Operation Manual

AMADOS III-D

ZA-M...iS

MG 651
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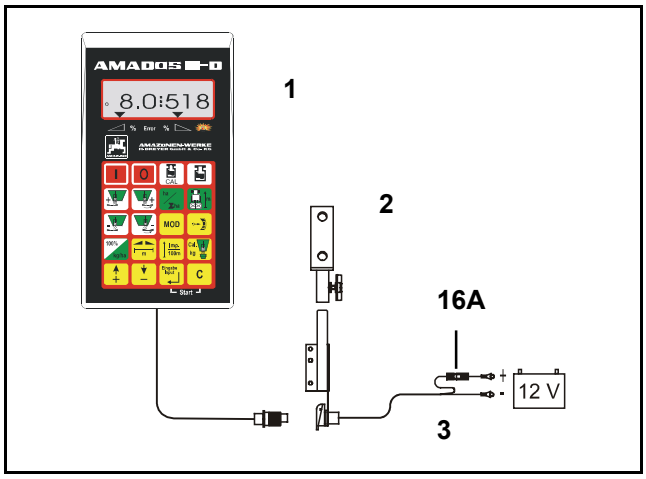
GB

CE

Before starting work, please carefully read and adhere to this operation manual and safety advice!

AMAZONE



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 III-D the electronic monitoring-, controlling and regulating system consisting of:

1 - Computer.
2 - Console.
3 - Battery connecting cable with plug and fuse (16A).

1. Information about the computer

1.1 Range of application

AMADOS III-D 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 III-D 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 III-D**.

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

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 III-D 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 fertiliser 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 fertiliser, 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 III-D** itself will be rejected. This also applies to damage due to application errors. Arbitrary modifications to the **AMADOS III-D** 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 III-D.

3. Description of product

AMADOS III-D

- 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 fertiliser data determined by weighing (only profiS-broadcasters).
- shows the actual hopper content and determines the applicated 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].

The computer 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.

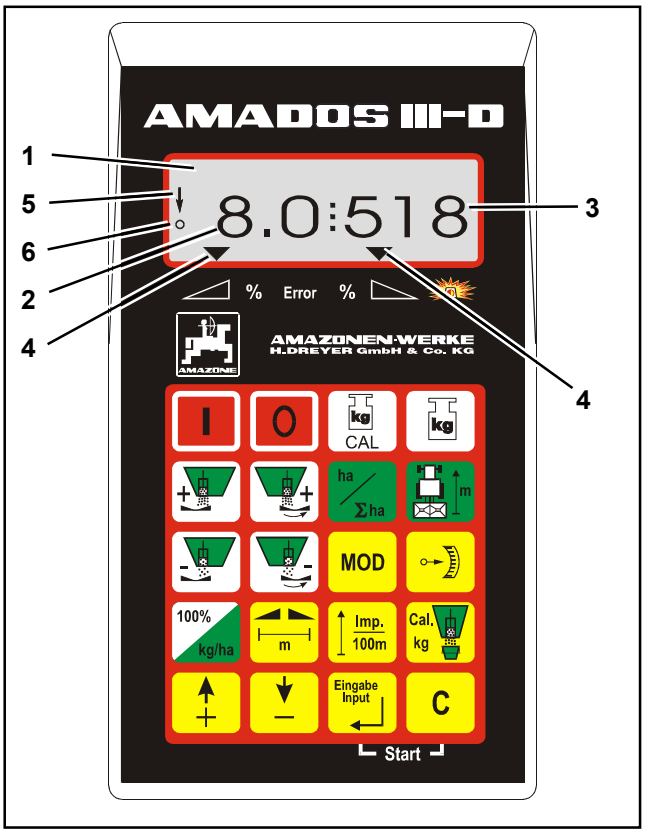


Fig. 1

3.1 Function description

AMADOS III-D 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 2 symbols are shown. The vertical arrow (Fig. 1/5) appears while travelling the calibration distance to determine the fertiliser calibration factor (only profiS broadcasters). The circle below (Fig. 1/6) should flick during operation and indicates that the sensor for counting the area or the travelled distance is transmitting impulses to the AMADOS III-D.

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

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.

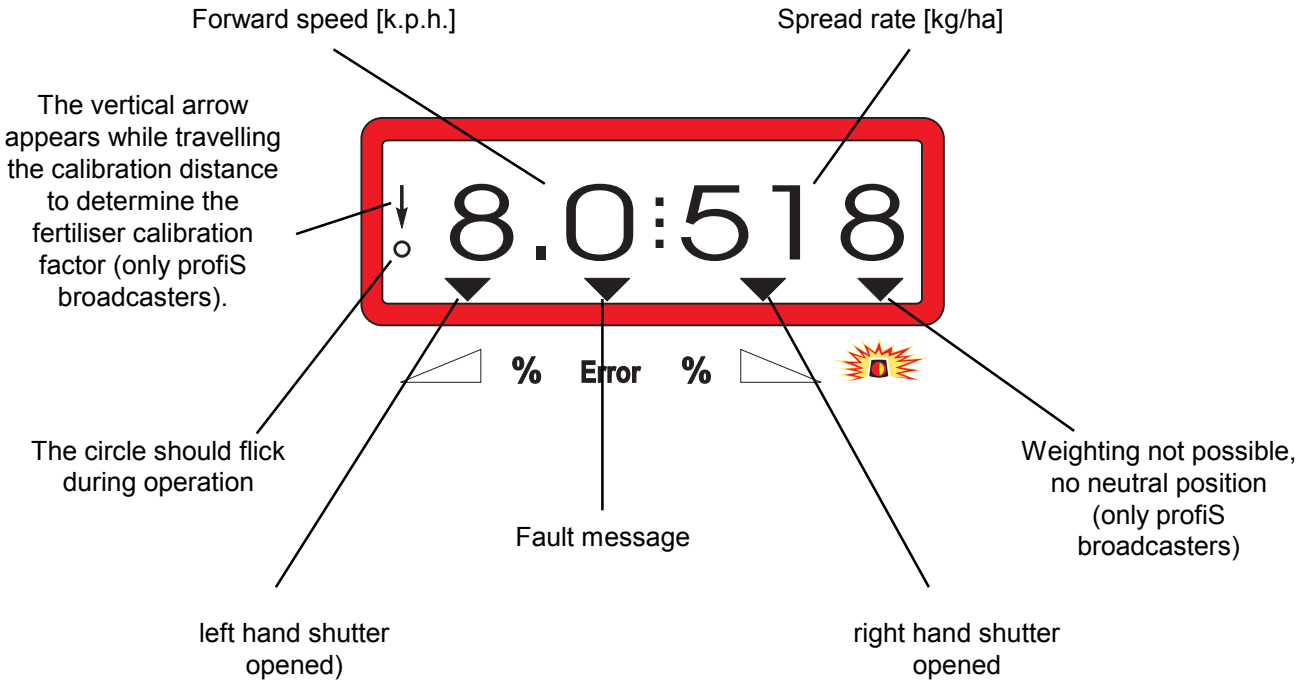
The key pad is offering 20 keys which are divided into the following areas:

Red	=	Implement on / off.
Yellow	=	Input keys (entering the implement specific data)
Green	=	Function keys.

