Operating Manual

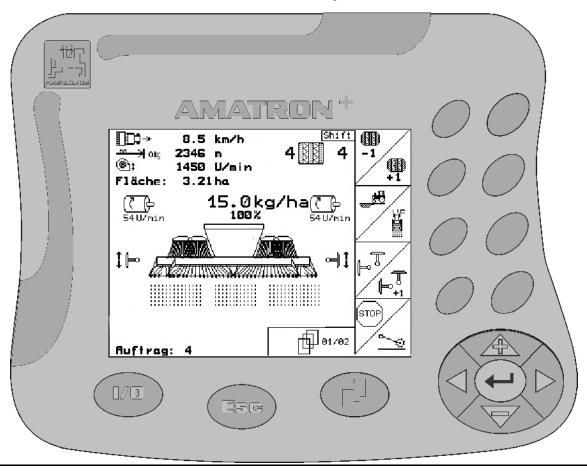
AMAZONE

AMATRON⁺

for

Cirrus Activ and Cayena

on board computer



MG3394 BAG0082.2 10.10 Printed in Germany



Please read this operating manual before first commissioning.

Keep it in a safe place for future use!

en





READING THE INSTRUC-TION

manual and adhering to it should not appear to be inconvenient and superfluous as it is not enough to hear from others and to realise that a machine is good, to buy it and to believe that now everything should work by itself. The person concerned would not only harm himself but also make the mistake of blaming the machine for the reason of a possible failure instead of himself. In order to ensure good success one should go into the mind of a thing, make himself familiar with every part of the machine and to get acquainted with its handling. Only in this way would you be satisfied both with the machine as also with yourself. To achieve this is the purpose of this instruction manual.

Leipzig-Plagwitz 1872. D. Jark!



Identification data

Enter the machine identification data here. You will find the identification data on the type plate.

Machine identification number:

(ten-digit)

Type: Amatron+

Year of manufacture:

Basic weight (kg):

Approved total weight (kg):

Maximum load (kg):

Manufacturer's address

AMAZONEN-WERKE

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Spare part orders

Spare parts lists are freely accessible in the spare parts portal at www.amazone.de.

Please send orders to your AMAZONE dealer.

Formalities of the operating manual

Document number: MG3394 Compilation date: 10.10

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Foreword

Dear Customer,

You have chosen one of the quality products from the wide product range of AMAZONEN-WERKE, H. DREYER GmbH & Co. KG. We thank you for your confidence in our products.

On receiving the machine, check to see if it was damaged during transport or if parts are missing. Using the delivery note, check that the machine was delivered in full including the ordered special equipment. Damage can only be rectified if problems are signalled immediately!

Before first commissioning, read and understand this operating manual, and particularly the safety information. Only after careful reading will you be able to benefit from the full scope of your newly purchased machine.

Please ensure that all the machine operators have read this operating manual before commissioning the machine.

Should you have problems or queries, please consult this operating manual or give us a call.

Regular maintenance and timely replacement of worn or damaged parts increases the lifespan of your machine.

User evaluation

Dear Reader.

We update our operating manuals regularly. Your suggestions for improvement help us to create ever more user-friendly manuals. Send us your suggestions by fax.

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1 User Information

The User Information section supplies information on use of the operating manual.

1.1 Purpose of the document

This operating manual

- Describes the operation and maintenance of the machine.
- Provides important information on safe and efficient handling of the machine.
- Is a component part of the machine and should always be kept with the machine or the traction vehicle.
- Keep it in a safe place for future use.

1.2 Locations in the operating manual

All the directions specified in the operating manual are always seen from the direction of travel.

1.3 Diagrams used

Handling instructions and reactions

Activities to be carried out by the user are given as numbered instructions. Always keep to the order of the handling instructions. The reaction to the handling instructions is given by an arrow.

Example:

1. Handling instruction 1

Reaction of the machine to handling instruction 1

2. Handling instruction 2

Lists

Lists without an essential order are shown as a list with bullets.

Example:

- Point 1
- Point 2

Number items in diagrams

Numbers in round brackets refer to the item numbers in the diagrams. The first number refers to the diagram and the second number to the item in the figure.

Example: (Fig. 3/6)

- Figure 3
- Item 6



2 General Safety Instructions

Comply with the instructions in the operating manual

Knowledge of the basic safety information and safety regulations is a basic requirement for safe handling and fault-free machine operation.



The operation manual

- Must always be kept at the place at which the machine is operated.
- Must always be easily accessible for the user and maintenance personnel.

Check all the available safety equipment regularly.

2.1 Representation of safety symbols

Safety instructions are indicated by the triangular safety symbol and the highlighted signal word. The signal word (DANGER, WARNING, CAUTION) describes the gravity of the risk and has the following significance:



DANGER

Indicates an immediate high risk which will result in death or serious physical injury (loss of body parts or long term damage) if not avoided.

If the instructions are not followed, then this will result in immediate death or serious physical injury.



WARNING

Indicates a medium risk, which could result in death or (serious) physical injury if not avoided.

If the instructions are not followed, then this may result in death or serious physical injury.



CAUTION

Indicates a low risk which could incur minor or medium level physical injury or damage to property if not avoided.



IMPORTANT

Indicates an obligation to special behaviour or an activity required for proper machine handling.

Non-compliance with these instructions can cause faults on the machine or in the environment.



NOTE

Indicates handling tips and particularly useful information. These instructions will help you to use all the functions of your machine to the optimum.



3 Installation instructions

3.1 Anschluss



- The tractor basic equipment (Fig. 1/1, Konsole mit Verteiler) console with distributor) must be installed to the right of the driver in the cabin, within visual range and easy to access, vibration-free and electrically connected.
- → For the installation, the paint must be removed from the installation points in order to prevent electrostatic charge.
- The distance from the radio unit or aerial must be at least 1 m.

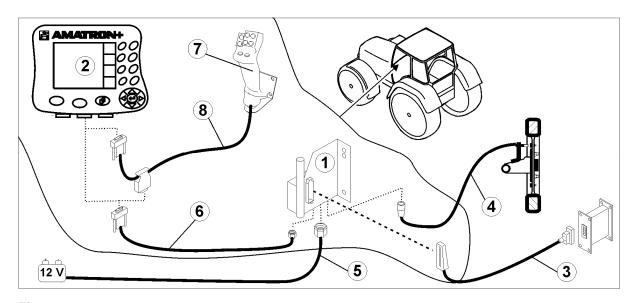


Fig. 1

Connections to tractor's basic equipment:

- The battery cable (Fig. 1/5).
- Signal cable from the tractor signal socket or distance sensor (Fig. 1/4).
- Connecting cable to AMATRON⁺ (Fig. 1/6).

To operate

- Plug the AMATRON⁺ (Fig. 1/2) into the tractor's basic equipment.
- Insert the connector of the connecting cable (Fig. 1/6) into the middle 9-pin Sub-D-bushing (Fig. 2/1).
- Connect the machine via the connector (Fig. 1/3) to the **AMATRON**⁺ verbinden.
 - The multifunction stick (Fig. 1/7) is connected using a Y-cable (Fig. 1/8).
- The serial interface (Fig. 2/2) allows a PDA to be connected.

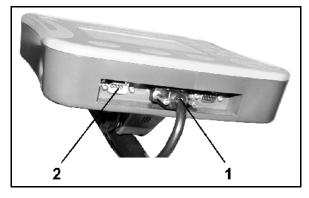


Fig. 2



3.2 Battery cable

The required operating voltage is 12 V and must taken directly from the battery.



Before connecting the **AMATRON**⁺ to a tractor with several batteries, it must be clarified, by referring to the tractor operating instructions or by asking the tractor manufacturer, which battery the computer must be connected to!

