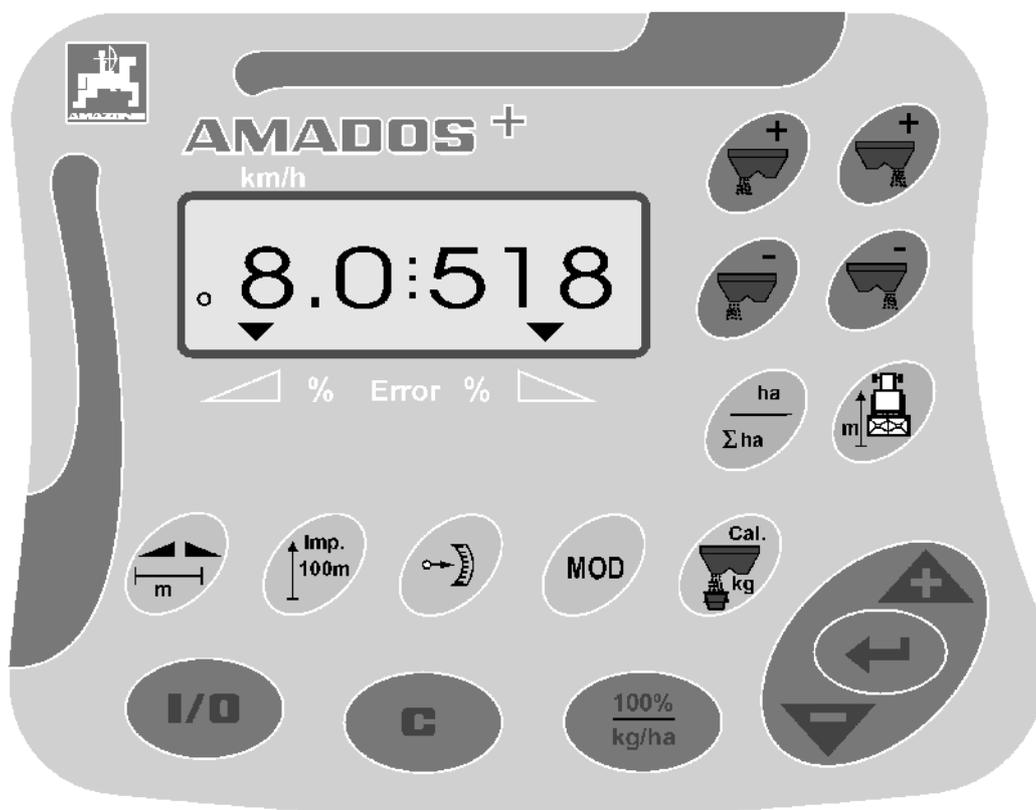


Operation manual

On-board computer

AMADOS⁺



MG 950
DB 1001 (GB) 01.04
Printed in Germany



**Before starting work,
please carefully read
and adhere to this op-
eration manual and
safety advice!**





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D-49502 Hasbergen-Gaste
Germany
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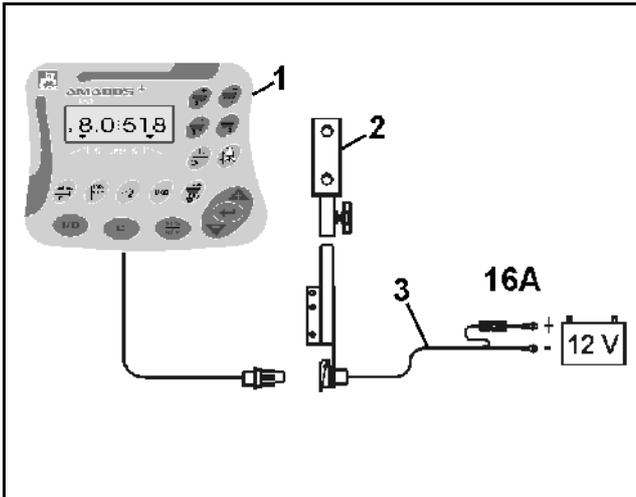
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On receipt of the computer

On receipt of the computer, please check whether transport damage has occurred or whether any parts are emitting. Only immediate claims to be filed with the forwarding agency may lead to replacement. Please check whether all parts mentioned in the following are provided.

AMADOS⁺ the electronic monitoring-, controlling and regulating system consisting of:

1. Computer.
2. Console
3. Battery connecting cable with plug and fuse (16A)(NE 190 / order separatly.

1. Information about the computer

1.1.1 Range of application

AMADOS⁺ can be coupled with the AMAZONE Centrifugal broadcaster ZA-M and can be used as a display-, monitoring- and controlling device.

1.2 Manufacturer

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

1.3 Conformity declaration

AMADOS⁺ fulfils the EMV-guide line 89/336/EC.

1.4 Details when making enquiries and ordering

When ordering spare parts indicate the serial number of the **AMADOS⁺**.



The safety requirements are only fulfilled when in the event of repair original AMAZONE spare parts are used. Using other parts may rule out the liability for resulting damage!

1.5 Identification

Type plate on the on-board computer.



The type plate is of documentary value and may not be changed or disguised!



1.6 Declined use

AMADOS⁺ has exclusively designed for the usual operation as a display-, monitoring- and controlling device for agricultural machinery.

AMADOS⁺ has not been designed for the application of slug pellets or fine seeds.

Any use other than that stipulated above is no longer regarded as designed use. The manufacturer does not accept any responsibility for damage resulting from this. Therefore, the operator himself will carry the full risk.

Under "designed use" the operator must adhere to the manufacturer's prescribed operation, maintenance and repair conditions, and exclusively use **original AMAZONE spare parts**.

AMADOS⁺ may only be operated, maintained and repaired by such persons who have been made acquainted with it and who have been advised about the dangers.

All applicable accident prevention advice as well as any further generally accepted safety-, working-, medical- and road traffic rules should be adhered to.

