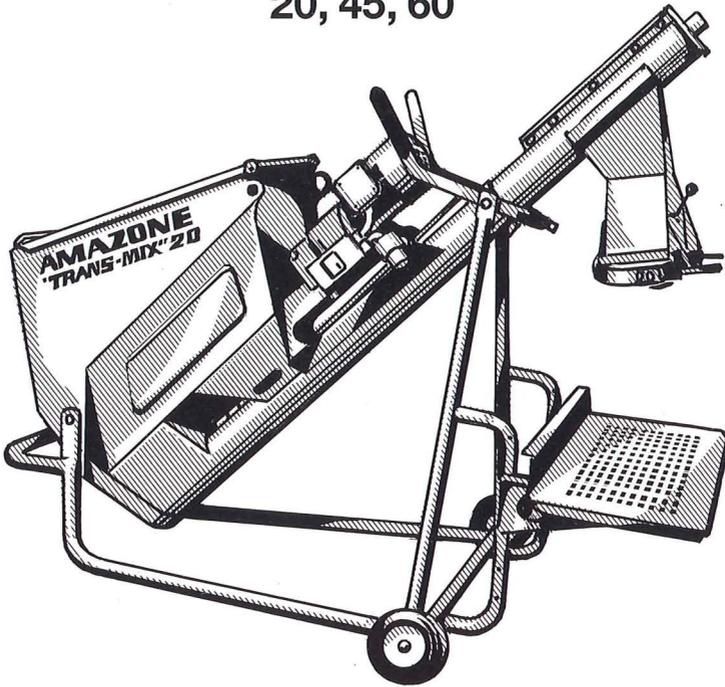


Instruction Manual Seed Dressing Mixing Auger

AMAZONE „TRANS-MIX“

20, 45, 60



AMAZONEN-WERKE H.DREYER GmbH & Co. KG



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Factories for: Fertilizer-spreaders, -storage halls, -handling systems. Seed drills. Soil cultivation machines. Field sprayers. Potato-graders, -sorters.

The AMAZONE seed dressing mixing auger TRANS MIX is one machine from the large AMAZONE range of farm machinery.

The mature engineering technology in connection with the correct operation ensures optimum use and longevity.

To ensure that you will get the best possible results from your "AMAZONE" we would ask you to read and observe these instructions carefully. You will, of course, appreciate that we will not be able to accept claims under the guarantee if any damage is caused due to incorrect operation.

Please enter in the field below the type and the serial number of your Trans Mix. This number may be found on the type plate on the machine.

Please always quote the serial number when ordering spares or asking technical questions:

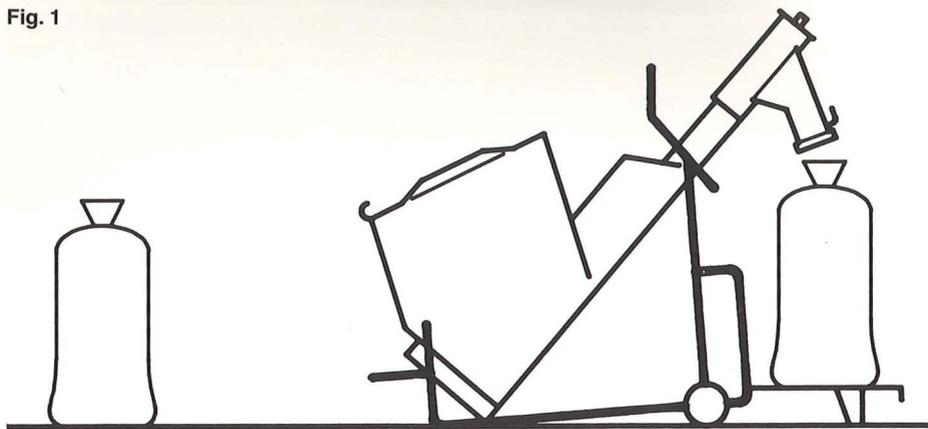
<p>Seed dressing mixing auger "Trans Mix" Type</p> <p>Serial Number</p>

Your seed dressing mixing auger complies only with the regulations of the Agricultural Health and Safety Authorities if in case of repair original spareparts of the AMAZONEN-Works are being used for replacement. Furthermore may we draw your attention to our safety technical advices which you may find under paragraph 8, page 17.

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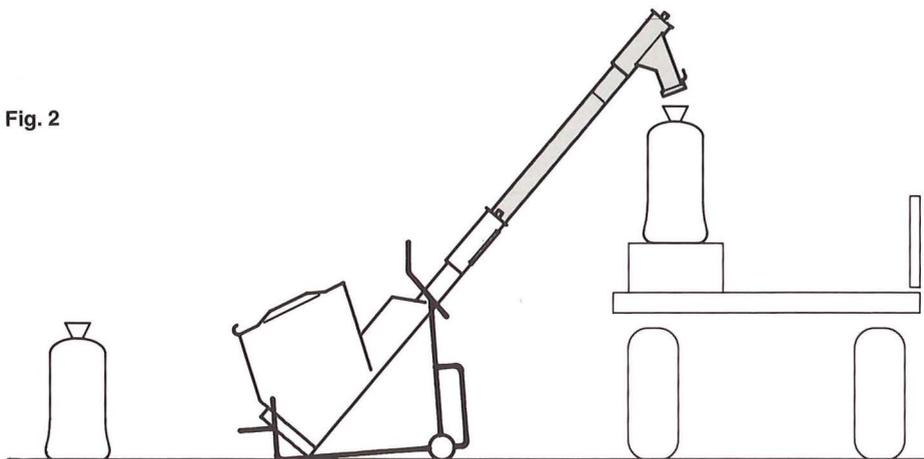
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Fig. 1



