Bulk Precision Broadcaster

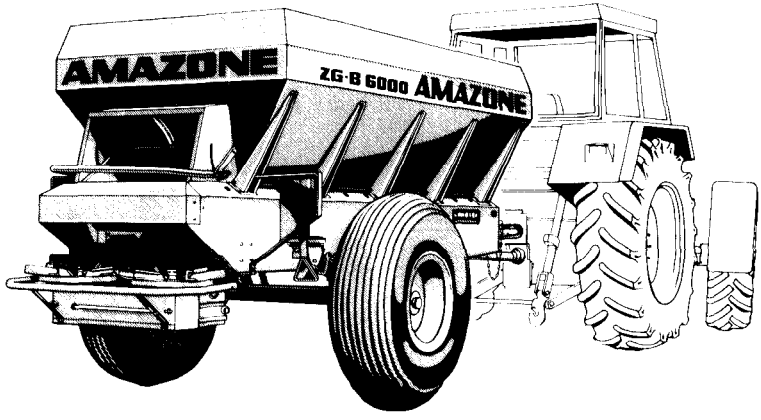
AMAZONE

ZG-B 6000

ZG-B 8000 ZG-B 8000 T

ZG-B 10 000 T

Operator's Manual



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The AMAZONE Bulk Fertilizer Broadcaster is one of the vast range of products of AMAZONE farm machinery. Its perfected technical design in connection with the correct operation permits an optimum performance and implement longevity. Thus, please read and observe these instructions very carefully, as you will appreciate that we cannot accept any claims under the guarantee if faults have been caused by incorrect operation.

Please enter the serial number of your Bulk Fertilizer Spreader here. When viewed in travelling direction, you will find the number at the front on the right of the frame.

Please always quote the serial number when reordering or making complaints.

Bulk Fertilizer Broadcaster ZG-B .....

Serial No. .....

ATTENTION!

All bolts on the machine have to be checked and tightened if necessary after the first 30 operation hours.

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In the figures mentioned in the text, e. g. fig. 3/2, the first number represents the figure No. and the second number the component in this figure.

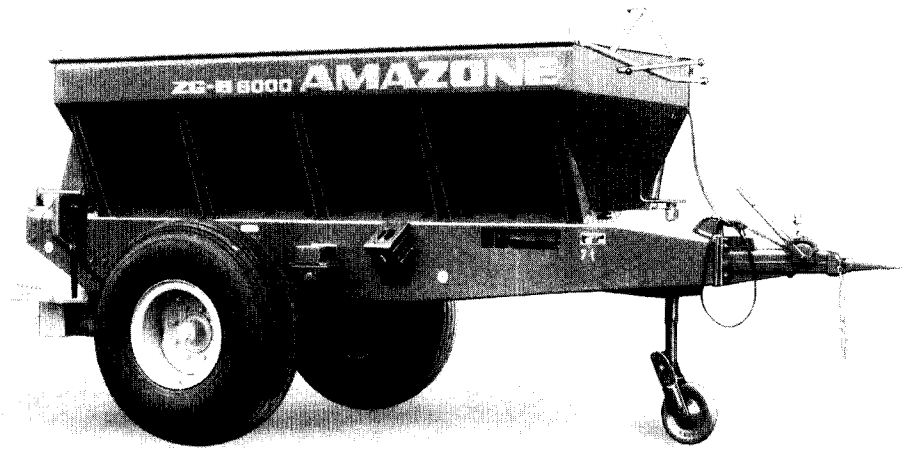

Fig. 1 AMAZONE ZG-B 6000

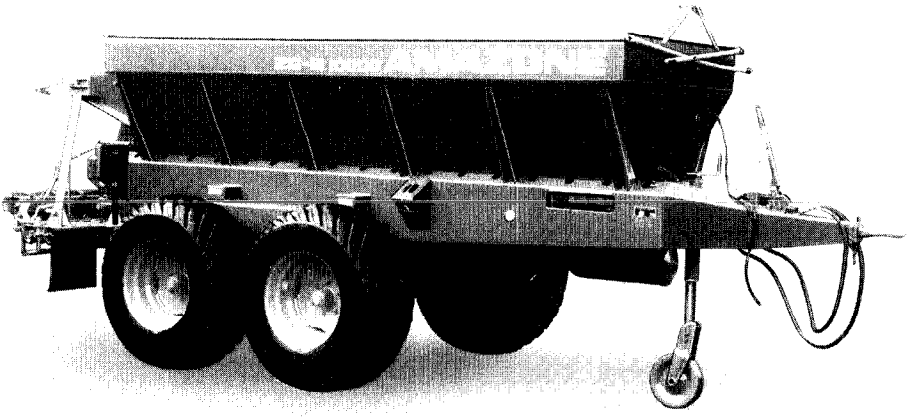

Fig. 2 AMAZONE ZG-B 10 000 T

1 Specification of the machine

1.1 Manufacturer

AMAZONEN-WERKE H. Dreyer GmbH & Co. KG, Postfach 51, D-4507 Hasbergen-Gaste

1.2 Types

AMAZONE ZG-B 6000, ZG-B 8000, ZG-B 8000 T, ZG-B 10 000 T

1.3 Technical data

Model	ZG-B 6000	ZG-B 8000/8000 T	ZG-B 10 000 T
Allowable total weight	7,000 kg	8,000 kg	10,000 kg
Unloaden weight of the serial execution (depending on axle and tyres)	approx. 1,900–2,000 kg	approx. 2,100–2,300 kg	approx. 2,500 kg
Payload	approx. 5,100 kg	approx. 5,900 kg	approx. 7,500 kg
Hopper volume	4,200 l	5,200 l	
Chassis	Sprung		
Axle	Solo	Solo or Tandem	
Tyres	various		
Brake	various, depending on legal regulations		
Total length	approx. 5,100 mm	approx. 5,850 mm	
Total width (depending on axle and tyres)	approx. 2,000–2,600 mm		
Total height (depending on tyres)	approx. 2,100–2,300 mm		
Drive	universal joint shaft drive 540 r.p.m. or ground wheel drive		
Spread rate adjustment	stepless slide setting mechanism		
Spreading system	Twin disc spreading unit or worm auger distributor		