AMAZONE machines have been manufactured with great care, however, certain deviations from the application rate cannot totally be excluded. These deviations may be caused, e. g. by:

- Varying composition of the fertilizer and of the seed (e. g. grain size, specific density, grain shape, dressing, sealing).
- Drifting.
- Blockage or bridging (e.g. by foreign particles, bag residue, damp fertilizer, etc.).
- Undulated terrain.
- Wear of wearing parts (e.g. spreading blades, . .).
- Damage by external influence.
- Wrong drive-R.P.M. and travelling speed.
- Fitting wrong spreading discs (e.g. mixing them up).
- Wrong setting of the machine (incorrect mounting, not adhering to the setting chart).

Before every operation and also during the operation check your device for proper function and for sufficient application accuracy of the machine.

Claims regarding damage not having occurred on the **AMADOS⁺** itself will be rejected. This also applies to damage due to application errors. Arbitrary modifications to the **AMADOS⁺** may result in damage and therefore, the manufacturer does not accept liability for such damage.

2. Safety

This instruction manual contains basic advice which must be adhered to when mounting, operating and maintaining the machine. Ensure that this instruction manual has been read by the user/operator before starting to operate the device and that it is made readily available at all times to the user.

Please strictly observe and adhere to all safety advice given in this instruction manual.

2.1 Dangers when not adhering to safety advice

Not adhering to the safety advice given

- may result in endangering the user or other persons, the environment and/or the machine itself.
- may result in the loss of any claim for damages.

Not paying attention to the safety advice may cause the following risks:

- Danger for persons by not secured operational range.
- Failure of important functions of the machine.
- Failures of prescribed measures for maintenance and repair.
- Danger for persons by mechanical or chemical affects.
- Dangers to persons or to the environment by leaking hydraulic oil.

2.2 Qualification of operator

The implement may only be operated, maintained and repaired by persons, who are acquainted with it and have been informed of the relevant dangers.

2.3 Symbols in this instruction manual

2.3.1 General danger symbol

Not adhering to the safety advice in this instruction manual may cause danger to health and life of persons. They are identified by the general danger symbol (Safety symbol according to DIN 4844-W9).



2.3.2 Attention symbol

Attention symbols which may cause dangers for the machine and it's function when not being adhered to, are identified with the Attention symbol:



2.3.3 Hint symbol

Hints regarding machine's specific particularities, which have to be adhered to for a faultless function of the machine are identified with the hint symbol



2.4 Safety advice for retrofitting electric and electronic devices and /or components

The function of the implements' electronic components and parts may be affected by the electric-magnetic transmittance of other devices. Such affects may endanger people when the following safety advice will not be adhered to:

When retrofitting electric and electronic devices and / or components to the implement with connection to the on-board electric circuit, the user must ensure by himself that the installation will not cause any disturbance to the tractor electronic or other components.

Special attention must be paid that the retrofitted electric and electronic parts correspond to the EMV-guide 89/336/EC in the relevant valid edition and that they bear the EC-sign.

For retrofitting mobile communication systems (e. g. radio, telephone) the following requirements must be fulfilled:

Only install devices which have officially been authorised in your country.

Firmly install the device.

The use of portable or mobile devices inside the tractor cab is only permissible with a connection to a firmly installed external antenna.

Install the transmitter spaced apart from the tractor's electronic.



When installing the antenna ensure an appropriate installation with proper earth connection between antenna and tractor earth.

For cabling and installation as well as for the maximum permissible current supply in addition adhere to the fitting instructions of the implement manufacturer

2.5 Safety advice for repair work



Before carrying out any repair work on the electric system or arc welding on the tractor or the mounted implement, disconnect all connections of AMADOS⁺.

3. Description of AMADOS+

- controls the spread rate [kg/ha] in dependence of the forward speed. For this, the shutter slide positions can be changed with the aid of 2 setting motors.
- controls the spread rate in dependence of the of the fertilizer data determined by weighing (only profiS-broadcasters).
- shows the actual hopper content and determines the applied spread in [kg] rate after having carried out the "start function" (only profiS-broadcasters).
- allows the change of the spread rate in 10 % steps (for both shutters simultaneously or individually).
- shows the current forward speed [k.p.h.].
- determines the finished part area [ha].
- stores the finished total area per season [ha].

AMADOS+ has been equipped with a memory and a battery. All entered and determined values are stored for about 10 years even if the on-board power supply is switched off. At the next switching on all data are available again.

3.1 Function description

AMADOS+ is supplied with a 6-digit display (Fig. 1/1) In operation position of the implement, the display shows:

- the current forward speed (Fig. 1/2) in [k.p.h.],
- the current spread rate (Fig. 1/3) in [kg/ha] and
- function control elements (Fig. 1/4) as, e. g. left and right hand shutter open.

On the left hand edge of the display additionally 1 symbol is shown. The circle should flick during operation and indicates that the sensor for counting the area or the travelled distance is transmitting impulses to the.

During the spreading operation the pre-selected desired spread rate can be changed for both shutters simultaneously or individually.

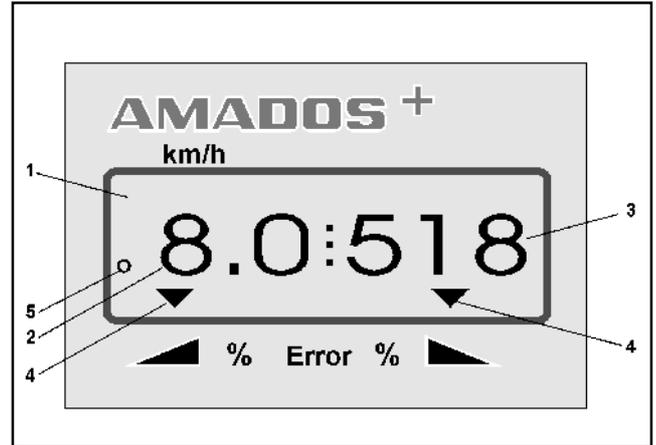


Fig. 1

The spread rate change **for both shutters together** is controlled via the keys and . With every single key pressure the pre-selected spread rate changes by + or - 10% **for both shutters together**.

