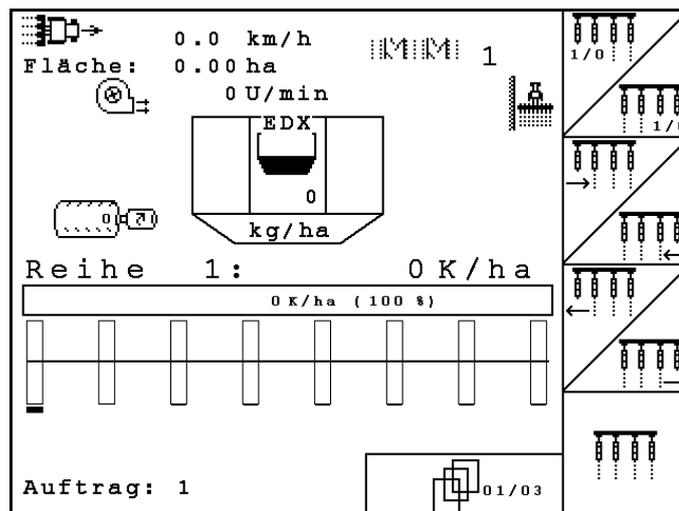


Operating Manual

AMAZONE

Software **AMABUS**

EDX



MG4676
BAG0118.4 03.16
Printed in Germany

en

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



Reading the instruction

Manual and following it should seem to be inconvenient and superfluous as it is not enough to hear from others and to realize that a machine is good, to buy it and to believe that now everything should work by itself. The person in question would not only harm himself but also make the mistake of blaming the machine for possible failures instead of himself. In order to ensure success one should enter the mind of a thing, make himself familiar with every part of the machine and get acquainted with how it's handled. Only in this way could you be satisfied both with the machine and with yourself. This goal is the purpose of this instruction manual.

Leipzig-Plagwitz 1872. Rud. Stark.

Formalities of the operating manual

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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 any questions or problems, please consult this operating manual or contact your local service partner.

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.

AMAZONEN-WERKE

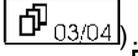
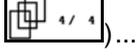
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1	User Information.....	6
1.1	Purpose of the document.....	6
1.2	Locations in the operating manual.....	6
1.3	Diagrams used.....	6
2	General Safety Instructions.....	7
2.1	Representation of safety symbols.....	7
3	Product description	8
3.1	Entries on AMATRON 3.....	9
3.2	Software version.....	9
3.3	Hierarchy of the software.....	10
4	Commissioning	11
4.1	Main menu.....	11
4.2	Starting a job.....	12
4.3	Perform calibration test for fertiliser / micropellets.....	17
4.3.1	Calibrating machines with remote control on Vario gearbox (EDX 9000-TC).....	18
4.3.2	Calibrating machines with electric full dosing (EDX 6000 / 6000-T).....	20
4.4	Fertiliser residual emptying (not for EDX 9000-TC).....	22
4.5	Checking the optosensors.....	23
4.6	Machine data entry.....	23
4.6.1	Calibrating distance sensor (machine data ).....	24
4.7	Setup menu.....	26
4.7.1	Configure the row deactivation.....	29
4.7.2	Setting light barriers (basic data ).....	30
4.7.3	Working position sensor (basic data ).....	31
4.7.4	Configure fertiliser dosing (basic data ).....	32
4.7.5	Configuring the micropellet spreader (basic data ).....	33
4.8	Geometry data for implement menu.....	34
4.9	GPS switch settings.....	34
5	Use on the field.....	35
5.1	Specified quantity adjustment.....	35
5.2	Preselection for hydraulic functions.....	35
5.3	Displaying work menu.....	36
5.4	Mini-view in the GPS switch.....	37
5.5	Functions in work menu.....	38
5.5.1	Tramlines.....	38
5.5.2	Permanent tramlines.....	40
5.5.3	Single-row switch-off.....	41
5.5.4	Track marker.....	42
5.5.5	Star wheel EDX 9000-TC.....	44
5.5.6	Folding the machine (EDX 6000-T, EDX 9000-T).....	45
5.5.7	Setting sowing coulter pressure.....	47
5.5.8	Setting fertiliser coulter pressure.....	47
5.5.9	Fertiliser metering.....	48
5.5.10	Seed dosing.....	49
5.5.11	Work lights front tank.....	49
5.5.12	Display Blower fan speed for fertiliser dosing / seed dosing.....	50
5.5.13	Selectable display, air pressure in seed dosing unit / Speed of dosing unit.....	50
5.5.14	Scraper of seed dosing unit.....	51
5.5.15	Micropellet spreader.....	52



