



BAUER

FOR A GREEN WORLD

OPERATING INSTRUCTIONS

for

Tractor Mixer

MTX 600 and MTX 750



Tractor Mixer
E

PRODUCT DETAILS

Type designation: Tractor Mixer

Type number:

Serial number¹ :

Dealer:

Name:

Address:

Tel./Fax:

Date of delivery:

Manufacturer:

Röhren- und Pumpenwerk BAUER Ges.m.b.H.
Kowaldstr. 2
A - 8570 Voitsberg
Tel.: +43 3142 200 - 0
Fax: +43 3142 200- 320/-340
e-mail: sales@bauer-at.com
www.bauer-at.com

Owner or operator:

Name:

Address:

Tel. / Fax:

Note: Please make a note of the type and serial number of your submersible motor mixer and its accessories! Be sure to specify these details every time you contact your dealer.

¹ In all warranty claims and correspondence relating to this machine it is essential to specify the complete serial number group including all letters. This applies to the machine itself and to any components involved. We cannot emphasise this point often enough.

INTRODUCTION

Thank you very much for purchasing a BAUER Tractor Mixer!

We take pleasure in presenting to you a **BAUER Tractor Mixer** that features state-of-the-art technology and top quality. This manual describes how to operate and maintain your **BAUER Tractor Mixer**. For reasons of clarity and due to the many options, this manual does not contain everything down to the last detail. In particular, it cannot possibly deal with every conceivable aspect of operation and maintenance. If you need further information or if you are faced with any special problem for which this manual does not give sufficient details, please do not hesitate to contact **BAUER company** at Kowaldstraße 2, A-8570 Voitsberg for the information you need.

We should also like to emphasise that the contents of this operating manual do neither form part of nor alter in any way any previous or existing agreement, promise or legal relationship. Commitments on the part of **BAUER** are based solely on the respective purchase contract, which also contains the complete and only valid warranty arrangement. Said contractual terms of warranty are neither extended nor limited by the contents of the present operating manual.

All information contained in the present manual is based on the latest product details available at the time of printing.

BAUER reserves the right to change without notice, without assuming any liability!

BAUER Tractor Mixers are designed for safe and reliable performance provided they are operated in compliance with the present instruction manual. In spite of the simplicity of the mixer we therefore request that you read this manual carefully before putting your **BAUER Tractor Mixer** into operation! All instructions given for handling, operating and servicing the mixer must be strictly observed. On condition that these instructions are followed the pump will operate trouble-free to your full satisfaction for many years!

Non-observance of our instructions may cause personal injury or damage to the equipment!

This operating manual is considered an integral part of the submersible motor mixer. Suppliers of new and used submersible motor pumps are advised to put down in writing that this manual was handed over together with the pump.

Please make this manual available to your operating personnel. You are kindly requested to state the pump type and serial number of the submersible motor pump in all inquiries, correspondence, warranty problems or parts orders. These details are specified on the nameplate.

We hope you will enjoy working with your BAUER Tractor Mixer



General safety instructions

Symbols and terms



The CE symbol that has to be affixed on the machine by the manufacturer outwardly demonstrates compliance of the machine with the directives for machines and other relevant EU directives.

**WARNING!**

This "Warning" symbol refers to important safety instructions in this manual. Whenever you see this symbol be aware of possible injury hazards. Read the note following the symbol very carefully and inform the other operators accordingly.

CAUTION!

Non-observance of this instruction may cause damage to or destroy the machine or individual components.

NOTE

It is important to observe this note or condition!

Qualified operators are persons who on account of their training, experience and instruction as well as their knowledge of relevant standards, rules, precautions to be taken for accident prevention and operating conditions, have been authorised by the person in charge of plant safety to perform the individual tasks required, and in doing so are able to recognise and avoid potential hazards. Among other things, knowledge of first-aid procedures is also required.

Operation encompasses the assembly, putting into operation (making it ready for use) and operating (activating, turning on and off etc.)

Maintenance encompasses the inspection and servicing (inspection and auditing), repairs (including error finding).

Product liability

As defined by the product liability law every farmer is also an entrepreneur!

