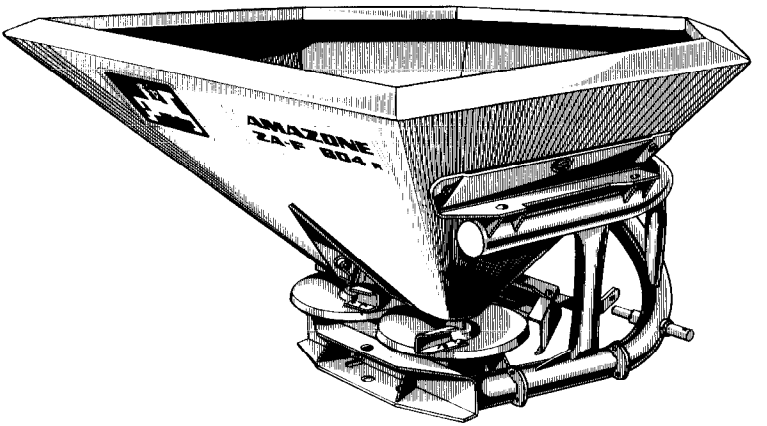
Centrifugal Twin Disc Precision Broadcaster

AMAZONE ZA-F

Instruction Book



We invite you to study these instructions carefully, and by adhering to them, make fullest use of your machine. You will then enjoy trouble-free and accurate Broadcasting with your new AMAZONE Precision Parallel Twin Disc Broadcaster.

No responsibility can be accepted by us if complaints and breakages are due to faulty manipulation or lack of maintenance.

AMAZONEN-WERKE
H. DREYER GmbH & Co. KG

P.O. Box 51
D-4507 Hasbergen-Gaste
F.R. Germany

Phone (0 54 05) * 501-0
Telefax: (0 54 05) 50 11 93
Telex: 9 44 895 amazo d

Branch factories at D-2872 Hude · F 5702 Forbach
Subsidiaries in Great Britain and France.

Factories for: Fertilizer-spreaders. Seed drills. Soil tillage machines. Field sprayers.

Printed in F.R. Germany

We invite you to study these instructions carefully, and by adhering to them, make fullest use of your machine. You will then enjoy trouble-free and accurate broadcasting with your new **AMAZONE** precision parallel twin disc broadcaster.

We congratulate you on the purchase of your new **AMAZONE** fertilizer broadcaster. You have made a good choice.
Please study these instructions carefully and by adhering to them make fullest use of your machine. You will then enjoy trouble-free and accurate spreading with your new **AMAZONE** broadcaster.

No responsibility can be accepted by us if complaints and breakages are due to wrong handling or lack of maintenance.

Never put to operation your **AMAZONE** broadcaster before having read chapter **2 Safety technical advices** and **2.2. General safety and accident prevention advice.**

Your broadcaster complies only with the regulations of the agricultural health and safety authorities when in the case of repair original spareparts of **AMAZONE** are used for replacement.

By this sign we have marked all chapters which refer to your safety. Please pass this instruction hand book also to other users of this machine.

Please enter the serial number of your broadcaster here. You will find the number stamped on the type plate.

Please always quote the machine type and serial number when ordering spareparts or making enquiries:

Centrifugal Broadcaster ZA-F .....

Machine serial No.: .....

CONTENTS

1 On receipt of the machine

Check that no damage has been caused in transit and all parts are present, otherwise no re sponsibility can be accepted by us or the carrier. Before commencing work, remove all packing material, wire, etc. and check that all lubrication points are well supplied with grease, oil, etc. before use (universal joints).

2 Technical Safety Precautions ⚠

2.1 *Declined use of the machine* ⚠

The centrifugal broadcaster ZA-F has been exclusively designed for agricultural purposes particularly for the distribution of granular fertilizers. The machine is designed to spread on slopes of up to 20 % (18 °) inclination.
If the spreader is used on slopes exceeding 20% it is no longer considered as proper use. The manufacturer does not accept any responsibility for damages resulting from this; the operator himself carries the full risk. Adhere to the manufacturer's prescribed operation, maintenance and repair conditions.
The centrifugal broadcaster AMAZONE ZA-F 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 Health and Safety Executive also advise that further generally accepted safety technical, working, medical and traffic laws should be adhered to.
Any damages resulting from arbitrary changes to the machine rule out the responsibility of the manufacturer.

2.2 General safety and accident prevention advice ⚠

2.2.1 **Basic principle:** Always check road and operational safety before putting the machine into any operation.

2.2.2 Adhere to the general rules of health- and safety precautions as well as to the advice in this instruction manual.

2.2.3 When making use of public roads adhere to the applicable traffic rules.

2.2.4 Become acquainted with all devices and controlling elements as well as with their function before beginning the operation. Doing this during operation would be too late.

2.2.5 Before beginning to drive check that your path is clear (e.g. from children). Ensure sufficient visibility!

2.2.6 The clothing of the operator should fit tight. Avoid wearing loose clothing!

2.2.7 Sitting or standing on the implement during operation or transport is not permitted.

2.2.8 Mount the implement as prescribed. Travelling characteristics, steering and braking ability are affected by mounted implements, trailers and ballast weights. Therefore take account of these effects and allow sufficient steering and braking.

2.2.9 Adhere to the maximum permissible axle loads and total weight. (Refer to vehicle documents and machine's instruction manual.) When lifting the fertilizer broadcaster the front axle load of the tractor is relieved by different amounts depending on the size of the tractor. Always check that the necessary front axle load of the tractor (20 % of the tractor's net weight) is maintained.

2.2.10 If a trailer hitch is provided it must only be used for **towing** suitable implements or **twin** axle trailers up to a maximum of 25 km/h (outside Germany different laws may prevail).
Single axle trailers must not be towed under any circumstances.

2.2.11 When driving round bends mind the projection to the sides and the centrifugal forces of the implement!
To avoid the spreader swinging sideways during operation stabilizer bars or chains can be fitted to the tractor's lower arms of the three-point linkage (see tractor accessory).

2.2.12 Whilst driving never leave the operator's seat!

2.2.13 Before leaving the tractor lower the implement to the ground.
Actuate the parking brake, stop the engine and remove the ignition key!