5.6	Procedure for use	54
5.6.1	Work menu key assignment.....	55
6	Multi-function stick / AmaPilot.....	61
6.1	Learn menu	61
6.2	AmaPilot.....	62
6.3	Multifunction stick.....	65
6.4	Key layout:	66
7	Maintenance	67
7.1	Gearbox calibration.....	67
7.2	Programming the light barriers.....	68
8	Alarms and messages	69
9	Malfunction.....	76
9.1	Failure of the distance sensor.....	76
9.2	Switching off defective light barrier	77
9.3	Switch off defective pressure sensor	77

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 item numbers in 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 Product description

AMAZONE machines are easy to control, operate and monitor when using the AMABUS software and the in-cab terminal AMATRON 3.

Main menu (Fig. 1)

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

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

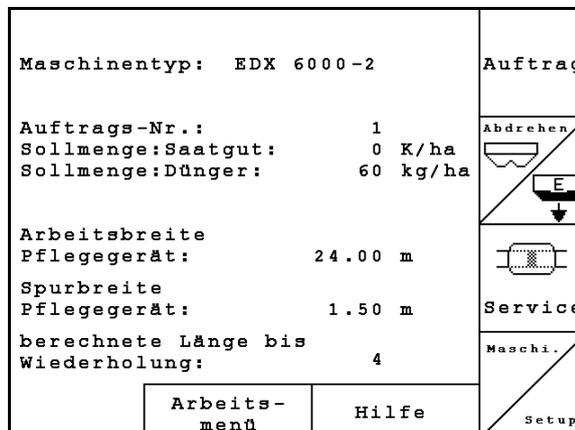


Fig. 1

Work menu (Fig. 2)

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

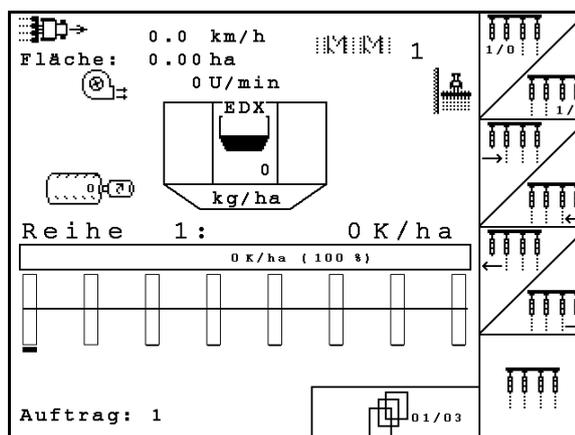


Fig. 2

3.1 Entries on AMATRON 3



In this operating manual, the function fields are shown with the following function description in order to make clear that the key for the respective function field must be actuated.

Example: function field :

Description in the operating manual:



Carry out function A.

Operating procedure:

Actuate the key (Fig. 3/1) assigned to the function field to carry out function A.

3.2 Software version

This operating manual is valid from software version:

