Operating Manual

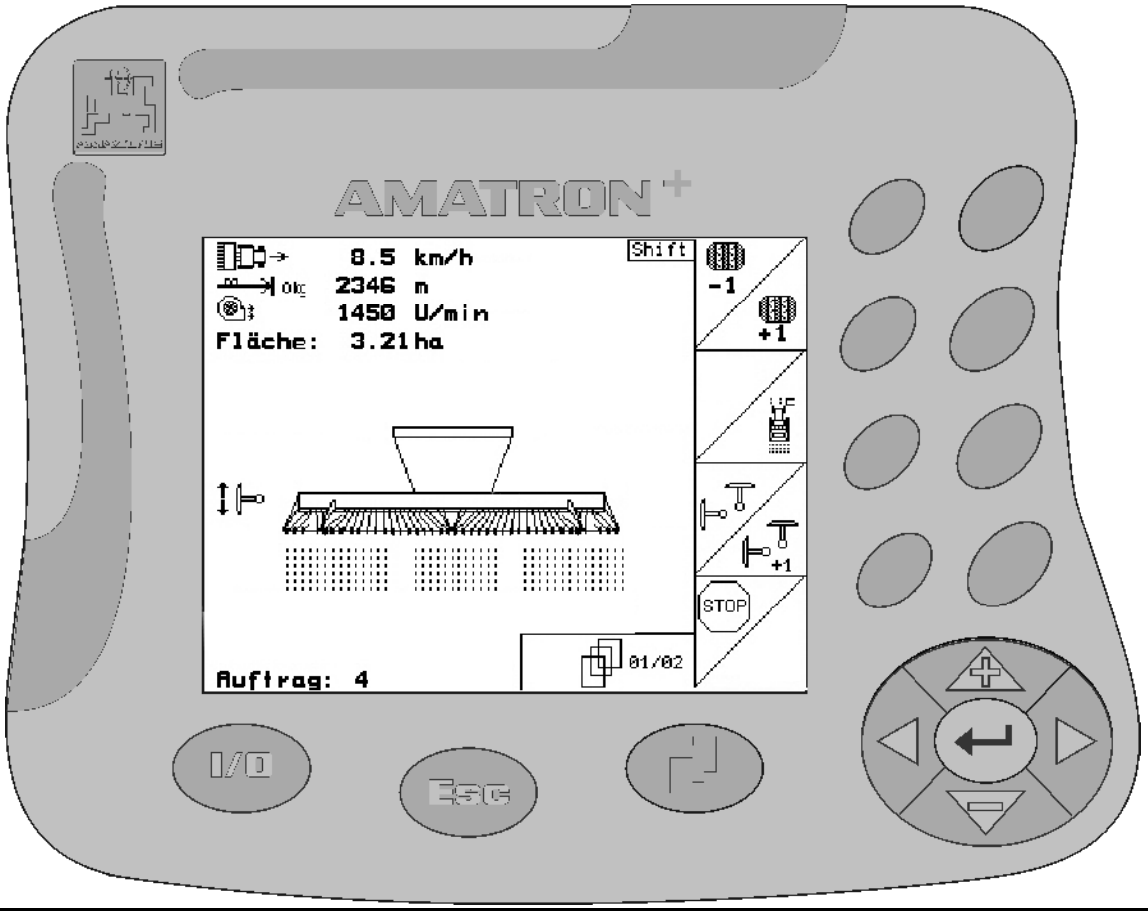
AMAZONE

AMATRON+

for

Cayena Citan Cirrus Aktiv

on board computer



Please read this operating manual before first commissioning.
Keep it in a safe place for future use!

MG4240
BAG0099.1 07.12
Printed in Germany

en

READING THE INSTRUCTION

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. Rud. Sack.

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

H. DREYER GmbH & Co. KG

Postfach 51

D-49202 Hasbergen

Tel.: + 49 (0) 5405 50 1-0

Fax.: + 49 (0) 5405 501-234

E-mail: amazone@amazone.de

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: MG4240

Compilation date: 07.12

© Copyright AMAZONEN-WERKE H. DREYER GmbH & Co. KG, 2012

All rights reserved.

Reprinting, even of sections, only possible with the approval of AMAZONEN-WERKE H. DREYER GmbH & Co. KG.

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.

AMAZONEN-WERKE

H. DREYER GmbH & Co. KG

Postfach 51

D-49202 Hasbergen

Tel.: + 49 (0) 5405 50 1-0

Fax.: + 49 (0) 5405 501-234

E-mail: amazone@amazone.de

1 User Information 7
1.1 Purpose of the document 7
1.2 Locations in the operating manual 7
1.3 Diagrams used 7

2 General Safety Instructions 8
2.1 Representation of safety symbols 8

3 Installation instructions 9
3.1 Anschluss 9
3.2 Battery cable 10

4 Product description 11
4.1 Keys and function fields 13
4.1.1 Shift ke 14
4.2 Entries on AMATRON+ 15
4.3 Entering text and numbers 15
4.3.1 Selection of options 16
4.3.2 Toggle function 16
4.4 Software version 16
4.5 Hierarchy of the AMATRON+ 17

5 Commissioning 18
5.1 Start screen 18
5.2 Main menu 18
5.3 Machine data entry 19
5.3.1 Table for seed rate reduction while creating tramlines 22
5.3.2 Entering interval tramline control (machine data 01/03) 23
5.3.3 Calibrating distance sensor (machine 01/03) 24
5.4 Starting a job 26
5.4.1 External job 28
5.5 Calibration test 29
5.5.1 Calibration test with divided hopper (optional for Cayena) 31
5.5.2 Metering settings successively / simultaneously 31
5.6 Setup menu 32
5.6.1 Configure tramline system 37
5.6.2 Configure seed rate remote control 37
5.6.3 Configure the switchover point of the working position sensor 38
5.7 Terminal setup 39

6 Use on the field 41
6.1 Specified quantity adjustment 41
6.2 Displaying work menu 42
6.3 Preselection for hydraulic functions 43
6.4 Functions in work menu 44
6.4.1 Tramline control 44
6.4.2 Markers 45
6.4.3 Electric full dosing 47
6.4.4 KG 48
6.4.5 Coulter pressure 48
6.4.6 Coulter pressure and harrow pressure 49
6.4.7 Tine depth 49
6.4.8 Folding the machine 50
6.4.9 Information on full dosing 52
6.5 Storage 52
6.6 Procedure for use 53

6.7 Key assignment in work menu **Citan 6000** 54
6.8 Key assignment in work menu **Cayena 6001** 55
6.9 Key assignment in work menu **Cirrus Activ** 56

7 Multi-function stick 57
7.1 Installation 57
7.2 Function 57
7.3 Assignment of multi-function stick 58

8 Malfunction 59
8.1 Alarm 59
8.2 Failure of the distance sensor 60

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.

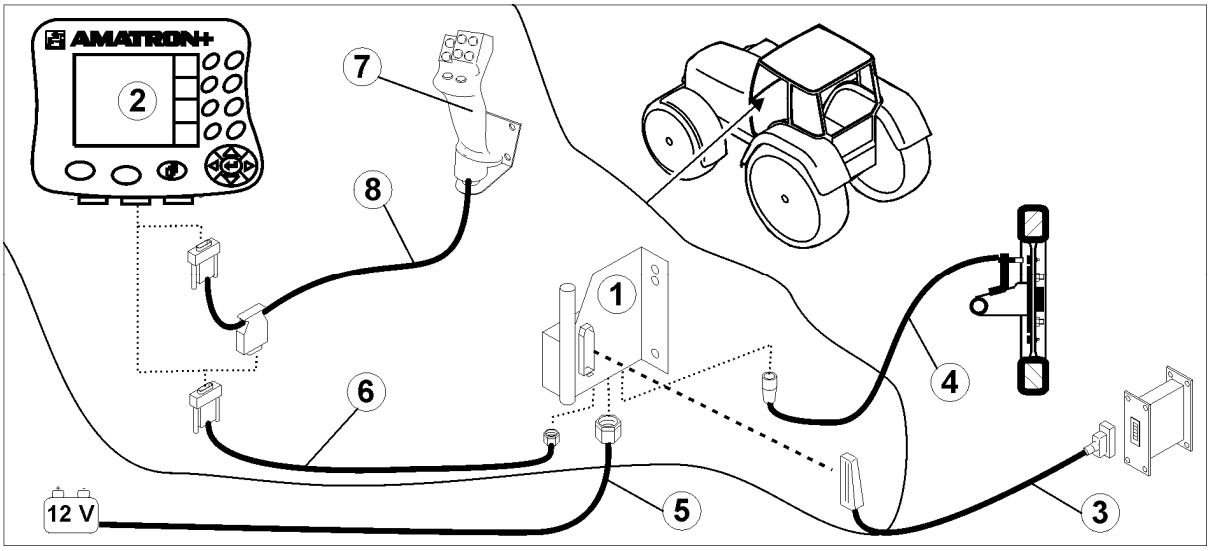


Fig. 1

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.

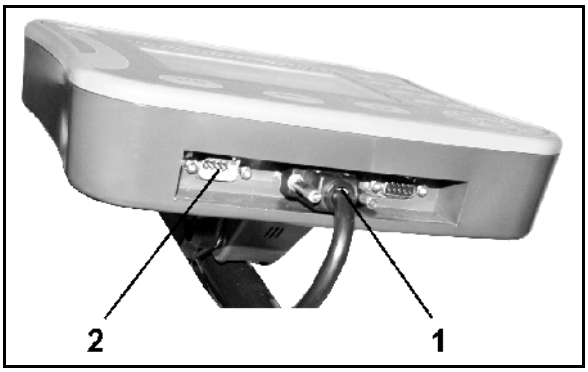


Fig. 2

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!

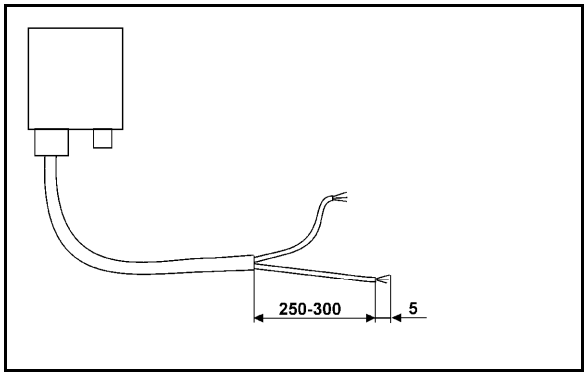


Fig. 3

1. 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:
   - Brown cable core to **+**.
   - Blue cable core to **-**.

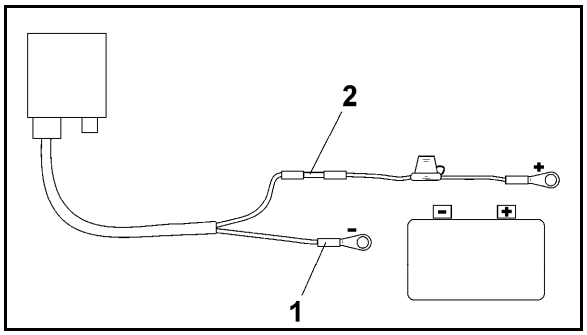


Fig. 4

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 the operation of different **AMAZONE** sowing machines using **AMATRON+**.

The settings and the operation of the machine using **AMATRON+** are different depending on the type and equipment.

The **AMATRON+** controls 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.

Once a job has been started, the **AMATRON+** stores the data.

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.

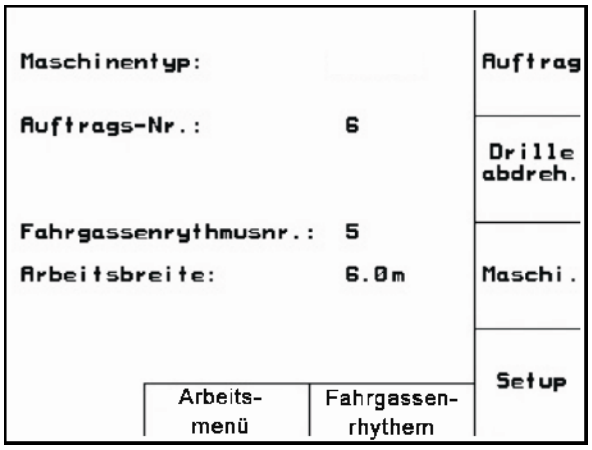


Fig. 5

Work menu (Fig. 6)

- During operation, the work menu indicates all necessary work data.
- The machine is operated via the work menu during use.

→ Press ESC:

Change from the main menu to the work menu.