The individual independent spread rate change for the right hand and left hand shutter is controlled via

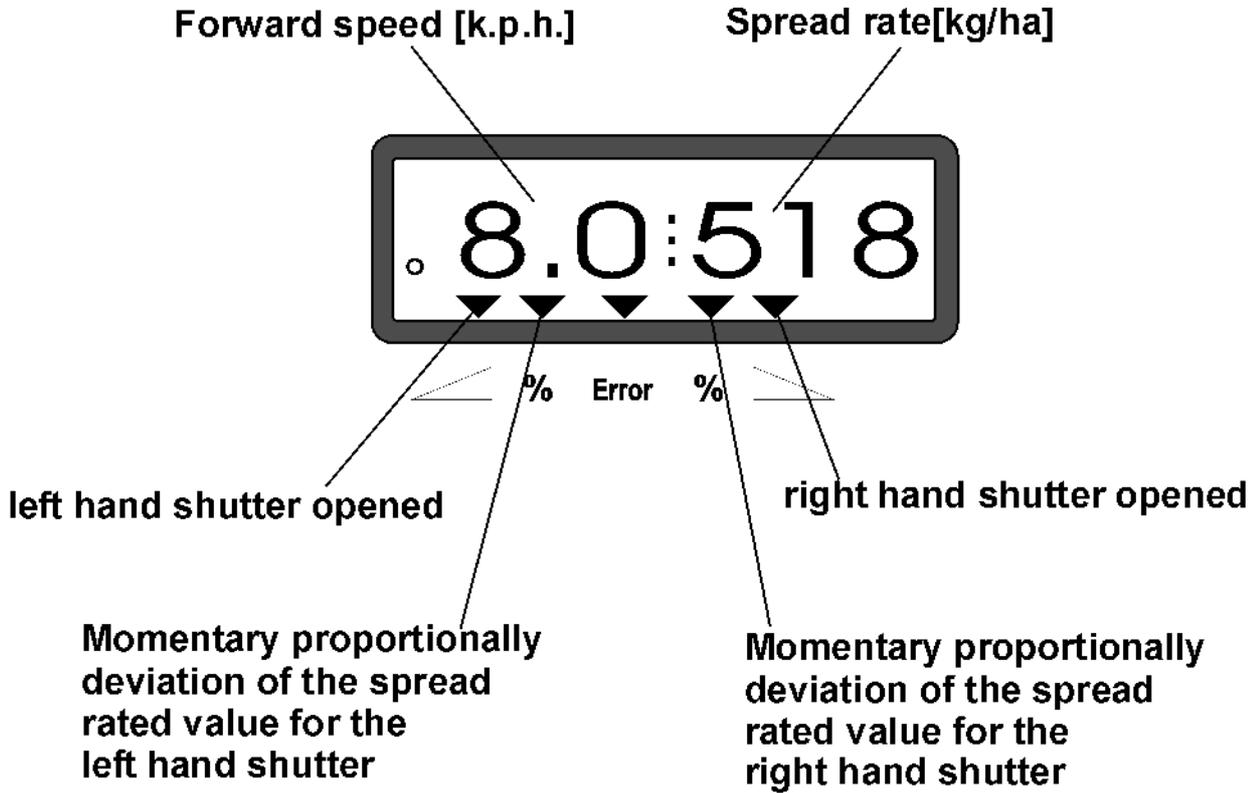
the keys , , and . Every single key pressure changes the pre-selected spread rate for the relevant shutter each by + or - 10%. The percentile spread rate deviation from the pre-selected desired spread rate is shown in the display.



3.1.1 Operating display

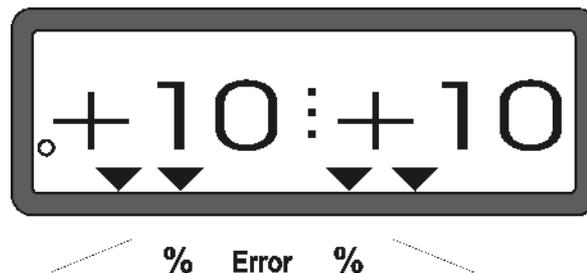
As soon as a shutter is opened **AMADOS+**, recognises that the implement is in operational position and changes to the "operational display".

Operating display:



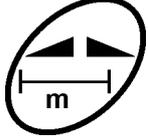
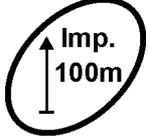
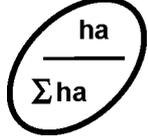
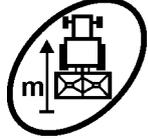
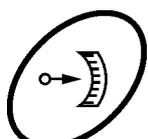
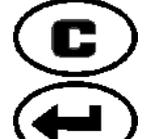
Fault message

Operating display after pressing the keys for the common spread rate change (+10%)



Keypad layout

Tabelle 1: Keypad layout

Key	Function		Key	Function
	Switch on and off AMADOS+.			return spread rate to rated value previously entered
	Increase spread rate – left hand shutter			Working width [m]
	Increase spread rate – right hand shutter			ground related sensor impulses over a distance of 100 m
	Reduce spread rate – left hand shutter			Fertilizer calibration factor
	Reduce spread rate – right hand shutter			Input key for increasing the displayed value
	Hectare meter			Input key for decreasing the displayed value
	Part distance counter			Key used to confirm all entries
	Mode entering			Correction key
	Displaying the impulse figure of the setting motors or in conjunction with key  open shutter for emptying the hopper entirely			Starting the procedure



4. Operation

4.1 AMADOS⁺ On-/off switching

By pressing key  den AMADOS⁺ is switched on and off.



When switching on, the display shows the creation date of the computer program for some seconds.



Always ensure that the setting motors set the setting levers nearly into the range of the zero-position (do not mind scales).



Whenever the supply voltage drops to below 10 volts, e. g. when starting the tractor, the computer automatically switches off. It has to be switched on again as described above.



Before starting to operate enter the implement specific data by pressing the corresponding keys in the mentioned order newly or check or determine by carrying out a calibration procedure.



Already entered implement specific data remain stored.



AMADOS⁺ has not been designed for the application of slug pellets or fine seeds.

4.2 Entering the implement specific data

The implement specific entering values required by AMADOS⁺ are dialled directly

- dialled via the keys  or  or
- determined by a calibration procedure.



When dialling the entering values the display jumps into the desired direction by one step forward or backward by the first pressure onto key  or . By repeated pressure onto the key the display continues to run until the key is released.