1.4 Suitability of the machine

The AMAZONE Bulk Fertilizer Broadcasters ZG-B 6000, ZG-B 8000, ZG-B 8000 T and ZG-B 10 000 T are suitable for the spreading of granular, crystalline, powdery and moist fertilizers. When using powdery fertilizers, the use of the AMAZONE worm auger distributor is recommended.

Fig. 3

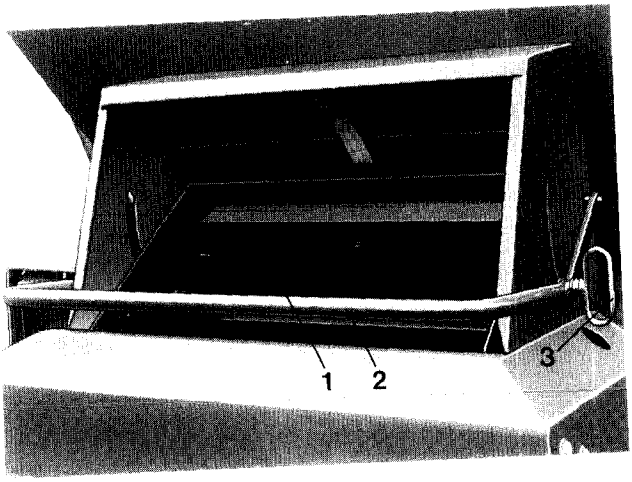

Fig. 4

2 Advice on receiving the machine

2.1 Receiving

On receipt of the bulk fertilizer spreader it must be checked for damage and missing parts. Claims must be made to the carriers immediately if compensation is to be obtained. Please ensure also that all parts listed in the consignment note have been received.

3 Putting into operation

3.1 Attachment to the tractor

The bulk fertilizer spreader should be attached to the tractor hitch in such a way that the broadcaster frame is parallel to the ground.

The pulling eye (fig. 3/1) on the cranked hitch can be adjusted for 100 mm in the height. For this, the pulling eye has to be loosened at its four fastening bolts and to be retightened in a 180° turned position.

3.2 Universal joint shaft

Match the p.t.o. shaft: Push on the p.t.o. shaft halves and check by holding together whether the profile tubes engage over a length of at least 100 mm. To avoid damage to the p.t.o. shaft due to excessively long profile tubes, the latter have to be shortened accordingly. They are too long if they foul the universal joints when cornering.

CAUTION!

On the model with overrun brakes remember that the p.t.o. shaft is shortened during the braking operation!

3.3 Description of the machine's function

The p.t.o.-driven conveyor belt conveys the spreading material continuously to the spreading unit. Metering of the fertilizer by stepless variable hopper opening. The spreading device takes over the fertilizer distribution.

3.4 Filling of the hopper

When filling the bulk fertilizer broadcaster the allowable total payload according to para. 1.3 has to be complied with.

3.5 Setting of the spread rate

The spread rate setting is done by adjusting the slide shutter (fig. 4/1) on the rear hopper opening by a setting lever (fig. 4/2) according to the supplied setting chart. The especially robust and simple construction allows a spread rate setting with only little manual power even with full hopper. After setting, the setting lever (fig. 4/2) has to be secured by tightening the clamping bolts (fig. 4/3) on both sides of the sluice opening.

The quantites given in the application rate chart are guide values only. It is therefore recommended to check the calibration when starting work and correct it if necessary.

