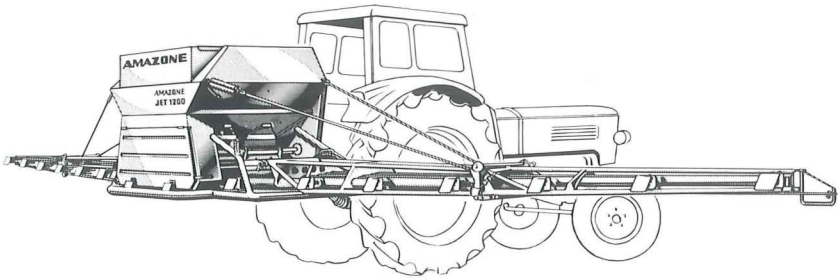
Pneumatic Fertilizer Broadcaster

AMAZONE JET 1200

Instruction Manual



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

AMAZONEN-WERKE H.DREYER GmbH&Co.KG

AMAZONE

Factories in W.-Germany:

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Telex: 09 4 801

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Factory in France:

AMAZONE – Machines Agricoles S.A.
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Tel.: (87) *85 15 31 - Telex: 86 04 92

Factories for: Mineral-fertilizer spreaders, seed drills, reciprocating harrows, potato grading-machines, fertilizer silos, conveyors universal sprayers, fertilizer containers

Printed in F. R. Germany

Please enter the serial number of your pneumatic broadcaster here. You will find the punched number by looking in the driving direction on the front right side of the main frame.

Please always quote the serial number when ordering spares or making complaints.

No.:

CONTENTS

1 Specifications of the machine

1.1 Manufacturer

AMAZONEN-WERKE H. Dreyer GmbH & Co. KG, Postfach 109, 4507 Hasbergen-Gaste, West-Germany

1.2 Type

Pneumatic Fertilizer Broadcaster AMAZONE JET 1200

1.3 Technical Data

Length	1,40 m
Transporting Width	2,75 m
Filling Height	0,89 m / 1,17 m
Unladen Weight	600 kg
Payload	1000 l / 1200 l
Drive System (for tractors having only 1000 R. P. M. PTO-shafts the machine has to be ordered especially modified from the factory)	PTO 540 R. P. M.
Working Width	12 m
Reduceable to	9 m, 6 m, 3 m
Number of Outlets	16
Spreading Rates	from 5 to 1600 kg/ha at 8 km/h
Metering Systems	forced feed metering system
Rate Control	possibility of calibrating (special optional equipment)
Spread Fans adjustable for	normal broadcasting and top dressing

1.4 Suitability of the Machine

The pneumatic spreader JET 1200 is suitable for spreading of granulated fertilizers, micro granules and similar products.

1.5 Special Optional Equipment

Calibration tray for spread rate control
Filling Sieve
Traffic Lights
Hopper Cover w. Bracing Bar
Splash Guard
Back Wall to increase hopper capacity to 1200 l
Hydraulical Shutter Control (spread width reduction to 6 m)

1.6 Description of the Machine's Function

The spread material is metered from the hopper into the injector jets by the forced feed rollers. The air produced by the blower transports the spreading material from the injector sluices through tubes to the distributor outlets on the booms. Deflector plates distribute the materials.

2 Hints upon Receiving the Machine

2.1 Receiving

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

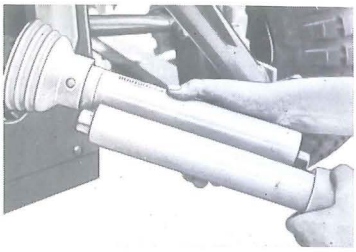
3 Putting into Operation

3.1 Attachment to the Tractor

The machine is attached to the 3-point hydraulic system of the tractor in the usual manner whereby care must be taken that in the operating position the machine is parallel with ground. This can be achieved by readjustment of the top link. In working position the distance between the lower part of the machine to the ground or to top of the crop should be a minimum of 700 mm. If this height is not obtainable (e. g. for late top dressing) the deflector plates have to be mounted in such a way that they are turned upwards (compare 3.7, fig. 9). For the on/off control of the forced feed metering system a hydraulic valve must be provided on the tractor.

