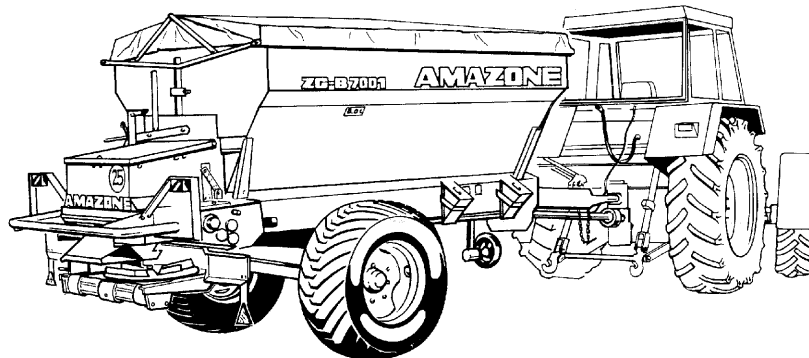




Instruction Manual

AMAZONE
Bulk Precision Broadcaster
ZG-B 6001, ZG-B 7001, ZG-B 10001
ZG-B 8001 R, ZG-B 12001 R, ZG-B 16001 TR



MG 251
DB 510-2 GB 09.01
Printed in Germany



Before starting to
operate, please carefully
read and adhere to this
instruction manual and
safety!



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D-49202 Hasbergen-Gaste

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The **AMAZONE bulk precision broadcaster ZG-B** is a universal broadcaster from the vast range of products manufactured by AMAZONE Agricultural Machinery.

Ensure that you know how to use and operate the bulk precision broadcaster ZG-B correctly. Never allow the ZG-B to be operated by untrained personnel.

Always ensure that the ZG-B is in good working order. Unpermitted modifications to the bulk precision broadcaster may endanger personnel, damage the machine, and reduce its operational life span. Damage claims resulting from incorrect operation or unpermitted modification will be rejected.

Carefully read the information regarding safety in these operating instructions and pay attention to the warning labels on the bulk precision broadcaster ZG-B.

Write the model number and the chassis number of your ZG-B in the spaces provided in the box below.

Bulk precision broadcaster ZG-B
Chassis No.

The numbers can be found on the specification label (see photo opposite) on the front right-hand side of the frame assembly. Please quote these numbers whenever placing subsequent orders or when submitting complaints.

Warranty claims may only be submitted if original spare parts and wearing parts are used.

Note Regarding Receipt of Machinery

On receipt of the bulk precision broadcaster ZG-B, check to make sure that no damage has occurred during transit and that no parts are missing. Compensation for damages is only possible if complaints are immediately submitted to the transport company.

Hints for this instruction manual

Keep this instruction manual so that it is always to hand. Also in the event of sale, you can pass on the instruction manual to the next owner.

At the time of printing all data and information is correct. However, AMAZONE always endeavours to introduce improvements. We therefore reserve the right to make changes to and / or alter the specification of our products without liability to existing users, past and present machines.

Symbols in this instruction manual

In this instruction manual many warnings and precautionary hints are given by the use of symbols. The identification and explanations for these symbols are given in the following:



General warning pictographs (DIN 4844-W9)

The warning pictographs indicate dangerous points on the machine. Observing these pictographs means safety for all persons using this machine.



Attention symbol

This symbol refers to safety advice. Not adhering to this safety advice implies danger to the implement and its functions.



Hint symbol

Hints regarding the machine's specification, which have to be followed in order to obtain faultless function of the machine are identified with the hint symbol.

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Fig. 1.1



Fig. 1.2

1 Manufacturer

AMAZONEN-Werke H. Dreyer GmbH & Co.KG, Postfach 51, 49202 Hasbergen-Gaste.

1.1 Technical Data

Bulk material spreader:	ZG-B 6001 (see Fig. 1.1)	ZG-B 7001 (see Fig. 1.2)	ZG-B 10001
Hopper capacity:	4200 l	5200 l	7200 l
Permissible total weight*:	8000 up to 10000 kg	8000 up to 10000 kg	8000 up to 10000 kg
Net weight * without spreader unit and without special execution:	1800 - 1900 kg	1900 - 2000 kg	ca. 2100 kg
Payload* on public roads:	6000 - 7800 kg	5900 - 7700 kg	5800 - 7600 kg
Total length:	5800 mm	5800 mm	7000 mm
width / height (mm) with tyres:			
550/60-22,5 12PR ET-0	2400 / 2265	2400 / 2440	2400 / 2580
600/55-26,5 8PR ET-15	2480 / 2335	2480 / 2510	2480 / 2650
700/50-26,5 8PR ET-15	2580 / 2335	2580 / 2510	2580 / 2650
20.0/70-508 12PR ET-40	2440 / 2265	2440 / 2440	2440 / 2580
20.0/70-508 12PR ET+40	2300 / 2265	2300 / 2440	2300 / 2580
permissible travelling speed, depending on execution*:	25 km/h, 40 km/h, 80 km/h		
Brake	Run-on brake with automatic back-up lock or air brake		

t510-1gb01

* please adhere to the advice of your national traffic law

1 - 4



Fig. 1.4




Fig. 1.5

Bulk fertiliser spreader:	ZG-B 8001 R (see Fig. 1.4)	ZG-B 12001 R	ZG-B 16001 TR (see Fig. 1.5)
Hopper capacity:	5200 l	9000 l	9000 l
Permissible total weight*:	8000 bis 10000 kg	12500 kg	16000 kg
Net weight* without spreader unit and without special execution:	approx. 2100 kg	approx. 3500 kg	approx. 4200 kg
Payload* on public roads:	5800 - 7600 kg	9000 kg	11600 kg
Total length:	6400 mm	7900 mm	7900 mm
Width / height (mm) with tyres:			
550/60-22,5 12PR ET-0	2400 / 2440	-----	2500 / 2580
600/55-26,5 8PR ET-15	2480 / 2510	2480 / 2630	2580 / 2650
700/50-26,5 8PR ET-15	2580 / 2510	-----	2680 / 2650
20.0/70-508 12PR ET-40	2440 / 2440	-----	-----
20.0/70-508 12PR ET+40	2300 / 2440	-----	-----
allowable travelling speed depending on equipment*:	25 km/h, 40 km/h, 80 km/h	25 km/h	25 km/h, 40 km/h
Brake	Run-on brake with automatic back-up lock or air brake		
ZG-B 8001 R:			
Brake			
ZG-B 12001 R and	Air brake		
ZG-B 16001 TR:			

t510-1gb02

* please adhere to the advice of your national traffic law

2 Information Regarding Safety

	<p>This symbol draws your attention to information regarding safety found on labels attached to the bulk precision broadcaster or included in these operating instructions. It indicates that there is a risk of injury to personnel! Observe all information regarding safety and the general regulations aimed at preventing accidents! Make other users aware of all information regarding safety!</p>
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Important Notes!

1. The AMAZONE bulk precision broadcaster ZG-B is only intended for standard agricultural and municipal applications (intended use).
2. All other applications are not considered as the intended use of the machinery. The manufacturer is not liable for any damage resulting from such applications. The user alone is responsible for any such damage.
3. Intended use also refers to the observance of the conditions prescribed by the manufacturer regarding operation and maintenance.
4. The AMAZONE bulk precision broadcaster ZG-B may only be used and maintained by persons who have received the appropriate training and are aware of the dangers that such work may involve.
5. The relevant accident prevention regulations and the other generally recognized regulations governing safety, occupational medicine, and traffic on public roads must be observed.
6. The information regarding safety in these operating instructions and attached to the bulk precision broadcaster must be followed exactly.
7. Any modifications made to the machine cancel all liability on the part of the manufacturer for any resulting damage.
8. The bulk precision broadcaster may overturn if on a slope.
9. The machines which we have manufactured with the utmost care and attention may still be subject to deviations in output or total failure even when they are used for the applications they are intended. This may, for example, be caused by:
 - the varying composition of the fertilizer (e.g. specific density, geometrical shapes),

- drifting,
- blockages or obstructions caused by, for example, foreign bodies, pieces of sacking, damp fertiliser, etc.,
- unevenness of the terrain,
- the wearing of moving parts (e.g. spreading vanes, V-belts, etc.),
- damage caused by external forces,
- incorrect drive and traveling speed,
- use of incorrect spreading discs (e.g. owing to error),
- incorrect setting of the machine (incorrect assembly, non-observance of the spreading table).

Therefore, check and ensure that your machine is functioning correctly with sufficient spreading accuracy before and during use.

Claims regarding damage not occurring to the broadcaster itself will be rejected. This also applies to liability for damage resulting from broadcasting errors. Modifications to the broadcaster may result in damage and therefore the manufacturer does not accept liability for such damage.

In the case of willful intent or gross negligence on the part of the owner or a responsible employee and in cases where errors occurring to the broadcaster are, according to the product liability law, liable for damage to persons or property on privately used machinery, the manufacturer is not exempt from liability. He is also not exempt from liability in the case of errors involving features that have been explicitly guaranteed not to fail if this guarantee is specifically aimed at covering the purchaser against damage not caused to the broadcaster itself.



Before Using the Machine for the First Time!

1. Before the bulk precision broadcaster is loaded, it must first be coupled to the towing vehicle. Since the bulk precision broadcaster is a single axle vehicle, the broadcaster **must never be uncoupled** if the load is unevenly distributed toward the rear of the hopper. **The towing shaft may tip up causing injury.**
2. **Before the bulk precision broadcaster is uncoupled** from the towing vehicle, **the brake must always be applied and the support wheel lowered.** In addition, the two chocks (located in the holders on the side of the vehicle) must also be used to prevent the bulk precision broadcaster from rolling away.
3. Never exceed the permissible maximum pay load.
4. Check and, if necessary, tighten all the bolted joints on the machine after the first 30 operating hours.
5. Tighten the wheel nuts after the first laden journey (at latest after 5 km). See point 16.2 for the torque values.



General Safety and Accident Prevention Regulations

Basic Rule: Before using the machine and tractor, check to ensure that they are safe to use and comply with traffic regulations!

1. Apart from the notes in these operating instructions, also observe the general regulations regarding safety and accident prevention!
 2. The warning and information labels attached to the machine provide important information for safe operation. They are intended to ensure your safety!
 3. Observe the respective regulations when using the machine on public highways!
 4. Before starting work, familiarize yourself with all of the devices, operating elements, and their functions. It will be too late to do this once work has begun!
 5. The user should avoid wearing loose clothing!
 6. Keep the machine clean in order to avoid the risk of fire!
 7. Before driving or starting the machinery, ensure that there are no persons in the immediate vicinity (children). Ensure that you have sufficient visibility!
 8. No persons should sit or stand on the machinery while it is being used!
 9. Couple the machinery in accordance with regulations and only secure it to the prescribed device!
 10. Particular attention must be paid when coupling and uncoupling the machines to and from the tractor!
 11. When assembling and disassembling, ensure that the support devices are positioned correctly (stability)!
 12. Always attach weights to the appropriate fixing points in accordance with regulations!
 13. Never exceed the permissible axle loads and total payload!
 14. Observe the national traffic regulations with regard to transport dimensions!
 15. Check and attach any transport equipment that may be necessary (e.g. lights, warning plates, and any protection devices)!
-

-
16. The release cable for quick-release couplings must hang loosely and must not release the coupling when in the lowered position!
 17. The tractor driver must never leave his seat during a journey!
 18. Travel behavior, steerability, and brake effectiveness are influenced by integrated and attached devices and ballast weights. Therefore, ensure that the machine allows adequate steering and braking effectiveness!
 19. When the bulk precision broadcaster is coupled, the front axle of the tractor is relieved according to the trailer's weight. The load on the front axle must be at least 20 % of the tractor's unladen weight!
 20. If curves are to be driven, take into account the width and/or the balance weight of the machinery!
 21. The machinery should only be started if all safety devices have been attached and are in the correct position!
 22. Never stand in the operating area of the machinery! Before starting the spreading discs, ensure that there are no persons within the casting zone of the fertiliser spreader. There is the danger of injury caused by flying fertiliser! Do not stand in the immediate vicinity of the spinning spreading discs!
 23. Do not stand within the clearance area of the machinery!
 24. To avoid injury, keep clear of all parts actuated by external power (e.g. hydraulic)!
 25. Couple the bulk precision broadcaster to the towing vehicle before loading. Failure to do so may result in injury caused by the towing shaft tipping up. Only load the bulk precision broadcaster when its brake has been applied, when the tractor's engine has been switched off, and the ignition key has been removed!
 26. Before leaving the tractor, apply the handbrake, turn off the engine, and remove the ignition key!
 27. No persons must stand between the tractor and the machinery unless the handbrake and/or the chocks have been applied to prevent the vehicle from rolling!
 28. Do not put any foreign objects in the hopper!
 29. When checking the amount of material inside the machine, beware of rotating machine parts!
 30. Before spreading, remove any fertiliser attached to the spreading vanes and worm auger distributor openings!
-



Trailed Broadcasters

1. Keep clear of rotating and oscillating parts!
2. Only use the steps provided on the machine when filling the hopper. No persons should sit or stand on the machine when it is in motion!
3. The fertiliser broadcaster should only be filled when the tractor engine is turned off, the ignition key is removed, and the broadcasting shutters are closed!
4. Never exceed the maximum filling levels!
5. Do not place any foreign objects in the hopper!



Notes Regarding Operation of the Hydraulic System

1. The hydraulic system is under high pressure!
2. The hydraulic rams and hydrostatic drives must be connected to the hydraulic hoses in accordance with the instructions!
3. When the hydraulic hoses are connected to the tractor's hydraulic system, it must be ensured that neither the hydraulic system of the tractor nor of the trailed machine is under pressure!
4. To avoid the incorrect connection of hydraulic hoses between the tractor and trailed machine, sockets and plugs should be labeled (color-coded)!
If the hoses are connected incorrectly, functions may be reversed, e.g. raising instead of lowering. This may result in injury!
5. Check the hydraulic lines at regular intervals and change worn or damaged hoses! All replacement lines must conform with the technical requirements specified by the manufacturer!

Hydraulic lines should be used for a maximum of six years (including a storage period not exceeding two years). Hoses and hose connections undergo a natural aging process even if they are stored and used correctly. As a result, their period of storage and usage is limited. The period of usage is a result of experience and determined under consideration of the possible potential for danger. Other periods may be recommended for hoses and lines made of thermoplasts.

6. Owing to the possible risk of injury, always use the appropriate tools when searching for leaks!
-

7. Liquids leaking under high pressure (hydraulic oil) may penetrate the skin and cause severe injury!
If injury occurs, call a doctor immediately! Risk of infection!
8. Before performing work on the hydraulic system, uncouple the device, depressurize the system, and turn off the engine!



P.T.O. Shafts

1. Only those p.t.o shafts recommended by the manufacturer should be used!
2. The guard tubes and cones of the tractor's p.t.o. shaft and of the p.t.o. shaft connection (also that of the trailed device) must be attached and in good condition!
3. In the case of p.t.o. shafts, always ensure that their guard tubes are in the correct position, i.e. the appropriate transport and working position!
4. The p.t.o. shaft should only be connected/disconnected when the p.t.o. shaft is deactivated, the engine is turned off, and the ignition key has been removed!
5. Always ensure that the p.t.o. shaft is connected and secured correctly!
6. Prevent the p.t.o. shaft guard from rotating by attaching the chains provided to non-moving parts!
7. Before activating the p.t.o. shaft, ensure that the selected p.t.o. shaft speed of the tractor matches the permissible speed of the trailed device!
8. When using the transit p.t.o. shaft, remember that the speed is dependent on the travel speed and that the direction of rotation is reversed when the direction of travel is reversed!
9. Before activating the p.t.o. shaft, ensure that no persons are standing in the danger zone of the device!
10. Never activate the p.t.o. shaft when the engine is switched off!
11. No persons must be in the immediate vicinity of the rotating p.t.o. or drive shaft when the p.t.o. shaft is being used!
12. Always deactivate the p.t.o. shaft if it is not needed or the angle between the tractor and the trailed device becomes too small!
13. Attention! After the p.t.o. shaft has been disengaged, there may still be a risk of injury owing to parts that are still in motion! Do not enter the immediate vicinity of the device until it has come to a complete stand still!

14. The p.t.o. shaft-driven machine and the p.t.o. shaft should only be cleaned, lubricated, and adjusted when the p.t.o. shaft has been disengaged, the engine has been switched off, and the ignition key has been removed!
15. Secure the disengaged p.t.o. shaft in the holder provided!
16. When the p.t.o. shaft has been disconnected, place the protective cap over the end of the p.t.o. shaft!
17. Before using the machine, ensure that any damage has been repaired!



Brakes and Tyres

1. Check the brake before every journey!
 2. The braking system must be checked thoroughly at regular intervals!
 3. Any adjustments or repairs to the braking system should only be performed by specialist workshops or licenced brake service stations! Only the prescribed brake fluid should be used and must be changed according to the manufacturers recommendations!
 4. When working on the tyres, always ensure that the device is stable and cannot roll away (chocks)!
 5. Tyres should only be replaced by persons familiar with the procedure and using the correct tools!
 6. Repairs to the tyres and wheels should only be performed by trained persons and by using the appropriate tools!
 7. Check the air pressure regularly! The air pressure must not exceed or drop below the prescribed pressure!
-



General Safety and Accident Prevention Regulations Regarding Maintenance Work

1. Maintenance and cleaning work as well as measures to remedy operational faults should only be performed when the drive and engine have been turned off! Remove the ignition key!
 2. Check nuts and bolts at regular intervals and tighten, if necessary!
 3. When performing maintenance on raised machinery, always ensure that suitable supports are used to prevent the machinery from falling and causing injury!
 4. Whenever changing implements with cutting edges, always use a suitable tool and protective gloves!
 5. Dispose of oil, grease, and filters as prescribed by law! (Ecology)
 6. Disconnect the battery whenever performing work on the electrical system!
 7. Disconnect the generator and the battery cable whenever performing work involving an electric welding device on the tractor and the trailed machine!
 8. All spare parts must meet the fixed technical standards specified by the manufacturer of the machine! This is ensured by, for example, using original spare parts!
-



MD 095
MD 082
MD 088

Fig. 3.1



Fig. 3.2



Fig. 3.3

3 Warning Symbols and Information Labels

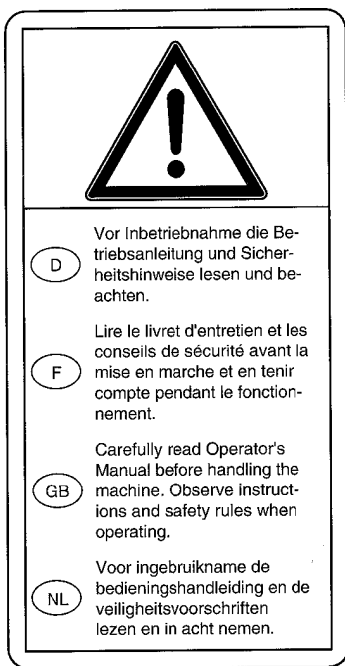


The warning symbols are intended to ensure the safety of all persons using the bulk precision broadcaster.

The information labels provide information that must be followed to ensure problem-free operation of the machine.

The danger areas and the locations at which the warning symbols and information labels are attached are indicated in the figures 3.1 to 3.3. The warning symbols are described on the following pages.

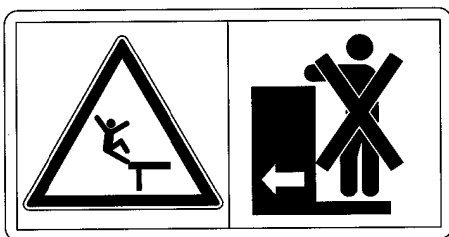
1. Always carefully follow the advice/instructions given by the warning symbols and in the information labels!
 2. Pass on all safety instructions to the other users!
 3. Make sure that all warning symbols and information labels on the bulk precision broadcaster are in good condition! Replace any missing or damaged warning symbols and information labels (label number = order number)!
-



Label number: **ME 489**

Explanation:

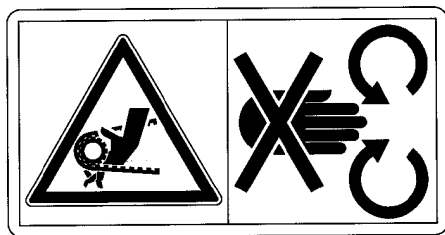
Carefully read Operator's Manual before putting the machine to operation. Observe instructions and safety rules when operating!



Label number: **MD 082**

Explanation:

No persons must stand or sit on the machine while it is in use or being transported!



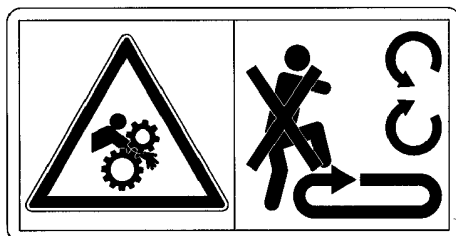
Label number: **MD 076**

Explanation:

Only use the machine if the guards are in place!

Do not open or remove the guards if the motor is running!

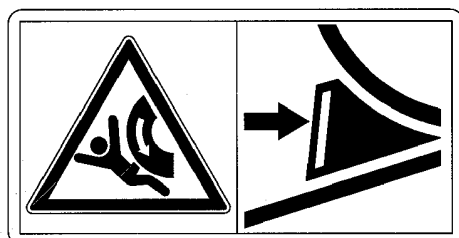
Before removing the guards, disengage the p.t.o. shaft, switch off the motor, and remove the ignition key!



Label number: **MD 088**

Explanation:

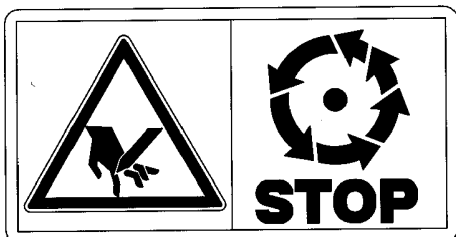
Do not climb into the hopper while the p.t.o. shaft is connected and the motor is running!



Label number: **MD 090**

Explanation:

Position the chocks before uncoupling the machine or leaving the machine unattended!



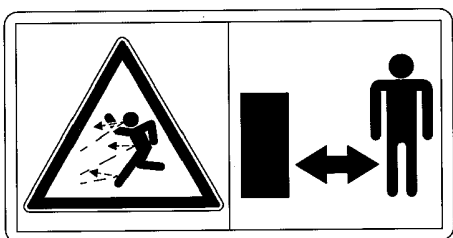
Label number: **MD 075**

Explanation:

Do not stand in the immediate vicinity of the rotating spreading discs!

Do not touch any of the machine parts while they are in motion! Wait until they have come to a complete standstill!