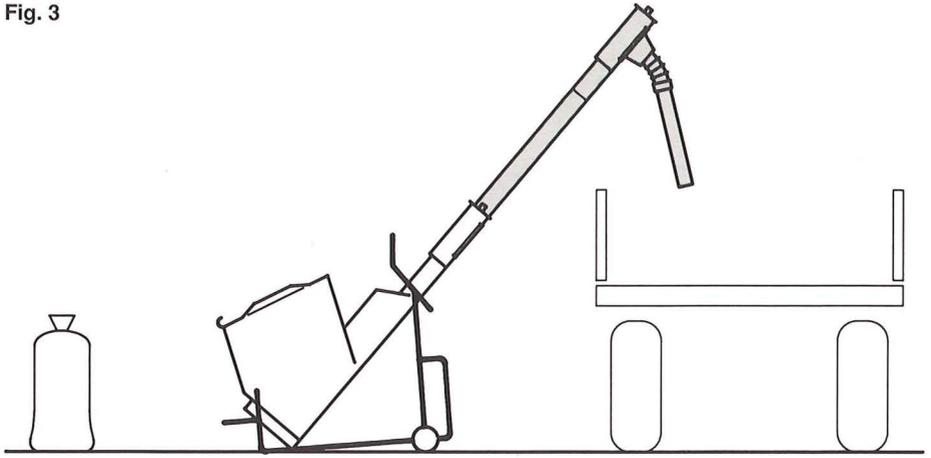
TM 20
Stationary seed Dresser - Basic execution for treatment of bagged seed

Fig. 2



TM 20
With auger extension 1.75 m, bagging height 2.40 m
With auger extension 2.60 m, bagging height 3.00 m

Fig. 3



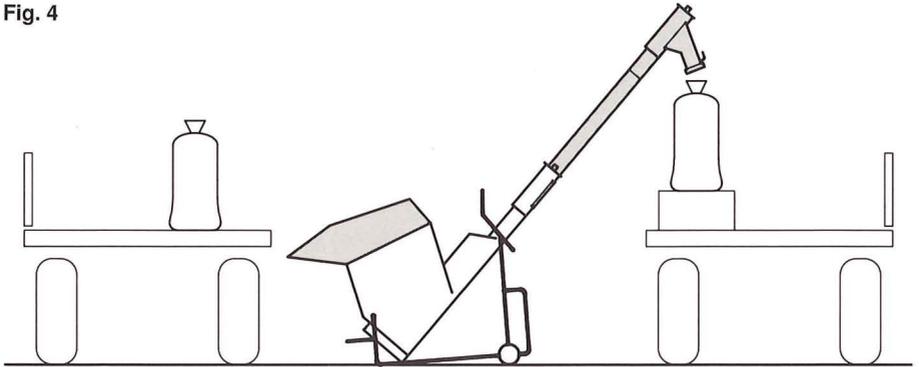
TM 20

Additionally with flexible outlet extension 1.75 m, max. dumping height 2.60 m

Additionally with flexible outlet extension 2.60 m, max. dumping height 3.20 m

Additionally with drop tube 1.50 m

Fig. 4

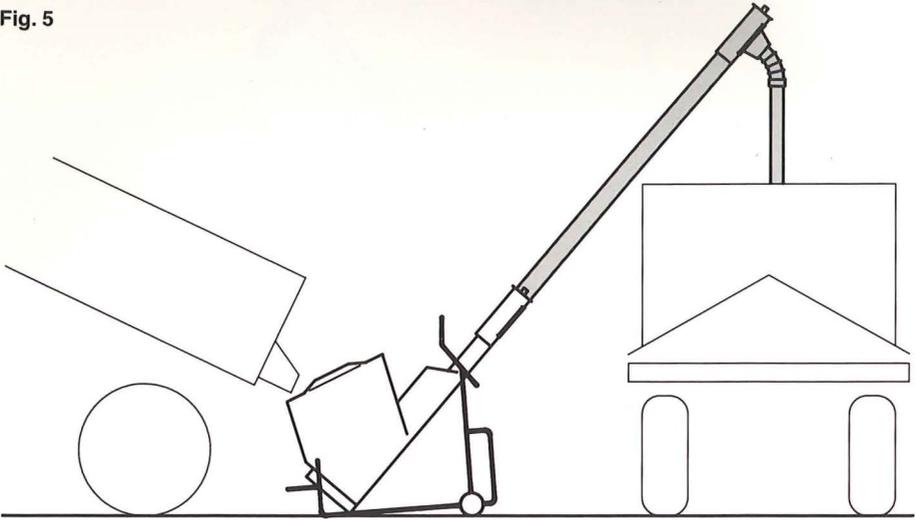


TM 20

Execution as shown in Fig. 2.

Additionally with bagging extension for trailer level

Fig. 5

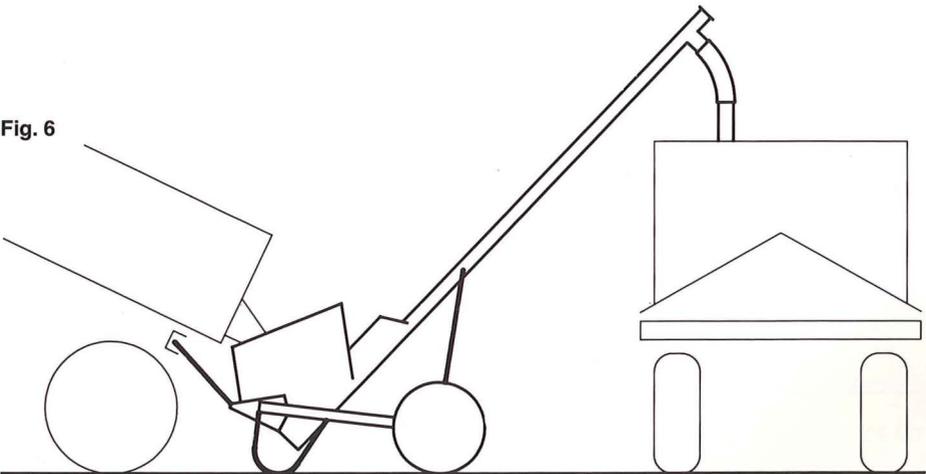


TM 20

Execution as shown in Fig. 3 .