- Install and secure the battery cable from the tractor cab to the tractor battery. When installing the battery cable, make sure there are no kinks.
- 2. Shorten the battery cable to the appropriate length.
- 3. Strip the cable end (Fig. 3) approx. 250 to 300 mm.
- → Strip the cable ends (Fig. 3) individually 5 mm.
 - 4. Insert the blue cable core (earth) into loose ring lug (Fig. 4/1).
 - 5. Pass pinch through with pliers.
 - 6. Insert brown cable core (+ 12 volts) into free end of connector (Fig. 4/2) einführen
- 7. Pass pinch through with pliers.
- 8. Shrink-fit connector (Fig. 4/2) with heat source (lighter or hairdryer) until the adhesive emerges.
- 9. Connect the battery cable to the tractor battery:
 - o Brown cable core to +.
 - o Blue cable core to -.

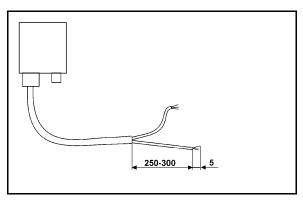


Fig. 3

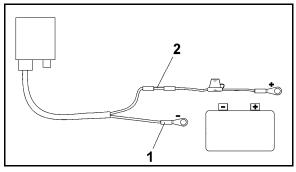


Fig. 4



4 Product description

AMATRON⁺ makes it easy to control, operate and monitor **AMAZONE** machines.

The **AMATRON**⁺ can be used for various field sprayers, fertiliser spreaders and seed drills.

This operating manual shows operation of the **AMAZONE** machines **Cirrus Aktiv** and **Cayena** with the **AMATRON**⁺.

Operation with the **AMATRON**⁺ differs according to the type and equipment of the machine.

The **AMATRON**⁺ ontrols a machine computer, providing it with all the necessary information and taking charge of the area-based regulation of the spray rate, depending on the current operational speed.

The **AMATRON**⁺ consists of the main menu, the work menu and the tramlines menu

Main menu (Fig. 5)

The main menu consists of several submenus in which, before work

- data must be entered,
- settings are determined or must be entered.

		I
Maschinentyp:	Cirrus	Auftrag
Auftrags-Nr.:	6	
		Drille abdreh.
Fahrgassenrythmusnr.:	: 5	
Arbeitsbreite:	6.0m	Maschi .
Arbeits-	Fahrgassen-	Setup
menü	rhythern	

Fig. 5

Work menu (Fig. 6)

- During operation, the work menu indicates all necessary spreading data.
- The machine is operated via the work menu during use.
- → Press (BGG):

Change from the main menu to the work menu.

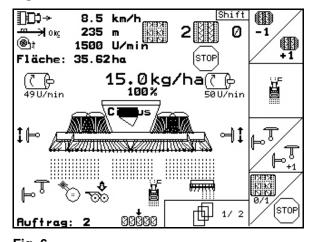


Fig. 6

Tramline rhythms menu

To find the correct tramline rhythm.



Change from the main menu to the tramline rhythms menu



4.1 Keys and function fields

The functions indicated at the right display edge by a function field (box or diagonally divided box) are controlled via the two rows of keys to the right of the display..

- f boxes appear on the display, only the right key ((Fig. 7/1) is assigned to the func-tion field (Fig. 7/A).
- f the boxes are diagonally divided:
 - o the left key (Fig. 7/2) is assigned to the top left function field (Fig. 7/B) zugeordnet.
 - o the right key (Fig. 7/3) is assigned to the bottom right function field (Fig. 7/C).

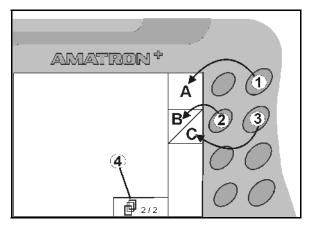


Fig. 7

	On/Off (Always switch off the AMATRON ⁺ when driving on public roads).
Esc	 Return to last menu Switch between work menu - main menu Cancel entry To work menu (hold down key at least 1 second)
Ð	 Scroll to other menu pages (only possible if (Fig. 7/4) ppears in display)
	Move cursor left in display
	Move cursor right in display
•	 Take over selected numbers and letters Confirm critical alarm 100% quantity in work menu
	 Move cursor up in display Increase specified quantity during work by percentage application rate increase (e.g.:+10%) (Adjusting percentage application rate increase, see page 37)
	 Move cursor down in display Reduce specified quantity during work by percentage application rate increase (e.g.:-10%) (Adjusting percentage application rate increase, see page 37).



4.1.1 Shift ke

- The shift key is located on the back of the unit (Fig. 8/1).
- When the Shift-key is activated, this is indicated on the display (Fig. 9/1).
- When the Shift-key is actuated, further function fields appear (Fig. 10) and the assignment of the function keys is altered accordingly.

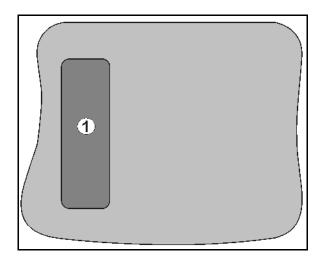


Fig. 8

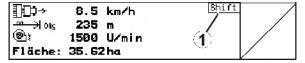


Fig. 9

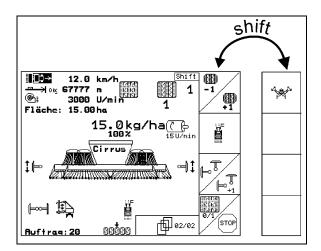


Fig. 10



4.2 Entries on **AMATRON**⁺



For operation of the **AMATRON**⁺ the function fields appear in this operating manual in order to make clear that the key for the respective function field must be pressed.

Example:

• Function field : Description in the operating manual::



Carry out function A.

Action:

The operator uses the key (Fig. 11/1), assigned to the function field to perform function A.

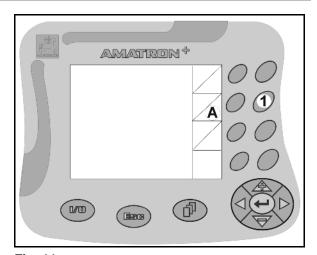


Fig. 11

4.3 Entering text and numbers

f it is necessary to enter texts or numbers on the **AMATRON**⁺, the input menu (Fig. 12).

n the lower part of the display, a selection field (Fig. 12/1) appears with letters, numbers and arrows which can be used to compose the input line (Fig. 12/2).



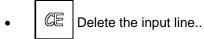


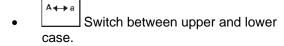


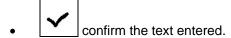
Choose letters or

numbers in the selection field (Fig. 12/3).









The arrows in the selection field (Fig. 12/4) llow movement in the text line.

The arrow in the selection field (Fig. 12/4) eletes the last entry.

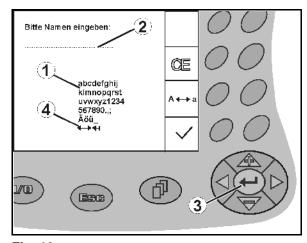


Fig. 12



4.3.1 Selection of options

- 1. Position the selection arrow (Fig. 13/1).
- 2. Apply the selection (Fig. 13/2).
- 3. Confirm the selection.

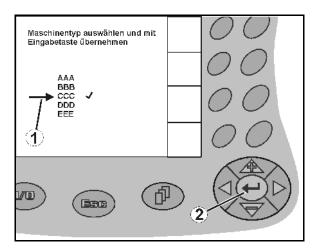


Fig. 13

4.3.2 Toggle function

Switching functions on/off:

- Press function key (Fig. 14/2) once
- \rightarrow Function **on** (Fig. 14/1).
- Again press function key
- → Function off.