2.2.14 Never stay or let anyone stay within the operating area!

Warning: Never come near to rotating spinner discs, danger of injury!

2.2.15 During the calibration test watch out for danger zones due to rotating parts of the machine!

2.2.16 Filling the fertilizer broadcaster may only be done with a stopped tractor engine, removed ignition key and closed shutters!

2.2.17 Note maximum permissible filling loads!
Maximum filling load of the ZA-F broadcasters:

ZA-F 403	500 kgs
ZA-F 604 R	800 kgs
ZA-F 804 R	1.200 kgs
ZA-F 1004 R	1.200 kgs
ZA-F 1204 R	1.200 kgs

2.2.18 If a filled machine is to be parked without the tractor, the fertiliizer inside the hopper should be levelled - otherwise danger of tipping over!

2.2.19 Do not place any foreign objects inside the hopper.

2.2.20 Be careful when standing or when seeing other persons standing within the throwing zone of the fertilizer broadcaster.

2.2.21 Mount the implement only with the prescribed tools.

2.2.22 Special care should be taken when the implement is coupled to or uncoupled from the tractor.

2.2.23 Secure implement and tractor against unintentional rolling away.

2.2.24 Only take implement into operation when all guards are fixed in position.

2.2.25 When fitting the machine to the three-point linkage of the tractor bring all control levers into such a position at which an unintentional lifting or lowering is impossible!

2.2.26 When actuating the control levers for the three-point linkage never step between tractor and implement!

2.2.27 When driving on public roads with a lifted machine the lifting control lever should be locked against unintentional lowering - before leaving the tractor lower the mounted implement onto the ground and remove ignition key!

2.2.28 Nobody should stay between tractor and implement if the tractor is not secured against rolling away by the parking brake and/or by chocks!

2.2.29 When fitting to the three-point linkage the mounting categories at the tractor and the implement must coincide!

2.2.30 Working implements should only be transported and driven on tractors which are designed to do this!

2.2.31 Check maximum permissible axle loads of the tractor (see vehicle documents).

2.2.32 Do not exceed maximum permissible transport measurements of the traffic department.

2.2.33 Fit and check transport gear, e. g. road lights, warning- and protection devices!

2.2.34 On all hydraulically actuated pivoting parts exists danger of injury by bruising and trapping.

2.2.35 The release ropes for the quick coupler should hang freely and when in the low position must not release the quick coupling by themselves.

2.2.36 Affix any ballast weights always as prescribed to the correct fixing points! Universal joint (P.T.O.) shaft.

2.2.37 Use only P.T.O. shafts which are designed for the implement and which are equipped with all legally requested guards.

2.2.38 Fit and remove the P.T.O. shaft only when engine is stopped!

2.2.39 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.

2.2.40 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 the correct place.

2.2.41 After switching off the P.T.O. the mounted implement may still continue to run by its dynamic masses. During this period never come too close to the implement. Begin work on the implement only after it has come to a full standstill!

2.2.42 Put to operation P.T.O. shafts only if they are completely equipped with guards also at the implement side!

2.2.43 Connect P.T.O. shaft only after the engine is stopped completely and the P.T.O. shaft has been switched off!

2.2.44 Before switching on the P.T.O. shaft take care that no one stays in the danger zone of the implement!

2.2.45 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.

2.2.46 Slow engagement of the P.T.O. shaft protects tractor and spreader.

2.2.47 Switch off the P.T.O. shaft as soon as the machine's outlet openings have been shut off.

2.2.48 After removal of the universal joint shaft replace protective cap over the tractor's P.T.O.

2.2.49 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!

2.2.50 Never switch on the tractor P.T.O. while the engine is stopped.

2.2.51 Always stop P.T.O. when it is not needed or when the shaft is in an adverse position!

2.2.52 Damages must be seen to and rectified before beginning the operation!

2.2.53 Ascertain corrrect fitting and securing of the P.T.O. lock.

2.2.54 Prevent P.T.O. guard from spinning by fixing the chain provided to a nearby static part.

2.2.55 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!

2.2.56 Dispose of old oils, grease and filters as prescribed by law.

2.2.57 Check and retighten if necessary nuts and bolts regularly, initially after 3 - 4 hopper fillings.

2.2.58 When conducting maintenance work on the lifted implement always place suitable supports underneath.

2.2.59 When conducting electrical welding operations on the tractor or on the mounted implement remove cable from the generator and the battery.

2.2.60 The hydraulic system is under high pressure.

2.2.61 When searching for leaks appropriate aids should be used because of the danger of injury.

2.2.62 Before starting to do repair work at the hydraulic system relieve it of pressure by actuating the control lever accordingly and stop tractor engine.

2.2.63 When fitting the hydraulic hoses to the tractor hydraulic sockets always ensure that the hydraulic system on the tractor as well as on the implement side is without pressure.

2.2.64 When connecting hydraulic rams fit hydraulic hoses according to H. S. advices.

2.2.65 Plugs and sockets should be colour coded for the hydraulic connections between the tractor and the implement to help prevent operational mistakes and thus avoid accidents.

2.2.66 The period of use of any hose circuit should not exceed six years including a possible storing period of two years maximum. Also when stored and used properly hoses and hose circuits do age. Therefore their longevity and period of use is limited. Deviations from the above may be accepted by the Health- and Safety Authorities depending on the experience they have had and the danger potential. For hoses and hose circuits made of thermoplasts other guide lines may prevail.

Special points to note:

2.2.67 If the machine has been stored away for a long period with fertilizer in the hopper, or been driven a long way (i. e. to and from work) containing fertilizer, the following should be observed before spreading:
First open outlet shutters fully, **engage P.T.O. slowly** and spread the fertilizer for a few seconds while standing still. If all mechanisms are free the machine can now be set in the required rate position for spreading, and work can start.