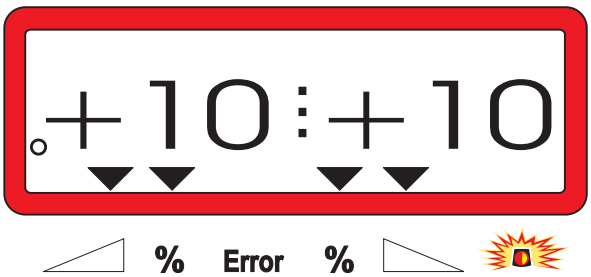
3.1.1 Operating display

As soon as a shutter is opened AMADOS III-D recognises that the implement is in operational position and changes to the "operational display".

Operating display

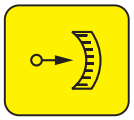
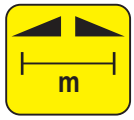
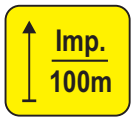
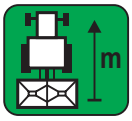


Operating display after pressing the keys for the common spread rate change (+10%)



3.2 Keypad layout

Table 1: Keypad layout

Key	Function		Key	Function
	Switch on AMADOS III-D.			mode entering
	Switch off AMADOS III-D.			Displaying the impulse figure of the setting motors or in conjunction with key  open shutter for emptying the hopper entirely
	Counterbalance broadcaster gauge the weigh cell			return spread rate to rated value previously entered
	Filled in / spread amount of fertiliser			Working width [m]
	increase spread rate – left hand shutter			ground related sensor impulses over a distance of 100 m
	increase spread rate – right hand shutter			Fertiliser calibration factor
	Hectare meter			input key for increasing the displayed value
	Part distance counter			input key for decreasing the displayed value
	reduce spread rate – left hand shutter			key used to confirm all entries
	reduce spread rate – right hand shutter			correction key

4. Operation

4.1 AMADOS III On-/off switching

By pressing key I **AMADOS III-D** is switched on and by pressing key O it is switched 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.

4.2 Entering the implement specific data

The implement specific entering values required by AMADOS III-D 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 Eingabe Input and be stored this way.

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.

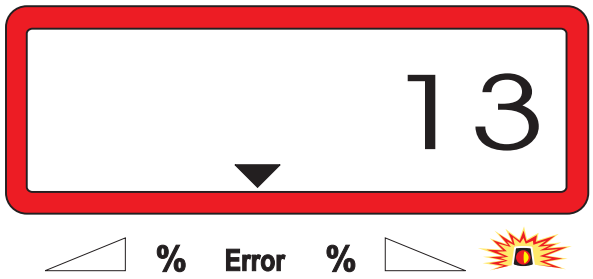
4.2.1 Implement type and implement equipment

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 III-D 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"

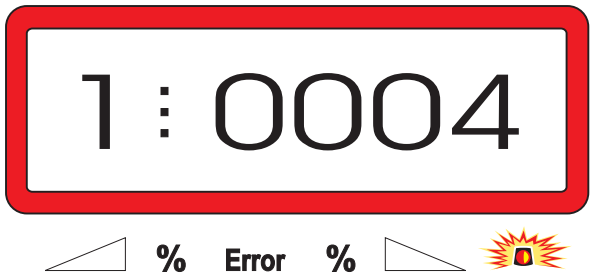


2. Mode "1", choosing the implement type

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

- C press, keep pressed and simultaneously press key MOD and hereby release the entering.
- Press key MOD (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 Eingabe Input and hereby store the cialled value "0004".

3. Mode "2-5"

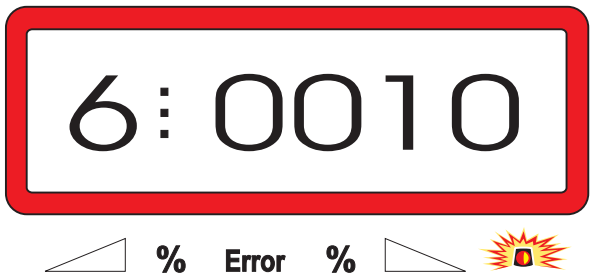
When operating with the fertiliser broadcaster the modes 2 to 5 are vacant and thus must not be chosen or changed.

4. Mode "6", intended average operational speed

AMADOS III-D required the entering of the "intended average operational speed" for the procedure "determining the fertiliser calibration factor".

- Press key MOD (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..

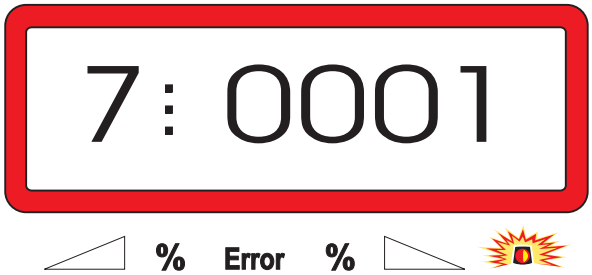
- Via the keys + or – dial the intended average operational speed on the display, e. g. "0010" for 10 km/h.
- Eingabe Input press and thus store the dialled value "0010".

5. Mode "7", 0 = without weigh cell and 1 = with weigh cell

Dial under mode "7", whether the broadcaster is equipped without or with weigh cell.

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

Display after mode "7" has been dialled



The first digit shows the dialled mode "7", the second indicates whether the broadcaster is equipped without "0000or with weigh cell "0001"– here "0001" for broadcaster with weigh cell.

- Via the keys + or – dial on the display the digits "0000" for broadcasters without weigh cell or "0001" for broadcaster without weigh cell.
- Press key Eingabe Input and thus store the dialled value "0010" and secure against unintended change.

6. Switch off AMADOS III-D and connect the implement plug with AMADOS III-D.

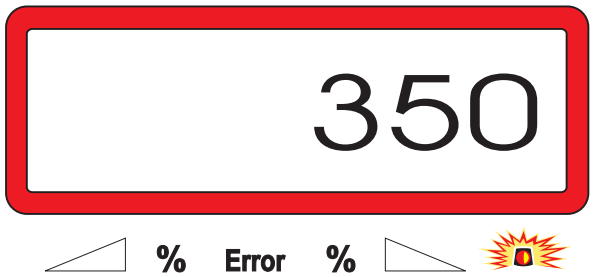
7. Switch on AMADOS III-D again.

4.2.2 Spread rate

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

- Press 100% kg/ha 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 Eingabe Input key. The dialled value "350" will be stored.
- Press once again 100% kg/ha 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.

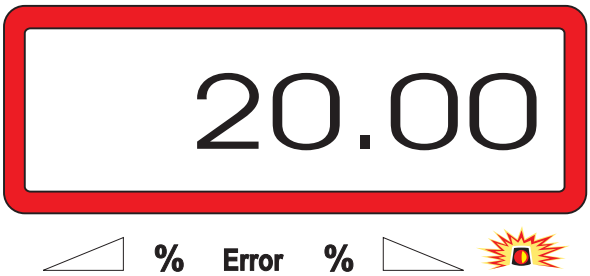
4.2.3 Working width

For determining the operated area **AMADOS III-D** 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 III-D** requires the calibration value "Imp./100m", which sensor "X" releases to **AMADOS III-D** when driving down a calibration distance of 100 m.