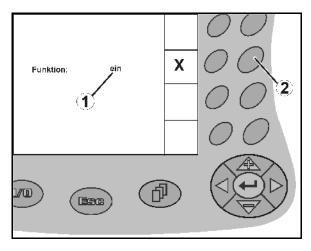


Fig. 14

4.4 Software version

This operating manual is valid from software version:

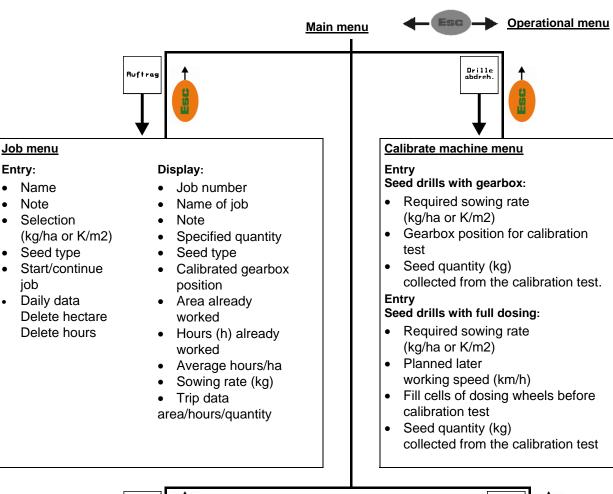
Machine: Terminal:

MHX-version: 6.01.02a BIN-version: 3.22.0

IOP-version: 7.4.1



4.5 Hierarchy of the **AMATRON**⁺







Setup menu

Entry:

- Diagnosis input
- Diagnosis output
- Enter simulated speed
- Select basic data
 - Select machine type
 - Working width
 - Configure tramline system
 - Configure seed rate setting
 - Pre-emergence marker
 - Track marker sensor
 - Level sensor
 - Blower fan alarm
 - Sowing shaft sensor
 - Alarm delay time sowing shaft/dosing unit

- Alarm delay time tramline system
- Alarm delay time lay shaft (cam wheel seed drill)
- Running time, predosing unit (only for full dosing)
- Tool I, II, III
- Turning on roller
- Hopper
- Working position sensor
- Track markers
- Display settings
 - Set national language

Machine data menu

Entry:

- Tramline control
- Interval spacing
- Increased/reduced seed quantity
 (%)
- Calibration value (Imp./100 m)
- Blower fan speed
- Fill level
- Fill machine
- Fill level alarm
- Seed rate reduction for tramline
- Control factor



5 Commissioning

5.1 Start screen

After the **AMATRON**⁺ is switched on with machine computer connected, the start menu (Fig. 15) und zeigt die Terminal – Softwareversions- Nr. an.

appears and indicates the terminal software version number.

After approx. 2 seconds the **AMATRON**⁺ automatically goes to the main menu.

If after the **AMATRON**⁺ is switched on data are loaded from the machine computer, e.g. in event of

- use of a new machine computer
- use of a new AMATRON⁺ terminal
- after RESET of the AMATRON⁺ terminal

this is indicated on the start screen (Fig. 15).

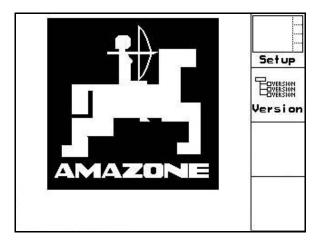


Fig. 15

5.2 Main menu



Job menu: Entry of data for a job. Before commencement of sowing, start the job (see on page 24).



Seed drill calibration menu: Carry out calibration test before starting sowing (see on page 26).

On the Cayena with divided hopper, there are two function fields for separate calibration.



Machine data menu: Entry of machinespecific or individual data (see on page 18).



Setup menu: Entry and readout of data for customer service in event of maintenance or fault (see on page 29).

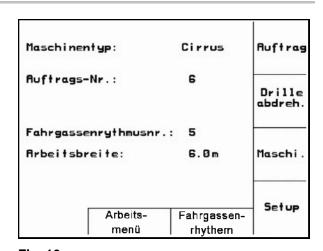
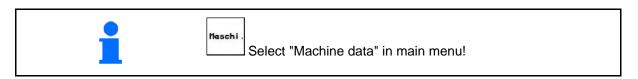


Fig. 16



5.3 Machine data entry



Page 1 in machine data menu (Fig. 17):

• Enter the required tramline rhythm (see tables Tabellen Fig. 18, Fig. 19).

• Enter the interval tramline control (see on page 21).

Enter the percentage application rate increase in % (value for percentage sowing rate change during work with ,

Fahrgassenrhythmusnr.: 15

Intervallabstand: 10/20

Mengenschritt: 10%

Impulse pro 100m: 58

I./100m

Maschine

Fig. 17

• Maschins Calibrate the distance sensor (see on page 22).

Tramline rhythm

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21	22	23	26	32	35
	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
	1	0	1	1	1	1	1	1	1	2	0	1	1	1		1	1	1	0	0	0	1	0	1
		1	2	2	2	2	2	2	2	3	3	2	2	2		2	2	2	1	1	1	2	1	2
		2		3	3	3	3	3	3	0	4	3	3	3		3	3	3	2	2	2	3	2	3
					4	4	4	4	4	5	5	4	4	4		4	4	4	3	3	3	4	3	4
						5	5	5	5	6	6	5	5	5	es.	5	5	5	4	4	4	5	4	5
ter							6	6	6	0	7	6	6	6	starts no tramlines.	6	6	6		5	5	6	5	6
counter								7	7	8	8	7	7	7	traı	7	7	7		6	6	7	6	7
e CC									8	9	0	8	8	8	ts no	8	8	8			7	8	7	8
i										10	10	9	9	9	star	9	9	9			8	9	8	9
Tramline												10	10	10	J 15	10	10					10	9	10
-												11	11	11	Switching	11	11						10	11
													12	12	Switc	12	12							12
														13	0)	13	13							13
																14	14							14
																15	15							
																	16							

Fig. 18



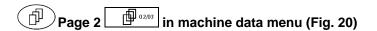
									Do	oubl	e tra	mli	ne c	onti	ol									
	18 links	18 rechts	19 links	19 rechts	24 links	24 rechts	25 links	25 rechts	27 links	27 rechts	28 links	28 rechts	29 links	29 rechts	30 links	30 rechts	31 links	31 rechts	33 links	33 rechts	34 links	34 rechts	36 links	36 rechts
	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
	2	2	2	2	2	0	2	0	2	0	2	2	2	0	0	2	2	2	2	2	2	2	2	2
	0	3	3	0	3	3	3	3	3	3	0	3			3	3	0	3	3	3	3	3	3	0
	4	4	4	4	0	4	4	4	4	4	0	4			4	4	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5	0	5	5	5			5	0			0	5	5	5	5	5
	6	6	6	6	6	6	0	6	0	6	6	0			6	6			6	6	0	6	6	6
	7	0	0	7	0	7	7	7	7	7									7	7	7	7	0	7
_	8	8	8	8	8	8	8	8	8	8									8	8	8	8	0	8
] te	9	9	9	9	9	0	0	9	9	0									9	9	9	9	9	9
counter	10	10	10	10	10	10	10	10	10	10									10	0	10	10	10	10
	11	11	11	11			11	11													0	11	11	11
l i	12	0	0	12			12	12													12	12	12	0
l E	13	13	13	13			13	0													13	13	13	13
Tramline	14	14	14	14			14	14													14	14	14	14
	15	15	15	15																	15	15		
	0	16	16	0																	16	16		
	17	17	17	17																	17	0		
	18	18	18	18																	18	18		
																					19	19		
																					20	20		
																					21	21		
																					22	0		

Fig. 19



It is **not** possible for **Cayena** to establish double tramlines!





 Adopt the current fan speed (rpm) during operation as the speed to be monitored.

• Enter the fan speed (rpm) that is to be monitored.

• Enter the current fill level (kg) in the hopper.

• Leg Enter the refill quantity (kg).

• Enter the remaining quantity level (kg) in the seed box at which the level alarm should be triggered.

- The AMATRON⁺ triggers an alarm when
 - o the theoretically calculated remaining quantity is achieved or
 - the level sensor (optional) is no longer covered with seed.

