

# Slurry mixer



**Original Operator's Manual** Copyright by Binderberger GmbH



Read the operating instructions carefully before  
commissioning the machine!

**This manual is valid for:**

Type	Article number
T403	GM-M4-1
T503	GM-M5-1
T603	GM-M6-1

**Version of this manual:** 1.0

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## **1 EC Declaration of Conformity**

We hereby declare that the various technical versions of the machine:

Designation: \_\_\_\_\_  
Type: T403; T503; T603  
Serial number: \_\_\_\_\_

comply with the provisions of the Machinery Directive 2006/42 / EC and the other related standards.

The machine mentioned meets the requirements of the EMC Directive 2004/108 / EC and the Low Voltage Directive 2006/95 / EC.

The accompanying safety regulations and operating instructions apply to these machines.

The machines must not be modified. If changes are made to the machine that have not been agreed with us, this declaration becomes invalid.

The following named place

- has carried out the type examination. The product has received the EC type examination under the number \_\_\_\_\_.
- has carried out the EC type-examination procedure specified in Annex IX of 2006/42 / EC.

*Notified checkplace for type examination according to Annex IX*

The following is the name and address of the person authorized to compile the technical documentation.

CEO Karl Binderberger  
Binderberger Maschinenbau GmbH  
Fillmannsbach 9  
AT-5144 St. Georgen am Fillmannsbach


## 2 Safety instructions


### 2.1 Explanation of symbols

Please pay attention to the meaning of the following symbolic explanations and instructions description. They are divided into levels of risk and classified in accordance with ISO 3864- 2

<b>DANGER</b>	
	<p><i>Indicates an immediate threat of danger. If the information is not followed, death or serious bodily injury (invalidity) is the result.</i></p>

<b>WARNING</b>	
	<p><i>Indicates a potentially dangerous situation. If the information is not followed, death or serious bodily injury (disability) are the result</i></p>

<b>CAUTION</b>	
	<p><i>Indicates a potentially dangerous situation. If the information is not followed, material damage as well as minor or moderate physical injuries are the result.</i></p>

<b>NOTICE</b>	
	<p><i>Indicates general instructions, useful operator instructions and working recommendations that have no influence on the safety and health of personnel.</i></p>

## 2.2 General safety instructions

The machine may only be operated by people who are trained, instructed and authorised for its use. These people must know the operating instructions and act in accordance with them. The respective competences of the operating personnel are clearly defined.

Operating personnel undergoing training may only initially work with the machine under the supervision of an experienced person. The completed and successful instruction is to be confirmed in writing.

## 2.3 Intended use

The slurry mixer is to be used exclusively for agitating slurry and similar mixtures.

All other forms of usage do not comply with the intended use. The manufacturer is not responsible for any personal injury or material damage that originates from non-compliant usage, but rather the operator of the machine is!

The reading of this manual as well as the observance of all instructions contained within it, particularly the safety instructions, also comply with the intended use. Also included is the fact that all inspection and servicing work is to be conducted in the prescribed time intervals.

## 2.4 Operator requirements

No special knowledge of mechanical or electrical engineering is required to operate the machine. However, the operator must be at least **18 years** old. The operator must be trained and instructed accordingly by the operator of the machine before starting work for the first time (see General safety regulations). Protective shoes and close-fitting clothing must be worn when operating the machine.

If the operator carries out maintenance and servicing work, he must have the necessary specialist knowledge.

## 2.5 Modifications to the machine

For safety reasons, no unauthorised modifications may be made to the machine; this applies in particular to welding work on load-bearing parts.

Only use original spare parts / original wear parts / original accessories - these parts are specially designed for the machine. In the case of externally sourced parts, there is no guarantee that they are designed and manufactured to withstand stress and safety.

Parts and special equipment not supplied by us are also not approved by us for use on the machine.

## 2.6 Misuse and residual risks

Despite correct application of all safety instructions for the machine, residual risks can still occur. These usually result from misuse of the machine.