According to §9 PHG (Product Liability Law), liability for damage to corporeal things caused by defective products is expressly excluded. This exclusion of liability also applies to parts not manufactured by BAUER itself but purchased from external suppliers.

Duty to furnish information

Even if the customer passes on the machine later-on he is obliged to hand the operating manual on to the new receiver too. The receiver of the machine must be instructed with reference to the mentioned regulations.

Intended use

- BAUER Tractor Mixers are built exclusively for normal use in agricultural applications (intended use).
- Any use beyond such normal use is considered non-conforming. Manufacturer is not liable for damage resulting from such non-conforming use, the sole liability for damage from non-conforming use lies with the user.
- Intended use also includes compliance with the manufacturer's operating, maintenance and service instructions.
- The BAUER Tractor Mixer may be used and operated only by persons who are familiar with the device and aware of the hazards involved.
- All rules relevant for accident prevention as well as any other generally valid specifications and regulations relating to safety, work medicine and traffic law must be strictly observed.
- Unauthorised modification of the machine releases the manufacturer from liability for damage resulting therefrom.



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1 GENERAL INSTRUCTIONS FOR SAFETY AND ACCIDENT PREVENTION

Check the machine for operational safety before every start-up.

1. In addition to the instructions contained in this manual, all specifications generally valid for safety and accident prevention must be observed!
2. The warning and instruction signs affixed to the machine give very important instructions for safe operation. Observing them serves your own personal safety!
3. Never put the machine into operation unless all guards and safety devices are completely mounted and in their proper working position!
4. Acquaint yourself with all equipment components and controls as well as their respective functions before starting to work. It is too late when the device is already running!
5. The operator's clothes should fit tightly. Avoid wearing loose clothes!
6. When handling slurry always keep in mind that the gasses produced are highly toxic and extremely explosive in combination with oxygen. Therefore, open fires, light tests, sparking and smoking are strictly forbidden!
7. Utmost care is required with regard to gasses in slurry and dung channels at open valves to the preliminary pit, before the main pit, or at cross channels. The same applies to mixing and withdrawal points when mixers or pumps are running!
8. When handling slurry always ensure sufficient ventilation!
9. Keep the machine clean to avoid fire hazards!

Tractor-driven machines

1. Before starting inspect the area around the machine (Children) ! Make sure your view is unrestricted!
2. Riding on the machine during transport is forbidden!
3. Couple the machine according to instructions and fasten it only at the specified points!
4. Be especially careful when coupling the machine to the tractor or uncoupling it!
5. Always adjust the supports in the proper position when coupling or uncoupling the machine (stability)!
6. Always mount balancing weights properly at the points provided!
7. Observe restrictions pertaining to axle load, total weight, and transport dimensions!
8. Inspect and mount all items required for transport such as lighting, warning signals and possible safety devices!
9. Mounted or trailed machines as well as balancing weights influence road behaviour, steering and braking capacity. Therefore make sure that proper steering and braking are possible!
10. Consider the projection and/or centrifugal mass of the machine when driving in curves!
11. It is forbidden to stay in the working range of the machine while it is operating !
12. Keep out of the turning and swivelling range of the machine!
13. Only operate hinged hydraulic frames when nobody is in the swivel range!
14. Externally powered machines (e.g. hydraulic) bear a crushing and shearing hazard!
15. Nobody is allowed between the tractor and the implement unless the tractor is secured by the parking brake and /or wedges under the wheels!
16. Hinged supports must always be folded up and secured before driving away!
17. Secure the machine and the tractor against rolling!

Tractor-mounted machines:

1. Before a machine is linked to or detached from the three-point linkage, the control device must be shifted to a position in which unintentional lifting or lowering is impossible!
2. When using the three-point linkage the linkage parameters of both tractor and attached machine must correspond, if not, they have to be matched accordingly!
3. The three-point linkage bears crushing and shearing hazards!
4. When operating the external control of the three-point linkage never step in-between tractor and the machine!
5. When the machine is in the transport position always make sure that the tractor's links are always properly secured on the sides.
6. When driving on the road with the machine lifted the control lever must be locked against lowering!