2.2.68 When spreading superphosphate, damp or poorly stored fertilizer, it is advisable to remove all excess fertilizer at the bottom of the hopper, hopper opening, deflector plates, and spreading discs by using the extension handle (Fig. 3/3) for this purpose. Furthermore the remainder of fertilizer sticking to **spreading blades** and **deflector plates** has to be **removed.**

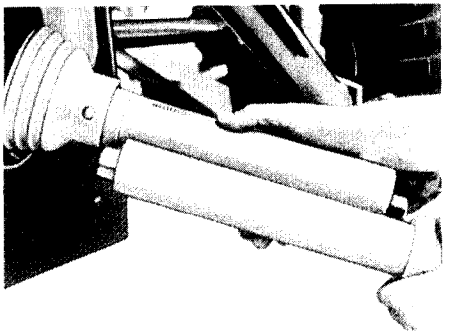


Fig. 1

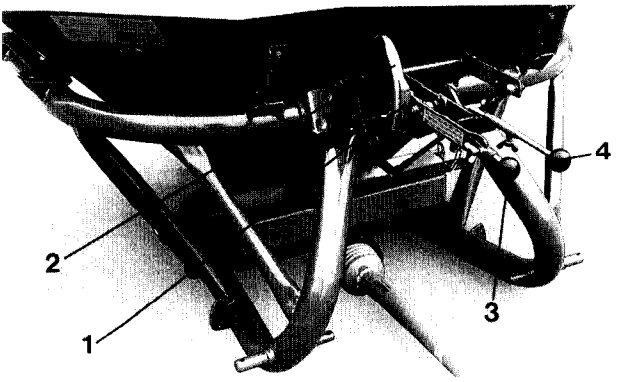


Fig. 2

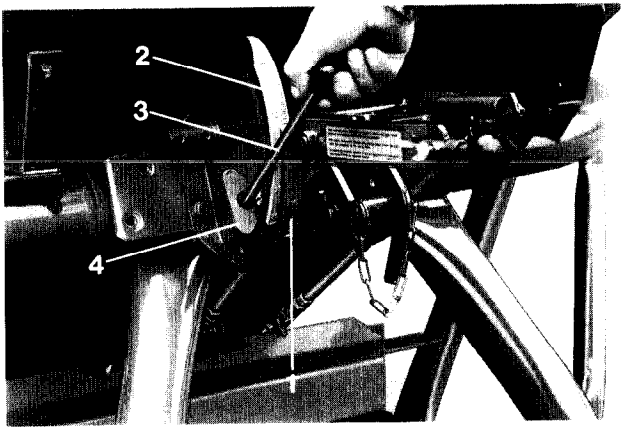


Fig. 3

3 Putting into operation

3.1 Matching of the P.T.O. shaft

For the first mounting the P.T.O. shaft should be assembled and the front half of the P.T.O. should be fixed to the tractor's P.T.O. but not inserted into the half which is to be joined to the spreader later on.
The spreader should be mounted to the tractor with the discs in the correct position to give the desired bout width which can be found in the supplied calibration chart. The implement-half of the P.T.O. shaft should be attached to the machine and then the two halves of the P.T.O. should be held side by side. It is now to be ascertained **in any position of the machine** (please check also in the various angling positions of the broadcater according to the setting chart) that at the P.T.O. shaft as well as at the P.T.O. tube in the far-most position a minimum overlap of 60 mm (2 1/2") is still achieved and in the closest position the ends of the yokes are not touched. If they touch both ends must be shortened (Fig. 1) by the same amount. The two halves of the P.T.O. shaft are now ready for joining together. Make sure that under all working conditions the angle of the shaft does not exceed 25°. (Lubricate P.T.O. shaft and tube!) The P.T.O. guard is detachable.

3.2 Setting up your spreader

When adjusting the handles take care that both extension handles (Fig. 2/3 and 2/4) lie on the stop (Fig. 2/1) of the scale (Fig. 2/2).
Setting your machine to give the required spread pattern and bout width is done by altering the pitch of the discs and their height above the crop as shown in the calibration charts by adjusting the top link. The spreading width varies according to the type of fertilizer and their manufactured surface texture.
Variations can occur depending on the condition of the fertilizer.

3.2.1 Spread rate setting

The rate setting is done by adjusting the stop (Fig. 3/1) on the scale (Fig. 3/2) with the aid of the extension handle (Fig. 3/1). Firstly loosen the wing nut (Fig. 3/4) then adjust the stop (Fig. 3/1) to the required position, this being read from the calibration chart.
Make sure the wing nut (Fig. 3/4) is retightened securely.

3.3 Checking the spread rate by calibration box (option)

A calibration box should be used before beginning the spreading operation
(see para. 5.4 + 5.4.2).

3.4 Checking the working width with the mobile test kit (option)

For checking the working width a mobile test kit is available (option, Order No. 125 900). Instructions are provided with the kit.

3.5 Special advice

The setting rates given in the setting chart refer to the fertilizer types tested by us. Especially newly introduced fertilizers or such fertilizers of different origin which are available under the same chemical denomination can have different spreading properties (bulk density, granule size, friction etc.). If you have any doubt we recommend checking the working width with the mobile test kit available as option.