- Touching rotating or moving components
- Injury from falling wooden or machine parts.
- Fire hazard due to inadequate ventilation of the engine
- Hearing damage from working without hearing protection
- Human error:
  - Mental overload
  - Excessive physical exertion
  - Entering a danger zone
  - Distractions
  - Neglected control activities



## **3 Description of the machine**

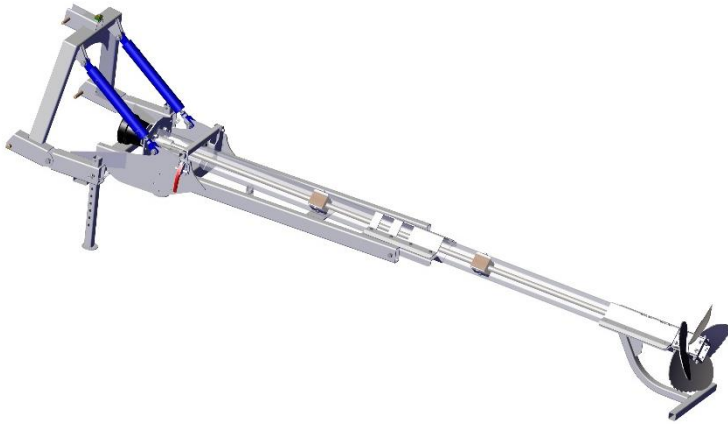
### **3.1 How it works**

The slurry mixer from Binderberger GmbH achieves an optimum mixing result with its toothed mixer blades. The different lengths and sizes allow the use in almost all slurry stores.

In order to be able to enter even very small pit openings, a swing-out device is fitted as standard. In addition, a hydraulic or a mechanical swivelling aid can be used as optional equipment.

In order to achieve a relatively long service life despite the difficult environment, the mixer linkage is guided by wooden plain bearings. It is driven by the power take-off shaft of a tractor.

### 3.2 Overview




### 3.3 Technical data

Type	T403	T503	T603
Weight*	328 kg	345 kg	370 kg
Stirring rod length	4 m	5 m	6 m
Agitator blade diameter	560 / 650 mm		
For pit depths up to	3 m	4 m	5 m
For pit openings from	80 x 80 cm		

\*... the dimensions and weights given are approximate values

## 4 Transport of the machine

### 4.1 Safety instructions during transport

<h1>WARNING</h1>	
	<p style="text-align: center;"><b><u>Risk of injury during transport!</u></b></p> <ul style="list-style-type: none"><li>• Ensure that there are no persons in the danger zone and that a sufficient safety distance is maintained!</li><li>• The specified position for transporting the machine must be strictly adhered to.</li><li>• The machine may only be lifted at the intended holding points!</li><li>• Protruding sharp edges can cause cuts.</li><li>• Suspended loads can fall down, then there is danger to life - do not stay under suspended loads!</li></ul>

### 4.2 Transportation of the slurry mixer


The slurry mixer can be transported on the tractor's 3-point linkage. However, it is not permitted to transport the mixer over a longer distance in this manner. For transport, the slurry mixer must be loaded onto a trailer.

**Pulling the machine in road traffic is not permitted under any circumstances!**


The length of the slurry mixer can become a great danger to people, animals and objects in the vicinity if the swinging out of the implement is not observed.