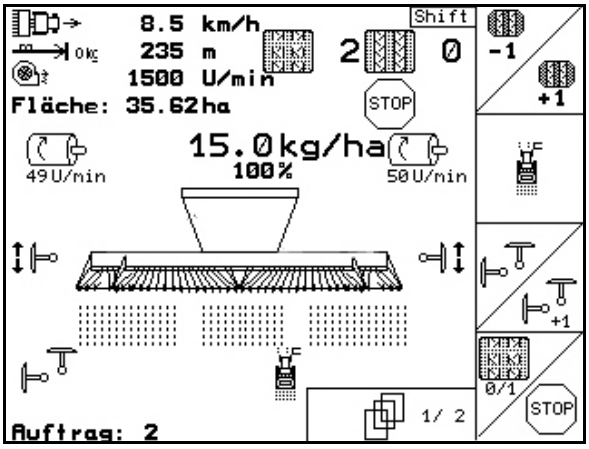


Fig. 6

Tramline rhythms menu

To find the correct tramline rhythm.

→ Press :
Change from the main menu to the tramline rhythms menu

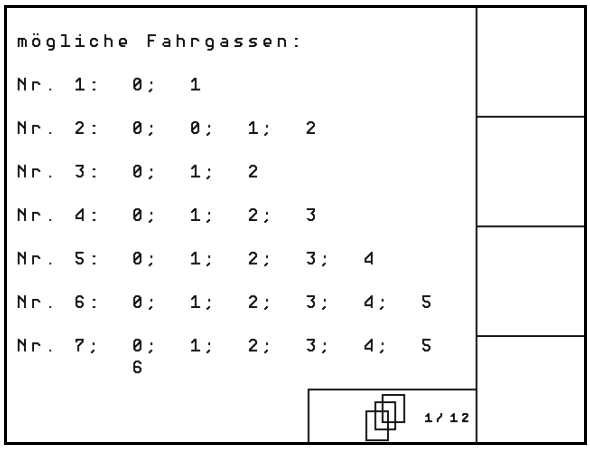


Fig. 7

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. 8/1) is assigned to the function field (Fig. 8/A).
- f the boxes are diagonally divided:
  - o the left key (Fig. 8/2) is assigned to the top left function field (Fig. 8/B).
  - o the right key (Fig. 8/3) is assigned to the bottom right function field (Fig. 8/C).

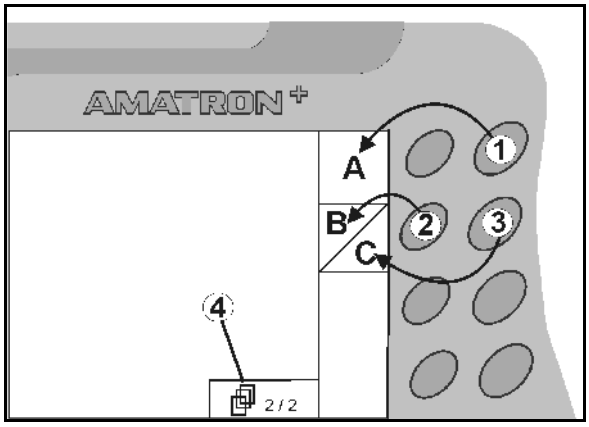


Fig. 8

I/0	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)
	• Scroll to other menu pages (only possible if (Fig. 8/4) appears 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 41)
	• 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 41).

4.1.1 Shift ke

- The shift key is located on the back of the unit (Fig. 9/1).
- When the Shift-key is activated, this is indicated on the display (Fig. 10/1).
- When the Shift-key is actuated, further function fields appear (Fig. 11) and the assignment of the function keys is altered accordingly.

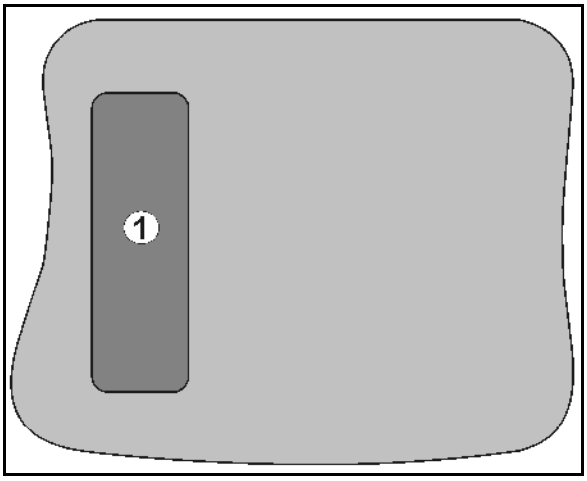


Fig. 9

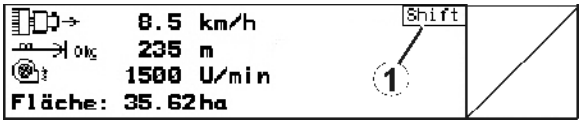


Fig. 10

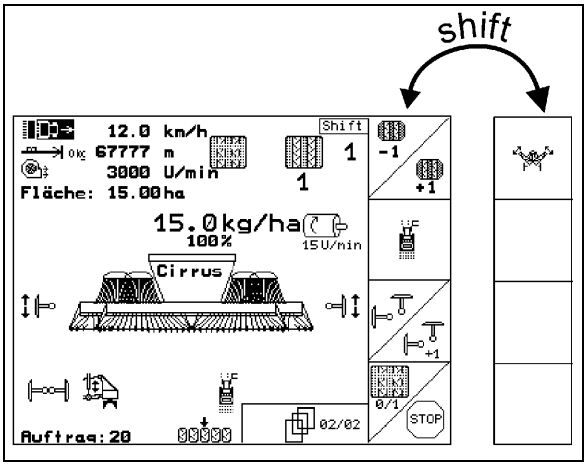


Fig. 11

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. 12/1), assigned to the function field to perform function A.

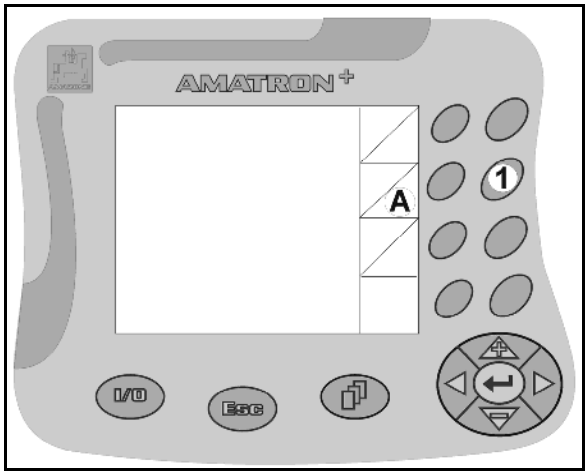
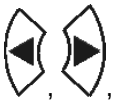


Fig. 12

4.3 Entering text and numbers

f it is necessary to enter texts or numbers on the **AMATRON+** , the input menu (Fig. 13).

n the lower part of the display, a selection field (Fig. 13/1) appears with letters, numbers and arrows which can be used to compose the input line (Fig. 13/2).



Choose letters or numbers in the selection field (Fig. 13/3).

- Confirm the selection (Fig. 13/3).
-

Delete the input line.
-

Switch between upper and lower case.
- confirm the text entered.

The arrows ↔ in the selection field (Fig. 13/4) llow movement in the text line.

The arrow ⇤ in the selection field (Fig. 13/4) eletes the last entry.

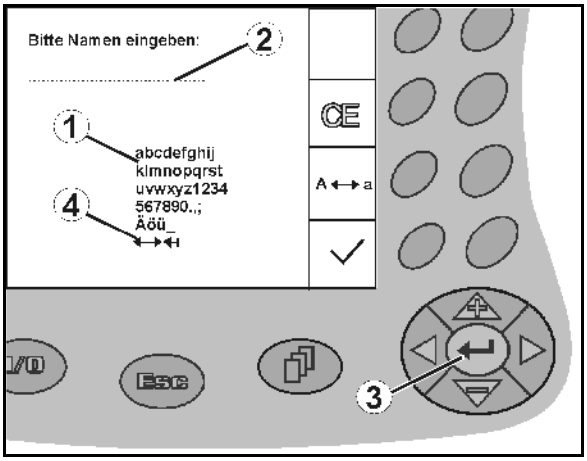


Fig. 13

4.3.1 Selection of options

1. / Position the selection arrow (Fig. 14/1).
2. Apply the selection (Fig. 14/2).
3. Confirm the selection.

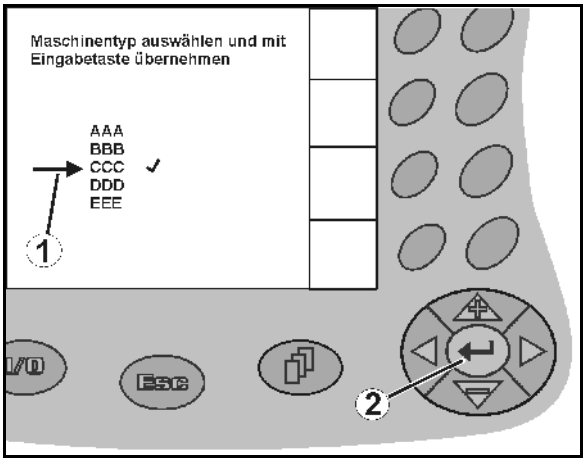


Fig. 14

4.3.2 Toggle function

Switching functions on/off:

- Press function key (Fig. 15/2) once
→ Function **on** (Fig. 15/1).
- Again press function key
→ Function off.

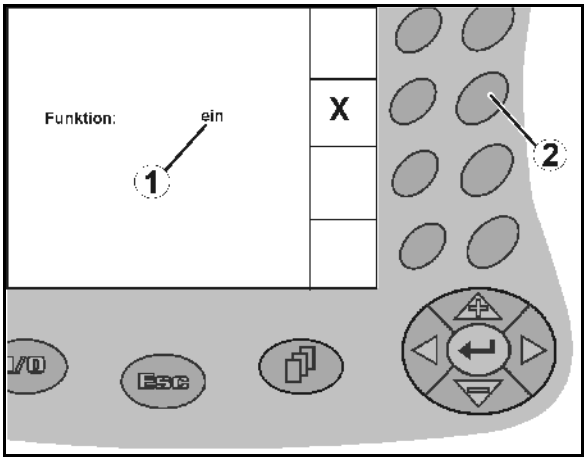


Fig. 15

4.4 Software version

This operating manual is valid from software version:

Machine:	Terminal:
MHX-version: 6.01.02 IOP-version: 8.0.2	BIN-version: 3.22.0

4.5 Hierarchy of the AMATRON+

Main menu ← Esc → **Operational menu**

Auftrag ↓ Esc ↑

Job menu

Entry:
- Name
- Note
- Selection (kg/ha or K/m2)
- Seed type
- Start/continue job
- Daily data
  Delete hectare
  Delete hours

Display:
- Job number
- Name of job
- Note
- Specified quantity
- Seed type
- Area already worked
- Hours (h) already worked
- Average hours/ha
- Sowing rate (kg)
- Trip data area/hours/quantity

Drille abdreh. ↓ Esc ↑

Calibrate machine menu
- Sort
- Required seed quantity (kg/ha or K/m2)
- Proposed subsequent working speed (km/h)
- Start calibration
- Calibration factor
- Fill cells of dosing wheels before calibration test

Setup ↓ Esc ↑

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, pre-dosing unit (only for full dosing)
  - Tool I, II, III
  - Turning on roller
  - Hopper
  - Working position sensor
  - Track markers
- Display settings
  - Set national language

Maschi. ↓ Esc ↑

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. 16) und zeigt die Terminal – Softwareversions- No. 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. 16).

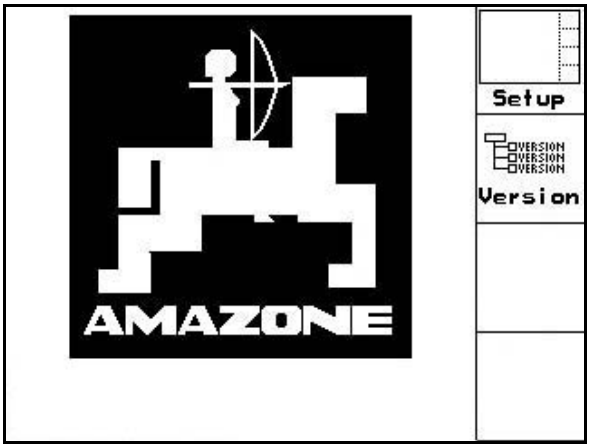


Fig. 16

5.2 Main menu

Job menu: Entry of data for a job. Before commencement of sowing, start the job (see on page 26).

Seed drill calibration menu: Carry out calibration test before starting sowing (see on page 29).

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

Machine data menu: Entry of machine-specific or individual data (see on page 19).

Setup menu: Entry and readout of data for customer service in event of maintenance or fault (see on page 32).

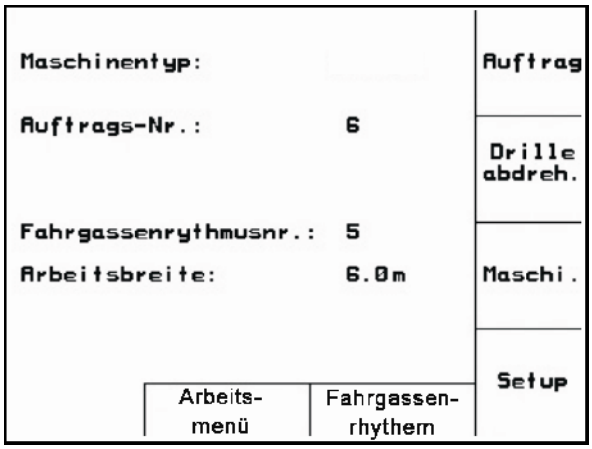


Fig. 17

5.3 Machine data entry

Maschi. Select "Machine data" in main menu!