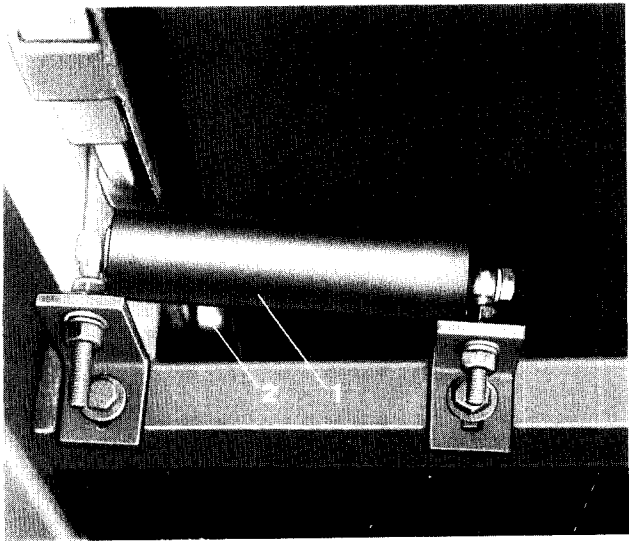

Fig. 5

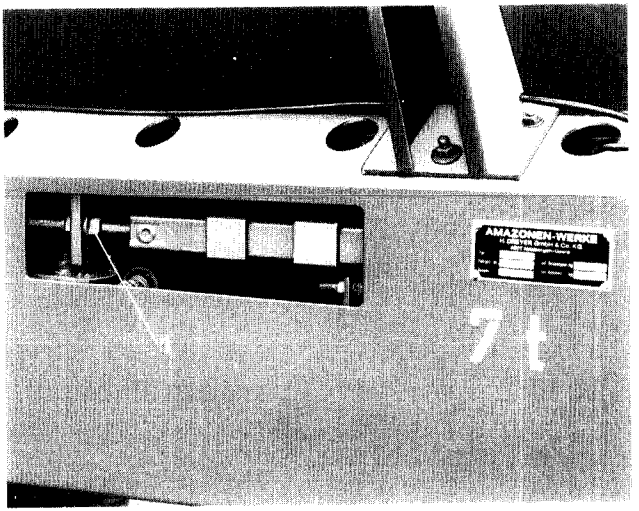

Fig. 6

3.6 Practical operation

The bulk fertilizer spreader is turned on and off by the p.t.o. shaft. With tractors with p.t.o. shafts which turn on hydraulically or pneumatically on load, work may only be started at low p.t.o.-revolutions. At the field's end, when turning, the p.t.o. shaft has to be turned off. The bulk fertilizer spreader with special optional equipment "ground wheel drive" can also be turned on or off respectively with the hydraulic ground wheel drive.

The AMAZONE bulk fertilizer spreader ZG-B is equipped with a approx. 800 mm wide conveyor belt. In order to achieve a steady run of the wide conveyor belt, drive rollers (fig. 5/1) and counter rollers (fig. 5/2) are mounted at the loose side of the belt. By the special arrangement of these rollers, a centring of the conveyor belt is achieved even at extreme operation conditions, i. e. inclined position on slopes or uneven loading.

During the first operation, ensure that the conveyor-belt runs evenly at the front at the deflection roller and at the rear at the driving pulley. The position of the belt can be seen at the rear on the next to last frame hole (fig. 3/2). If necessary, the deflection roller has to be adjusted by the setting nuts (fig. 6/1) at the left and right hand side.

Adjustment example:

1. Belt runs to the right: tension deflection roller at the right or loosen at the left.
2. Belt runs to the left: tension deflection roller at the left or loosen at the right.

An adjustment for correction should only be carried out when the belt continually runs to one side. We recommend only slight adjustments ($^1/_6$ to $^3/_6$ spanner turn) at a time, otherwise the belt may run to the other side. If necessary, repeat the adjustment. It has to be noted that due to the low belt speed, belt run adjustments take place only very slowly.

3.7 Support wheel

The support wheel serves for storing of the bulk fertilizer spreader. The relatively large wheel also allows a movement of the machine when it is empty.

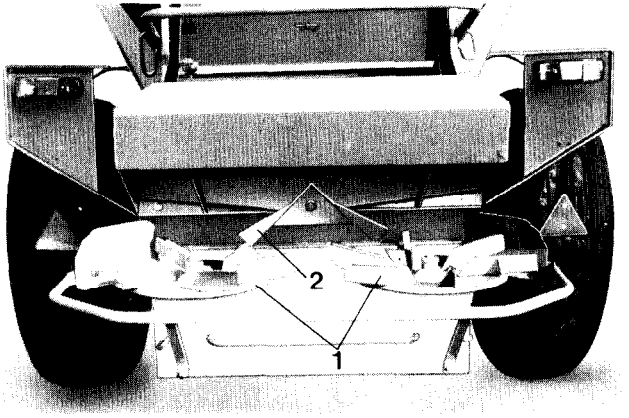

Fig. 7

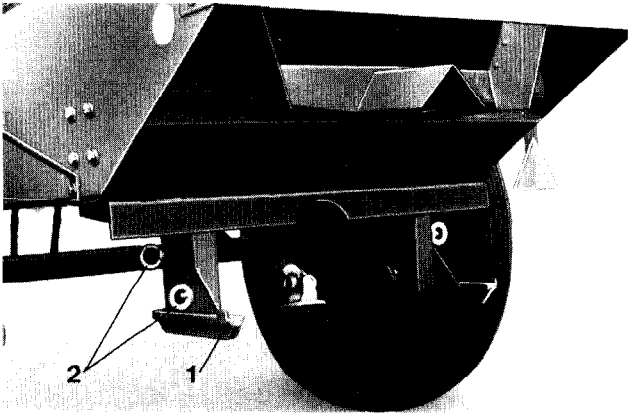

Fig. 8

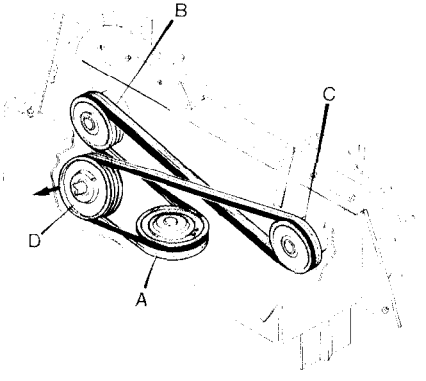

Fig. 9

4 Special optional equipments

4.1 Twin disc spreading unit

With the twin disc spreading unit (fig. 7/1) preferably granular, crystalline and moist fertilizers are spread. For fitting of the twin disc spreading unit it is pushed into the quick coupling (fig. 8/1) up to the stop and secured with thumb bolts and ring nuts (fig. 8/2). The p.t.o. shaft is pushed onto the flange of the free wheel of the gearbox and secured with 6 bolts.

For spreading of moist fertilizers, the supplied roof shaped shute (fig. 7/2) has to be removed (also see information in the spreading chart). The twin disc spreading unit is driven in a closed gear box by three V-belts (fig. 9). It is important that the V-belts have the prescribed belt tension, as otherwise premature belt wear occurs.

Control of the V-belt tensioning

At a correct tension, the V-belts should give approx. 12 mm at a pressure of approx. 5 kg in the middle between pulley C and D.