The calibration figure "Imp./100m" may never be smaller than "250", as otherwise AMADOS III-D 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.

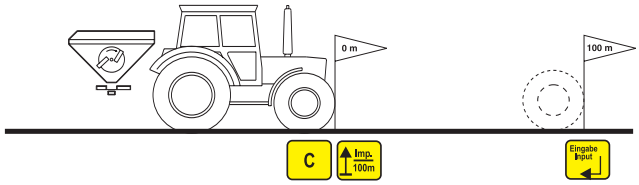
In case of deviations between

- **the spread rate and the actually worked area**
- **the worked area determined and displayed by AMADOS III-D 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:

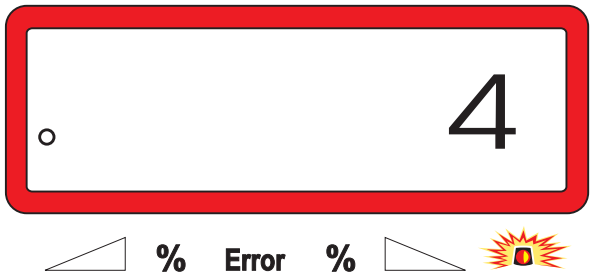
- Accurately measure out in the field a calibration distance of 100 m. Mark the starting- and ending point of the calibration distance.



- Bring tractor in start position.
- Press key C and hold it pressed while pressing key Imp. 100m
- 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 Eingabe Input and thus store the displayed determined calibration value (Imp./100 m).
- Once again press key Imp. 100m to check the stored calibration value. The display now should show the determined calibration value (Imp./100 m).

4.2.5 Determining the fertiliser calibration

The fertiliser calibration factor determines the controlling behaviour of AMADOS III-D and depends on

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

The fertiliser flowing behaviour itself depends on

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

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

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

Always again determine the fertiliser calibration factor

- **if the spread rate changes by more than 50%.**
- **if deviations between the theoretical and the actual spread rate occur.**

The fertiliser calibration factor is determined:

- stationary – for all broadcasters.
- automatically during a calibration travel whilst spreading – only possible for broadcasters with weigh cell.

<u>During the fertiliser calibration determination the spread rate entered</u> into AMADOS III-D may not exceed the value resulting from the columns " max. spread rate to be entered during the fertiliser calibration factor determination for 6, 8, 10 km/h".

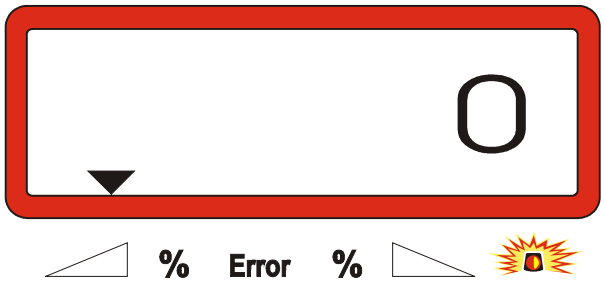
Table 2: "Maximum spread rate to be entered during the fertiliser calibration factor determination in dependence of working width and operational speed"

Working width [m]	max. spread rate to be entered [kg/ha] when determining the fertiliser 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

4.2.5.1 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 fertiliser 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!).
- C press, keep pressed as simultaneously press key Cal. kg and start the calibration procedure.
- The display shows a "0".

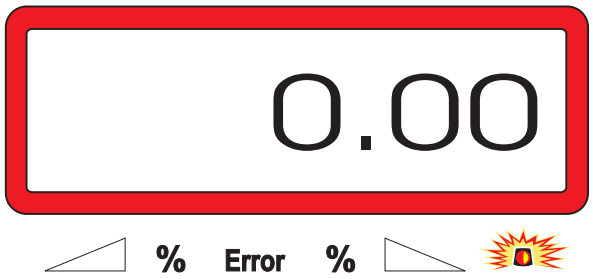
Display at the start of the fertiliser calibration test



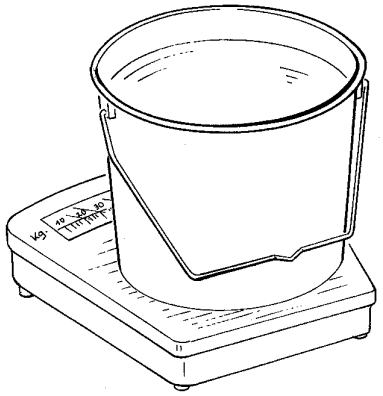
- With the pto shaft engaged, run the tractor at the rated speed (540 RPM) and open the left hand shutter.
- The display now shows the shutter opening time.
- Close the shutter earliest after 30 seconds or when the bucket is full.

The display changes after the shutter has been closed.

Display after closing the shutter



- Weigh collected fertiliser (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 fertiliser via the keys  or  into the computer, e.g. "12.50" for 12,5 kg.
- Then press key  to confirm.

  AMADOS III-D determines the fertiliser calibration factor. This is now valid for this specific kind of fertiliser.
-  press and the fertiliser calibration factor is displayed.
- After completing the calibration test reinstall the spreading disc.

4.2.5.2 Determining the calibration factor automatically via the weigh cell

The fertiliser calibration factor can be determined during spreading at any time.

There are 2 kinds of procedure to determine the fertiliser calibration factor:

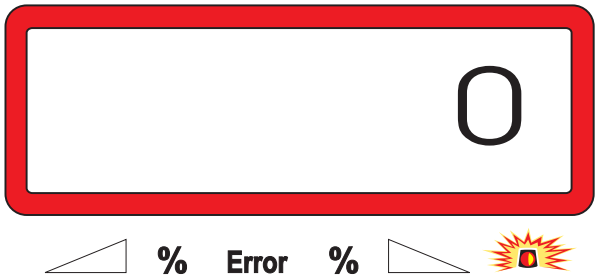
- use the stationary determined fertiliser calibration factor.
- determine the unknown fertiliser calibration factor automatically via the weigh cell.

Procedure:

- Check the entering for the desired spread rate and the working width.
-  press and the stored fertiliser calibration factor is displayed.
- The displayed calibration factor can be changed at random via the keys  or  .
- Press  and thus store the new calibration factor.
- Stop tractor and broadcaster on a level ground.
- When the triangle above the warning lamp goes out, press key  keep it pressed and simultaneously press key  and thus start the determination of the fertiliser calibration factor.

If the triangle above the warning lamp lights up the broadcaster is not in neutral position. The determination of the fertiliser calibration factor can only be started with the broadcaster in neutral position.

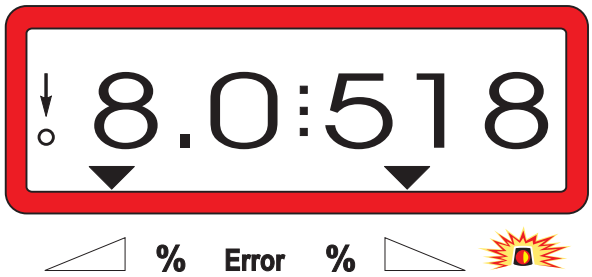
Display when starting the determination of the fertiliser calibration factor



- Start spreading in the usual way and spread at least 200 kg of fertiliser.