All via the keys  or  dialled or determined by a calibration procedure entering values must always be confirmed by pressing key  and be stored this way..

4.2.1 Implement type and implement equipment



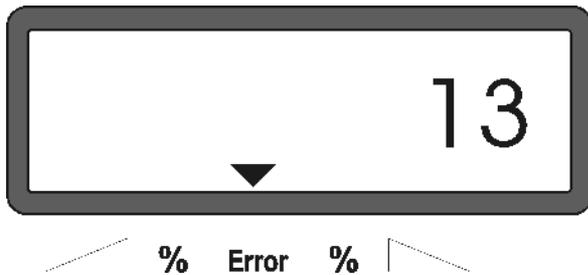
Carry out all enterings regarding the implement type and implement equipment (Mode "1" to "6") only with a disconnected implement plug.

1. Switch on AMADOS⁺ with a disconnected implement plug.



Initially the display shows the program entering date. For the following period of approx. 10 seconds then no entry is possible. Thereafter automatically the error message "13" is shown. After a waiting time of approx. 15 seconds the mode "1" can be dialled.

Display with error report "13"

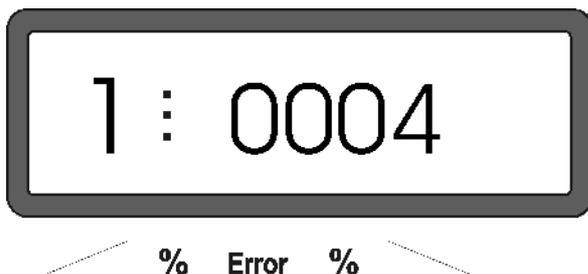


2. Mode "1", choosing the implement type

Press Mode "1" and dial the code "machine type" for the relevant implement type.

- press, keep pressed and simultaneously press key and hereby release the entering.
- Press key (if necessary several times) and dial mode "1".

Display after mode "1" has been dialled



The first digit shows the chosen mode "1", the second the coding for the chosen machine type – for centrifugal broadcasters coding "0004".

- Dial the coding "0004" on the display via the keys or .
- Press key and hereby store the dialled value "0004".

3. Mode "2-5,7"



When operating with the fertilizer broadcaster the modes 2 to 5 are vacant and thus must not be chosen or changed.

4. Mode "6", intended average operational speed

AMADOS⁺ required the entering of the "intended average operational speed" for the procedure "determining the fertilizer calibration factor".

- Press key (if necessary several times) and dial mode "6".

Display after mode "6" has been dialled



The first digit shows the chosen mode "6", the second the average forward speed in [k.p.h.] – e.g. "0010" for 10 k.p.h..

- Via the keys or dial the intended average operational speed on the display, e. g. "0010" for 10 km/h.
- press and thus store the dialled value "0010".



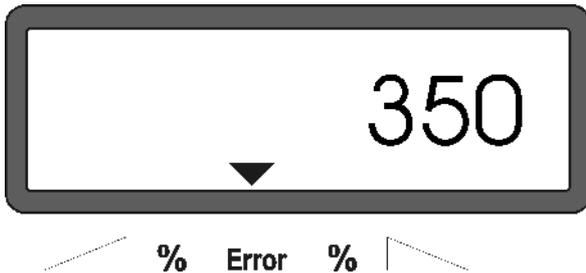
4.2.2 Spread rate



Enter the value for the desired spread rate whilst the tractor is not moving..

- Press key.
- Via the keys or dial the desired spread rate [kg/ha] on the display, e. g. "350" for the spread rate 350 kg/ha.

Display of the spread rate



- Press key. The dialled value "350" will be stored.
- Press once again key to check the stored value. On the display then the figure "350" should appear.



During fertilising operation the spread rate can be changed in +/-10% steps (please refer to chapter 4.3.2).



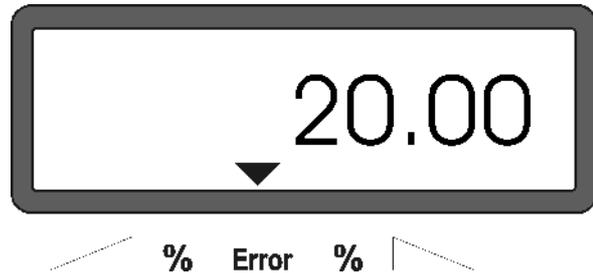
At spread rates of more than 1000 kg the first digit is not shown.

4.2.3 Working width

For determining the operated area **AMADOS+** requires information about the working width. The working width should be entered as follows:

- Press key .
- Via the keys or dial the desired working width [m] on the display, e. g. "20.00" for 20 m working width..

Display working width



- Press key and thus store the dialled value.
- Once again press key to check the stored value. On the display then the chosen figure, e. g. "20.00" should appear.

4.2.4 Calibrating the distance sensor

For determining the actual forward speed **AMADOS⁺** requires the calibration value "Imp./100m", which sensor "X" releases to **AMADOS⁺** when driving down a calibration distance of 100 m.



The calibration figure "Imp./100m" may never be smaller than "250", as otherwise **AMADOS⁺** does not operate properly.

For entering the calibration value "Imp./100m" two possibilities are given:

- the calibration value "Imp./100m" is known and is dialled via the key board.
- the calibration value "Imp./100m" is not known and will be determined by driving down a pre-measured distance.



As the calibration figure "Imp./100m" is ground related, it is, in case of soil types heavily deviating from one another, recommended to determine always newly the calibration figure by driving down a pre-measured distance.

1. The calibration value "Imp./100 m" is known:

- Press key  when tractor is stopped.
- Dial the known calibration value "Imp./100m" via the keys  or .
- Press key  and thus store the dialled calibration value.
- Once again press key  to check the stored calibration value. On the display now the chosen calibration value should appear.