Page 1 01/03 **in machine data menu (Fig. 18):**

- Enter the required tramline rhythm (see tables Fig. 19, Fig. 20).
- Enter the interval tramline control (see on page 23).
- Menge in % Enter the percentage application rate increase in % (value for percentage sowing rate change during work with ,).
- I./100m Maschine Calibrate the distance sensor (see on page 24).

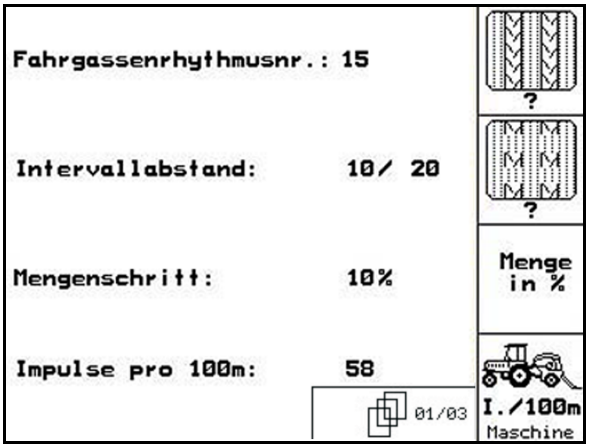


Fig. 18

Tramline rhythm

Simple tramline control																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21	22	23	26	32	35
Fahrgassenzähler	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	Switching 15 starts no tramlines.	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		5	5	5	4	4	4	5	4	5
							6	6	6	0	7	6	6	6		6	6	6		5	5	6	5	6
								7	7	8	8	7	7	7		7	7	7		6	6	7	6	7
									8	9	0	8	8	8		8	8	8			7	8	7	8
										10	10	9	9	9		9	9	9			8	9	8	9
												10	10	10		10	10					10	9	10
												11	11	11		11	11						10	11
													12	12		12	12							12
														13		13	13							13
																14	14							14
																15	15							
																	16							

Fig. 19

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

Double tramline control

Tramline counter	18 left	18 right	19 left	19 right	24 left	24 right	25 left	25 right	27 left	27 right	28 left	28 right	29 left	29 right	30 left	30 right	31 left	31 right	33 left	33 right	34 left	34 right	36 left	36 right
	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
	9	9	9	9	9	0	0	9	9	0									9	9	9	9	9	9
	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
	12	0	0	12			12	12													12	12	12	0
	13	13	13	13			13	0													13	13	13	13
	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		

Double tramline control

Tramline counter	37 left	37 right	38 left	38 right	39 left	39 right	40left	40 right	41 left	41 right	42 left	42 right	43 left	43 right
	1	0	1	1	1	1	1	1	1	1	1	4	1	1
	2	2	2	0	0	2	2	2	2	2	2	2	2	0
	0	3	3	3	0	3	3	3	3	0	3	3	3	3
	0	4	0	4	4	4	4	0	4	4	4	0	4	4
	5	5	0	5			5	5	0	5	5	5	5	0
	6	0	6	6			6	6	0	6	6	6	6	6
			7	0			0	7	7	7	7	7	7	7
			8	8			8	8	8	8	8	8	8	8
							9	9	0	9	9	9	0	9
							0	10	10	10	0	10	10	10
							0	11	11	11	11	11	11	11
							12	12	12	12	12	12	0	12
							13	0	13	13	13	13	13	13
							14	14	14	0	14	14	14	14
							15	15	15	15	15	15		
							16	16	16	16	16	16		
							17	0	17	17	0	17		
							18	18	18	18	18	18		
							19	19	19	19	19	19		
							20	20	0	20	20	20		
									21	21	21	21		
									22	22	22	22		
											23			
											24	24		
											25	25		
											26	26		

Fig. 20

Page 2 02/03 in machine data menu (Fig. 21)

- Prog. Adopt the current fan speed (rpm) during operation as the speed to be monitored.
- n Enter the fan speed (rpm) that is to be monitored.
- kg Enter the current fill level (kg) in the hopper.
- kg Enter the refill quantity (kg).
- Alarm 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
  - o the level sensor (optional) is no longer covered with seed.

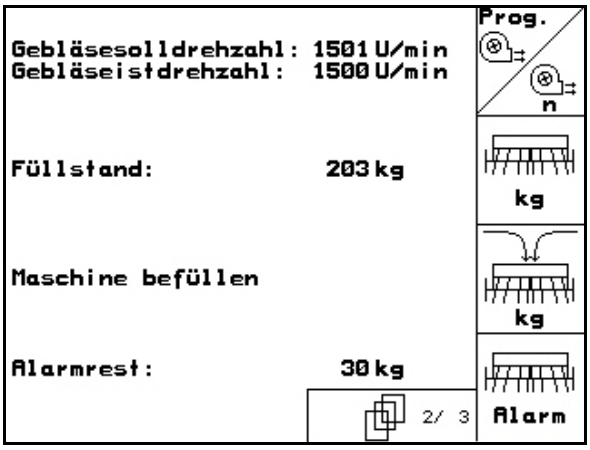


Fig. 21

Page 3 03/03 in the machine data menu (Fig. 22)

- -% Enter the seed volume reduction (in %) when starting a tramline (see on page 22, only necessary for machines without seed return to hopper).
- Enter the control factor for the diesel engines.

  Standard value: 1
- +% Entering the raised seed rate with increased harrow pressure

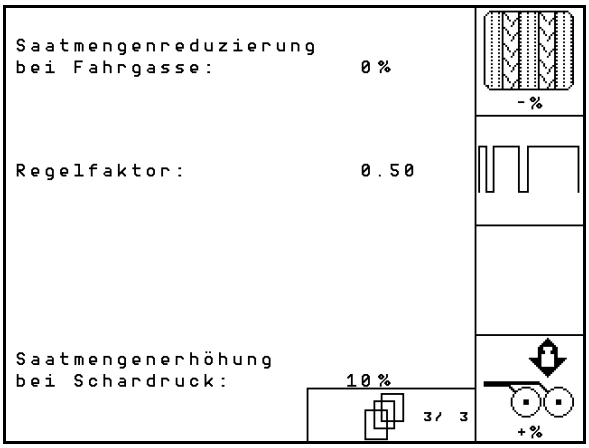


Fig. 22

5.3.1 Table for seed rate reduction while creating tramlines

Working width	Number of sowing coulters	Number of tramline hoses	Recommended percentage seed volume reduction for starting tramlines
3,0 m	18	4	22%
	18	6	33%
	24	4	17%
	24	6	25%
3,43 m	21	4	19%
3,50 m	21	6	29%
	28	4	14%
	28	6	21%
4,0 m	24	4	17%
	24	6	25%
	32	4	13%
	32	6	19%
4,5 m	27	4	15%
	27	6	22%
	36	4	11%
	36	6	17%
5,0 m	40	4	10%
	40	6	15%
6,0 m	36	4	11%
	36	6	16%
	48	4	8%
	48	6	12%
8,0 m	64	4	6%
	64	6	9%
9,0 m	72	4	6%
	72	6	8%
12,0 m	72	4	6%
	72	6	8%
	96	4	4%
	96	6	6%
15,0 m	90	4	4%
	90	6	7%

5.3.2 Entering interval tramline control (machine data 01/03)

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

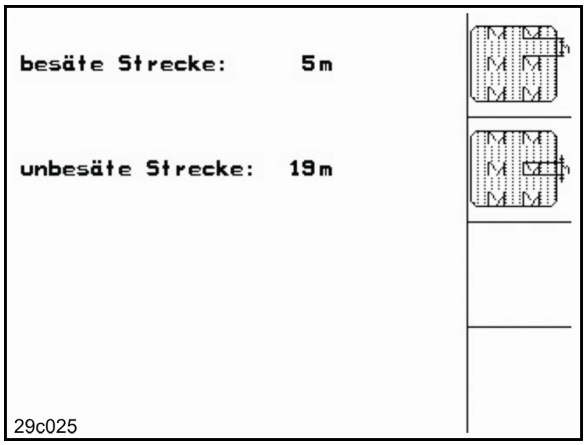


Fig. 23

5.3.3 Calibrating distance sensor (machine 01/03)

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:

- [man. Eingabe] The value is known and is entered manually on the **AMATRON+**.
- [Start] The value is not known and is determined by travelling a calibration distance of 100 m.

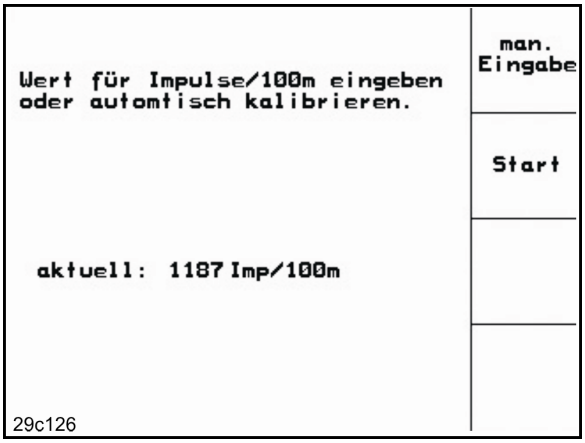


Fig. 24

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 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.

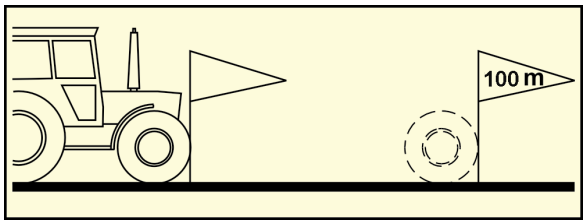


Fig. 25

5.4 Starting a job

Select "Job" in main menu!

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:
  - o

Select seed type.
  - o

Enter the 1000 grain weight.
  - o

Quantity display in kg / ha or grains / m^2.

    (not with partitioned tank)

  Only with divided hopper:
  - o

Metering settings successively / simultaneously
-

On machines with divided hopper: Switching for entries for Tank 1 and Tank 2.

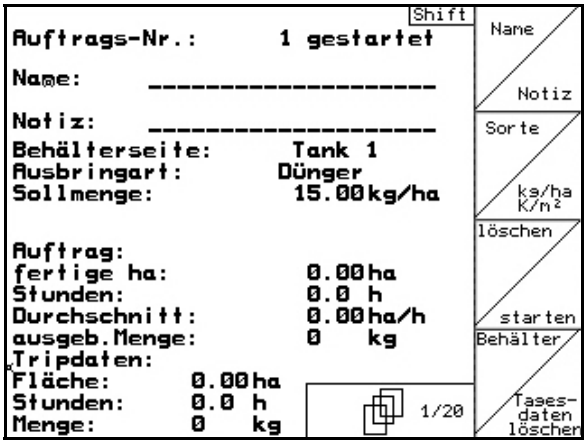


Fig. 26

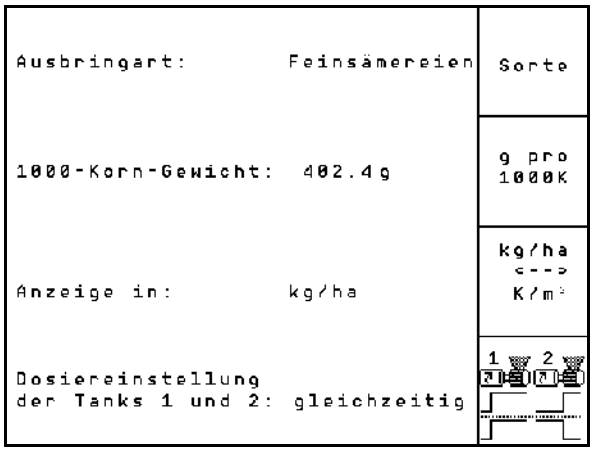


Fig. 27

On the machine 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

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

Already stored jobs can be called up with and restarted with starten

Pressed shift key (Fig. 28):

- Auftrag vor Scroll forward.
- Auftrag zurück Scroll backward.

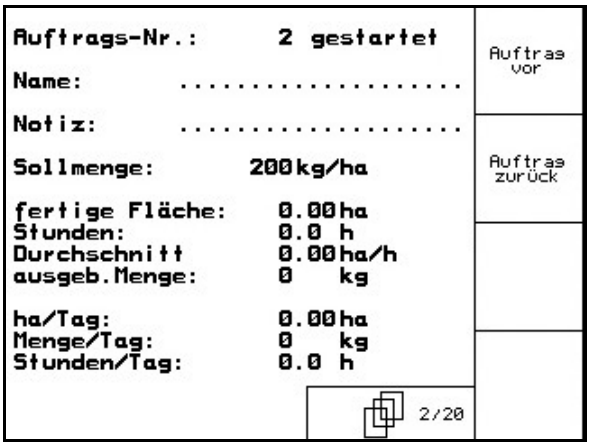


Fig. 28

5.4.1 External job

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

This job is always given the job number 21.