Machine: MHX version: 5.31

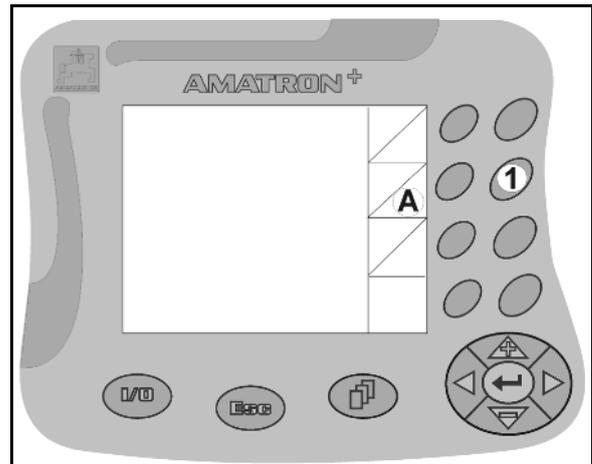
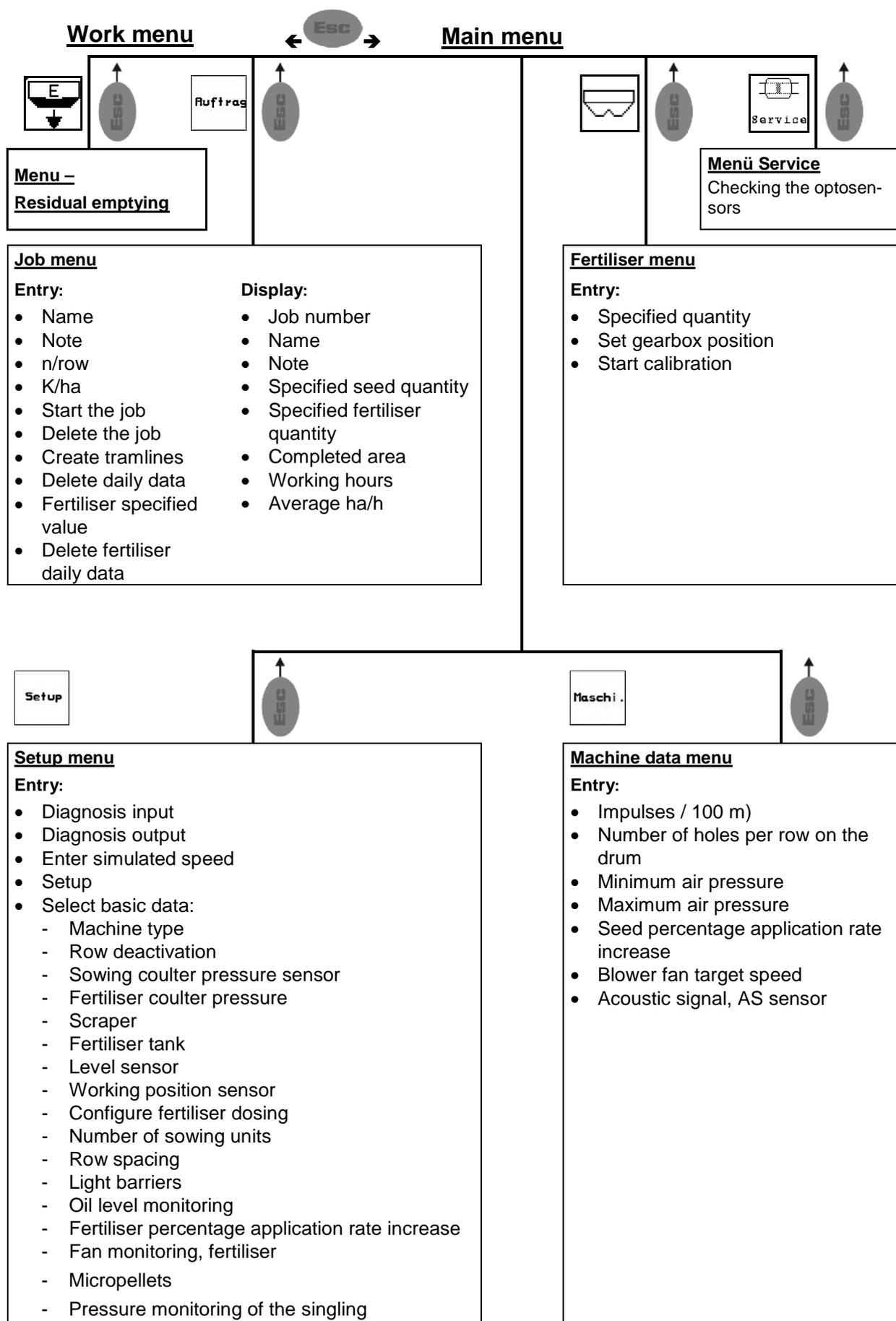


Fig. 3

3.3 Hierarchy of the software



4 Commissioning

4.1 Main menu

 Job menu: Entry of data for a job. Before commencement of sowing, start the job (see Seite 12).

 Fertiliser calibration test menu (see page 17).

 Residual emptying

 Optosensor check menu (see page 23)

 Machine data menu: Entry of machine-specific or individual data (see Seite 23).

 Setup menu: Entry and readout of data for Customer Service in event of maintenance or malfunction and entry of basic data(see page 26).

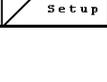
Maschinentyp: EDX 6000-2	Auftrag
Auftrags-Nr.: 1	Abdrehen
Sollmenge:Saatgut: 0 K/ha	
Sollmenge:Dünger: 60 kg/ha	
Arbeitsbreite	Service
Pflegegerät: 24.00 m	
Spurbreite	Maschi.
Pflegegerät: 1.50 m	
berechnete Länge bis	Setup
Wiederholung: 4	
Arbeitsmenü	Hilfe

Fig. 4

4.2 Starting a job



When using the TaskController for job management, it is shown as an external job.