3.2 Universal Joint Shaft (IMPORTANT)

When attaching the machine for the first time to the 3-point linkage of the tractor, **do not attach the PTO-shaft to the tractor.** Instead, pull the front half of the PTO-shaft out, attach it to the splined PTO-shaft of the tractor, lift the machine into the working position and check the overlap of the PTO-shaft by holding both free ends side by side and simultaneously lower the machine on the hydraulics to the floor. A minimum overlap of 60 mm ($2^1/_4$") should be maintained in all lifting positions of the machine. On the other hand the inner and outer tubes must under no circumstances touch the universal joints on the end of the tubes. If the PTO-shafts and tubes are too long, they have to be shortened by the same amount on either side (including the protective tubes). Apply grease to the inner shaft!



3.3 Filling the Hopper

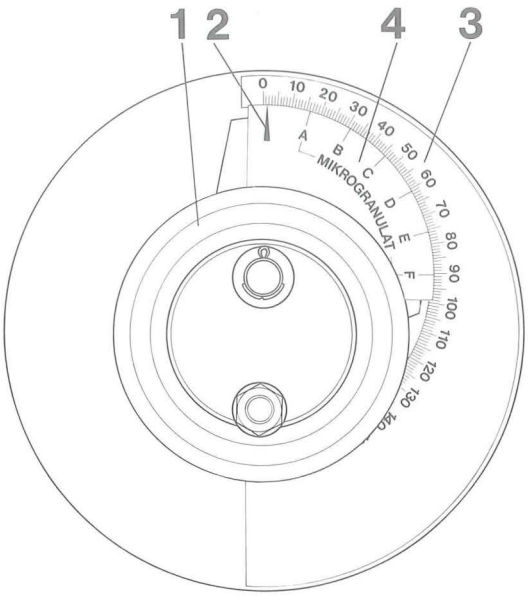
The allowable payload is 1200 kg. If lumpy or unclean spreading material is to be used, a filling sieve (special optional equipment) is recommended, when in the lowered position the loading height of the rear of the machine without the additional rear wall is 89 cm, so that filling from a tipping lorry or trailer is possible.

3.4 Adjustment of the Spreading Rate with Fertilizer

The desired spreading rates can be read on the setting chart for fertilizers, which may be found on the inner side of the rear cover of the machine. For this, the column showing the desired operation speed for the relative kind of fertilizer has to be used to find the proper rate. The relative position of the eccentric flywheel scale may be taken from the same setting chart and will be set at the eccentric flywheel (fig. 2/1) by turning the arrow (fig. 2/2) until it opposes the relative figure on the scale from 0–180 (fig. 2/3). The eccentric flywheel with its arrow can be moved after loosening its lock-nut with the spanner supplied. When the desired setting has been found, tighten the nut to avoid movement of the setting during operation. At the scale (fig. 3/1) of the stroke limiter the setting nut (fig. 3/2) has to be set in accordance with the setting figure at the scale from 1–180 (fig. 2/3).

3.5 Adjustment of the Spreading Rate for Micro Granules

For micro granules the desired settings can be read from a setting table, which is located on the inside of the rear cover of the machine. The column should be found on the setting table which meets the desired speed and the type of micro granule to be spread. The eccentric scale position taken from the table will be set at the eccentric flywheel (fig. 2/1), whereby (e. g. setting B 31) the letter found in the table (e. g. "B") on the micro granule scale (fig. 2/4) opposes the prescribed figure (e. g. 31) on the scale 0–180(fig. 2/3). On the scale (fig. 3/1) of the stroke limiter the setting nut (fig. 3/2) should always be set at the scale figure 20.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MIKROGRANULAT