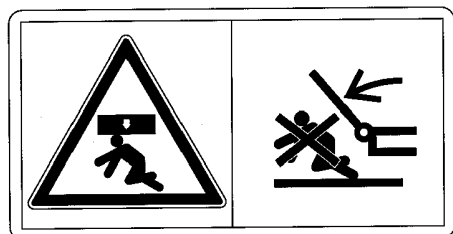
Before changing the spreading discs or adjusting the spreading vanes, disengage the p.t.o. shaft, switch off the engine, and remove the ignition key!



Label number: **MD 079**

Explanation:

Risk of injury resulting from flying fertiliser! Ensure that no persons are located in the danger zone!



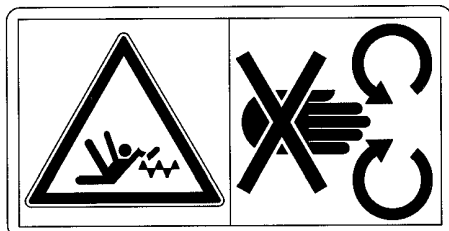
Label number: **MD 084**

Explanation:

Do not stand in the slewing area of the worm auger distributor!

Ensure that no persons are located in the danger zone!

Only open the safety flap from the driving seat of the tractor using the pull cord!

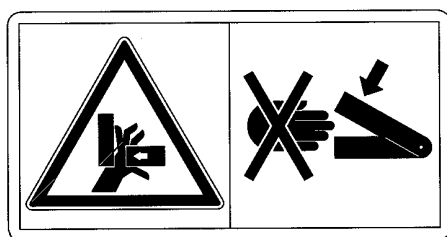


Label number: **MD 083**

Explanation

(also applies to S200/3 worm auger distributor):

Never reach inside the worm auger distributor while it is still moving!



Label number: **MD 078**

Explanation

(label attached to the wheel drive):

Do not stand within the slewing area of the wheel drive unit and its actuation mechanism!

Ensure that there are no persons in the danger zone!

Never reach inside areas where a risk of crushing may exist if there is a possibility that parts located in these areas may still be moving!

Explanation

(Label attached to the S 200/3 worm auger distributor):

Do not stand within the slewing area of the S 200/3 worm auger distributor and its actuation mechanism!

Ensure that there are no persons within the danger zone!

Never reach inside areas where a risk of bruising may exist if there is a possibility that parts located in these areas may still be moving!



Fig. 4.1



Fig. 4.2

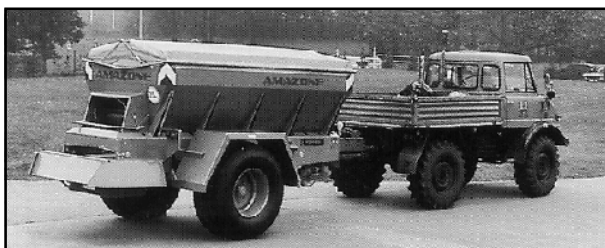


Fig. 4.3



Fig. 4.4

4 AMAZONE Bulk Precision Broadcaster ZG-B

The AMAZONE bulk precision broadcaster ZG-B is a universal broadcaster with a hopper volume of 4200 l to 9000 l. The material to be spread is fed from the hopper to the spreading unit via a floor conveyor belt. In the basic model, the floor conveyor belt and the spreading unit are driven by the tractor's p.t.o. shaft. As an optional extra, the floor conveyor belt can also be driven by a ground-wheel unit. The freely adjustable hopper outlet determines the amount of material entering the spreading unit and thus the amount of material to be spread. The material to be spread is distributed by the spreading unit. The steep wall of the hopper and the wide floor conveyor belt mean that no material is left in the hopper even if damp fertiliser is used. Depending on the authorization (see the technical specifications), the machine can be transported at speeds of 25, 40, or 80 km/h.

In agriculture, bulk precision broadcasters (fig. 4.1) with **twin disc spreading units** are preferred for damp and granular fertilisers and **worm auger distributors** positioned at the front of the machine and with a working range of 9 m or 12 m are preferred for use for powdered fertilisers (ground lime).

Sowing machines and externally mounted fertiliser spreaders can be filled using the **transfer worm auger** (fig. 4.2) mounted on the bulk precision broadcaster.

In the municipal sector, bulk precision broadcasters are used for **lime treatment in forests** or as **road gritters** (fig. 4.3) resp. salt spreaders against black-ice on roads.

The **AMAZONE worm auger distributor S 200/3** (fig. 4.4) accurately distributes large amounts of material (up to 50 kg/m²) e.g. split over a 3 m working range. The worm auger distributors are used, for example, for split, cement, or concrete in highway construction, to distribute lime on refuse sites, or in the construction of sport fields.

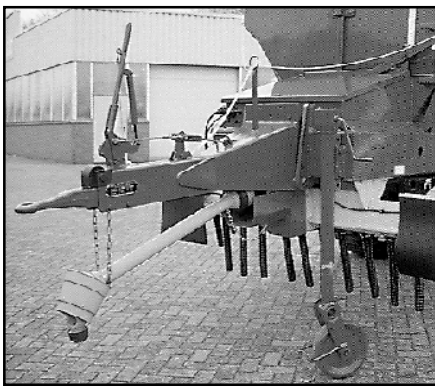


Fig. 4.5

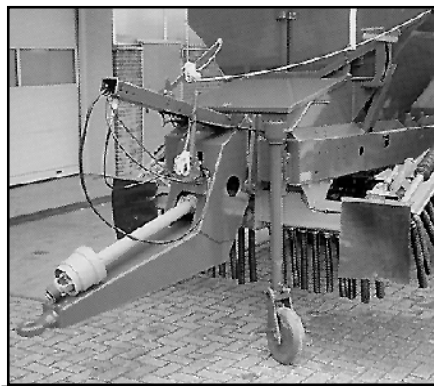


Fig. 4.6

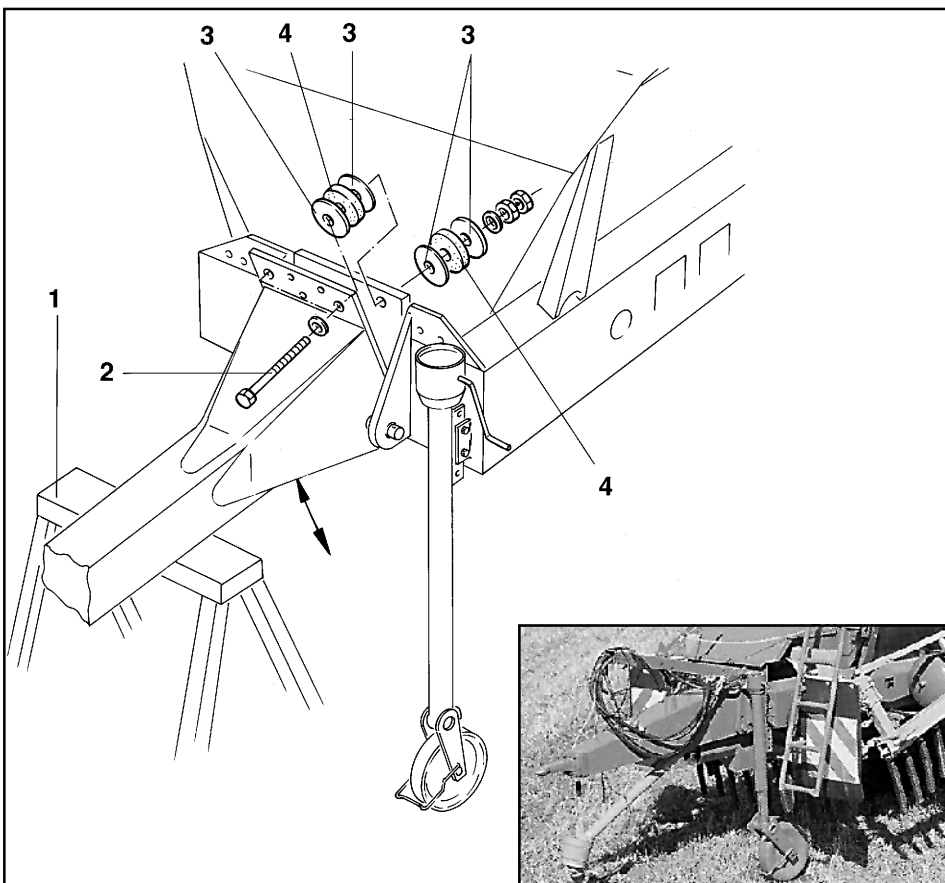


Fig. 4.7

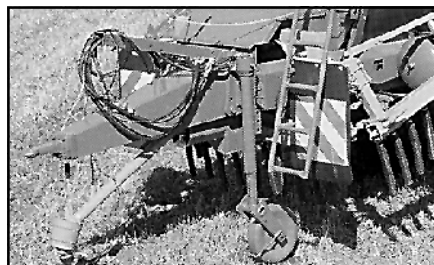


Fig. 4.8

4.1 Hitching Up the Bulk Precision Broadcaster

All bulk precision broadcasters are equipped with a sprung draw bar and may be raised or lowered.

At random, the bulk precision broadcaster can be equipped with a draw bar (fig. 4.5) with overrunning brake and automatic recoil device, a straight draw bar (fig. 4.8), or a cranked draw bar (fig. 4.6).



1. **Do not exceed the maximum permissible load for the pulling eye or the hitch coupling!**
2. **There must be no persons between the tractor and the bulk precision broadcaster when the two machines are being coupled!**
3. **When the bulk precision broadcaster is coupled, the front axle of the tractor is relieved. Ensure that the load on the front axle amounts to 20 % of the tractor's unladen weight.**

Attaching and securing the draw bar of the bulk precision broadcaster to the pulling eye or the hitch coupling of the tractor:

Important!

Ensure that the coupling point has adequate room for movement!

If the frame of the ZG-B behind the tractor is not horizontal to the ground when the two machines have been coupled, the coupling of the tractor or the draw bar of the broadcaster must be adjusted.

Adjusting the draw bar of the bulk precision broadcaster:

- Uncouple the broadcaster from the tractor (see point 4.3) and allow it to rest on the castor wheel.
- Rest the draw bar on a solid trestle (fig. 4.7/1) and remove the two securing bolts (fig. 4.7/2).
- By changing the position of both sets of spacing discs (fig. 4.7/3) evenly, you can adjust the draw bar. The buffer discs (fig. 4.7/4) must not be removed. They dampen the jolts transmitted from the tractor to the broadcaster.
- Insert and tighten the draw bar bolts (torque 540 Nm).

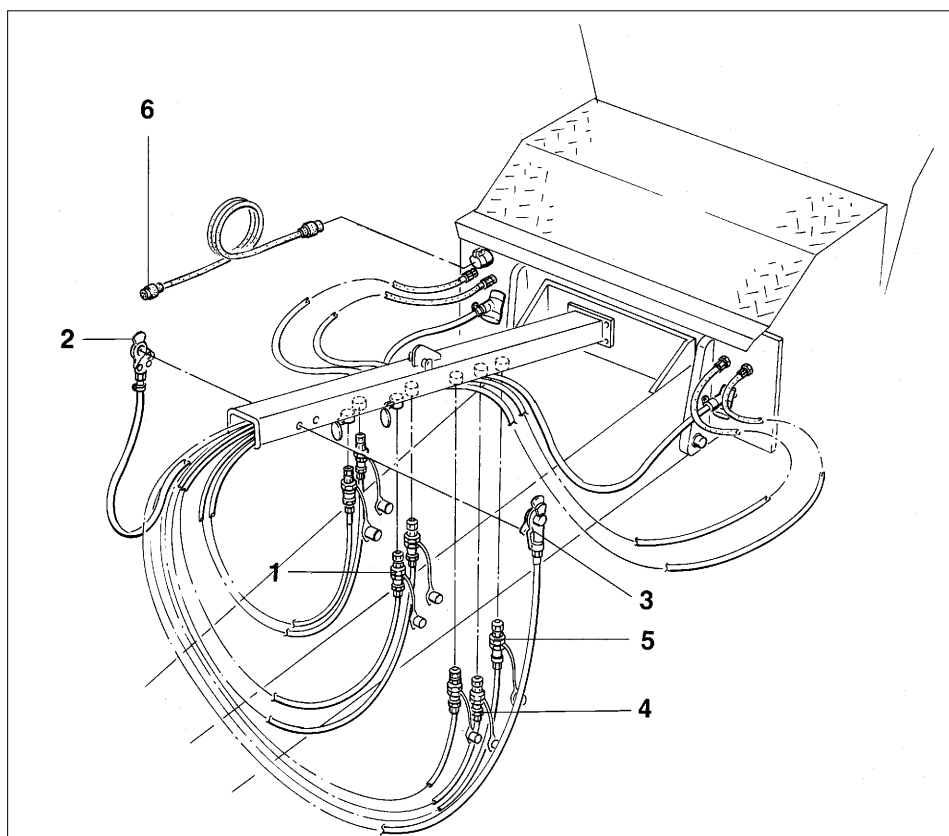


Fig. 4.9



Fig. 4.10

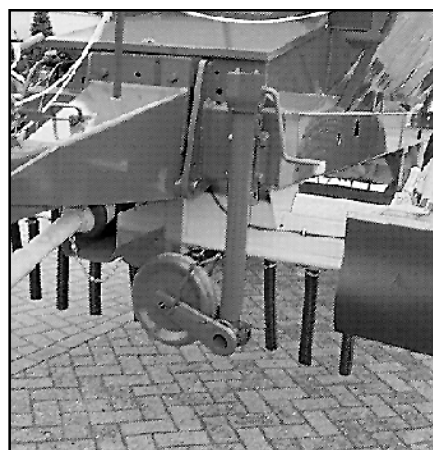


Fig. 4.11

Establishing the hydraulic connection:

Hydraulic connection	No. of hydr. plug (see figure 4.9)	Control valve of tractor
To engage self-guiding boogie axle (ZG-B 16001 T)	1	single-action

Connecting the pneumatic brake:

Connection	Color and no. of hose coupling (see figure 4.9)	Connection to tractor
Air brake	yellow (2)	Brake line
	red (3)	Supply line

Important! All checks to be performed before every journey and at regular intervals are listed under point 17.3.

Connecting the hydraulic brake:

Connection	No. of hydr. plug (see figure 4.9)	Control valve of tractor
Hydraulic brake	4	single-action special valve
	5	

Establishing the electrical connections:

Connect the power cable (fig. 4.9/6) for the lighting system to the tractor and check that the lighting system functions correctly.

Raise the castor wheel:

To prevent the castor wheel from swinging to and fro, it is guided into a support tube. Raise the castor wheel into the guide, step on the foot pedal (fig. 4.10), and swing the castor wheel by hand into its transport position (fig. 4.11).

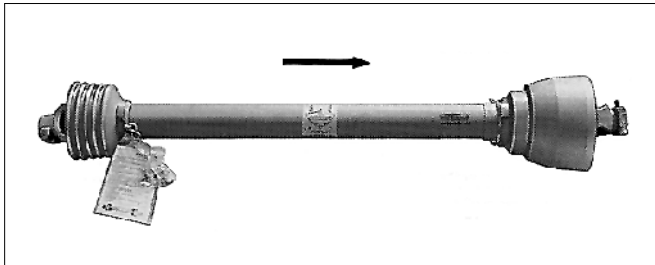


Fig. 4.12

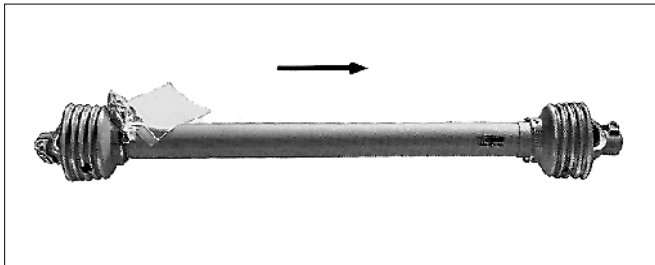


Fig. 4.13

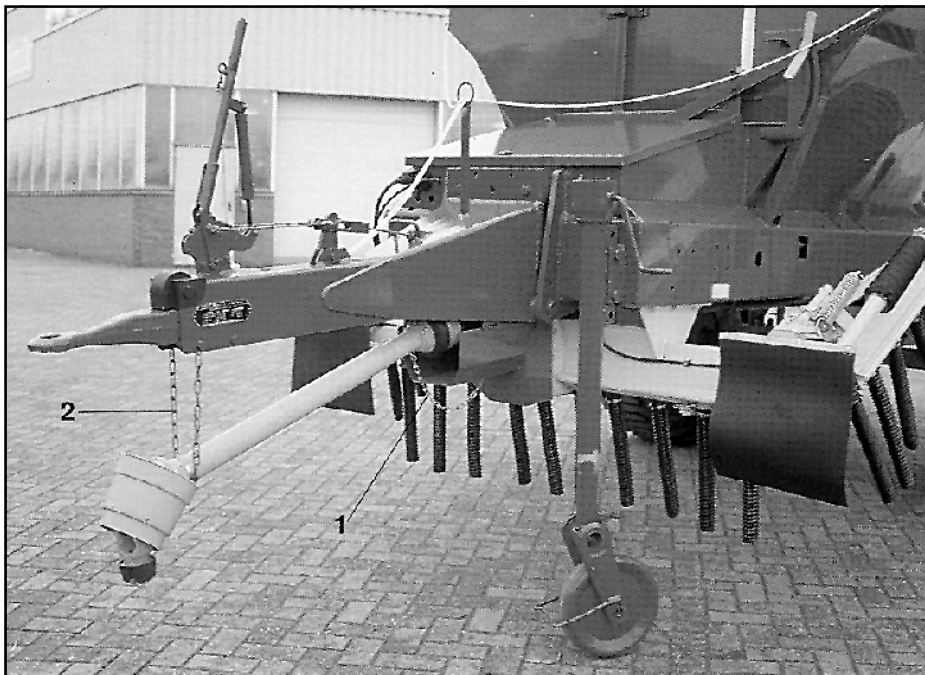


Fig. 4.14

4.2 P.T.O. Shaft: Tractor - Bulk Precision Broadcaster

The floor conveyor belt (except for ground wheel-driven units) and the spreading unit are driven by the tractor's p.t.o. shaft. Only connect the p.t.o. shaft supplied with the bulk precision broadcaster to the tractor!

1. **Wide-angle p.t.o. shaft WWE 2300-SD15-1010 (fig. 4.12),**
for all ZG-Bs, except ZG-B 5001.

The p.t.o. shaft is suitable for cornering manoeuvres in fields if spreading is not to be interrupted (do not exceed the maximum p.t.o. shaft angle specified by the manufacturer!).

2. **P.T.O. shaft W 2300-SD15-1010 (fig. 4.13),**
for ZG-B 5001.

Important:

Disengage the p.t.o. shafts W 2300 before every cornering manoeuvre, e.g. when turning at the end of a field.

Connecting the p.t.o. shaft:

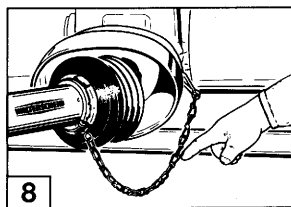
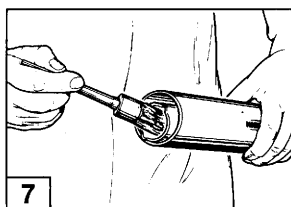
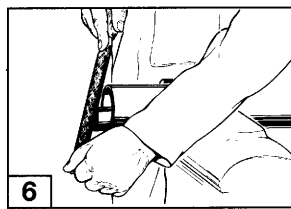
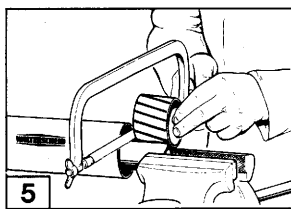
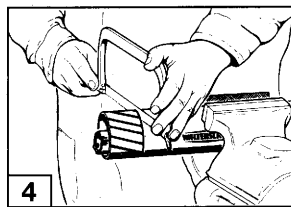
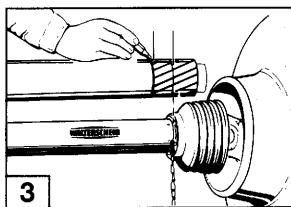
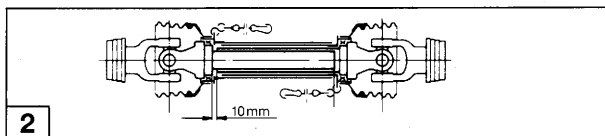
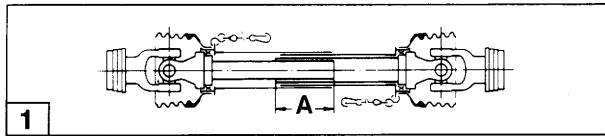
1. Observe point 4.2.1 **when using the machine for the first time or when changing the towing vehicles!**
2. Clean and grease the p.t.o. shaft connections at the tractor and the ZG-B before attaching the p.t.o. shaft!
3. Attach the p.t.o. shaft halves to the tractor's p.t.o. shaft connector and to the broadcaster's input shaft in the prescribed manner (see the symbol on the p.t.o. shaft).
4. The guard tubes for the p.t.o. shaft have chains (fig. 4.14/1) that are to be attached to the tractor and the ZG-B. These chains prevent the guard tubes from spinning with the p.t.o. shaft. Attach the chains to the holes provided so that the p.t.o. shaft still has sufficient room for movement in all operational positions and so that the guard tube does not spin when the shaft is in operation.
5. Work should only be commenced when all guarding devices are in position.



Ensure that all the information regarding safety (under point 2) has been observed before engaging the p.t.o. shaft!

To prevent damage from being caused to the p.t.o. shaft, only engage the clutch when the tractor's engine is idling or is running at a low speed!

P.T.O. shaft speed: max. 540 r.p.m.



4.2.1 Matching the P.T.O. Shaft with the Tractor

Clean and grease the p.t.o. shaft at the tractor and the input shaft of the ZG-B before attaching the p.t.o. shaft!

Attach the p.t.o. shaft halves to the tractor's p.t.o. shaft and to the broadcaster's input shaft in the prescribed manner (see the symbol on the p.t.o. shaft), but **do not slide** the p.t.o. shaft tubes **into each other**.

Fig. 4.15/1:

Hold the two p.t.o. tubes next to each other and check whether the p.t.o. tubes do overlap each other (at least $A = 150 \text{ mm}$) when the machines are driven in a straight line and during cornering manoeuvres.

Fig. 4.15/2:

When the two p.t.o. shaft halves are pushed together, they must not be forced against the yokes of the universal joints. It must be taken into consideration that the p.t.o. shaft shortens in a braking procedure if the bulk precision broadcaster is equipped with an overrunning brake. A distance of at least 10 mm must be provided to allow for this.