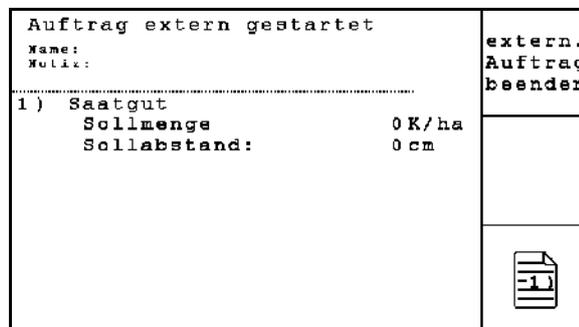
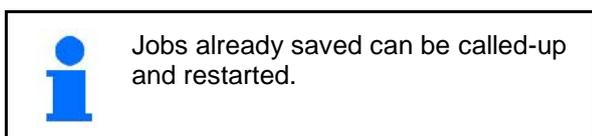


Fig. 5

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.



- Page back through job.
- Page forward through job.
- Delete job; all data for this job will be deleted.
- Start job so that the data accumulated for this job is stored.
- Call up seed overview
- Call up fertiliser overview
- Call up tramline control overview

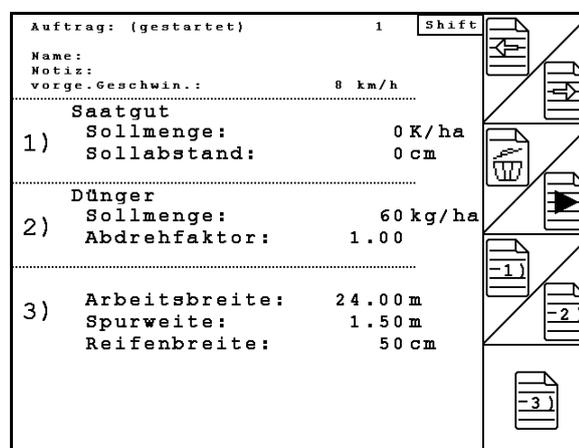


Fig. 6

Shift key depressed  :



- Copy seed, fertiliser or tramline data of the started job into a new overview.

The job menu is divided into three submenus.

- (1) Seed overview
- (2) Fertiliser overview
- (3) Tramline control overview

The name of the job and a note can be entered in each overview.



- Enter name.



- Enter note.

- (1) Seed overview:



- Enter target quantity of seed in grains per hectare.



- Enter spacing of grains.



- Display grains per row.

ausgeb. Menge:		
Reihe 1:	0.0TK	
Reihe 2:	0.0TK	
Reihe 3:	0.0TK	
Reihe 4:	0.0TK	
Reihe 5:	0.0TK	
Reihe 6:	0.0TK	
Reihe 7:	0.0TK	
Reihe 8:	0.0TK	



- o Delete grains per row.



- Delete trip data - seed.



Fig. 7

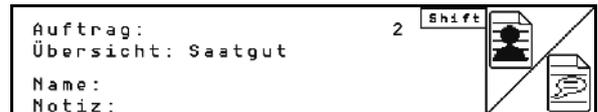


Fig. 8

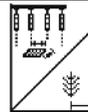
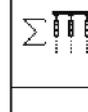
Sollmenge:	0 K/ha	
Sollabstand:	0 cm	
Gesamtdaten		
Menge:	0.0 TK	
Fläche:	0.0 ha	
Zeit:	0.0 h	
Durchschnitt:		0.0 ha/h
Tripdaten		
Menge:	0.0 TK	
Fläche:	0.0 ha	
Zeit:	0.0 h	

Fig. 9

Commissioning

(2) Fertiliser overview



- Enter target quantity of fertiliser in kg per hectare.

The desired target quantity can be entered even for a manual specified quantity setting.

For correct calculation of fertiliser data, the target quantity must correspond to the quantity set on the gearbox.



- Enter the calibration factor.

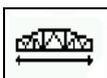


- Enter the intended speed.



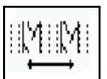
- Delete fertiliser trip data

(3) Tramline overview



- Enter the working width of the care device.

→ Enter 0 here in case no tramlines should be created.



- Select the track width of the care device according to the selection mask.



- Enter the care device tyre width.



- Start operating with complete or half working widths.

→ Can be selected depending on the working width of the care device and EDX.

Starting operation at half a working width prevents the creation of the tramline when driving back and forth.



- Select field edge left or right when starting work.

→ The number of runs until the tramline rhythm is repeated is displayed.

