranty expires.**
- Always ensure unlimited movement of the knobs and trouble-free function of the limit switch. Pollutions need to be necessarily avoided! A faulty function can cause unintended starting of the mixing tools! Danger of crushing!
- If the mix master “Garant and Favorite” is lifted with a crane or something similar the supporting ropes and the carrying belts should only be attached to the described positions of the device. Do not stand under lifted loads.
- Only use original spare parts for replacement.

7.2 Power connection

Before connection the mix master “Garant” make sure that the following points are completely executed.


Before commissioning make sure that the electrical regulations at the place of use are followed. Ensure that electrical devices cannot be damaged during operation. Do not connect the mix master “Garant” to your house socket. Connect only with a suitable feed point (for example construction site power distribution point with ground fault circuit interrupter with maximally 0.05 ampere trigger current. Do only use rubber cables which are suitable for the intended purpose, we recommend type H07RN-F, cross section 2.5mm² with perfect cable fire.

An excessive long cable connection between feed point and device can cause a decrease of power. This causes undervoltage protection.

Ensure when installing the cable that this does not pose a tripping hazard. Pay attention to the **rotation direction of the motor**. The mixing tools have to rotate clockwise.

In case of a wrong rotation direction the mixing tools could loosen which could damage the tools or the device.

7.3 Safety instruction for the hydraulic system

	<p>ATTENTION!</p> <p>The hydraulic system is designed for a maximum pressure of 189 bar! Changes on the hydraulic system must only be done by authorized personnel. The hydraulic system of the carrier vehicle is in most cases equipped with a pressure accumulator which can rise to serious injury risks if they are not completely unloaded before changing of this system.</p> <p>When unloading the accumulator it is sufficient to operate the brake pedal 8 – 10 times when the device is standing still.</p>
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1. The hydraulic system is under pressure!
2. Pay attention to the prescribed connection of the hydraulic hoses when connecting the hydraulic cylinder and the oil motor.
3. When connecting the hydraulic hoses to the carrier vehicle – ensure that the hydraulic is depressurized for the carrier vehicle and on the implement side!
4. Check the hydraulic hose line regularly and exchange it in case of damage and ageing! The exchange hoses need to correspond to the technical requirements from the device manufacturer!
5. When looking for oil leaks use suitable additives!
6. Liquids leaking under high pressure (hydraulic oil) can penetrate skin and cause serious injuries.
7. Before working on the hydraulic system put down the mix master “Garant and Favorite”, depressurize the hydraulic system and turn off the motor.
8. Ensure that the hydraulic hoses are carefully installed to avoid damage by pulling, stretching or disconnecting and check that the hoses are equipped with the correct equipment at the correct place.
9. Check on any shear position and crushing positions on the device if there are protective spirals against damage of the hoses attached to the hydraulic hoses.
10. Never try to keep a leak on thy hydraulic shut with your hand. Use a piece of cardboard.

7.4 Devices operated with a tractor

1. Before commissioning check the immediate area (kids)! Ensure sufficient view!
2. Couple the device properly and only attach it to the prescribed fixture!
3. When driving on roads ensure sufficient space for manoeuvring and swivelling possibility!

4. Driving behaviour, steering capability and braking power are influenced by attached devices and ballast weights! Therefore, ensure sufficient steering capability and braking power!
5. When driving round bends note the wide protrusion and the gyrating mass of the mix master “Garant and Favorite”.
6. It is forbidden to stay in the danger zone during work with the mix master!

7.5 Driving mode road traffic

The speed needs to be adjusted to the environmental conditions. During driving downhill and downswing and when driving transversal towards the slope avoid sudden driving round bends. Turn off the differential lock. When driving along slopes never uncouple or engage another gear.

1. **Check braking power before starting the drive!**
2. **Pay attention to the allowed total weight and the high speed limit!**
3. Before driving downhill change into a lower gear!
4. The vehicle owner needs to ensure that the vehicle in traffic on public roads is in proper condition. Pay attention to proper condition and trouble-free function of the brakes and to the road traffic regulations of the individual countries!
5. The speed always needs to be adjusted to the environmental conditions.
6. When driving downhill and downswing towards the slope avoid sudden driving round bends. During driving round bends turn off the differential lock. When driving along slopes never uncouple or change into another gear!
7. The maximum speed with loading arm in road transport is 25 km/h.
8. Pay attention to the prescribed air pressure for the front wheels and the chassis!
9. Couple the mix master “Garant and Favorite” properly. Driving behaviour, steering capability and braking power are influenced by implements and ballast weights. Therefore, ensure sufficient steering capability and braking power!
10. Never drive on public roads with running mixing star!

8 Machine description

This chapter gives a comprehensive overview of the construction and the function of the machine. Read it, if possible, next to the machine. This makes it easier to familiarize yourself with the machine.

8.1 Application areas

The mix master “Garant and Favorite” is a multi-component mixer for the expert. The mix master “Garant and Favorite” passes the mixing material directly into the tank from above and mixes. For producing concrete or mortar the prescribed water quantity is added in addition and processed. With the slider which is attached on the side below the mixing material is removed quickly and clean from the tank. The mixing tools are driven with an electric motor with flange-mounted worm gear. The electric motor is operated with a supplied control panel with a knob. The following products can be mixed / processed: concrete, mortar, peat, compost, fertilizer and feed. The mix master “Garant and Favorite” is suited for pickling seed.

OVERVIEW OF ADVANTAGES:

- Exact mixing ratio of the individual components,
- addition of bonding agents,
- intensive and homogenous material processing,
- quick mixing of special mixing arms,
- height-adjustable with stand legs,
- easy handling,
- quick and clean emptying,
- easy to maintain.

8.2 Design versions

The mix master “Favorite” is available in the following versions.

- 600 – 800 liter volume.

The mix master „Garant“ is available in the following versions.

- 400 – 1000 liter volume.

8.3 Delivery

The mix master „Garant and Favorite” is packed into foil for the delivery. The side outlet and the splash protection need to be unmounted before commissioning. The net weight can be found in the delivery note.

8.4 Ideal accessory

Mix master „Garant“:

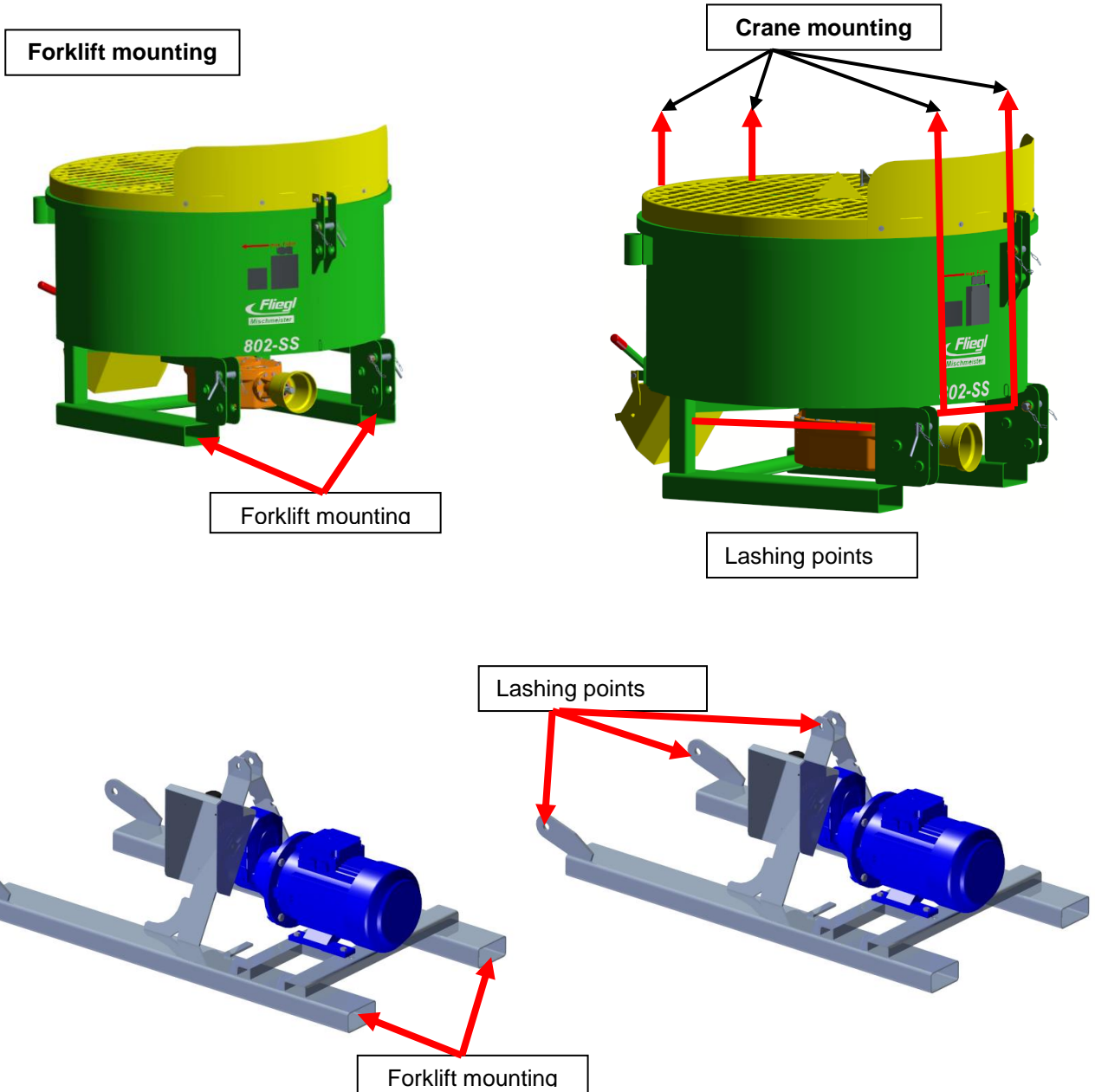
- Hydraulic drive
- Electric drive of 5,5 kW to 18,5 kW
- Discharge chute swivelling
- Filling bracket
- Stand legs
- chassis
- platform with ladder
- platform with parking space
- bagging device

Mix master „Favorite“:

- filling bracket
- discharge chute swivelling
- chassis
- bagging device

8.5 Transport with crane or forklift truck with a corresponding hoist to the place of application

You can transport the mix master “Garant and Favorite” with a forklift truck or with a crane with a corresponding hoist to the application place .The mix master “Garant and Favorite” possesses 2 forklift plates on the stand leg (see picture below). If the mixer is transported with a crane pay attention to the positions where the belt is attached (see picture below).



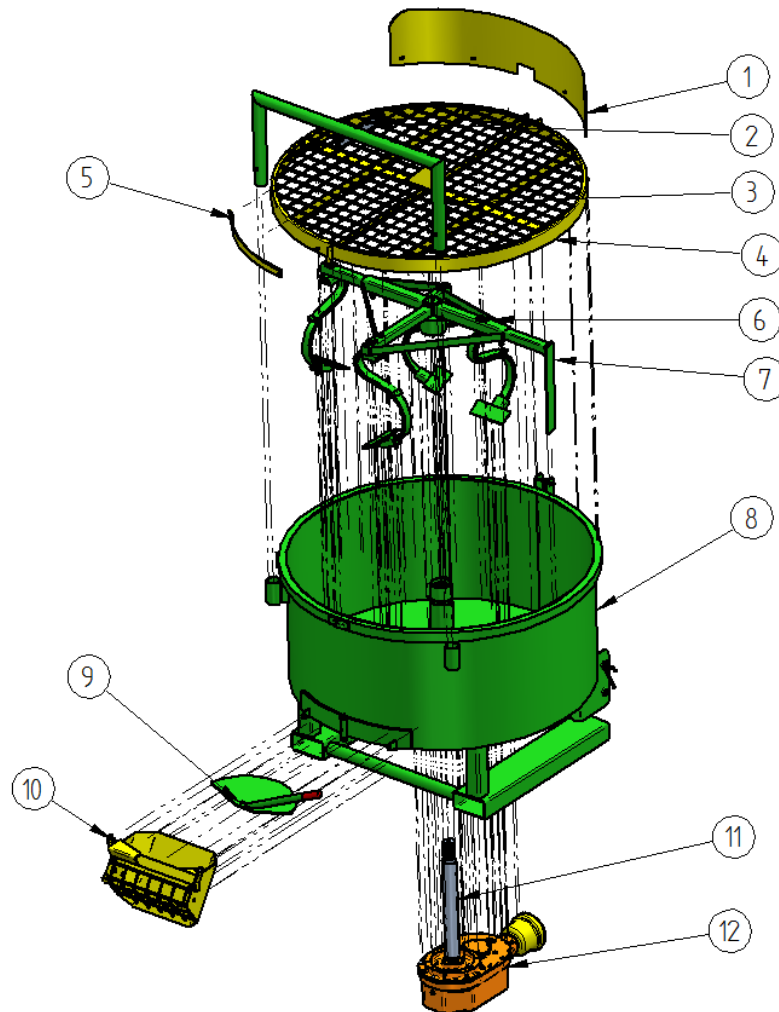
8.6 Disposal



The mix master „Garant and Favorite“ can only be disposed in Germany and Austria at the public-law collection points for electric waste. If this is impossible forward these disassembled parts after proper unmounting to the recycling department

8.7 Overview of components of the mix master „Garant“

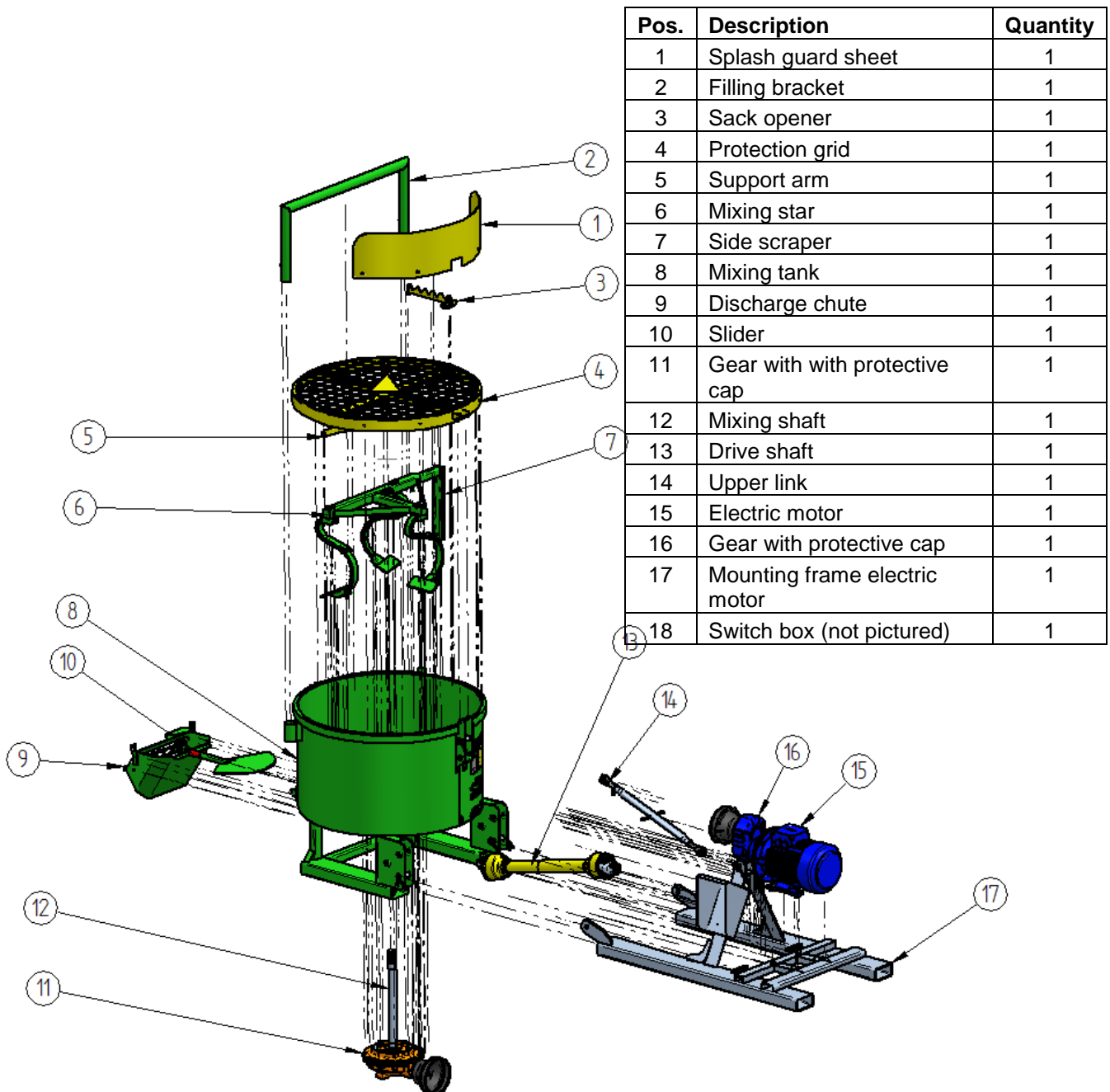
The following picture gives an overview of the most important components and shows their installation position on the mix master “Garant” . .