Shown here: Taking over of bulk seed from a tipping trailer

Fig. 6

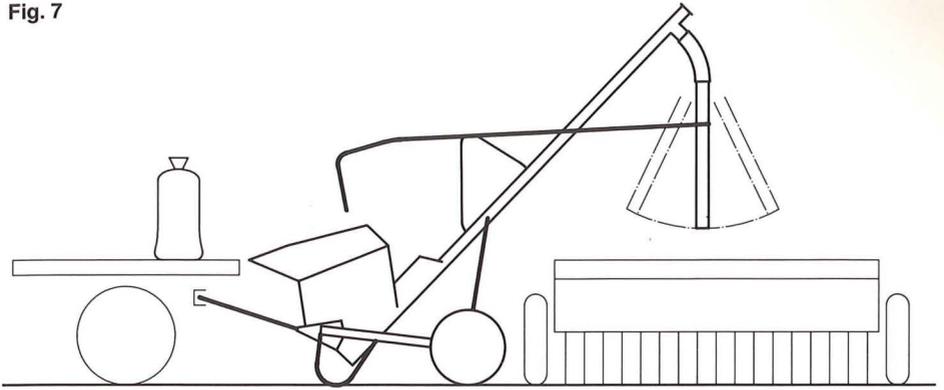


TM 45 or TM 60 (drawn implement)

Shown here: Taking over of bulk seed from a tipping trailer

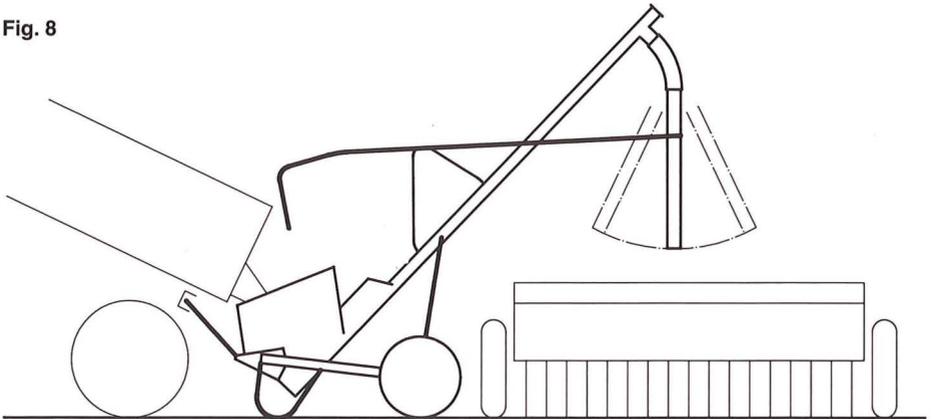
Max. dumping height 3.10 m resp. 4.20 m

Fig. 7



TM 45 or TM 60 (drawn implement). Direct filling of seed drill with bagged seed from a trailer.
TM 45 for seed drills of max. 3 m hopper length - TM 60 for seed drills of max. 6 m hopper length.
Preferably with dry (powder) dressing otherwise adhere to waiting time.

Fig. 8



TM 45 or TM 60 (drawn implement). Same as para. 8.7
Shown here: filling of bulk seed from a tipping trailer

1 General information about the "TRANS-MIX"

1.1 Manufacturer

AMAZONEN-WERKE, H. Dreyer GmbH & Co. KG, D-4507 Hasbergen-Gaste, F. R. Germany.

1.2 Type

AMAZONE "TRANS-MIX" 20, 45, 60

1.3 Technical data

Type	Dressing hopper capacity	Dressing and uncharging time	net weight	Measurements (m) (L x B x H)
TRANS-MIX 20	e.g. approx 50 kg (maize/corn) 100 kg (grain)	approx.1 min.	144 kg	2.4 x 1.45 x 1.8
TRANS-MIX 45	100 kg grain	approx. 1-1.5 min.	190 kg	4.0x1.4x3.3
TRANS-MIX 60	100 kg grain	approx. 1.5 min.	210 kg	4.8x1.6x4.6

1.4 Fields of use

"TRANS-MIX" 20:

Stationary treatment with bagging possibility of seed (e.g. maize (= corn), grain, legumes etc.). Useable for powdered and liquid dressing (liquid dressings either diluted in water or other dilution agents).

"TRANS-MIX" 45 and 60:

Stationary treatment of seed with simultaneous possibility of filling seed drills or additionally for filling bags. Transporting of grain with stopped agitator. Usable for powdery and liquid dressings (liquid dressings either dilutable in water or in other diluting agents). Transportable implement with one axle, wheels and drawbar.

2 Hints on receipt of the machine

Immediately check for damage during transport or for missing parts. Claims are only accepted following immediate complaint to your distributor. Please also check that all parts listed in the freight note are present.

3 Way of function

While the mixing auger rotates (about 150 R.P.M. or 70 R.P.M. for maize/corn) a specified amount of seed is filled into the mixing bin (e. g. 100 kg grain or about 50 kg maize/corn). When treating seed supplied in bulk weigh the first filling and set the seed level indicator at the machine accordingly.

While the content of the bin is moved by the mixing auger the seed dressing agent is slowly poured over it in a predetermined quantity. Powdered seed dressing should be used from small packages. Liquid seed dressings are supplied by the producers with metering cups. This working procedure has the advantage that always the advised amount of the seed dressing is added to the seed material filled into the bin. Any adaption of the dressing agent metering to any flow of delivered seed is not necessary.

Please adhere to the instructions by the manufacturer of the seed dressing.