Sollmenge:	70 kg/ha	
Abdrehfaktor:	1.00	
vorge. Geschwin.:	8 km/h	
Gesamtdaten		
Menge:	0 kg	
Fläche:	0.0 ha	
Zeit:	0.0 h	
Durchschnitt:	0.0 ha/h	
Tripdaten		
Menge:	0 kg	
Fläche:	0.0 ha	
Zeit:	0.0 h	

Fig. 10

Pfleegerät		
Arbeitsbreite: (reale Arbeitsbreite: 24.00m)	24 m	
Spurweite:	1.50 m	
Reifenbreite:	50 cm	
----- EDX -----		
Beginn mit:	voller Maschinenbreite	
Feldrand bei erster Sägasse:	links	
Anzahl Reihen:	8	
Abstand Reihen: (reale Arbeitsbreite: 6.00m)	75.0 cm	
Fahrten EDX bis Wiederholung:	4	

Fig. 11



If it is not possible to calculate a tramline rhythm from the entries for the care device and EDX, you will have to accept an overlap or an intermediate section that is not processed when using the care device.



- Selection for the driving performance of the care device
 - o drive with unworked intermediate space
 - o drive with overlapping

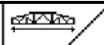
Pfleegerät		
Arbeitsbreite: (reale Arbeitsbreite: 31.50m)	31 m	
Spurbreite:	1.50 m	
Fahrverhalten:	mit Zwischenraum fahren	
Reifenbreite:	50 cm	

Fig. 12

→ The deviating actual working width of the care device is displayed.



- A permanent deactivation, deactivation only for the sowing lane and creation of tramlines can be combined as required.
- When creating tramlines or deactivating rows, no seed is supplied to the deactivated rows.
- The spreading of fertiliser will not be influenced by the creation of tramlines or deactivation of single rows.



Data entered for the tramline are displayed in the main menu:

- Entered working width of the care device
- Track width of the care device
- The number of runs until repeating the tramline rhythm (the value can be greater than 100).

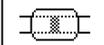
Maschinentyp:	EDX9000-T	Auftrag
Auftrags-Nr.:	1	
Sollmenge	0 K/ha	
Arbeitsbreite Pfleegerät:	24.00m	Service
Spurbreite Pfleegerät:	1.80m	Maschi.
berechnete Länge bis Wiederholung:	8	Setup
	Arbeits- menü	
	Hilfe	

Fig. 13

Commissioning

Overview (1), (2), (3)

Shift key depressed  :

-  Copy seed, fertiliser or tramline data of the started job into a new overview (except trip data).
-  Page back through job.
-  Page forward through job.
-  Delete job; all data for this job will be deleted.
-  Start job so that the data accumulated for this job will be stored.

Auftrag: (gestartet) 1		Shifc
Übersicht: Saatgut		
Name:	uuuu	
Notiz:		
Sollmenge:	88000	K/ha
Sollabstand:	15	cm
Gesamtdaten		
Menge:	0.0	TK
Fläche:	0.0	ha
Zeit:	0.0	h
Durchschnitt:	0.0	ha/h
Tripdaten		
Menge:	0.0	TK
Fläche:	0.0	ha
Zeit:	0.0	h

Fig. 14

4.3 Perform calibration test for fertiliser / micropellets

The calibration test checks whether the specified quantity is correct during later work.

The calibration test must always be carried out

- when changing products
- if there are any differences between the calibration test and actual spread rate.
- After changing the settings

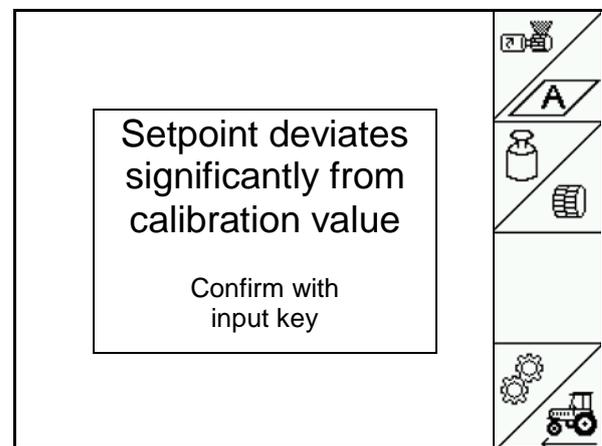
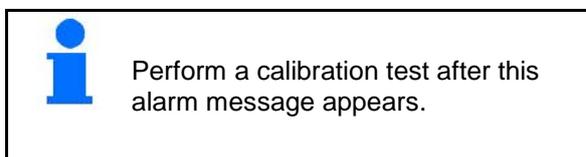


Fig. 15

4.3.1 Calibrating machines with remote control on Vario gearbox (EDX 9000-TC)

Calibration table:

- (1) Fertiliser hopper EDX
- (2) A for fertiliser
- (3) Target quantity
- (4) Size of the metering roller in ccm

Default value: 700

- (5) Calibration factor, indicates successful calibration
- (6) Speed that can be implemented for the adjustment
- (7) Intended forward speed from the job menu



- Call up the setting menu.