Pos.	Description	Quantity
1	Splash guard sheet	1
2	Sack opener	1
3	Filling bracket	1
4	Protection grid	1
5	Support arm	1
6	Mixing star	1
7	Side scraper	1
8	Mixing tank	1
9	Slider	1
10	Discharge chute	1
11	Mixing shaft	1
12	Gear with protective cap	1

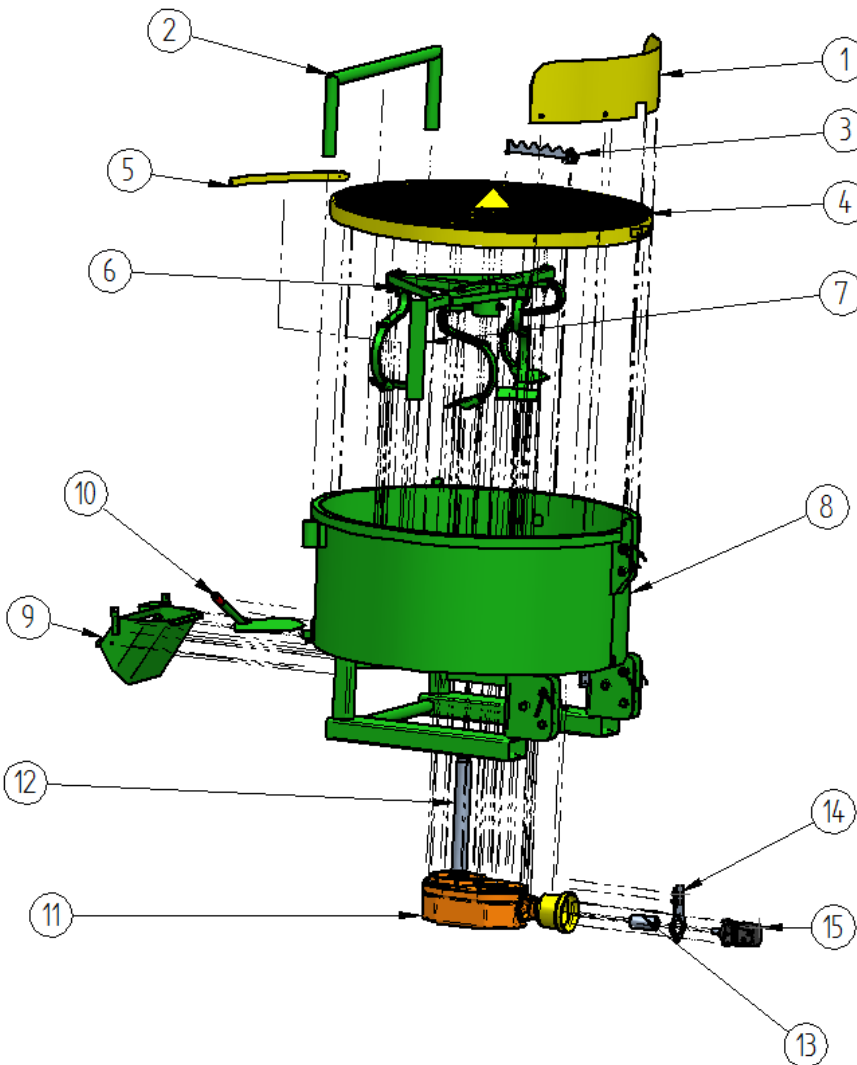
8.8 Overview of components of the mix master „Garant“ with electric drive

The following picture gives an overview about the most important components and shows their installation position on the mix master “Garant”.



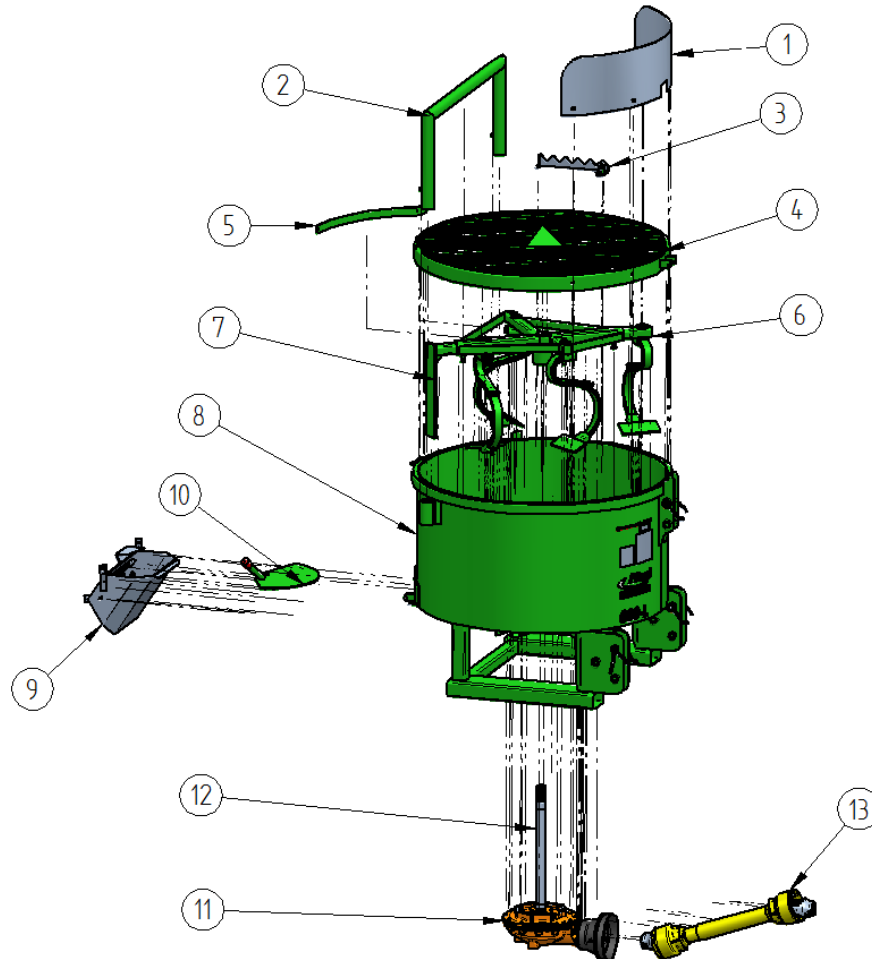
8.9 Overview of components of mix master „Garant“ with hydraulic drive

Pos.	Description	Quantity
1	Splash guard sheet	1
2	Filling bracket	1
3	Sack opener	1
4	Protection grid	1
5	Support arm	1
6	Mixing star	1
7	Side scraper	1
8	Mixing tank	1
9	Discharge chute	1
10	Slider	1
11	Gear with protective cap	1
12	Mixing shaft	1
13	PTO shaft sleeve	1
14	Mounting plate	1
15	Oil motor	1
16	Switch box (not pictured)	1



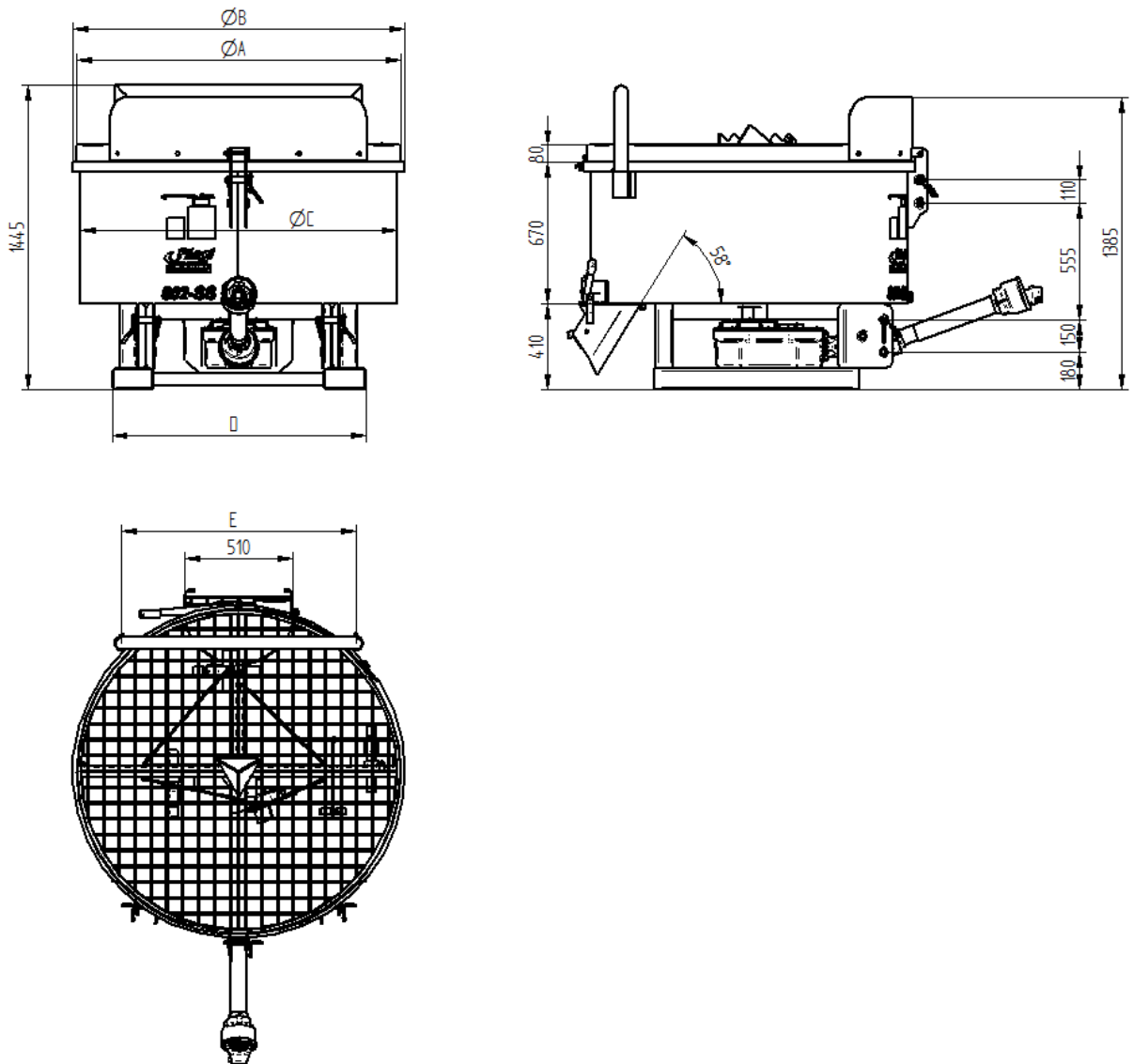
8.10 Overview of components of mix master „Favorite“

The following picture gives an overview of the most important components and shows their installation position on the mix master “Favorite”.



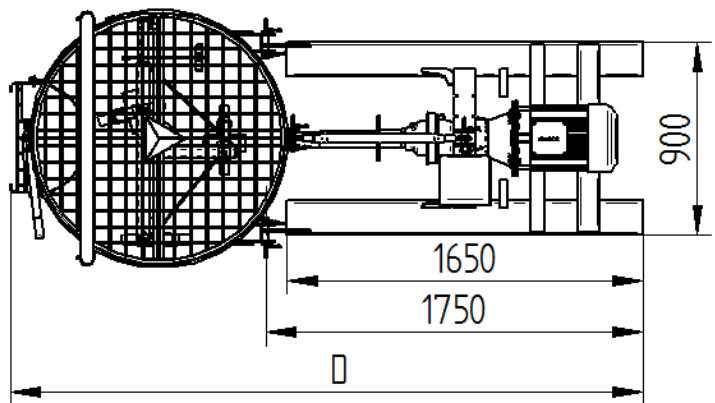
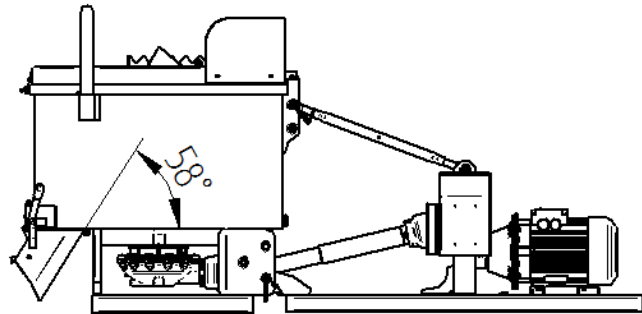
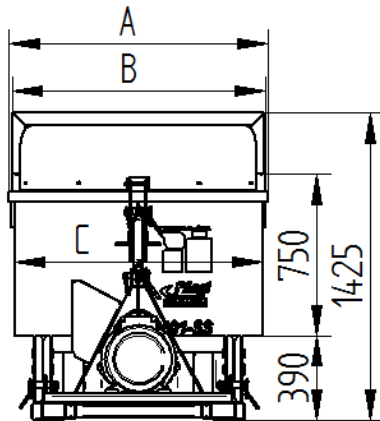
Pos.	Description	Quantity
1	Slash guard sheet	1
2	Sack opener	1
3	Filling bracket	1
4	Protection grid	1
5	Support arm	1
6	Mixing star	1
7	Side scraper	1
8	Mixing tank	1
9	Discharge chute	1
10	Slider	1
11	Gear with protective cap	1
12	Gear shaft	1
13	Drive shaft	1

8.11 Dimensions mix master „Garant“



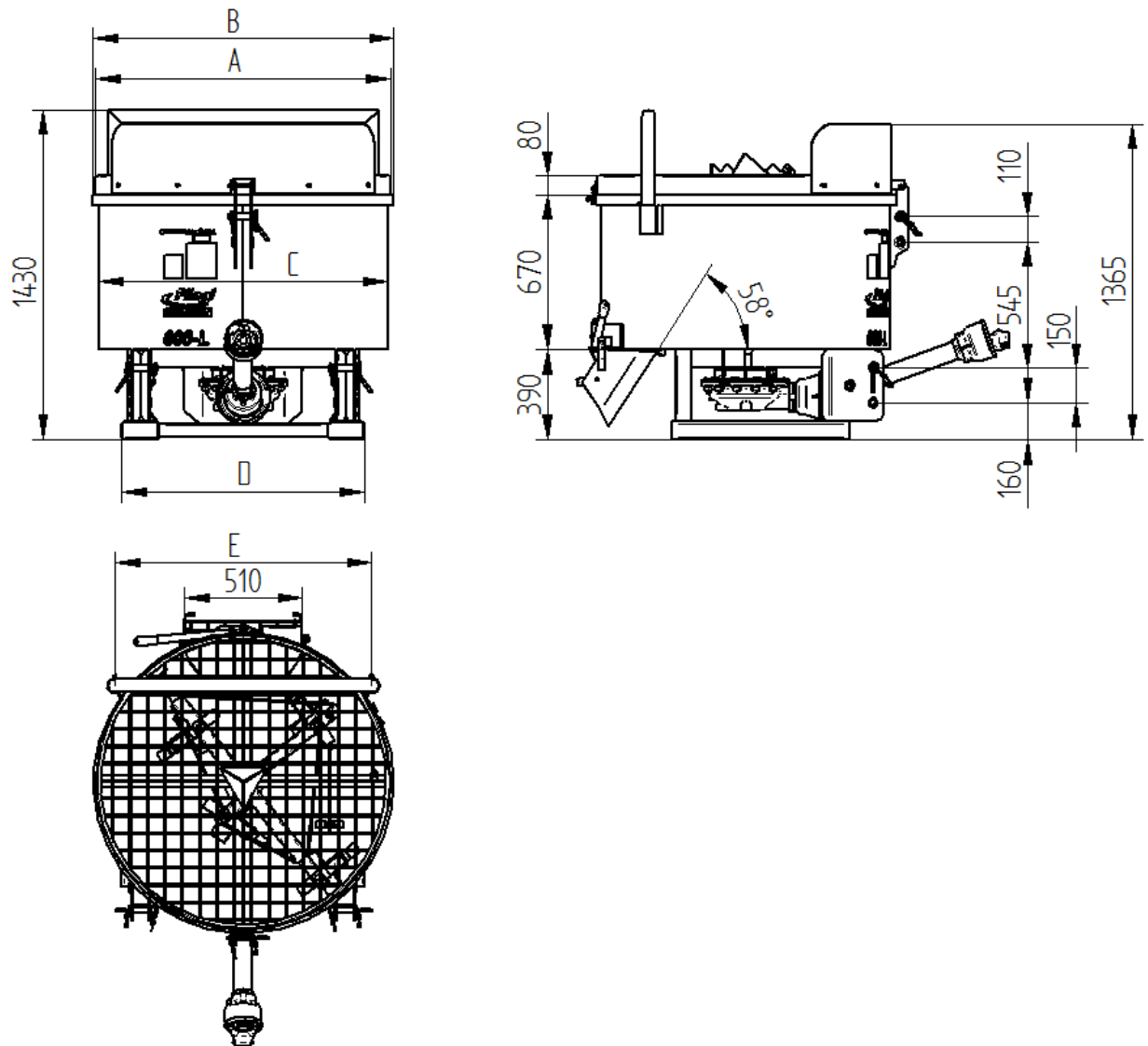
Mixer Type	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E
Garant 401 SS	1175 mm	1200 mm	1150 mm	990 mm	1110 mm
Garant 602 SS	1275 mm	1300 mm	1250 mm	1050 mm	1110 mm
Garant 802 SS	1535 mm	1576 mm	1500 mm	1200 mm	1110 mm
Garant 1002 SS	1835 mm	1880 mm	1800 mm	1170 mm	1110 mm