The data is transferred via the serial interface.

- [externen Auftrag beenden] End external job (data of external job are deleted).

→ Transfer data back to PDA beforehand.

- [Sorte] Select seed type.
- [kg/ha <--> K/m²] Quantity display in kg / ha or grains / m^2.

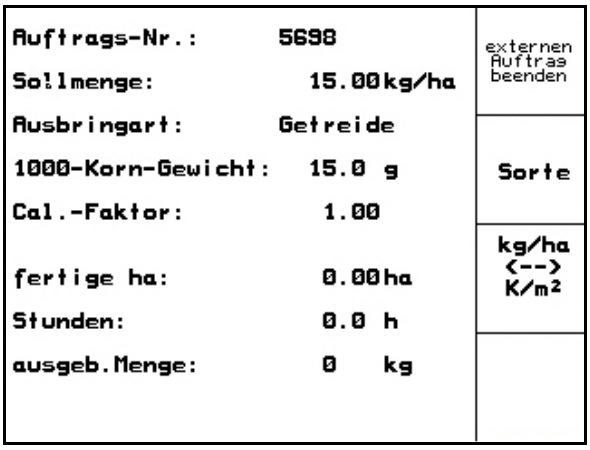


Fig. 29

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.

- Drille abdreh. Select "Calibrate seed drill" in main menu!
- With divided hopper: Tank 1 Tank 2 Calibrate Tank 1 and Tank 2 separately.

All entries in the Calibrate menu can also be entered in the Job menu (see on page 26).

1. Prepare calibration test in accordance with the seed drill operating manual!
2. Sorte Call up seed type submenu.
   - o Sorte Select seed type.
   - o g pro 1000K Enter the 1000 grain weight.

     (not with partitioned tank)
   - o kg/ha <--> K/m² Quantity display in kg / ha or grains / m^2.

   Only with divided hopper:
   - o Metering settings, see page 31.
3. kg/ha K/m² Test/enter desired sowing rate.

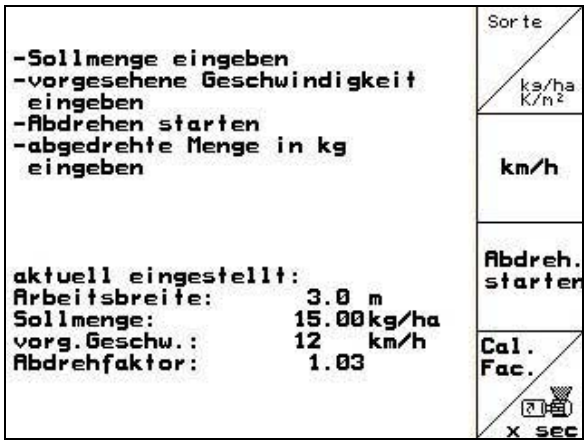


Fig. 30

4.

Enter planned subsequent working speed (km/h).

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 47).

8. Empty the collection bucket.

9.

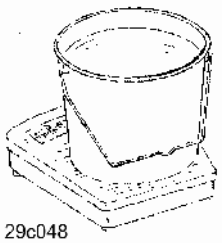
Start the calibration test.

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

10.
Terminate the calibration process

11. 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 1 – Calibrate front hopper half.
-

Tank 2 – Calibrate rear hopper half.

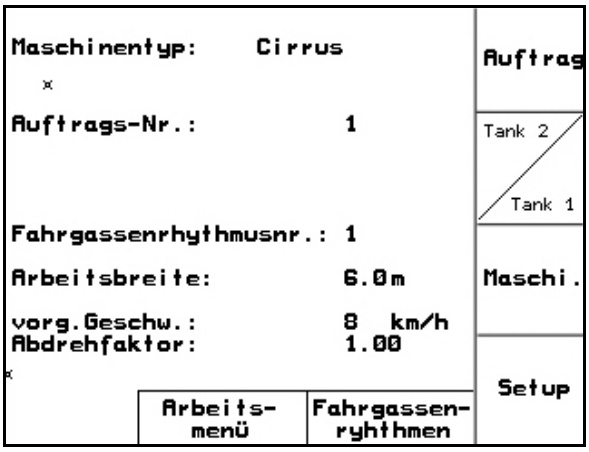


Fig. 31

Carry out the calibration test on the metering unit for tank 1 and tank 2 successively.

5.5.2 Metering settings successively / simultaneously

Metering settings of the tanks:

- Simultaneous: for spreading two different substances in tank 1 and tank 2.
- Successive: for spreading identical seeds in tank 1 and tank 2.

  Only one metering unit runs during operation. When Tank 2 is empty, metering starts from Tank 1.

  The following settings are important to correctly switch from tank 2 to tank 1:

  - Correct setting of the filling level sensors. This will then activate the switchover.
  - Entering the transition period of the metering unit (Setup)
  - Entering the delay between tank 2 empty and tank 1 start (Setup).

Exception:

Divided hopper, identical seed, metering setting set to simultaneous

- The specified quantity must be separated in the metering unit.
- The calibration test must be carried out for the respective share of the specified quantity for each metering unit.

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 are a workshop operation and must be carried out only by qualified personnel!

Setup Select "Setup" in the main menu!

Page 1 01/02 of the setup menu (Fig. 32):

- Diagnosis computer input (only for customer service).
- Diagnosis computer output (only for customer service).
- km/h sim. Enter simulated speed for continued working with defective distance sensor (see on page 60).
- Setup Terminal Setup (see on page 39).
- Enter basic data.

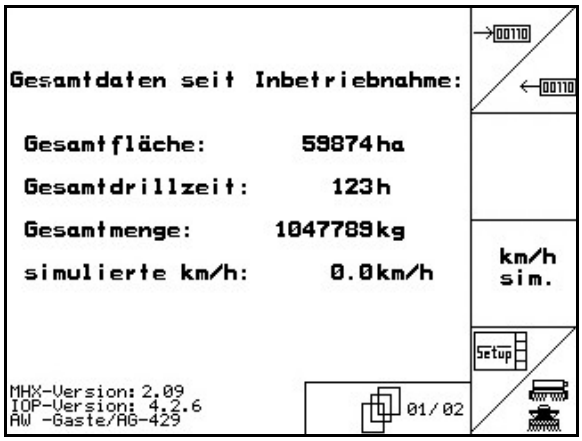


Fig. 32

Page 1 1/ 6 Basic data (Fig. 33):

- Selecting machine type.
- Entry of working width (m).
- Configure tramline system, see on page 37.
- Configure seed rate remote control, see on page 37.

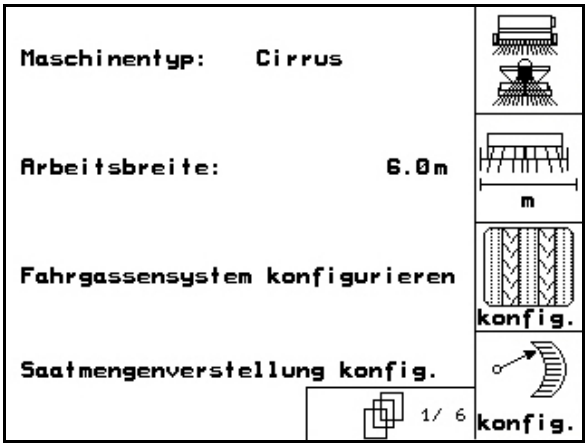


Fig. 33

Page 2 2/ 6 Basic data (Fig. 34):

- Selection of pre-emergence marker:
  - o None.
  - o Hydraulically actuated.
  - o Electrically actuated.
- Number of track marker sensors.

→ none: Cayena production year from 2012 / Citan 6000 / Cirrus Aktiv

→ one: Cayena production year up to 2011

- Coulter pressure sensor: yes / no
- Level sensor in seed box yes / no
- Triggering of the alarm if the blower fan speed differs from the setpoint (in %).

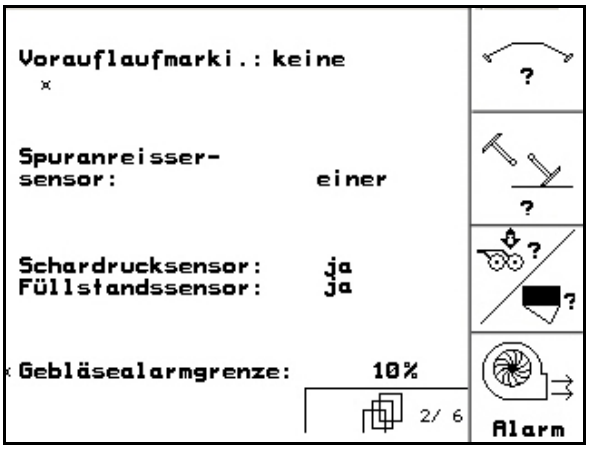


Fig. 34

Page 3 3/ 6 Basic data (Fig. 35):

- Monitoring the dosing wheels
  - o One dosing unit.
  - o Two dosing units.
  - o No monitoring → Select.
- Entry of dosing wheel alarm delay time..
- Entry of tramline system alarm delay time.
- Function not for Cirrus / Cayena / Citan.

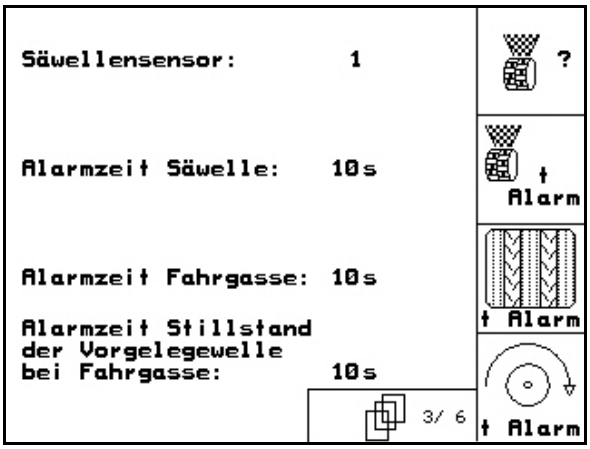


Fig. 35

Page 4 4/ 6 Basic data (Fig. 36):

- Machine-dependent setting for tool I:
  - o Cirrus Activ: KG raising
  - o Cirrus: Disc array
  - o Cayena, Citan: no
- Machine-dependent setting for tool II:
  - o Cirrus Activ: KG depth
  - o Other machines: no
- Machine-dependent setting for tool III:
  - o Cirrus, Citan: Coulter pressure (option), harrow pressure (option)
  - o Cayena: no

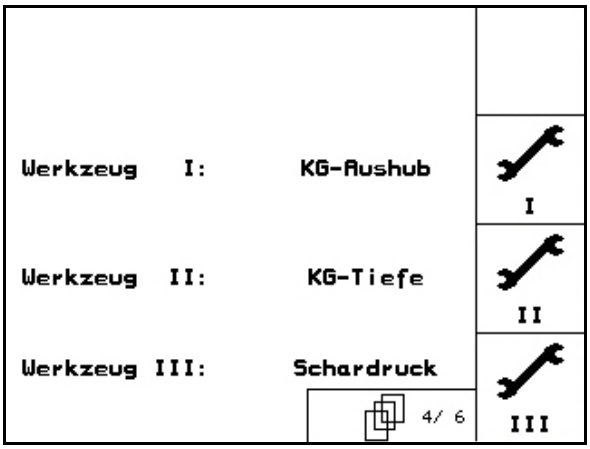


Fig. 36

Page 5 5/ 6 Basic data (Fig. 37):

- Turn at headlands on all wheels (yes / no).
- Hopper
  - o divided
  - o not divided
- Working position sensor

→ Select analogue

- Configure the switchover point of the working position sensor, see page 38.

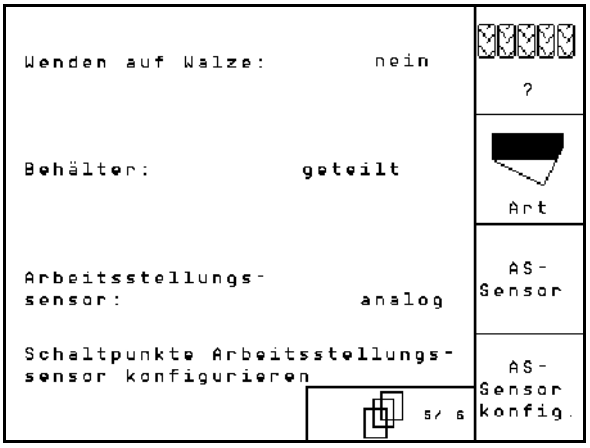


Fig. 37

Page 6 5/ 6 Basic data (Fig. 38):

- Folding (yes / no)
- 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.
  - o Automatic change

    of control block, hydraulic preselection of track marker possible.
  - o None

    No track marker or track marker without sensor fitted.