- Start calibration

1	2	3	4	5	6	7
					Min. ↓ Max.	
		kg/ha	ccm		km/h	8 km/h
1	A	100	700	29.4 <input checked="" type="checkbox"/>	3.0 ↓ 20.0	

Fig. 16

Prepare the calibration test according to the machine operating manual!



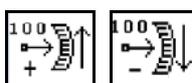
Carry out the settings:

- Select the theoretical area that should be worked during the calibration procedure.
- Enter desired quantity.
- Metering roller size

Einstellungen Behälter 1		
Behälter:	aktiviert	
Abdrehfläche:	1/40 ha	
Sollmenge:	100 kg/ha	
Dosierwalze:	700 ccm	
Reihenfolge:	gleichzeitig	
Sorte:	A	
Getriebeposition:	29.4	

Fig. 17

The target quantity can also be entered in the job menu (see page 18).



- Set gearbox to position.

The gearbox setting displayed on the AMATRON 3 must correspond to the value indicated on the scale.
Otherwise the gearbox must be calibrated (see page 18)

Carry out the calibration test:

1.  Back to the calibration table.
2. Rotate the star wheel with the calibration crank as described in the machine operating manual in the direction of travel until all the chambers of the dosing wheels are filled with fertiliser and an even flow to the collection bucket(s) is achieved
3. Empty the collection bucket.

4.  Start the calibration test.

5. Turn the star wheel with the crank, as described in the machine operating manual, until the acoustic signal is sounded.

Further rotations after the acoustic signal are taken into consideration by the AMATRON 3 for its calculation.

6.  Terminate the calibration process.
7. Weigh the quantity caught in the collection bucket(s) (take tank 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 3 calculates and sets the required gearbox position using the data entered from the calibration test.

Repeat the calibration process to check the correct setting.

 When repeating the calibration, use the newly determined gearbox setting (do not go to gearbox position 50)!

					Min. ↓ Max.	
		kg/ha	ccm		km/h	8 km/h
1	A	200	500	72.7 	3.0 ↓ 20.0	 

Fig. 18

4.3.2 Calibrating machines with electric full dosing (EDX 6000 / 6000-T)

Calibration table:

- (1) Fertiliser hopper EDX
- (2) A for fertiliser
B for micropellets on the left
C for micropellets on the right
- (3) Target quantity
- (4) Size of the metering roller in ccm

Default value: 660

- (5) Calibration factor,
 indicates successful calibration
- (6) Speed that can be implemented for the adjustment
- (7) Intended forward speed from the job menu



- Call up the setting menu.



- Start calibration

→ The calibration procedure can be cancelled after 10 seconds (calibration data is determined) and the work can be started.

1	2	3	4	5	6	7
					Min. ↓ Max.	
		kg/ha	ccm		km/h	8 km/h
1	A	200	660	1.80 <input checked="" type="checkbox"/>	3.0 ↓ 20.0	

Fig. 19

Prepare the calibration test according to the machine operating manual!



Carry out the settings:

- Select the theoretical area that should be worked during the calibration procedure.
- Enter desired quantity.
- Metering roller size.

Einstellungen Behälter 1		
Behälter:	aktiviert	
Abdrehfläche:	1/40 ha	
Sollmenge:	200 kg/ha	
Dosierwalze:	660 ccm	
Reihenfolge:	gleichzeitig	
Sorte:	A	
Abdrehfaktor:	1.80	
vorge.Geschwin.:	8 km/h	

Fig. 20

The target quantity can also be entered in the job menu (see page 20).

-  Enter the calibration factor (1.00 default value before calibration)
-  Enter the Intended forward speed.

Carry out the calibration test::

-  Fill the cells of the dosing roller with the pre-dosing. The running time is adjustable (see Seite 28).
- Empty the collection bucket.
-  Back to the calibration table.

					Min. ↓ Max.	
		kg/ha	ccm		km/h	8 km/h
1	A	200	660	1.00 <input type="checkbox"/>	3.0 ↓ 20.0	

Fig. 21

-  Start the calibration test.
- The electric motor doses the calibration quantity to the collection bucket until the acoustic signal is sounded.
- Weigh the quantity caught in the collection bucket(s) (take tank weight into consideration) and enter the weight (kg) in the terminal.