Fig. 4.15/3:

To adapt the length, hold the two halves of the p.t.o. shaft against each other in the shortest operating position and mark the length of the shafts.

Fig. 4.15/4:

Shorten the inner and outer guard tube by the same amount.

Fig. 4.15/5:

Shorten the inner and outer sliding tubes by the same amount as the guard tube.

Fig. 4.15/6:

Smoothen any rough edges and carefully remove any swarf.

Fig. 4.15/7:

Grease the sliding tubes and slide them inside each other.

Fig. 4.15/8:

The guard tubes of the p.t.o. shaft have chains which should be attached to the tractor and the ZG-B. These chains prevent the guard tubes from spinning with the p.t.o. shaft. Attach the chains to the holes provided so that the p.t.o. shaft still has sufficient room for movement in all operational positions and so that the guard tube does not spin when the shaft is in operation.

Also follow the manufacturer's assembly and maintenance advice attached to the p.t.o. shaft!

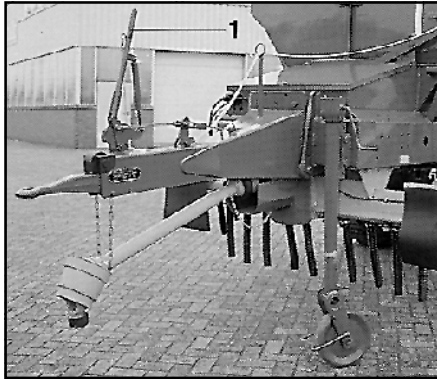


Fig. 4.16

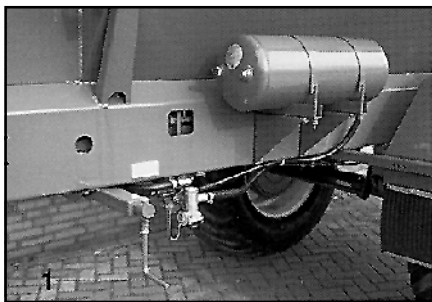


Fig. 4.17



Fig. 4.18

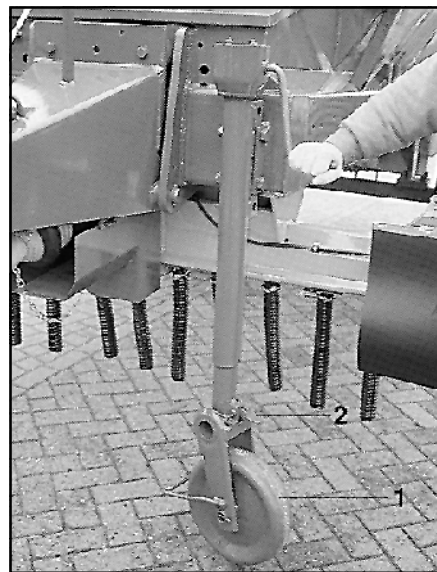


Fig. 4.19

4.3 Unhitching the Bulk Precision Broadcaster



1. Risk of injury caused by the towing hitch tipping up!

The bulk precision broadcaster **must never be uncoupled** if its load is unevenly distributed toward the rear of the hopper!

The bulk precision broadcaster is a single axle vehicle and if its load is unevenly distributed toward the rear of the hopper, the broadcaster may tip backwards causing injury.

2. When uncoupling the broadcaster from the tractor, ensure that there are no persons located between the two machines!

Apply the brake:

Before the bulk precision broadcaster is uncoupled from the tractor, the brake (fig. 4.16/1) must first be applied. In the case of broadcasters with air brakes, the brake is applied using a crank (fig. 4.17/1) at the side of the vehicle. Turn the crank to the right as far as it will go.

Prevent the bulk precision broadcaster from rolling by using the chocks:

Before the bulk precision broadcaster is uncoupled, the two chocks (fig. 4.18/1) must be applied to ensure that the machine cannot roll away. When the broadcaster is in transit, the chocks (fig. 4.18/2) are placed in the holders on the main frame and held in place by spring clips.

Lower the castor wheel:

The castor wheel (fig. 4.19/1) swings down when the foot pedal (fig. 4.19/2) is pressed. Allow the castor wheel to click into position and then lower it until the towing hitch comes out of the tractor's coupling.

Hang the p.t.o. shaft in the chain:

Hang the p.t.o. shaft in the chain (Fig. 4.16/2).

Uncouple the bulk precision broadcaster.



Fig. 4.20



Fig. 4.21



Fig. 4.22

4.4 Filling



Danger of accident!

1. Before the bulk precision broadcaster is loaded, it must first be coupled to the tractor!
2. Do not exceed the maximum permissible weight! Weigh the vehicle!
3. If the maximum overall weight is exceeded in the case of journeys on roads **not** classed as public highways, it must be remembered that the brakes are then no longer sufficiently effective for the top speed! The speed of the vehicle must be reduced accordingly.

4.5 Setting the Spread Rate

The spread rate is set using the slide gate (fig. 4.21/1).

In the basic models, the slide gate is set using a lever (Fig. 4.22/3). As an optional extra, the slide gate can also be set hydraulically or electronically.

The lever (fig. 4.22/3) is held in position by means of a locking screw which has to be loosened each time the position of the slide gate is adjusted and then tightened again. The position of the slide gate is indicated on a scale (fig. 4.22/2).

The scale value can be found in the spreading table or determined using the enclosed slide rule. How to use the slide rule is explained in the spreading table.

ZG-B 8001 R and ZG-B 16001 TR only:

If the hopper is to be emptied from the front of the machine (for example, in the case of front auger distributor operation), the spread rate must be set in the way described above, but at the front slide gate (fig. 4.22/1) and with the rear slide gate closed. Close the rear slide gate in the case of front spreading.

Important!

To achieve optimum spreading, it is necessary to keep the speed of the p.t.o. shaft and the travel speed (except for ground wheel-driven machines) as constant as possible during spreading.

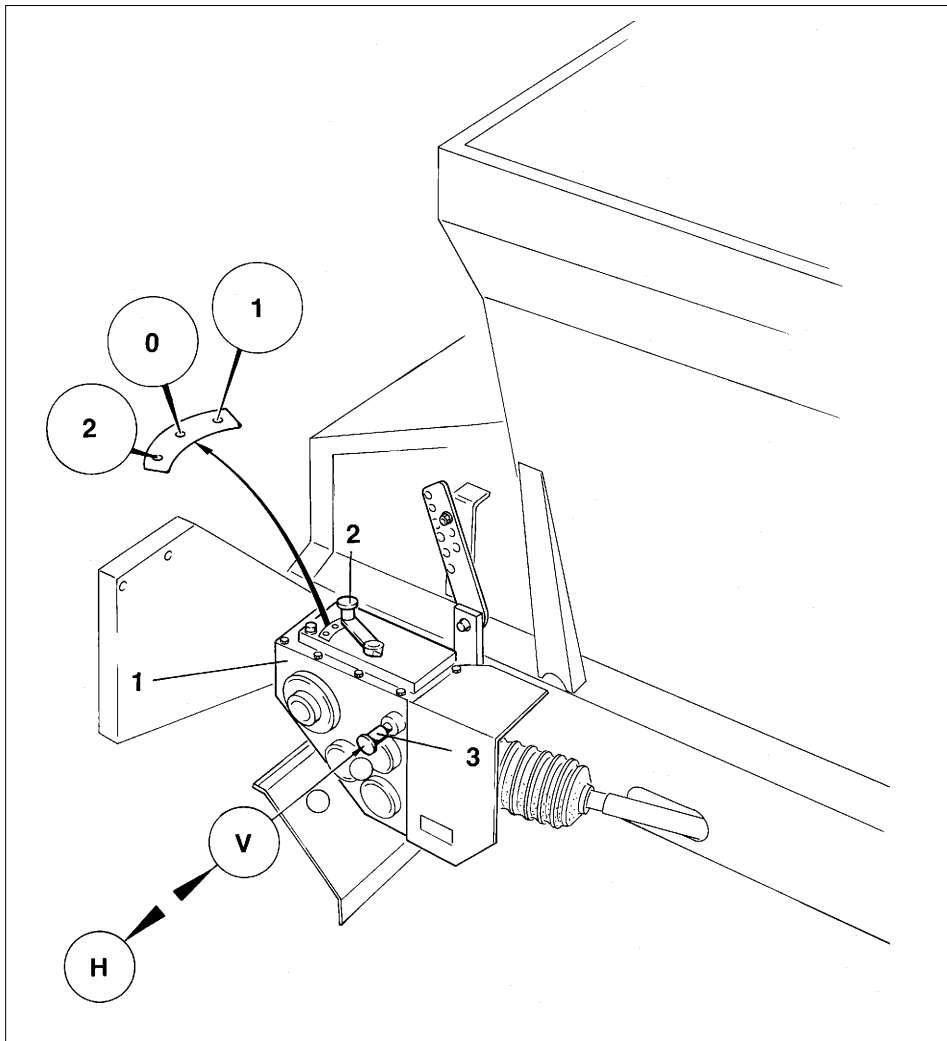


Fig. 4.23

4.6 Setting the belt speed

On the shift gearbox (Fig. 4.23/1) two belt speeds can be set with the aid of the control lever (Fig. 4.23/2) and the conveyor belt can be disengaged. The belt speed "II" is twice as fast as the belt speed "I".

Prior to any setting disengage the tractor pto shaft and wait until the pto shaft and the conveyor belt have come to a standstill. Briefly lift the gear change shift lever (Fig. 4.23/2) and let it catch in the desired position:

Belt speed I:	control lever in position 1
Switching off the conveyor belt:	control lever in position 0
Belt speed II:	control lever in position 2

For large application rates we recommend belt speed "II".

4.7 Setting the running direction of the floor belt (only for ZG-B 8001 R and ZG-B 16001 TR)

With the aid of the reversing drive the floor belts of the AMAZONE-bulk fertiliser spreaders ZG-B 8001 R and ZG-B 16001 TR can move backward and forward. When the belt is moving backward the fertiliser is delivered to the twin disc spreader unit, when it is moving forward it is delivered to the front worm auger.

The running direction of the floor belt is set with the control rod (Fig. 4.23/3) which is attached to the side of the gearbox. Prior to any setting disengage the tractor pto shaft and wait until pto shaft and conveyor belt have come to a full standstill.
The switching clearance is about 10 mm:

Backward belt movement (H) : Pull control rod off the gearbox.

Forward belt movement (V): Push control rod into the gearbox.



If the gear cannot be shifted properly, briefly engage the tractor pto shaft idle running. Disengage the tractor pto shaft and shift gear as soon as the pto shaft and the conveyor belt have come to a standstill

Two belt speeds can be set in each running direction (see para. 4.6).

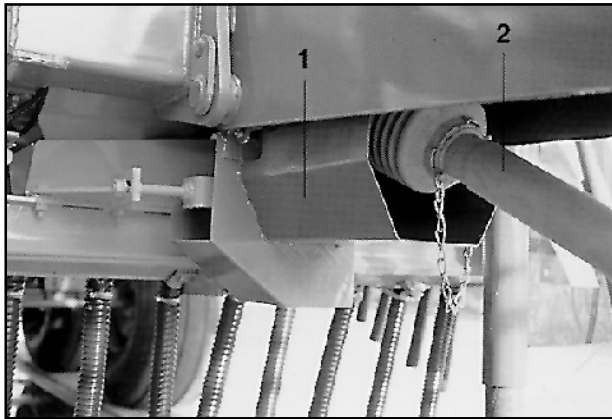


Fig. 4.24

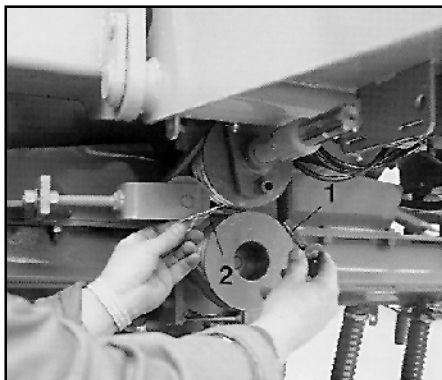


Fig. 4.25

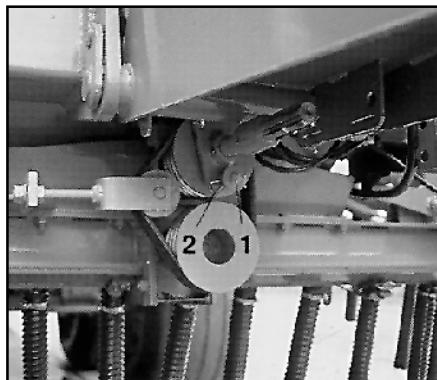


Fig. 4.25

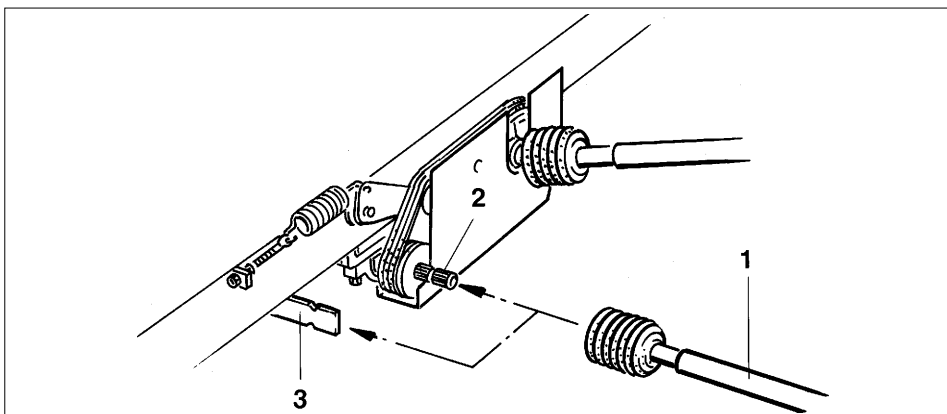


Fig. 4.26

4.8 Changing to a Different Spreading Unit (ZG-B 8001 R and ZG-B 16001 TR only)

The bulk precision broadcasters ZG-B 8001 R and ZG-B 16001 TR can be equipped with two spreading units at the same time (for example, the twin disc spreading unit and the front worm auger distributor). Before one spreading unit is brought into operation, the other must be shut down.



Danger of accident!

1. **Before changing to a different spreading unit, switch off the tractor's p.t.o. shaft, turn off the tractor's engine, and remove the ignition key.**

2. **Do not remove the p.t.o. shaft guard.**

In the figures 4.25 and 4.26, the p.t.o. shaft guard (fig. 4.24/1) and the p.t.o. shaft (fig. 4.24/2) have been removed for explanation purposes only. Do not remove the p.t.o. shaft guard (fig. 4.24/1) when changing to a different spreading unit.

Spreading Using the Twin Disc Spreading Unit:

Disengage the front spreading unit:

- Pull out the bolt (fig. 4.25/1) after having removed the spring pin (fig. 4.25/2).
- Close the front slide gate.

Connect the twin disc spreading unit:

- Connect the p.t.o. shaft (fig. 4.27/1) to the drive shaft (fig. 4.27/2) underneath the bulk precision broadcaster.
- Change the floor conveyor belt's direction of travel as described in point 4.7.

Spreading Using the Front Worm Auger Distributor:

Disengage the rear spreading unit:

- Disconnect the p.t.o. shaft (fig. 4.27/1) from the drive shaft (fig. 4.27/2) underneath the bulk precision broadcaster and attach it to the support bracket (fig. 4.27/3).
- Close the rear slide gate.

Connect the front worm auger distributor:

- Insert the bolt (fig. 4.26/1) next to the p.t.o. shaft connector and secure it using a spring pin (fig. 4.26/2).
- Change the floor conveyor belt's direction of travel as described in point 4.7.



Fig. 6.1



Fig. 6.2

6 Universal Spreading Unit (Optional Extra)

The universal spreading unit can be equipped with:

- ZG-B spreading discs,
- Carbo-lime spreading unit,
- TELE-SET spreading discs and
- OMNIA-SET spreading discs.

see also fig. 6.1 (standard equipment):

Universal spreading unit (fig. 6.1/1) with ZG-B spreading discs (fig. 6.1/2) and additional chute (fig. 6.1/3)

see also fig. 6.2:

Universal spreading unit (fig. 6.2/1) with OMNIA-SET spreading discs (fig. 6.2/2) and funnel chute (fig. 6.2/3).



Danger of injury!

1. Do not stand in the immediate vicinity of the rotating spreading discs!
 2. Do not touch any of the machine's moving parts! Wait until they have come to a complete standstill!
 3. Before changing the spreading discs or adjusting the spreading vanes, switch off the tractor's p.t.o. shaft, turn off the tractor's engine, and remove the ignition key!
 4. Keep clear of flying fertiliser! Risk of injury!
 5. Ensure that no persons are located in the danger zone!
-

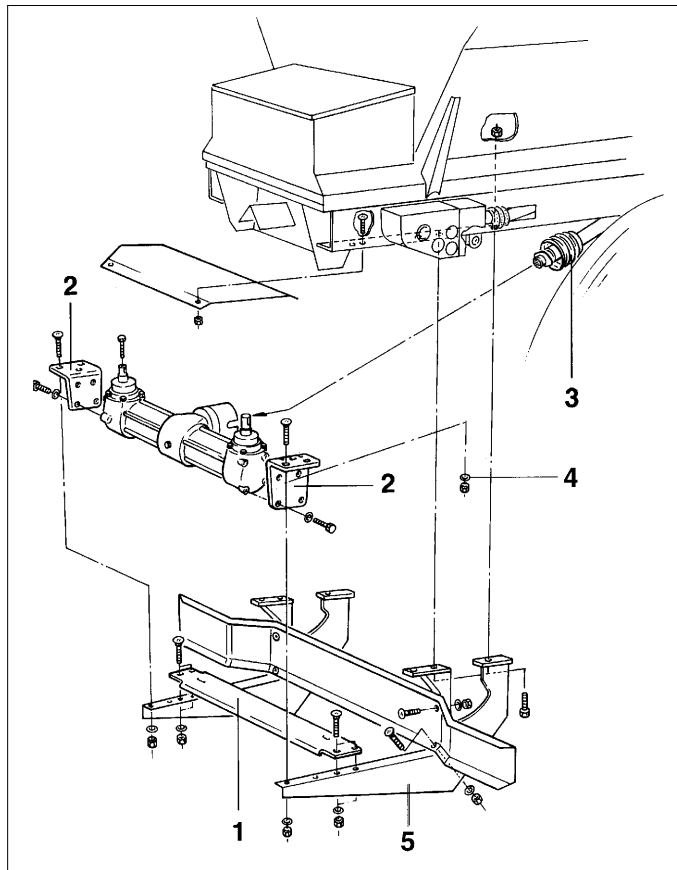


Fig. 6.3

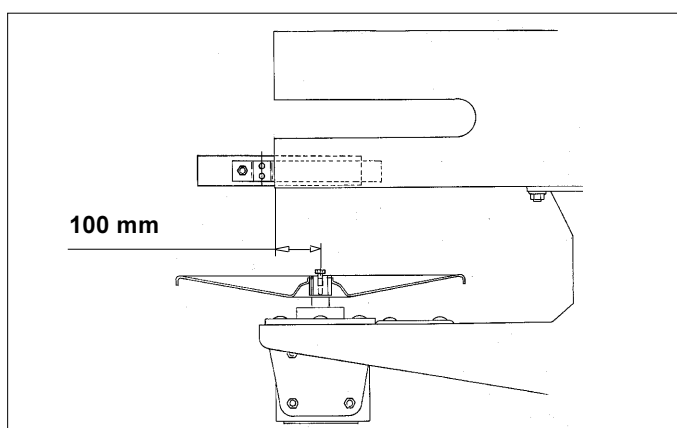


Fig. 6.4

6.1 Fitting the Universal Spreading Unit

- Fit the universal spreading unit as described in figure 6.3.



Fit the universal spreading unit centrally in relation to the vehicle.

The distance (see fig. 6.4) from the middle of the drive shaft to the frame of the bulk precision broadcaster is 100 mm.

Bolt the universal gears in place.

Push the stop (fig. 6.3/1) onto the angle brackets (fig. 6.3/2) of the universal spreading unit and then bolt it in place.

Push stop-disk (Fig. 6.3/4) sideways against carrier of spreading unit (Fig. 6.3/5) and also bolt it in place.

- Attach the p.t.o. shaft with the overriding clutch (fig. 6.3/3) to the end of the spreading unit's p.t.o. shaft and ensure that it engages correctly.

Notes Regarding Disassembly:

- Do not remove the stop (fig. 6.3/1). When fitted again at a later date, the universal spreading unit can be simply slid against the stop and secured.
- The half of the p.t.o. shaft (fig. 6.3/3) that is hanging beneath the bulk precision broadcaster must be completely removed before taking off the universal spreading unit.



Fig. 7.1

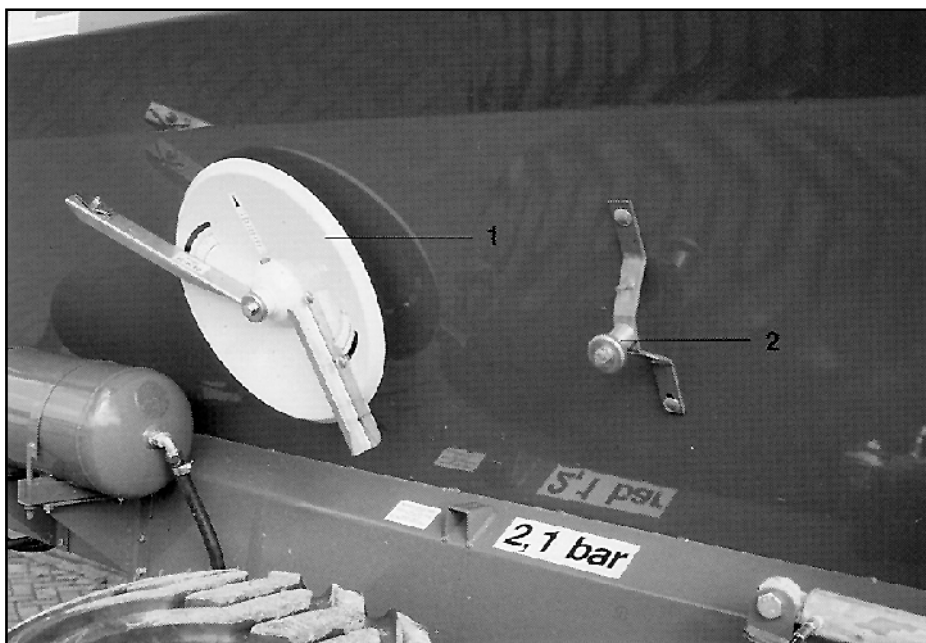


Fig. 7.2

7 Spreading Discs

Attach the spreading discs (fig. 7.1/1) to the gear shafts of the twin disc spreading unit and bolt in place using **M 10 hexagonal bolts** (fig. 7.1/2). Do not confuse the "left" spreading disc with the "right" spreading disc. Pay attention to the labeling. Disassemble the funnel chute beforehand (if applicable).