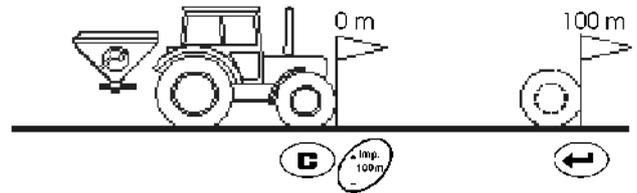
In case of deviations between

- the spread rate and the actually worked area
- the worked area determined and displayed by **AMADOS⁺** and the actually worked area

newly determine the calibration figure by driving down a calibration distance of 100 m (please refer to chapter 4.2.4 item° 2).

2. The value "Imp./100 m" is unknown:

- Accurately measure out in the field a calibration distance of 100 m. Mark the starting- and ending point of the calibration distance.

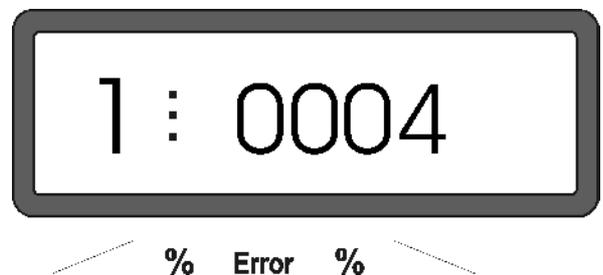


- Bring tractor in start position.
- Press key  and hold it pressed while pressing key .
- Travel accurately along the calibration distance from the starting- till the ending point (when starting to move, the counter returns to "0"). On the display the continuously determined impulses are shown.



Do not press any key while travelling along the calibration distance.

Display during the calibration test



- Stop after 100 m. On the display now the number of the determined impulses is shown.
- Press key  and thus store the displayed determined calibration value (Imp./100 m).
- Once again press key  to check the stored calibration value. The display now should show the determined calibration value (Imp./100 m).



4.2.5 Determining the fertilizer calibration

The fertilizer calibration factor determines the controlling behaviour of **AMADOS⁺** and depends on

- the flowing behaviour of the fertilizer to be spread.
- the entered spread rate.
- the entered working width.

The fertilizer flowing behaviour itself depends on

- the fertilizer storing, the fertilizer storing time and the climatic conditions.
- the working conditions.



The fertilizer flowing behaviour can change even after a short storing time.

Therefore again determine the fertilizer calibration factor of the fertilizer to be spread.



Always again determine the fertilizer calibration factor

- if the spread rate changes.
- if deviations between the theoretical and the actual spread rate occur.

Determine stationary the fertilizer calibration factor



During the fertilizer calibration determination the spread rate entered into AMADOS⁺ may not exceed the value resulting from the columns " max. spread rate to be entered during the fertilizer calibration factor determination for 6, 8, 10 km/h".

Tabelle 2: "Maximum spread rate to be entered during the fertilizer calibration factor determination in dependence of working width and operational speed"

Working width [m]	max. spread rate to be entered [kg/ha] when determining the fertilizer calibration factor for the operational speed		
	6 k.p.h. km/h	8 k.p.h. km/h	10 k.p.h. km/h
10	3000	2400	1800
12	2500	2000	1500
15	2000	1600	1200
16	1900	1520	1140
18	1688	1350	1013
20	1525	1220	915
21	1450	1160	870
24	1263	1010	758
27	1125	900	675
28	1088	870	653
30	1013	810	608
32	950	760	570
36	850	680	510

Stationary determination of the calibration factor:

- Check the entered values for the desired spread rate and working width and correct if necessary.
- Fill a sufficient amount of fertilizer into the storage hopper.
- Remove the **left hand** spreading disc.
- Place the collection bucket underneath the discharge opening (please observe the ZA-M instruction manual!).

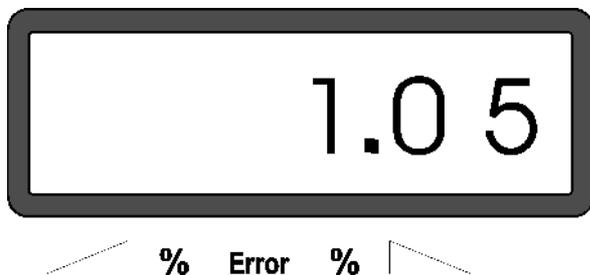
- Press key
 - Enter via the keys or calibration factor on the display, e.g. 1.05.
 - To enter the calibration factor it is possible to
 - take the calibration factor directly from the setting chart or
 - take experience value



Calibration factor realistical (0.7-1.4):

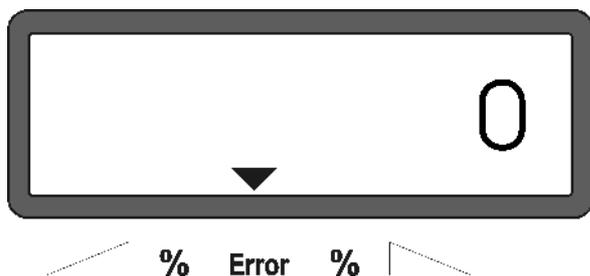
- **about 0.7 for urea**
- **about 1.0 for mineral fertilizer CAN**
- about 1.4 for fine, heaviness PK-fertilizer

Display after entering the calibration factor



- Press key and confirm.
- Press key , keep pressed and simultaneously press key and start the calibration.
- The display shows „0“.

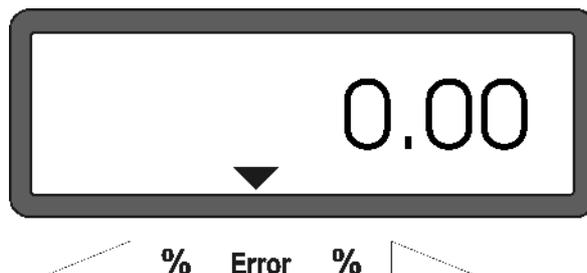
Display during starting the fertilizer calibration



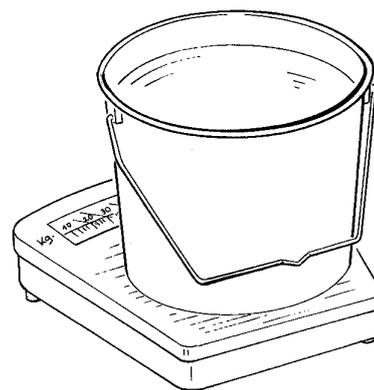
- With the pto shaft engaged, run the tractor at the rated speed (540 RPM) and open the left hand shutter.
- The display now shows the shutter opening time.
- Close the shutter earliest after 30 seconds or when the bucket is full.