					Min. ↓ Max.	
		kg/ha	ccm		km/h	8 km/h
1	A	200	660	1.00 <input type="checkbox"/>	3.0 ↓ 20.0	

Abdrehvorgang läuft, mit ESC abbrechen oder mit Eingabetaste bestätigen



0.006 ha
1.334 kg

#2073

Fig. 22

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

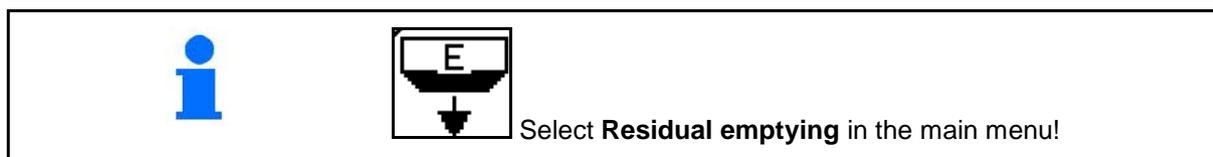
The AMATRON 3 calculates the required calibration factor on the basis of the data entered from the calibration test and sets the electric motor to the correct speed.

 Repeat the calibration process to check the correct setting.

					Min. ↓ Max.	
		kg/ha	ccm		km/h	8 km/h
1	A	200	660	1.00 <input checked="" type="checkbox"/>	3.0 ↓ 20.0	

Fig. 23

4.4 Fertiliser residual emptying (not for EDX 9000-TC)



When the metering shaft is rotating, fertiliser residues can be conveyed out of the tank through the opened injector:

1. Stop the implement.
2. Switch off the blower fan.



Fertiliser



Micropellets on the left



Micropellets on the right.

3. Secure the tractor and implement against unintentional rolling.
4. Open the rotary shutter of the injector.
5. Place the container under the metering unit / mount the calibration trough.



6. Start emptying, keep the button pressed until the emptying is completed or the tank is full.

→ The running emptying is displayed on the terminal.

7. After emptying, close the rotary shutter of the injector.



Fig. 24

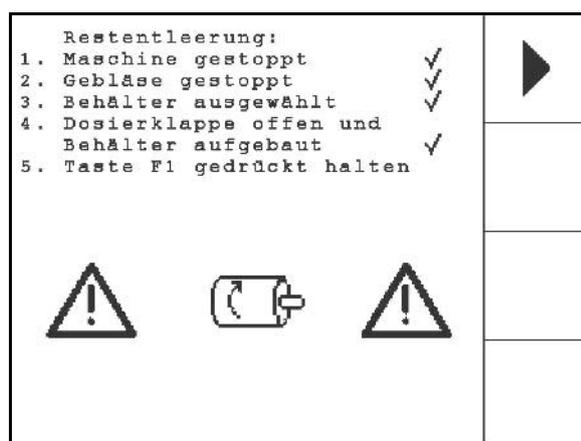


Fig. 25

4.5 Checking the optosensors



The optosensors are integrated in the dosing nozzles.

To check the optosensors:

1. Detach the seed hoses from the dosing nozzle.
 2. Insert an object into the dosing nozzle.
- AMATRON 3 indicates the respective row (numbers starting from left).
3. Check all optosensors
 4. Refit the seed hoses.

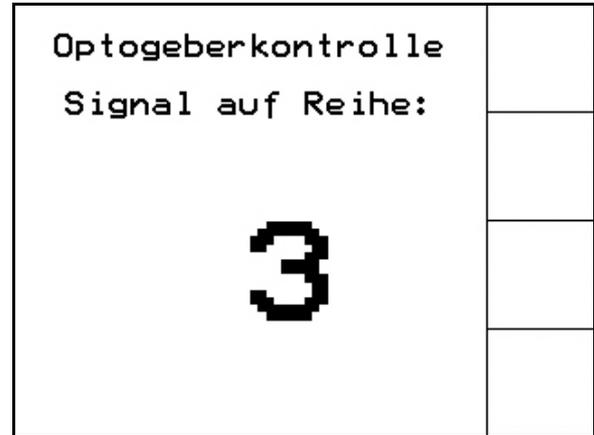


Fig. 26

4.6 Machine data entry



Page 1 01/03 in machine data menu (Fig. 27):

- Imp/100m** Calibrate the distance sensor (see Seite 24).
- Bohrung** Enter number of holes per row on the drum
 If 200 is entered (for fine seed), the sensitivity of the opto-sensor is adapted automatically.
- min.** Entry of minimum pressure in dosing
 Standard value: 45 mbar
- max.** Entry of maximum pressure in dosing
 Standard value: 60 mbar