After 1/2 - 1 minute of mixing time it may already be visually noted that the mixing procedure is completed. In this case the emptying slide may be opened so that the treated seed is transported by the filling auger towards the bagging outlet or towards the drill filling tube.



Fig. 9

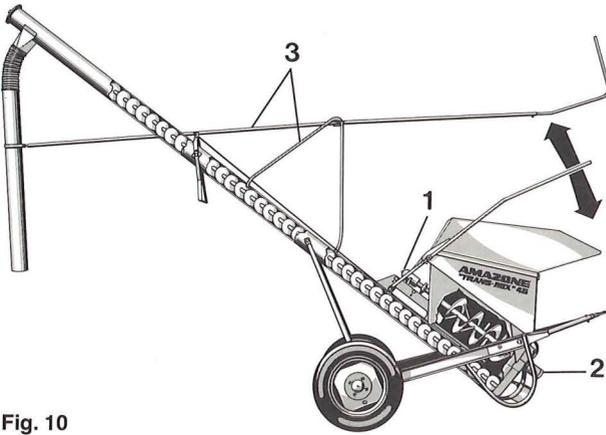


Fig. 10

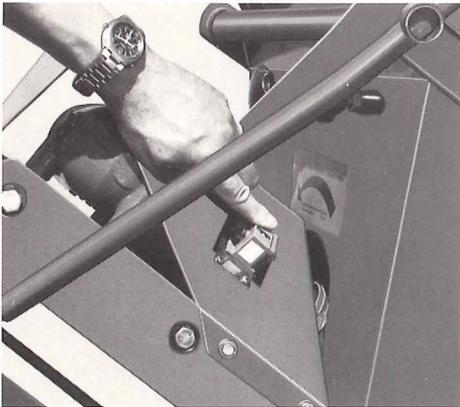


Fig. 11

4 Putting to operation

4.1 Various available drive systems

4.1.1 Drive from tractor pto (Fig. 10/1)

A pto-shaft of approx. 1 m length having on both ends a 1 3/8"-six splined yoke and locking pin may be attached to the angled gearbox fitted above the mixing bin. The tractor is backed up in a suitable distance sideways to the righthand next to the seed dresser and the free end of the pto-shaft is connected with the tractor's pto-shaft. When not in use the pto-shaft may be hung sideways to the seed dresser by the chain provided.

4.1.2 Hydrostatic drive by hydraulic motor (Fig. 10/2)

The hydrostatic motor (Bucher MAC 160) is fitted to the lower end of the mixing bin. For connecting to the tractor hydraulic each one supply and return flow hose of 9 m length with connecting plug is provided. When not in use the hoses should be wound up to the hook provided at the rear wall of the mixing bin. To prevent the motor running in the wrong direction the supply hose is provided with a return flow lock valve.

4.1.3 Electric geared motor (Fig. 9/1)

The electric motor is placed to the upper end of the mixing bin and provided with a socket for 380 Volt three phase current - Europlug type CEE 5 x 16 A. Before first operation check whether the turning sense of the mixing auger corresponds to the arrow sticker.

4.1.4 Combined drive

At the combined drive please note the following points:

Oil motor and pto connection:

When using the pto-drive the oil motor should be uncoupled by removing the bolt M 8 at the connecting plate between oil motor sprocket.

Oil motor and electric motor:

When using the electric motor the oil motor should be disconnected as described above.

4.1.5 Setting the correct drive speed:

For grain: about 150 R.P.M. (at the mixing auger). For maize (= corn) and other large size kinds of seed: 70 R.P.M. When using the hydrostatic drive or the pto-drive from the tractor the correct driving speed should be set prior to the beginning of the operation. For this purpose switch on the drive and chose an estimated rev.speed.

Now check which speed actually prevails by pressing the speed meter for about one minute. The counter is located at the lefthand side of the motor console at the front end of the mixing bin (Fig. 11). The shown figure corresponds to the speed of the mixing auger.

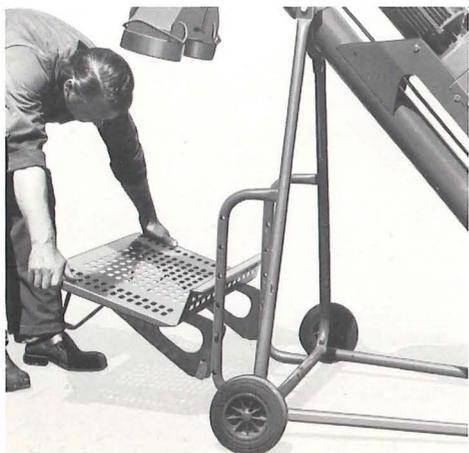


Fig. 12



Fig. 13



Fig. 14

4.2 TM 20

This machine is supplied ready for use. Only the bagging platform should be hung in a height matching with the height of the sacks and furthermore should be brought into a level position (Fig. 12). The supplied filling chute eases filling of bagged seed from the ground (Fig. 13).

4.3 TM 45 and 60

This implement is supplied with an extension for filling of bagged seed from a trailer. The extension can also be turned by 180 degree, depending on how much space is available between the trailer and the machine. When treating seed in bulk the extension should be removed. To take the extension off remove the tension lock at the back of the mixing bin. Lift one side of the extension upwards and push it sideways out of the hinges (Fig. 14). Its folding lid may then be fitted directly onto the mixing bin.

For filling long bins or seed drill boxes a guide rod for moving the outlet tube is supplied. This rod is guided in a support. Fit this support to the fitting places and push the guide rod through the taking up ring till the outlet tube. Here the guide rod is fixed by means of the mounting clamp. If necessary the plastic guide tube may be shortened to the required height (Fig. 10/3).

Please note when filling the seed drill with powder dressed seed from which direction the wind is blowing to avoid inhaling of dressing powder by the operating personnel.