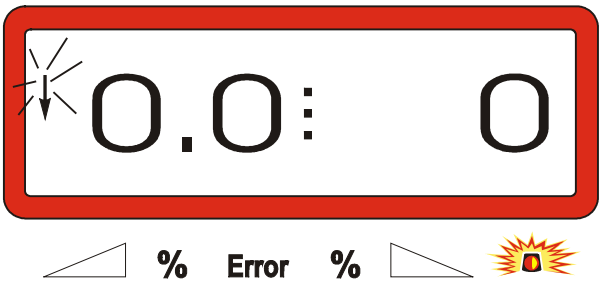
Immediately after starting the calibration travel the display changes into the operating. During the calibration travel a vertical arrow appears on the left hand edge of the display above the flashing circle.

Display during the calibration travel



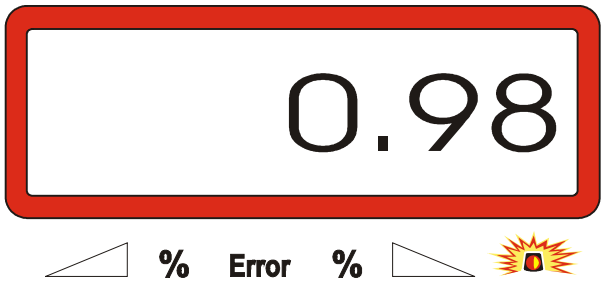
- Stop the calibration travel at the earliest when the vertical arrow on the left hand display edge starts to flash.

Display after having stopped the calibration travel



- Stop tractor and broadcaster on a level ground.
- When the tractor has been stopped and after the triangle above the warning lamp has gone out, press key C keep pressed and simultaneously press key m.
- The display shows the calculated fertiliser calibration factor, e. g. 0.98.

Display of the calculated calibration factor



The values for the realistic fertiliser calibration factors lie 0.70 and 1.50.

- Press key Eingabe Input and store the calculated fertiliser calibration factor.

4.3 Putting into operation in the field

Enter all data as described before.

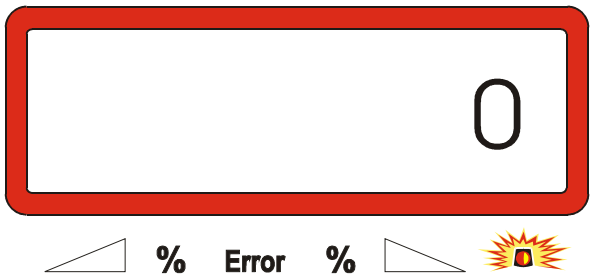
4.3.1 Filling routine for broadcasters with weigh cell

Implicitly carry out the filling routine as described in the following for every new filling procedure when it is intended to determine the applicated amount of fertiliser after having carried out the "start function".

Stop the tractor with the mounted fertiliser broadcaster on a level parking area.

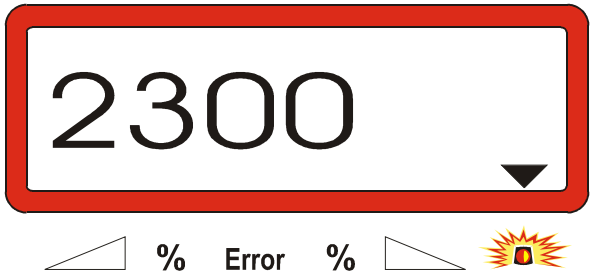
- Press key C, keep pressed and simultaneously press kg

Display before filling the fertiliser broadcaster



- Fill fertiliser into the broadcaster or top up. The display shows the filled-in amount of fertiliser in [kg], e.g. 2300 kg.

Display of the amount of fertiliser inside the broadcaster



- Eingabe Input press, after the triangle above the warning lamp has gone out. AMADOS III-D adds the residual amount of fertiliser which is still in the broadcaster and the filled in amount of fertiliser.

If key Eingabe Input is pressed before the triangle above the warning lamp has gone out, the fault message "15" appears. This fault message vanishes after approx. 3 seconds.

- Press key kg one time and the display shows the total hopper content in [kg].

4.3.2 Carry out the start function

Before starting to operate carry out the "start function" Eingabe Input + C (Start) and the implement is ready to work. For this

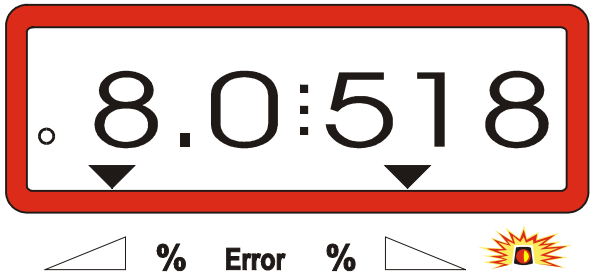
- Press key Eingabe Input keep pressed and simultaneously press key C.

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

- 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.

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].

Operating display



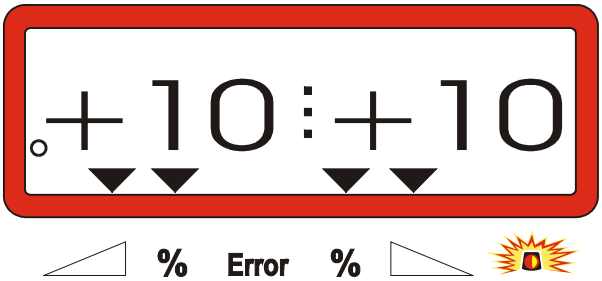
4.3.3 Changing the spread rate during fertilising operation

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

4.3.3.1 Simultaneous spread rate change for both shutters

- 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.

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



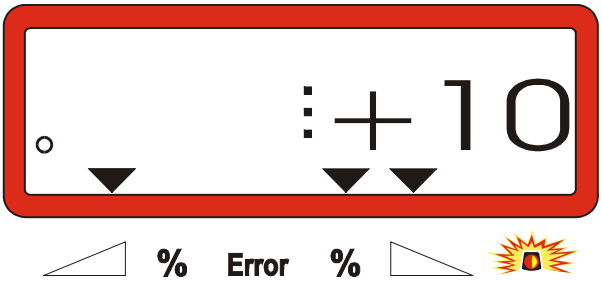
After approx. 10 seconds the display returns to the operational display.

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

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

- Press key  ,  ,  or  . With 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.**

4.3.4 Spreading extremely small spread rates, e. g. green manure and slug pellets

Spread rates below 50 kg/ha (smallest spread rates) will have an unfavourable flowing effect of the material due to the small diameter of the outlet opening and therefore may lead to deviations of the spread rate.