Advice for mounting the V-belts in the Twin Disc Spreading unit

The three V-belts have to be fitted to pulleys, A, B and C and then in the opposite sequence to pulley D. Small wooden wedges for holding the pulleys B and C are recommended.

Sequence of V-belt mounting

1. Take the first V-belt from the rear groove of pulley A from behind over the upper groove of pulley B, from behind over the upper groove of pulley C. V-Belt. Course of V-belt see fig. 9.
2. The second V-belt from the middle groove of pulley A from behind over the middle groove of pulley B, from behind over the middle groove of pulley C. The V-belt now is parallel to the first V-belt.
3. The third V-belt from the front groove of pulley A from behind over the lower groove of pulley B, from behind over the lower groove of pulley C. The V-belt is now parallel to the V-belts already mounted.
4. Take the V-belt mounted last in direction of arrow over pulley D till last groove.
5. The second and the first V-belt conduct in the same manner over pulley D until second and first groove.
6. Push pulley D (tensioning pulley) to tension the V-belts so far that the above mentioned V-belt tension is achieved, tighten afterwards. Take care, that the belts run correctly in the grooves of the pulleys.

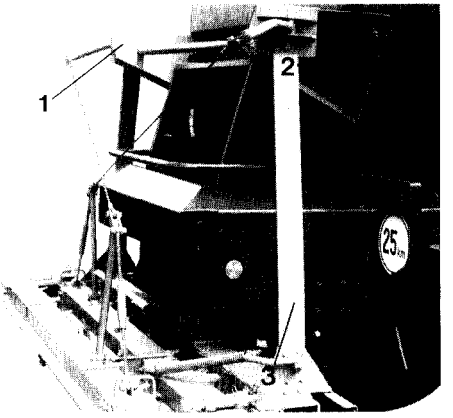

Fig. 10

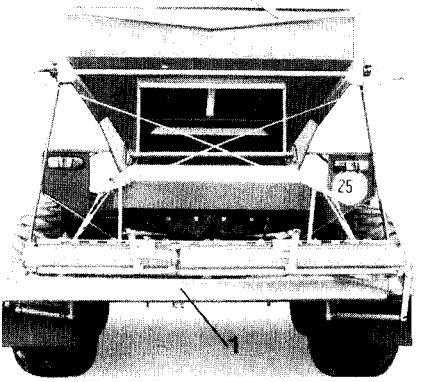

Fig. 11

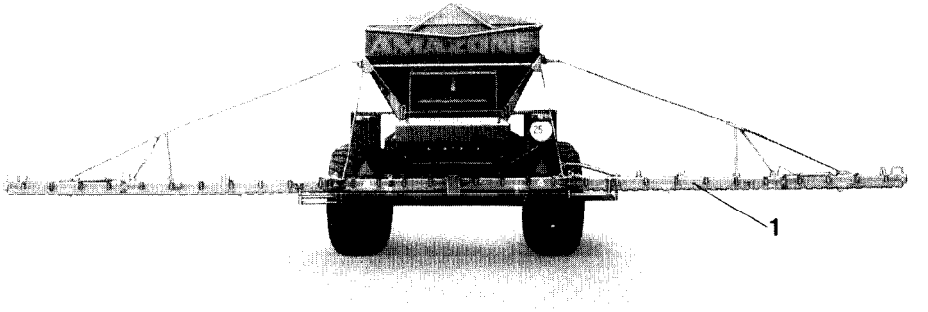

Fig. 12

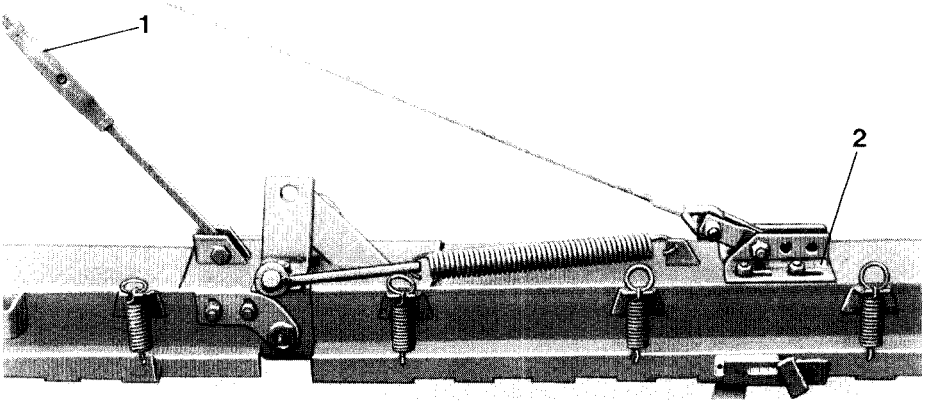

Fig. 13

4.2 Worm auger Distributor 6 m and 8 m

The worm auger distributor is preferably used for powdery fertilizers.

To attach to the bulk fertilizer spreader ZG-B proceed as follows:

The bracket (fig. 10/1) for the worm auger has to be fixed with three bolts (fig. 10/2) on the hopper of the ZG-B. Then push the worm auger into the quick coupling (fig. 8) and secure with T-screws and ring nuts. We recommend our fitting trolley which makes fitting easier. The carrying arms (fig. 10/3) are fitted at the left and right side to the bracket of the worm auger so that the worm auger is suspended parallel to the surface on which the bulk fertilizer broadcaster stands.

In transport position (fig. 11) and in working position (fig. 12) the booms (fig. 11/1 and 12/1) of the worm auger are suspended so that the cables are tight. For an exact parallel adjustment in working position, the turnbuckles (fig. 13/1) at the base of the carrying cables on the booms of the 6 m worm auger may have to be adjusted. The parallel adjustment of the booms on the 8 m worm auger is possible on the cable adjuster (fig. 13/2) after extending the booms.