Trailed machines

1. When a machine is coupled to the draw bar make sure that the coupling point provides sufficient flexibility!



Power take-off (applies only to PTO driven machines)

1. It is not allowed to use any other types of PTO drive shafts except those prescribed by the manufacturer!
2. Drive shaft guard tube and guard cone as well as the PTO guard – also on the machine side - must be mounted and in good working order!
3. When using a PTO drive shaft always observe the specified overlap in transport and working position!
4. Never connect or disconnect the PTO drive shaft unless the PTO is stopped, the engine turned off, and the ignition key pulled out!
5. Make sure the drive shaft is always connected and secured properly!
6. Attach safety chain to keep the drive shaft guard from rotating with the shaft!
7. Before you turn on the PTO make sure that the selected tractor PTO speed corresponds with the permissible implement speed!
8. Before starting the PTO make sure that nobody is standing in the danger zone of the machine!
9. Never turn on the PTO when the engine is turned off or during a transport drive!
10. When working with the PTO nobody is allowed near the turning PTO or drive shaft!
11. Warning! The PTO shaft may continue turning due to its centrifugal mass after the PTO has been turned off! Keep clear of the machine during this time and do not touch until the PTO shaft stands absolutely still!
12. For cleaning, greasing, or adjusting the PTO driven implement or drive shaft, PTO and engine must be switched off and the ignition key pulled out!
13. Place the disconnected drive shaft on the provided support!
14. When drive shaft has been removed put the guard on the PTO shaft!
15. If a defect occurs repair it immediately before starting to work with the machine!

Hydraulic system

1. Hydraulic system is under high pressure!
2. When connecting hydraulic cylinders and motors, make sure the hydraulic hoses are connected as specified!
3. Before coupling the hydraulic hoses with the tractor's hydraulic system make sure that the entire hydraulic system is pressureless both on the tractor and implement side !
4. Inspect the hydraulic lines at regular intervals and replace them immediately in case of defects or ageing. Replaced hoses must comply with the technical specifications of the implement manufacturer!
5. When looking for leaks use only suitable equipment because of the injury hazard involved!
6. Liquids emerging under high pressure (hydraulic oil) may penetrate the skin and cause serious injuries! An injured person must see a doctor immediately! Danger of infection!
7. Before working on the hydraulic system the machine must be lowered, the system depressurised and the engine turned off!

Electric-driven implements

1. All work beyond normal maintenance of the implement should be performed only by a professional electrician!
2. Defective or broken plugs and sockets must be replaced by a professional electrician!
3. Never pull a plug out of the socket at the flexible electric cord!
4. Extension cables for power supply should be used only temporarily! Never use such lines permanently as a substitute for the required fixed installations!
5. Flexible lines laid across traffic areas on the farm must have at least 5 m ground clearance!
6. Always turn off the power supply before you do any work on the machine!
7. Check all electric lines for visible defects before you put the machine into operation! Replace defective cables and do not start the machine before that!
8. Never use electric-driven implements in damp situations or locations exposed to fire hazard unless they are adequately protected against moisture and dust!
9. Covering electric motors may cause heat concentration with high temperatures which could destroy the operating equipment and cause fires!

Hand-operated devices (valves)

1. Because of the slurry gasses produced in the lines, no slurry is allowed to remain in closed pipelines – bursting hazard!
2. Lay the pipelines with sufficient inclination and make sure that the selected closing order of valves allows all lines to be drained completely!
3. Protect the valves against unauthorised handling!
4. If a valve gets jammed do not apply force! Use only the operating levers supplied with the implement!
5. Observe the permissible maximum operating pressure of valves and pipelines when pumps are operated!
6. Service only when the tanks are empty!

Maintenance

1. Never perform any maintenance, service or cleaning work or fault elimination steps unless the drive is turned off and the engine is standing still!
2. Check proper fit of all nuts and bolts regularly and tighten them, if necessary.
3. If maintenance work is required on the lifted machine always secure it by means of appropriate supports!
4. When exchanging tools with cutting edges always use proper tools and wear safe protective gloves.
5. Dispose of oil, grease and filters according to local laws and regulations!
6. Always turn off power before working on the electric system!
7. Before doing electric welding on tractor and mounted and mounted devices, the generator and battery cables must be disconnected.
8. Spare parts must meet manufacturer's minimum technical specifications! This is the case for instance with original spare parts for instance!