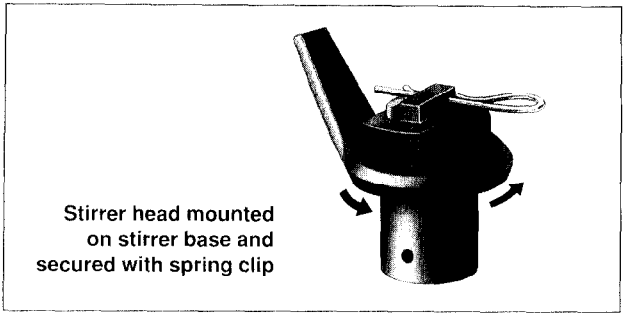


Fig. 4

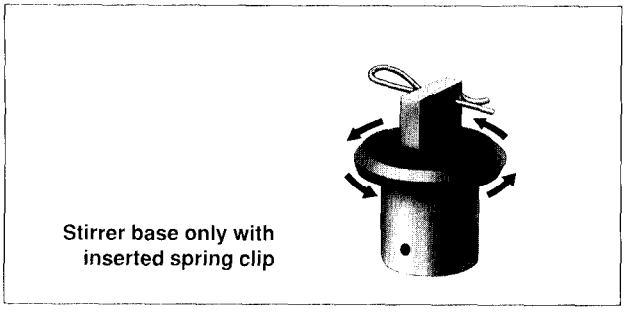


Fig. 5

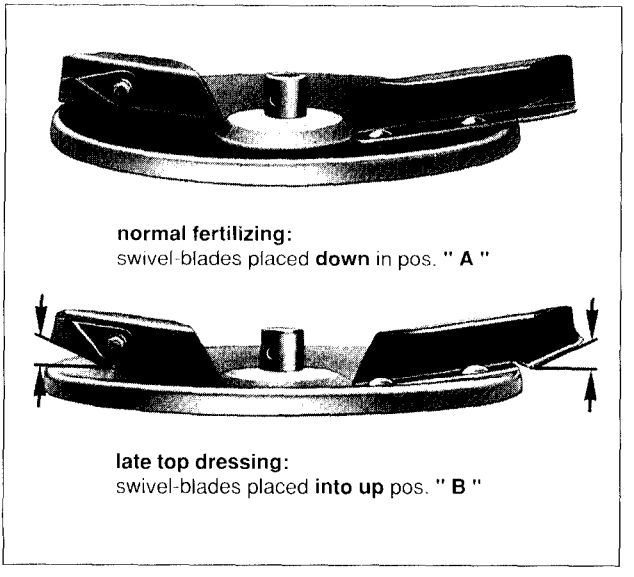


Fig. 6

3.6 One side spreading i. e. half bout width

In the direction of forward travel, the right-hand extension handle (Fig. 2/3) should be pulled out fully, so that both extension handles (Fig. 2/3 and 2/4) can be operated independently if required. In the side of the hopper not required for spreading the stirrer head (Fig. 4) should be removed (Fig. 5) or covered with the hopper insert (optional equipment).
If the machine has been ordered with a stirrer head stop (option, compare para. 5.2) it is possible to stop the rotation of the stirrer head by pulling out a clip-pin situated below the hopper. This way, damage to the fertilizer's granules can be avoided when the shutter slide is shut on one side for broadcasting to one side.
If for spreading towards the boundary a tramline has been laid down in the first drill bout we recommend the use of a boundary spread limiter (see para. 5.5).

3.7 Late top dressing with swivel blades

Swivel-blades can be used for normal fertilizing (A) and for late top dressing (B). Swivelling the blade ends is done by hand without undoing the stop nuts.

3.7.1 Normal fertilizing

Swivel blades placed down in pos. "A" . Use the measurements for the angling of the spinner discs as mentioned in the normal ZA-F setting-chart.

3.7.2 Late top dressing

Swivel-blades placed up into pos. "B" (Fig. 6). The height of the spinner discs must be brought level to the height of the tips of the corn/ears (pos. 0). Should the lifting height of the tractor's hydraulic be insufficient (corn higher than 0.9 - 1.0 m), a corn-lowerer (extra option, Order No. 119 500) must be mounted behind the broadcaster.

3.8 Advice for spreading snail-pesticides (e. g. Draza, Mesurol etc.)

3.8.1 In its standard execution the AMAZONE ZA-F may be used for broadcasting pellets. The slug pesticides Draza, Mesurol) are supplied in pellets or similar shapes and are spread in relatively low rates (e. g. 3 kg/ha).

3.8.2 When filling the machine, please avoid inhaling the dust of the pesticide or having direct skin contact with it (wear protective gloves). After handling a pesticide carefully wash hands and other parts of the skin which have been exposed to it using soap.
In addition, when handling snail-pesticides (slug pellets), we would like to draw your attention to the advice of the agent's manufacturer and to the general health and safety advice for handling crop protective materials.

3.8.3 For spreading small pellets **you should make sure** that the hopper outlets are always covered with the spreading material and a constant P.T.O. speed of 540 R.P.M. is maintained. For emptying the spreader place a sheet of canvas beneath it and then open both shutter slides so that the spreading material can be collected without harm to the environment.

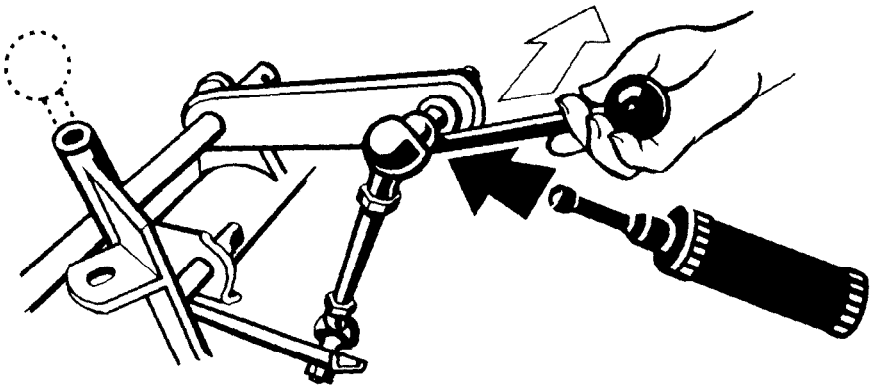


Fig. 7

3.8.4 The setting data may be obtained from the setting chart. The setting figures should be used as a guide. Before the first operation the correct spread rate setting should be checked (see para. 5.4). Due to the small spread rate we recommend carrying out the spread rate calibration test to at least triple the length of the forward distance normally used for fertiliizer (then the multiplier should also be changed accordingly).

3.8.5 Slug pesticides must never be mixed with fertilizers or other materials so as to be able to operate the broadcaster at another setting position (environment endangered by misapplication).

4 Maintenance

4.1 **Outlet shutter slide - grease daily after use.**

4.2 At **weekly** intervals check the distance between the hopper and stirrer finger (6 - 7mm, Fig. 18). If this distance is incorrect readjust the stirrer finger. Worn stirrer heads should be replaced.

4.3 Wash out the hopper and free all working surfaces and mechanisms from fertilizer **daily.**

4.4 Ensure that the **4 ball joints** of the control lever (Fig. 2/3 or 2/4) are loosened from time to time, **cleaned** and **greased** (see Fig. 7, use extension of side lever as shown on the sticker on the machine).

4.5 The 8 mm (5/16") safety shear bolts supplied with the machine are replacements for the P.T.O. connection if required. Always grease the input shaft before replacing the shear bolt.

4.6 If gear box damage is noticed, a replacement should be ordered immediately. **Under no circumstances** should the machine continue to be used in a defective condition.