Holders (fig. 7.2/2) which can be attached to the broadcaster's hopper are available for additional spreading discs (fig. 7.2/1).

Note:

1. The condition of the spreading vanes plays a major role in determining the broadcaster's ability to distribute the fertiliser evenly across a field. For this reason, the spreading vanes are made of particularly abrasion-resistant and partly rust-free material. Nevertheless, the spreading vanes will still suffer a certain amount of abrasion.

Change the spreading vanes and discs as soon as holes in the spreading vanes become visible.

2. The casting range of the fertiliser may vary even if the working range of the broadcasters remains constant. Spreading patterns with different, fertiliser-specific overlap zones which may deviate from those spreading patterns given in these operating instructions and the spreading table may result depending on the type of fertiliser used.
3. Remove any fertiliser stuck to the spreading vanes and the guiding chutes at regular intervals!



Danger of injury!

1. **Do not stand in the immediate vicinity of the rotating spreading discs!**
 2. **Do not touch any of the machine's moving parts! Wait until they have come to a complete standstill!**
 3. **Before changing the spreading discs or adjusting the spreading vanes, switch off the tractor's p.t.o. shaft, turn off the tractor's engine, and remove the ignition key!**
 4. **Keep clear of flying fertiliser! Risk of injury!**
 5. **Ensure that no persons are located in the danger zone!**
-

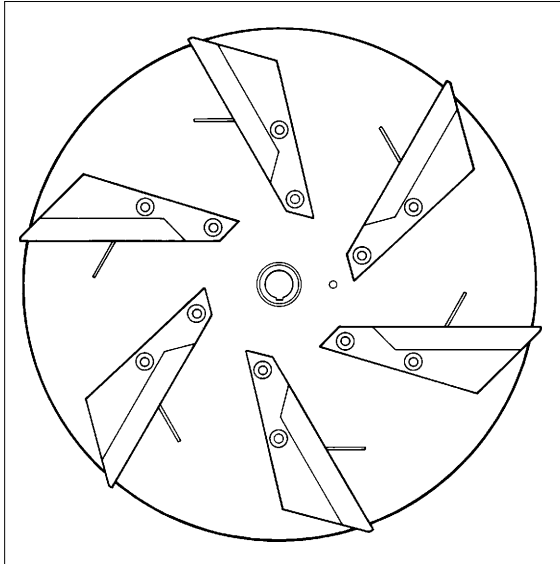


Fig. 7.3

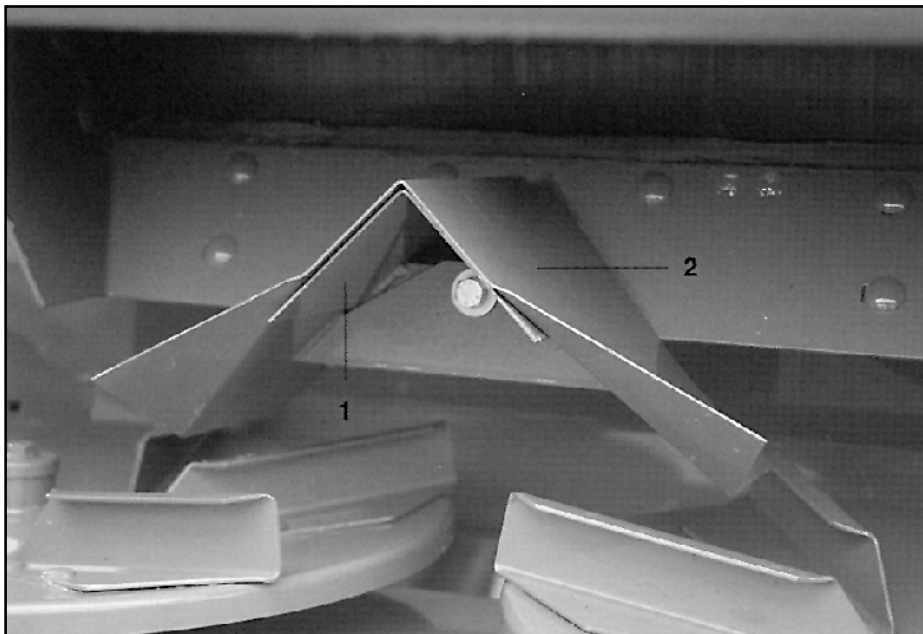


Fig. 7.4

7.1 ZG-B Spreading Discs Used to Spread Damp Fertiliser

All bulk precision broadcasters are equipped with a fixed chute (fig. 7.4/1) used to spread damp fertiliser with ZG-B spreading discs (fig. 7.3).

See spreading table for settings determining the spread rate:
ZG-B spreading discs.

7.2 ZG-B Spreading Discs Used to Spread Granular Fertiliser

If granular fertiliser is to be spread using ZG-B spreading discs (fig. 7.3), the additional chute (fig. 7.4/2) must be fitted to optimize the drop point of the fertiliser onto the spreading discs. This chute is simply bolted on top of the chute that is already mounted (fig. 7.4/1).

See spreading table for settings determining the spread rate:
ZG-B spreading discs with additional chute.

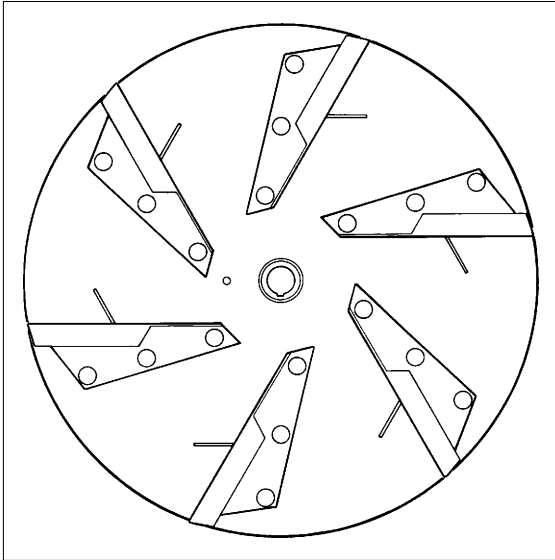


Fig. 7.5

7.3 Spreader unit for carbo lime

For spreading large application rates of carbo lime mount the spreading discs (Fig. 7.5).

**Setting values to adjust the spread rate, see spreading table:
Carbo-lime.**

7 - 8

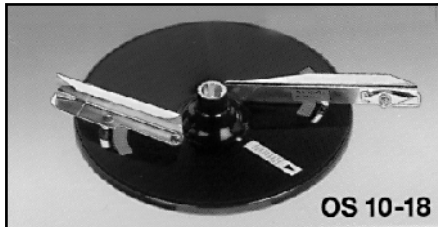


Fig. 7.8

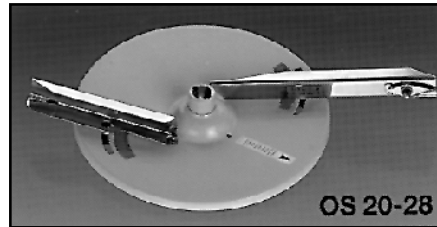


Fig. 7.9

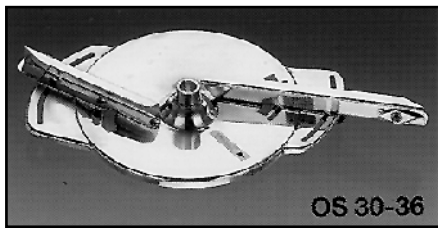


Fig. 7.10

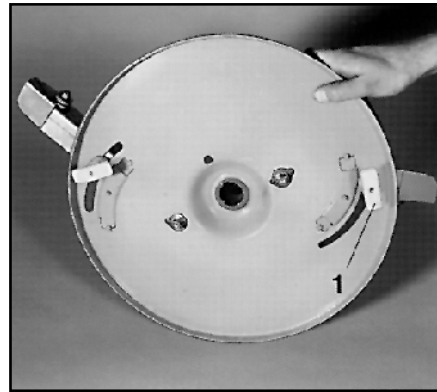


Fig. 7.11

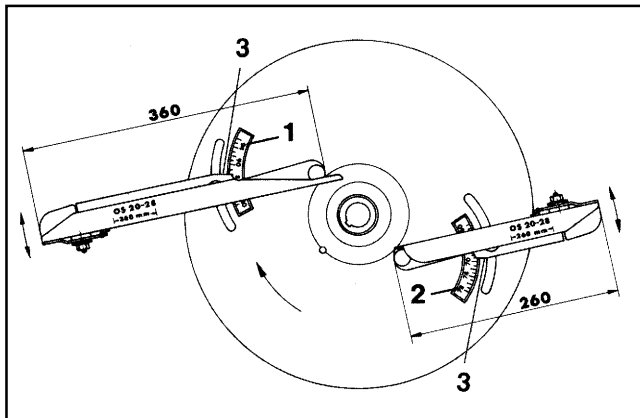


Fig. 7.12

7.4 OMNIA-SET Spreading Discs Used to Spread Granular Fertiliser

The OMNIA-SET spreading discs (OS spreading discs) to be used depend on the spacing between the tram lines.

OS 10-18 spreading discs (fig. 7.8), tram-line spacing of 10 to 18 m,

OS 20-28 spreading discs (fig. 7.9), tram-line spacing of 20 to 28 m,

OS 30-36 spreading discs (fig. 7.10), tram-line spacing of 30 to 36 m.

The position of the spreading vanes (fig 7.12) on the OMNIA-SET spreading discs can be adjusted and the angle of the wings can be changed. If granular fertiliser is to be spread using OMNIA-SET spreading discs, the funnel chute must be fitted to optimize the drop point of the fertiliser on the spreading discs (see point 7.5).

See the spreading table for the settings:
OMNIA-SET spreading discs with funnel chute.

Adjust the spreading discs as follows:

1. Setting the working width

The working width is set by adjusting the spreading vanes on the spreading discs. The correct values can be found in the spreading table:

Example: **Spreading discs:** OS 20-28

Type of fertiliser: KAS 27% N granular, BASF (white)

Working width: 24 m

Setting for spreading vanes

according to the spreading table: 68/87

Adjust the spreading vanes as follows:

- Loosen the two wing nuts (fig. 7.11/1) under the spreading disc, adjust the vanes, and then tighten the wing nuts again.
- Set the reading edge (fig. 7.12/3) of the **short vane to "68"** on the scale (fig. 7.12/2).
- Set the reading edge (fig. 7.12/3) of the **long vane to "87"** on the scale (fig. 7.12/1).

Note:

The working width of the broadcaster is increased by changing the angle of the spreading vanes to a higher value on the scale. The working width is reduced by changing the angle of the spreading vanes to a lower value on the scale. The shorter spreading vane distributes the fertiliser mainly in the center of the spreading pattern, whereas the longer vane mainly distributes to the outer area.

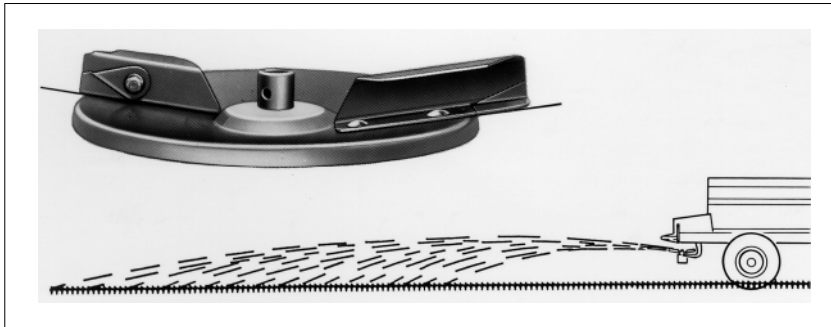


Fig. 7.13

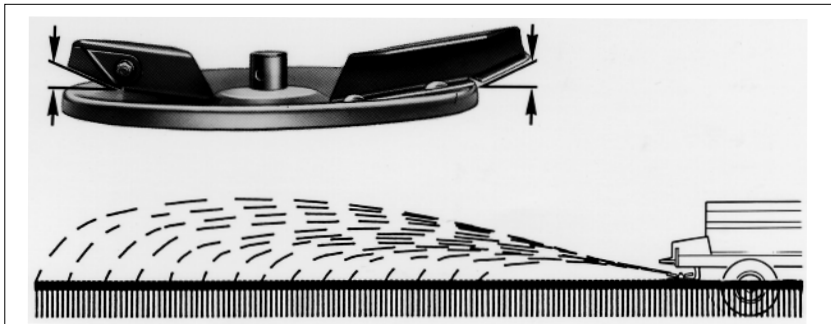


Fig. 7.14

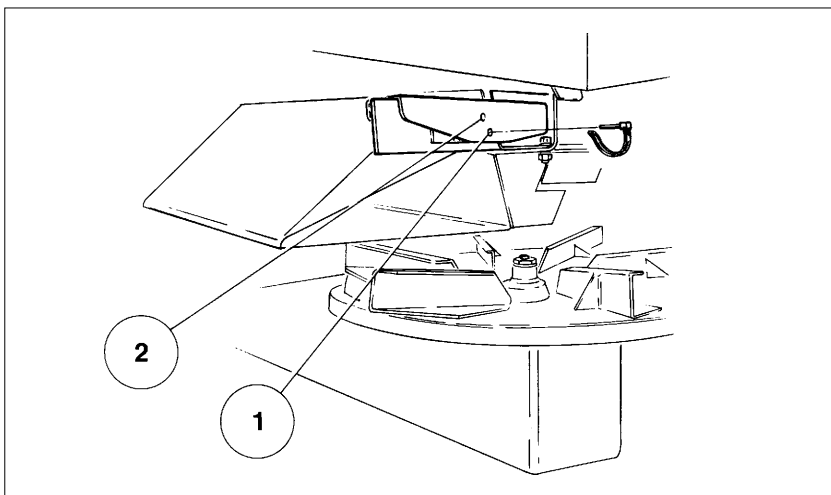


Fig. 7.15

2. Setting the swivel blades

Normal fertilisation

In the case of normal fertilisation, Omnia-Set spreading discs produce a flat and very shallow spreading fan (fig. 7.13). With normal fertilisation, the swivel blades of the spreading vanes are usually in the lower position. In some cases (see spreading table), the upper position (fig. 7.14) is required in order to achieve large working widths. No tool is needed to adjust the position of the swivel blades.

Late fertilisation

In the case of late fertilisation (fig. 7.14), the swivel blades of the spreading vanes are set to the upper position (no tool is required). As a result, the spreading path of the fertiliser is raised.

3. Setting the funnel chute

Secure the funnel chute on either side by inserting the numbered lynch pins into the appropriate holes. The holes are labeled with the numbers 1 and 2 (see fig. 7.15).

Adjust the funnel chute as follows:

Funnel chute position	Spread rate
Hole 1	up to 150 kg/ha
Hole 2	over 150 kg/ha

Note:

Older bulk precision broadcasters can also be fitted with a funnel chute that has **7 holes** for the lynch pins instead of two.

The funnel chute is then secured as follows:

Hole 4 for spread rates up to 150 kg/ha

Hole 5 for spread rates over 150 kg/ha.

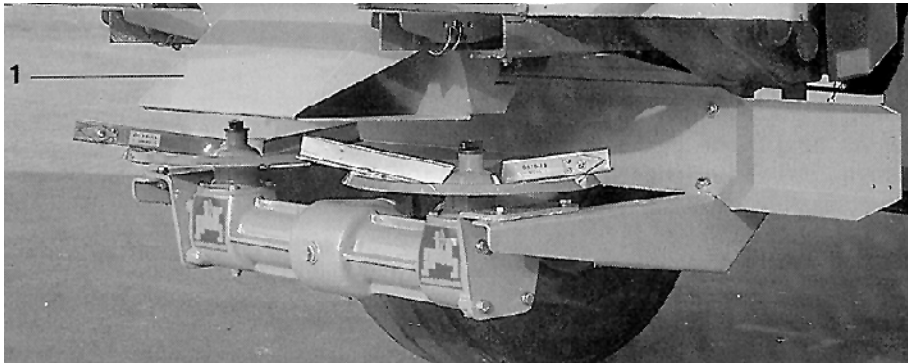


Fig. 7.16

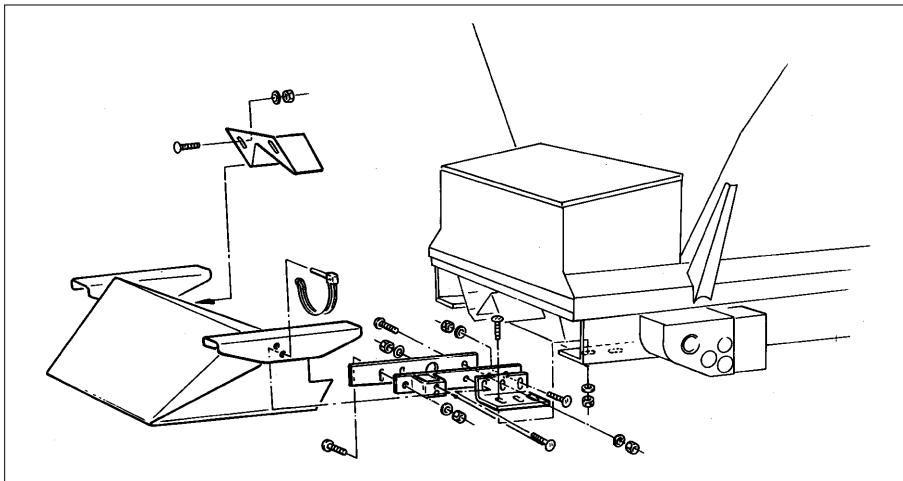


Fig. 7.17

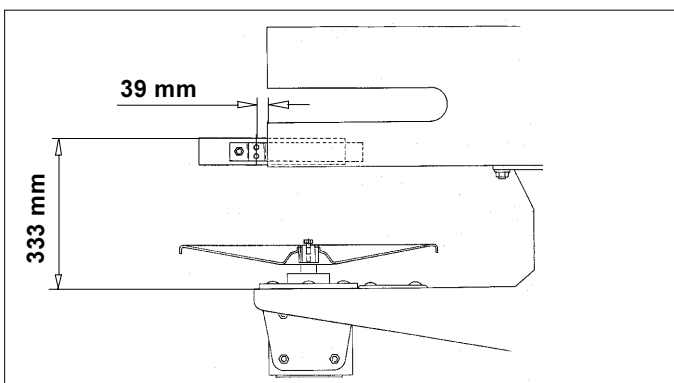


Fig. 7.18

7.5 Fitting the Funnel Chute

- Remove the additional chute (fig. 7.4/2, if applicable).
- Secure the funnel chute (fig. 7.16/1) according to fig. 7.17.

Important:

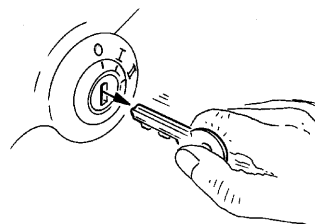
The distance (see fig. 7.18) between the frame of the bulk precision broadcaster and the center of the hole through which the linch pin to secure the funnel chute is passed is **39 mm**. The clearance between the guide chute base and the gearbox carrier is **333 mm** (see Fig. 7.18).

7.6 Checking the outlet-openings of the guide chute before every operation

Spreading material can build up inside the outlet openings (Fig. 7.19/1) of the guide chute to become too narrow to achieve a correct spread pattern. To achieve a correct spread pattern ensure that both outlets are clean. Therefore before every operation of the bulk spreader check resp. clean the outlets as follows:



Disengage tractor p.t.o. shaft, stop tractor engine and remove ignition key.



- pull out two clip pins (Fig. 7.19/2) and pull guide chute (Fig. 7.19/3) to the rear until the outlets (Fig. 7.19/1) can be seen
- check resp. clean the outlet openings
- push guide chute back into position and affix by two clip pins (Fig. 7.19/2) as described on pages 7 - 11 again.