8.12 Dimensions mix master „Garant“ with electric drive



Mixer Type	Dimension A	Dimension B	Dimension C	Dimension D
Garant 401 SS	1175 mm	1200 mm	1150 mm	2935 mm
Garant 602 SS	1275 mm	1300 mm	1250 mm	3020 mm
Garant 802 SS	1535 mm	1576 mm	1500 mm	3240 mm
Garant 1002 SS	1835 mm	1880 mm	1800 mm	3615 mm

8.13 Dimensions mix master „Favorite“



Mixer Type	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E
Favorite 600	1275 mm	1300 mm	1250 mm	1050 mm	1110 mm
Favorite 800	1540 mm	1575 mm	1500 mm	1200 mm	1110 mm

8.14 Technical data

Mechanical data:	Mix master Type: Favorite 600 Favorite 800 Mix master Garant 401 SS Mix master Garant 602 SS Mix master Garant 802 SS Mix master Garant 1002 SS Mix master Type: Favorite 600 Favorite 800 Mix master Garant 401 SS Mix master Garant 602 SS Mix master Garant 802 SS Mix master Garant 1002 SS	Fill content: 600 liters 800 liters 400 liters 600 liters 800 liters 1000 liters Weight: 430 kg 570 kg 380 kg 490 kg 630 kg 820 kg
Recommended drive power:	Mix master Type: Favorite 600 Favorite 800 Mix master Garant 401 SS Mix master Garant 602 SS Mix master Garant 802 SS Mix master Garant 1002 SS	Power: from 50 PS from 70 PS from 35 PS from 50 PS from 70 PS from 100 PS
Electric data:	Operation voltage Mains fuse on site	(400 volt) minimum 16 A
Oil filling gear:	Oil type	Gear oil 80W/90
Intended environment temperature:	Air temperature during operation	Up to + 35° C
Emissions:	Measured sound power level Guaranteed sound power level EMV	91 dB (A) Measurement uncertainty: 1 dB (A) 93 dB (A) Measurement uncertainty: 1 dB (A) In accordance with EMV directive and the EMV standards for application in industry.

9 Transport and installation

9.1 Transport of the machine to location of installation



Movement without load without turning on the mixing stars

9.1.1 Means of transport

The following means of transport are required for the transport of the machine:

- a forklift or a front loader with lifting eyes on the tractor

9.1.2 Transport inspection

When receiving the delivery check immediately if it is complete in accordance with the delivery note and check if there are transport damages.

In case of external visible transport damage proceed as follows:

- do not accept the delivery or only accept it under reserve.
- make a note about the level of damage on the transport documents or on the delivery note from the carrier.
- File complaint.



NOTE!

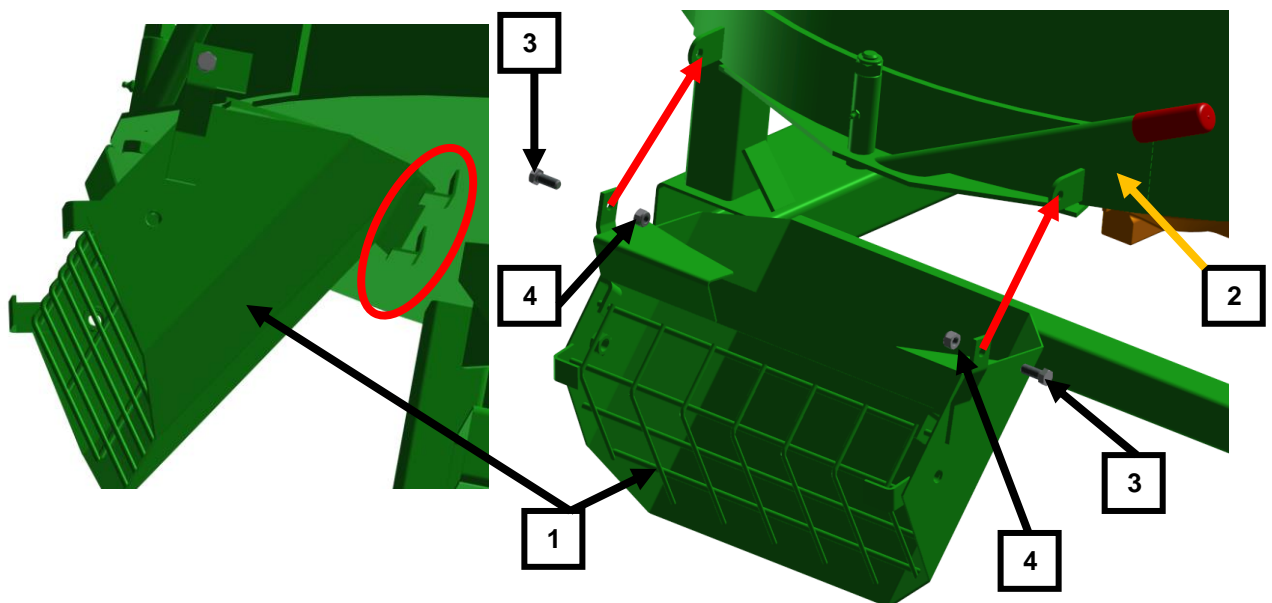
Claim any damage as soon as it is detected.

Complaints can only be accepted if made within the complaint period.

9.2 Set up

9.2.1 Mix master „Garant und Favorit“ set up with the mounting

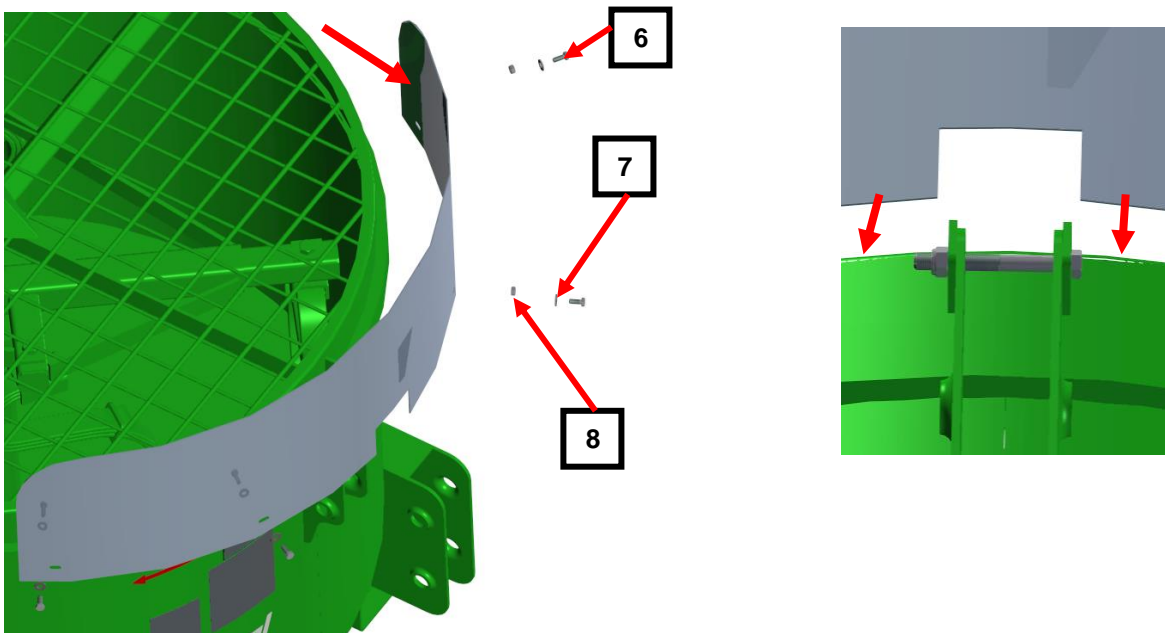
1. First mount the discharge chute (1) on the slider (2). Proceed as follows: Take the hexagon screws M12x30 (3) and the lock nut M12 (4) from the bag and mount the screw connection as shown below.



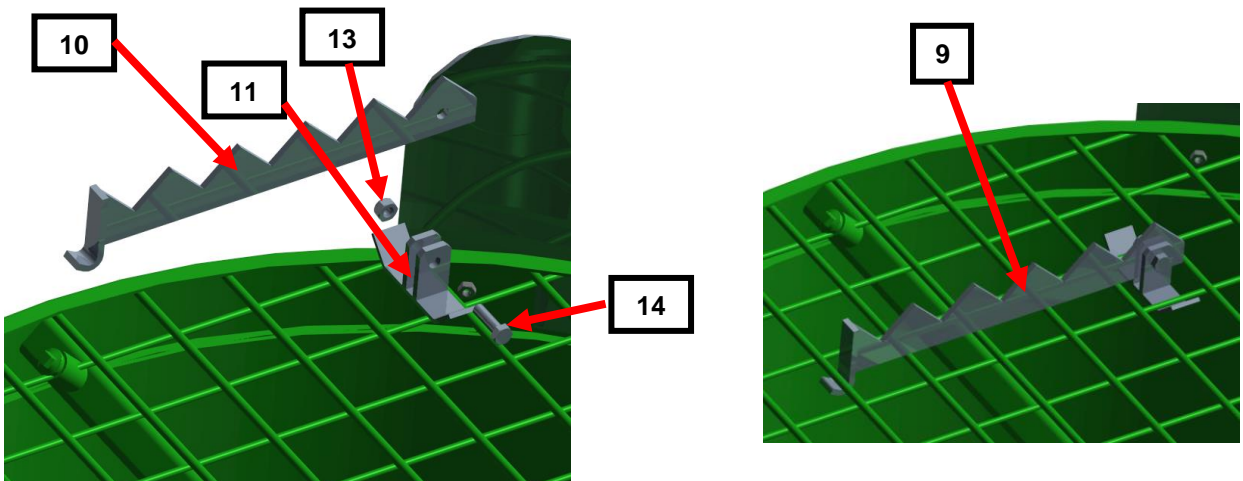
Mix master „Garant und Favorite“

Transport and installation

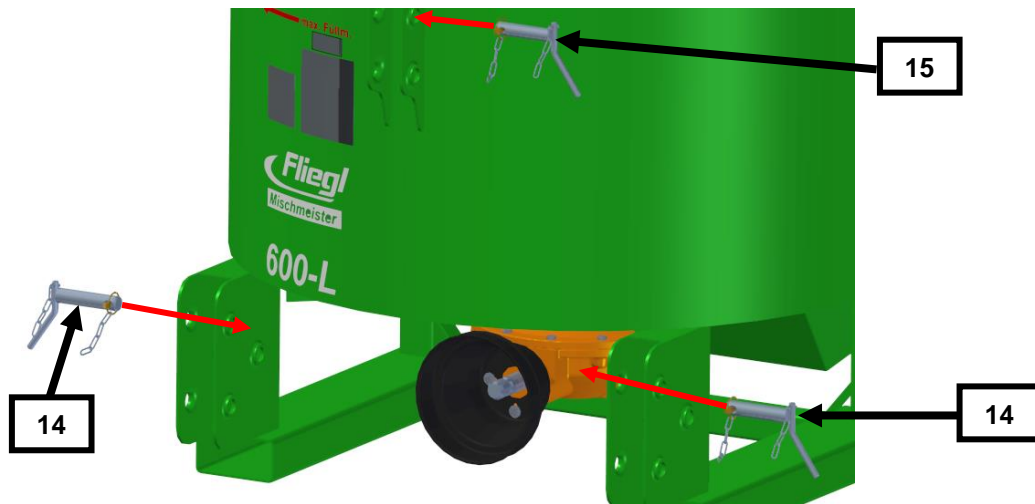
- Next you have to mount the splash guard sheet (5). Take the splash guard sheet (5) and the screw connections hexagon screws M 8x20 (6), washer (7) and lock nut M8 (8) and mount the sheet as shown below.



- Mount the sack opener (9) on the upside of the protective grid. Proceed as follows: Take the zig zag sheet (10) with the holder (11) and the hexagon screw M 10x35 (12) and lock nut (13) and connect them as shown below.



- Plug the upper lower link bolts (15) and the upper link bolts (16) as shown below into the corresponding mounting holds as shown on the next page and secure these with linch pins (see picture on the next page).

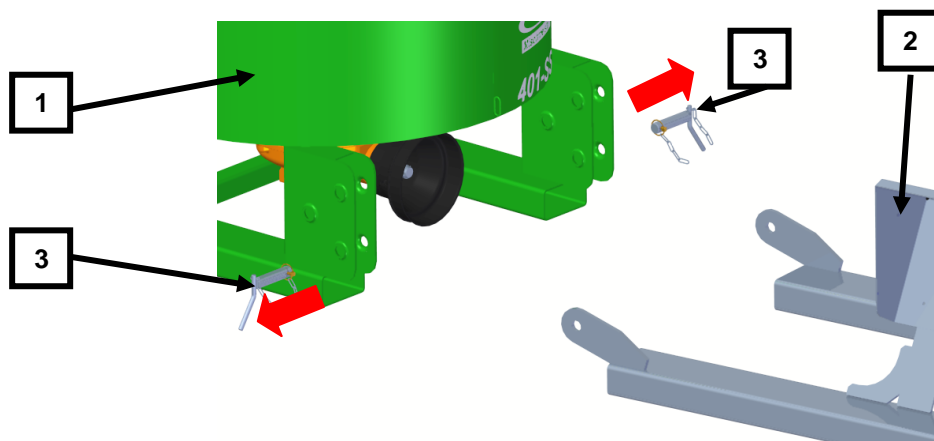


5. The last step is attaching the chain (15) to the upper link bolt (see picture below). Pay attention! **From a size of 800 liters it is necessary to attach two chains (15).**



9.2.2 Coupling the mix master „Garant“ to the electric unit

1. First place a mix master tank (1) on flat ground. Then set up the electric unit (2). Ensure that the unit is on the side of the drive shaft connection (see picture below). Now remove both lower link bolts (3) from the holes of the mix master.

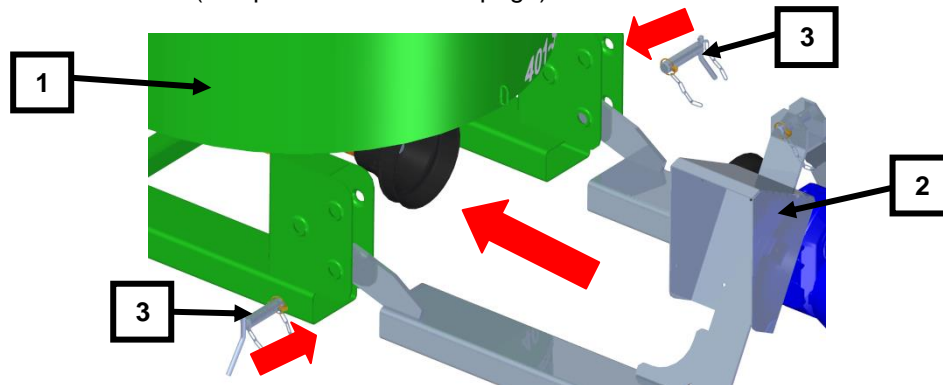


- 2.