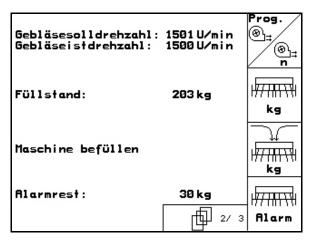


Fig. 20

Page 3 in the machine data menu (Fig. 21)

• Enter the seed volume reduction (in %) when starting a tramline (see table Fig. 22, only necessary for machines without seed return to hopper).

• Enter the control factor for the diesel engines.

Standard value: 1

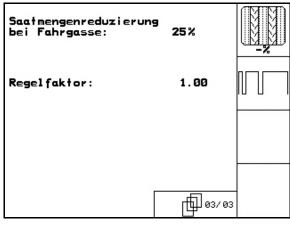


Fig. 21



Working width	Number of sowing coul- ters	Number of tramline hoses	Recommended percentage seed volume reduction for starting tramlines
	24	4	17%
3,0 m	30	4	13%
3,0 111	24	6	25%
	30	6	20%
	32	4	12%
4.0 m	40	4	10%
4,0 m	32	6	19%
	40	6	15%
	36	4	11%
4.5 m	44	4	9%
4,5 m	36	6	17%
	44	6	14%
6.0 m	48	4	8%
6,0 m	48	6	12%
0.0 m	64	4	6%
8,0 m	64	6	9%
0.0 m	72	4	6%
9,0 m	72	6	8%
12.0 m	96	4	4%
12,0 m	96	6	6%

Fig. 22

5.3.1 Entering interval tramline control (machine data

- Enter the seeded distance (m) with interval tramline control activated.
- Enter the unseeded distance (m) with interval tramline control activated.

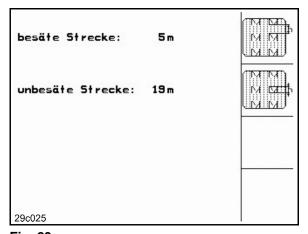


Fig. 23



5.3.2 Calibrating distance sensor (machine



To set the seed rate calibration value and to record the area cultivated or to determine the forward speed, the **AMATRON**⁺ needs the impulses of the seed drill wheel over a calibration distance of 100 m.

The value Imp./100m is the number of impulses received by the **AMATRON**⁺ during the measuring travel of the seed drill drive wheel.

The value Imp./100m must be determined:

- before initial use
- in event of different soils
- in event of deviation between the seed quantity determined in the calibration test and the seed quantity output in the field
- in event of deviation between the indicated and the actually cultivated area.



The calibration value Imp./100m must not be less than 250, otherwise **AMATRON**⁺ does not function properly.

There are 2 possibilities for entering Imp./100m:

• The value is known and is entered manually on the **AMATRON**⁺.

• The value is not known and is determined by travelling a calibration distance of 100 m.

Wert für Impulse/100m eingeben oder automtisch kalibrieren.	man. Eingabe
	Start
aktuell: 1187 Imp/100m	
29c126	

Fig. 24



Determine calibration value by travelling a calibration distance:

 On the field, measure a calibration distance of exactly 100 m. Mark the start and end point of the calibration distance (Fig. 25).



- Start the calibration.
- Travel the calibration distance exactly from start to end point (upon starting, the counter goes to 0). On the display the continuously determined impulses are indicated.
- Stop after 100 m. On the display the number of determined impulses are now indicated.



Adopt value Imp./100m.



Reject value Imp./100m.

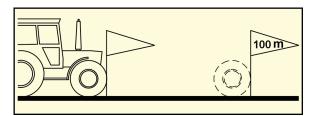
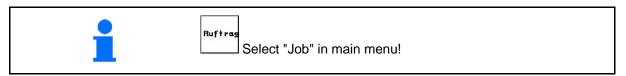


Fig. 25



5.4 Starting a job



When the job menu is opened, the last job started appears.

A maximum of 20 jobs can be stored.

To start a new job, select a job number.

Enter name.

All data for this job are deleted.

Start the job so that data can be stored with this job.

• Enter the specified quantity.

Call up seed type submenu:

Select seed type.

o Enter the 1000 grain weight.

o kg/ha (---) Quantity display in kg / ha or grains / m².

Auftrags-Nr.:	1 gestartet	Name
Name:		Notiz
Notiz:		Sor te
Behälterseite Rusbringart: Sollmenge:	: Tank 1 Dünger 15.00 kg/ha	ka/ha K/m²
Auftrag:		löschen
fertige ha: Stunden:	0.00 ha 0.0 h	/
Durchschnitt: ausgeb.Menge:	0.00 ha/h 0 kg	starten Behälter
).00 ha	Tages-
Menge:	1.0 h	daten löschen

Fig. 26

Feinsämereien	Sorte
150.0g	9 pro 1000K
kg/ha	kg/ha () K/m²
	150.0g

Fig. 27

 Only Cayena with divided hopper: Switching for entries for Tank 1 and Tank 2.



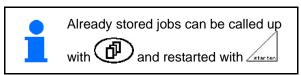
On the Cayena with divided hopper, enter the sort (seed/fertiliser) and the specified quantity for Tank 1 and Tank 2.

Tank 1 - front hopper half

Tank 2 - rear hopper half



- Delete daily data:
 - o Cultivated surface (ha/day).
 - o Seed volume output (quantity/day).
 - o Work time (hours/day).



Pressed shift key (Fig. 28):

- Auftras
 Scroll forward.
- Scroll backward.

Auftrags-Nr.:	2 gestartet	Auftras
Name:		vor
Notiz:		
Sollmenge:	200 kg/ha	Auftras zurück
fertige Fläche: Stunden: Durchschnitt ausgeb.Menge:	0.00 ha 0.0 h 0.00 ha/h 0 kg	
ha/Tag: Menge/Tag: Stunden/Tag:	0.00 ha 0 kg 0.0 h	
	2/20	

Fig. 28

5.4.1 External job

An external job can be given to the **AMA-TRON**⁺ and started via a PDA computer.

This job is always given the job number 21.

The data is transferred via the serial interface.

- End external job (data of external job are deleted).
- → Transfer data back to PDA beforehand.

	Sorte	
•		Select seed type.

• Quantity display in kg / ha or grains / m².

Auftrags-Nr.:	5698	externen Auftras
Sollmenge:	15.00 kg/ha	beenden
Rusbringart:	Getreide	
1000-Korn-Gewicht:	15.0 g	Sorte
CalFaktor:	1.00	
fertige ha: Stunden:	0.00ha 0.0 h	kg/ha () K/m²
ausgeb. Menge:	0 kg	

Fig. 29

Amatron+ BAG0082.2 10.10

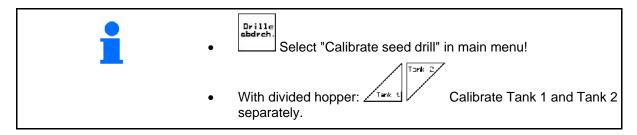


5.5 Calibration test

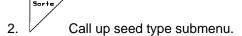
The calibration test checks whether the sowing rate is correct during later sowing.

The calibration test must always be carried out

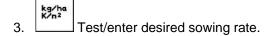
- when the seed type is changed
- if the seed type is identical, but size grain, grain shape, specific weight and dressing are different
- when the dosing roller is changed
- if there are any differences between the calibration test and actual sowing rates.



1. Prepare calibration test in accordance with the seed drill operating manual!

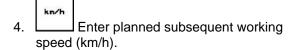


- Select seed type.
- o Enter the 1000 grain weight.
- Quantity display in kg / ha or grains / m².





This value can also be entered in the job menu. (see on page 24).



- 5. Set the calibration factor before the first calibration to 1.00 or an experience value
- 6. Check whether the correct dosing roller is fitted (coarse, medium, fine).
- 7. Fill the cells of the dosing roller with the predosing. The running time is adjustable (see on page 43).

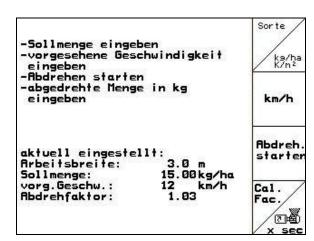


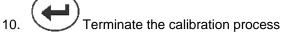
Fig. 30



8. Empty the collection bucket.



- 9. Start the calibration test.
- → The electric motor doses the calibration quantity to the collection bucket until the acoustic signal is sounded.