Fig. 2

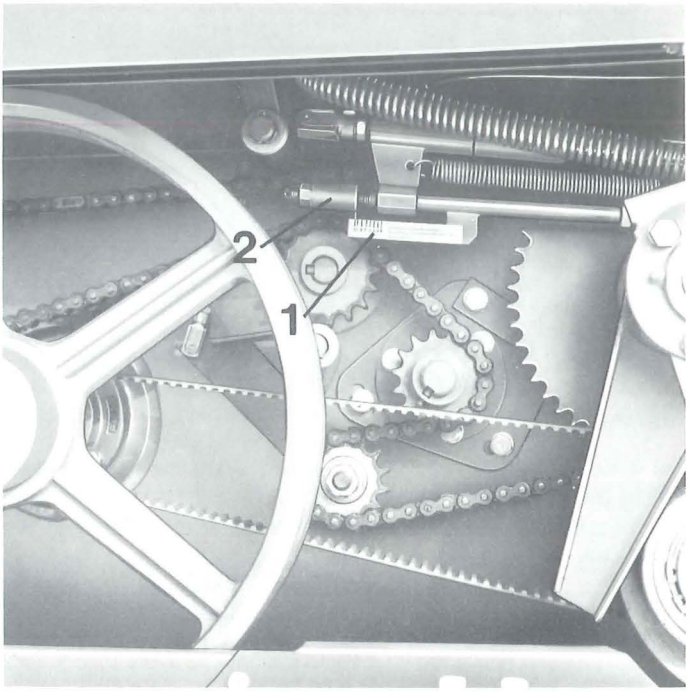
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Fig. 3

Fig. 4

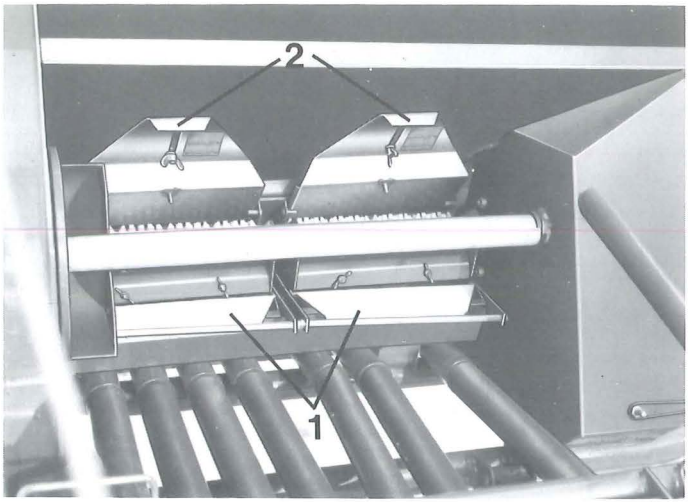

Fig. 5

3.6 Calibrating the required spread rate

This is only possible with the optionally available calibration tray (compare 4.1).

First find from the calibration table the desired type of fertilizer to be spread, as well as in the column for the desired forward speed, the application rate and set the machine according to 3.4 or 3.5. Simultaneously set the stroke limiter according to 3.4 or 3.5. After inserting of the calibration tray (fig. 4/1) the plastic shutters (fig. 5/1) should be slid above the injector jets. Check to make sure the main shutter slides (fig. 5/2) are in the open position (see hints on the main shutters).

In order to fill the metering housings with fertilizer the PTO-shaft should be engaged briefly. Thereafter the calibration tray should be emptied completely. The metered driving distance with the 12 m boom width is 42 m (this equals 1/20 ha). At spreading rates below 800 kg/ha all main outlets may be used for the calibration test. At spreading rates above 800 kg/ha the front two main outlets must be closed by the shutter (fig. 5/2).

The machine is then run at a PTO-speed of 540 R. P. M. at the desired working speed across the measured distance of 42 m. The spreading material collected in the calibration tray should then be weighed.

If all main outlets are used during the calibration test, the weight of the quantity collected should be multiplied by 20. If the rear two outlets only were open for making the calibration tests, the weighed quantity should be multiplied by 40 in order to obtain the spreading rate per hectare. For calibrating **micro granules all** main outlets are used. The calibrated weight of the micro granules should be multiplied by 22.