4.7 To prevent damage to the gear box when storing, the P.T.O. shaft can be tied to the three point linkage top link bracket.

4.8 Spreading materials containing silicates, magnesia or excello may cause increased wear.

4.9 The oil level is correct if it can be seen in the gauge window at the rear of the gear box (level position). When refilling use SAE 90 oil (1.6 l).

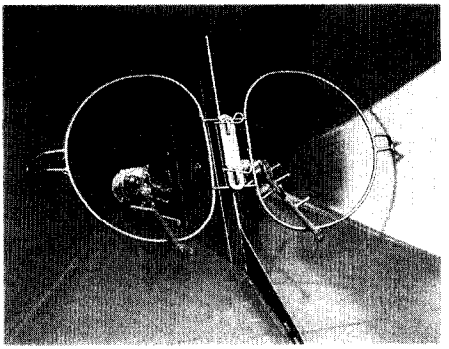


Fig. 8

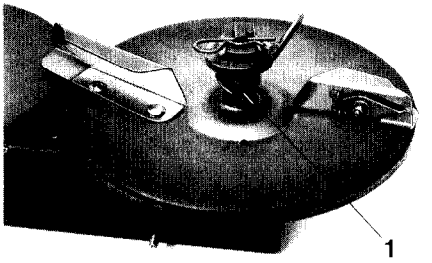


Fig. 9

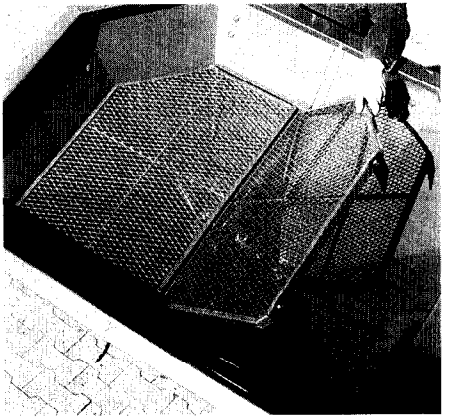


Fig. 10

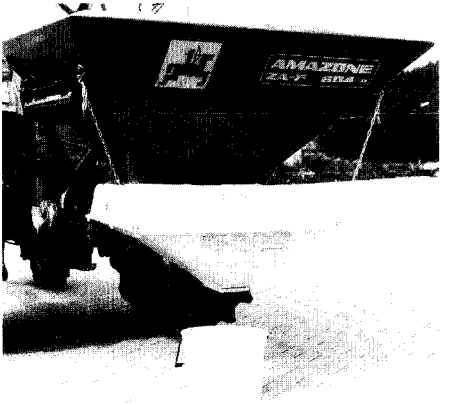


Fig. 11

5 Optional equipment (Selection of: many other optionals are available)

5.1 Agitators (Order No.: 111 500) (Fig. 8)

These can be installed if fertilizer is powdery (i.e. slag etc.) or if ordinary fertilizer has been dampened purposely. In this case, remove the top of the stirrer heads (Figs. 5 and 6) and fit the coupling of the agitator in its place. Secure with the R-clip provided.

⚠ **Attention: Keep hands out of the hopper while the machine is running.**

5.2 Stirrer head drive stop (Order No. 182 400) (Fig. 9)

When ordering a new machine it can be supplied with a built-in stirrer head drive stop. For retrofitting it is necessary to also exchange the gearbox,spreading discs, stirrerheads and stirrerfingers.
If spreading to one side is required (see para. 3.6) in addition to shutting the shutter slide on that particular side, the rotation of the stirrer head can be stopped by simply pulling out a clip pin (Fig. 9/1) below the hopper tip.
Both stirrer heads can be switched off when spreading fertilizers which are highly sensitive to pressure. Then, however, the spread rates will change so that it is vital to conduct another calibration test according to para. 5.4.

5.3 Protective sieve (Order No. 192 500) (not for ZA-F-403) (Fig. 10)

For use with bulk fertilizers or separating foreign materials from the sample.

5.4 Calibration box (Order No. 179 400) for checking the spread rate (Fig. 11)

For checking rates during calibration.

5.4.1 Definition of effective spread width

Various spreading widths for different materials are shown in the calibration charts. However, because fertilizers vary between grades and manufacturers a rate calibration is recommended. Set the machine for the rate required as in the calibration chart. Spread for a short time without the calibration box. The effective working width is approximately 60 - 70 % of the full spreading width.

5.4.2 Fitting the calibration box

Push the calibration box from the rear over the hitch and fit it to the frame (Fig. 11).

⚠ **Always stop tractor engine before putting on or taking off calibration box.**

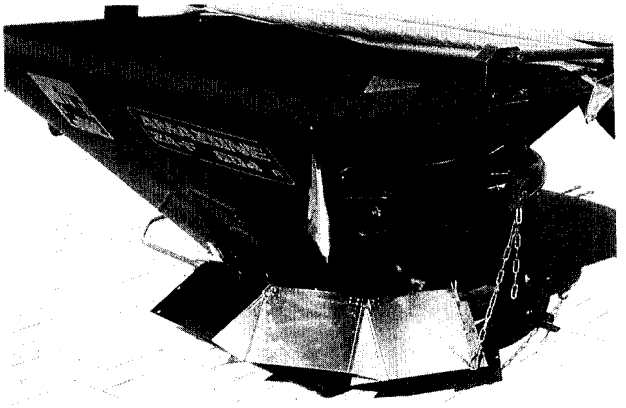


Fig. 12

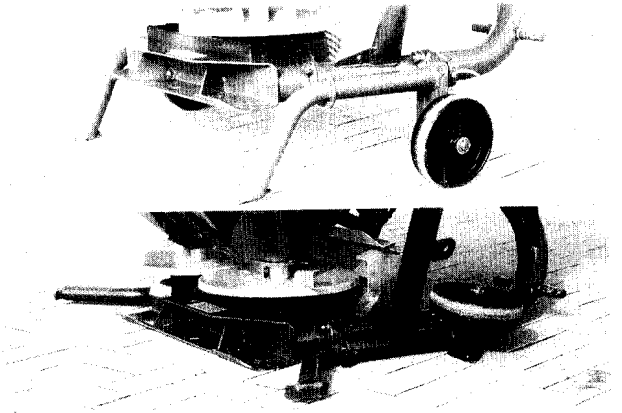


Fig. 13

Fig. 14

5.4.3 Determining the spread rate

First fit the calibration box. After each fixed bout width mark out the required distance. The required distance should then be driven over under normal field working conditions (i. e. forward speed, P.T.O. speed, etc.) while collecting fertilizer in the calibration box.
The weight of the collected material is then multiplied by the given number (20, 30 or 40). Then the exact quantity spread is obtained.