The display changes after the shutter has been closed.

Display after closing the shutter



- Weigh collected fertilizer (consider net weight of bucket).



The balance used must weigh very accurately. Larger inaccuracies may cause deviations in the actually applied spread rate.

- Enter weight of the fertilizer via the keys or into the computer, e.g. "12.50" for 12,5 kg.
 - Then press key to confirm.
- AMADOS⁺** determines the fertilizer calibration factor. This is now valid for this specific kind of fertilizer.

- press and the fertilizer calibration factor is displayed.
- After completing the calibration test reinstall the spreading disc.



4.3 Putting into operation in the field

4.3.2 Changing the spread rate during fertilising operation



Enter all data as described before..

During spreading operation the pre-selected desired spread rate value can be changed for both shutters simultaneously or for every shutter individually.

4.3.1 Carry out the start function

4.3.2.1 Simultaneous spread rate change for both shutters

Before starting to operate carry out the "start function" and the implement is ready to work. For this

- Press key keep pressed and simultaneously press key .

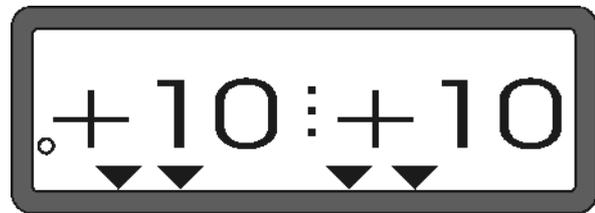
- Press key or With every key pressure the pre-selected spread rate **for both shutters together** changes by + or - 10%. The percentile spread rate deviation from the pre-selected desired spread rate is shown in the display.



The memory for the part area hectare counter and the applied spread rate is set on to "0".

Display after having pressed the keys for the simultaneous spread rate change

- Set the pto shaft speed to 540 RPM (unless not otherwise stated for the working width setting in the setting chart).
- Start the tractor and open the shutter.



% Error %



As soon as a shutter is opened, the display changes to the operation display. The display shows the actual forward speed [k.p.h.] and the actual spread rate [kg/ha].



After approx. 10 seconds the display returns to the operational display.

Operating display



% Error %

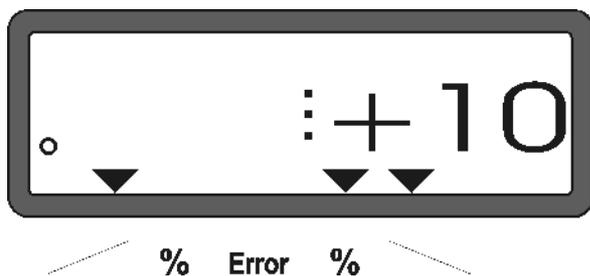


Pressing the key returns the changed spread rate to the pre-selected desired spread rate value.

4.3.2.2 Individual, independent seed rate changes for the right and left hand shutter

- Press key  ,  ,  or  every key pressure the pre-selected spread rate for the **individual shutter** changes by + or - 10%. The percentile spread rate deviation from the pre-selected desired spread rate is shown in the display.

Display after having pressed the keys for the spread rate change for the right hand shutter (+10%)



 After approx. 10 seconds the display returns to the operational display.

 Pressing the key  returns the changed spread rate to the pre-selected desired spread rate value.



4.3.3 Function keys and their use during the spreading operation

By pressing one of the following function keys the wanted value will be displayed for approx. 10 seconds during spreading operation. Thereafter **AMADOS⁺** automatically returns into the "operational display".

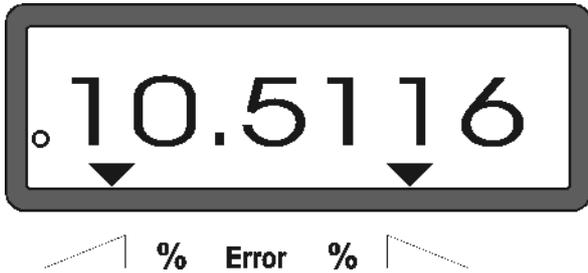
4.3.3.1 Hectare meter

1. Part area – hectare meter

After one time pressing key the covered part area in [ha] is displayed, which has been covered since actuating the "start function".

Only the covered area will be determined at which the fertilizer broadcaster is –in operating position.

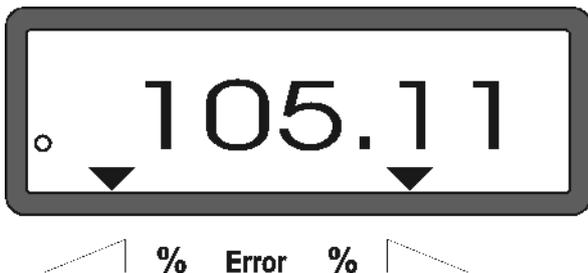
Display after one-time pressing the key



2. Total area – hectare meter

After two-times pressing the key the total area in [ha], e.g. of one season, is displayed..

Display after two-times pressing the key



3. Manual change into the "operational display"

After three-times pressing the key the display immediately changes to the "operational display".

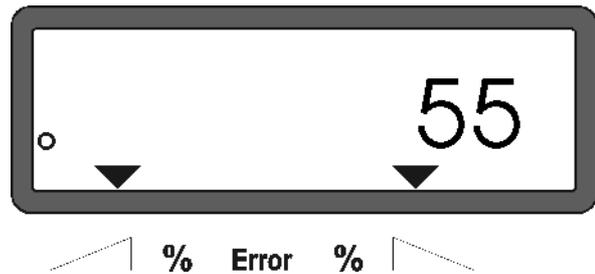
4.3.3.2 Part distance counter

The part distance counter determines the distance covered during the turning manoeuvre on the headlands.

- Press key and start the part distance.

After pressing the key the display shows the covered distance in [m] continuously determined. After the transition into the operation position this display vanishes after approx. 10 seconds.

Display after pressing the key part distance



4.4 Emptying the hopper

- Stop the implement and open the hydraulic rams.