For divided hopper halves that are emptied successively:

- Dosing unit transition period
- Delay between Tank 2 empty and Tank 1 start.

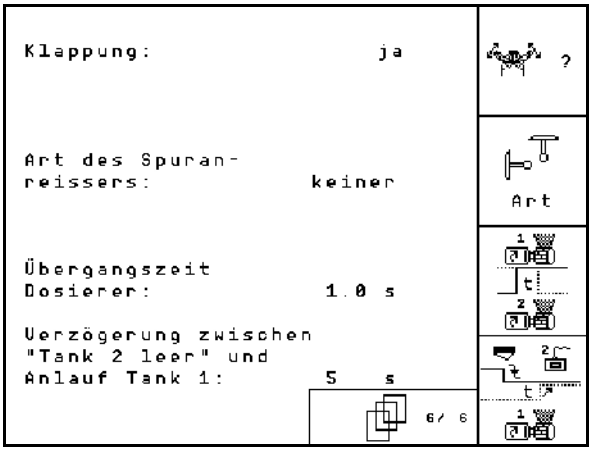


Fig. 38

Page 7 7/ 7 Basic data

Cirrus Aktiv only:

- KG 1/min ? Enter the number of KG speed sensors.
  - no – no sensor available
  - 3/20 → KG6000 (3 sensors /20 pulses per revolution)
  - 3/1 → KG6001 (3 sensors / 1 pulse per revolution)

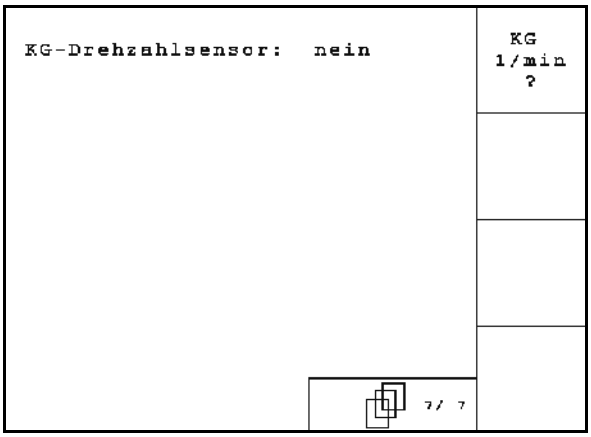


Fig. 39

Page 2 02/02 of the setup menu (Fig. 40):

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

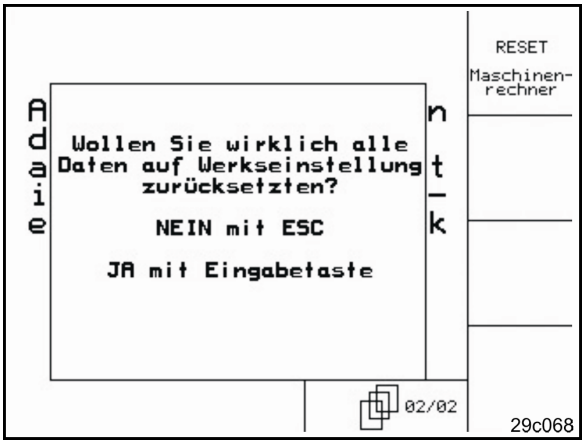


Fig. 40

5.6.1 Configure tramline system

- Single or double tramline
  - o actuated by a tramline motor,
  - o actuated by two tramline motors.
- Time after raising to shifting up the tramline number.

Fig. 41

5.6.2 Configure seed rate remote control

- Select seed rate remote control:

  → electric full dosing
- Enter number of dosing units.
- Enter type of motor.
  - o Disc-type motor
  - o Cirrus Aktiv: Longitudinal motor

The following entries are used for applying sufficient seed directly after the turn when using the machine:

- Real time entry from the starting the machine to reaching the planned speed.
- Calculated speed in % when using the machine.

  This speed must be greater than the real speed.

The following entry is used to apply sufficient seed when starting from a stationary position.

- Enter the time for the pre-metering.

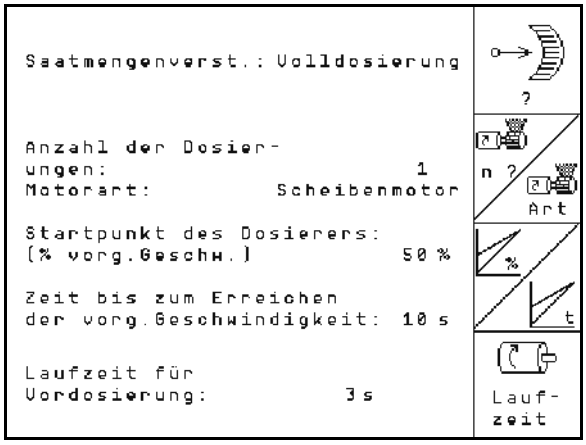


Fig. 42

5.6.3 Configure the switchover point of the working position sensor

- Switch point metering off
- Switch point metering on
- Switch point headlands position
- Switch point fold position

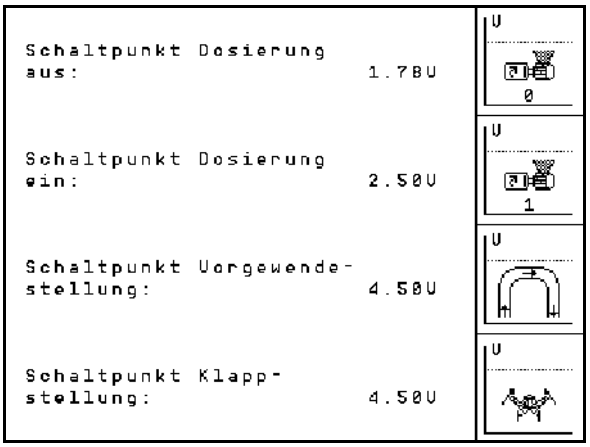


Fig. 43

Default values

Switch point / Machine	metering off	metering on	headlands position	fold position
Citan	1,78 V	2,50 V	2,58 V	4,20 V
Cayena up to 2011	1,20 V	1,22 V	3,10 V	3,20 V
Cayena as from 2012	1,00 V	2,50 V	4,49 V	4,50 V
Cirrus Aktiv	1,78 V	1,80 V	3,10 V	3,20 V

5.7 Terminal setup

In the setup menu:

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

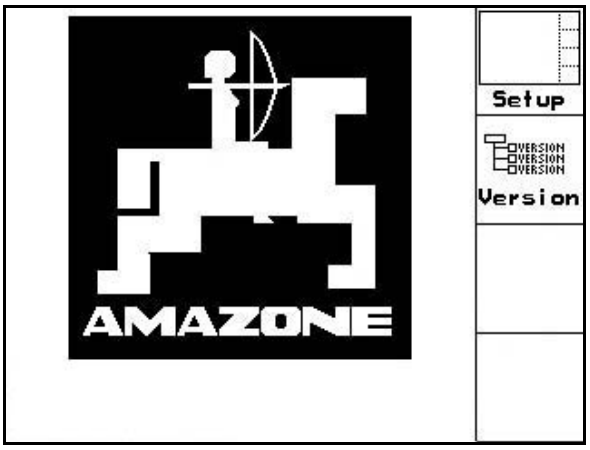


Fig. 44

Page 1 01/03 of Terminal setup

- Set the contrast via the function fields Kon. - or. Kon. +.
- Set the brightness via the function fields bzw. einstellen.
- Invert the display black ← → white Invert..
- Key for sound on/off
- Delete the stored data via the function field Reset. (See on page 36).
- Set the language of the user interface via the function field Sprache.
- ESC Exit Terminal setup menu.

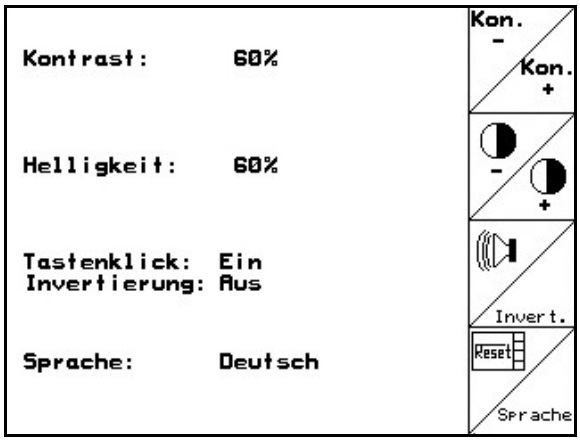


Fig. 45

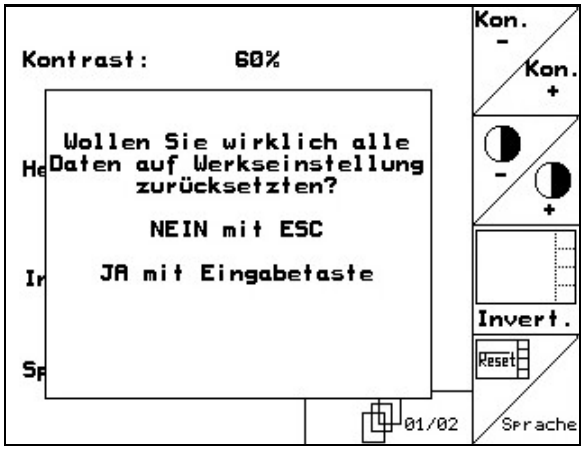


Fig. 46

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

Page 2 02/03 of Terminal setup

- Entry of time.
- Entry of date.
- RS232 Entry of data transfer speed.

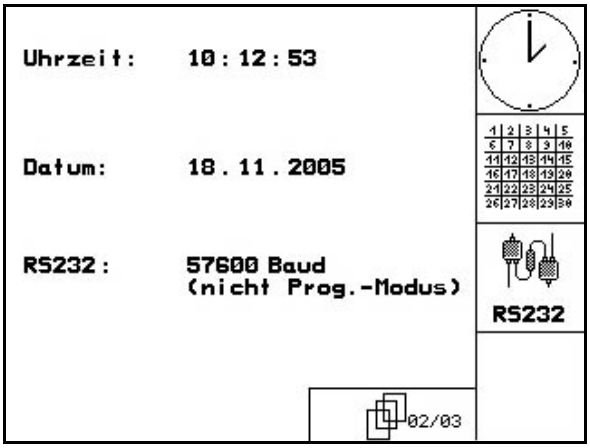


Fig. 47

Page 3 03/03 of Terminal setup

- Delete program:

1. , Select program.
2. löschen Delete program.

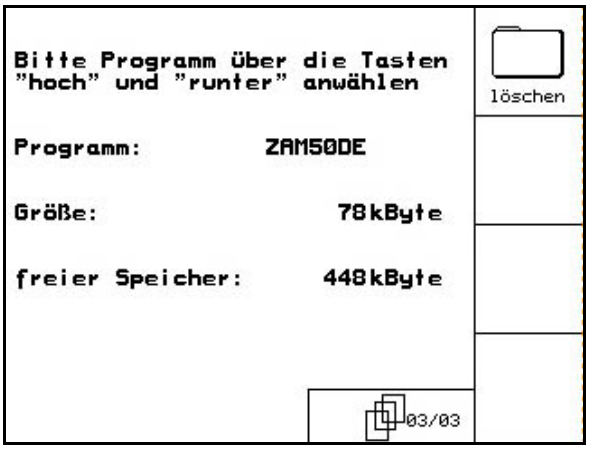


Fig. 48

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 26)
- Machine data (see on page 19)
- Calibration test data (see on page 29).

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 19) (e.g.:+10%).

Reset sowing rate to 100%.

Each press of the key decreases the sowing rate by the rate increase (on page 19) (e.g.:-10%).

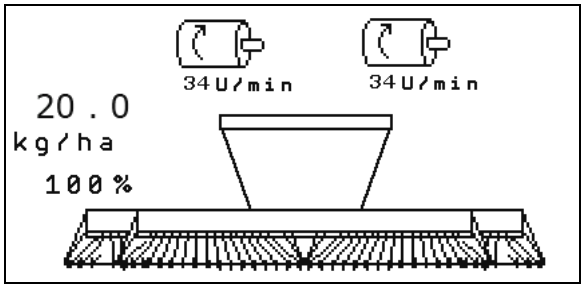


Fig. 49

The changed specified value is indicated in the work menu in kg/ha and per cent (Fig. 49)!

Functions 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).