4.3.4.1 Spreading rye grass

Example:

Rye grass
Spread rate: **34 kg/ha**
Working width: 12 m
Forward speed : 10 k.p.h. [km/h]
From setting chart: **shutter position "27"**

Table 3: "Spread rate setting for rye grass – Excerpt from the setting chart

Rye grass 0,51 kg/l

Lever setting posi	10 km/h 8	10	12	12 km/h 8	10	12	km/h 8	10	12	km/h 8	10	12	km/h 8	10	12
25	25	20	16	21	16	14									
26	39	31	26	33	26	22									
27	52	41	35	43	34	29									
28	64	51	43	53	42	35									
29	79	63	53	66	52	44									
30	96	77	64	80	64	53									

For broadcasting rye grass, please proceed with the calibration test in the following order:

1 - In the setting chart find page for spread rate setting of CAN 27 % N granular BASF.

Table 4: Spread rate setting CAN 27 % N granular BASF. Excerpt from the setting chart

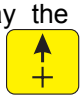
KAS 27 % gran. BASF; Hydro; DSM; Kemira;
Agrolinz 1,06 kg/l
KAS 27 % N gran. ø 3,36 mm SCHZ Lovosice CZ 1,04 kg/l
KAS 27 % N gepr. ø 2,76 mm NET IRL 1,03 kg/l
NP- und NPK-Sorten gran. BASF 1,13 kg/l
NPK 15-15-15 gran. ø 3,65 mm Combilinz Agrolinz 1,11 kg/l
NPK-1 12-19-19 gran. ø 2,81 mm
SCHZ Lovosice CZ 1,05 kg/l

Lever setting posi	20 km/h 8	10	12	21 km/h 8	10	12	24 km/h 8	10	12	27 km/h 8	10	12	28 km/h 8	10	12
24	119	95	79	113	91	76	99	79	66	88	71	59	85	68	57
25	133	107	89	127	102	85	111	89	74	99	79	66	95	76	63
26	149	119	99	142	113	94	124	99	83	110	88	73	106	85	71
27	165	132	110	157	126	105	137	110	92	122	98	81	118	94	79
28	182	146	121	173	139	116	152	121	101	135	108	90	130	104	87
29	200	160	134	191	153	127	167	134	111	148	119	99	143	114	95
30	219	175	146	209	167	139	183	146	122	162	130	108	157	125	104
31	239	191	160	228	182	152	199	160	133	177	142	118	171	137	114
32	260	208	173	248	198	165	217	173	144	193	154	128	186	149	124
33	282	225	188	268	215	179	235	188	156	209	167	139	201	161	134
34	304	243	203	289	232	193	253	203	169	225	180	150	217	174	145
35	327	262	218	311	249	208	272	218	182	242	194	161	233	187	156
36	351	280	234	334	267	223	292	234	195	260	208	173	250	200	167
37	375	300	250	357	286	238	312	250	208	278	222	185	268	214	178
38	400	320	266	381	305	254	333	266	222	296	237	197	285	228	190
39	425	340	283	405	324	270	354	283	236	315	252	210	304	243	202
40	451	361	301	429	344	286	376	301	250	334	267	223	322	258	215
41	477	382	318	454	364	303	398	318	265	353	283	236	341	273	227
42	504	403	336	480	384	320	420	336	280	373	298	249	360	288	240
43	531	424	354	505	404	337	442	354	295	393	314	262	379	303	253
44	558	446	372	531	425	354	465	372	310	413	331	275	398	319	266
45	585	468	390	557	446	371	488	390	325	433	347	289	418	334	279
46	612	490	408	583	467	389	510	408	340	454	363	302	437	350	292
47	640	512	427	610	488	406	533	427	356	474	379	316	457	366	305
48	667	534	445	636	509	424	556	445	371	494	396	330	477	381	318
49	695	556	463	662	529	441	579	463	386	515	412	343	496	397	331
50	722	578	481	688	550	459	602	481	401	535	428	357	516	413	344
51	749	599	500	714	571	476	624	500	416	555	444	370	535	428	357
52	776	621	517	739	591	493	647	517	431	575	460	383	554	443	370
53	803	642	535	764	611	510	669	535	446	594	476	396	573	459	382

2 - Look for column 20 m working width and 8 k.p.h.. In this column for the **setting lever position "27"** (shutter position "27" for rye grass spread rate 34 kg/ha) read off the **spread rate "165" [kg/ha].**

3 - Press key  and dial via the keys  or  the figure "12" (for 12m working width for rye grass) on the display. Press key  and store.

4 - **Stop vehicle**, press key 

and dial on the display the spread rate "165" [kg/ha] via the keys  or  , press key 

and store the entered value "165".

Once again press key 

and check the entered value. The display should then show the figure "165".

Carry out the calibration test with grass seed (please refer to chapter 4.2.5):

5 - Press key 

and hold it pressed while simultaneously pressing key 

and start the calibration test. The display now shows a "0".

6 - With the pto shaft engaged, run the tractor at rated speed (540 RPM) and open the left hand shutter for at least 30 seconds.

7 - Weigh the collected grass seed.

8 - Enter the weight of the collected grass seed via the keys  or  into the computer, e. g. "0.50" for 0,5 kg.

Press key 

and confirm.

"AMADOS III-D" now determines a calibration factor characteristic for the grass seed and the working width used which can be displayed by pressing key 

.

9 - Enter the desired grass seed spread rate (34 kg/ha) as described before.

10 - Reinstall the left hand spreading disc.

4.3.5 Function keys and their use during the spreading operation

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

4.3.5.1 Hectare meter

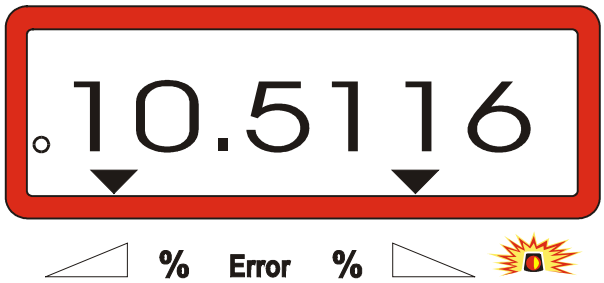
1. Part area – hectare meter

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 fertiliser broadcaster is –in operating position.

Display after one-time pressing the key

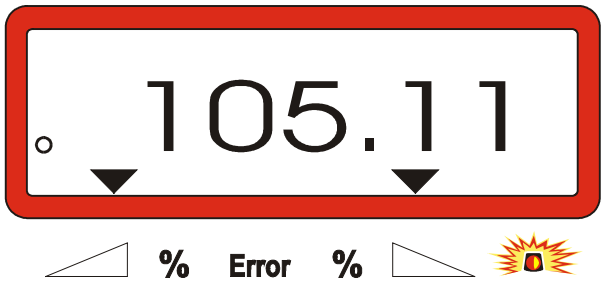


2. Total area – hectare meter

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".

4.3.5.2 Part distance counter

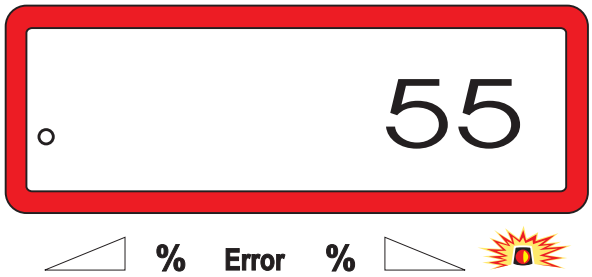
The part distance counter determines the distance covered during the turning manoeuvre on the headlands.