 Weigh the seed caught in the collection bucket(s) (take hopper weight into consideration) and enter the weight (kg) in the terminal.



The scales must weigh accurately. Inaccuracies may cause deviations in the actual sowing rate!

The **AMATRON**⁺ calculates the required calibration factor on the basis of the data entered from the calibration test and sets the electric motor to the correct speed.



Repeat the calibration process to check the correct setting.





5.5.1 Calibration test with divided hopper (optional for Cayena)

Fig. 31, Main menu with divided hopper



Tank 2 – Calibrate rear hopper half.

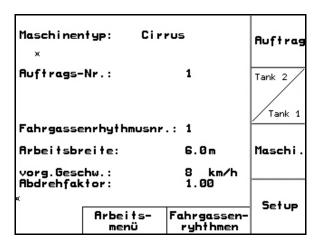


Fig. 31

Calibration test for two different products (seed and fertiliser)



- For spreading two different products (seed / fertiliser) for Tank 1 and Tank 2, enter
 - o the appropriate sort
 - o the appropriate specified quantity.
- On machines with divided hopper, enter the sort (seed / fertiliser) and the specified quantity for Tank 1 and Tank 2.
- Carry out the calibration test on the two dosing units consecutively!
- If two different products are entered as the sort, during use the two dosing units run concurrently in order to spread the two products together.

Calibration test for two identical seed types



- To spread two identical seed types for Tank 1 and Tank 2, in each case enter
 - o the same sort
 - the desired specified quantity.
- Carry out the calibration test on the two dosing units consecutively!
- If two identical seed types are entered as the sort, only one dosing unit runs during use. When Tank 1 is empty, dosing starts from Tank 2.
 - → When switching from Tank 1 to Tank 2, make sure the level sensor is correctly set. This will then activate the switchover.



5.6 Setup menu

In the setup menu

- Diagnosis data for the customer service for maintenance or malfunctions are input/output,
- Machine basic data are selected and entered or special optional equipment is switched on and off (only for customer service).



The settings in the setup menu is a workshop operation and must be carried out only by qualified personnel!



Setup

Select "Setup" in the main menu!

Page 1 of the setup menu (Fig. 32):

Diagnosis computer input (only for customer service).

)00110

- Diagnosis computer output (only for customer service).
- Enter simulated speed for continued working with defective distance sensor (see on page 56).
- Terminal Setup (see on page 35).



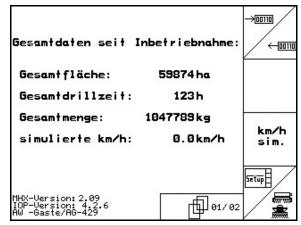
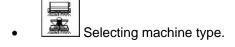


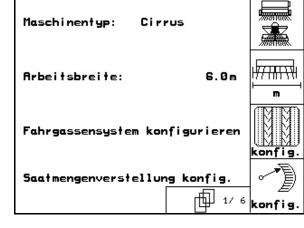
Fig. 32







• Entry of working width (m).



Configure tramline system.

Tramline submenu

o Single or double tramline

- actuated by a tramline motor,
- actuated by two tramline motors.

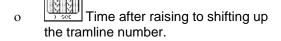


Fig. 33

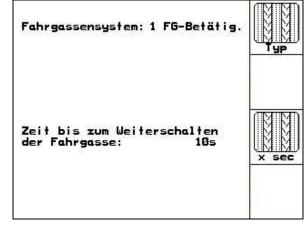


Fig. 34

Configure seed rate remote control.

Setting seed rate submenu

o Select seed rate remote control:

- no seed rate remote control.
- with Vario gearbox.
- electric full dosing.
- \rightarrow Select.
- →The last value displayed is stored

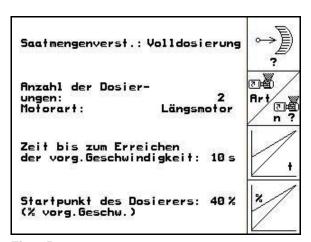


Fig. 35



Electric full dosing:



Enter number of dosing units.



_Art__ Enter type of motor.

- Longitudinal motor (Cirrus).
- Disc-type motor (Cayena)..

Entry of time from use of machine to reaching the planned speed

Start speed in % of planned working speed.





- Selection of pre-emergence marker:
 - o None.
 - o Hydraulically actuated.
 - o Electrically actuated.
- Number of track marker sensors.
 - o None (entry for **Cirrus / Cayena**).
- Coulter pressure sensor: yes / no
- Level sensor in seed box yes / no
- Rlarm Triggering of the alarm if the blower fan speed differs from the setpoint (in %).

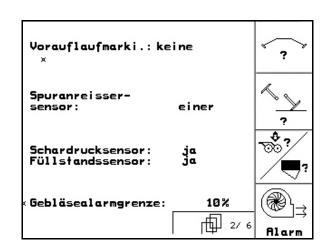
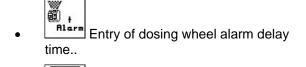


Fig. 36



- Monitoring the dosing wheels
 - o One dosing unit.
 - o Two dosing units.
 - No monitoring → Select.
 - → The last value displayed is stored.



Entry of tramline system alarm delay time.

• Hlarm Function not for Cirrus / Cay-

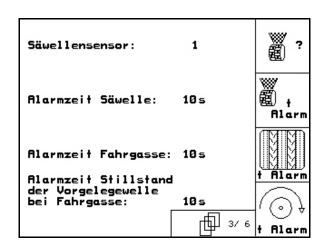
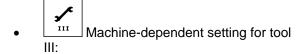


Fig. 37





- Machine-dependent setting for tool I:
 - Cirrus Activ: KG raising
 - o **Cirrus**: Disc array
 - o Cayena: no
- Machine-dependent setting for tool
 - o Cirrus Activ: KG depth
 - o Other machines: no



o **Cirrus Activ**: Coulter pressure

o **Cayena**: no

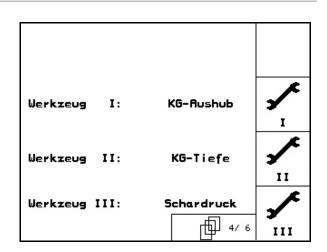


Fig. 38

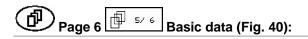


- Turn at headlands on all wheels (yes / no).
- Hopper
 - o divided
 - o not divided
- Folding (yes / no)
- Working position sensor
 - o Digital
 - o Select analogue \rightarrow Select



Fig. 39





Switching point working position sensor

Default values:

- o Cirrus Activ = 80bar
- o **Cayena** = 40bar

Type of track marker

o Manual change

Control via shuttle valve and sensor -Display in work menu of which track marker is to be used next.

- Automatic change
 of control block, hydraulic preselection
 of track marker possible.
- None
 No track marker or track marker without sensor fitted.

Dosing unit transition period

Delay between Tank 2 empty and Tank 1 start.

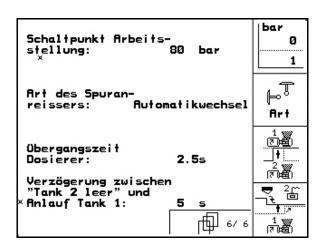
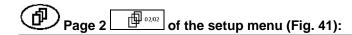


Fig. 40



Reset machine data to factory settings. All entered and accumulated data, e.g. jobs, calibration values and setup data are lost.

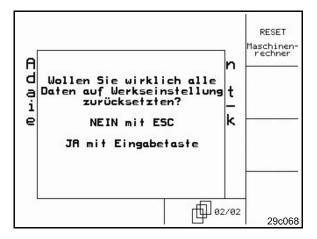


Fig. 41



5.6.1 Terminal setup

In the setup menu:

- In order to change the display settings, actuate the following keys simultaneously:
 - Scroll and
 - o Shift key.
- Via the function field Setup call up the entry "Display settings".
- Display the units located on the bus.