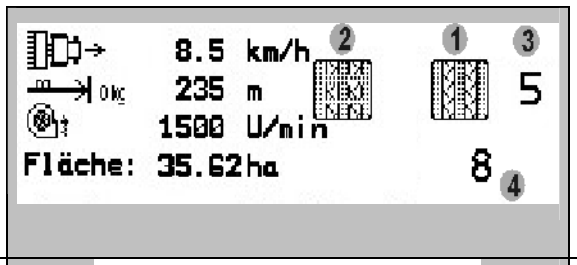
6.2 Displaying work menu

Speed-

Distance to refill-

Blower fan speed-

Worked area-



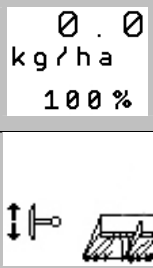
1. Tramline system active
2. Interval tramline system active
3. Tramline counter
4. Interrupt tramline rhythm/ STOP shifting on of tramline

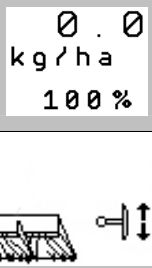
Metering unit 1

Speed

Specified quantity in Kg / ha

Percent





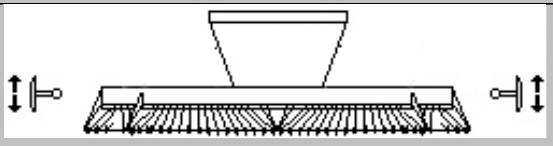
Metering unit **2** (option)

Speed

Specified quantity in Kg / ha

Percent

Track marker left active -



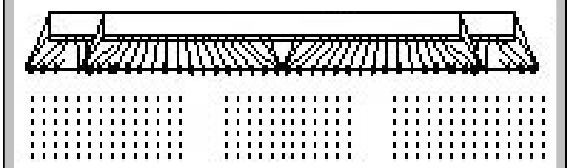
- Track marker right active

Work modes:

1. Machine receives no impulses from the distance sensor.

Dosing unit not running.

2. Machine receives impulses from the distance sensor.



Dosing unit running, machine in operational position

3. Machine receives impulses from the distance sensor.

SEED DRILL RAISED

Dosing unit not running, machine is raised.

Preselection of hydraulic functions

Current job -

- Open page in work menu.

6.3 Preselection for hydraulic functions

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. 50/1) are displayed in the work menu.

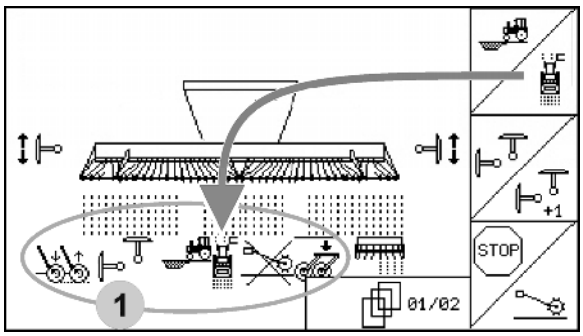
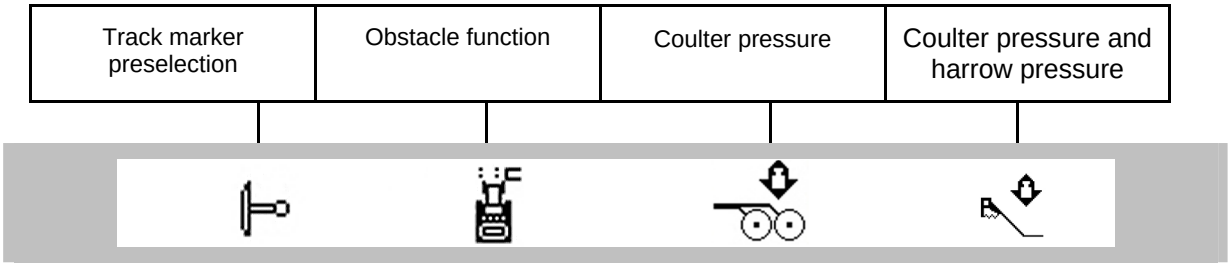
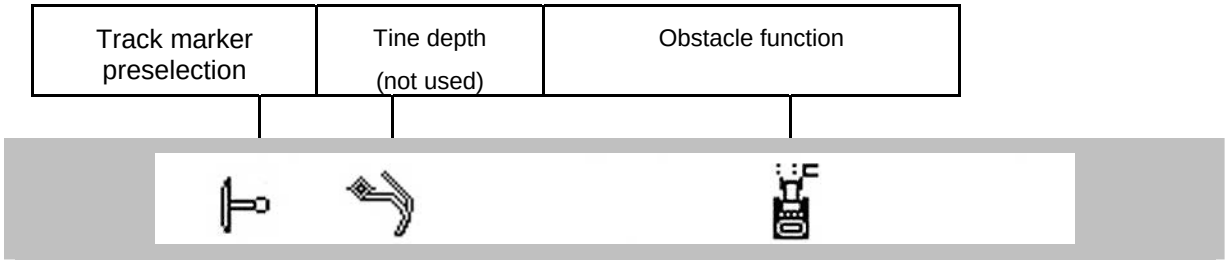


Fig. 50

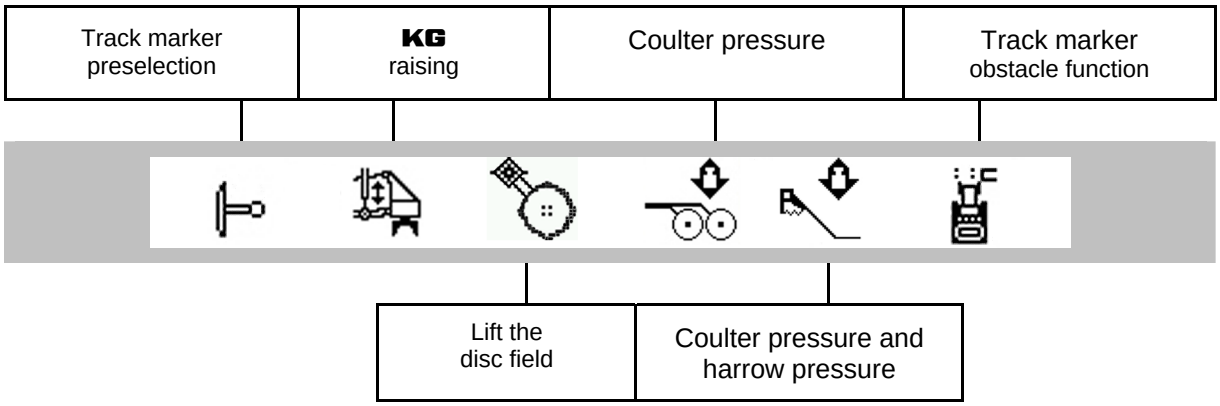
Preselection of hydraulic functions **Citan 6000**



Preselection of hydraulic functions **Cayena 6001**

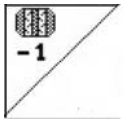
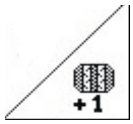


Preselection of hydraulic functions **Cirrus**



6.4 Functions in work menu

6.4.1 Tramline control

	**Switch back tramline counter**
	Switch forward tramline counter

The tramline counter switches when the machine is raised.

Fig. 51/...

(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 on

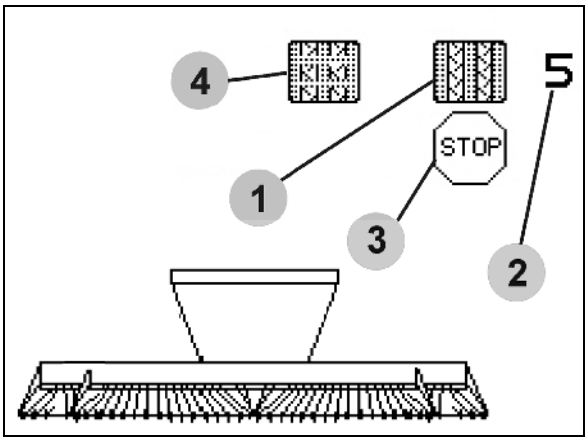
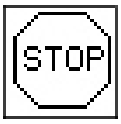


Fig. 51

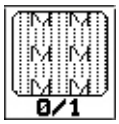
	**Suppress shift on of tramline counter**

1. Stop tramline counter.

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

2. 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:

Always left track marker

Always right track marker

Always both track markers

No track marker

Alternating mode left / right

(Active track marker automatically changes at headlands)

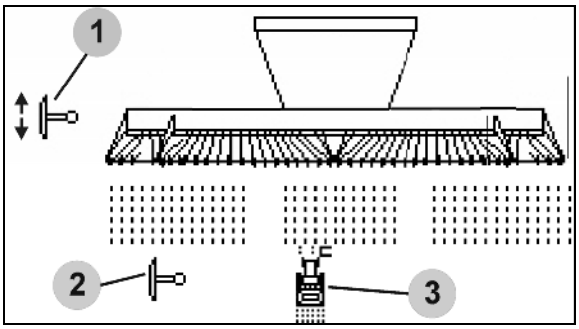
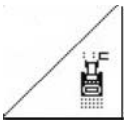


Fig. 52

- Display of active track marker (Fig. 52/1)
- Display of track marker preselection (Fig. 52/2)

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. 52/3).
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 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.

1. Start predosing.

→ The predosing provides the coulter with seed for a specified running period (Fig. 53).

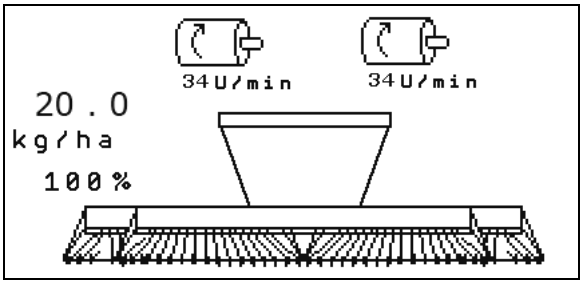
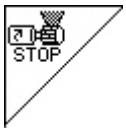


Fig. 53



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. 54: Display: the dosing unit is switched off.

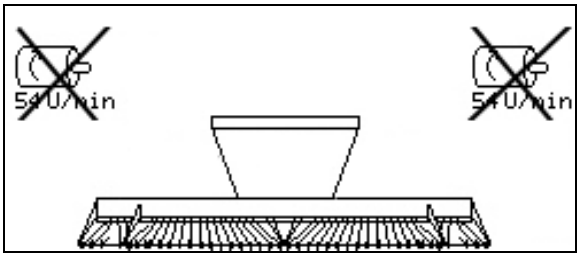
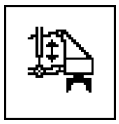


Fig. 54

6.4.4 KG



Set the KG working depth (Cirrus Aktiv)

1. Preselect KG (Fig. 55).
2. Operate tractor control unit 1.

→ Increase / reduce working depth.

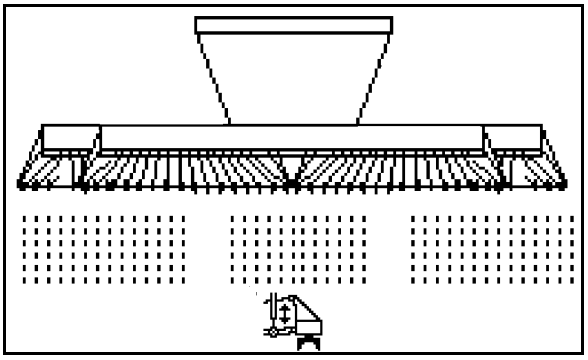


Fig. 55

6.4.5 Coulter pressure

Set increased / reduced coulter pressure (Cirrus, Citan)

1. Preselect coulter pressure (Fig. 57).
2. Operate tractor control unit 2.

→ Set increased pressure.

→ Set reduced pressure.

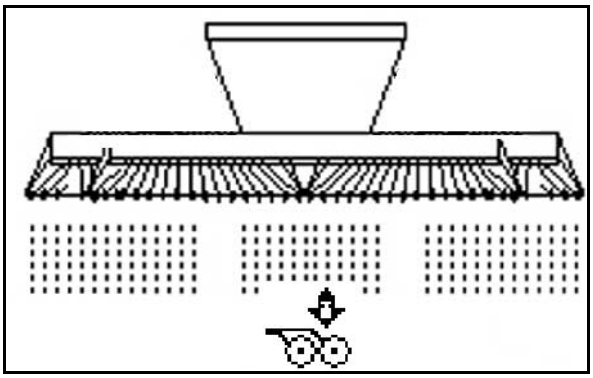
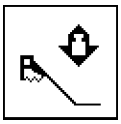
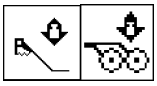


Fig. 56

6.4.6 Coulter pressure and harrow pressure



Set increased / reduced coulter and harrow pressure (Cirrus, Citan)

1.  Preselect coulter/harrow pressure (Fig. 57).
2. Operate tractor control unit 2.

→ Set increased pressure.

→ Set reduced pressure.

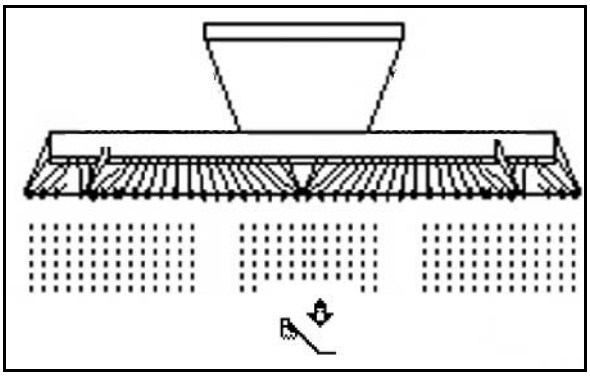


Fig. 57

6.4.7 Tine depth

Set the tine depth (Cayena, not used)

1. Pre-select the tine depth (Fig. 57).
2. Actuate tractor control unit 3.

→ Set a larger tine depth.