Calibration Examples:

1. desired spread rate: 550 kg/ha of Compound fertilizer
   desired forward speed: 8 km/h
   eccentric-scale position: 35,
   for the calibrating tests **all outlets** are opened,
   collected quantity: 26 kg
   actual quantity per hectare: **20** x 26 = 520 kg/ha
   Thus at this setting using a forward speed of 8 km/h a spread rate of 520 kg/ha would be obtained.

2. Desired spread rate: 1140 kg/ha of compound fertilizer
   desired forward speed: 6 km/h,
   eccentric scale position: 55,
   for the calibration test only the **rear two** outlets are used,
   collected quantity: 30 kg.
   Thus at this setting using a forward speed of 6 km/h the actual spread rate:
   40 x 30 = 1200 kg/ha.
   A spread rate of 1200 kg/ha would be obtained.

3. Desired spread rate: 11,2 kg/ha **micro granules:** Support-Dotan,
   desired forward speed: 8 km/h,
   eccentric scale position: D 61,
   for the calibration test **all outlets** are opened,
   collected quantity: 0,48 kg,
   actual spread rate: **22** x 0,48 = 10,56 kg/ha.
   Thus at this setting using a forward speed of 8 km/h the spread rate of 10,56 kg/ha would be obtained.
   If the obtained rates need to be corrected, the above calibration test should be redone, after a corresponding readjustment of the eccentric flywheel roller (fig. 2/1) and the stroke limiter.

If at rates above 800 kg/ha the calibration test has been performed with half of the main outlets opened only, make sure that before the actual spreading operation starts in the field **all shutters have been opened again.**

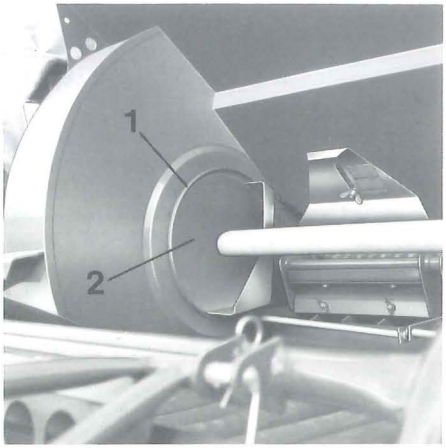

Fig. 6

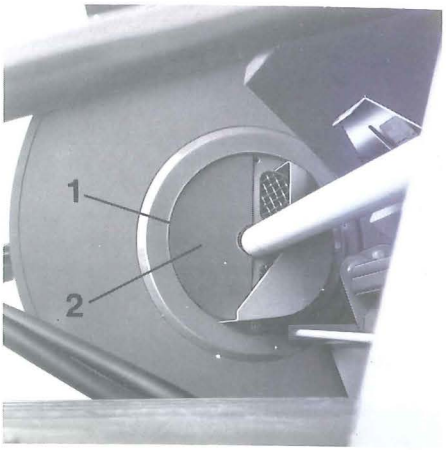

Fig. 7

Special Hints for the Calibration of Micro Granules:

During the calibration test with micro granules the suction opening of the blower (fig. 6/1 and 7/1) should be closed with the supplied rubber throttle discs, which are supplied with every calibration tray. The openings below the 4 main outlets have to be set according to the instructions on the signs on every main shutter.

After the calibration test **the throttle discs (fig. 6/2) have to be removed and replaced by a half throttle disc (fig. 7/2),** which are delivered with the machine.

As with granulated fertilizers for prills (such as prilled ammonium nitrate, urea etc.) the half throttle disc (fig. 7/2) has to be inserted during field operation.

Fig. 8

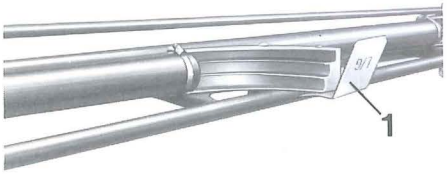

Fig. 9

3.7 Practical Operation in the Field

Before starting the field operation fold the booms into their horizontal position. Please check that all deflector plates (fig. 8/1 and 9/1) are in their correct position: when the deflector plates are in the normal downwards position, the spreading cones are less affected by wind.