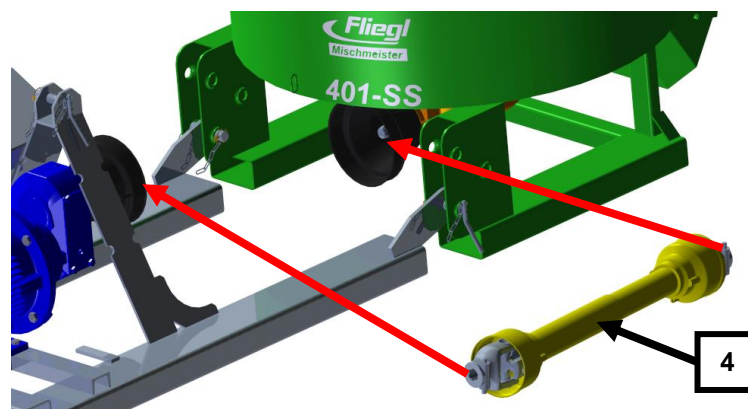
Mix master „Garant und Favorite“

Transport and installation

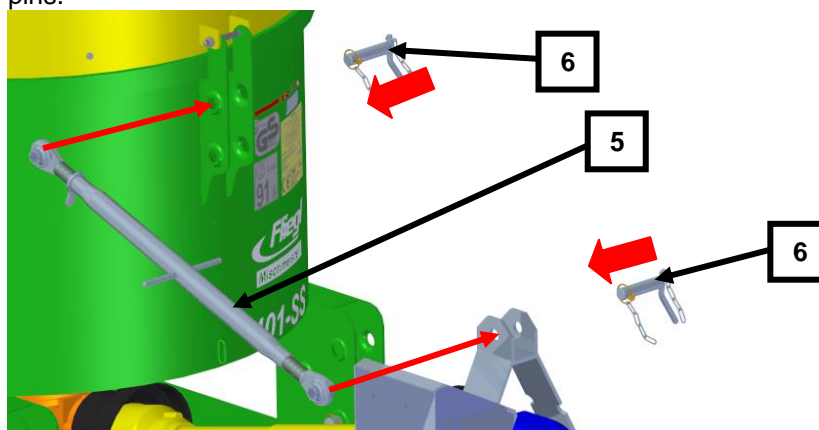
- Now push the electric unit (3) until the mounting hole is concentrically with the mounting hole of the mix master (1). Now push both lower link bolts (3) again into the hole and secure it with the attached linch (see picture on the next page).



- Now you can attach the drive shaft (4). Ensure the correct length, it should not be mounted too tight on the shaft nominal. Should there be a problem with the length you can shorten the shaft (see description drive shaft on the next pages).



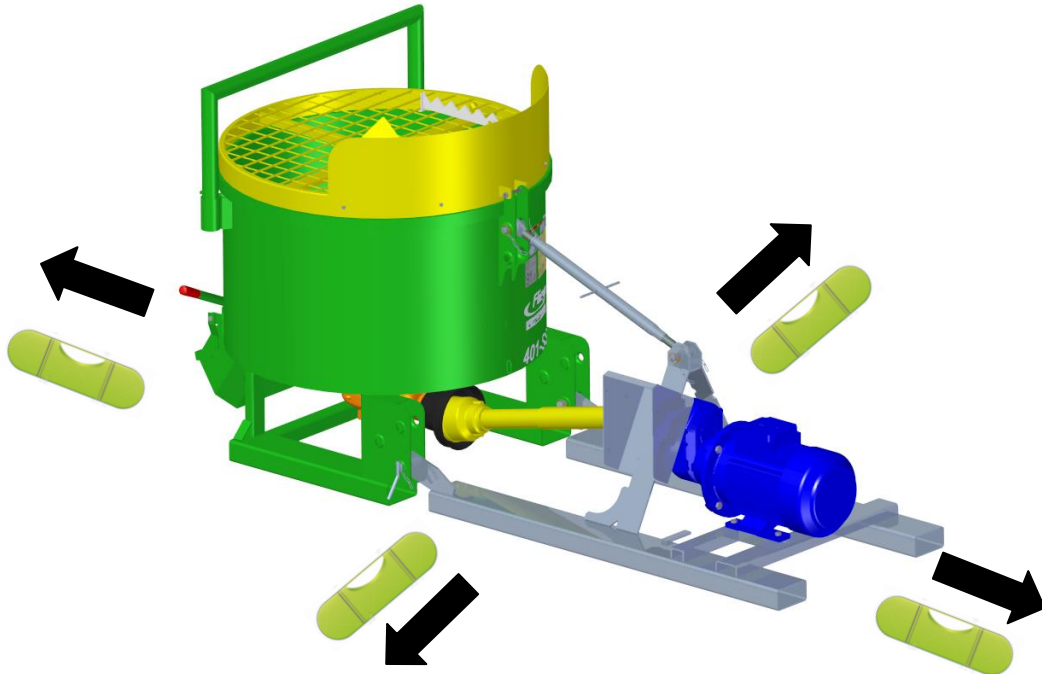
- At the end attach the upper links (5) to the upper mountings. This is done by pulling both upper link bolts (6) out of the flap on the mix master and the electric unit. Mount the upper link (5) to both mountings. Secure the upper link (5) afterwards with both upper link bolts with linch pins.



- Now the mix master electro is set up.

9.2.3 Set up mix master „Garant“ with electric drive.

The mix master „Garant“ should be set up in both directions horizontally, possibly place underlays under it. We recommend to use a spirit level for checking when setting up the mixer.

**9.3 Supply and installation of the mix master with electric drive****ATTENTION****9.3.1 Executing the electric connection**

The electric supply is connected to the switch cabinet.

Execution only my professional personnel!

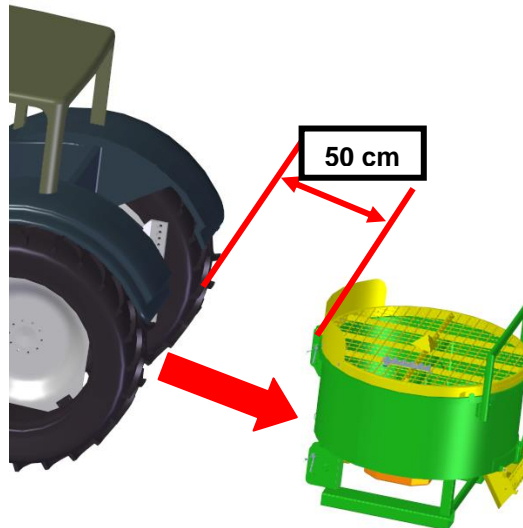
Connect in accordance with the valid standards and directives at the place of installation and in accordance with the circuit diagram. Voltage and current consumption see chapter technical data.

Procedure

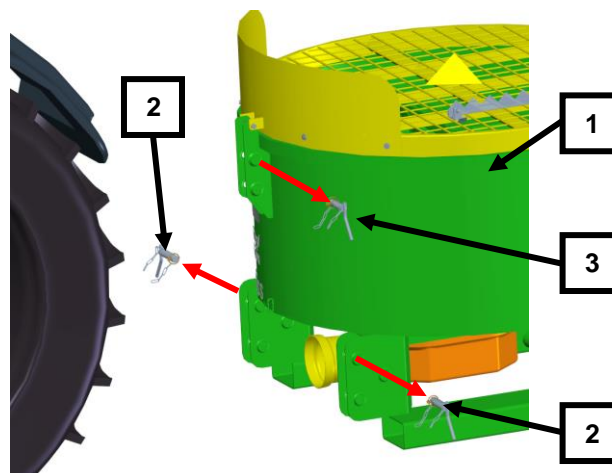
1. Supply with the screw connection on the bottom of the switch cabinet.
2. Connect the supply on the marked terminal strip in the switch cabinet.
3. Check power supply.

9.4 Mix master „Garant and Favorite“ couple to the tractor

1. Approach with your tractor backwards towards the mix master until there is a distance of 0,50 meters between tractor and mix master. Ensure that nobody is in the danger zone (see picture below).



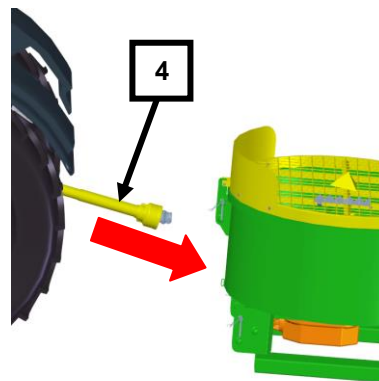
2. Remove any upper link bolts (3) and lower link bolts (2) from the flaps. Afterwards drive the tractor at walking pace until the hole of the lower flap on the mix master (1) is concentrically with the lower link hole of the tractor. Now plug the lower link bolts (2) on both sides to the lower link ball and secure these with linch pins (see picture below).



3. Connect the chain on the upper link bolt (3) of the mix master (1) with the upper link bolt of the tractor. Ensure that starting from **series 800 liters two chains need to be attached** (see picture on the next page).



4. At the end connect the drive shaft (4) with both PTO shaft stubs of the mix master and the tractor (see picture below). Pay attention to the following chapter PTO shaft.



5. Now the mix master is ready for operation.

9.5 Drive shaft

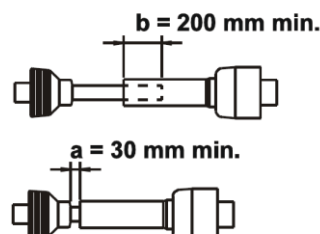
- The drive shaft must generally only be coupled and uncoupled when the motor of the tractor is at standstill.
- Ensure that the coupling of the drive shaft is correctly locked.
- The drive shaft protection needs to be secured with the chains against rotating.

9.5.1 Adjustment of the drive shaft

Since the correct length of the drive shaft is depending on the tractor it could be necessary to shorten the drive shaft.

The drive shaft needs to be adjusted in a way in which: (see following picture)

- it has as much overlapping as possible,
- it has at least 30 mm free space (**a**) in each position,
- it has at least 200 mm overlapping (**b**) in each position.



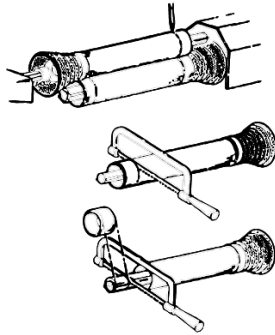
9.5.2 Shortening the drive shaft

When shortening ensure that not too much of the protection tube is removed. The shaft must **never** be visible when it is mounted between tractor and machine.

The shaft ends need to be held parallel to each other and marked 30 mm (minimum).

Attach the drive shaft halves to the PTO shaft or on the machine so that they are horizontally.

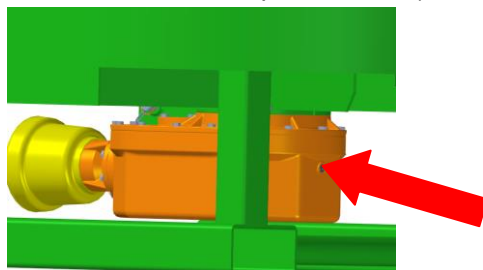
All tubes need to be shortened to the same length. Round the ends of the profile tube, deburr them carefully and clean them inside (see picture below).

**WARNING!**

Grease the profile tubes carefully before reassembling them as otherwise they will be subject to intense friction forces.

9.6 Following checks need to be done before first commissioning

- Check if there are any loose or droopy parts (especially screw connections) on the mix master “Garant and Favorite”.
- Check condition of any safety devices.
- General visual check of the mix master “Garant and Favorite” for possible changes.
- Check the working area and ensure that no other people are in the working area – especially kids.
- Before every commissioning check the gear oil level on the oil level screw (oil level needs to reach the screw, see picture below).



10 Operation

10.1 Commissioning



TO AVOID DAMAGE OF THE DEVICE OR SERIOUS INJURIES WHEN COMMISSIONING THE DEVICE PAY ATTENTION TO THE FOLLOWING POINTS:

- The commissioning of the device must only be done by qualified personnel who pays attention to the safety notes.
- Before the first commissioning check if any tool and any other parts are removed from the implement.
- Before commissioning check if any cables are damaged.
- Execute movements without load without turning on the mixing stars.
- Also read chapter “general safety notes”.

10.2 First commissioning



ATTENTION!

For first commissioning the following things are necessary:

- Pay attention to people who could stay within the danger zone!
- Check installation, see chapter 9.2.3 page 43.
- Add additives and operation material or check, see chapter 11.7 page 60
- Turn on the machine, see chapter 11.1 page 48
- Check safety device, see chapter 11.3 page 56.

10.3 Restarting

After longer storage (see chapter 12 page 62) the same works which are necessary for first commissioning are necessary. See chapter 10.2. If different works, execute!

10.4 Turning the machine on and off



ATTENTION!

10.4.1 drive shaft

When installing, ensure that the drive shaft on the tractor locks to the gearing stub.

Oil motor

Connect hydraulic connections correctly and check if there are any leaks (visual check).

General information about commissioning

Pay attention to the filling level, when overfilling safety is not guaranteed. Overfilling can cause releasing of the front and back wheels of the vehicle – overloading of the hydraulic.

10.4.1 Before turning on**IMPORTANT!**

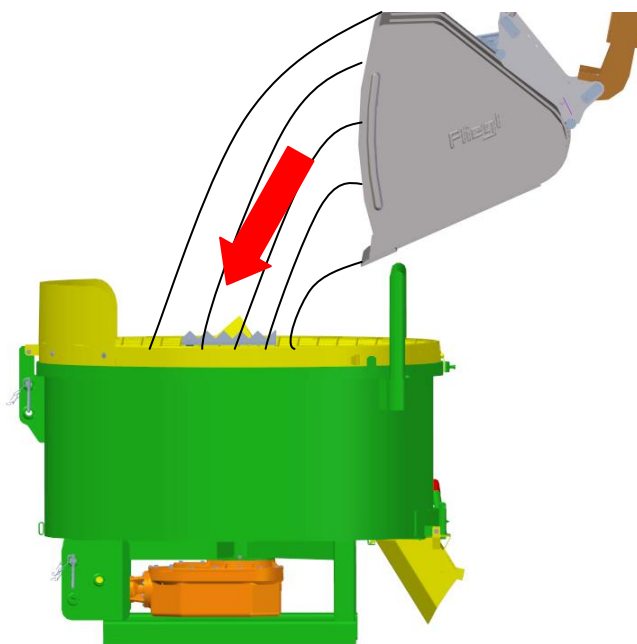
- Instruct unauthorized people to leave the machine.
- Make a visual check of the whole machine and the tools.
- Check the filling levels of the whole machine and the tools.
- Unlock any device for shut down in emergency.

10.5 Operation of the device**THE FOLLOWING POINTS NEED TO BE FOLLOWED TO AVOID DAMAGE OF THE DEVICE OR SERIOUS INJURIES WHEN OPERATING THE DEVICE**

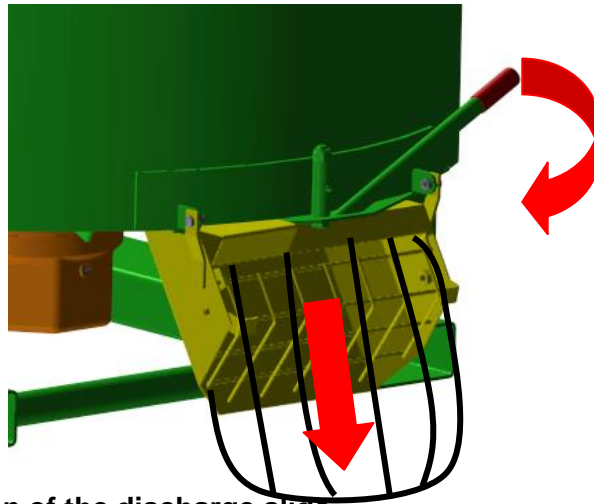
- The mix master “Garant and Favorite” must only be operated in accordance with its intended use.
- Make functional checks before turning on the mix master “Garant and Favorite”.
- Read chapter “general safety notes”
- Find out information about the correct behaviour in case of disturbances before using the machine.
- Pay attention to the filling level, in case of overfilling the safety is not guaranteed!