→ Set a smaller tine depth.

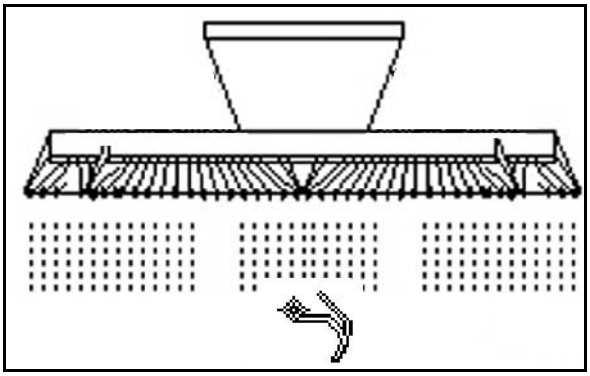


Fig. 58

6.4.8 Folding the machine

Fold the machine in / out

- Change to Folding submenu (Fig. 59).

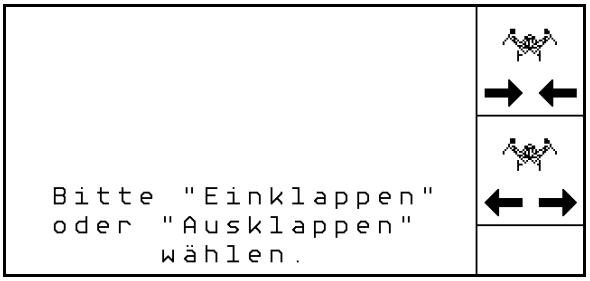


Fig. 59

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!

6.4.8.1 Folding Citan 6000

Folding out

1. Select folding out.
2. Operate control unit 1.

→ Lift the machine extension arm out of the transport locking mechanism.

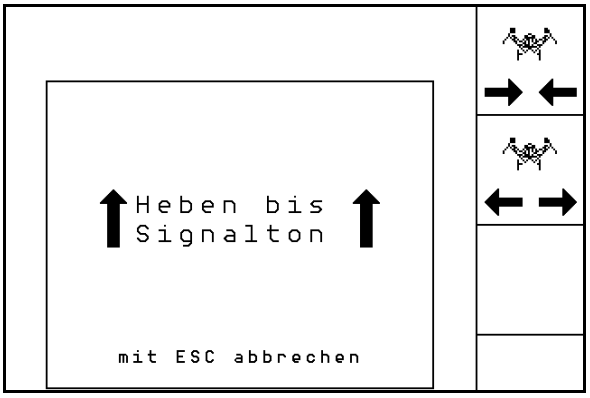


Fig. 60

3. Operate tractor control unit 2.

→ Extension arms fold out.

4. Confirm folding.
5. Operate control unit 1.

→ Lower the machine extension arm.

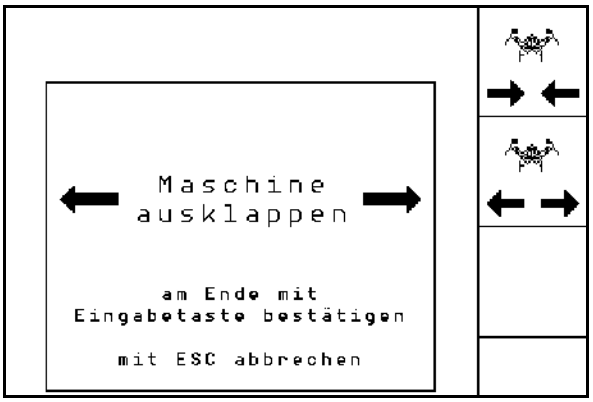


Fig. 61

Folding in

1. Select folding in.
2. Operate control unit 1 until the signal tone.

→ Lift the machine extension arm..

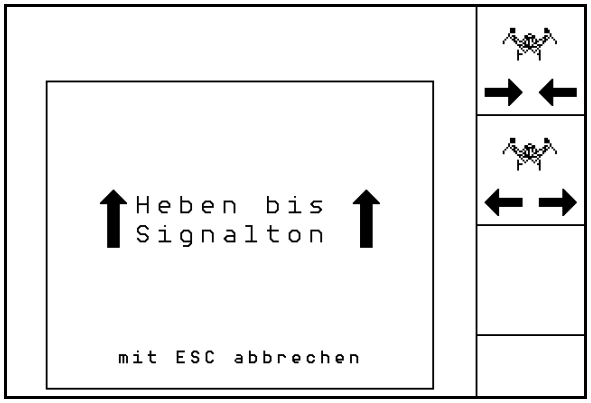


Fig. 62

3. Operate control unit 2.

→. Fold in the machine.

4. Confirm folding.
5. Operate control unit 1.

→ Lower the machine extension arm into the transport locking mechanism.

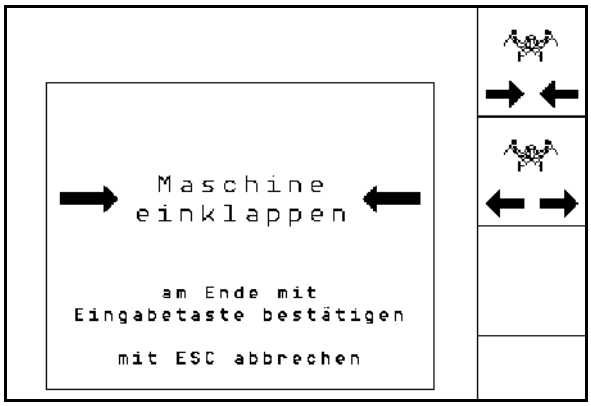


Fig. 63

6.4.8.2 Folding Cayena 6001/Cirrus

Folding out

1. Select folding out.
2. Operate control unit 1 until the signal tone.

→ Raise the machine.

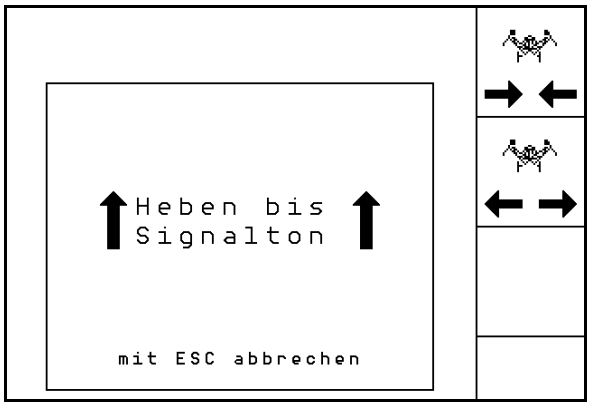


Fig. 64

3. Operate control unit 2.

→ Extension arms fold out.

4. Cirrus Aktiv: Also operate control unit 3.

→ KG folds out.

5. Confirm folding.

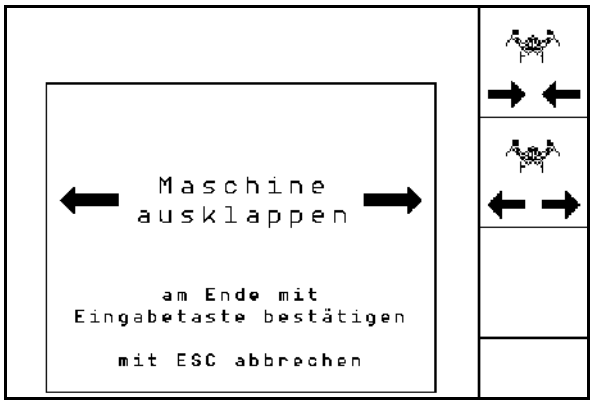


Fig. 65

Folding in

1. Select folding in.
2. Operate control unit 1 until the signal tone.

→ Raise the machine.

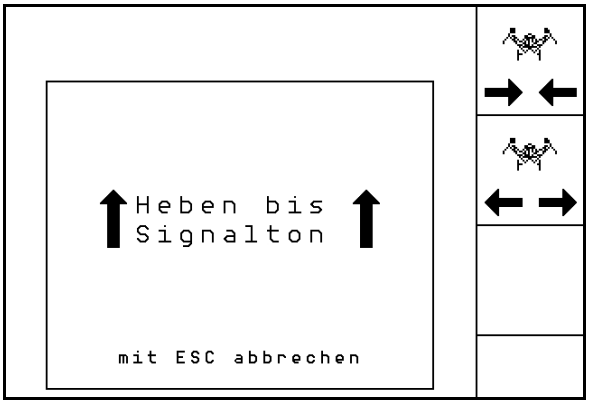


Fig. 66

3. Operate control unit 2.

→. Fold in the machine.

4. Cirrus Aktiv: Also operate control unit 3

→ KG folds in.

5. Confirm folding.

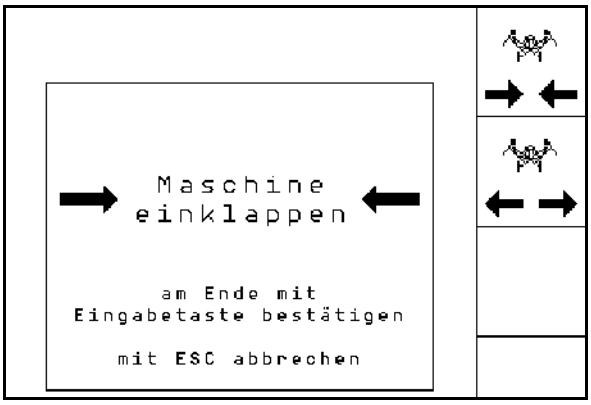


Fig. 67

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 Storage

Store the board computer in a dry environment when removing it from the tractor cab.

6.6 Procedure for use

1.

Switch on the **AMATRON+**.
2. Create / select a job and check the settings.
3.

Start the job.
4.

Select the work menu.
5. Foldable machine: Fold out the booms.
6. Lower the desired track marker.
7. Check the displayed tramline counter for the first field run and correct as necessary.
8. Start the sowing.
9. After approx. 30 m, stop and check the sowing.

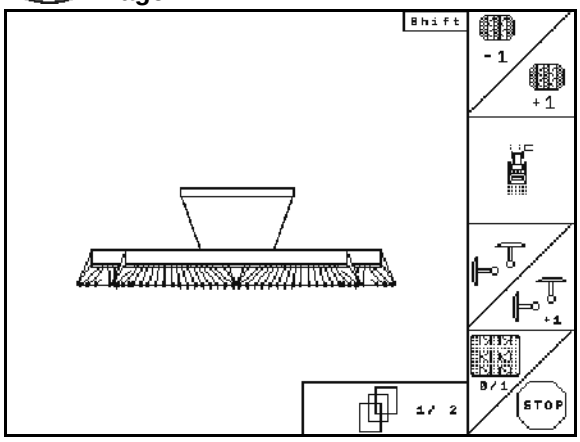
During the sowing, the **AMATRON+** shows the work menu. From here, all functions relevant to the sowing procedure can be actuated.

→ The data determined are stored for the started job.