2 General Description

Crops can only be secured and quality improved by supplying the crops with the necessary nutrients at the right time.

BAUER manufactured products are produced with diligence and under constant inspection. The slurry mixers meet all requirements for the agricultural use of these machines. Their efficient use ranges from the mixing of thin slurry to liquids with solid parts like straw, fibres and clots. Short preparation times, easy operation and high reliability are other conveniences.

The BAUER tractor mixer MTX consists of the lifting frame and the mixer shaft with the stirring blades and the guard bow.

The lifting frame of the MTX mixer can be mounted on the a trolley on request. The lifting frame makes it very easy to lift up and transport the tractor mixer to the desired location
Owing to the adjustability of all three linkage members, the strong and extremely rigid lifting frame fits any type of three-point linkage.

The mixer shaft accomodates the oil-filled drive shaft running in a life-time lubricated ball bearing on the drive side and in an oil-lubricated sliding bearing on the blade side.

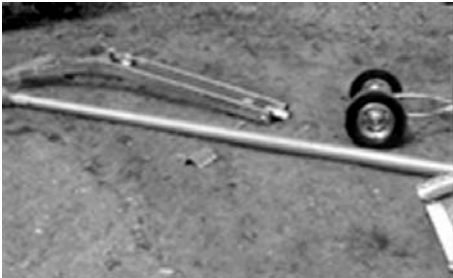
A proven sealing system prevents the lubricating oil from leaking out of and slurry from entering into the bearings. The max. permissible speed of **540 rpm** must not be exceeded.

The mixer blade is made of high-grade steel. A special guard bow protect it from damage during transportation and operation. The guard device serves to prevent accidents and must never be removed.



3 Putting into operation

3.1 One-time assembly



For easy transport of the mixer, the lifting frame, the mixer shaft, the mixing blade and the guard bow are delivered loose and must be assembled before putting the mixer into operation for the first time:

Proceed as follows:



Assemble mixer trolley and lifting frame.



Place the mixer shaft in the hydraulic frame...



and arrest it with clamping sleeve and fastening clamp.
Torque: 80 Nm





Mount the guard bow. It must be positioned below the blades. That way, you have an optimum protection during transportation and operation.



Place the blade on the hub and fasten it. Secure the screw with Loctite 242 and tighten with 80 Nm.



Turn the upper link ! The below picture shows the right position of the upper link !



3.2 Putting into operation



WARNING!

- Turn the mixer only on, when in the pit.
- See that nobody is in the dangerous range of the machine or the pit opening (CHILDREN!!!).
- For adjustment of length, section pipe lapping and maintenance of the cardan shaft- see separate instructions.
- Check the length of the cardan shaft if,
 - There is enough pipe lapping, when the cardan shaft is at its longest position.
 - If the cardan shaft can still be pushed together, if it is at its shortest position.If necessary, length corrections have to be made (see instructions for cardan shafts).



Link lifting frame to the lower hitch points of the hydraulic system and fasten and secure the upper link at the tractor with pin.



Remove the mixer trolley .



Raise the mixer and back up to pit. Next, lower the mixer shaft into pit.



Finally, couple the tractor and the mixer with the cardan shaft.

- To couple the cardan shaft, push the sliding pin and at the same time push the cardan shaft onto the PTO shaft until the pin rests.
- Link the fixing chain of the cardan shaft protection on the tractor and pump side so that there is protection cannot swivel and the cardan shaft has enough swivel range.

CAUTION!

- When coupling the cardan shaft to the pump and the tractor, see, that the offset angle is as low as possible. That way you ensure smooth running, a higher lifetime of the mixer and the cardan shaft.
- Check, if the cardan shaft is well lubricated!
- Check, if the coupling pins are completely rested.
- Check, if the protection pipe is fixed with the holding chains.



The pit open, the mixer can now be brought into its desired position and start operating.

3.3 Notes



The mixer can also be used for pit openings of 80 cm x 80 cm.

- For this, the blades must be set in a vertical position above the opening and then lowered by means of the tractor hydraulic system down to the ground.
- Then go forward with the tractor until you reach the desired angle of inclination of the mixer.