5. Practical operation

5.1 Stationary operation (TM 20)

This implement is suited for on-the-farm-dressing of seed. It is possible to dress in advance either into bags or with the corresponding auger extension (option) onto a trailer or a bin. Both seed in bags or in bulk may be treated.

Seed in bulk is dumped directly from a tipping trailer or from a bin into the seed dresser. For the first charge you should weight exactly 100 kgs of seed and fill it into the mixing bin of the running machine (150 R.P.M.). The emptying shutter slide is kept closed. Hereafter set your seed level indicator in such a way that the seed in move touches the pointer plate. Now tighten the pointer in this position.

Now add the advised amount of seed dressing agent in form of powder or liquid by means of a calibration cup onto the seed. Use dry dressing dressing agent (powder) only from small packages in suitable quantities.

Allow for a mixing time (dressing time) of 1/2 to 1 minute and then transfer the seed into bags or seed box by pulling the shutter slide.

Especially when using powder dressings and water dilutable dressings the mixing bin cover should be kept closed.

The stationary use is suited for advanced dressing. When using liquid dressings a soaking time of at least two hours should be allowed between dressing and drilling. After this period the flowing properties and thus the seed rate of the seed will not change any further.

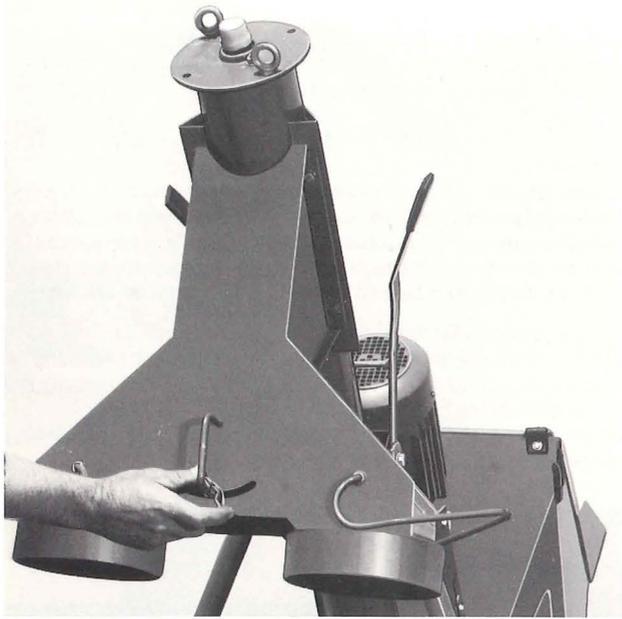


Fig. 15



Fig. 16

5.1.1 Treatment of maize (corn)

Usually maize (corn) seed is supplied in dressed form by the producer.

The after-treatment against frit-fly and birds may be done by the TRANS-MIX. Fill in three "packs" (three bags of each 50 000 seeds) into the mixing bin. This is equivalent to about 45 kgs. The mixing auger should rotate with a speed of about 70 R.P.M.

Also here the dressing agent is added by means of the calibration cup at a running machine onto the seed in movement. After 30 seconds of mixing time the seed is transferred into bags.

The transferring auger of the TRANS-MIX is available for maize (corn) treatment with an extra soft outer edge of plastic material. This ensures a gentle treatment of the maize (corn) seed during the transfer procedure. Before beginning with the maize treatment check whether the transferring auger (not the mixing auger) is equipped with the elastic plastic edge.

If it is intended to refill the packs (bags) again with the corresponding weight it may be of advantage to fill in only one or two bags. When filling only two bags a relatively even filling can be achieved by placing the swivel flap at the bagging outlet into the centre position (Fig. 15).

5.1.2 Treatment of legumes (peas, beans, soy beans etc.) and many others such as acorns and beech nuts

These kinds of seed may also be dressed in the TRANS-MIX with the suited agents which act in various ways as a herbicide or to improve the plant development.

The treatment is done as with maize. Fill in 50 kg per charge and let it be mixed for 30 seconds.

When using maize (corn) and legumes we recommend to remove the cross member inside the mixing- and dressing bin to avoid damage to the seed.

Transporting of mineral fertilizers (Attention: Danger of corrosion)

With the TRANS-MIX it is possible also to transport granular mineral fertilizers. The transporting efficiency is about 8 tons/hour depending on the auger speed.

For this purpose it is recommended to stop the agitating auger by removing the connecting bolt at the upper drive flange. After use the implement should be washed thoroughly with water.

The diluted fertilizer is very aggressive and leads to corrosion at the steel parts. We therefore recommend to spray the entire implement after drying off with oil.

5.1.3 Cleaning the machine

For the usual cleaning open the emptying flap below the mixing bin of the TM 20 after finishing the dressing operation or prior to any change of seed. A brush may be used for cleaning the inside of the bin. The remainder should be collected in a tray or similar.

For the complete cleaning of the transport auger it can be dismantled quickly with a few grips by hand. For this purpose remove the two ringbolts at the upper end and pull out the transport auger including the end cap as shown in Fig. 16. When treating maize (corn) it is, depending on the type of dressing, possible that a certain stain settles to the inside of the implement.

This stain should be removed as soon as the dressing operation is terminated but at least once a day from the inside of the auger tube.

For this purpose the supplied cleaning rod may be used. It will be pressed from above into the transport auger tube so that the dressing crusts fall out of the opened cleaning flap. Of course, a cleaning by a water hose or a high pressure cleaner is possible.