10.6 Filling the mix master „Garant and Favorite“ with hydraulic drive.

The filling of the mix master is done only from the top with closed protection grid, only if this is done the mixing star with hydraulic control in the carrier vehicle can be turned on.



10.7 Discharge slide



10.7.1 Function of the discharge slide

The discharge slide serves for targeted dosing of the mixing material, for example filling of the conveyor belt, wheel barrow etc.

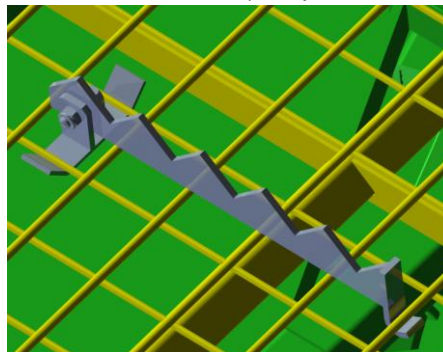
Process

The mixing floor on the attached discharge opening opens by pulling back the grip stock.


ATTENTION: Do not grip into the opening when the mixing star is running!


10.8 Sack opener

The sack opener is attached on the top on the protection grid, it is used for easier opening of the paper bags for the additives of mortar, concrete etc. (see picture below).



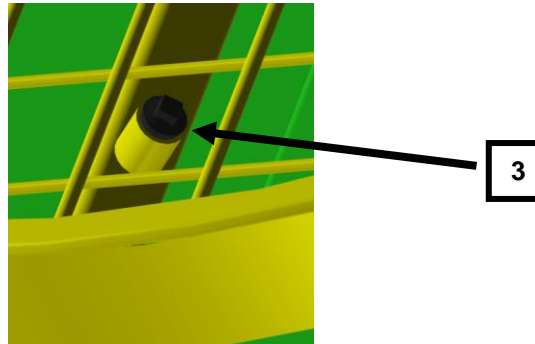
The sack opener is made of a spike bar and a clamping rail which is connected with a hexagon screw. To screw connection needs to be loosened to move the sack opener. The spike bar can be placed on the grid at the desired position with the flap and secured with the clamping rail and the hexagon screw.

	<p>ATTENTION!: Cement can etch skin and eyes. Protect yourself at any time from cement dust.</p>
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	<p>NOTE!: The sack opener can be attached to the protection grid at any free position in consideration of the grid opening when filling.</p>
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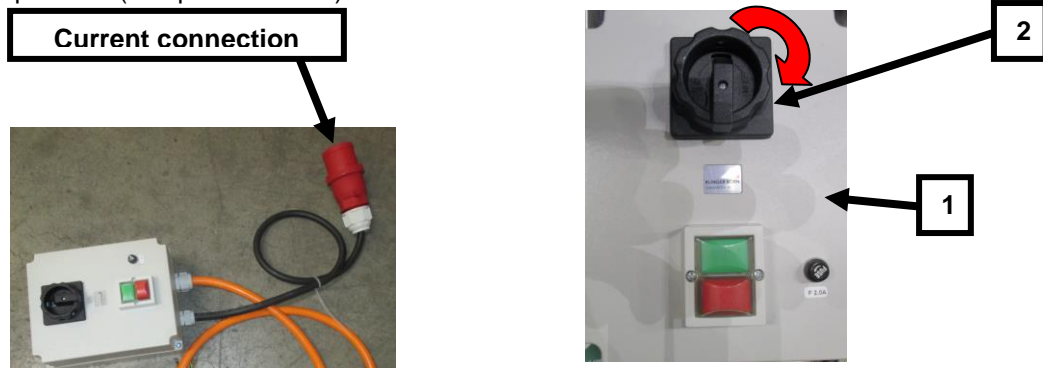
10.9 Water connection on the mix master “Garant and Favorite”

It is possible to connect a water hose directly on the top of the filling area if you want to mix mortar of concrete. Screw the plugs (3). Mount a water connection at your choice at the place where you removed the plug (3). The internal thread is an inch thread (see picture below).

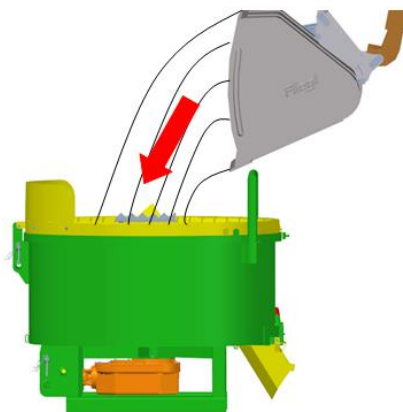


10.10 Filling and operation of the mix master „Garant“ with electric drive

1. Plug the 400 volt plug to the current source. Afterwards turn the main switch (2) on the switch box (1) into the direction of the arrow into position “1 – on”. Now your mix master is ready for operation (see picture below).



2. Now fill the mix master with the desired material from the top. Pour the bulk material through the protective grid (see picture below).

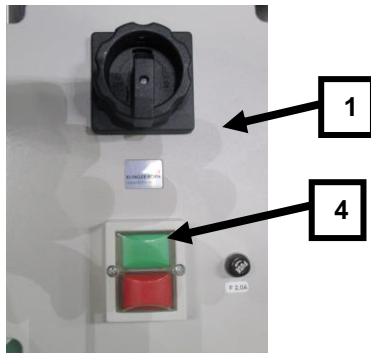


3. Turn on the mixing star by pushing the green button (4) on the switch box (1) 1x (see picture below).



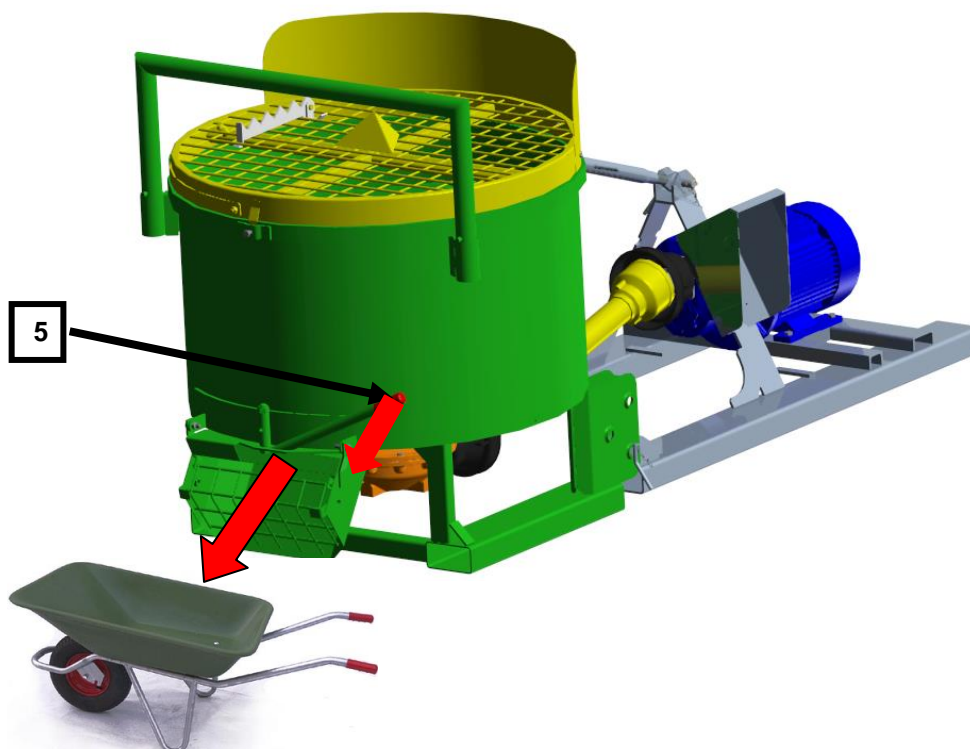
NOTE!

To operate the mix master “Garant with electric drive” at low cost and time-saving we recommend to proceed as follow: Always charge the mixing tank first with 1/3 of the aggregates, then add water and bonding agents. Turn on and then add the other 2/3 of aggregates.

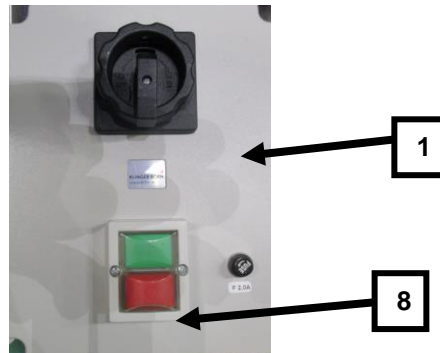


4. As soon as the material has reached the final texture the material can be emptied. Turn the control handle (5) in the direction of the arrow, the outlet floor and, therefore, the material is transported through the discharge chute out of the tank.

IMPORTANT! Make sure that the mixing star is continuing running because this supports the discharging of the material (see picture below).



- When the tank is emptied, turn the control handle (5) back into the starting position. Afterwards turn off the mixing star. This is done by pushing the red button (8) on the switch box (1) 1x (see picture below).



10.11 Rotation directions mixing star

The rotation direction of the mixing star needs to be checked.

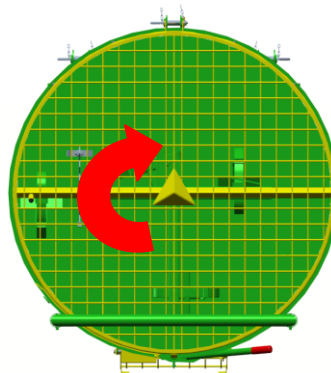
Objective:

The correct setup of the machine needs to be checked.

Process:

- Turn on the mix master.
- Correct the adjustment if necessary.

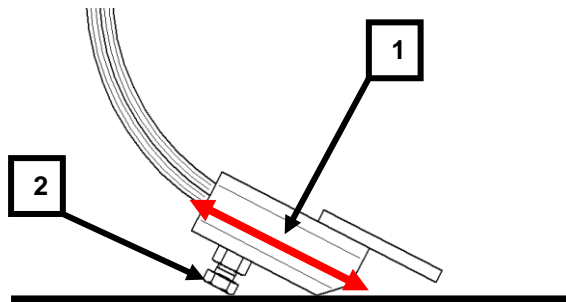
The mixing star is driven by the hydraulics of the carrier vehicle or with the gear motor. Pay attention to the correct rotation direction of the mixing star (correct rotation direction see picture below).



10.12 Mixing star

Every connection of the mixer arm to the mixing star needs to be checked regularly and retightened if necessary. Check before every use if the mixing paddles are correctly adjusted.

In empty condition the mixing paddle should touch the ground slightly. If the mixing paddle is rubbing on the ground it is adjusted too low. If you want to change the adjustment it is only necessary to loosen the screw (2) on the shaft of the mixing paddle, to move the shovel (1) and to secure it again with the screw. If the shovel cannot be moved it is necessary to slightly hammer with a hammer on the shaft of the mixing paddle (see picture on the next page).



10.13 Execution of the test run

After setup and assembly and before starting the production a test run needs to be done.

Objective:

The correct setup of the machine should be checked.

Requirements:

- Machine is ready for operation,
- Machine is completely set up.

Process:

1. Turn on the machine.
2. Correct the adjustment, if necessary.

10.13.1 Before turning on



IMPORTANT

- Instruct unauthorized people to leave the danger zone
- Make a visual check of the whole mix master and the tools
- Check the filling levels of lubricating agents and additives..
- Unlock all devices for shut down in emergency
- Before starting work ensure that any caps and safety devices are installed and properly functional
- Never decommission safety devices during operation.
- Ensure tidiness and cleanliness in the working area! Loose components and tools lying around are sources for accidents.

10.14 Interventions in emergencies

An action in emergency includes individually or in combination:

- Turning off in emergency
- Turning on in emergency

10.14.1 Turning off in emergency

In danger situations machine movements need to be stopped immediately as quick as possible and the energy supply needs to be turned off.

In emergency proceed as follows:

- a. Immediately turn off the main switch.
- b. Secure the main switch from restarting.
- c. Immediately contact the responsible person for the place of use.
- d. **If necessary** call a doctor or the fire department.
- e. Rescue people from the danger zone, initiate first aid actions.
- f. Keep access routes clear for rescue vehicles.
- g. Contact the competent authorities this is necessary because of the seriousness of the emergency.
- h. Instruct the trained personnel with the elimination of the disturbances.

- i. Check the device before recommissioning and ensure that any safety devices are installed and functional.

**WARNING!****Danger to life by premature restarting!****Restarting causes danger to life for anyone in the danger zone.****Therefore:**

- **Before restarting ensure that nobody is staying in the danger zone.**

10.14.2 Turning on in emergency

An action in emergency which is intended to turn on the supply with electric energy to a part of the machine which is necessary for emergent situations.

**IMPORTANT**

Before restarting the mixer / operation vehicle after shutdown in emergency

- Find out the reasons for shutdown in emergency,
- Eliminate the risks.

1. Remove any work pieces from the machine.
 2. Ensure that any risks are eliminated.
 3. Check the tools. The tools which were active at the time of shutdown in emergency could be damaged.
 4. Drive the machine in basic position.
- You can continue usual operation.

11 Maintenance



ATTENTION

The mix master „Garant and Favorite“ needs to be checked for damages after every operation.

Below please find information for the elimination of disturbances and maintenance of the machine. A regular maintenance in accordance with the maintenance plan is an essential prerequisite for an efficient use of the machine.

- Chapter 11.2 includes any works which need to be done and the maintenance cycles.
- Chapter 11.6 describes how to execute the individual maintenance works.
- Chapter 11.7 gives an overview of any additives and operation material.
- Chapter 12 gives an overview of any spare parts and wear parts.

11.1 Customer service

Fliegl Agro-Center GmbH
 Maierhof 1
 D-84556 Kastl
 Phone: +49 (0) 8671- 9600- 400
 Fax: +49 (0) 8671- 9600- 701
 E-mail: info@agro-center.de

11.2 Proper maintenance

The proper maintenance helps to ensure a trouble-free and efficient run in production. The operation personnel can execute these works after corresponding instruction.

Work	Maintenance interval
Check safety devices	Before commissioning
Cleaning the machine	at the end of the operation
Refilling oil on the drive gear	Weekly or every 40 hours of operation
Greasing in accordance with the greasing plan	Weekly or every 10 hours of operation



NOTE

Some of the above mentioned works are strongly depending on the use and the environmental conditions. The above mentioned cycles are minimum cycles. In individual cases different maintenance cycles are possible.

In this case:

- correct the information indicated in this manual,
- instruct the operation personnel properly.

11.3 Testing devices



IMPORTANT

Check any devices individually and separately from each other for shut down in emergency. IN case of faulty safety devices immediately shut down the machine and secure from restarting.


Functional checks of the device for shut down in emergency

1. Operate the device for the shut down in emergency

2. The operation of the device for the shut down in emergency needs to cause a turning off of any machine functions:
 - Mixing star
 - Hydraulically operated parts.

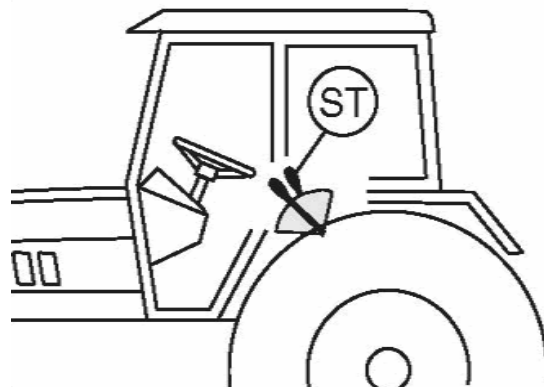
11.4 Cleaning the mix master „Garant and Favorite“

For cleaning the machine use water only with a water jet, no HIGH PRESSURE CLEANER! At the end of the work it is necessary to clean the material tank with the outlet slide and the mixing star. They need to be free of material deposits and encrustations. The guidance on the floor of the outlet slide always needs to be clean and lightly greased to ensure slight opening and closing.