## 5 Set up of the machine

### 5.1 Safety instructions for set up

<h1 style="margin: 0;">WARNING</h1>	
	<p><b><u>Risk of injury if the machine is not set up correctly!</u></b></p> <ul style="list-style-type: none"><li>• Always check the machine for transport damage before setting it up!</li><li>• Ensure that no persons are endangered by the installation!</li><li>• Incorrectly placed or improperly fastened machine parts can fall or topple over.</li><li>• The machine may only be operated when in perfect condition!</li><li>• Do not attach or detach pressurised hoses!</li><li>• Hoses under pressure must not be routed into the operator's cab! If this is not possible, it must be ensured that the operator cannot be injured if the hose bursts!</li><li>• Ensure that there are no persons between the machine and the tractor! When connecting the PTO shaft to the tractor and the slurry mixer, ensure that it is at the correct angle. This ensures smoother running and a longer service life of the mixer and the PTO shaft.</li></ul>

## 5.2 Duties before starting work

<h1>NOTICE</h1>	
	<p><b><u>Carry out the following activities before starting work:</u></b></p> <ul style="list-style-type: none"><li>• Before switching on the machine, make sure that there are no persons or foreign objects in the danger zone.</li><li>• Check the machine for visible damage; rectify any defects found immediately. The machine may only be operated when in perfect condition.</li><li>• Remove all objects from the plant area that are not part of the machine or necessary for carrying out the work.</li></ul>

### 5.3 Coupling the slurry mixer to the tractor

Drive the tractor to the slurry mixer and hitch the slurry mixer to the tractor's three-point linkage. Connect the two hydraulic hoses to a double-acting control unit on the tractor.

Finally, establish connection between tractor and mixer with PTO shaft:

- To couple the PTO shaft, press the sliding pin and at the same time push the PTO shaft onto the PTO until the sliding pin engages.
- Hook in the retaining chain of the PTO shaft guard on the tractor and pump sides in such a way that the guard is prevented from turning and a sufficient swivelling range of the PTO shaft is ensured.

Raise the slurry mixer with the aid of the tractor's rear hydraulics. Remove the locking bolts of the parking feet and push them up as far as possible and secure them again with the locking bolts.

When connecting the PTO shaft, make sure that it is angled as little as possible! This increases the smooth running and service life of the PTO shaft and the mixer.

#### **Standard PTO shaft**

To ensure uniform transmission of the rotary movement in every angular position. Maximum angular deflection of the PTO shaft:

- 25° for continuous operation
- 45° for short-time operation

#### **50-degree wide-angle PTO**

Maximum angular deflection of the wide-angle joint:

- 35° during continuous operation
- 50° during standstill and short-time duty

#### **80-degree wide-angle PTO**

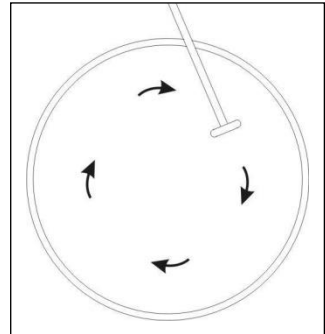
Maximum angular deflection of the wide-angle joint:

- 25° during continuous operation.
- 80° at standstill and short-time duty.

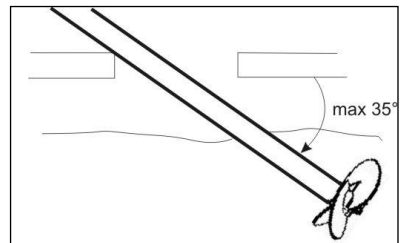
## 5.4 Immersion and placement of the slurry mixer

In principle, the slurry mixer should be immersed in the pit in such a way that the slurry rotates during mixing.

In order to obtain a good mixing performance, it is advantageous to mix close to the wall at the beginning. This creates a rotation in the slurry earlier. In addition, the inclination of the mixer should not exceed 35°, otherwise there is no longer sufficient mixing performance.



To get the slurry mixer into a closed pit, you should place it so that the wings are already above the opening. Then open the pipe lock at the front. This will tilt the entire pipe into the pit opening. Now you can insert the mixer wing into the pit by simultaneously retracting the upper link and driving back with the tractor. The smaller the opening, the more precise the work must be. When the slurry mixer is in the slurry pit, the pipe lock must be closed again.





When the slurry mixer has been manoeuvred to the exact place of installation, secure the tractor against rolling away (handbrake). Position the tractor and the slurry mixer on the pit so that it is safe and easy to connect the PTO shaft.