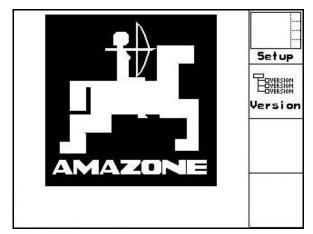


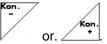
Fig. 42



ELVESION .

Page 1 of Terminal setup

Set the contrast via the function fields



- Set the brightness via the function fields bzw. einstellen.
- Invert the display black ← → white / Invert.



- Set the language of the user interface via
 the function field Sprache.
- Exit Terminal setup menu..

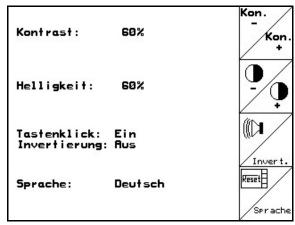


Fig. 43

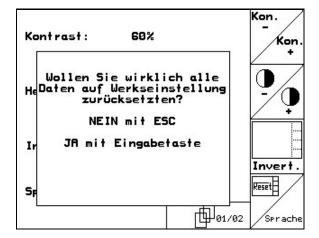


Fig. 44



The Terminal reset function resets all data of the terminal to the factory settings. No machine data are lost.





Fig. 45



• Delete program:



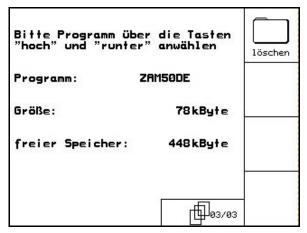


Fig. 46



6 Use on the field



CAUTION

During travel to the field and on public roads, the **AMATRON**⁺ should always be switched off!

Incorrect use leads to the risk of accidents!

Before starting the sowing, the **AMATRON**⁺ must have received the following data:

- Job data (see on page 24)
- Machine data (see on page 18)
- Calibration test data (see on page 26).

6.1 Specified quantity adjustment

The sowing rate can be changed at will during the work at the press of a key.



Each press of the key increases the sowing rate by the rate increase (on page 18) (e.g.:+10%).



Reset sowing rate to 100%.



Each press of the key decreases the sowing rate by the rate increase (on page 18) (e.g.:-10%).

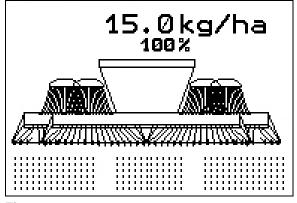


Fig. 47



The changed specified value is indicated in the work menu in kg/ha and per cent (Fig. 47)!

6.2 Preselection for hydraulic functions

Only **Cirrus**:

- 1. Preselect a hydraulic function via a function key.
- 2. Operate tractor control unit.
- → The preselected hydraulic function is carried out.

The hydraulic preselection functions (Fig. 48/1) are displayed in the work menu.

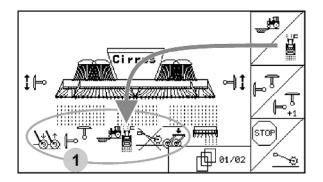


Fig. 48

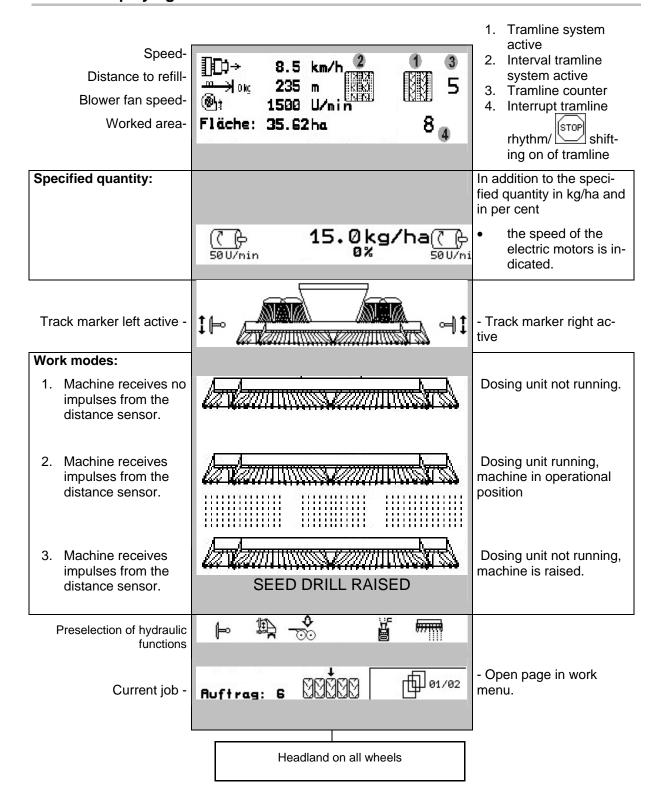


Options which

- are switched off in the setup menu
- do not belong to the machine equipment (options)
- are not indicated in the work menu (function fields are not assigned).

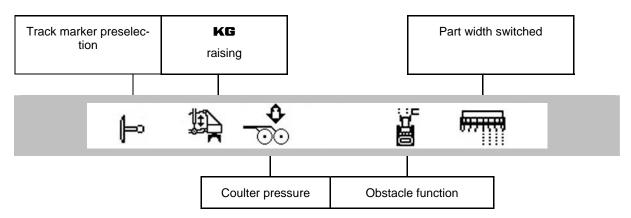


6.3 Displaying work menu





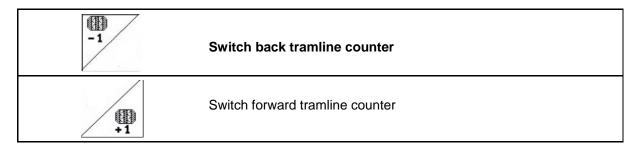
Preselection of hydraulic functions **Cirrus Activ**:





6.4 Functions in work menu

6.4.1 Tramline control



The tramline counter switches when the machine is raised.

Fig. 49/...

- (1) Tramline system display switched on
- (2) Current tramline number display
- (3) Display of tramline counter shift suppressed
- (4) Display of interval tramline control switched

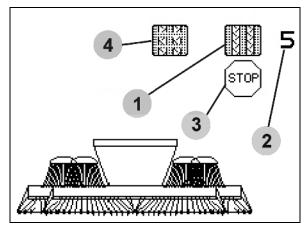


Fig. 49



Suppress shift on of tramline counter



- Stop tramline counter.
- → When the machine is raised, the tramline counter does not shift on.



- Cancel tramline counter stop.
- The tramline counter switches when the machine is raised.



Activating and deactivating interval tramline control



6.4.2 Markers

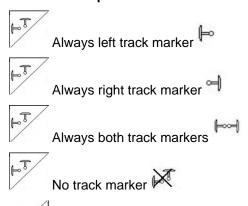


For raising / lowering the machine, the preselected track marker is automatically actuated.



Manual track marker preselection

Track marker preselection:



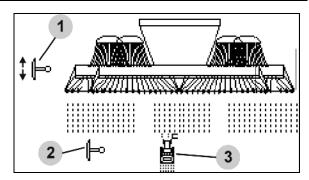


Fig. 50

Alternating mode left / right

(Active track marker automatically changes at headlands)

- Display of active track marker (Fig. 50/1)
- Display of track marker preselection (Fig. 50/2)



Track marker shifting on in alternating mode

The track marker shifting allows the changing of the active track marker from left to right and vice versa.



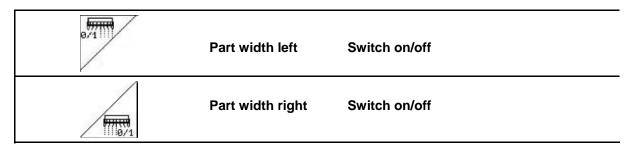


Track marker obstacle switching

For passing obstacles on the field.