The deflector plates should be facing upwards for late top dressing when the machine cannot be lifted high enough above the top of the crop by the tractor's hydraulics. For this the deflector plates on the booms (fig. 8/1 and 9/1) have to be installed on the opposite boom, i. e., for the position "top dressing" the deflector plates of the right boom have to be installed on the left boom and vice versa.

ATTENTION! For normal work the deflector plates should be returned facing downwards into the normal position!
(see hints on the inside of the rear cover of the machine).

For late top dressing up to the maximum rate of 1000 kg/ha fertilizer at a speed of 8 km/h can be used. This upper limit has been marked in the calibration chart by a stepped line.

The tractor PTO must be engaged at a low PTO-speed. The R. P. M. should then be increased and be kept at 540 R. P. M. Should the tractor be equipped only with a PTO-giving 1000 R. P. M., the machine should be ordered from the manufacturer with a special drive unit. **Only when the PTO-revolutions have reached 540 R. P. M., should the broadcaster's shutters be opened and the spreading can begin.**

At the end of the field when turning the blower revolutions must be maintained at the same speed. Thus only the hydraulic on/off switch needs to be moved.

If an obstacle obstructs the boom ends, the outer part of the boom drops off and drags behind to avoid damages to be boom. This part can easily be replaced by one person.

If at the end of spreading fertilizer is still left in the hopper, this can be removed by opening the bottom flaps. For this, first the cover plates (fig. 5/1) as mentioned under paragraph 3.6 are inserted. Thereafter the handle (fig. 10/1) is pulled over the delivery tubes until they are covered. After emptying, the bottom flaps are pushed back into their working position, by lifting the handles.

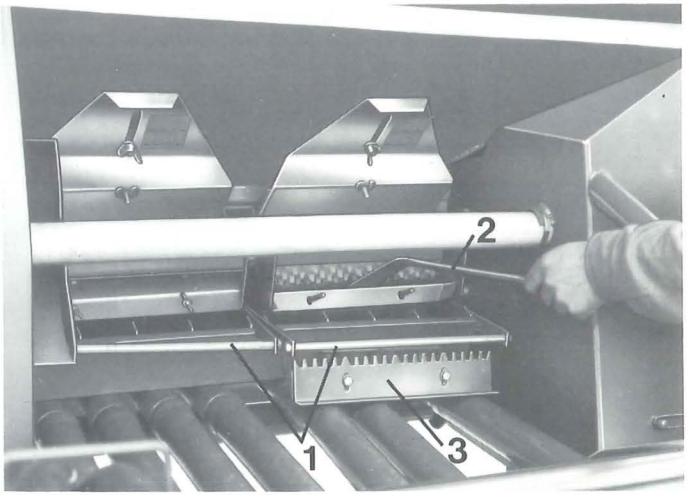

Fig. 10

4 Special Optional Equipments

4.1 Calibration Tray

The calibration tray is used for checking the set calibration rates (compare paragraph 3.6).

4.2 Filling Sieve

The filling sieve, sieves out foreign hard and big particles such as lumpy fertilizers to prevent damage to the forced feed rollers or cause spreading inaccuracy.

4.3 Traffic Lights

The traffics lights which are available as special optionals can be installed to the standard traffic light carriers on the machine.

4.4 Hopper Cover with Bracing Bar

To protect the spreading material inside the hopper a hopper cover with bracing bar is available. When filling the hopper the cover with the bracing bar must be folded towards the tractor.

4.5 Splash Guard

The splash guard prevents dirtying the spreader with the rear wheels of the tractor.

4.6 Rear Wall

The rear wall is bolted to the rear of the main upper hopper. With this wall a hopper capacity of 1200 l may be achieved. The filling height however will be increased from 0,89 to 1,17 m.