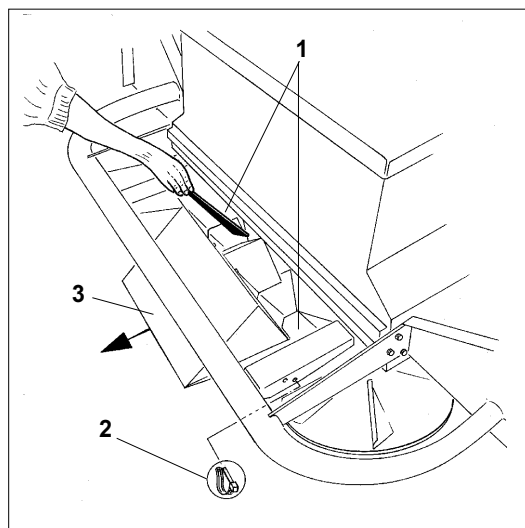


Fig. 7.19

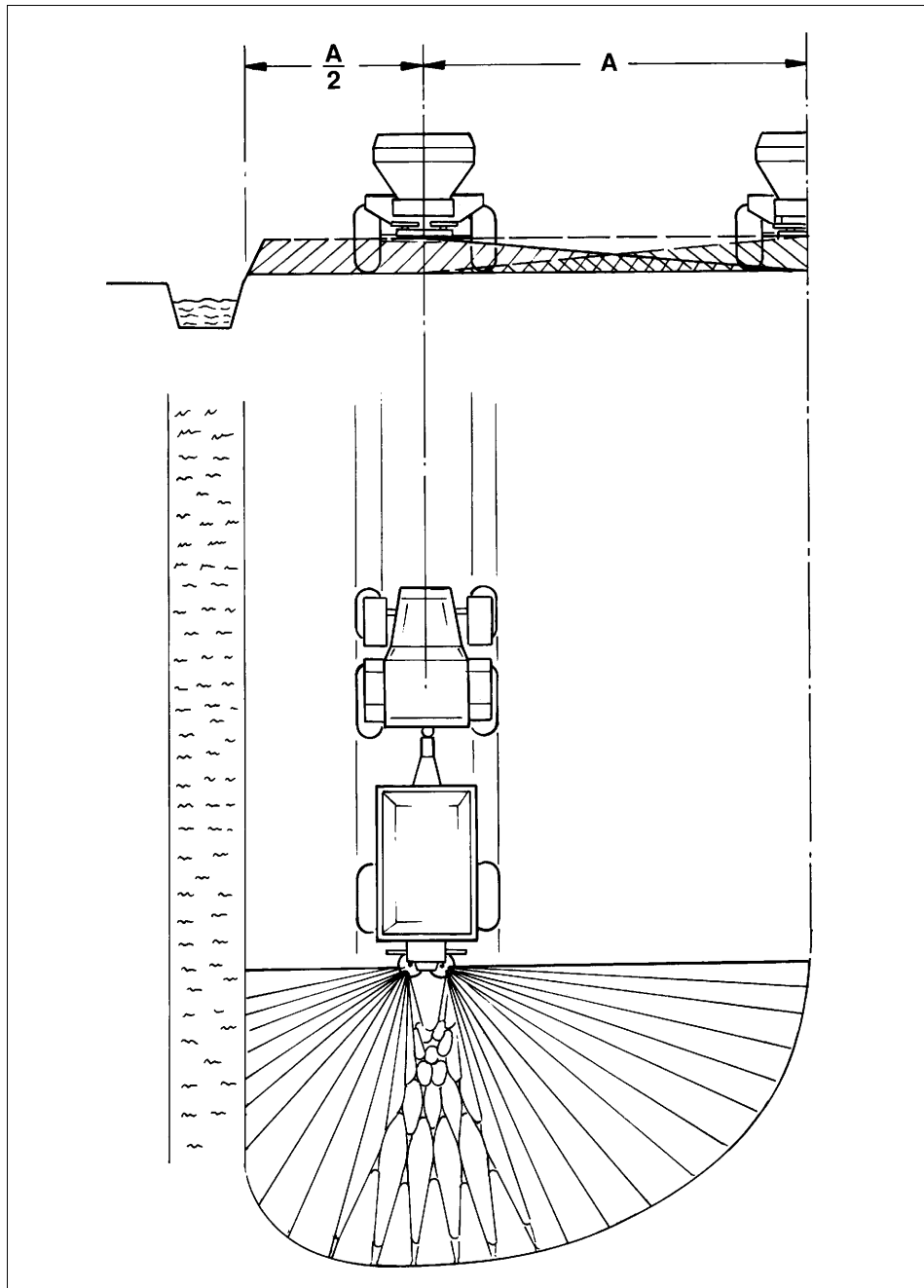


Fig. 8.1

8 Boundary Spreading

To spread up to the boundary of a field, it is advisable to use the **TELE-SET boundary spreading disc** (optional extra). This prevents large amounts of fertiliser from being spread beyond the boundary of the field.

The TELE-SET boundary spreading disc is required if the field is bordered by a body of water or woodland.

The boundary spreading discs produce a trapezoidal spreading pattern on one side (fig. 8.1). The actual spreading pattern achieved may vary from that shown on the page opposite.

The following are available:

1. TELE-SET boundary spreading discs **TS 10-28**
for spacings "A" of 10 to 28 m between tram lines,
2. TELE-SET boundary spreading discs **TS 30-36**
for spacings "A" of 30 to 36 m between tram lines,

Each are available in two models (i.e. for boundary spreading on the **left** and **right** side of the machine).

Only one of these boundary spreading discs is used at any one time and should be used in place of the spreading disc of the spreading unit that is situated closest to the field boundary.

Important!

The spacing "A" (see fig. 8.1) is the same as the working width of the broadcaster. If spreading is to be started with the TELE-SET boundary spreading disc, the first tram line must be arranged so that the distance from the center of the tram line to the field boundary amounts to half a spacing "A/2".

Important!

If TELE-SET TS 10-28 / Omnia-Set spreading disc OS 10-18 is used for spreading and the distance to the field boundary is 5 m or 6 m, the speed of the tractor's p.t.o. shaft must be reduced so that the fertiliser is not spread beyond the field boundary by the Omnia-Set spreading disc. The casting range of the Omnia-Set spreading disc OS 10-18 over the center of the tram line to the field boundary is approx. 8 m.

Reduce the speed of the tractor's p.t.o. shaft:

from 540 r.p.m. to 400 r.p.m. for a distance of 5 m.
from 540 r.p.m. to 450 r.p.m. for a distance of 6 m.

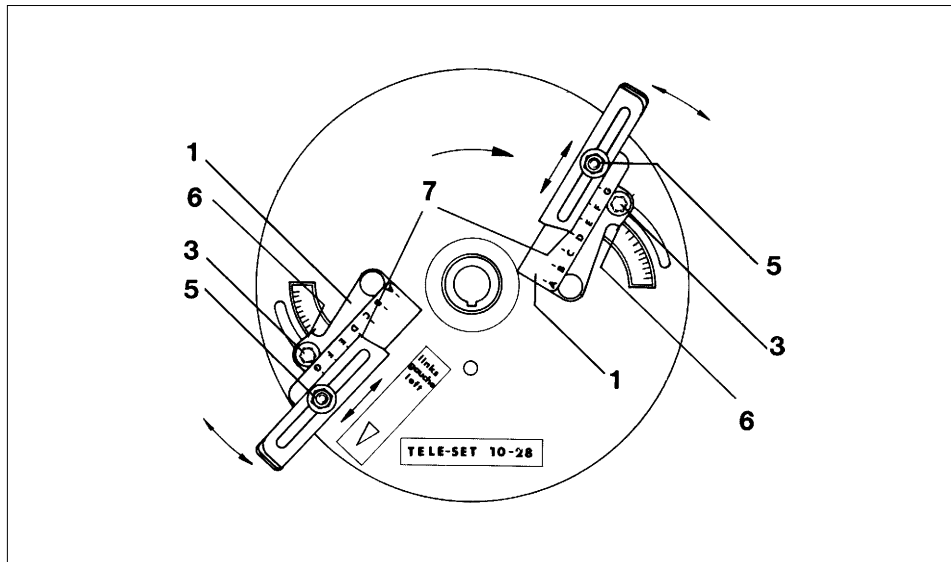


Fig. 8.2

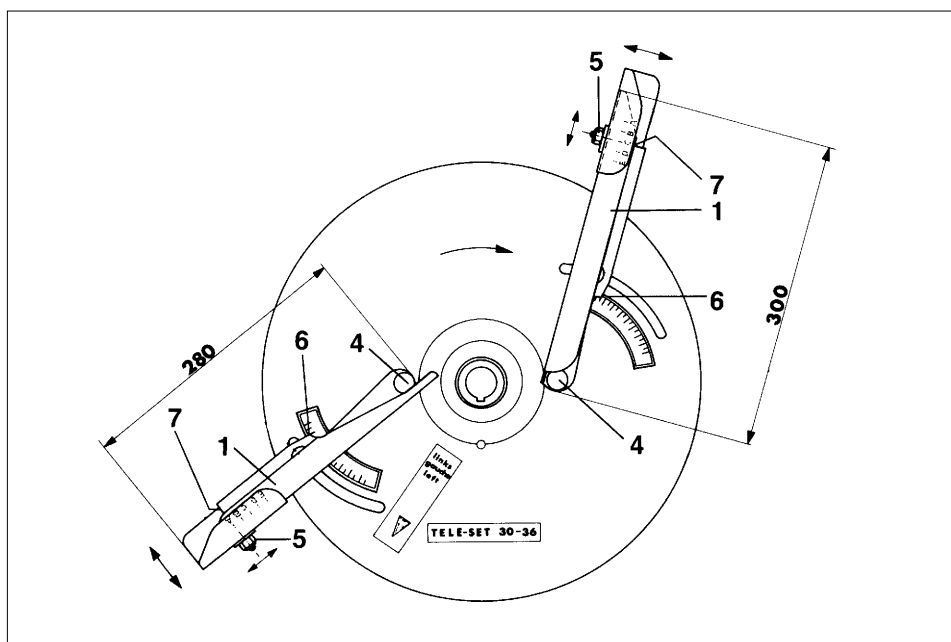


Fig. 8.3

8.1 TELE-SET 10-28 Boundary Spreading Disc

The TELE-SET 10-28 boundary spreading disc is equipped with two adjustable telescopic vanes (fig. 8.2/1). The correct setting for each vane can be found in the spreading table. Slacken the thumb nuts (fig. 8.2/3 and 8.2/5), adjust the vanes, and then tighten the nuts again.

Use the reading edge (fig. 8.2/6) to set values ranging from 20 to 31 **on the red scale**.

Use the reading edge (fig. 8.2/7) to set values from A to G **on the second scale**.

Example:

Spacing between tram lines A: 18 m

Distance A/2 of the first tram line to the field boundary: .. 9 m

Type of fertiliser: Calcium ammonium nitrate (KAS)

Settings according to the table: D23 / D21

One telescopic vane requires the settings "D" and "23",
the other telescopic vane requires the settings "D" and "21".

Note:

The settings have the following effects on the spreading pattern:

The higher the value on the red scale, the greater the working width and the steeper the drop-off of the spread pattern will be. The nearer the value on the second scale is to G, the greater the spreading width and the shallower the drop-off of the spread pattern will be.

8.2 TELE-SET 30-36 Boundary Spreading Disc

The TELE-SET 30-36 boundary spreading disc is equipped with two adjustable telescopic vanes of different lengths (fig. 8.3/1). The correct setting for each vane can be found in the spreading table. Slacken the thumb nuts (fig. 8.3/4 and 8.3/5), adjust the vanes, and then tighten the nuts again.

Use the reading edge (fig. 8.3/6) to set values ranging from 20 to 35 or from 40 to 58 **on the red scale**.

Use the reading edge (fig. 8.3/7) to set values from A to E **on the second scale**.

Example:

Spacing between tram lines A: 30 m

Distance A/2 of the first tram line to the field boundary: .. 15 m

Type of fertiliser: Calcium ammonium nitrate (KAS)

Settings according to the table: A28 / A44

The short telescopic vane requires the settings "A" and "28",
the long telescopic vane requires the settings A and 44.

Note:

The higher the value on the red scale, the greater the working width and the steeper the drop-off of the spread pattern will be. The nearer the value on the second scale is to E, the greater the working width and the shallower the drop-off of the spread pattern will be.



Fig. 9.1



Fig. 9.2

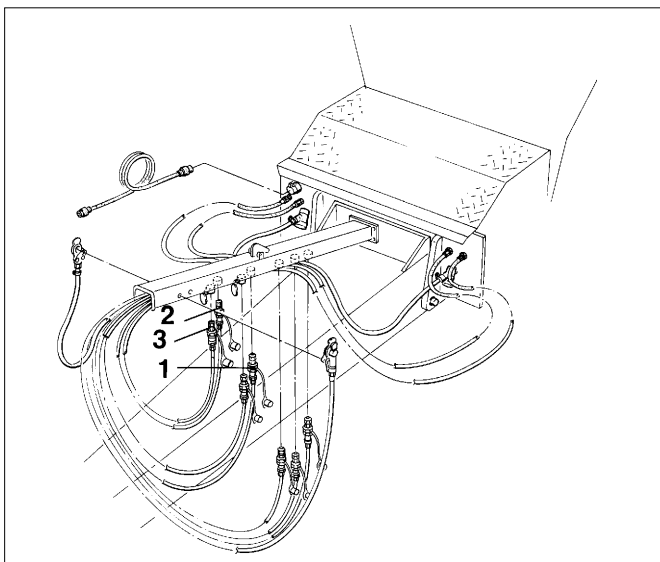


Fig. 9.3

9 Front-Mounted Worm Auger Distributor

(Optional Extra for ZG-B 8001 R and ZG-B 16001 TR)

ZG-B 8001 R bulk precision broadcasters can be equipped with 9 m front-mounted worm auger distributors (fig. 9.1) and ZG-B 16001 TR bulk precision broadcasters with 9 m and 12 m front-mounted worm augers (fig. 9.2).

Before using the front-mounted worm auger distributor:

1. Before using the front-mounted worm auger distributor, shut off the rear spreading unit (if applicable) as described in point 4.8.
2. Establish the hydraulic connections:

Hydraulic connection	Hydr. plug number (see figure 9.3)	Control valve of tractor
To fold back booms (9/12 m front-mounted worm auger)	1	single-acting
Balancing device (12 m front-mounted worm auger)	2	double-acting
	3	



Never reach inside or place any object into the worm auger distributor while it is still rotating!

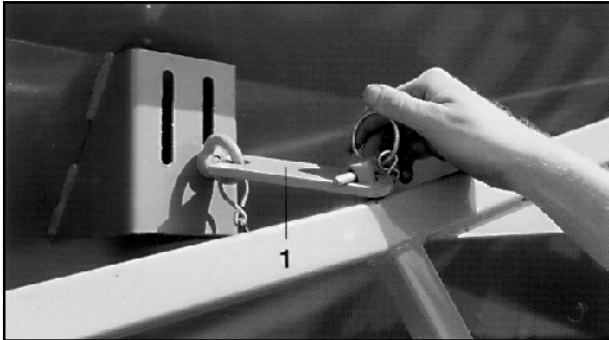


Fig. 9.4



Fig. 9.5



Fig. 9.6

9.1 Moving the Worm Auger Distributor's Booms into Working Position

9 m worm auger distributor:

Pull the linch pin (fig. 9.13/2) out of the safety catches.

12 m worm auger distributor:

Release the securing plates (fig. 9.4/1) on either side of the booms.

Open the safety catches **from the tractor cab** using the pull cord (fig. 9.5/1). When the safety catches are opened, the booms swing into their working position (fig. 9.6) under their own inertia.



Danger of injury!

1. **Do not stand in the slewing range of the worm auger distributor!
Ensure that there are no persons in the slewing range!**
2. **Only swing the booms out into their working position if there is sufficient space to do so!**
3. **Before releasing the linch pinchs (fig. 9.13/2) and securing plates (fig. 9.4/1), ensure that the booms are engaged securely in the safety catches (fig. 9.13/1), otherwise the booms may accidentally swing out into their working position causing injury.**

Note!

The booms of the worm auger distributor may only be swung out into their working position if the broadcaster is on level ground and the hydraulically activated balancing device (see point 9.4) is in its central position, otherwise the booms may hit the ground causing damage.



Fig. 9.7

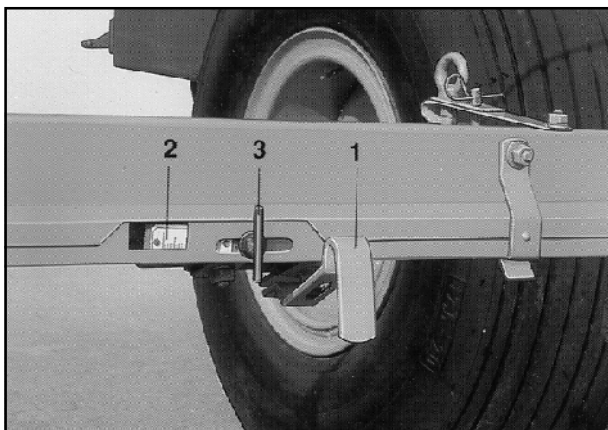


Fig. 9.8

9.2 Setting the Spread Rate and Adjusting the Outlet Openings

1. Setting the spread rate:

Set the spread rate using the slide gate as described in point 4.5.

See spreading table for settings determining the spread rate:
Worm auger distributors with a 9 m or 12 m working width.

2. Adjusting the outlet openings:

The required amount of fertiliser is transported along the floor conveyor belt, through a funnel, into the distributing troughs, and then to the worm auger distributors. Under the worm auger distributors, there are outlet openings from where the fertiliser is discharged. In addition, at the end of each boom is an "overflow" (fig. 9.7/1) from where the fertiliser is also discharged.

Switch on the floor conveyor belt and worm auger distributor. As soon as the fertiliser has filled the worm auger distributor, check whether fertiliser is being discharged evenly from all openings including the "overflows".

Adjusting: If more fertiliser is being discharged from the "overflows" (fig. 9.7/1) than from the outlet openings under the worm auger distributor :

Increase the size of the outlet openings.

If less fertiliser is being discharged from the "overflows" than from the outlet openings under the worm auger distributor:

Decrease the size of the outlet openings.



Before making any adjustments, switch off the conveyor belt and worm auger distributor.

Increase and decrease the size of the outlet openings using the lever on the rear side of each boom (fig. 9.8/1). The further outwards the lever is pushed, the larger the outlet openings become. Before any adjustments are made, the T-screw (fig. 9.8/3) must be slackened and tightened again afterward.

Set all levers (fig. 9.8/1) to the same scale value (fig. 9.8/2).

After spreading has been completed, the worm auger distributor can be returned to its transport position. The selected settings do not have to be changed.

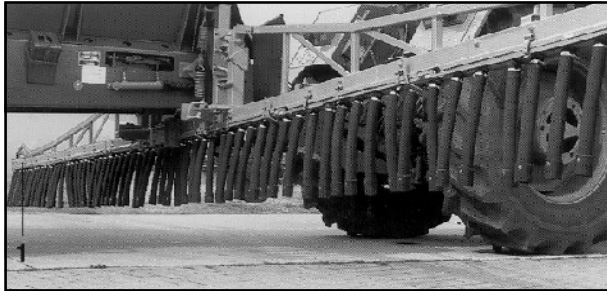


Fig. 9.9

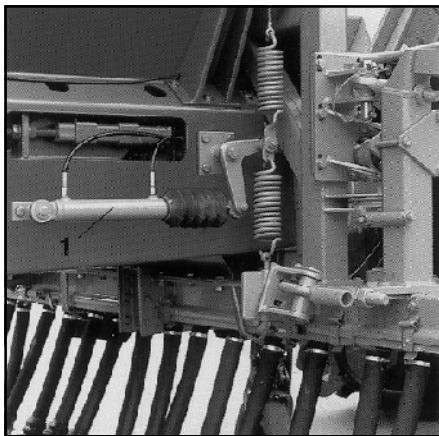


Fig. 9.10

9.3 Obstacles in the Field

If the worm auger distributor booms encounter any obstacles in the field, the booms can be simply returned to their transport position to avoid the obstacles (see point 9.5 Transport Position).

However, if a collision does occur, the boom will be pushed upward to make way for the obstacle.

9.4 Tilting Device

(12 m front-mounted worm auger distributor only)

If the broadcaster is driven over furrows or depressions, it tilts to one side. To prevent the long worm auger distributor booms (fig. 9.9/1) from making contact with the ground, the 12 m worm auger distributor can be displaced using a hydraulic ram (fig. 9.10/1) attached to the frame and connected to a double-action control valve. The hydraulic ram and booms are normally in the central position.



Fig. 9.11

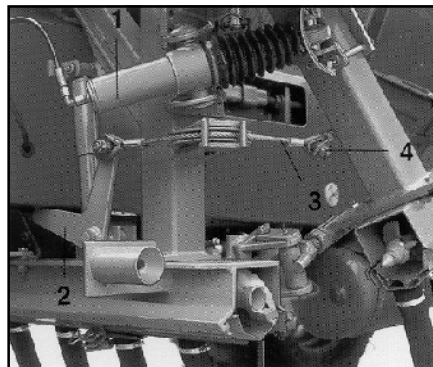


Fig. 9.12

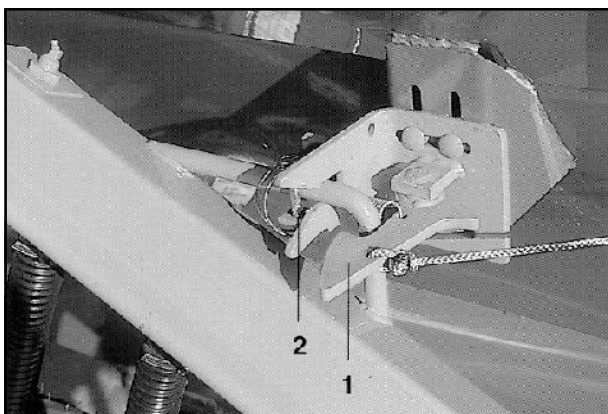


Fig. 9.13

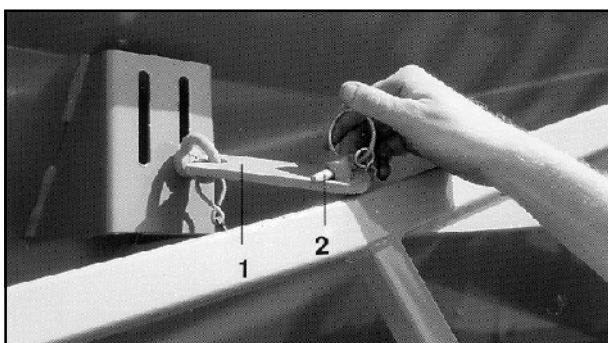


Fig. 9.14

9.5 Transport Position

During transport, both worm auger distributor booms are swung back against the hopper (fig. 9.11).

The booms are moved from their working position to their transport position by two simple hydraulic rams (fig. 9.12/1). When the booms are swung back, they engage in a safety catch (fig. 9.13) on the side of the hopper and are held in place by safety hooks (fig. 9.13/1). Both hydraulic rams (fig. 9.12/1) must be connected to a single-action control valve.



Danger!

1. **Do not stand in the slewing range of the worm auger distributor!**
Ensure that there are no persons in the slewing range!
2. **Additional safety devices must be used if the broadcaster is transported on public roads!**

When being transported on public roads:

- the booms of the 9 m worm auger distributor must be attached and secured to the side of the bulk precision broadcaster using linch pins (fig. 9.13/2);
- the booms of the 12 m worm auger distributor must be attached and secured using securing plates (fig. 9.14/1) and linch pins (fig. 9.14/2).

12 m front-mounted worm auger distributors only:

When in use in a field, the position of the 12 m worm auger distributor can be corrected by the hydraulically activated slope tilting device (see point 9.4). The worm auger distributor can also be swung into its working position even if the slope tilting device is not in its central position. When the booms are swung back into their transport position, two levers (fig. 9.12/2) are actuated beneath the frame of the bulk precision broadcaster and push the worm auger distributor into its central position before the booms engage in the safety catches (fig. 9.13).

Note!

If the booms do **not** engage in the safety catches (fig. 9.13) when they are swung back, the levers (fig. 9.12/2) must be adjusted. The levers are held in place by cables (fig. 9.12/3) the length of which can be altered using the tensioning bolts (fig. 9.12/4). Both levers must be adjusted so that the booms engage smoothly in the safety catches.