- 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

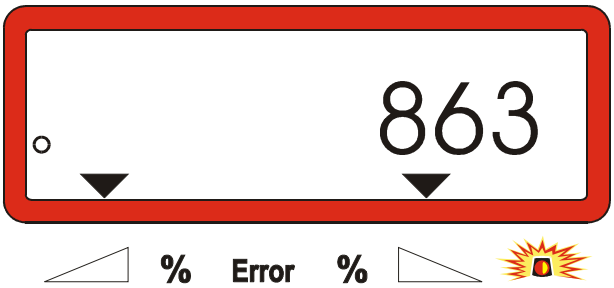


4.3.5.3 Hopper content and applicated amount of fertiliser – for broadcasters with weigh cell only

1. Hopper content

- After **one time** pressing key  the actual amount of fertiliser in the hopper in [kg] us displayed, e. g. 863 kg.

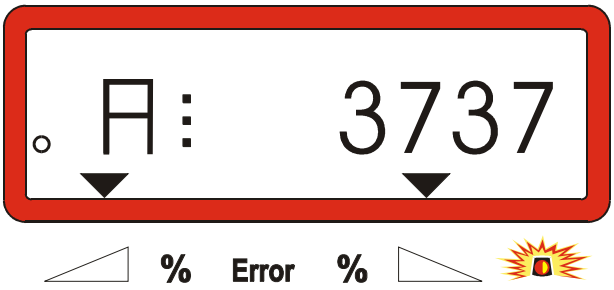
Display after one time pressing the key



2. Applicated amount of fertiliser

- After **two times** pressing the key  the applicated amount of fertiliser in [kg] is displayed after actuating the "start function".

Display after two-times pressing the key



Hopper content and applicated amount of fertiliser differ in the display by an "A".

The "A" indicates the applicated amount of fertiliser.

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 fertiliser 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.

AMADOS III-D is maintenance free. During winter time, AMADOS III-D 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 III-D!

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 III-D 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

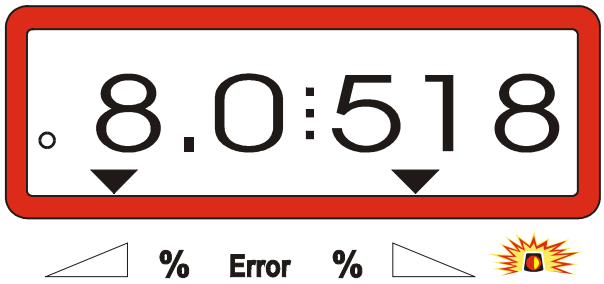
- Mount the centrifugal broadcaster to the tractor and connect AMADOS III-D with the power supply. Do not yet insert the implement plug.
- Do not fill the hopper with fertiliser.
- Switch on AMADOS III-D.
- With implement plug pulled off
  - check or dial newly the coding "0004" under mode "1" and store.
  - under mode "6" dial 8 km/h for the average operational speed and store.
- Switch off AMADOS III-D and connect AMADOS III-D with the implement plug.
- Switch on AMADOS III-D 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 fertiliser calibration factor and store.

Execution

1. **Check shutter slide position in the basic setting**

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

Required display



- While the display shows 8.0 [k.p.h.] and 518 [kg/ha] switch off AMADOS III-D .
- 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 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).

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.

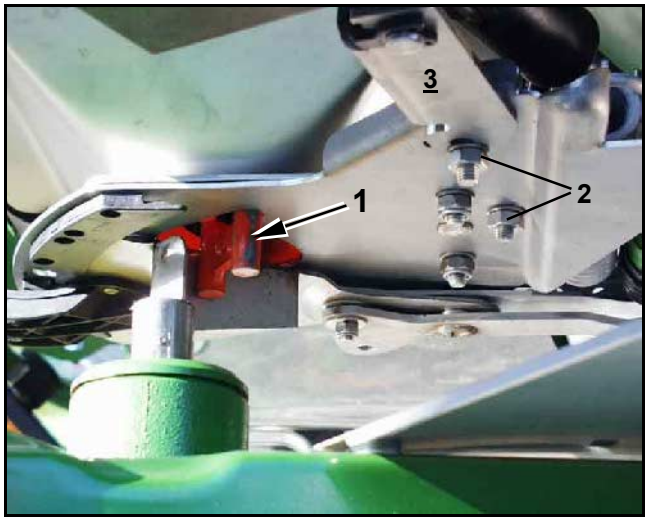


Fig. 2

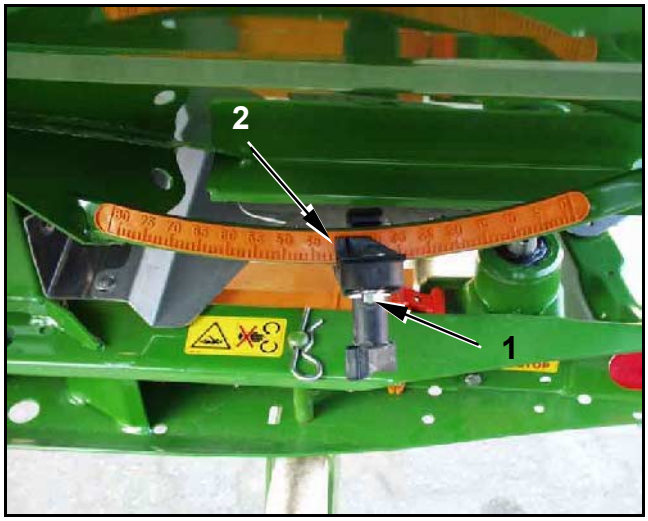


Fig. 3

3. 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.

5.1.1 Counterbalancing the broadcaster (only for broadcaster with weigh cell)

In the factory the broadcaster has been counterbalances with the weigh cell, e. g. with the empty broadcaster the AMADOS III-D display shows a "0" for 0 kg hopper content.

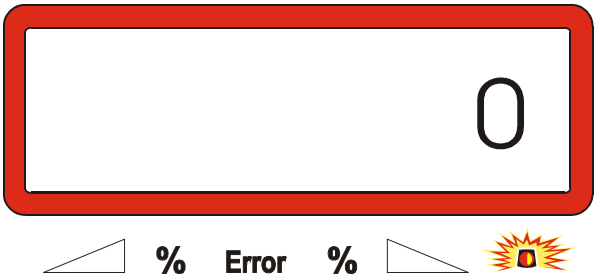
Regularly check the broadcaster balancing and carry out newly if necessary, because the net weight of the broadcaster may change, e. g. by pollution or if options have been attached.

With empty broadcaster and correct counterbalancing a "0" must appear on the display. If another value is shown, carry out a fresh counterbalancing of the broadcaster.

1. Checking the broadcaster counterbalancing

- Stop the tractor with mounted empty broadcaster on a level parking area.
- Press key kg **one time**. A "0" should appear on the display.