4.7 Hydraulical Shutter Control

With the aid of this special equipment the bout width can be reduced at random to the right or to be left in a comfortable manner from the tractor seat. However to install this optional it is necessary that a further hydraulic valve is provided on the tractor. For broadcasting micro granules the back stroke of the ram, which operates the main shutter (fig. 5/2) (two rams right, two rams left) has to be limited. For this the spring pins (fig. 11/1) have to be inserted into the holes provided (fig. 11/2).

ATTENTION! Before spreading fertilizer do not forget to remove the spring pins.

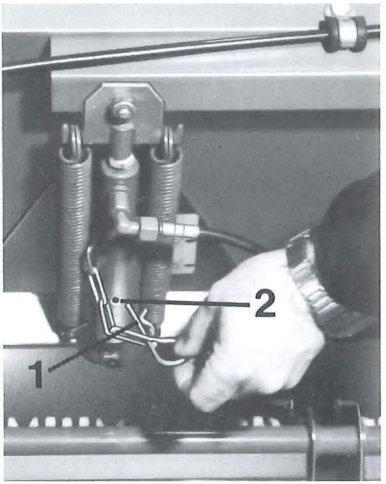

Fig. 11

5 Care and Maintenance

5.1 General Hints

After the first 30 hours of operation all bolts and nuts should be checked for tightness. Furthermore chains, V-belts and cammed belts have to be checked for proper tension.

Cleaning the spreader should be done with water, whilst the machine is running in a rear backward angled position. The forced feed metering rollers and jets should be especially checked carefully for cleanliness. For cleaning open the cleaning lid (fig. 12/1) below the rear end of the machine at a wind channel and remove the two plastic plugs below the drive unit housing. Hardened fertilizer remaining in the metering wheel area may be removed with the cleaning road (fig. 10/2). For this the cleaning comb (fig. 10/3) has to be removed after removing the two thumb nuts).

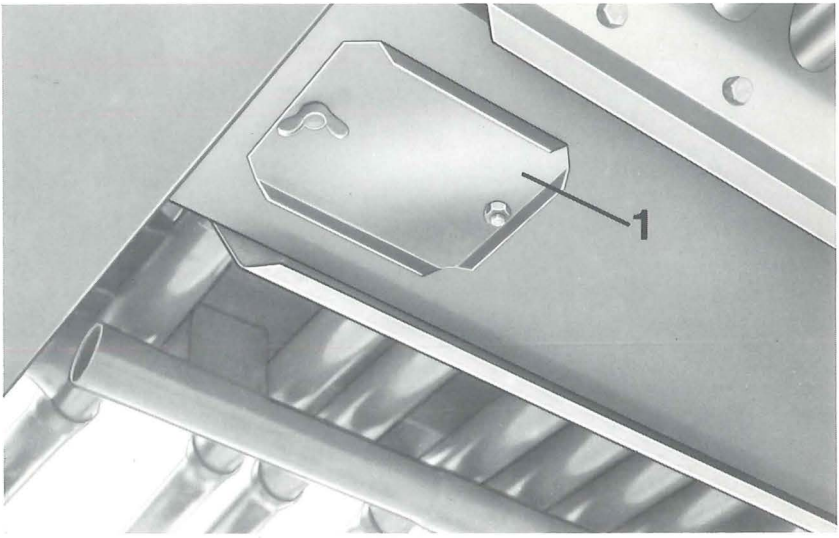

Fig. 12

5.2 Lubrication Instructions

The universal joint shaft has to be greased daily. Also the universal joint shaft tubes have to be greased from time to time. All other bearings are free of maintenance. For maintaining the roller chain it is recommended to remove it during a longer operational pause, wash it in kerosene and dip it into clean oil or heated grease. Never lubricate the chains while operating the machine.

Should the free wheel need replacement or refilling of oil, we recommend Shell-Tellus 127.

(ATTENTION! Never use any oils with HD-, graphite-, molykote- or similar additives!).