Fig. 9.15

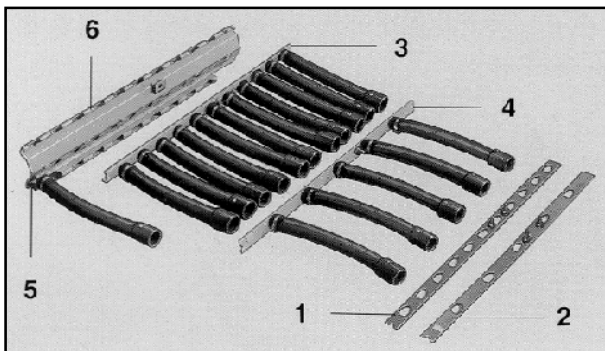


Fig. 9.16



Fig. 9.17



Fig. 9.18

9.6 Spreading Small Spread rates and Spreading Using the Dust-Protective Hose Attachments

The size of the outlet openings (see point 9.2) under the worm auger distributors is adjusted using the slides.

The gaps between the outlet openings under the worm auger distributor can be adjusted by changing the slides (fig. 9.16). In normal use, the outlet openings are separated by gaps of 82.5 mm.

Spreading small amounts of material

Slides with gaps of 165 mm can be fitted.

To reduce the amount of dust produced

Slides with anti-dust tubes can be used (fig. 9.15/1).

The following are available:

1. Slides (fig. 9.16/1) with 82.5 mm gaps without anti-dust hoses.
2. Slides (fig. 9.16/2) with 165 mm gaps without anti-dust hoses.
3. Slides (fig. 9.16/3) with 82.5 mm gaps and anti-dust hoses (for 9 m worm auger distributors only).
4. Slides (fig. 9.16/4) with 165 mm gaps and anti-dust hoses.

Assembly:

Fit the slides as described in point 9.7 (Cleaning the Worm Auger Distributors).

The individual connectors (fig. 9.16/5) of the slides with anti-dust hoses must be fitted directly to the distributing trough (fig. 9.16/6).

Important Note Regarding Slides With Anti-Dust Hoses:

If the worm auger distributor is fitted with anti-dust hoses, guards (fig. 9.17/1) must be attached to the frame of the bulk precision broadcaster. The guards prevent the hoses from coming into contact with the tyres (see fig. 9.18).

The guards do not have to be fitted if the bulk precision broadcaster has mudguards.

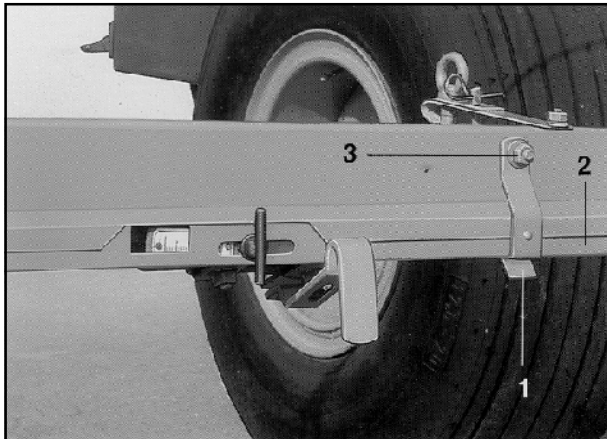


Fig. 9.19

Fig. 9.20

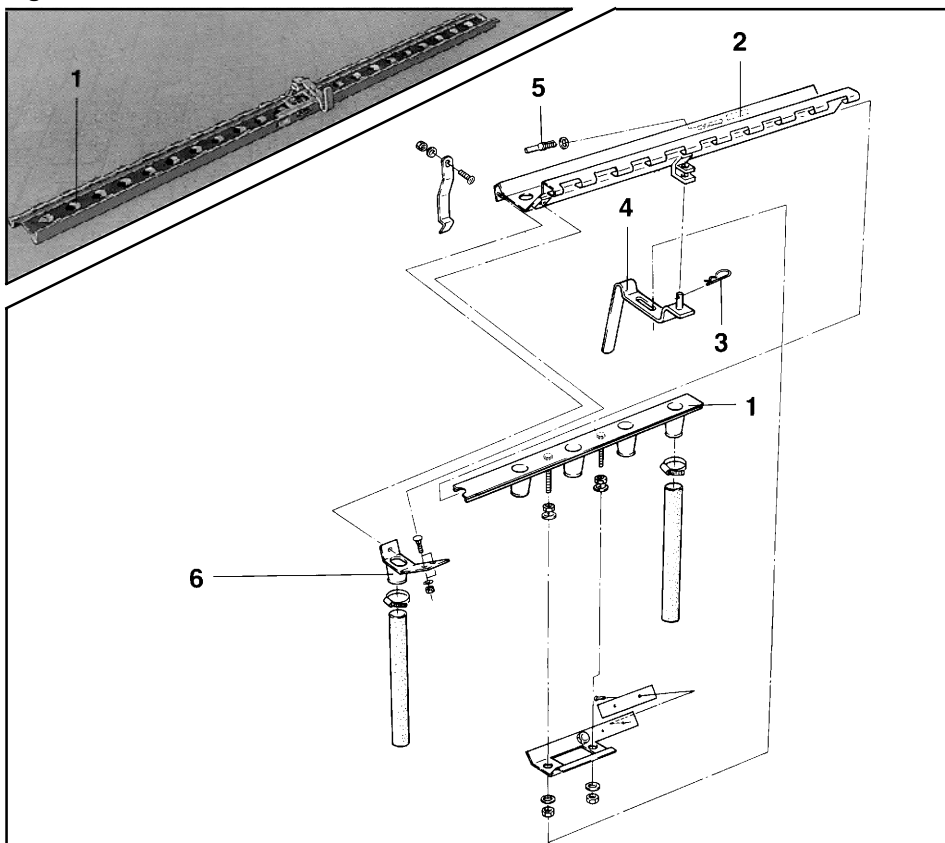


Fig. 9.21

9.7 Cleaning the Worm Auger Distributors

Removing the distributing troughs:

1. Swing the spreading booms back into their transport position.
2. Release the trough holder (fig. 9.19/1) under the distributing troughs (fig. 9.19/2) without loosening the hexagonal nut (fig. 9.19/3).
3. Press the distributing troughs downward to remove them (fig. 9.19/2).
4. Clean the worm auger distributors. The worm auger distributor can be cleaned using a water jet or a high-pressure cleaner.

Disassembling the slides:

If the slides (fig. 9.20/1) become difficult to adjust, remove the slides (fig. 9.21/1) from the distributing troughs (fig. 9.21/2) and clean them:

1. Pull out the spring clip (fig. 9.21/3) and remove the adjusting lever (fig. 9.21/4).
2. After the T-bolt (fig. 9.21/5) has been loosened, the slide (fig. 9.21/1) can be pulled out sideways. Distributing troughs with anti-dust hoses each have an individual connector (fig. 9.21/6) which does not have to be disassembled for cleaning.
3. The slides are reinserted in the distributing troughs by performing the above steps in reversed order.

Reinserting the distributing troughs:

1. Insert the distributing troughs into the booms and push upward until the trough holders (fig. 9.19/1) engage.
 2. Ensure that the trough holders (fig. 9.19/1) are positioned correctly. If necessary, tighten the hexagonal nut (fig. 9.19/2) of the trough holder.
-

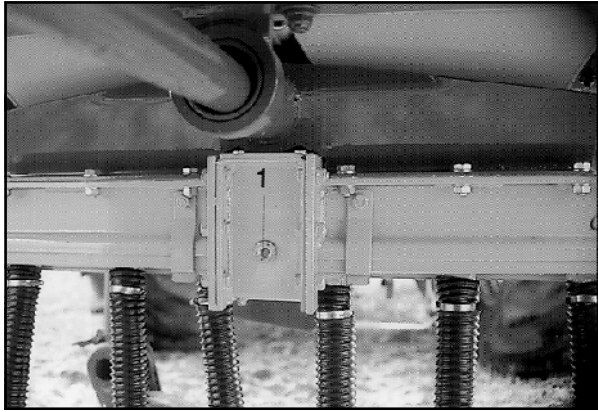


Fig. 9.22



Fig. 9.23

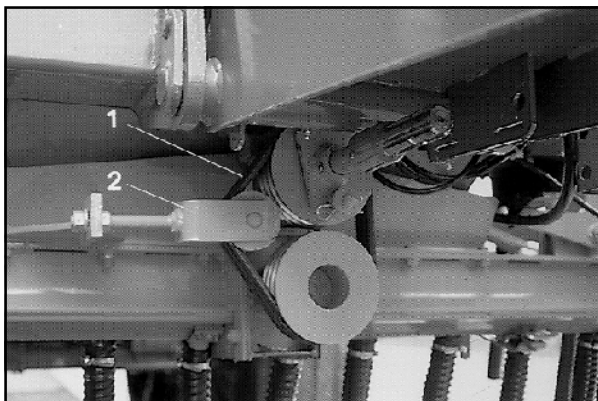


Fig. 9.24

9.8 Maintenance Plan for the Front-Mounted Worm Auger Distributor

1. Gear box:

The oil does not have to be changed.

Check the level of oil at the oil level checking bolt (fig. 9.22/1) each time the machine is used. When the broadcaster is positioned horizontally, the oil level reaches the lower edge of the oil level bolt.

Quantity: 0.8 litre.

Gear oil: SAE 90.

2. Grease nipple:

Grease all bearings (fig. 9.23/1) regularly, at least once before every spreading period.

Carefully clean the grease nipple and grease gun before greasing the bearings. This is to prevent any dirt from being forced into the bearings.

The following must be greased:

2 bearings on the booms of the 9 m worm auger distributor,

4 bearings on the booms of the 12 m worm auger distributor.

3. V-belt tensioning

The gears of the 9 m and 12 m worm auger distributors are driven by 3 V-belts (fig. 9.24/1). Check the V-belts regularly, at least once before every spreading period.

If necessary, adjust the tension of the V-belts using the tensioning wheel (fig. 9.24/2).



Before assembling the machine, switch off the tractor's p.t.o. shaft, turn off the tractor's engine, and remove the ignition key.

After assembly has been completed, reattach the p.t.o. shaft guard (fig. 4.24/1).



Fig. 10.1

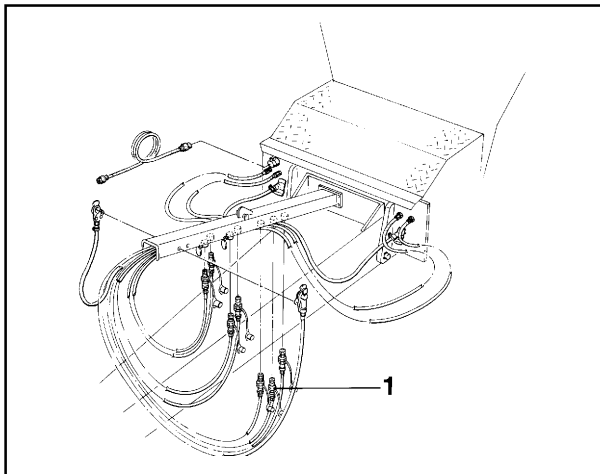


Fig. 10.2

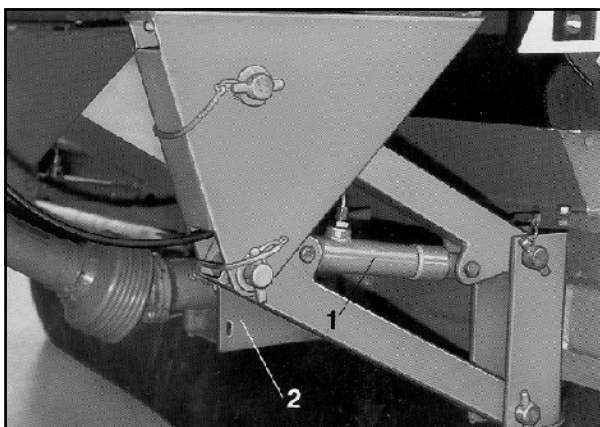


Fig. 10.3

10 S 200/3 Worm Auger Distributor with 3 m Working Width (Optional Extra)

AMAZONE bulk precision broadcasters with S 200/3 worm auger distributors (fig. 10.1/1) are used in road construction for material such as chippings, cement, and concrete, on refuse sites for spreading lime, or in the construction of sports fields. The AMAZONE S 200/3 worm auger distributor distributes large amounts of material (up to 50 kg/m²) precisely across a working width of 3 m.

Before using the S 200/3 worm auger distributor:

1. Connect the S 200/3 worm auger distributor as described in point 4.8 and switch off the front-mounted worm auger distributor (if applicable).
2. Establish the hydraulic connections:

Hydraulic connection (fig. 10.2/1)	Control valve of tractor
To raise the S 200/3 worm auger distributor	single-action

The worm auger distributor is fitted with two single-action hydraulic rams (fig. 10.3/1) used to raise the worm auger distributor during transit on the construction site. The worm auger distributor's own weight causes it to lower into its working position when the control valve is actuated.

Attention! When work has been completed, raise the worm auger distributor to its transport position in order to avoid damage.



1. **Do not stand in the slewing range of the S 200/3 worm auger distributor and its operating mechanism!**
2. **Ensure that there are no persons within the danger zone!**
3. **Never reach into parts of the machine where parts may still be moving!**
Risk of injury!
4. **Lock the control valve in place after it has been used.** This is to prevent the unintentional raising and lowering of the worm auger distributor!
5. **The S 200/3 worm auger distributor must not be taken onto public roads!**
Bulk precision broadcasters with S 200/3 worm auger distributors exceed the maximum permissible width of 2.5 m. The S 200/3 worm auger distributor including the p.t.o. shaft (fig. 10.6/1) must be taken off before any travel on public roads.

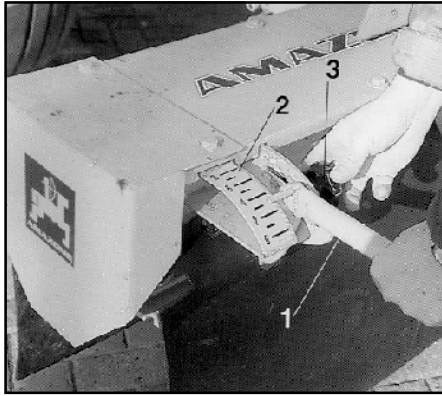


Fig. 10.4

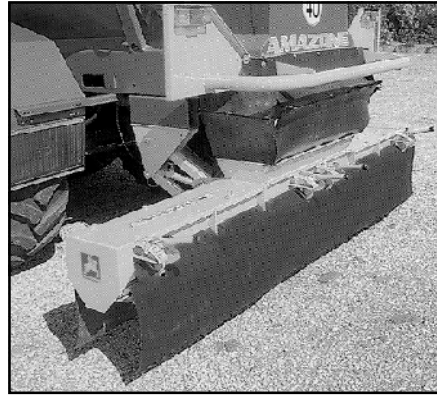


Fig. 10.5

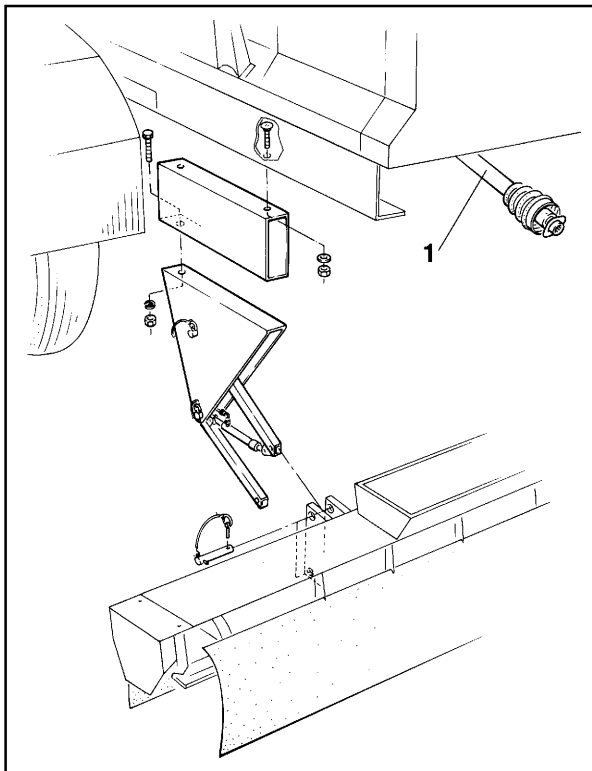


Fig. 10.6

Setting the spread rate:

The spread rate is set using the slide gate as described in point 4.5.

Adjusting the outlet openings:

The required amount of fertiliser is transported along the floor conveyor belt, through a funnel, into the distributing troughs, and then to the worm auger distributors. Under the worm auger distributors, there are outlet openings from where the fertiliser is discharged.

The outlet openings can be adjusted using the four levers (fig. 10.4/1). The higher the levers are raised, the larger the outlet openings become. All levers should first be set to the middle scale value (fig. 10.4/2). Before the levers are adjusted, the star grip (fig. 10.4/3) must be slackened and then tightened again afterwards. Switch on the floor conveyor belt and the worm auger distributor. As soon as the material has filled the worm auger distributor, check whether the material is being discharged evenly from all openings and across the entire working width. If necessary, alter the positions of the levers.

**Danger!**

1. **Shut down the conveyor belt and worm auger distributor before adjusting the levers.**
2. **Never reach inside or place any objects into the rotating worm auger distributor.**

The working speed is approx. 2 km/h. When spreading has been completed, the worm auger distributor can be brought to its transport position without the selected settings having to be changed.

Fitting the worm auger distributor

Attach the worm auger distributor to the bulk precision broadcaster as shown in fig. 10.6. Before tightening the bolts, ensure that the worm auger distributor is positioned centrally in relation to the vehicle and at a right angle to the direction of travel. Attach the dust guard as shown in fig. 10.5.



Fig. 11.1

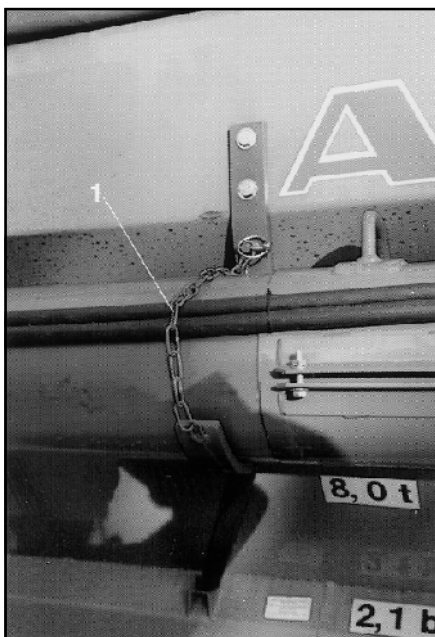


Fig. 11.2



Fig. 11.3

11 Transfer Worm Auger

(Optional Extra)

The transfer worm auger (fig. 11.1) is used to fill, for example, sowing machines and externally mounted fertiliser spreaders. The transfer worm auger is permanently attached to the ZG-B 8001 R and ZG-B 16001 TR bulk precision broadcasters.

Transport position

In its transport position (fig. 11.1), the transfer worm auger is attached along the side of the broadcaster's hopper and is secured using a chain (fig. 11.2/1) and a cable (fig. 11.3/1).



Fig. 11.4



Fig. 11.5



Fig. 11.6

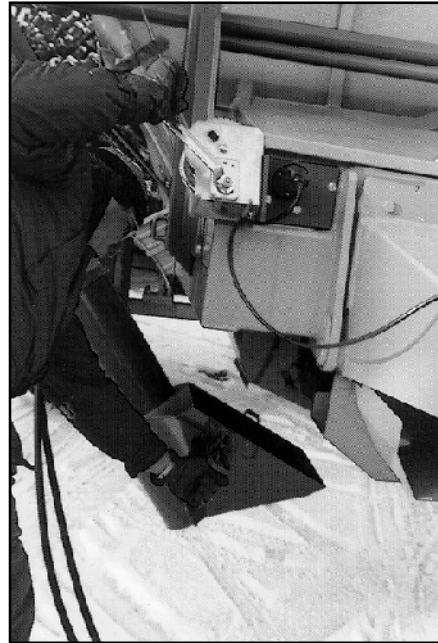


Fig. 11.7



Fig. 11.8



Fig. 11.9

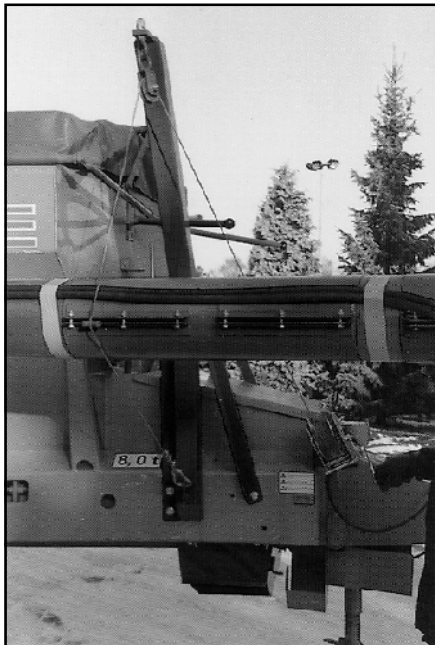


Fig. 11.10

Putting the transfer worm auger into its working position:

- Couple the bulk precision broadcaster to the tractor.
- Loosen the securing cable (fig. 11.3/1) using the crank (fig. 11.3/2).
- The transfer worm auger is attached to a swinging support arm. Swing the support arm out (as shown in fig. 11.4) until the catch (fig. 11.5/1) engages.
- Attach the cable (fig. 11.6/1) to the middle of the screw and slowly swing the transfer worm auger into its working position by turning the crank (fig. 11.3/2).
- Swing the transfer worm auger under the discharge hopper (fig. 11.7) and attach it to the hopper using the fasteners (fig. 11.8).
- Tension the cable (fig. 11.6/1).
- Connect the hydraulic motor of the transfer worm auger to a double-action hydraulic connector.

The transfer worm auger is ready for operation (see fig. 11.9).