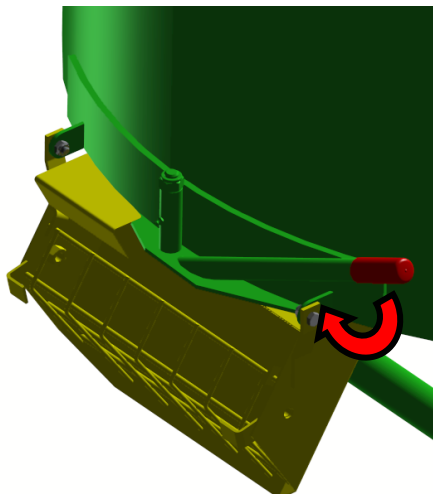
	<p>CAUTION! Water can permeate sensitive machine parts! Therefore:</p> <ul style="list-style-type: none"> • Before cleaning the mix master “Garant and Favorite” cover any openings into which no water should permeate for safety reasons and functional reasons (for example electric motors) • After cleaning remove the caps completely.
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Procedure

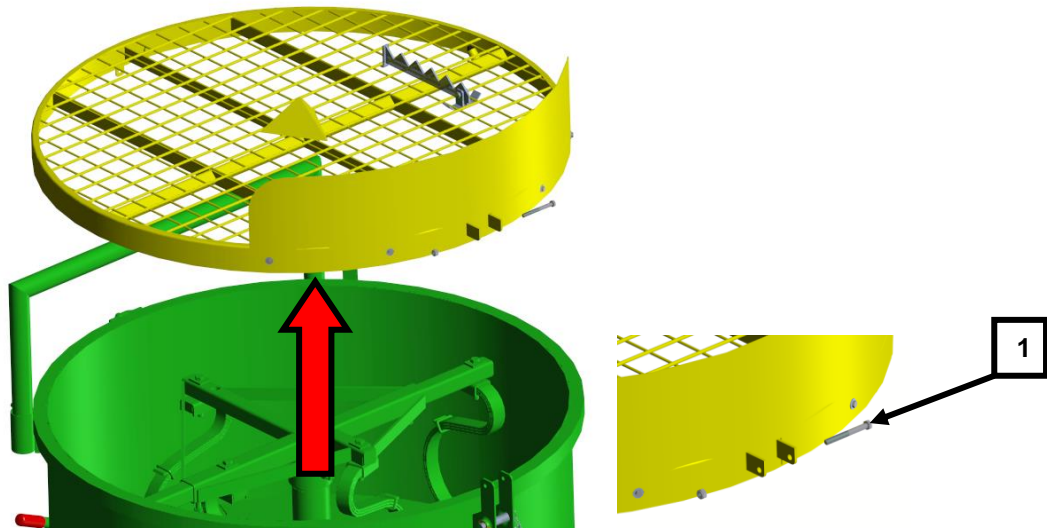
1. Turn off the machine (see picture below).



2. Open the outlet slide (see picture).



- Open the cap with the protection grid, therefore, unscrew the hexagon screws (1) on the flaps (see picture below).



- Clean the interior space and the protective grid with water.



NOTE

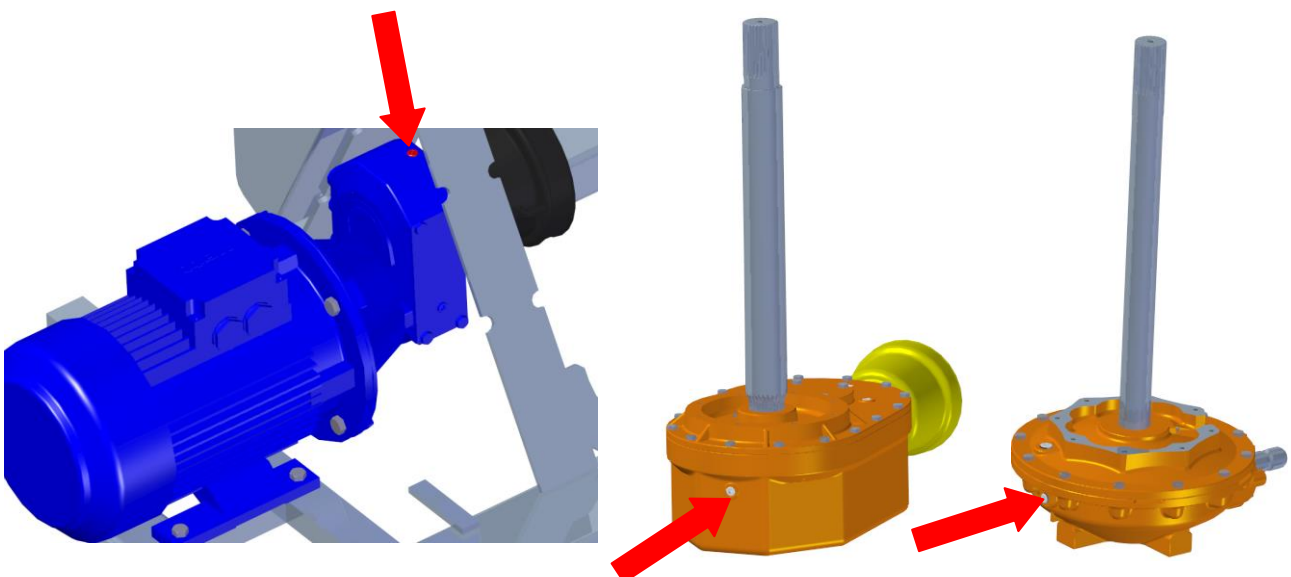
Some of the above mentioned works are strongly depending on the use and the environmental conditions. The above mentioned cycles are minimum cycles. In individual cases the maintenance cycles are different.

In this case:

- correct the information included in this manual
- instruct the operation personnel properly.

11.4.1 Refilling oil on the gear

The filling level control and the filling screws are under the mixer and in front of the e-motor (gear).



11.5 Executing maintenance work



ATTENTION

- Before commissioning check the gear oil and, if necessary, refill it.
- Before commissioning check the lubricating parts regularly and grease them (mixing star on the top, shaft protection tube below, outlet slide).
- Check if there is wear on the mixing paddle and, if necessary, change it
- Check mounting parts between drive vehicle and mixer for wear and, if necessary, exchange them.

Work / test	Maintenance interval / description
Check safety and protective devices	Daily / weekly and generally for every commissioning and after every reparation of the machine.
Cleaning the machine	Daily
Lubricating the machine	Daily

11.6 Maintenance plan

After 5 hours it is necessary to tighten all fixing screws! After another 100 hours of operation check the screw connections for tightness and, if necessary tighten them. (Disregard could result in damages on the tractor and the loader because there could be reduction of the screw tightening torque on the screw connections caused by shock and changing tension forces during operation of the loader).

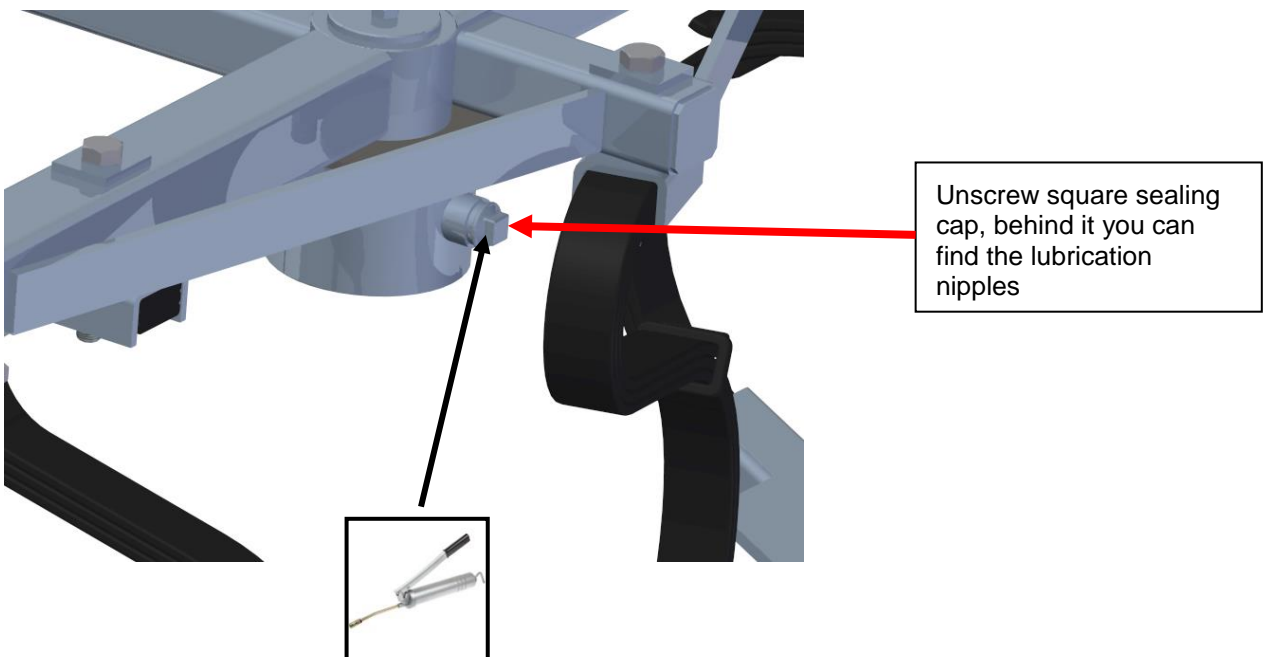
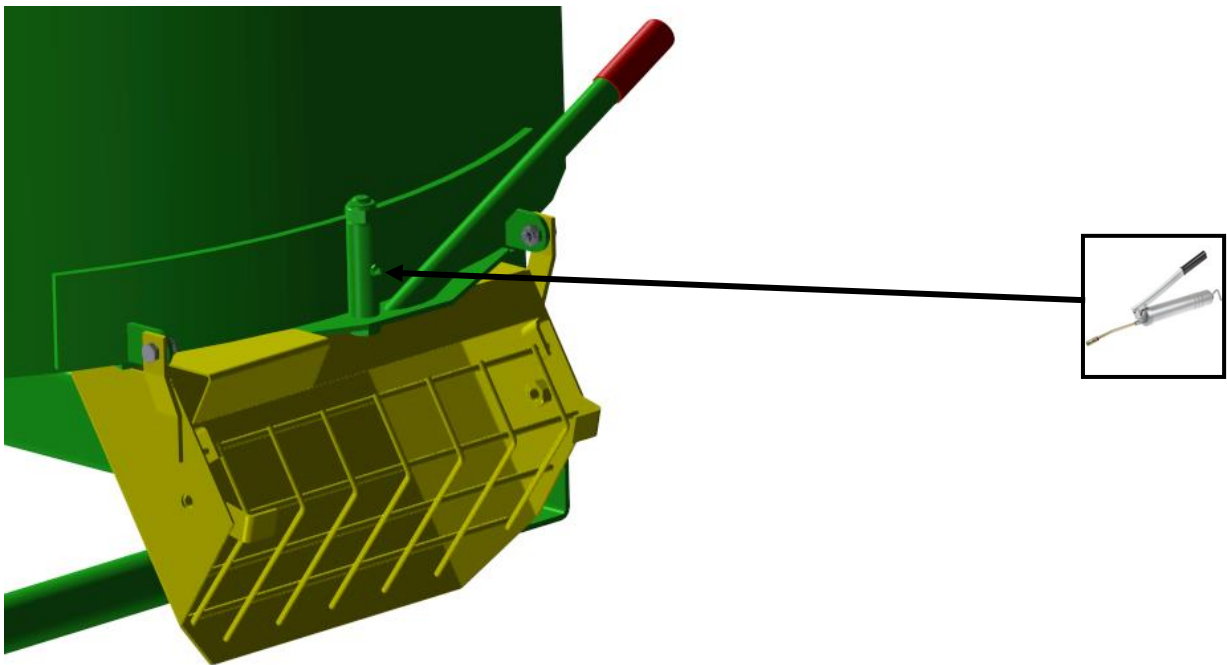
Metric screws										
List of screw										
Preload forces and tightening torques for shaft screws made of steel										
Regular thread										
Dimension	Preload force (kN)					Tightening torque (Nm)				
Strength class	4.6	5.6	8.8	10.9	12.9	4.6	5.6	8.8	10.9	12.9
M 4x0.70	1.29	1.71	3.9	5.7	6.7	1.02	1.37	3.0	4.4	5.1
M 5x0.80	2.1	2.79	6.4	9.3	10.9	2.0	2.7	5.9	8.7	10
M 6x1.00	2.96	3.94	9.0	13.2	15.4	3.5	4.6	10.0	15.0	18.0
M 8x1.25	5.42	7.23	16.5	24.2	28.5	8.4	11.0	25.0	36.0	43.0
M 10x1.50	8.64	11.5	26.0	38.5	45.0	17.0	22.0	49.0	72.0	84.0
M 12x1.75	12.6	16.8	38.5	56.0	66.0	29.0	39.0	85.0	125.0	145.0
M 14x2.00	17.3	23.1	53.0	77.0	90.0	46.0	62.0	135.0	200.0	235.0
M 16x2.00	23.8	31.7	72.0	106.0	124.0	71.0	95.0	210.0	310.0	365.0
M 18x2.50	28.9	38.6	91.0	129.0	151.0	97.0	130.0	300.0	430.0	500.0
M 20x2.50	37.2	49.6	117.0	166.0	194.0	139.0	184.0	425.0	610.0	710.0
M 22x2.50	46.5	62.0	146.0	208.0	243.0	186.0	250.0	580.0	830.0	970.0
M 24x3.00	53.6	71.4	168.0	239.0	280.0	235.0	315.0	730.0	1050.0	1800.0
M 27x3.00	70.6	94.1	221.0	315.0	370.0	350.0	470.0	1100.0	1550.0	1800.0
M 30x3.50	85.7	114.5	270.0	385.0	450.0	475.0	635.0	1450.0	2100.0	2450.0
M 33x3.50	107.0	142.5	335.0	480.0	560.0	680.0	1080.0	1440.0	2800.0	3400.0
M 36x4.00	125.5	167.5	395.5	560.0	680.0	1080.0	1440.0	2600.0	3700.0	4300.0
M 39x4.00	151.0	201.0	475.0	670.0	790.0	1330.0	1780.0	3400.0	4800.0	5600.0

Fine thread						
Dimension	Preload force (kN)			Tightening torque (Nm)		
Strength class	8.8	10.9	12.9	8.8	10.9	12.9
M 8x1.00	18.1	26.5	31.9	27.0	40.0	47.0
M 10x1.25	28.5	41.5	48.5	54.0	79.0	93.0
M 12x1.25	43.0	64.0	74.0	96.0	140.0	165.0
M 12x1.50	40.5	60.0	70.0	92.0	135.0	155.0
M 14x1.50	58.0	86.0	100.0	150.0	220.0	260.0
M 16x1.50	79.0	116.0	136.0	230.0	490.0	580.0
M 18x1.50	106.0	152.0	177.0	350.0	490.0	580.0
M 20x1.50	134.0	191.0	224.0	480.0	690.0	800.0
M 22x1.50	166.0	236.0	275.0	640.0	920.0	1070.0
M 24x2.00	189.0	270.0	315.0	810.0	1160.0	1350.0
M 27x2.00	245.0	350.0	410.0	1190.0	1700.0	2000.0
M 30x2.00	309.0	440.0	515.0	1610.0	2300.0	2690.0

11.7 Additives and operating materials

Additive and operating material	Specification
Gear oil	Gear oil SAE 90 EP, Gear oil types with EP addition and antifoam property API-GL 5
Lubricating grease	Li grease, DIN 51502, KP 2K

11.8 Lubricating plan



11.9 Troubleshooting and fault elimination

Disturbance	Possible reason	Fault elimination	Correction entered by
Unit does not start	Power supply not okay	Repair power supply line	Service technician
	No mains power	Check mains power	Service technician
	Main switch not turned on	Turn on main switch	Operator
	Material tank overfilled	Open and empty the slider	Operator
	jammed mixing star	Dissolve the jamming, restart again	Operator
Device stops	Motor safety switch triggered – overfilled or mixing star is jammed	Open the slider and empty it, afterwards restart again	Operator
	Supply line too long and/or too low cable cross section	Check cable cross section, needs to be 2,5m ² , shorten supply line.	Operator
	Voltage drop in the power supply	Check mains voltage	Service technician

12 Decommissioning

12.1 Storage conditions

Short term and medium term storage (up to 2 years) without special measure of the technical data specified environmental conditions possible.

For long term storage measures for corrosion protection need to be taken.


12.2 Disassembly, final cessation


1. Turn off the device.
2. Disconnect the power line on the switch cabinet or unplug the plug and roll up the supply cable and fix it on the device safely.
3. Empty additives.
4. Dispose in a recycling company.