- 1. Preselect obstacle switching (Fig. 50/3).
- 2. Operate tractor control unit 1.
- → Raise track marker.
- 3. Pass obstacle.
- 4. Operate tractor control unit 1.
- → Lower track marker.
- 5. Cancel preselection.

6.4.3 Switching part widths (only electric full dosing / Cirrus)



For sowing on half a working width, one part width can be switched off.

Fig. 51: Display: left part width switched off.

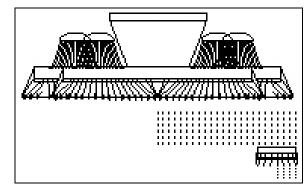


Fig. 51



6.4.4 Electric full dosing



Start / stop predosing

- At the start of sowing: When starting from standstill, activate full dosing in order to ensure sufficient seed discharge over the first metres.
- To fill the seed wheels before calibration.



Start predosing.

→ The predosing provides the coulter with seed for a specified running period (Fig. 52).

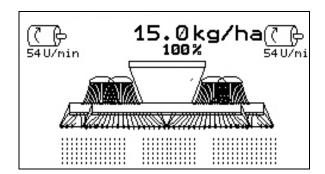


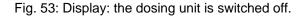
Fig. 52



Electric full dosing: Keep dosing unit switched off

In order to prevent unintended starting of the dosing unit, it can be switched off.

This may be useful, as even just minor rotations of the star wheel may cause the dosing unit to start



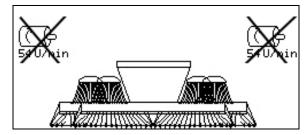


Fig. 53



6.4.5 KG raising (Cirrus Activ)



KG raising / lowering

To eliminate blockages.



- **KG** (Fig. 54). 1. Preselect
- 2. Operate tractor control unit 1.
- Raise **KG** and eliminate blockage.
- 3. Operate tractor control unit 1.
- Lower **KG**.

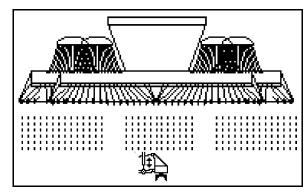


Fig. 54

6.4.6 Coulter pressure and harrow pressure (Cirrus Activ)



Set increased / reduced coulter and harrow pressure

- Preselect coulter/harrow pressure (Fig. 55).
- 2. Operate tractor control unit 2.
- Set increased pressure.
- Set reduced pressure.

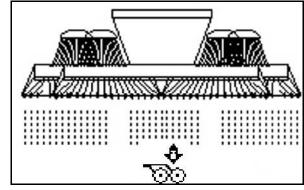


Fig. 55



6.4.7 Folding the machine



Fold the machine in / out



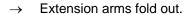
Folding out

Important! Before carrying out this procedure, raise the machine.

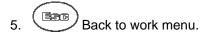
- 1. Operate control unit 1.
- → Raise the machine.







- 4. **Only Cirrus Activ**: Operate tractor control unit 3.
- → KG folds out.



Folding in

Important! Before carrying out this procedure, raise the machine.

- 1. Operate control unit 1.
- → Raise the machine.



- 3. Operate control unit 2.
- →. Fold in the machine.
- 4. **Only Cirrus Activ**: Operate control unit 3.
- → KG folds out.





WARNING

To move the machine from the transport position to the working position and vice versa, it is essential to refer to the machine operating manual!

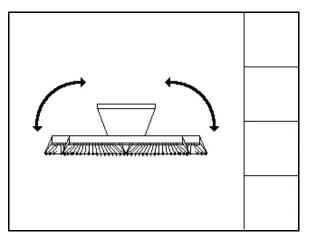


Fig. 56



6.4.8 Headland on all wheels



Turn at headlands on all wheels.

For soft soils:

When being raised at headlands, the machine is supported on all four wheels.

- 1. Preselect Headland on all four wheels (Fig. 57).
- 2. Operate tractor control unit 1.
 - o The machine is raised.
 - All wheels remain on the ground.



- 3. Cancel preselection.
- → During the next raising, only the running gear wheels remain on the ground.

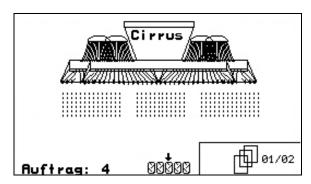


Fig. 57

6.4.9 Information on full dosing



. Display for full dosing

The following are displayed:

- Motor speed
- Power consumption
- Voltage of current sensor
- Travel speed



6.5 **Cirrus Activ**

6.5.1 Procedure for use

- 1. Switch on the **AMATRON***.
- 2. Select the desired job in the main menu and check the settings.
- 3. starten Start the job.
- 4. Select the work menu.

3 tractor control units are available to operate the hydraulic functions:

- Operate tractor control unit 1 (hose marking yellow):
 - o Lower the machine
 - o Move the star wheel to the operational position
 - Move the preselected track marker to the operational position

or:

Hydraulic preselection functions

(Obstacle function, keeping star wheel up,: headlands on all wheels, **KG** raising

- Operate tractor control unit 2 (hose marking green):
 - Folding machine extension arms

or:

- o Hydraulic preselection functions:wheel mark eradicator in operational position, coulter/harrow pressure
- Operate **tractor control unit 3** (hose marking blue)
 - o **KG** folding (only via the folding menu)

oder:

o Arbeitstiefe KG

or:

- Hydraulic preselection functions: KG raising
- Operate **tractor control unit 4** (hose marking red)
 - o Switch blower fan on/off...
- 5. Check the displayed tramline counter for the first field run and correct as necessary.
- 6. Start the sowing.
- Electric full dosing:

As soon as the star wheel is lowered to the operational position, automatic predosing begins.

o With the predosing can be ended prematurely..

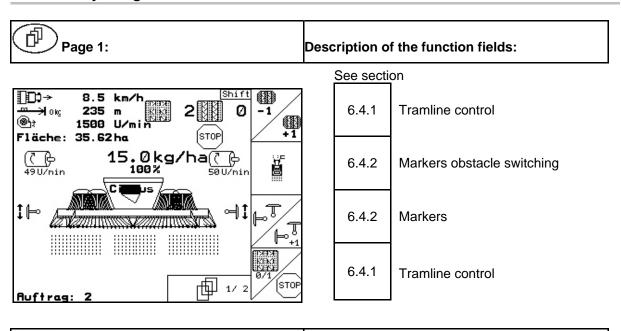


- 7. After approx. 30 m, stop and check
 - o work intensity of the disc cultivator
 - o depositing depth of the seed
 - o working intensity of the exact harrow
- During the sowing, the AMATRON⁺ shows the work menu.
 From here, all functions relevant to the sowing procedure can be actuated.
- → The data determined are stored for the started job.

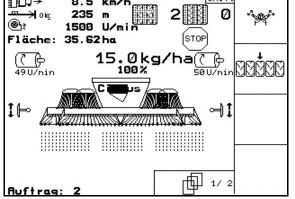
After use:

- 1. Check the job data (if required).
- 2. Activate the control units as required.
- 3. Switch off the **AMATRON**⁺.