Fig. 17

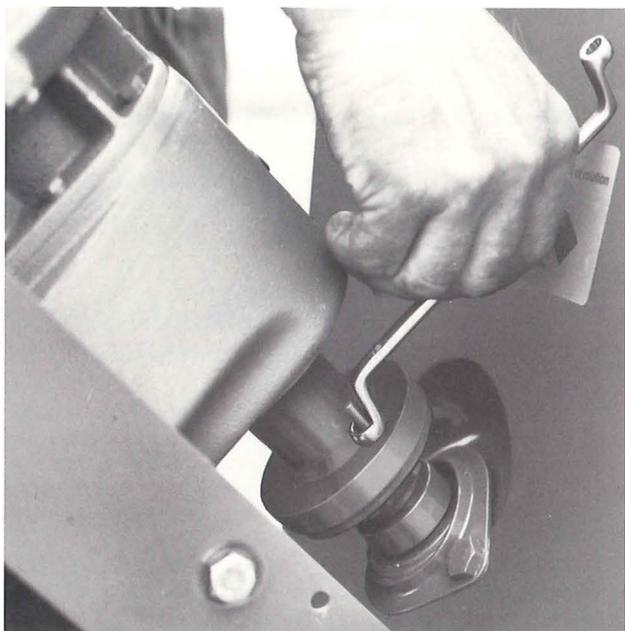


Fig. 18

5.2 Operation with TM 45 and TM 60

This machine is equipped with a transport device, a long transport auger and a hopper extension as an aid for filling bagged seed. With this machine it is possible to dress using powder dressing on the field directly from the trailer into the seed drill. For this purpose the seed dresser is hooked behind the seed trailer.

For transporting the hitch is swiveled into the lower-most position and secured there by a pin (transport position) (Fig. 17). On the field this hitch should be again brought into the upper-most position so that the bin and the auger tube are brought into the operation position.

For an operation on the field the use of an hydrostatic motor is best suited. Place the 9 m long hose alongside the trailer to the transport tractor. When connecting the hose please make sure of connecting the supply- and the return hose correctly. If wrongly connected a locking valve blocks the oil supply.

For this purpose the tractor should be equipped with a double acting control valve or a single acting control valve and a free return flow socket.

Now fill in the bagged seed from the trailer. The dressing procedure is conducted as described under para. 5.1. For discharging into the seed drill the seed drill is driven laterally behind the dresser.

The flow of seed can be controlled with the guide rod for the outlet hose. This way both sides of the seed drill may be filled evenly. For charging the dressing bin from a tipping trailer remove the hopper extension as described earlier.

Attention: As described already earlier this procedure is only pursued for the use of dry powdery dressing as with the liquid dressing due to the changing flowing properties of the seed a waiting time of about two hours before sowing is required to allow the moisture to soak into the seed completely.

When using liquid dressing agent we therefore recommend the advanced dressing. In this case we recommend the following working steps: Pour seed from trailer (bagged seed or bulk seed) into the seed dresser and let it then be discharged onto another trailer (tipping trailer or bin).

After termination of the waiting period or a day later the seed can be sown and filled by the TRANSMIX seed dresser TM 45 or TM 60 on the field directly into the seed drill.

When using the TM only as a filling aid the agitating and mixing auger may be switched off. For this purpose remove the bolt from the coupling disk above the mixing bin as shown in Fig. 18. This bolt also functions as a shear bolt for safety. In case of over-strain it shears off and thus must be replaced. (Bolt type M 6 x 30 DIN 933 8.8)



Fig. 19



Fig. 20

5.3 Bagging device

The bagging device may be retrofitted to all seed dressers equipped with long transport auger tube. For this purpose remove the cover below the transport tube. Thereafter fix the bagging device (Fig. 19) by using the four supplied hexagon bolts M 8 x 20. The support frame for the bag rest may be fixed at the upper end to the motor console and at the lower end to the axle. Thereafter the platform can be set to the required height (size of bag). For fixing the bags to the outlet stud the bag should be placed in such a way around the stud that the lower end of the bag is resting properly on the platform and in this position the swivel clamp is pressed over the upper end of the bag. The rest of the bag's circumference is also wound around the bagging stud in such a way that it is held by the bag fixing clamp (Fig. 20).

6 Special accessories (options)

6.1 Bagging device for TM 45 and TM 60

6.2 Combination of several drive systems

7 Maintenance and Care

A special maintenance of the TRANS-MIX is not necessary. Apply occasionally oil to the drive chain. After termination of the dressing operation and before changing the seed the rest seed should be discharged through the bottom flap at the bin sink at the end of the auger (see chapter "Cleaning").

8 Safety technical advices

For the general part of the operating instructions for AMAZONE implements for soil tillage, sowing and plant protection including AMAZONE TRANS-MIX seed dressing mixing augers TM 20, 45 and 60.

Read and adhere to these "Safety technical advices" before putting to operation your machine! Pass on all safety advices also to other users.

This chapter is produced in consultation with health- and safety experts with the intention to help to avoid accidents and to help to ensure you and others a safe environment. When studying you may at times think you know it all already. But so did others who then found themselves in a less fortunate situation. Therefore do yourself and others the favour and read thoroughly all the points until they become part of your habits. Ask others to read it too. Especially those whom you entrust to operate your farm equipment.

Reference to the instruction manual

These "Safety Technical Advices" are an integral part of the instruction manual handed out to you on receipt of your new AMAZONE-machine. Some of the points in the following refer to specific AMAZONE-machines and may not, therefore, apply to the machine you have obtained.

Declined use of the machine

The **AMAZONE** machine obtained by you has been exclusively designed for operation in agricultural situations (declined use). Any use beyond the one stipulated above is no longer considered as declined use. The manufacturer does not accept any responsibility for damages resulting from this; the operator himself carries the full risk.

Under "declined use" the manufacturer's prescribed operation-, maintenance- and repair conditions are to be adhered to. The **AMAZONE** machine may only be operated, maintained and repaired by such persons who have been made acquainted with it and who have been advised about the dangers.

The applicable accident prevention advice as well as further generally accepted safety technical, working, medical and traffic rules should be adhered to. Any damages resulting from arbitrary changes on the machine rule out the responsibility of the manufacturer.