Carry out any position changes in order to achieve the optimum mixing position while observing the correct angular position of the PTO shaft!

## 6 Operation


### 6.1 Safety instructions during operation

<b>DANGER</b>	
	<p><b><u>Risk of injury from moving machine parts and the pit opening!</u></b></p> <ul style="list-style-type: none"><li>• Keep a sufficient safety distance from moving machine parts!</li><li>• Do not stay under the slurry mixer in a suspended state, it may fall down!</li><li>• In the area of the pit opening, there must be no unauthorised persons within a radius of at least 4m. However, at least one other person should be within calling distance in case someone falls into the pit and/or is injured by the slurry mixer.</li><li>• If the operating personnel move away from the machine, it must be secured against being switched on again and the pit must be closed.</li><li>• Smoking and naked flames can cause the escaping gases to explode!</li></ul>

<b>WARNING</b>	
	<p><b><u>Risk of injury when operating!</u></b></p> <ul style="list-style-type: none"><li>• Familiarise yourself with the operating elements of the slurry mixer!</li><li>• Ensure that there are no persons between the machine and the tractor.</li><li>• All parts that do not belong to the machine must be removed from its vicinity. (Danger of tripping)</li><li>• Ensure sufficient lighting and marking of the pit opening.</li></ul>



## 6.2 Important notes during operation

<h1>NOTICE</h1>	
	<ul style="list-style-type: none"><li>• Ensure that there is sufficient distance to the pit opening. The escaping gases are poisonous and explosive.</li><li>• During operation, the mixer pipe must be clamped in the rocker and the tractor braked.</li><li>• Do not switch on the slurry mixer until it is in the pit.</li><li>• The PTO shaft speed of the tractor must not exceed 540 rpm.</li><li>• The slurry mixer may only be raised and lowered when the PTO shaft is stationary.</li><li>• Before switching on the machine, inform yourself about the correct behaviour in the event of a malfunction.</li><li>• Before switching on the machine, carry out the points listed in chapter "Duties before starting work".</li><li>• After switching off the machine, always carry out the work steps in the following chapter "Decommissioning".</li></ul>

## 6.3 Working with the slurry mixer

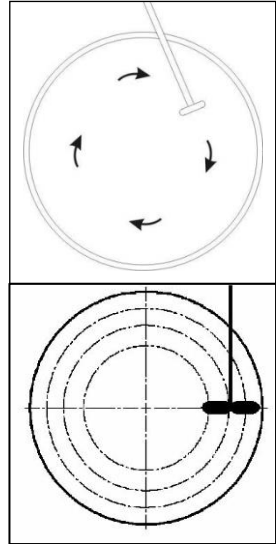
After you have carried out all the points from the chapter "Setting up the machine", you can start working.

## 6.4 Recommendation for use in pits

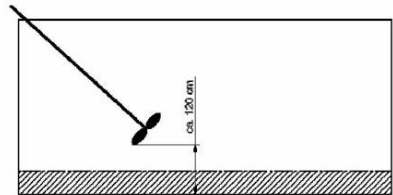
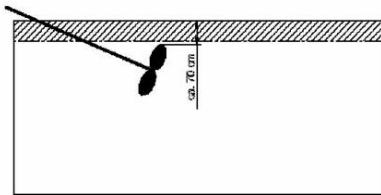
The slurry mixer should be placed in the pit in such a way that the mixing jet causes a rotation of the entire pit contents. In order to obtain a good mixing performance, it is advantageous to mix along the wall at the beginning, with some distance. This creates a rotation in the slurry earlier.

Ensure that the agitator jet is directed tangentially to the wall. The effect of the agitator jet is greatly reduced if it is directed directly at a wall.

When lowering the mixer tube, make sure that the mixer blade is neither too shallow nor too deep in the slurry.