6.5.2 Key assignment in work menu **Cirrus Activ**



Shift key pressed: Description of the function fields: See section Shift

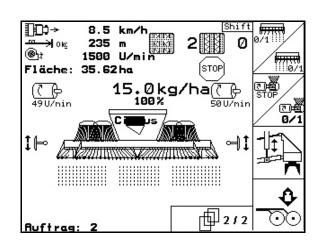


6.4.7 Folding the machine
6.4.8 Headland on all wheels



Page 2:

Description of the function fields:

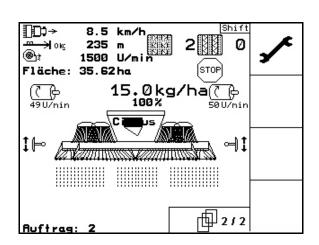


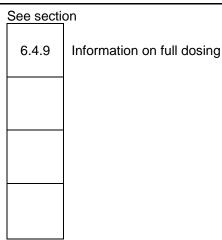
See section 6.4.3 Switching part widths (only electric full dosing / Cirrus) 6.4.4 Electric full dosing 6.4.5 KG raising (Cirrus Activ) Coulter pressure and harrow pressure (Cirrus Activ)



Shift key pressed:

Description of the function fields:







6.6 Cayena

6.6.1 Procedure for use

- 1. Switch on the **AMATRON**⁺.
- 2. Select the desired job in the main menu and check the settings



4. Select the work menu.

4 tractor control units are available to operate the hydraulic functions:

- Operate tractor control unit 1 (hose marking yellow):
 - Lower the machine
- Operate **tractor control unit 2** (hose marking green):
 - o Fold the machine extension arm
 - o Move the track marker to the operational position
- Operate tractor control unit 3 (hose marking blue)
 - Tine coulter working depth
- Operate tractor control unit 4 (hose marking red):
 - Switch the blower fan on/off.
- 5. Check the displayed tramline counter for the first field run and correct as necessary.
- 6. Start the sowing.

When travel in operational position begins, the dosing starts.



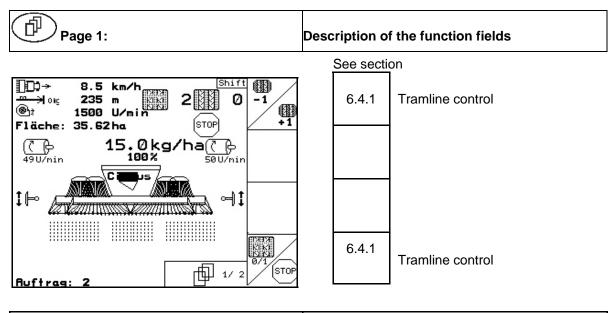
- Start predosing.
- 7. After approx. 30 m, stop and check:
 - o depositing depth of the seed
 - o working intensity of the exact harrow
- During the sowing, the AMATRON⁺ shows the work menu.
 From here, all functions relevant to the sowing procedure can be actuated.
- → The data determined are stored for the started job.

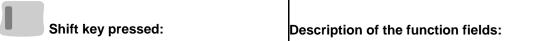
After use:

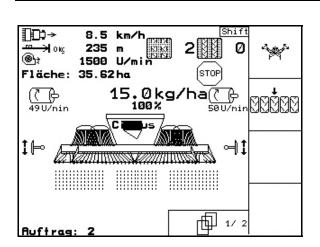
- 1. Check the job data (if required).
- 2. Activate the control units as required.
- 3. Switch off the AMATRON*.

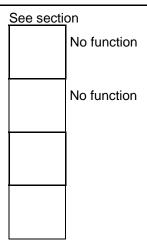


6.6.2 Key assignment in work menu **Cayena**







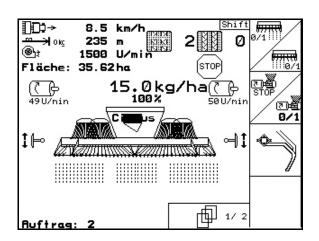






Page 2:

Description of the function fields:



See section

6.4.3 Switching part widths (only electric full dosing / **Cirrus**)

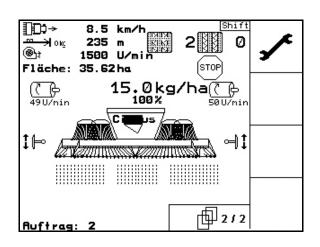
6.4.4 Electric full dosing

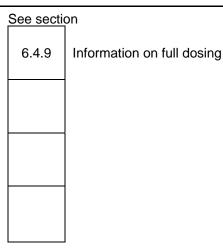
No function



Shift key pressed:

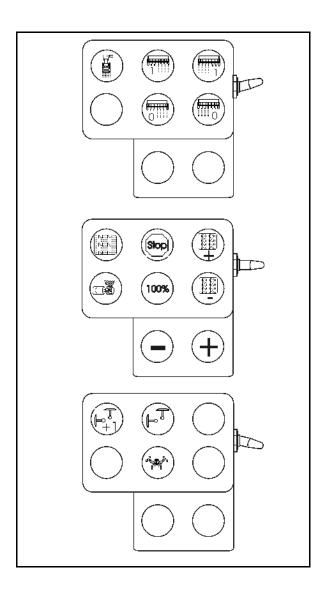
Description of the function fields:







6.7 Assignment of multi-function stick





7 Multi-function stick

7.1 Installation

The multi-function stick (Fig. 58/1) is attached with 4 screws at a convenient location in the tractor cab.

To connect, insert the connector of the basic equipment into the 9-pin Sub-D-bushing of the multi-function stick (Fig. 58/2).

Insert the connector (Fig. 58/3) of the multifunction stick into the centre Sub-D-bushing of the **AMATRON**⁺.

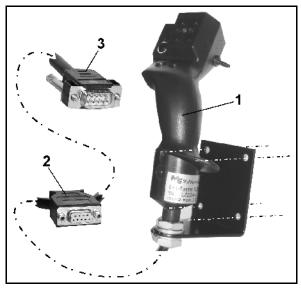


Fig. 58

7.2 Function

The multi-function stick only functions in the work menu of the **AMATRON**⁺. It allows blind operation of the **AMATRON**⁺ in use on the field.

For operation of the **AMATRON**⁺, the multifunction stick (Fig. 59) has 8 keys (1 - 8) available. In addition, the assignment of the keys can be changed 3-fold by means of a switch (Fig. 60/2).

The switch default position is

- central position (Fig. 59/A)and can be pressed
- up (Fig. 59/B) or
- down (Fig. 59/C)

The position of the switch is indicated by an LED lamp (Fig. 59/1) angezeigt.

- LED display yellow
- LED display red
- LED display green

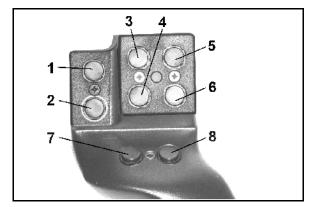


Fig. 59

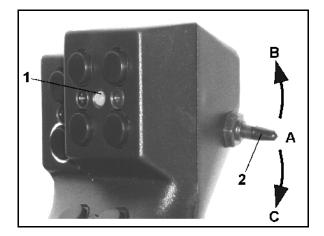


Fig. 60



8 Malfunction

8.1 Alarm

Uncritical alarm:

A fault message (Fig. 61) appears at the bottom of the display and an acoustic alarm sounds three times.

→ Rectify the fault if possible.

Example:

- Hopper seed level too low.
- → Remedy: Refill seed hopper...

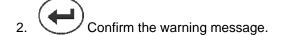


Fig. 61

Critical alarm:

A warning message (Fig. 62) appears in the middle of the display and an acoustic alarm is given.

1. Read the warning message on the display.



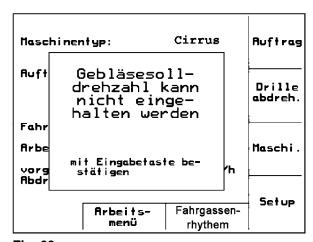


Fig. 62



8.2 Failure of the distance sensor

In event of failure of the distance sensor (Imp./100m), work can continue after entry of a simulated working speed.

In order to avoid sowing errors, the defective sensor must be replaced.

If a new sensor is not immediately available, the work can be continued as follows:

 Disconnect the signal cable of the defective distance sensor from the job computer.



In event of failure of the distance sensor, with the machine moving the seed rows in operational position are not indicated in the work menu.

Actuate from the main menu.

Actuate from the main menu.

Enter a simulated speed.

During the work, the simulated speed entered must be maintained.

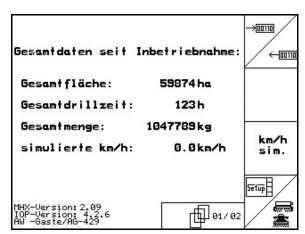


Fig. 63





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