Determined Bout width	Distance Required	Area Covered	Multi-plier
6,00 m	41,60 m	1/40 ha	40
7,50 m	44,40 m	1/30 ha	30
8,00 m	41,60 m	1/30 ha	30
9,00 m	55,50 m	1/20 ha	20
10,00 m	50,00 m	1/20 ha	20
12,00 m	41,60 m	1/20 ha	20
15,00 m	33,30 m	1/20 ha	20

Example:

Effective bout width = 12 metres. Collected fertilizer from a driven distance of 41.6 metres at the normal forward speed = 20 kg. Quantity spread per hectare = 20 kg x 20 = 400 kg/ha. If the calibration box is too small for the higher rates required, the driving distance should be halved and the multiplying figure doubled.
If the calculation does not correspond to the required rate, alter the setting and do the calibration again.

5.5 Boundary spread limiter (Order No. 137 600) (For ZA-F 403 Order No. 157 600) (Fig. 12)

If a tramline has been laid down in the first drill bout the boundary spread limiter helps to prevent any fertilizer getting beyond the field's boundary (ref. para. 3.6).

5.6 Foldable rolling device (Order No. 133 201) (Fig. 13)

The foldable rolling device is fitted to the existing brackets on the main frame. It allows the easy pushing of the spreader in the farm yard (secure against rolling away). It also eases the attachment of the broadcaster to the tractor. Before starting to operate, lift the machine, stop the tractor engine, swivel the wheels up and secure.

5.7 4-row band spreading device (Order No. 11350) (Fig. 14)

For accurate placement of fertilizer in rows especially for maize. The row distance can be varied at random up to 90 cm (35.5"). The maximum band spreading width is 3,6 m (142"). The bandspreading device can be retrofitted to any ZA-F model.
The kit comes with a separate fitting instruction.

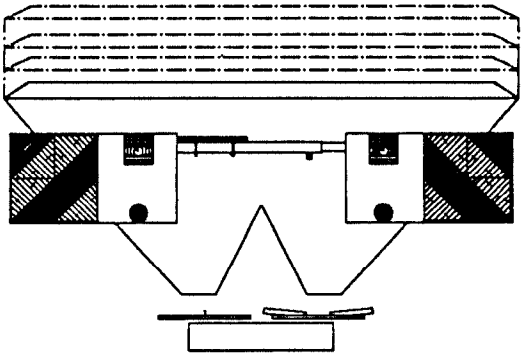


Fig. 15

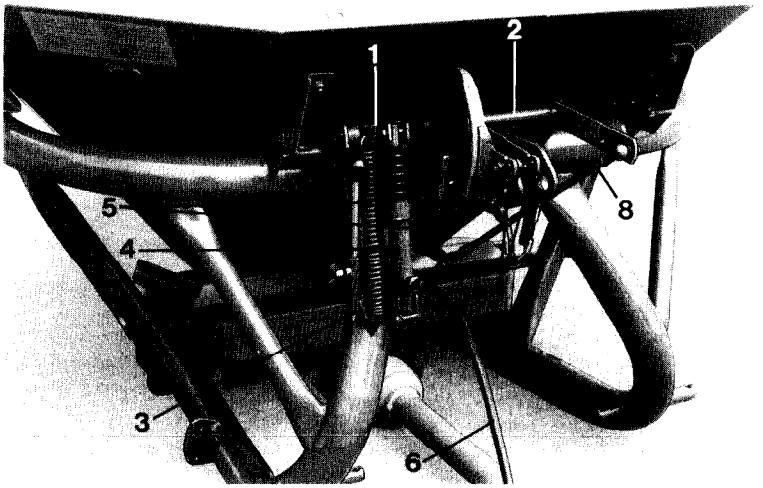


Fig. 16

5.8 Light carriers (order No.104 900) (Fig. 15)

Brackets for light carriers for rear lights are available on request. These are to be installed according to Fig. 15.

5.9 Hydraulic shutter controls: (Fitting instructions)

5.9.1 Hydraulic shutter control types I & II (I = Order No. 123 600; II = Order-No. 124 600)

5.9.1.1 Lever bracket (Fig. 16/1) should be mounted on the right arm lever (Fig. 16/2) and connected with a pin.

5.9.1.2 Slide the base (Fig. 16/3) onto the lever bracket (Fig. 16/1) and secure with two M 10 x 16 bolts to the frame.

5.9.1.3 With the aid of a small roll pin mount the hydraulic ram (Fig. 9/4) and connect with the M 8 bolt to the bracket (Fig. 16/1).

5.9.1.4 Hook the springs (Fig. 16/5) into the top of the bracket (Fig. 16/1).

5.9.1.5 Through the lower part of the ram mounting (Fig. 16/3) insert the bolts and tension the springs (Fig. 16/5) fully.

5.9.1.6 Loosen both guides (Fig. 17a/13) of the slides (Fig. 17/9), push them all the way upwards. Retighten bolts.

5.9.1.7 Connect the hydraulic hoses (Fig. 16/6).

5.9.1.8 Check the function. In case of stiff movement disconnect the springs (Fig. 16/5) and disconnect hydraulic hoses (Fig. 16/6). By actuating the control levers (Fig. 16/7) the shutter slides should then move easily. If movement still is stiff, disconnect the lifting rods at the ball joints (Fig. 16/8) and
a) Check the free movement of the shutter slides. If necessary slightly loosen the guides of the shutter slides (Fig. 17/13).
b) Check the free movement of the pivot shaft (Fig. 16/2). If necessary reset the fixing plate (Fig. 16/3) of the pivot shaft.