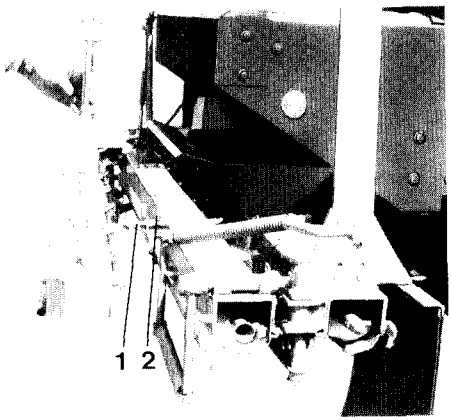

Fig. 14

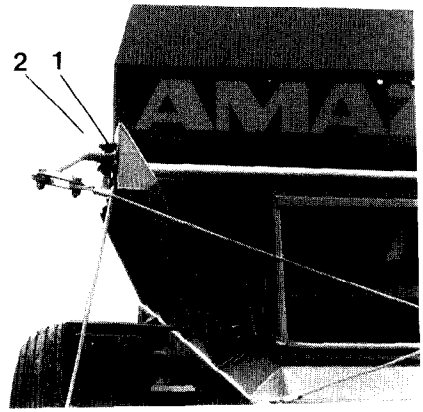

Fig. 15

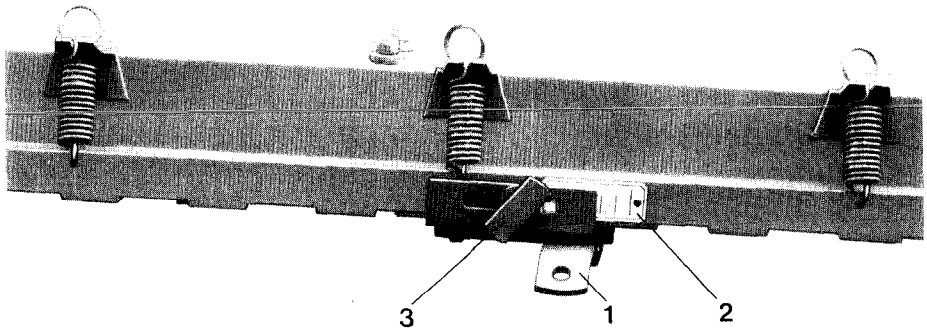

Fig. 16

In working position the booms of the worm auger are fixed by spring catches (fig. 14/1). We recommend additional securing by moving the clips (fig. 14/2) into the lower holes. For easy fitting of the booms of the worm auger into the catches, they can be adjusted in height after loosening of the lock nut (fig. 15/2) and adjusting the setting bolt (fig. 15/1).

Before starting operation, the worm auger has to be checked regarding correct adjustment in transporting and working position and has to be readjusted if necessary.

CAUTION!

When the worm auger distributor is removed, the broadcaster must not be driven with the p.t.o. since otherwise the freely suspended p.t.o. shaft half will be destroyed. Remove the p.t.o. shaft half if necessary.

Contrary to the disc spreader units, the auger distributor has to be adjusted before the work is begun. It should be adjusted in such a way that the fertilizer quantity set on the setting device runs out evenly over the entire working width of the auger distributor and deposited on the soil. This is achieved quickly by running the scraper floor feed for a moment after having set the fertilizer quantity on the ZG vehicle so that there is fertilizer in the auger threads. When on the field, move the 4 setting levers (fig. 16/1) outwards (they face backwards with the auger in operating position) and thus open the outlet holes. The setting labels (fig. 16/2) should show identical values for all 4 setting levers. With the machine running, move off for a short distance and check whether the overflow at the auger ends is as great as the amount running from the holes. When this is the case, the setting is correct; otherwise it needs to be readjusted. With excessive overflow, open the holes further, i. e. increase the setting label reading (fig. 16/2); when there is no overflow, close the holes further, i. e. reduce the setting label reading (fig. 16/2). When the adjustment is correct, secure with the quick release lever (fig. 16/3). On completion of the work, the booms (fig. 12) can easily be folded back by hand to achieve the transport width (fig. 11) the chosen setting does not need to be changed.