General safety and accident prevention advice

Basic principle:

Always check traffic and operational safety before any putting of the machine into operation.

1. Adhere to the general rules of health- and safety precautions besides the advice in this instruction manual!
2. The fitted warning- and advising plates give important hints for a dangerless operation; adhering to serves your own security!
3. When making use of public roads adhere to applicable traffic rules.
4. Become acquainted with all installations and controlling devices as well as with their function before beginning with the operation. Doing this during operation would be too late.
5. The clothing of the operator should fit tight. Avoid wearing any loose clothing!
6. To avoid danger of fire keep your machine clean!
7. Before beginning to drive check surrounding area (children etc.) Ensure sufficient visibility!
8. Sitting or standing on the implement during operation or during transport is not permissible.
9. Attach implements as advised and only to the advised devices!
10. Special care should be taken when the implement is coupled to or off the tractor.
11. When attaching or removing the machine bring the supporting devices into the corresponding position (standing safety).
12. Fit weights always as advised to the fixing points provided for that purpose.
13. Adhere to the maximum permissible axle loads, total weights and transport measurements.
14. Fit and check transport gear, traffic lights, warning and guards!
15. The release ropes for quick coupler should hang freely and in the lowered position must not release the quick coupling by themselves.
16. During driving never leave the operator's seat.
17. Mount the implement as prescribed. Moving behaviour, steerability and braking are influenced by mounted implements, trailers and ballast weights. Check sufficient steerability and braking.
18. When driving round bends note the width of the machine and/or the changing centre of gravity of the implement.
19. Put implement into operation only when all guards are fixed in position.
20. Never stay or allow anyone to stay within the operating area!
21. Never stay in the turning and slewing area of the implement!
22. Hydraulic folding frames may only be actuated, if no persons are staying in the slewing area.
23. On all pivoting parts actuated by foreign powers (e. g. hydraulics) exists danger of injury by bruising and crushing.
24. Before leaving the tractor lower the machine to the ground. Actuate the parking brake, stop the engine and remove the ignition key!
25. Allow nobody to stay between tractor and implement if the tractor is not secured against rolling away by the parking brake and/or by the supplied chocks.
26. Packer-roller catching arms should be swiveled inwards and secured before driving on roads.
27. Bring markers into transporting position and secure.

General safety and accident prevention advice

Tractor mounted implements

1. When fitting the machine to the three-point linkage of the tractor bring all control levers into such a position that unintended lifting or lowering is impossible.
2. When fitting to the three-point linkage the mounting categories at the tractor and the implement must be compatible or must be made compatible.
3. There is danger of injury in the area of the three-point linkage by its squeezing and shearing places.
4. When actuating the control levers for the three-point linkage from outside the tractor cab never step between tractor and implement!
5. Make sure that in the transport position of the implement the tractor three-point linkage has sufficient lateral immovability.
6. When driving on public roads with a lifted machine the lifting control lever should be locked against unintentional lowering.

Trailed machines

1. Secure implement and tractor against unintended rolling.
2. Never exceed maximum permissible load or the coupling drawbar/ hitch.
3. When fitting hitches note sufficient movement at the hitch-point.

General safety and accident prevention advice

Operating with P.T.O. shafts (for P.T.O. driven implements only)

1. Use only P.T.O. shafts which are designed for the implement and which are equipped with all legally requested guardings.
2. Guard tubes and cones of the P.T.O. shaft as well as a tractor and implement side P.T.O. guard must be fitted and kept in a proper condition.
3. At P.T.O. shafts always see to the advised tube overlapping in transport- and operating position!
4. Fit and remove the P.T.O. shaft only when engine is stopped.
5. Ascertain correct fitting and securing of the P.T.O. lock!
6. Prevent P.T.O. guard from spinning by fixing the provided chain to a nearby static part.
7. Before switching on the P.T.O. shaft ensure that the chosen P.T.O.-speed of the tractor corresponds to the allowable implement input speed.
8. When using the ground-related P.T.O. take into account that the P.T.O. speed depends on the driving speed and that the turning sense is reversed when driving backwards.
9. Before switching on the P.T.O. shaft take care, that no one stays in the danger zone of the implement!
10. Never switch on the tractor P.T.O. while engine is stopped!
11. When operating with a switched-on P.T.O. shaft allow no one to stay near to the spinning P.T.O. - or universal joint shaft.
12. Always stop P.T.O. when it is not needed or when the shaft is in an adverse position!
13. Attention: After switching off the P.T.O. the mounted implement may continue to run by its dynamic mass. During this period never come too close to the implement. Begin to work on the implement only after it has come to a full standstill!
14. Clean and grease the universal joint shaft and the P.T.O. driven implement only after the P.T.O. shaft and engine have been stopped and ignition key pulled out.
15. Place the uncoupled P.T.O. shaft on the retaining device provided.!
16. After removal of the universal joint shaft replace protective cap over the tractor's P.T.O.
17. In case of any damage remedy is to be undertaken before beginning the operation.

General safety and accident prevention advice

Hydraulic system

1. The hydraulic system is under high pressure.
2. Connect hydraulic hoses to the hydraulic rams and motors according to the advice in the instructions.
3. When fitting the hydraulic hoses to the tractor hydraulic sockets always ensure that the hydraulic system at the tractor's as well as at the implement side is without pressure.
4. To avoid wrong hydraulic connection sockets and plugs should be marked (e.g.colour coded). This helps to prevent contrary function (lifting instead of lowering or vice versa) and reduces the danger of accident.
5. Regularly check hydraulic hoses and pipings and exchange if found defective. The replacement hoses and pipings must meet with the implement manufacturer's technical standards!
6. When searching for leaks appropriate aids should be used because of the danger of injury.
7. Liquids leaking under high pressure (Diesel fuel, hydraulic oil) can penetrate the skin and cause severe injury. When injured see a doctor immediately! Danger of infection!
8. Before starting to do repair work to the hydraulic system relieve it from pressure by actuating the control lever accordingly, lower machine to the ground and stop tractor engine.
9. The maximum allowable operational atmospherical pressure must never be exceeded.