- Simultaneously press key and until both shutters are completely open.

5. Repair, maintenance and cleaning



When cleaning the fertilizer broadcaster with a high pressure cleaner, it is important to ensure that the water jet is not directed to cable inlets and sockets.

- After cleaning, grease the hinge connections on the setting levers.

Der **AMADOS⁺** maintenance free. During winter time **AMADOS⁺** should be stored at room temperature. To guard against dust and moisture all outlets not in use must be protected with caps.



Before carrying out welding work on the tractor or the broadcaster, disconnect the electric power supply for **AMADOS⁺**!

5.1 Check shutter slide main setting and the impulses of the setting motors



The setting motors have been set by the manufacturer in such a way that the rate setting slide at closed hydraulic shutter slides return after switching on **AMADOS⁺** nearly to the 0-position on the scale.



A change of the setting lever basic setting is only necessary if

- the setting-motor had been exchanged.
- the desired and the actual spread rate considerably deviate and a calibration fault or other faults can be excluded.
- an uneven emptying of the two hopper tips is noted.

Prior to operation

- Mount the centrifugal broadcaster to the tractor and connect **AMADOS⁺** with the power supply. Do not yet insert the implement plug.
- Do not fill the hopper with fertilizer.
- Switch on **AMADOS⁺**.
- With implement plug pulled off

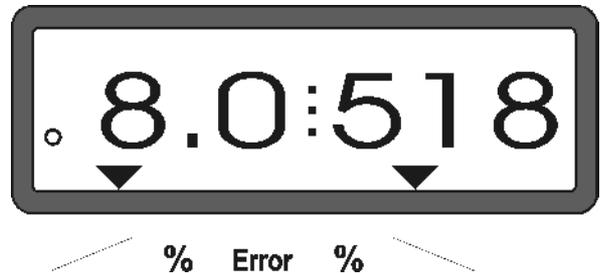
- check or dial newly the coding "0004" under mode "1" and store
- under mode "6" dial 8 km/h for the average operational speed and store.
- Switch off **AMADOS⁺** and connect **AMADOS⁺** with the implement plug
- Switch on **AMADOS⁺** again.
- Choose the rated spread rate 518 kg/ha and store.
- Choose the working width 20 m and store.
- The calibration figure "Imp/100m" equals the impulse figure determined at "distance sensor calibration". It remains unchanged
- Choose the figure 1,0 for the fertilizer calibration factor and store.

Execution

1. Check shutter slide position in the basic setting

- Open shutter slide.
- Speed up your tractor until the **AMADOS⁺** display will show the following display

Required display



- While the display shows 8.0 [k.p.h.] and 518 [kg/ha] switch off **AMADOS⁺**.
- Stop the tractor and read the shutter slide position for the metering shutter slides off the scale for the spread rate setting.
 - The read-off edge of the pointer must indicate for both metering shutter slides the shutter slide position 41±.



The shutter slide position 41±1 is only a mean value. Decisive is the opened diameter of the outlet opening. The opening allowed by the metering shutter slide must be 62 mm.



2. Checking the impulse figure of the setting motors

- Press key  one time. The now appearing impulse figure must have the value 1500 ± 15 . This impulse figure describes the position of the setting motors.



After a one time pressing of this key the impulse figure for the left hand setting motor is shown and after a two times pressing the impulse figure for the right hand setting motor.



If the shown impulse figures are beyond the range of tolerance, please contact our Technical Service Department.



If the displayed impulse figures are within the range of tolerance, check the shutter basic setting with the aid of a setting gauge (Order No.: 915018).



If after pressing key  no impulse figure is shown, the reason may be a defect in the signal storing of the setting motor. In this case, exchange the setting motor.

3. Checking the dimension of the opened discharge outlet



When actuating the shutter slides, do not reach into the discharge opening! Danger of squeezing!

- The setting gauge (Fig. 2/1) must easily fit through the now released discharge opening diameter. (Special option, Order-No.:: 915018).

Should this not be the case (opened discharge outlet diameter too small or too big) readjust the fixing of the setting motor bracket with the linkage for the shutter slide as follows:

- Slacken the fixing bolts (Fig. 2/2) of the setting motor console (Fig. 2/3).
- Insert the setting gauge (Fig. 2/1) into the discharge outlet opening.
- Swivel the setting motor console (Fig. 2/3) towards the setting gauge and retighten the fixing bolts (Fig. 2/2).



Fig. 2

Check whether the shutter position 41 for the metering shutter slides is shown on the spread rate setting scale. If necessary slacken the pointer fixing (Fig. 3/1) and align the pointer read off edge (Fig. 3/2) onto the scale figure 41.



If the values for the read off shutter slide positions of the two shutters are far beyond the indicated maximum values, a fault in the control system or on the setting motor can be assumed. In this case, check the impulse value of the setting motors.



Fig. 3

6. Malfunctions

6.1 Operation of the broadcaster in the event of electrical failure

In the event of electrical faults occurring on the computer **AMADOS⁺** or the electrical setting-motors, the operation can be continued even if the fault cannot be remedied straight away.

For this disconnect the plug connection (Fig. 4/1) between setting motor (Fig. 4/2) and metering shutter

- Remove the two circlips (Fig. 5/1) by using circlip pliers (Fig. 5/2).

- Pull off the two hinge pins (Fig. 6/1).
- Remove the setting motor from the motor retainer.
- Lift the setting motor and unhook the setting spindle from the plug connection of the setting lever.