4 Operation



WARNING!

When operating slurry equipment, there is not only the dangers caused by moving parts or parts under pressure, liquid dung gasses can also occur. These gasses (carbpm dioxid CO_2 , ammonia NH_3 , hydrogen sulphide H_2S , methane CH_4) can cause poisoning or explosions. Particularly when operating mixers, mixing equipment, race track systems, stirring nozzles or slurry ventilation systems, take care that no gasses can flow into the stables from containers outside (mount syphons or valves). When handling slurry in the stables, make sure a compulsory ventilation system is installed.

- Smoking or handling of open fires are forbidden close to the pit opening or the slurry container when mixing the slurry !
- Escaping gasses are toxic and explosive. For safety reasons, people and animals should keep sufficient distance to the opening of the slurry pit.
- During the operations, the mixer shaft must be clamped tightly in the lifting frame and the tractor brakes must be set.
- Lift or lower the mixer shaft only while the cardan shaft is not turning.
- Turn the mixer on only, when it is in the pit. .
- The max. pto speed of the tractor may not exceed 540 rpm.
- Take care, that nobody is in the dangerous range of the machine or is close to the pit opening (CHILDREN!!!).

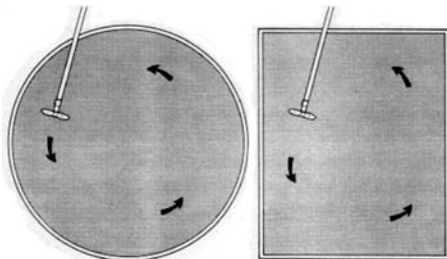
NOTE

- The angle of inclination of the mixer shaft depends on the type of the slurry pit. To achieve an optimum performance, the angle should not exceed 40 degrees.
- A higher speed of the pit volume is reached when the mixer blades are close to the wall.
- The position of the blades in the slurry should neither be too shallow nor too deep, the first causing the formation of undesired foam, the latter decreases the suction and mixing effect. Only for slurry with heavy sediment (pig and poultry manure, manure with a lot of sawdust etc.) the mixer shaft should be lower. That way the floating crust is torn up more quickly by the slurry underneath.



Position the mixer into the pit so that the slurry stream agitates all the slurry in the pit. If the stream is directed towards the wall, the blending effect is reduced considerably.

Do not lower the mixer shaft in a way that the blades are positioned too deep or too shallow.



You can go by the fastening clamp of the protective guard. The clamp should still be visible. That way some air gets sucked in at intervals, which enhances the mixing performance without creating a lot of foam. When you have slurry with a strong sediment (pig and poultry manure, manure with a lot of sawdust etc.) the mixer shaft should be as low as possible for mixing.

5 Transport



Slightly lift the tractor mixer with the tractor hydraulic system and move the mixer trolley onto the lifting frame.



Disconnect the tractor mixer from the tractor and pull the mixer away by hand.

6 Trouble – shooting

Trouble	Cause	Remedy
Mixer runs uneven	mixer blades are unbalanced	check if blades are symmetrical and have them resharpened, if necessary.
	Plain bearing bushes run down	Exchange plain bearing bushes
Plain bearing becomes very hot	heavy loss of oil due to defective sealing	Replace sealings
	bearing bushes damaged (abrasion)	insert new bearing bushes
Shaft hits outer pipe	intermediate bearing in the middle of the mixer shaft defective	replace intermediate bearing
Insufficient stirring effect	Blades blocked by something	remove binding twine, plastic bags etc from the blades
	p.t.o. speed not high enough	raise p.t.o. speed, max. 540 rpm.



7 Accessories

7.1 Rope winch



The rope winch is an option to the tractor slurry mixer. It serves to swivel the mixer.



8 Service and Maintenance

**WARNING!**

- Maintenance and repair works can only be done, when the slurry mixer is not operating. Do not climb on a running machine !
- Before you work around the protective ring or the blades, turn off the tractor.
- Repairs are only to be done by qualified operators !

CAUTION!

Regularly check if all nuts and bolts are fastened tightly and, if necessary fasten!