Brakes and Tyres

1. Before every journey check function of brakes!
2. The braking system must regularly and thoroughly be checked!
3. Setting- and repair work at the brakes must only be conducted by licensed workshops or brake service stations. Always use prescribed brake fluids and renew as prescribed.
4. When working on the tyres make sure that the implement has been placed on the ground safely and that it is secured by chocks against unintentional rolling.
5. Mounting tyres requires sufficient knowledge and availability of prescribed tools.
6. Repairwork on tyres may only be conducted by trained staff and with suitable tools.
7. Check air pressure regularly and adhere to the advised air pressure.

General safety and accident prevention advice

Maintenance

1. Repair-, maintenance- and cleaning operations as well as remedy of function faults should principally be conducted with a stopped drive and engine. Remove ignition key!
2. Check nuts and bolts for tightness and retighten if necessary.
3. When conducting maintenance work on a lifted implement always place suitable supports underneath.
4. For replacing any tools with cutting edges always use suitable tools and gloves.
5. Dispose of old oils, grease and filters as prescribed by law.
6. Before working on the electric gear disconnect battery cables.
7. When conducting electrical welding operations on the tractor or on the mounted implement remove cable from the generator and the battery.
8. Any spareparts fitted must in minimum meet with the implement manufacturer's fixed technical standards. This is for example ensured by using original spareparts.
9. To avoid danger of explosion only use nitrogen for filling up gas tanks.

General safety and accident prevention advice

A N N E X

Special advices for particular machines

- A. General safety technical advices
— See compiled text for machinery and implements for soil tillage, sowing and plant protection.
- B. **Special advices for operating with:**
— Mechanical seed drills
— Mounted, semi-mounted and trailed throwing broadcasters
— Pneumatic Fertilizer spreaders
— Plant-protective implements for field crops

In the following all necessary special safety technical advices for particular groups of machinery shall be listed which go beyond those formulated in the general section.

Mechanical seed drills

1. During the calibration test watch out for rotating or oscillating parts of the machine.
2. Use steps only for filling. It is not allowable to travel on the steps during operation.
3. For road transport remove marker-discs and -carriers of the pre-emergence marker.
4. Adhere to the manufacturer's advices when filling the seedbox.
5. Arrest markers in transport position.
6. Never place any parts inside seed box as even when manoeuvring the agitator shaft rotates.
7. Never exceed the maximum allowable filling quantity.

Mounted, semi-mounted and trailed throwing broadcasters

1. During the calibration test watch out for rotating or oscillating parts of the machine.
2. Use steps only for filling. It is not allowable to travel on the steps during operation.
3. Filling of the machine must only be done with the tractor engine stopped, ignition key removed and shutters closed.
4. Note maximum permissible filling loads!
5. Never place any foreign parts inside the hopper as even when manoeuvring the agitator shaft rotates.
6. Be careful when staying or when seeing other persons staying within the throwing zone of the fertilizer broadcaster.
7. Attention: Never allow yourself or any one to get near to rotating spreading discs, danger of injury!
8. The Trailer hitch provided must only be used for towing suitable implements or twin axle trailers up to a maximum of 25 km/h (outside West-Germany different laws may prevail). Single axle trailers must not be towed under any circumstances.
9. If a filled machine is to be parked without a tractor the fertilizer inside the hopper should be levelled - otherwise there is a danger of tipping over!
10. Stop P.T.O. immediately after the shutters of the fertilizer broadcaster have been closed.

General safety and accident prevention advice

Pneumatic fertilizer spreaders

1. Be careful when staying or when seeing other persons staying within the throwing zone of the fertilizer broadcaster.
2. Never free fertilizer inside hopper by hand but use suitable aids to guide the material to the metering wheels and always stop machine beforehand.
3. Hydraulic slope correction and hydraulic folding may only be actuated without anybody in the area of slewing of the machine's components.
4. When turning with unfolded booms watch for people and traffic!
5. When broadcasting alongside water courses or roads always use boundary spread devices.
6. Check proper condition of the supporting cables and supporting connections.
7. Never reach into the rotating agitator shaft.
8. Never place any foreign parts inside the hopper.

Plant protective implements for field crops

1. Adhere to the recommendations of the manufacturers of the plant protection agents.
 - Protective clothing.
 - Warning advices.
 - Filling-, operation- and cleaning advices.
2. Attention! Adhere to the advices of the plant protection law!
3. Never open any pipings which are pressurized.
4. Only such spare hoses for an operational pressure of 10 (option 20) bar may be fitted which withstand the chemical, mechanical and thermal strain. For fitting principally hose clamps made from stainless steel must be used.
5. If repair work is necessary (inside a spray liquid tank) this can only be undertaken after thorough cleaning whereby a breath protection mask and protective clothing must be worn. For added safety a second person also fully protected should watch the work from outside the tank.
6. Repair of sprayers which were used for liquid fertilizing with Ammonium-Nitrate-Urea solvents (AUS):

Remainings of Ammonium-Nitrate-Urea solvents may - after evaporation of the water - form a salt on top or inside the sprayer. Hereby pure Ammonium-Nitrate or Urea is reproduced. In its pure form Ammonium Nitrate in conjunction with organic materials, e. g. Urea is explosive, when at repair work (e. g. welding, grinding, filling) the critical temperatures are reached. The salt of the Ammonium-Nitrate-Urea solution is water- solvable, i. e. by thorough washing with water of the sprayer or the parts to be repaired this danger is excluded. For this reason clean the sprayer thoroughly with water before repairing!
7. Notes about the compatibility of spray agents and materials of the implement must be observed.
8. Materials which tend to gum up or to congeal must never be sprayed.