Display with an empty, correctly counterbalanced broadcaster



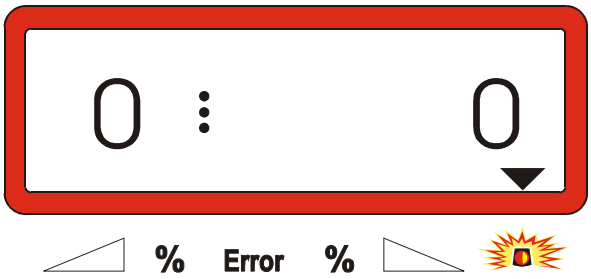
The broadcaster has been counterbalanced correctly if a "0" for 0 kg hopper content appears on the display.

If another value appears, counterbalance the broadcaster.

2. Counterbalancing the broadcaster with weigh cell

- Press key C, keep press and simultaneously press key kg CAL.

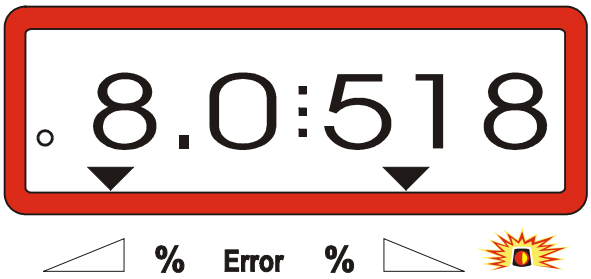
Display zero counterbalancing



If the triangle above the warning lamp lights up the broadcaster is not in neutral position. However, the zero-counterbalancing can only be carried out with the broadcaster in neutral position.

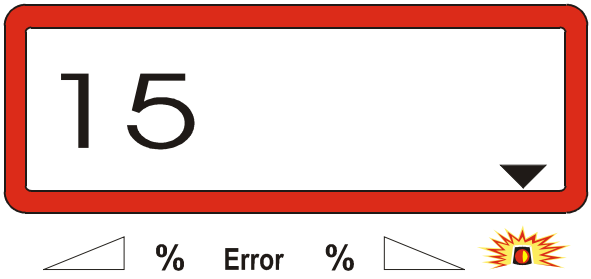
- Wait until the triangle above the warning lamp goes out, then press key Eingabe Input and store the zero-counterbalancing. The display changes to the operating position.

Operating display



If key Eingabe Input is pressed before the triangle above the warning lamp has gone out the error report "15" appears.

Display with error report "15"



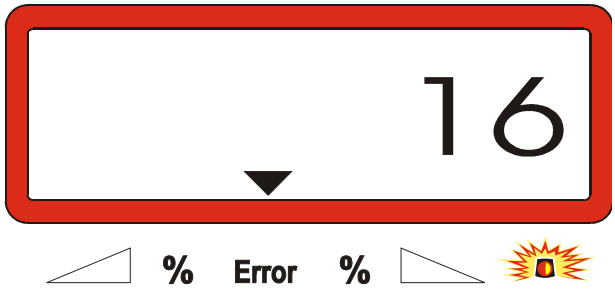
The error message vanishes after approx. 3 seconds.

- Press again key Eingabe Input and the display changes to the operating position.

5.1.2 Deviations between theoretical and actual spread rate – only for broadcasters with weigh cell

In case of heavy deviations between the actual and the theoretical spread rate, the error report "16" is displayed". The reason for this error report may be, for example, a chucked shutter opening.

Display with error report "16"



- Remedy source of error, e. g. clean shutter opening.
- Determine new calibration factor.

5.1.3 Deviations between displayed and actual hopper content – for broadcasters with weigh cell only

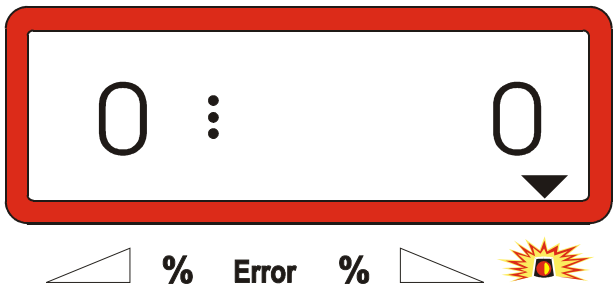
The weigh cell has been calibrated by the factory.

Newly calibrate the weigh cell,

- **in case of deviations between displayed and actual hopper content.**
- **after settings on the carrying bolt of the weigh cell.**

- Park tractor and broadcaster on a level ground.
- Press key C , keep pressed and simultaneously press key kg CAL. By this measure first counterbalance the broadcaster.

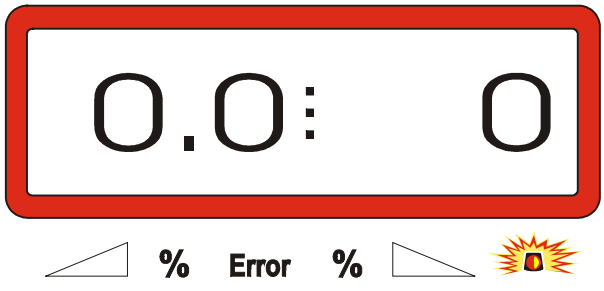
Display zero-counterbalance



If the triangle above the warning lamp lights up, the broadcaster is not in neutral position. A constant weighing result can only be determined with the broadcaster in neutral position.

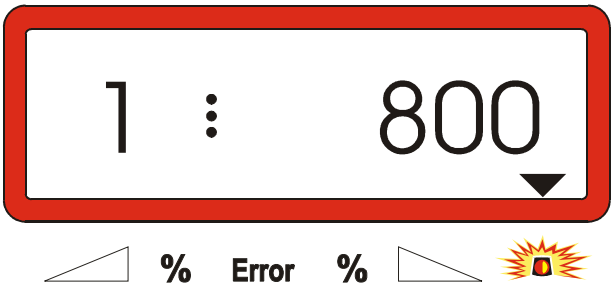
- Wait until the triangle above the warning lamp goes out, then press key Eingabe Input and memorise the zero-counterbalance. The display changes into the operational display.

Display after having pressed the enter-key



- Again press key C keep it pressed and simultaneously press key CAL.
- Again press key CAL The display changes into the display "calibrating the weigh cell".

Display "Calibrating the weigh cell"



The figure "800" means, that for calibrating the weigh cell an accurately weighed amount of fertiliser of at least 800 kg must be filled into the hopper.

- Fill at least 800 kg fertiliser into the hopper.
- Accurately weigh the amount of fertiliser filled into the hopper.
- Starting from the displayed figure "800" dial the weight for the amount of fertiliser filled into the hopper via the keys + and − on the display.
- When the triangle above the warning lamp goes out, press key Eingabe Input and terminate the calibrating procedure. The display changes into the operational display.

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 III-D 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.