12.3 Destruction and recycling

Before transporting unmount and disassemble the device in accordance with the chapter 13.2 below.

Device parts and electrical components need to be separated according to the type and need to be disposed professionally.

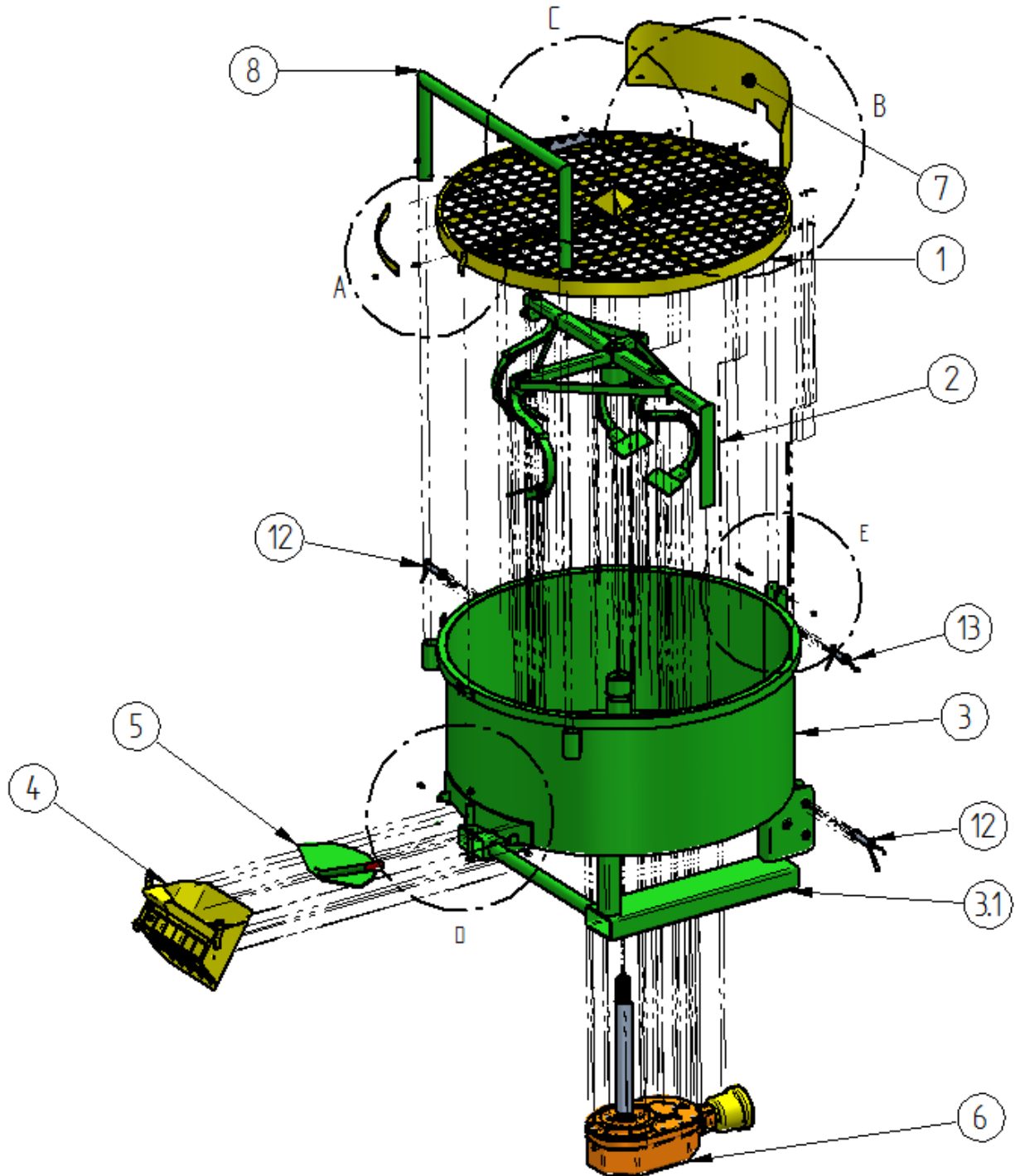
	<p>IMPORTANT!</p> <p>Any components and additives and operating materials of the device:</p> <ul style="list-style-type: none"> • need to be separated according to the type, • need to be disposed in accordance with the local regulations and directives.
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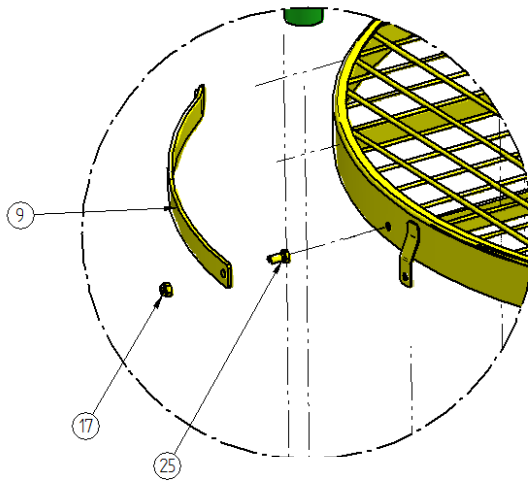
	<p>NOTE!</p> <ul style="list-style-type: none"> • Oil and grease are hazardous waste!
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	<p>NOTE!</p> <ul style="list-style-type: none"> • Refer to the manufacturer for questions about destruction/recycling.
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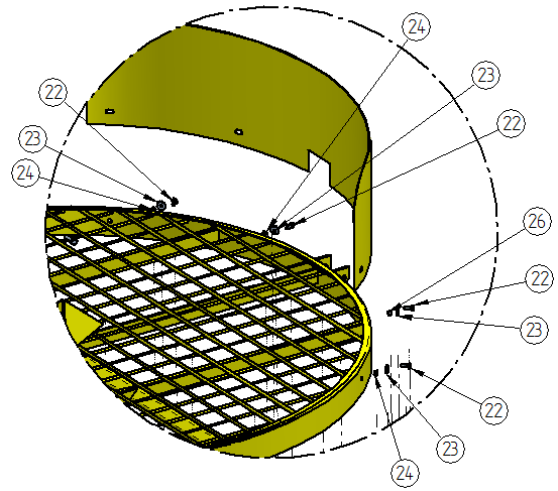
13 Spare parts and wear parts

13.1 Spare part list completely mix master “Garant and Favorite”

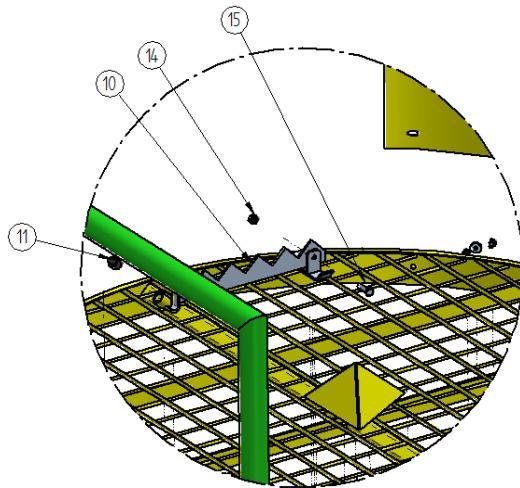




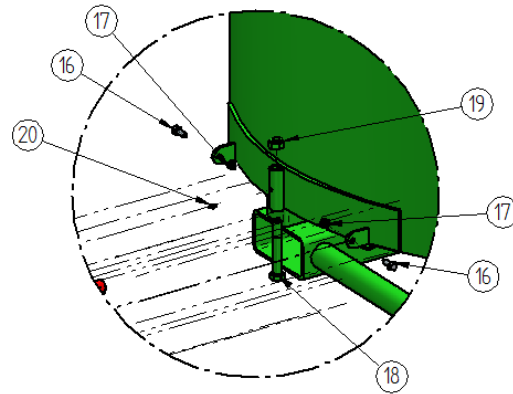
DETAIL A



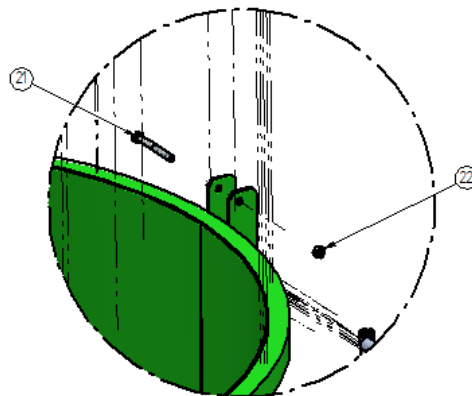
DETAIL B



DETAIL C



DETAIL D



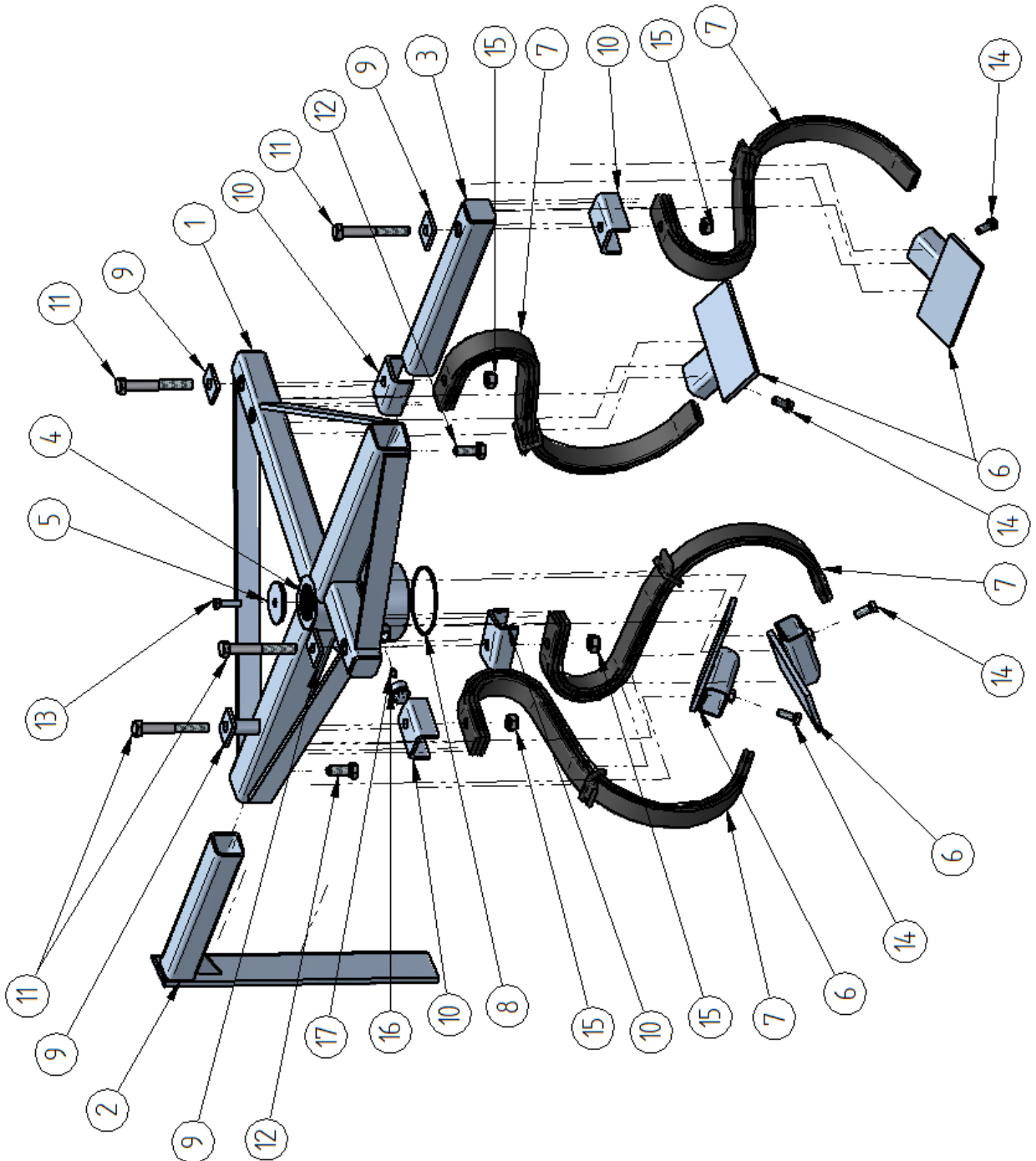
DETAIL E

Mix master „Garant und Favorite“

Spare parts and wear parts

Pos	Article or drawing number	Description	Addition	Type 401 SS	Type 602 SS	Type 802 SS	Type 1002 SS
1	MIZMFA400001	Protection grid 400 FA	MFA40003-060000-000	1	-	-	-
	MIZMFA600001	Protection grid 600 FA	MFA60003-060000-000	-	1	-	-
	MIZMFA800001	Protection grid 800 FA	MFA80003-060000-000	-	-	1	-
	MIZMFA100001	Protection grid 1000 FA	MFA10003-060000-000	-	-	-	1
2	MIZXXX400080	Mixing star	400 FA / 402 SS	1	-	-	-
	MIZXXX400007	Mixing star	600 – 800 FA / 602 – 802 SS	-	1	-	-
	MSS80200-030000-000-01	Mixing star		-	-	1	-
	MSS10200-030000-000-01	Mixing star		-	-	-	1
	MSS40101-020000-000	Mixing tank		1	-	-	-
	MSS60200-020000-000	Mixing tank		-	1	-	-
	MSS80208-010000-000	Mixing tank		-	-	1	-
	MSS10200-020000-000	Mixing tank		-	-	-	1
3.1	MSS40101-010000-000-01	Bottom frame		1	-	-	-
	MSS60200-010000-000	Bottom frame		-	1	-	-
	MSS80208-010000-000-01	Bottom frame		-	-	1	-
	MSS10200-010000-000	Bottom frame		-	-	-	1
	MIZXXX400076	Discharge chute		1	1	1	1
5	MSS40100-020600	Slider		1	1	1	1
	-	Gear unit		1	1	1	1
7	MIZXXX100045	Splash guard sheet	For mix master	1	1	1	1
	MSSZUB401006	Filling bracket	For mix master	1	1	1	1
9	MSS40100-060700-000	Support bracket		1	-	-	-
	MSS60200-060700-000	Support bracket		-	1	-	-
	MSS80200-060700-000	Support bracket		-	-	1	-
	MSS10200-060700-000	Support bracket		-	-	-	1
	MIZXXX100055	Sack opener	For mix master	1	1	1	1
11	NKTTXXX401544	Plug with edge – fitting	1/2" – V4A	1	1	1	1
	NKTTXXX511010	Lower link bolt galvanized with chain	Cat II – D28 / length 123 mm	2	2	2	2
13	NKTTXXX511101	Upper link bolt galvanized	Cat II – D25 with lever and chain	1	1	1	1
	NKTTXXX190042	Hexagon screw – DIN 933 / 8.8	M10 x 35 – galvanized	1	1	1	1