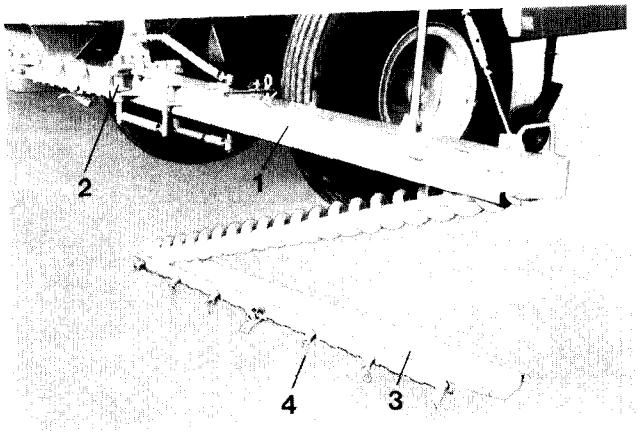

Fig. 17

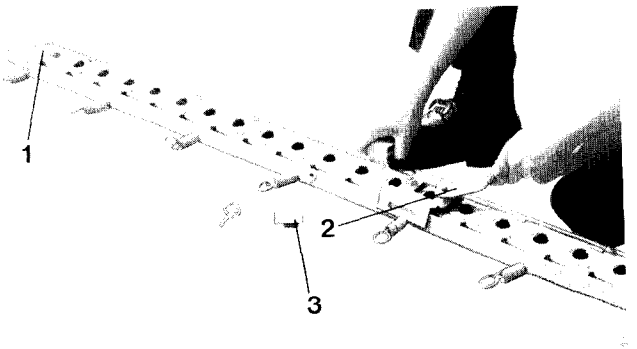

Fig. 18

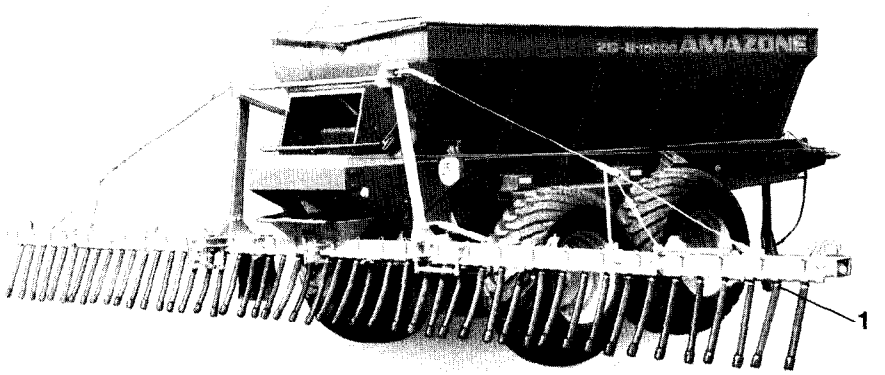

Fig. 19

The auger booms (fig. 17/1) are attached to the frame by robust constant-velocity joints (fig. 17/2); thus they are able to move backwards and upwards and thus avoid obstruction. Strong return springs return the booms into operating position after any collision with an obstacle.

The robust shape of the auger boom, which is suspended into the tray (fig. 17/3) not only prevents damage but also provides protection from rain water. However, the booms must be unfolded from the transport position into the working position by hand since bearing damage might otherwise result.

All components of the auger distributor are easily accessible and can therefore be cleaned easily. The spreader trays (fig. 17/3) can be folded down and removed quickly and easily by unhooking the tension springs by the ring (fig. 17/4).

We recommend that the trays and also the auger be cleaned after each spreading period using a strong jet of water.

When using highly corrosive types of fertilizer, it is advisable to also remove the slides (fig. 18/1) for easier cleaning of the slide guides. After cleaning, slide adjustment will be easier. The removing of the slide is done with the removable setting lever (fig. 18/2). The thumb bolt (fig. 18/3) in unscrewed. Then the setting lever (fig. 18/2) is placed with its hole on the slide bolt and the slide with setting lever is pulled out by hand. The replacement of the slide is done in the opposite sequence.

The auger distributor is maintenance free; it has an oil-bath gearbox and does not require any lubrication. We recommend to check the oil level once a year on the oil level gauge. When the spreader is in parallel position to the ground, the oil level reaches to the lower rim of the oil level gauge at an oil quantity of 0,8 litres gearbox oil SAE 90.

4.3 Slide with twice the hole pitch for the auger distributor

This optional equipment is necessary for small quantities to be spread and for granular fertilizers.

The slide can be exchanged very quickly by using the removable setting lever. The thumb bolt (fig. 18/3) is unscrewed. Then the setting lever (fig. 18/2) is placed with its hole on the slide bolt. The replacement of the new slide is done in the opposite sequence.

4.4 Dust guard for worm auger distributor

The normal slides can be exchanged for slides with a dust guard (fig. 19/1). The wind sensitivity of powdery fertilizers is considerably reduced by the jet stream performed by the hose directly fitted to the slide. Even at relatively windy days, powdery fertilizer can be spread with little dust problems.

The exchange of the slides is executed as described under para. 4.3. For the 6 m worm auger, two single sleeves have to be additionally fitted to the left and right hand side of the centre on the first hole of the short and long spreading trays.