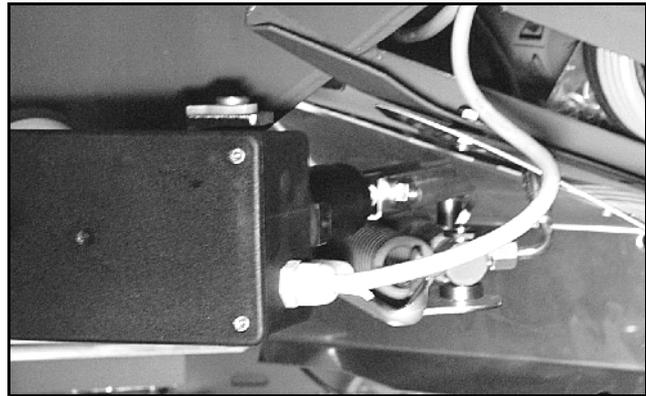


Fig. 4

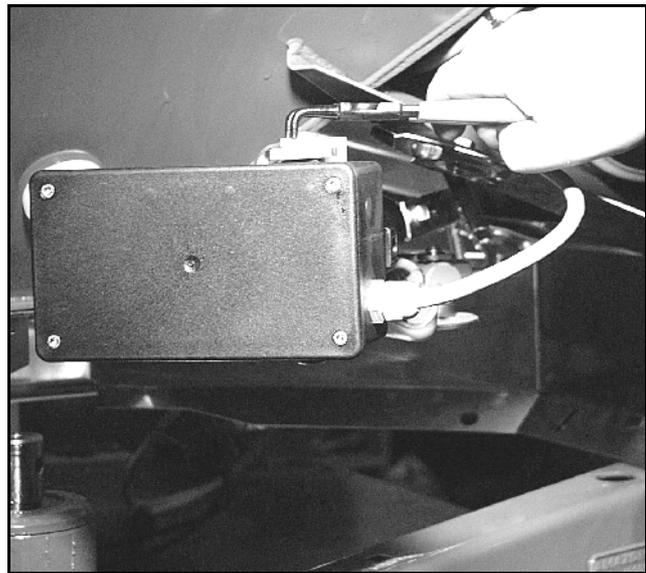


Fig. 5

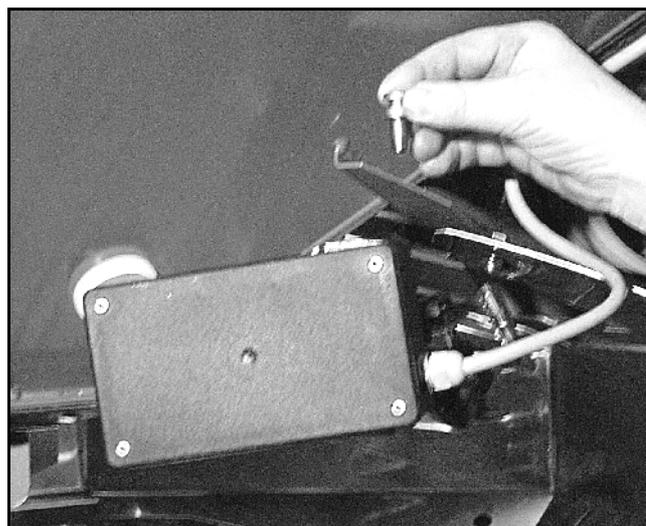


Fig. 6

- Then properly affix the setting motor with the unhooked setting spindle again in the motor retainer.



Secure the unhooked setting spindle (Fig. 7/1) with fixing aids from swivelling into the operational range of the hydraulic ram.

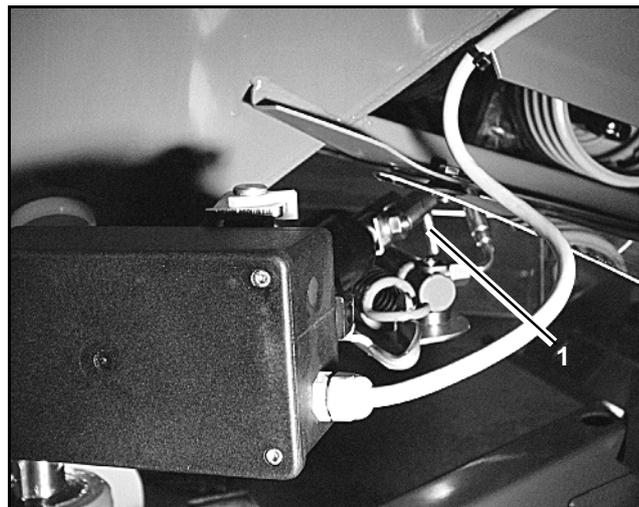


Fig. 7

- Install the clamping device (Fig. 8/1) for the metering shutter lever (Fig. 8/2) as follows:
 - Remove thumb nut (Fig. 8/3) Remove the pins and exchange the position of the two washers (Fig. 8/4) from the rear (Fig. 8/5) to the front (Fig. 8/6) (Fig. 9).



Fig. 8



Fig. 9



6.2 Fault messages

When using the **AMADOS⁺** on board-computer, the following fault messages (error messages) may occur:

Fault number / error	Cause	Remedy
10	rated value cannot be maintained.	<ul style="list-style-type: none"> - check rated value (see chapter 4.2.2). - adapt speed. - Switch off AMADOS⁺ newly carry out the start function (please refer to para. 4.3.1)
11	"spread rate" not entered.	<ul style="list-style-type: none"> - enter rated value (see chapter 4.2.2).
12	"working width" not entered.	<ul style="list-style-type: none"> - enter working width (see chapter 4.2.3).
13	no reaction by setting motor left hand side.	<ul style="list-style-type: none"> - check coding (see chapter 4.2.1). - check setting motors for function, e. g. by activating the function "emptying hopper" (see chapter 4.4).
14	no reaction by setting motor right hand side.	<ul style="list-style-type: none"> - check coding (see chapter 4.2.1). - check setting motors for function, e. g. by activating the function "emptying hopper" (see chapter 4.4).
16	The actual spread rate heavily deviates from the dialled application rated value (e.g. due to choked shutter opening).	<ul style="list-style-type: none"> - Remedy error source (e.g. clean shutter opening). Then newly determine the calibration factor.
no area determination	<p>"working width" not entered.</p> <p>AMADOS⁺ does not recognise "working position"..</p>	<ul style="list-style-type: none"> - enter working width (see chapter 4.2.3). - check sensor "working position".
no speed display	<p>No impulses arrive at AMADOS III-D (Symbol "speed impulse" does not light up).</p> <p>The impulse value "Imp./100m" is missing.</p>	<ul style="list-style-type: none"> - check sensor "X", cable ducting and wiring. - enter impulse value or determine by driving a test distance (see chapter 4.2.4).



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