Returning the transfer worm auger into its transport position

The transfer worm auger is returned to its transport position by following the above instructions in reversed order:

- The cable is attached to the middle of the screw (fig. 11.6) and tensioned.
 - Release the hopper fasteners (fig. 11.8).
 - Slowly bring the transfer worm auger into its transport position by turning the crank.
 - Carefully place the auger onto its holder (fig. 11.2) and secure it using a chain (fig. 11.2/1).
 - Attach the cable to the auger as shown in fig. 11.10.
 - Release the catch (fig. 11.5) and slide the auger into the holder using the crank.
 - Attach and tension the cable as shown in fig. 11.3.
-

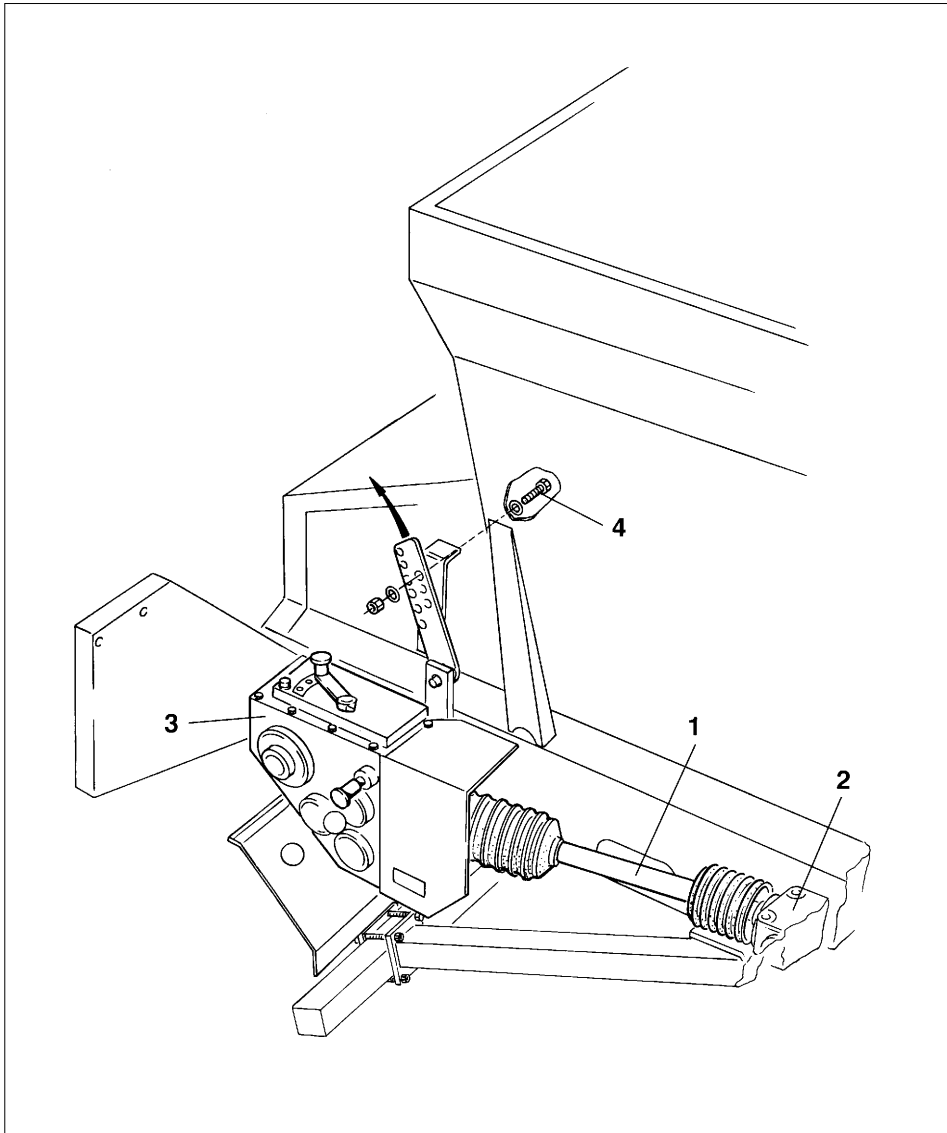


Fig. 12.1

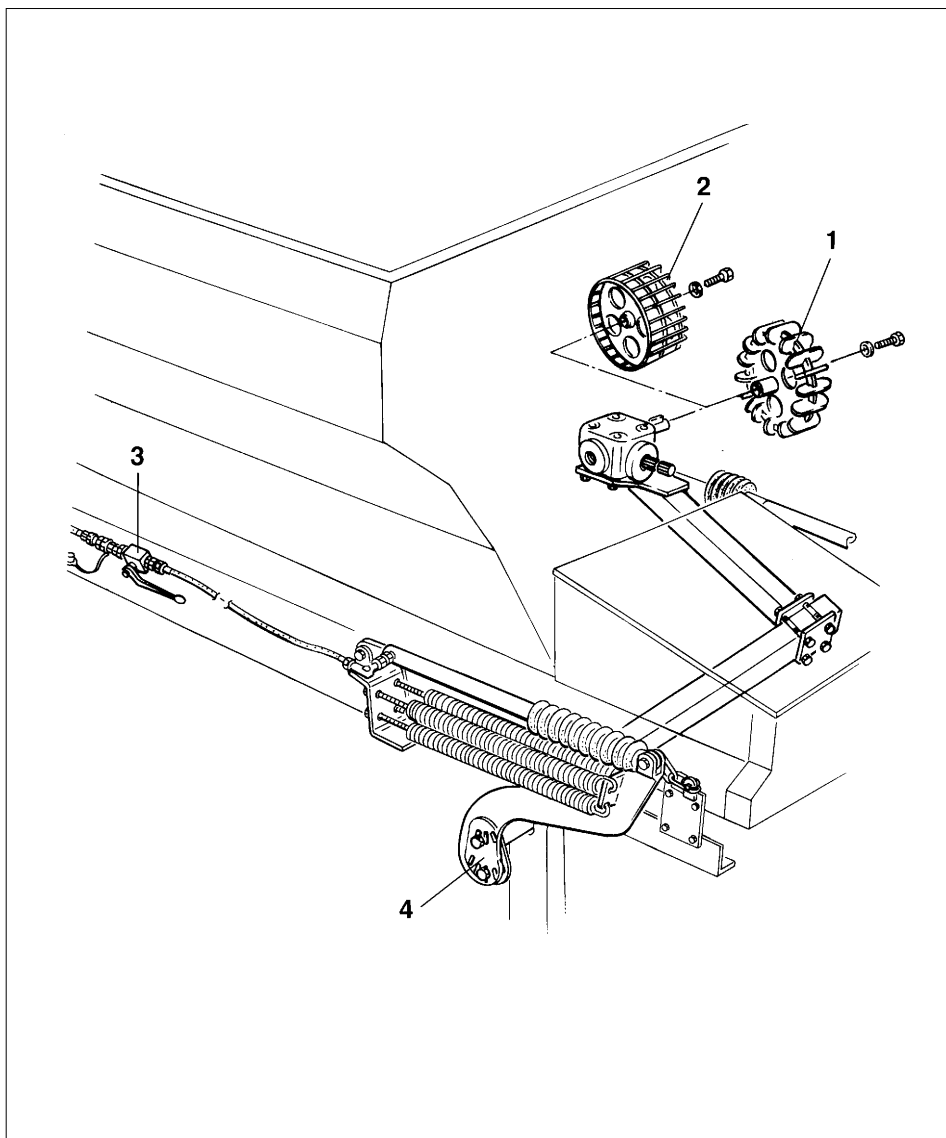


Fig. 12.2



Fig. 12.3

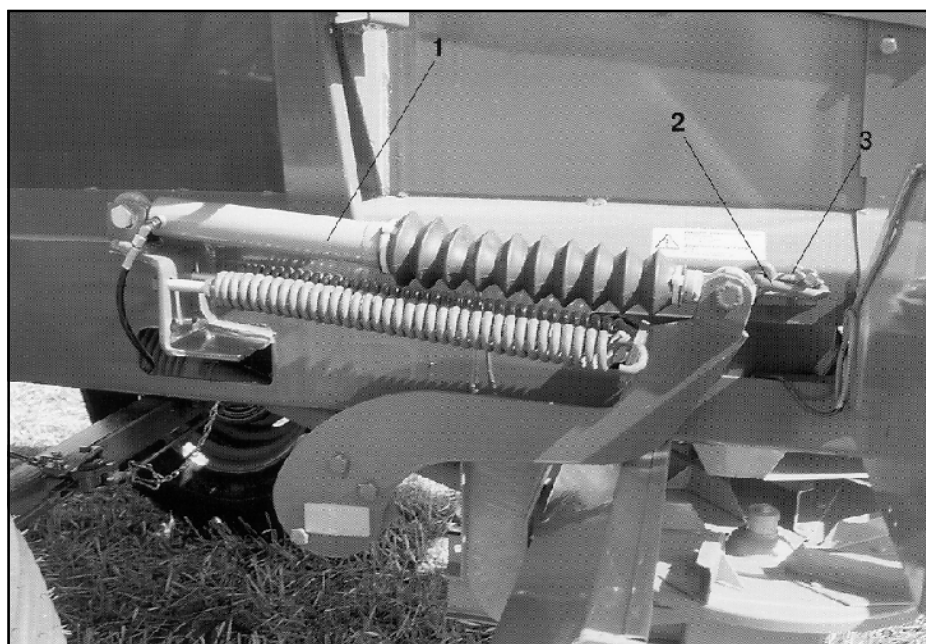


Fig. 12.4


12 Ground Wheel Drive (Optional Extra)

If the material to be spread is to be discharged evenly, the **conveyor belt speed** (p.t.o. shaft speed) and the **travel speed** must be kept constant. In the basic model, the conveyor belt is driven by the tractor's p.t.o. shaft. In hilly areas, it is sometimes difficult to maintain both a constant p.t.o. shaft speed and a constant speed of travel.

If the conveyor belt is driven by the ground wheel, the conveyor belt speed is dependent on the speed of travel and the material to be spread is distributed evenly. The spreading unit is still driven by the tractor's p.t.o. shaft.


Important! The slide gate settings may be different for ground wheel drive.
Check the spreading table!

Connect the ground wheel drive:

 **Switch off the tractor's p.t.o. shaft, turn off the tractor's engine, and remove the ignition key.**

1. Remove the p.t.o. shaft (fig. 12.1/1) from the drive shaft under the bulk precision broadcaster and connect it to the angular gear box (fig. 12.1/2) of the ground wheel. To prevent the angle of the p.t.o. shaft (fig. 12.1/1) from becoming too extreme, the conveyor belt gear box (fig. 12.1/3) must be moved accordingly. After the M16 hexagonal bolt (fig. 12.1/4) has been removed, the gears can be repositioned. The new position is secured using the hexagonal bolt.
2. Connect the hydraulic plug (fig. 12.2/3) to a single-action control valve on the tractor.

Switch the conveyor belt on and off:

-  1. **Do not stand in the slewing range of the drive wheel (fig. 12.3/1) and its operating mechanism (fig. 12.4)!**
2. **Ensure that there are no persons in the danger zone!**
3. **Never reach inside the machine while parts may still be moving!**
- Risk of injury!**

When the control valve is actuated, the drive wheel (fig. 12.3/1) is either forced against the broadcaster's tyre by means of a spring or lifted from the tyre by means of the hydraulic ram (fig. 12.4/1) in which case the conveyor belt is switched off. The travel of the drive wheel can be adapted to the size of the broadcaster's tyre by changing the position of the ram (fig. 12.2/4).

Before using the ground wheel drive for the first time or when changing tyres, ensure that the correct drive wheel is fitted for the appropriate type of tyre:

- drive wheel (fig. 12.2/1) for relatively smooth tyres with a fine tread,
- drive wheel (fig. 12.2/2) for tyres with a coarse, cammed tread.

Transport on public highways

Switch off the conveyor belt. Shut the stop valve (fig. 12.2/3) and secure the ground wheel with the chain (fig. 12.4/2) and lynch pin (fig. 12.4/3) provided.



Fig. 13.1



Fig. 13.2

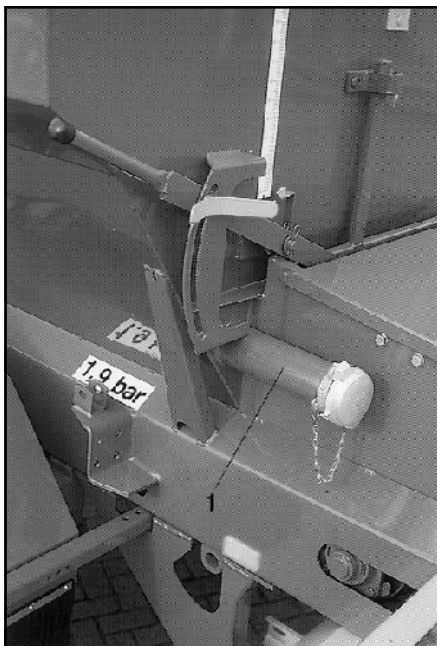


Fig. 13.3

13 Swivelling Tarpaulin Hopper Cover (Optional Extra)

Pneumatic filling of the hopper

The swivelling tarpaulin cover (fig. 13.1/1) prevents the fertiliser in the hopper from becoming wet. It also prevents spreading errors caused by changes with regard to the fertiliser's spreading characteristics which may result from exposure to dampness. Powdered fertiliser cannot be caught by the wind passing over it during transport.

The swivelling tarpaulin cover is required if the ZG-B is loaded pneumatically through a filler pipe (fig. 13.3/1; standard feature of ZG-B 8001 R and ZG-B 16001 TR).

The swivelling tarpaulin cover (see fig. 13.1) can be opened and closed using a lever. Figure 13.2 shows the swivelling tarpaulin cover of the ZG-B 16001 TR bulk precision broadcaster (the cover can be reached via a permanently attached step ladder).

Attention!

Secure the closed swivelling tarpaulin cover using tensioning rope (fig. 13.2/1). If the cover is not secured in place, it may be forced open by a gust of wind or by the wind passing over it during transport.

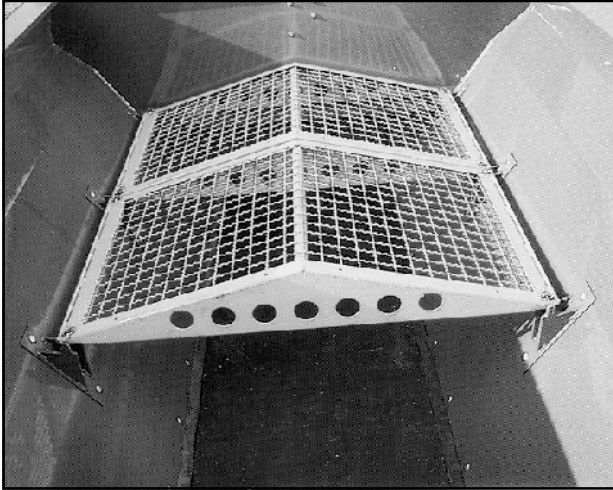


Fig. 14.1

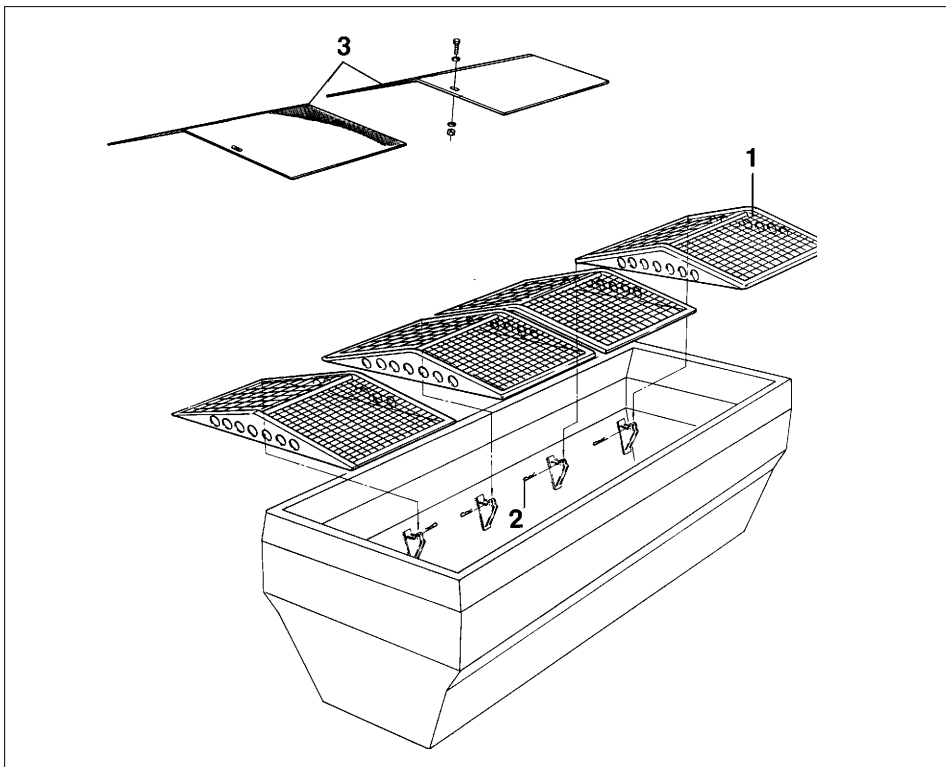


Fig. 14.2

14 Sieve Grates

(Optional Extra)

The sieve grates (fig. 14.1) cover the entire hopper. Lumps of fertiliser and foreign bodies are caught by the sieves grates when the hopper is filled. The grates (fig. 14.2/1) are attached to brackets and secured in place using spring pins (fig. 14.2/2).

Notes regarding assembly: ZG-B 8001 R and ZG-B 16001 TR

The ZG-B 8001 R and ZG-B 16001 TR bulk precision broadcasters are fitted with load relief covers as a standard feature. The load relief covers must be removed before the sieve grates are fitted. If **necessary (see point 15)**, load relief plates (fig. 14.2/3) can be bolted to the sieve grates.

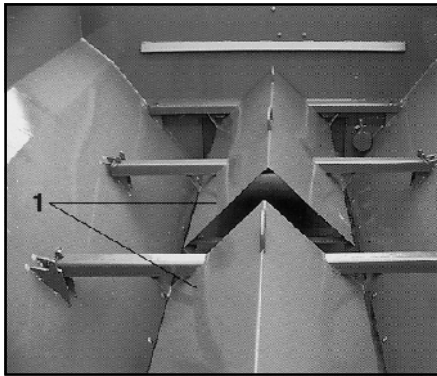


Fig. 15.1

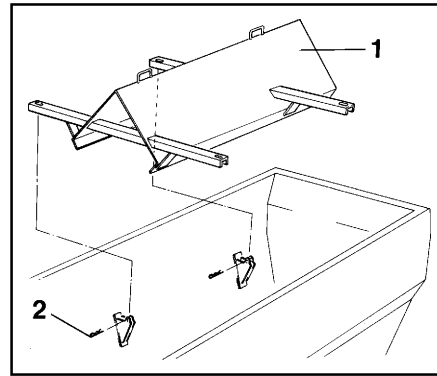


Fig. 15.2

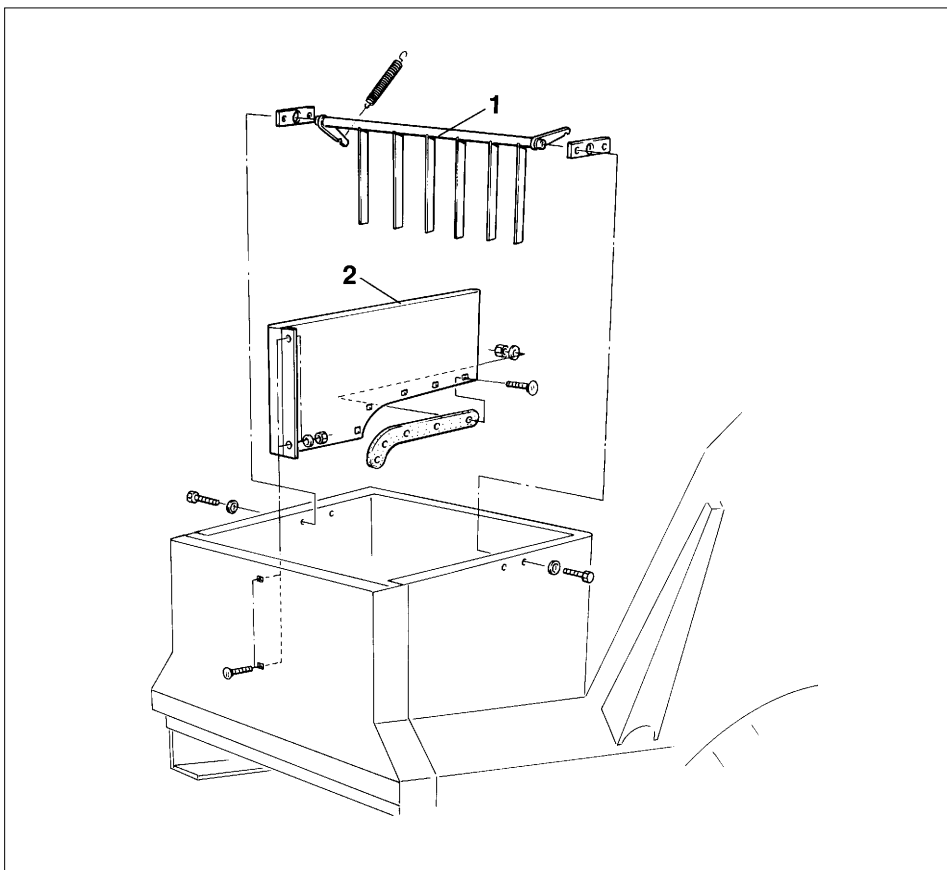


Fig. 15.3

15 Floor Conveyor Belt Load Relief Cover

The ZG-B 8001 R and ZG-B 16001 TR bulk precision broadcasters are fitted with belt load relief covers (fig. 15.1/1) as a standard feature.

The belt load relief covers (fig. 15.2/1) are attached to brackets and secured in place using spring pins (fig. 15.2/2).

Fit the belt load relief covers if the front-mounted spreading unit of the bulk precision broadcaster is to be used.

Note regarding spreading using the rear spreading unit:

The belt load relief covers should be removed in the case of damp manure or dampened fertilisers in order to prevent bridging.

15.1 Fertiliser Rake (Optional Extra)

The fertiliser rake breaks up any lumps of fertiliser. The fertiliser rake (fig. 15.3/1) is fitted directly before the spreading unit.

15.2 Fertiliser Flow Dividor Plate for precise spreading on slopes (Optional Extra)

If the fertiliser flow dividor plate (fig. 15.3/2) is fitted, the stream of fertiliser will be evenly divided onto the two spreading discs.