Fig. 20

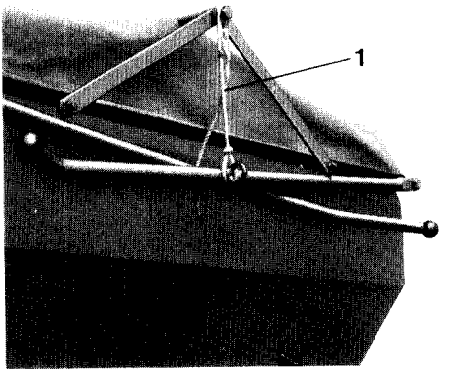

Fig. 21

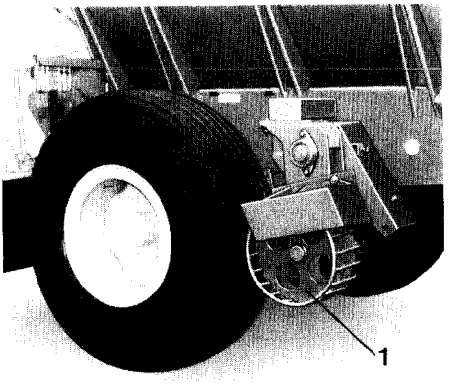

Fig. 22

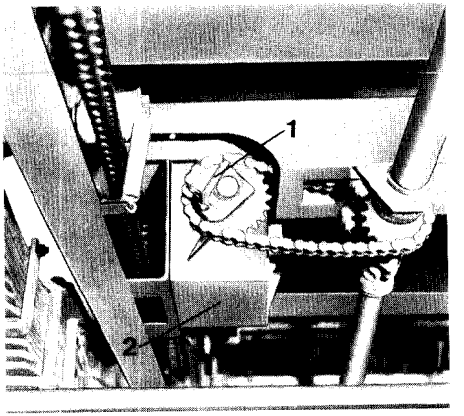

Fig. 23

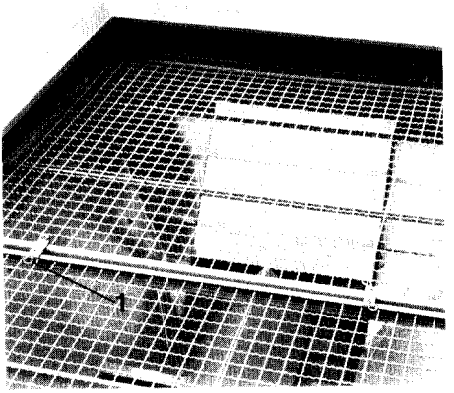

Fig. 24

4.5 Swivelable hopper cover

The swivelable hopper cover allows instant opening or closing of the hopper (fig. 20). It can be secured against gusty weather by a tensioning cable (fig. 21/1).

4.6 Hopper cover with filling sleeve

With the hopper cover with filling sleeve, a dust-free filling from the silo is achieved. Outer sleeve-diameter: 425 mm.

4.7 Ground wheel drive

In hilly terrain it is sometimes difficult to achieve an exact spreading rate since, with constant p.t.o. speed, it is not always possible to travel at the same speed. This problem is solved by switching the fertilizer feed over from p.t.o. drive to ground wheel drive.

This is achieved by withdrawing the coupling pin (fig. 23/1) from the sprocket on the angle gearbox. The driving wheel is pressed hydraulically on to the tyre of the ground wheel which means that the fertilizer feed is travel-controlled while the spreading unit is still driven by the p.t.o. shaft.

The spread rate setting with ground wheel drive can be checked from the spreading chart.

The tractor for the bulk fertilizer broadcaster has to be equippped with a single acting control valve.

4.8 Screen

With the screen (fig. 24) over the entire hopper, clods of fertilizer and foreign matters can be separated when filling. When not in use, the individual screens may be removed quickly from the hopper after withdrawing the clevis pins (fig. 24/1).

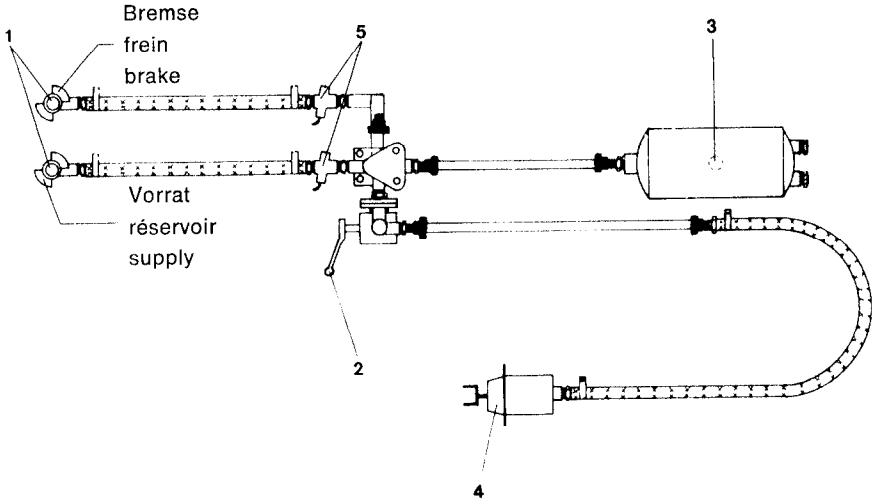

Fig. 25

5 Care and Maintenance

5.1 Compressed air brake:

The following checks should be made each time before setting off:

a) Ensure that the shut-off valve on the tractor is open.

b) Before coupling up, check the coupling heads (fig. 25/1) for cleanliness and ensure that they engage properly. Also check position of hoses.
After uncoupling close the heads and stow away.

c) Check handle position on the brake force controller (fig. 25/2).

d) *Drain water from the air reservoir (fig. 25/3) if necessary! Do not attempt to repair the* air reservoir!

e) Carry out brake test!

f) Check brake cylinder piston stroke! Only two thirds of the stroke of the brake cylinder (fig. 25/4) may be utilised; if in excess of this, readjust brake. Replace damaged dust covers.

The following checks are required at regular intervals (approximately once per week):

a) Check and clean the element in the pipe air filters (fig. 25/5) at regular intervals!

b) Check braking system for leaks! When the engine is switched off, the operating pressure may drop by 0.1 kg/cm^2 (1.42 p.s.i.) in 10 minutes or by 0.6 kg/cm^2 (8.52 p.s.i.) after one hour.

c) Check brake hoses for satisfactory condition. Replace damaged brake hoses!

d) Any damaged components must be replaced. However, no welding or soldering work may be carried out on pipes or fittings.

e) Lubrication
The lubricant to be used is special grease for compressed air equipment.

Brake tests: (Please check your national Road Licensing Regulation)

In accordance with appendix VII section 29 of the German Road Licensing Regulations the following tests must be carried out at regular intervals:

1. Intermediate brake tests
2. Special brake tests
3. Main tests.

If the visual, performance or effectiveness tests indicates defects, the individual components have to be subjected to an "internal examination".