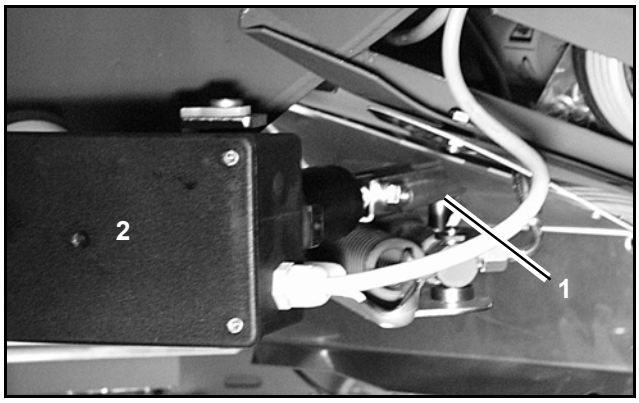


Fig. 4

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

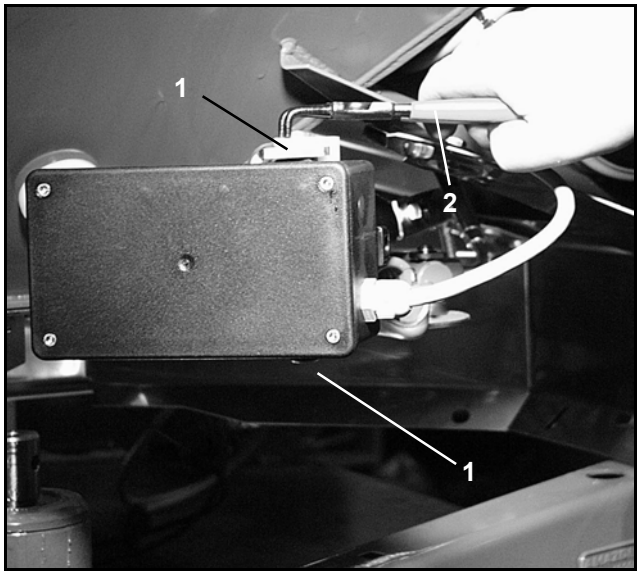


Fig. 5

- 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.

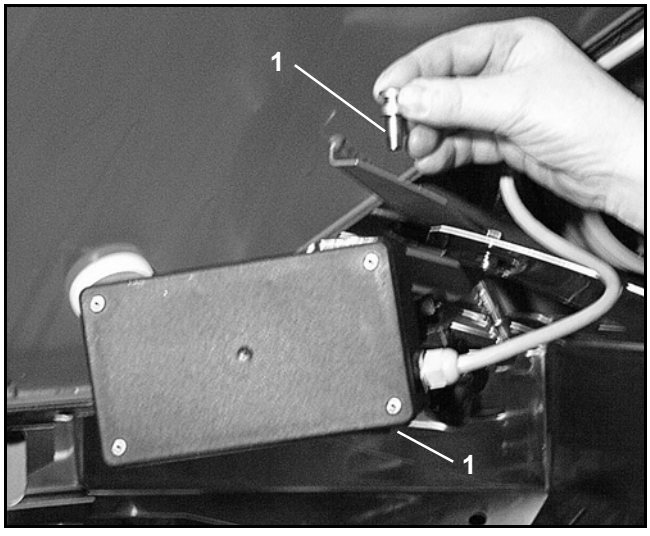


Fig. 6

- 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.

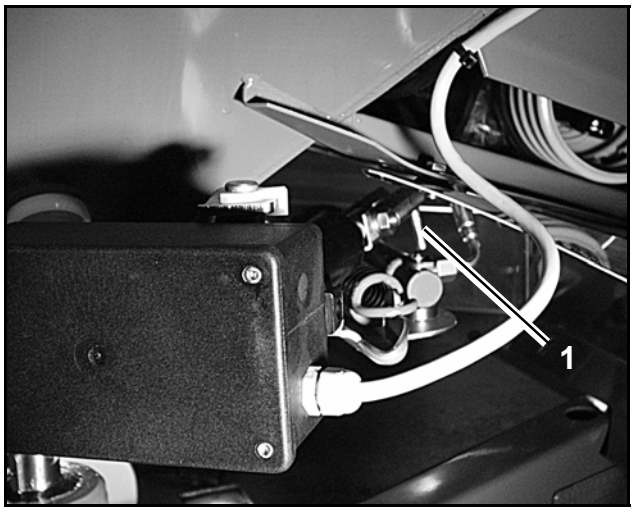


Fig. 7

- 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).

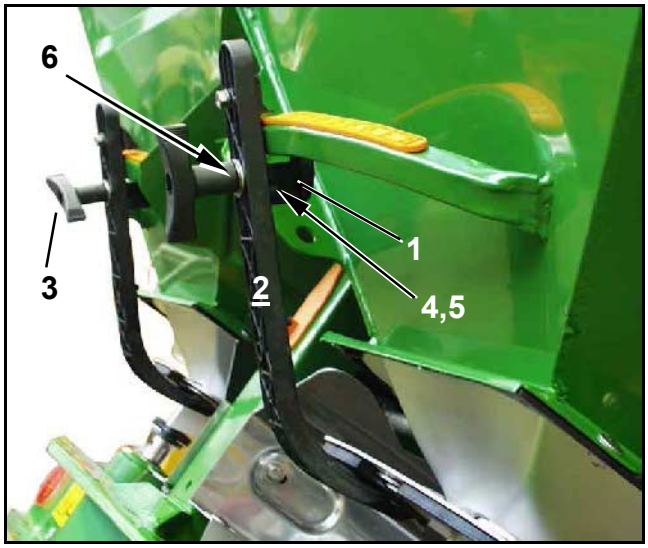


Fig. 8

Fig. 9

6.2 Fault messages

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

Fault number / error	Cause	Remedy
10	rated value cannot be maintained.	- check rated value (see chapter 4.2.2). - adapt speed. - Switch off **AMADOS III-D**, newly carry out the start function (please refer to para. 4.3.1)
11	"spread rate" not entered.	- enter rated value (see chapter 4.2.2).
12	"working width" not entered.	- enter working width (see chapter 4.2.3).
13	no reaction by setting motor left hand side.	- 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.	- check coding (see chapter 4.2.1). - check setting motors for function, e. g. by activating the function "emptying hopper" (see chapter 4.4).
15	No constant weighing result during the procedure "counterbalance broadcaster with weigh cell" or "calibrating weigh cell".	- Wait until the triangle above the warning lamp goes out and press again the "Enter" key.
16	The actual spread rate heavily deviates from the dialled application rated value (e.g. due to choked shutter opening).	- Remedy error source (e.g. clean shutter opening). Then newly determine the calibration factor.
no area determination	"working width" not entered. **AMADOS III-D** does not recognise "working position".	- enter working width (see chapter 4.2.3). - check sensor "working position".
no speed display	No impulses arrive at **AMADOS III-D** (Symbol "speed impulse" does not light up). The impulse value "Imp./100m" is missing.	- check sensor "X", cable ducting and wiring. - enter impulse value or determine by driving a test distance (see chapter 4.2.4).

7. Implement data

Fertiliser broadcaster		
Mode "1“	Code –Machine type	0004
Mode "2“	vacant	
Mode "3“	vacant	
Mode"4“	vacant	
Mode "5“	vacant	
Mode "6“	intended average operational speed	0008.....0015
Mode "7“	Weigh cell;	yes = 0001 / no = 0000
Spread rate [kg/ha]		
Working width [m]		
Imp./100m		
Kind of fertiliser		Fertiliser calibration factor

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Soil cultivation machinery. Field Boom Sprayers. Municipal machinery.