We emphasize again and again that proper servicing and maintenance strongly influence the operating reliability and service life of a machine. Like every other machine, the slurry mixer should be cleaned after each use; the slurry is still fresh and can be rinsed off easily with water.

The cutting edges of the blades must be checked as to their sharpness from time to time and, if necessary, re-sharpened evenly to avoid unbalance.

Check the bearing on the blade side for loss of oil at certain intervals. If oil leaks out, the sealing rings must be exchanged. Every time the drive shaft is dismantled or the sealing rings or the plain bearing bush exchanged, the shaft must be filled with the specified quantity of oil (see item 10 "Technical data").

The oil is filled in at the front end for the p.t.o. shaft stub after removing the screw plug. For evacuating the air from the shaft the plug at the side of the bearing body should be removed during the filling process.

9 Storage and standstill

After a longer standstill and before putting the machine into operation again, check the oil level at the mixer shaft. To do this, position it horizontally and remove the oil filling plug at the side of the motor. There is sufficient oil, if the drive shaft, that you see in the pipe, is still completely covered with oil. If you do not have enough oil, find out what the reason could be and repair. In this case, it is important to check the sealing system at the side of the blades. Use a dip stick to check the oil level of the reduction gearbox.

The mixer should not be stored in a way that it is exposed to the weather, possibly therefore under a roof. The motor should be higher up than the mixer blades with the guard bow. That way, checking the sealing system at the side of the mixer blades is also facilitated. Check the sealing system particularly after a longer storage in terms of oil loss. If oil leaked, the sealing rings must be exchanged.

10 Technical data

Slurry mixer model		MTX 600 / 4	MTX 600 / 5	MTX 750 / 4	MTX 750 / 5
Drive power	kW	20	20	35	35
Length of mixer shaft	m	4	5	4	5
Diameter of blades	mm	600	600	750	750
For pit volumes up to:	m ³	600	800	1000	1400
For pit depths up to:	m	3,5	4,5	3,5	4,5
For pit openings from	cm x cm	80 x 80			
Oil filling capacity		2,5 litre SAE 20W-20 motor oil			

Engine Oil; Viscosity Grade SAE20W20 or SAE20; SAE HK30; Quality Level API CF/SF

10.1 Name plates



10.2 Signs

The signs on the mixer and the frame may not be removed. They help to operate the **BAUER slurry mixer** more safely.

If you damage or remove them, you are requested to order them from us. Please find the part numbers in the spare parts book.

11 Conformity Certificate

EC Declaration of Conformity according to EC Directive 2006/42/EC

The manufacturer

Röhren- und Pumpenwerk BAUER Gesellschaft m.b.H.
Kowaldstraße 2, 8570 Voitsberg, Austria
phone +43 3142 200-0; fax: +43 3142 200-320/-340

herewith confirms that the machine mentioned below

Designation of machine	Tractor Mixer
Machine type / basic units	MTX 600/4/5/6; MTX 750/4/5/6; MTX3/4/5/6
Consists of	Lifting frame, agitator bar, agitator blade, safety bar

corresponds analogously to the requirements of the Machinery Directive 2006/42/EC.
In case of a modification of the machine not accorded with FAN GmbH, this declaration will cease to be valid.

The following standards as amended have been applied analogously:

DIN EN ISO 12100-1	Safety of machines – Basic concepts, general principles for design, Part 1: Basic terminology, methodology
DIN EN ISO 12100-2	Safety of machines – Basic concepts, general principles for design, Part 2: Technical principles and specifications
DIN EN 60204-1	Safety of machines - Electrical equipment of machines, Part 1: General requirements
EN ISO 14121-1	Safety of machines – Risk assessment

Norms related to products


EN ISO 13857	Safety of machines, safety clearance to secure no touching hazard area with upper extremities.
DIN EN 349	Safety of machine, minimum clearance to avoid crushing body parts
DIN EN 809	Pumps and pump units for liquids - Common safety requirements

The documents belonging to the machine according to annex VII, part B have been attached.

Person in charge of documentation: Thomas Theissl, Kowaldstraße 2, 8570 Voitsberg, Austria,



Technical Designer in Charge



Commercial Manager