5.2 Tyre Pressures

For ZG-B 6000 – 25 km/h

Permissible total weight	Tyre size	PR	Tyre pressure*
5,700 kg	13.0/65-18	12	4.75 bar
5,700 kg	14.5 - 20 MPT	10	2.5 bar
5,700 kg	46 x 16	24–28	3.5 bar
7,000 kg	17.5 - 20	18	3.5 bar
7,000 kg	20 - 20	20	3.5 bar
8,000 kg	500 - 22.5	8	2.2 bar
8,000 kg	20.0/70 - 20	16	2.5 bar

For ZG-B 6000 – 80 km/h

Permissible total weight	Tyre size	PR	Tyre pressure*
4,900 kg	14.5 - 20 MPT	12	3.0 bar
6,350 kg	18 - 19.5	16	4.0 bar

* Conversion factors when checking with the old-style pressure gauge:
1 bar = 1.02 kg/cm^2; 1 kg/cm^2 = 0.98 bar.

For ZG-B 8000 and ZG-B 8000 T – 25 km/h

Permissible total weight	Tyre size	PR	Tyre pressure*
8,000 kg	17.5 - 20	18	3.5 bar
8,000 kg	20 - 20	20	3.5 bar
8,000 kg	20.00 - 20	16	3.5 bar
8,000 kg	600 - 26.5	8	1.9 bar
8,000 kg	13.0/65-18	12	4.75 bar
8,000 kg	46 x 16	24–28	3.5 bar
8,000 kg	500 - 22.5	8	2.2 bar

For ZG-B 8000 and ZG-B 8000 T – 80 km/h

Permissible total weight	Tyre size	PR	Tyre pressure*
8,000 kg	18 - 19.5	16	5.0 bar
8,000 kg	15.5/55 R 18 MPT	14	3.75 bar

For ZG-B 10 000 T – 25 km/h

Permissible total weight	Tyre size	PR	Tyre pressure*
10 000 kg	46 x 16	24–28	3.5 bar
10 000 kg	500 - 22.5	8	2.2 bar

* Conversion factors when checking with the old-style pressure gauge:
1 bar = 1.02 kg/cm^2; 1 kg/cm^2 = 0.98 bar.

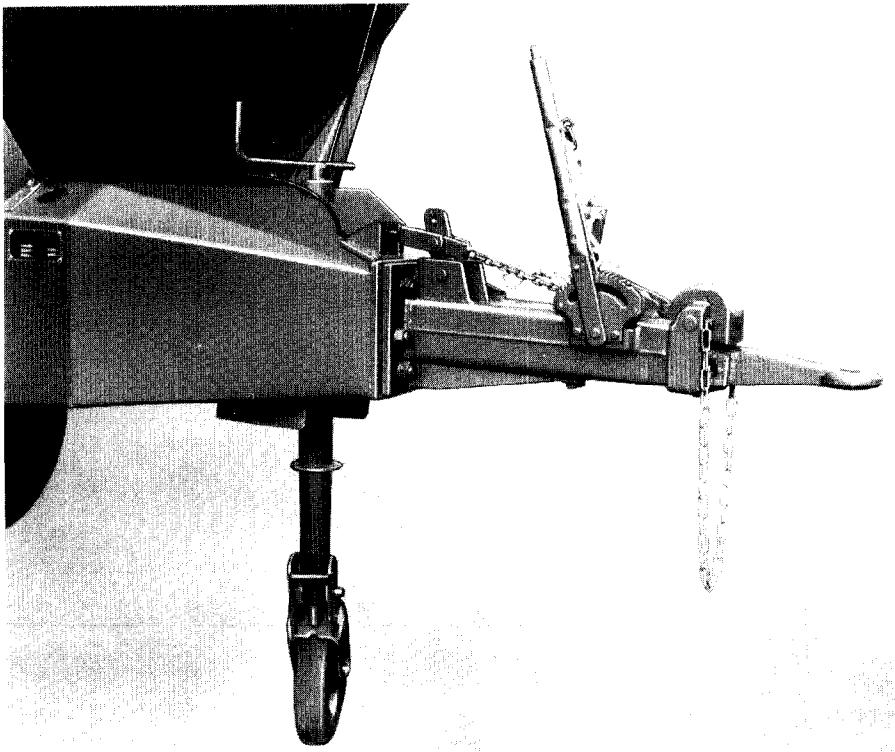

Fig. 26

5.3 General maintenance and service

In general, the bulk fertilizer broadcaster AMAZONE ZG-B is **maintenance-free** and does not need a daily greasing.

The slow running drive- and reflection rollers and all support rollers are equipped with maintenance-free roller bearings which are provided with a grease packing for their entire life. This also applies for the quick running drive shafts on the twin disc spreading unit, the p.t.o. shafts and for the main drive shaft. They, however, are provided with additional lubricating nipples so that the bearings can be lubricated before the spreading period when the machine is used heavily. Before lubrication the lubrication nipples and the grease gun have to be cleaned carefully.

Depending on the broadcaster design, the brake lever mountings and also the cables on the axle should be lubricated before and after each spreading period. The same also applies to the transmission elements of the overrun brake and the brake cable.

All bolts have to be checked after the first 30 working hours and to be tightened if necessary.

For the roller chain we recommend that, when the unit is not used for some considerable time, the chain be removed, washed in kerosene and then immersed in warmed grease or oil. Do not oil the chain during operation!

The **angle gearbox** is provided with an oilbath and does not require any lubrication. We recommend that the oil level should be checked once a year at the oil level screw. The capacity is **2.5 litres of gearbox oil SAE 90;** when the broadcaster stands on level ground, the oil reaches up to the lower edge of the oil level gauge.

At equal intervals the oil level of the **worm auger distributor gearbox** has to be checked. The gearbox has to be filled with **0,8 litres of gearbox oil SAE 90** up to the lower egde of the oil level gauge.

When the spreading period has been completed, any fertilizer residue should be cleaned off the bulk fertilizer broadcaster using water; which will prolong the life of the machine.