The correct immersion depth is important for triggering the sinking layer or floating layer. For sinking layers (chicken and pig slurry) you should be about 120 cm above the pit bottom to mix the slurry sufficiently. For floating layers (cattle slurry), the mixer blade should be just below the floating layer. This is usually about 70 cm.



## 6.5 Breaking through the floating layer (cattle slurry)

When swinging the mixer tube in and out of the pit through the floating cover, make sure that the mixer tube is inserted straight and that the mixer blades are operated at the lowest possible speed. Otherwise, there is a risk that the tube will be bent if it is blocked by the floating cover.

This can also happen if the tube is lifted under the floating cover. This can be prevented by driving forward with the tractor during the swivelling process.

During mixing, the position of the mixer tube (raising and lowering of the tractor hydraulics or changes to the mixer hydraulics) must not be changed under any circumstances. If a PTO shaft rotating under load is changed in length, high forces are exerted on the joints, tractor drive shaft and slurry mixer shaft and may cause breakage of the respective components. Therefore, it must be ensured that the setting of the mixer tube cannot change independently during agitation.

## 6.6 Starting the mixer




To start the implement, simply engage the PTO on the tractor. The mixer should be operated at a PTO speed of maximum 540 rpm.

## 6.7 Equipment control

Visually inspect the unit. Look for faults and defects that could have an influence on safety. Any faults and defects must be rectified.

- Make sure that there are no leaks in the hydraulics.
- Make sure that there are no damaged hoses or connections.

## 7 Servicing

<h1>DANGER</h1>	
	<p style="text-align: center;"><b><u>Serious risk of injury from switching on the drive during maintenance work!</u></b></p> <ul style="list-style-type: none"><li>• Switch off the machine!</li><li>• Disconnect from the power source!</li><li>• Secure against being switched on again!</li></ul>
<h1>WARNING</h1>	
	<p style="text-align: center;"><b><u>Invisible dangers!</u></b></p> <ul style="list-style-type: none"><li>• Hot machine components!</li><li>• Allow machine to cool down to ambient temperature before any maintenance work.</li><li>• Do not carry out any welding work near the slurry pit. (explosive gases)</li><li>• Unauthorised persons are strictly prohibited from entering the plant area! Unauthorised persons are all persons who are not assigned to work on the machine</li></ul>
<h1>CAUTION</h1>	
	<p style="text-align: center;"><b><u>Lubricants</u></b></p> <ul style="list-style-type: none"><li>• Use suitable collection containers.</li><li>• Remove spilled oil immediately.</li><li>• Avoid contact with skin and eyes.</li><li>• Do not swallow or inhale.</li><li>• Use suitable protective equipment (gloves, goggles).</li></ul>

## 7.1 Important instructions during servicing

### NOTICE



- Depressurise all pressure units
- The prescribed maintenance work - adjustment, cleaning, maintenance, inspection, ... must be carried out in due time
- Replace all machine parts that are not in perfect condition immediately.
- Use only original spare parts.
- Ensure that suitable collection containers are available for all substances hazardous to groundwater (oils, coolants, etc.).
- Self-locking screws and nuts must always be renewed.
- All operating materials and lubricants that are not reused must be disposed of in an environmentally friendly manner.
- There is a risk of fire during welding work. Have fire extinguishers ready.
- Ensure that adequate lifting equipment and load lifting devices are available for the replacement of larger machine parts.
- Never release the machine for operation without the factory provided safety devices.
- It is strictly forbidden to remove safety notices affixed to the machine.
- Replace the information stickers on the machine if they are no longer legible.
- Do not carry out repairs if you do not have the required qualifications.
- Always ensure that the prescribed operating materials are present in the machine in sufficient quantities.

## 7.2 Notes when working on hydraulic equipment

All work on the machine's hydraulic equipment may only be carried out by trained specialists.

- Depressurise all hydraulic systems / system parts before starting work.
- Before starting work, ensure that suitable collection containers are available for all substances hazardous to groundwater (oils, coolants, etc.).