6.7 Key assignment in work menu Citan 6000

Description of the function fields:

Page 1:

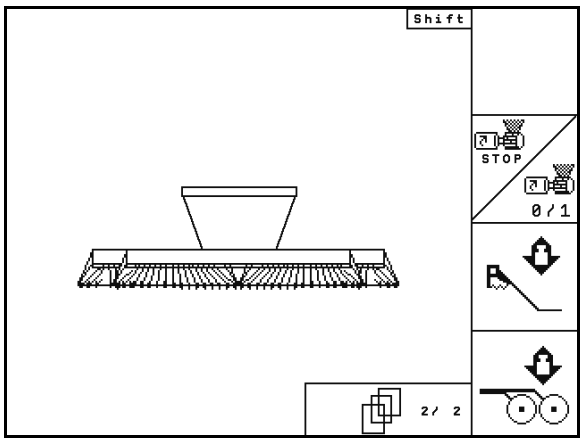


See section	
6.4.1	Tramline control
6.4.2	Markers – obstacle function
6.4.2	Markers
6.4.1	Tramline control

Shift key pressed

6.4.8	Folding the machine

Page 2:



6.4.3	Electric full dosing
6.4.6	Coulter pressure and harrow pressure
6.4.5	Coulter pressure

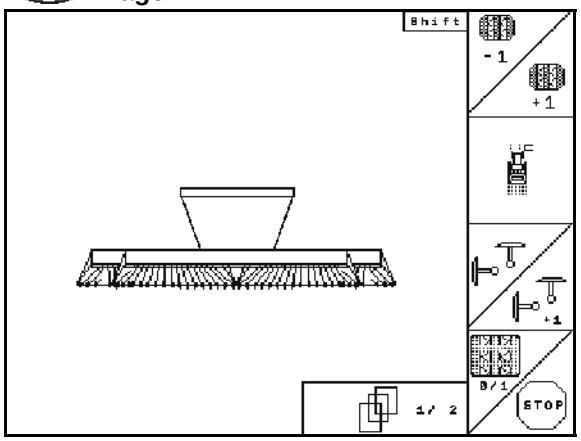
Shift key pressed

6.4.9	Information on full dosing

6.8 Key assignment in work menu Cayena 6001

Description of the function fields:

Page 1:

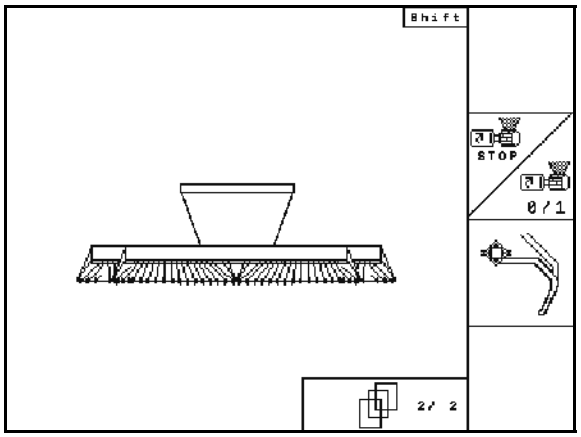


See section	
6.4.1	Tramline control
6.4.2	Markers – obstacle function
6.4.2	Markers
6.4.1	Tramline control

Shift key pressed:

6.4.8	Folding the machine

Page 2:



6.4.3	Electric full dosing
6.4.7	Tine depth

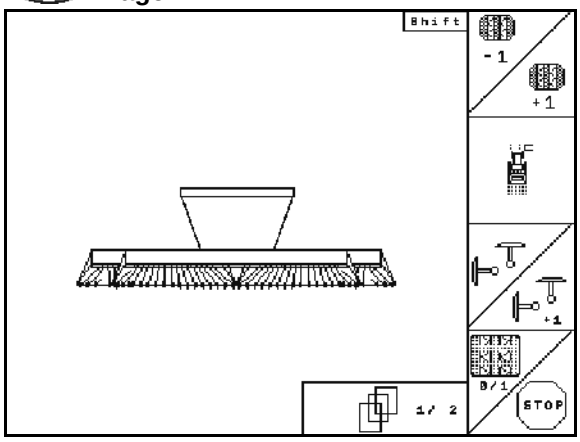
Shift key pressed:

6.4.9	Information on full dosing

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

Description of the function fields:

Page 1:

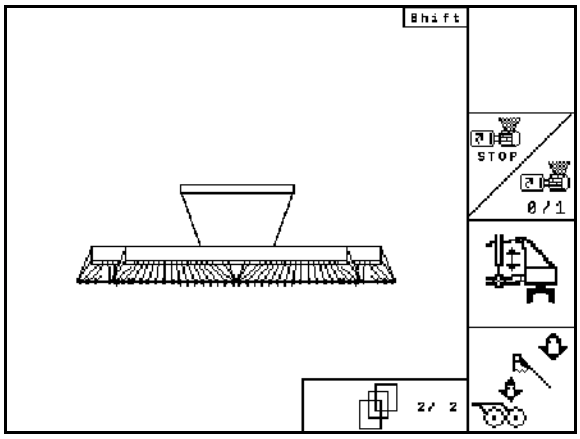


See section	
6.4.1	Tramline control
6.4.2	Markers – obstacle function
6.4.2	Markers
6.4.1	Tramline control

Shift key pressed:

6.4.8	Folding the machine

Page 2:



6.4.3	Electric full dosing
6.4.4	**KG**
6.4.6 6.4.5	Coulter pressure and harrow pressure Coulter pressure

Shift key pressed:

6.4.9	Information on full dosing

7 Multi-function stick

7.1 Installation

The multi-function stick (Fig. 68/1) 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. 68/2).

Insert the connector (Fig. 68/3) of the multi-function stick into the centre Sub-D-bushing of the **AMATRON+**.

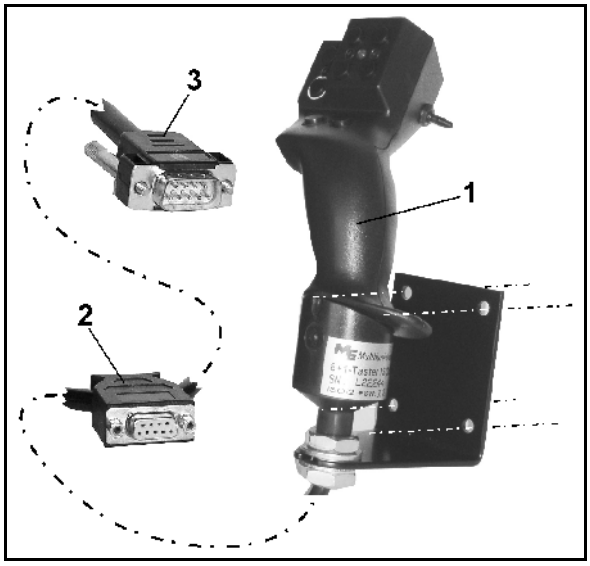


Fig. 68

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 multi-function stick (Fig. 69) has 8 keys (1 - 8) available. In addition, the assignment of the keys can be changed 3-fold by means of a switch (Fig. 70/2) .

The switch default position is

- central position (Fig. 69/A) and can be pressed
- up (Fig. 69/B) or
- down (Fig. 69/C)

The position of the switch is indicated by an LED lamp (Fig. 69/1) angezeigt.

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

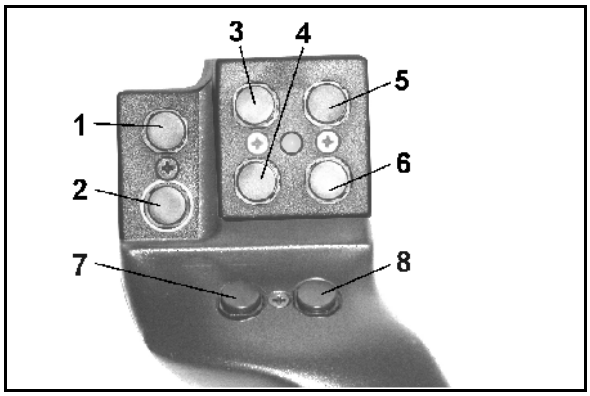


Fig. 69

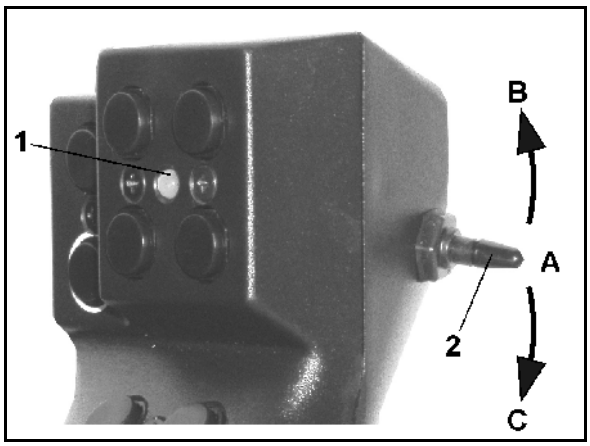
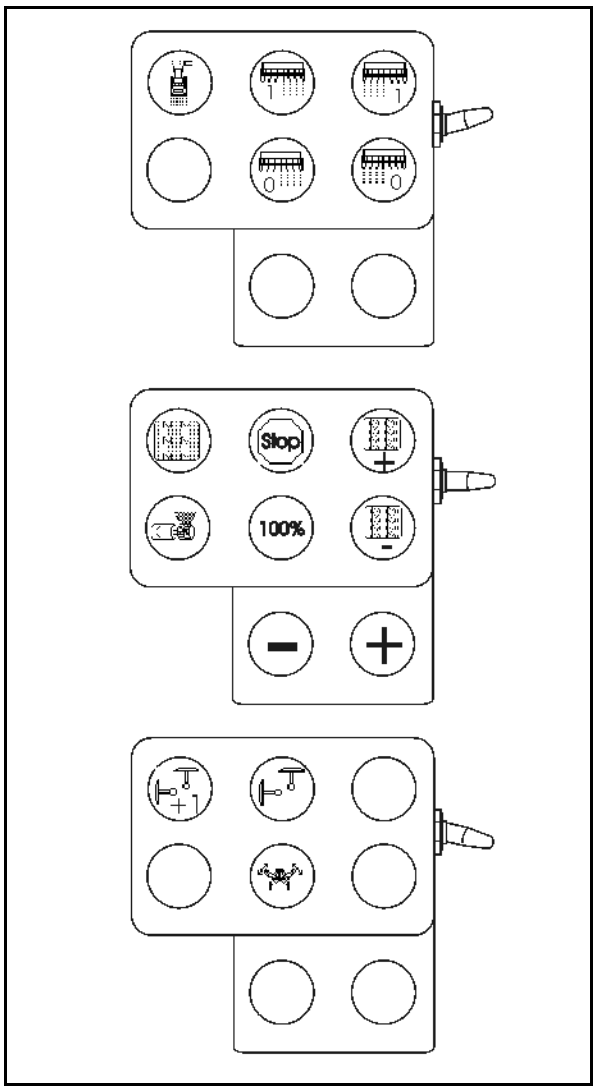


Fig. 70

7.3 Assignment of multi-function stick



8 Malfunction

8.1 Alarm

Uncritical alarm:

A fault message (Fig. 71) 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..

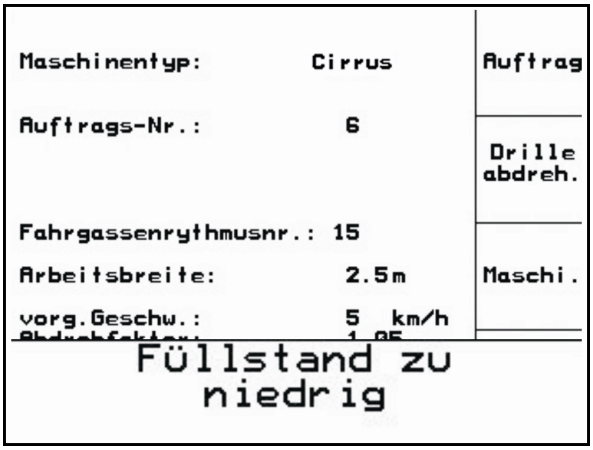


Fig. 71

Critical alarm:

A warning message (Fig. 72) appears in the middle of the display and an acoustic alarm is given.

1. Read the warning message on the display.
2. Confirm the warning message.

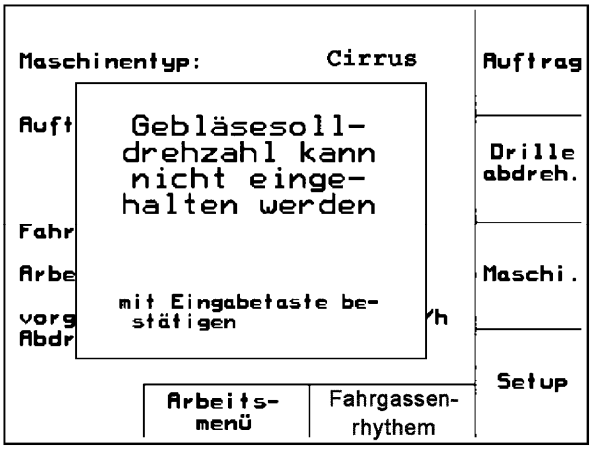


Fig. 72

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.

1. [Setup] Actuate from the main menu.
2. [km/h sim.] Enter a simulated speed.

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

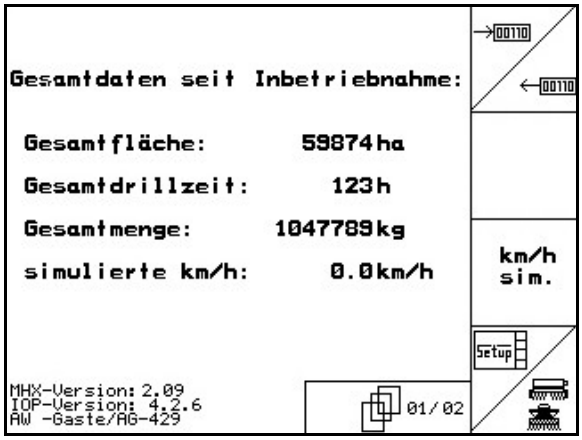


Fig. 73

AMAZONEN-WERKE

H. DREYER GmbH & Co. KG

Postfach 51
D-49202 Hasbergen-Gaste
Germany

Tel.: + 49 (0) 5405 501-0
Telefax: + 49 (0) 5405 501-234
e-mail: amazone@amazone.de
http:// www.amazone.de

Plants: D-27794 Hude • D-04249 Leipzig • F-57602 Forbach
Branches in England and France

Manufacturers of mineral fertiliser spreaders, field sprayers, seed drills, soil cultivation machines, multipurpose warehouses and communal units