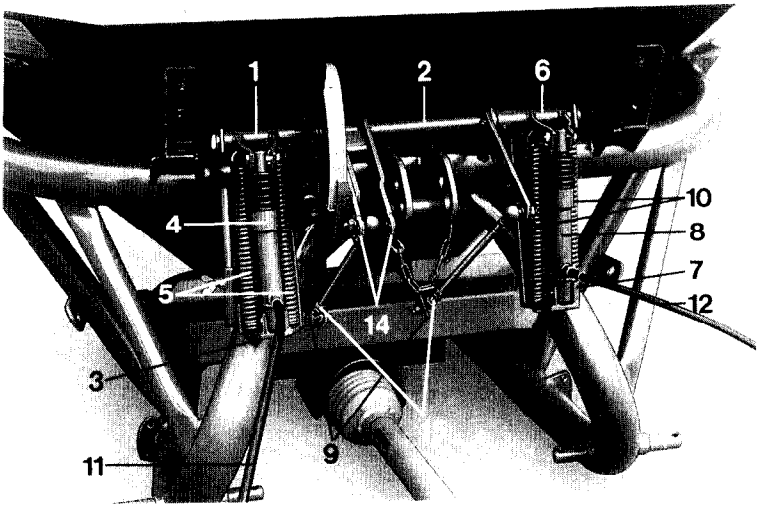


Fig. 17

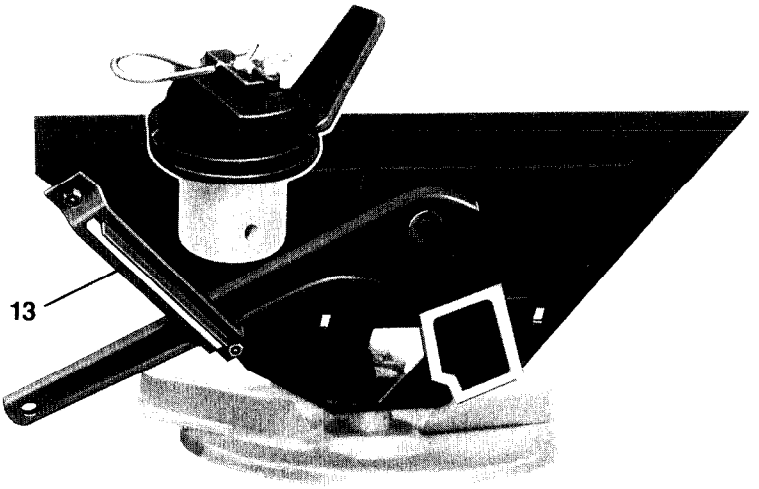


Fig. 17a

5.9.2 Hydraulic combi shutter control types I & II (I = Order No. 1125 600; II = Order No. 128 600)

5.9.2.1 Lever bracket (Fig. 17/1) should be mounted on the lever arm (Fig. 17/2) and connected with the pins provided.

5.9.2.2 Slide the base (Fig. 17/3) onto the lever bracket (Fig. 17/1) and secure with two M 10 x 16 bolts to the frame.

5.9.2.3 With the assistance of a small screw jack, mount the hydraulic ram (Fig. 17/4) and connect with M 8 bolt and a small roll pin to the bracket (Fig. 17/1).

5.9.2.4 Hook the spring (Fig. 17/5) into the top of the bracket (Fig. 17/1).

5.9.2.5 The lever bush (Fig. 17/6) should then be mounted on the left lever rod (Fig. 17/2) and connected with the pin provided.

5.9.2.6 Slide the base (Fig. 17/7) with the bolted mounting plate onto the lever bush (Fig. 17/6).

5.9.2.7 Connect the hydraulic ram (Fig. 17/8) with the lever bracket (Fig. 17/6) with the M 8 bolt and roll pin provided.

5.9.2.8 Extend the hydraulic ram (Fig. 17/8) out fully and close the shutter (Fig. 17/9) completely.

5.9.2.9 Line up the ram (Fig. 17/8) which is already on the right side and weld the mounting plate to the frame.

5.9.2.10 Hook the spring (Fig. 17/10) into the top of the bracket (Fig. 17/6).

5.9.2.11 Insert the bolts through the lower part of the ram mounting (Figs. 17/3 and 17/7) and tension the springs (Figs. 17/5 and 17/10) fully.

5.9.2.12 Loosen both guides (Fig. 17a/13) of the slides (Fig. 17/9), push them all the way upwards. Retighten bolts.

5.9.2.13 Connect the hydraulic hoses (Figs. 17/11 and 17/12).

5.9.2.14 Check the function. In case of stiff movement disconnect the springs (Fig. 17/5 and 17/10) and disconnect hydraulic hose (Fig. 17/11 and 17/12). By actuating the control levers (Fig. 17/14) the shutter slides should then move easily. If movement still is stiff, disconnect the lifting rods at the ball joints (Fig. 17/15) and
a) Check the free movement of the shutter slides. If necessary slightly loosen the guides of the shutter slides (Fig. 17/13).
b) Check the free movement of the pivot shaft (Fig. 17/2). If necessary reset the fixing plate (Fig. 17/3) of the pivot shaft.