Switch off the tractor and disconnect the two hydraulic hoses from the tractor. Place a warning sign against reconnection.

## 7.3 Cleaning

After each operation and before each maintenance, the machine must be cleaned of dirt!

After each cleaning with water, the slurry mixer must be lubricated! Lubrication points can be found along the agitator rod.

## 7.4 Changing the hydraulic hoses

All hydraulic hoses must be replaced after 5 years.

Otherwise, damage to the hoses can cause serious injuries.

## 7.5 Maintenance time scheme

Regular maintenance is the best guarantee for effective and economical operation of your machine. It is recommended to lubricate the machine after each cleaning with water or every 50 hours of operation.

## 7.6 Duties before the end of servicing

After completing the maintenance work and before starting the machine, observe the following points:

- Prepare inspection records, activity logs, etc.
- Check all previously loosened screw connections for tightness.
- Check that all previously removed guards, covers, container lids, .... are properly reinstalled.
- Make sure that all tools, materials and other equipment used have been removed from the work area.
- Clean the work area and remove any spilled liquids and similar substances.
- Ensure that all safety devices of the machine are working properly again.
- Check the operation of the safety devices. Do not release the machine for use if the safety devices are not functioning properly.
- Carry out a test run with a function check of the repaired components.
- Secure the machine against unauthorised switching on if you have not completed the work.
- Do not handle naked flames or smoke.

## 8 Help in case of malfunctions

Error	Possible Cause	Error correction
	The PTO shaft is angled too much	Change the positions
The mixer runs unsteadily	Agitator blade is unbalanced	Check the stirring blade for symmetry and repair if necessary
	Agitator blade is too close to the pit wall or other structural conditions	Increase the distance
	One or more agitator blades are bent	Replace the agitator blade
Too little stirring action	Agitator blade is covered with foreign matter	Remove foreign bodies
	PTO shaft speed too low	Increase speed to max 540 rpm
Loud noise in the mixer tube	Intermediate bearing defective	Replace intermediate bearing
Mixer tube changes position automatically	Hydraulic system leaking	Check the hydraulic hoses, cylinders and fittings and replace if necessary.
	Mixer tube is not firmly seated in the clamp	Tighten screws

If faults cannot be eliminated, please contact your specialist dealer! He will be happy to help you.



## **9 Guarantee and Warranty**

### **Guarantee Terms 950601:**

The Binderberger Maschinenbau GmbH company provides a guarantee for a period of two years on parts that fail to fulfil their intended purpose as the result of material defects or production errors.

A one-year guarantee is provided by our suppliers on goods procured by us, such as wheels, pumps and valves. The guarantee comes into force with the delivery date.

The guarantee does not cover failures that are due to normal wear, inattentiveness, incorrect use and incorrect assembly. Hydraulic hoses and couplings are excluded from the guarantee.

Costs that originate within the scope of the guarantee procedure for detaching, assembly and delivery are not refunded. The fault should be repaired upon the mutual arrangement of the customer, the appointed dealer and the Binderberger company. The fault should be repaired following a mutual arrangement between the customer, the appointed dealer and the Binderberger company.

For this, the model of the machine, the production number, the delivery date and the name of the owner, as well as the address, must be indicated. For this, the model of the machine, the production number, the delivery date and the name of the owner as well as the address must be presented.

The guarantee is invalid if the machine deviates from the original implementation, e.g., due to changes, set-up, additional constructions or the replacement of parts that have not been delivered by us. Otherwise, the NL92 delivery regulations are valid.

## **10 Conduct when dealing with accidents**

Routinely find out at regular intervals what first aid facilities are available.  
Inform your supervisor immediately - after the initial treatment of injured persons - in the event of accidents involving personal injury, damage to equipment or damage to buildings.

State the severity of personal injury and property damage for the targeted deployment of rescue vehicles.

In the event of a disaster (fire, ...), leave the machine immediately.



Dealer's stamp:

Name plate:



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