13.2 Spare parts mixing star

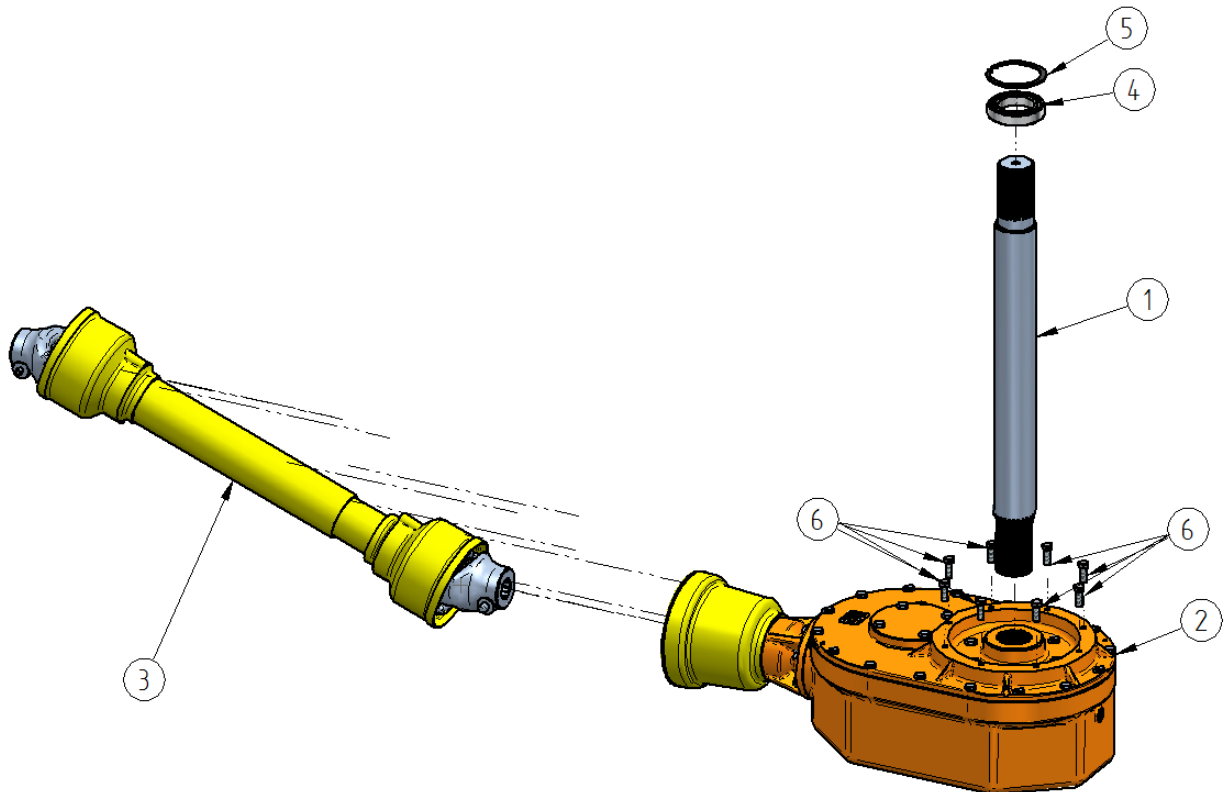


Mix master „Garant und Favorite“

Spare parts and wear parts

Pos	Article or drawing number	Description	Addition	Type 401 SS	Type 602 SS	Type 802 SS	Type 1002 SS
1	MSS60200-031100-00	Mixing star inside		1	1	1	1
2	MIZXXX100012	Side scraper	Adjustable 50 x 50	1	1	1	1
3	MIZXXX500023	Insertion pipe for mixing star	50 x 50 mm	1	1	1	1
4	MIZXXX500010	Sleeve complete for mixing star SS/FA/DFA		1	1	1	1
5	MIZXXX400031	Disc for mixing star	Round – 70 mm	1	1	1	1
6	MIZXXX100001	Mixing paddle		4	4	4	4
7	MIZXXX100002	Mixing paddle mounting 2/3 layers	Thickness 8 mm	4	4	4	4
8	MIZXXX100070	O ring	For mixing star	1	1	1	1
9	MIZXXX400032	Disc for mixing star	Rectangular – 50 x 40 mm	4	4	4	4
10	MIZXXX100023	Mixing paddle mounting guide welded	l – Ø: 16 mm / A-Ø:9mm / H: 50 mm	4	4	4	4
11	NKTXXX190176	Hexagon screw – DIN 931 / 8.8	M 16 x 120 – galvanized	4	4	4	4
12	NKTXXX190158	Hexagon screw – DIN 933 / 8.8	M 16 x 40 – galvanized	2	2	2	2
13	NKTXXX190044	Hexagon screw – DIN 933 / 8.8	M 10 x 40 – galvanized	1	1	1	1
14	NKTXXX190076	Hexagon screw – DIN 933 / 8.8	M 12 x 30 – galvanized	4	4	4	4
15	NKTXXX191014	Lock nut – DIN 985 / 8	M 16 – galvanized	4	4	4	4
16	NKTXXX401546	Plug with edge – fitting	¾" – V4A	1	1	1	1
17	NKTXXX100301	Lubricating nipple	H1M8 x 1 / straight	1	1	1	1
18	NKTXXX190042	Hexagon screw – DIN 933 / 8.8	M 10 x 35 – galvanized	1	1	1	1

13.3 Spare parts gear unit

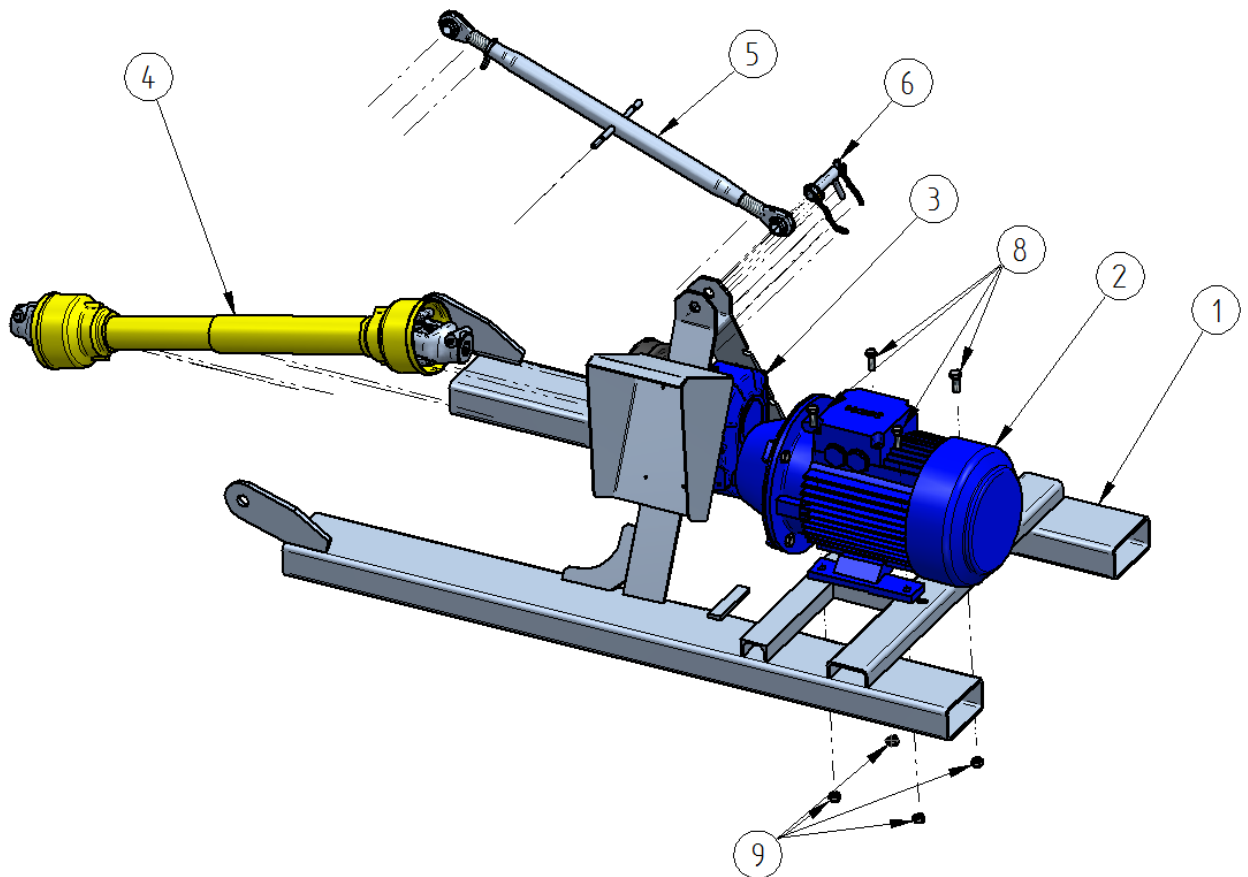


Mix master „Garant und Favorite“

Spare parts and wear parts

Pos	Article or drawing number	Description	Addition	Type 401 SS	Type 602 SS	Type 802 SS	Type 1002 SS
1	MIZXXX000008	Mixing shaft	Galvanized D60 / galvanized D50 / L740 mm	1	1	1	1
2	GETXXX300002	Gear for mixer	RL72B – GARDINI	1	1	1	1
3	GELBIN110001	Drive shaft B4 – ZBIB4D071CE098001 – mixer	900mm / shear pin / 1 3/8" – 1 3/8"	1	1	1	1
4	NKTXXX020020	Deep groove ball	6012 – 2RS	1	1	1	1
5	NKTXXX141318	Circlip – DIN472	J 95 (for holes)	1	1	1	1
6	NKTXXX190040	Hexagon screw – DIN 933 / 8.8	M 10 x 30 – galvanized	8	8	8	8

13.4 Electric gear unity article number MSSZUB401022, MSSZUB602102, MSSZUB102002

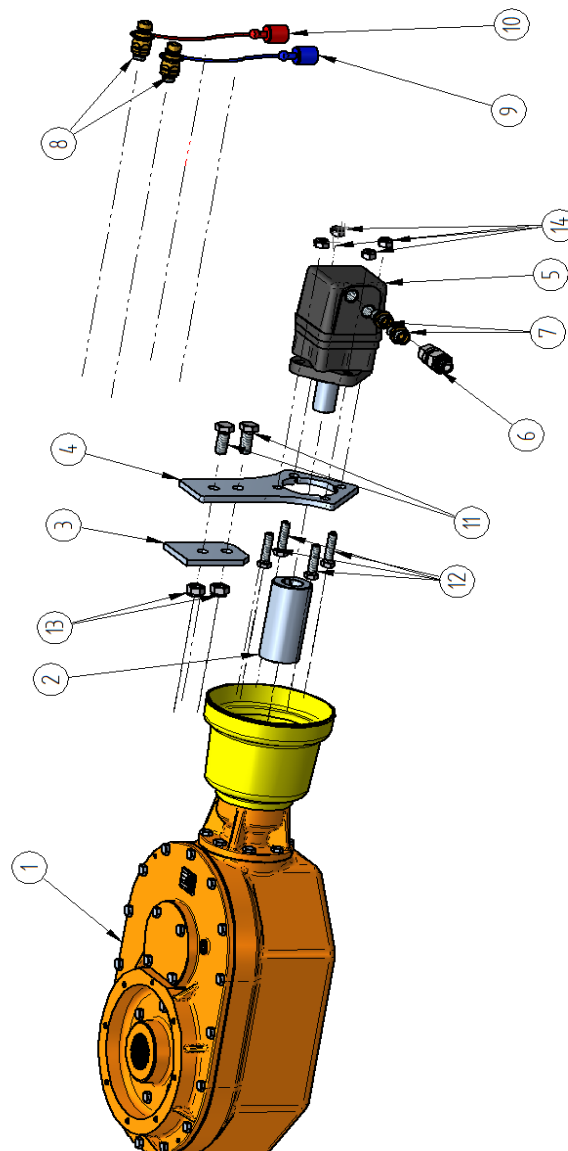


Mix master „Garant und Favorite“

Spare parts and wear parts

Pos	Article or drawing number	Description	Addition	Type 401 SS	Type 602 SS	Type 802 SS	Type 1002 SS
1	MSS40102-090500-000-02	Frame electric unit		1	1	1	1
2	ETZXXX500027	Electric motor with flange B3/B5	5.5 kw – 3000 u/min	1	1	1	1
	ETZXXX500035	Electric motor with flange B3/B5	11 kw – 1500 u/min	1	1	1	1
	ETZXXX500045	Electric motor with flange B3/B5	18 kw – 1500 u/min	1	1	1	1
3	GETXXX300020	Transmission gear GB	J 95 (for holes)	1	1	1	1
4	GELBIN110001	Drive shaft B4- ZBIB4D071CE098001 – mixer	900 mm / shear pin / 1 3/8" – 1 3/8"	1	1	1	1
5	SZBXXX020165	Upper link Cat 2/2 – M30x3	L=650 mm	1	1	1	1
6	NKTXXX511101	Upper link bolt galvanized L=123 mm/old	Cat II – D25 with lever and chain	1	1	1	1
7	ETZXXX961022 (not shown)	Switch box star – triangle automatic	00110284 / AC-3 400 V / 7,5 – 11 kw	1	1	1	1
8	NKTXXX190126	Hexagon screw – Din 933 / 8.8	M 14 x 40	4	4	4	4
9	NKTXXX191014	Lock nut – DIN 985 / 8	M 16 – galvanized	4	4	4	4

13.5 Hydraulic gear unit article number MSSZUB401001



Mix master „Garant und Favorite“
Spare parts and wear parts

Pos	Article or drawing number	Description	Addition	Type 401 SS	Type 602 SS	Type 802 SS	Type 1002 SS
1	GETXXX300002	Gear for mixer	RL72B – GARDINI	1	1	1	1
2	MIZXXX301005	Connection sleeve	D32 – 1 3/8"	1	1	1	1
3	-	Weld plate		1	1	1	1
4	HMTXXX990020	Mounting plate for	Oil motor CLR/CLS	1	1	1	1
5	HMTXXX100130	Oil motor	CLS 250 Ø32	1	1	1	1
6	HZBXXX800024	Check valve	RHD – 15 L	1	1	1	1
7	HVSXXX100017	Straight screw-in connection	GE R1/2" – 15L	2	2	2	2
8	HZBXXX200035	SVK plug – size 3	15L – NW 12	2	2	2	2
9	HZBXXX920016	Dust cap – blue	For SVK – plug size 3	1	1	1	1
10	HZBXXX920030	Dust cap - red	For SVK – plug size 3	1	1	1	1
11	HSLXXX040009	Hydraulic hose	NW 12/2500	2	2	2	2

14 Mixing table

Concrete class	Application areas	Concrete quality	Graining	Consistency range	Cement type PZ	Cement quantity per m³	Mixer 400		Mixer 600		Mixer 800		Mixer 1000	
							Filling height	Cement	Filling height	Cement	Filling height	Cement	Filling height	Cement
B I	Unreinforced statically reinforced concrete for inside components	B 5	32	KS	35 F	110 kg	40 cm	44 kg	49 cm	66 kg	47 cm	88 kg	40 cm	110 kg
		B 10	32	KP	35 F	150 kg	40 cm	60 kg	49 cm	90 kg	47 cm	120 kg	40 cm	150 kg
		B 10	32	KP	35 F	200 kg	40 cm	88 kg	49 cm	120 kg	47 cm	160 kg	40 cm	200 kg
		B 10	16	KS	35 F	200 kg	40 cm	80 kg	49 cm	120 kg	47 cm	160 kg	40 cm	200 kg
	Concretes for inside and outside components	B 15	16	KS	35 F	250 kg	40 cm	100 kg	49 cm	150 kg	47 cm	200 kg	40 cm	250 kg
		B 15	16	KR	35 F	260 kg	40 cm	104 kg	49 cm	156 kg	47 cm	208 kg	40 cm	260 kg
		B 15	32	KR	35 F	260 kg	40 c	104 kg	49 cm	156 kg	47 cm	208 kg	40 cm	260 kg
		B 25	32	KP	35 F	280 kg	40 cm	112 kg	49 cm	168 kg	47 cm	224 kg	40 cm	280 kg
		B 25	32	KR	35 F	310 kg	40 cm	124 kg	49 cm	168 kg	47 cm	224 kg	40 cm	310 kg
		B 25	16	KR	35 F	330 kg	40 cm	132 kg	49 cm	198 kg	47 cm	264 kg	40 cm	330 kg
B II	For inside and outside components	B 25	32	KR	35 F	325 kg	40 cm	130 kg	49 cm	196 kg	47 cm	260 kg	40 cm	325 kg
		B 25	32	KR	35 F	350 kg	40 cm	140 kg	49 cm	210 kg	47 cm	280 kg	40 cm	350 kg
		B 25	16	KR	35 F	370 kg	40 cm	148 kg	49 cm	222 kg	47 kg	296 kg	40 cm	370 kg
		B 35	32	KR	35 F	360 kg	40 cm	144 kg	49 cm	216 cm	47 cm	288 kg	40 cm	360 kg
		B 45	16	KR	35 F	390 kg	40 cm	156 kg	49 cm	234 kg	47 cm	312 kg	40 cm	390 kg
		B 45	32	KR	45 F	380 kg	40 cm	152 kg	49 cm	228 kg	47 cm	304 kg	40 cm	380 kg
		B 45	16	KR	45 F	400 kg	40 cm	160 kg	49 cm	240 cm	47 cm	320 kg	40 cm	400 kg

Consistency ranges of the concrete

1. Concrete type number	Consistency	Flow spread	Compaction
2. Concrete strength class	KS stiff concrete	= 40 cm	1,45 – 1,26
3. Consistency	KP plasticized concrete	= 40 cm	1,25 – 1,11
4. Strength class of the cement	KR soft concrete	41 – 50 cm	1,10 – 1,04
	KF flowing concrete	51 – 60 cm	

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