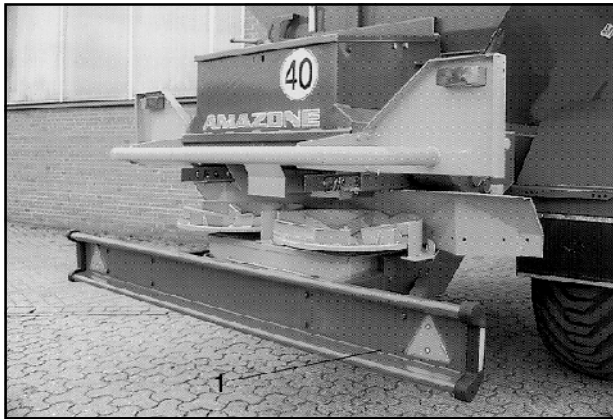


Fig. 16.1

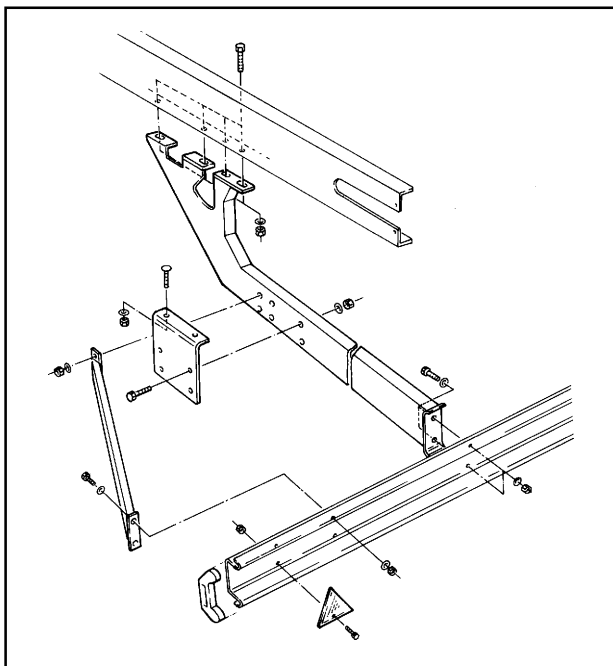


Fig. 16.2

16 Transport on Public Roads

If the tractor and bulk precision broadcaster are to be taken onto public roads, they must correspond to national traffic regulations. It is the responsibility of the vehicle owner and the vehicle driver to ensure that the vehicle corresponds to the national traffic and vehicle regulations. These points must be noted:

1. Maximum permissible speed.
2. Permissible laden weight.
3. Trailing load on the towing shaft and hitch.
4. The maximum transport width of 2.5 m must not be exceeded.
5. Check the vehicle lamps before beginning a journey.
6. Close the slide gate during transport on public roads.
7. Close the swivelling tarpaulin cover and secure it so that it cannot open accidentally.
8. No persons must stand or sit on the bulk precision broadcaster during transport.
9. If the maximum permissible speed is greater than 25 km/h, the bulk precision broadcaster must be fitted with a rear barrier (fig. 16.1/1) as shown in fig. 16.2.

Ensure that you observe the points above. They are intended to prevent accidents from occurring on public roads.

17 Maintenance Plan

Bolted joints

All bolted joints on the machine must be checked and, if necessary, tightened after the first 30 hours of operation.

See point 17.2 for the torque to be applied to the wheel nuts.

Air pressure

Check the tyre air pressure (see table) at regular intervals.

Cleaning

Remove all fertiliser from the bulk precision broadcaster using a water jet or compressed air cleaner after the spreading period has ended.

Floor conveyor belt gear boxes (fig. 17.3)

The oil does not have to be changed.

Check the oil level using the dipstick (fig. 17.3/1).

Quantity of oil: 4.5 l gear oil SAE 90.

Universal spreading unit gear box (fig. 6.1/1)

The oil does not have to be changed.

Quantity of oil: 2.5 l gear oil SAE 90.

Angular gear box, ground wheel drive (fig. 12.1/2)

The oil does not have to be changed.

Quantity of oil: 1.0 l gear oil SAE 90.

Gear boxes, S 200/3 worm auger distributor (fig. 10.3/2)

The oil does not have to be changed.

Quantity of oil: 0.8 l gear oil SAE 90.

Front-mounted worm auger distributor

see point 9.8.

V-belt spreading unit

see point 5.1.

Air pressure tyres ZG-B						
AMAZONE- bulk fertiliser spreader	Permissible maximum travelling speed	Permissible payload	tyres		Air pressure normal operation	minimum air pressure *
ZG-B 6001 ZG-B 7001 ZG-B 10001 ZG-B 8001 R	25 km/h	8.000 Kg	550/60-22,6 600/55-26,5 700/50-26,5	12 PR 12 PR 8 PR	2,1 bar 2,7 bar 1,5 bar	1,4 bar 1,2 bar 1,0 bar
ZG-B 12001 R	25 km/h	12.500 Kg	600/55-26,5	12 PR	2,7 bar	2,0 bar
ZG-B 6001 ZG-B 7001 ZG-B 10001 ZG-B 8001 R	25 km/h	10.000 Kg	550/60-22,6 600/55-26,5 700/50-26,5	12 PR 12 PR 8 PR	2,1 bar 2,7 bar 1,5 bar	2,0 bar 1,8 bar 1,4 bar
ZG-B 6001 ZG-B 7001 ZG-B 10001 ZG-B 8001 R	40 km/h	9.000 Kg	550/60-22,6 600/55-26,5 700/50-26,5	12 PR 12 PR 8 PR	2,1 bar 2,7 bar 1,5 bar	2,1 bar 2,2 bar 1,5 bar
ZG-B 6001 ZG-B 7001 ZG-B 10001 ZG-B 8001 R	80 km/h	9.000 Kg	445/65 R 22,5	20 PR	6,5 bar	6,5 bar
ZG-B 16001 TR 4-tyres	25 km/h	16.000 Kg	550/60-22,6 600/55-26,5 700/50-26,5	12 PR 12 PR 8 PR	2,1 bar 1,5 bar 1,5 bar	1,4 bar 1,2 bar 1,0 bar
ZG-B 16001 TR 4-tyres	40 km/h	16.000 Kg	550/60-22,5 600/55-26,5 700/50-26,5	12 PR 12 PR 8 PR	2,1 bar 2,7 bar 1,5 bar	2,1 bar 1,8 bar 1,4 bar

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* Tyres with low pressure leave shallower wheel marks on the field. Therefore, some tyres can be used with a lower pressure than prescribed for normal operation. However, this will result in increased tyre wear.

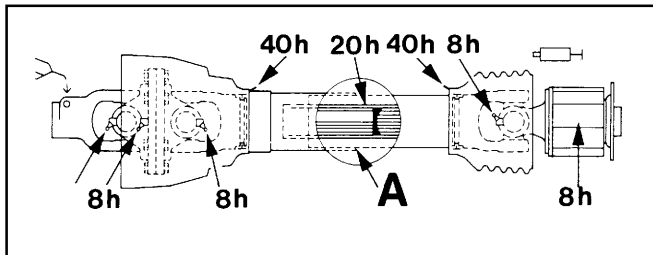


Fig. 17.1

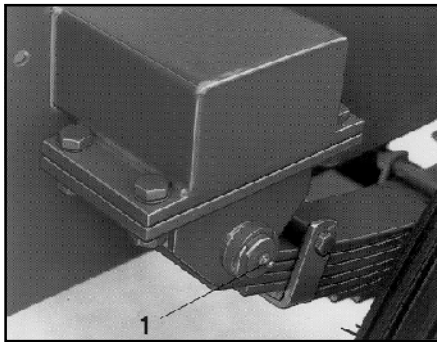


Fig. 17.2

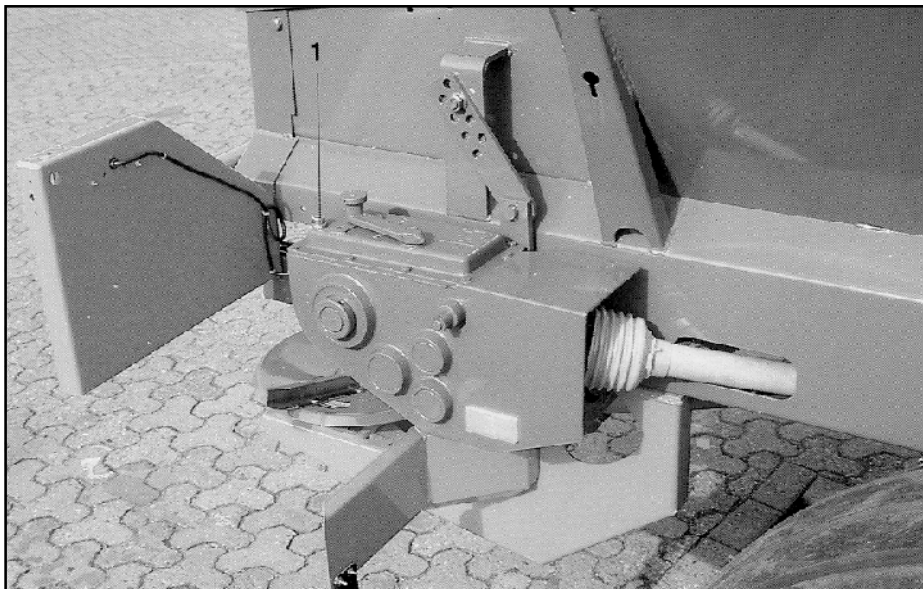


Fig. 17.3

P.T.O. shafts

Grease the p.t.o. shafts at regular intervals (operating hours h) in accordance with the greasing diagram (fig. 17.1). When the broadcaster is used in winter, the guard tubes (fig. 17.1/A) must be greased to prevent seizure caused by freezing. Carefully clean the grease nipple and grease gun before the grease is applied.

Also follow the shaft manufacturer's assembly and maintenance instructions attached to the p.t.o. shaft.

Grease nipples

Grease all grease nipples (for example, the grease nipple (fig. 17.2/1) of the leaf spring bearing) before and after each spreading period. Carefully clean the grease nipples and grease gun before the grease is applied.

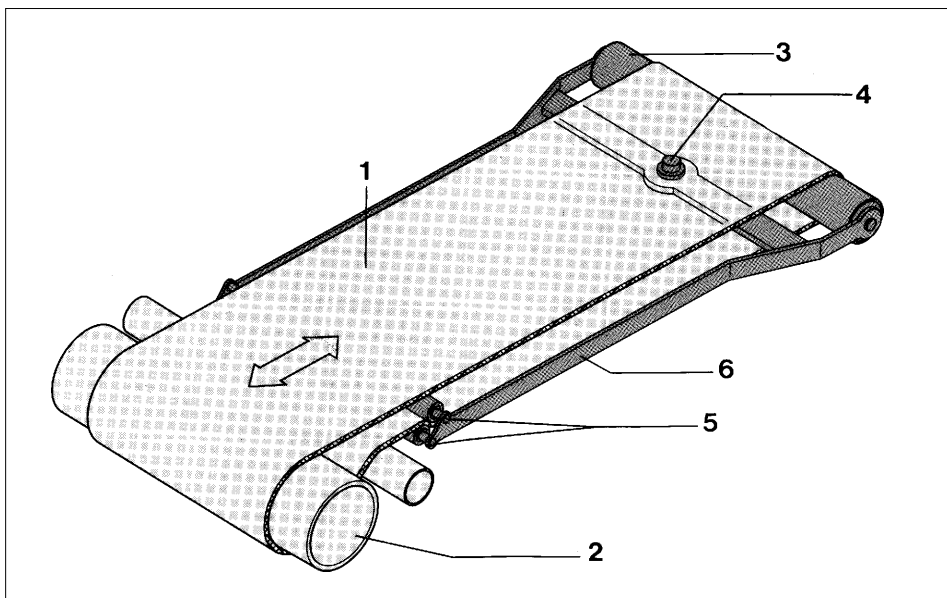


Fig. 17.4

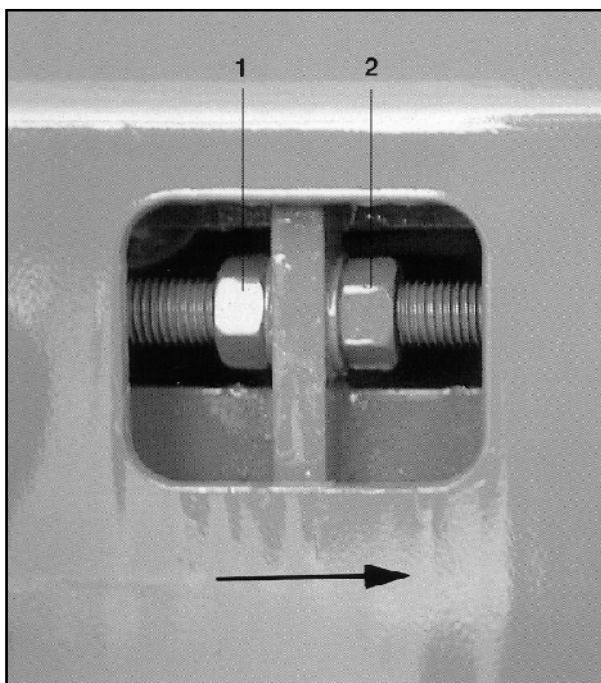


Fig. 17.5

17.1 Floor Conveyor Belt with Automatic Belt Centering

Conveyor belts (fig. 17.4/1) tend to shift laterally if the broadcaster is tilted (for example, when used on slopes) or if the load is unevenly distributed to one side. The conveyor belt then runs outward. This is prevented from occurring in AMAZONE ZG-B bulk precision broadcasters by means of the automatic belt centering system.

The conveyor belt is tensioned in the belt frame between the driving drum (fig. 17.4/2) and the tail pulley (fig. 17.4/3) by means of the automatic belt centering system. The driving drum is fixed in the belt frame, whereas the tailing pulley can rotate about the swivelling pin (fig. 17.4/4). The conveyor belt also runs between two control rollers (fig. 17.4/5) which are connected to the tailing pulley by a frame (fig. 17.4/6).

If the conveyor belt runs outward owing to the load being distributed to one side of the belt, the control rollers follow this movement. This, in turn, causes the tailing pulley to turn about the swivelling axis. As a result, the distance between the tailing pulley and the driving drum increases at the side to which the conveyor belt has shifted. The increased distance causes the conveyor belt to move back to the center and to remain there.

Tensioning the conveyor belt

The conveyor belt is tensioned in the belt frame by a tensioning device to ensure that the belt runs smoothly and evenly. If, for some reason, the conveyor begins to run irregularly, the conveyor belt must be tensioned at both sides in the following way:

1. Loosen the rear counter nuts (fig. 17.5/1) on both sides by turning them to the left (the direction of travel is indicated by the arrow).
2. Turn the hexagonal nuts (fig. 17.5/2) on both sides to the left **by the same amount** (the direction of travel is indicated by the arrow).

Important! The amount that the hexagonal nuts (fig. 17.5/2) have been moved must be the same on both sides of the belt unit. Do not turn the two hexagonal nuts (fig. 17.5/2) by more than 1/2 a spanner turn. Tighten the counter nuts and check whether the conveyor belt is running evenly.

Bearing

The driving drum and tailing pulley of the belt unit are fitted with **maintenance-free** ball bearings which have been sufficiently lubricated for the length of their working life. The support rollers are fitted with special **maintenance-free** bearings.

17.2 Axles and Brakes

The notes regarding assembly and adjustment are part of the warranty conditions. Claims resulting from natural wear as well as faults caused by overloading, unauthorized welding, and modifications are not covered by the warranty!

Axles must **never** be overloaded. Overloading reduces the working life of the machine and causes damage to the axles.

The following errors may lead to overloading and must be avoided:

1. Driving over curb stones.
2. Exceeding the max. permissible speed.
3. Fitting wheels with incorrect wheel offset.
4. Fitting oversized tyres.
5. Uneven loading.



The wheel brakes must always be set correctly (by a specialist workshop) in order to ensure operational safety.

The brake linings must be changed well before the rivets come into contact with the brake drum. Only brake linings prescribed for the axles should be used, otherwise the operating licence for the vehicle may be revoked. Never drive without hub caps, otherwise dirt may penetrate and destroy the wheel bearings.

Wheel nuts

Tighten the wheel nuts after the first laden journey (at least after 5 km). See the table for the torque values.

Bolt thread/ wheel nuts (mm)	Spanner size (mm)	Max. torque (Nm)	
		black	galvanized
M 18 x 1.5	24	265	245
M 20 x 1.5	27	323	294
M 22 x 1.5	32	441	343

Maintenance Plan for Axles and Brakes

The work listed in the maintenance plan may only be performed by trained persons or in specialist workshops. The following plan is applicable to all vehicles. If you have any queries, consult a specialist workshop, the manufacturer of the axles, or the manufacturer's sales organization.

**After the first laden journey,
at least after 5 km:**

- Tighten the wheel nuts
(see the "Wheel nuts" table for the torque values).
- Wheel hubs: check the bearing clearance.

After 50 operating hours:

- Wheel hubs: check the bearing clearance.
- Check and lubricate the front axle.

Every 100 operating hours:

- Wheel hubs: check the bearing clearance.
- Brake camshaft: lubricate the bearing.
- Check and, if necessary, adjust the position of the brake lever.

Every 500 operating hours:

- Adjust the bevel-type roller bearing:
Remove the hub cap and cotter pin. Tighten the axle nut until the wheel hub and braking drum are slightly braked. Slacken the axle nut to the next cotter pin hole. Check the bearing clearance. Secure the axle nut using a cotter pin and replace the hub cap. **Attention!** If the wheel hub and braking drum are set too closely, damage may be caused to the bearing.

**Every 1000 operating hours,
at least every 6 months:**

- Relubricate the wheel hubs using roller bearing grease:
use top-quality lithium base grease only (drop point 190°). Using the wrong grease or too much grease will cause damage to the wheel bearings.
- Check the wear on the brake linings and, if necessary, replace the linings.
- Front axle bearing: replace the roller bearing grease.

This plan applies to vehicles subjected to normal use. In the case of vehicles subjected to more frequent use and greater loads, the maintenance intervals must be reduced accordingly in order to prevent damage.

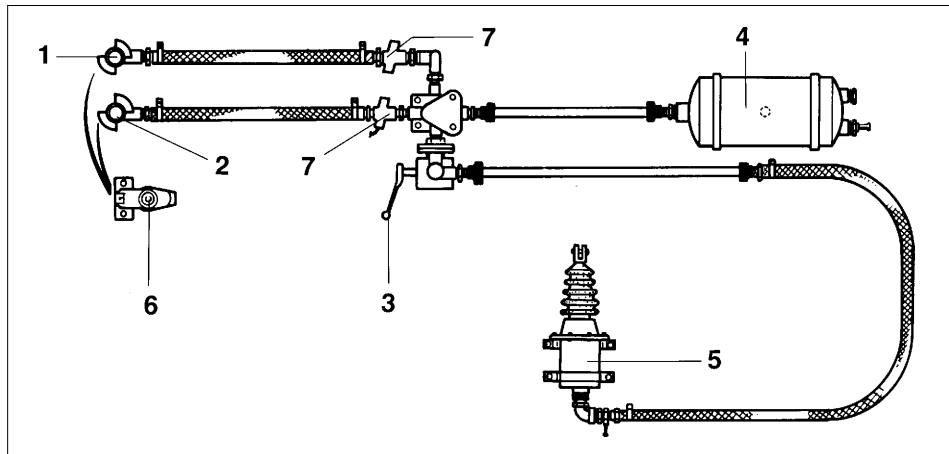


Fig. 17.6

17.3 Air Brake

The following checking and maintenance plan is applicable to all vehicles. The components of the air brake on your bulk precision broadcaster may be different from that shown in figure 17.6. If you have any queries, consult a specialist workshop, the manufacturer of the air brake, or the manufacturer's sales organization.

Before beginning any journey, the following must be performed:

1. Open the stop valve!
2. Check whether the hose couplings are clean before coupling and ensure that they engage correctly! The hose coupling (fig. 17.6/1) for the brake line has a yellow marking. The hose coupling (fig. 17.6/2) for the supply line has a red marking.
3. Hose lines must not be allowed to rub against external components. Check the path of the hose line!
4. Check the position of the brake pressure regulator lever (fig. 17.6/3)!
5. If necessary, drain the compressed-air container (fig. 17.6/4)!
6. Test the brakes!
7. Check the piston stroke of the braking ram! Only two thirds of the braking ram's stroke (fig. 17.6/5) may be used. If this is not the case, adjust the brake! Replace damaged dust covers!
8. After uncoupling, close the hose plugs and attach them to the dummy sockets (fig. 17.6/6) on the ZG-B!

The following checks must be performed at regular intervals (approx. once every week):

1. Check and clean the pipe line filters (fig. 17.6/7)!
2. Check the air-tightness of the brake system! With the engine turned off, operating pressure is permitted to drop by 0.1 bar in ten minutes (by 0.6 bar per hour).
3. Check that the brake lines are in perfect condition! Replace damaged brake lines!
4. No welding or soldering may be performed on fittings and lines! Damaged parts must be replaced!
5. Grease the components! Special gray grease for pneumatic devices must be used as lubricant.

Brake Inspections!

The following inspections must be performed at regular intervals:

1. Interim brake inspections
2. Special brake inspections
3. Main inspections

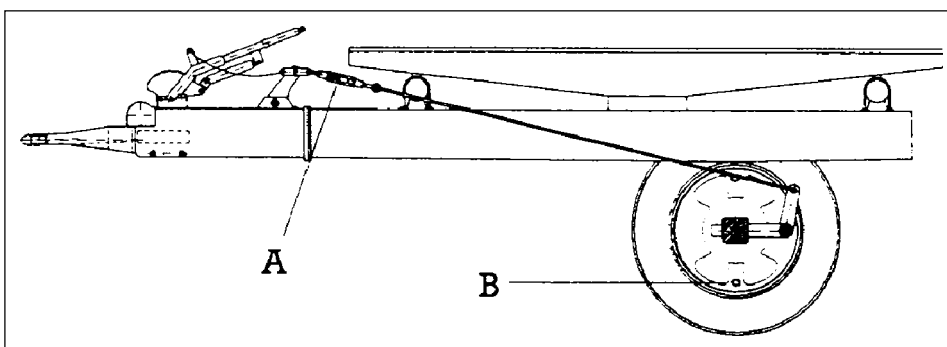
If the visual, functional, or working tests reveal faults, an "internal" examination of the individual components must be performed by trained persons or in a specialist workshop.

17.4 Setting and re-adjusting advice for single axle trailer with System 2000 from Messrs. BPW

BPW Bergische Achsen Kommanditgesellschaft
P. O. Box 1280
D-51656 Wiehl / F. R. Germany



Before uncoupling the trailer apply the parking brake!



After approx. 500 hours of operation check the basic setting.

Re-adjustment: Jack up the axle. Bring run-on device and parking brake into release position (secure vehicle against unintended rolling!) Slacken turnbuckle (A). Tighten adjusting bolt (B) by turning it in right hand direction until the wheel run into driving direction is blocked. Repeat this procedure on the second wheel. Then turn backwards the adjusting bolt by turning the wheel into driving direction until both wheels run evenly and freely. Re-tighten the turnbuckle (A) until no air clearance will be in the transmission device, however the free run of the wheels is not hindered.

Attention:

Further re-adjustment of the brake system only on the wheel brakes (B)!



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