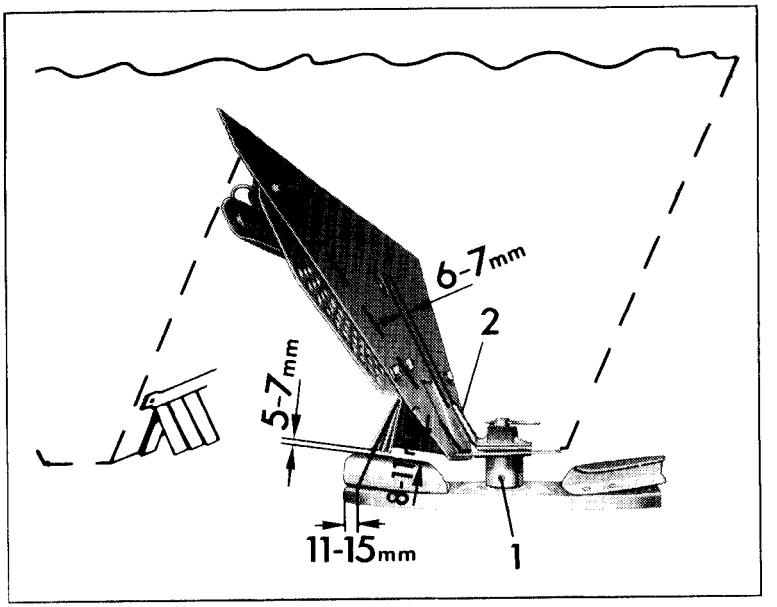


Fig. 18

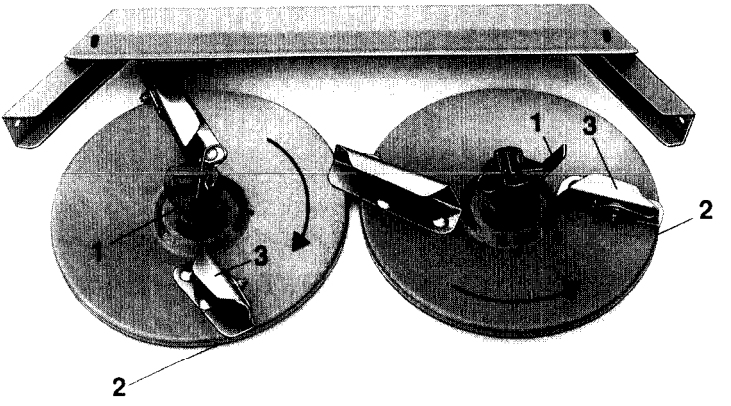


Fig. 19

6 Hints for repair

6.1 Replacing and fitting the stirrer heads

Extract the roll pins (Fig. 18/1) from below the hopper just above the spreading disc. Pull off the stirrer bases and mark these left and right for replacement purposes later. If no extractor is available, make a groove with a hammer and chisel on both sides of the stirrer base near the pin holes, thus widening the stirrer base bushes. Then insert a chisel or screw-driver between the stirrer base and disc, and lever up. Under no circumstances heat or use any kind of open flame to remove the stirrer base, as this could result in the warping of the spinner discs.
When replacing the stirrer heads, ensure that the hardened surface (Fig. 19/1) of the stirrer fingers point in the direction of travel (Fig. 19).
The stirrer fingers must also point towards the holes (Fig. 19/2) in the rims of the spinner discs.
The stirrer finger (Fig. 18/2) must have a clearance of 6 - 7 mm (1/4" - 9/32"). The stirrer must not grind on the hopper base, although this gap should not exceed 0.5 mm at any point. The stirrer heads should be resecured with double roll pins.

6.2 Replacing and fitting the gearbox

Follow the instructions as in 6.1 to remove the stirrer heads. Remove the bolts and the spreader guard. Take out the gearbox, pull off the spinner discs (preferably using the special AMAZONE tool) and mark the discs "left" and "right" for replacement purposes.
Mount replacement gearbox to the machine and tighten bolts. Remount the stirrer heads as described in para. 6.1.
Check the measurements of the blades and deflector plates, etc. (see Fig. 18).

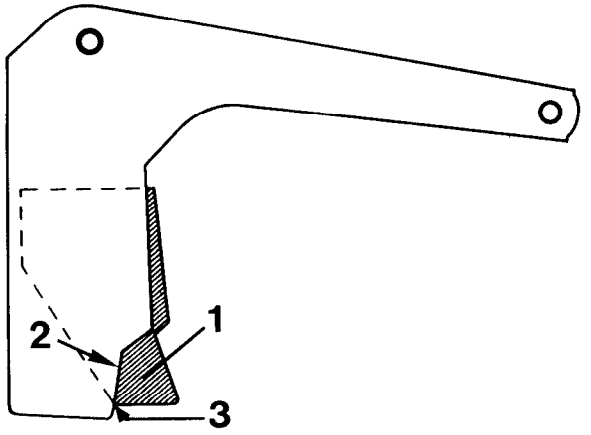


Fig. 20

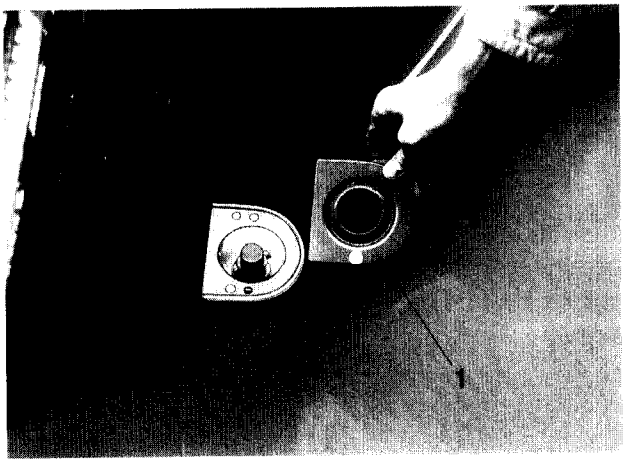


Fig. 21

6.3 Incorrectly adjusted shutter

Occasionally the shutter openings should be checked for correctness to ensure symmetrical distribution of the fertilizer (very important!)
Special setting gauges which can be obtained from our spareparts department are available.
The setting should then proceed as follows:
The stop (Fig. 2/1) is to be adjusted on the scale to No. 11. Then afterwards the shutters will be brought into position as shown in Fig. 2/4. Both openings must then be checked with the setting gauge. If the setting is wrong, the openings can be adjusted with the connecting rods (Fig. 3/5) by loosening the lock-nuts (Fig. 3/6). Turn the connecting rod (Fig. 3/5) until the outlet gap in Pos. 11 is exactly the same as the size of the setting gauge. Then retighten lock-nuts.
If no setting gauges are available the outlet (Fig. 20/1) can be set by sight, i. e. by setting the handlever to No. 11 on the scale and making sure that the corner of the opening is in line with the edge of the shutter (Figs. 20/2 and 20/3).

6.4 When fitting the spinner vanes

When fitting the spinner vanes please note that the short vane (Fig. 19/3) is mounted above the hole (Fig. 19/2) in the rim of the spinner disc.

6.5 Wear on the stirrer base sealing plates

After removal of the stirrer bases (see para 6.1) the stirrer base sealing rings (Fig. 21/1) made of stainless steel can be unbolted and replaced by new ones.