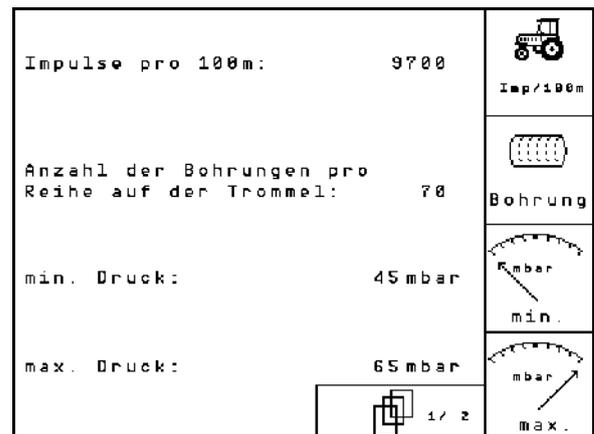


Fig. 27

Page 2 in machine data menu (Fig. 28):

- Entry of percentage application rate increase in % for seed.
 - o Value for percentage rate change.
 - o During work, set with , .
- Entry of percentage application rate increase in % for fertiliser.
 - o Value for percentage rate change.
- Take over the current blower speed as blower fan target speed
or
- Entering the blower fan target speed
- Acoustic signal for the condition change of the working position sensor
 - o On / Off

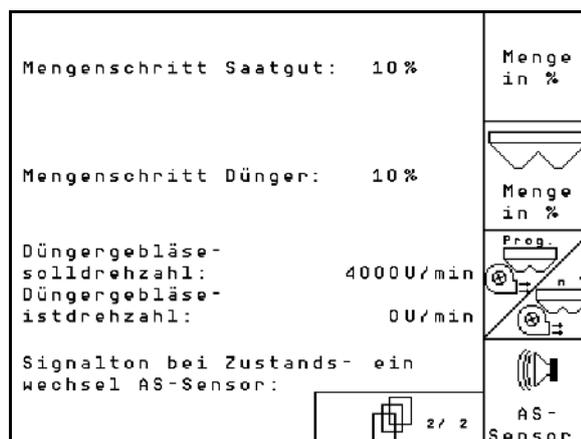


Fig. 28

4.6.1 Calibrating distance sensor (machine data)

To set the seed rate calibration value and to record the area cultivated or to determine the forward speed, the AMATRON 3 needs the impulses of the seed drill wheel over a calibration distance of 100 m.

The value Impulses/100m is the number of impulses received by the AMATRON 3 during the measuring travel of the seed drill drive wheel.

The slippage of the seed drill drive wheel may change during work on a different soil (e.g. from heavy to light soil), which also results in a change of the value Impulses/100m.

The value Impulses/100m must be determined:

- before initial use
- in event of different soils (wheel slippage)
- 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 determined value Impulses/100m can be entered during subsequent work in the same box in the table (see Fig. 31).

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

- 
 The value is known (see Fig. 31) and is entered manually on the AMATRON 3.
- 
 The value is not known and is determined by travelling a calibration distance of 100 m.

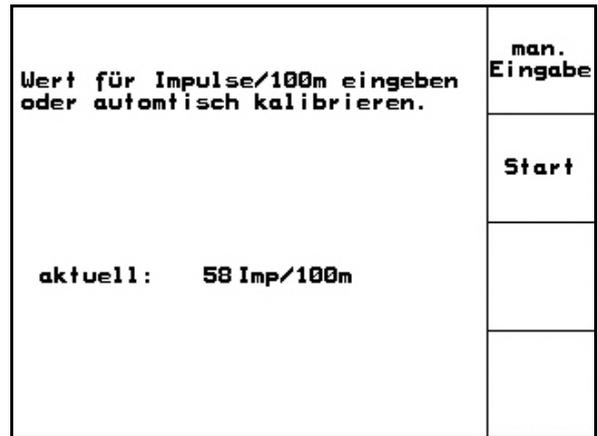


Fig. 29

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. 30).

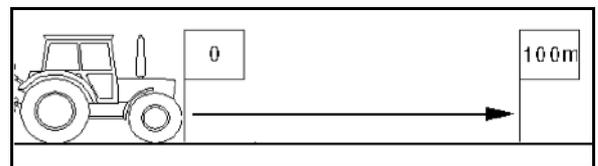


Fig. 30

- 
 Start the calibration.
- All metering devices are automatically switched off.
- 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 numbers of determined impulses are now indicated.

	Theoretical calibration value Impulses/100 m
Radar	Approx. 9.700
Star wheel	1200

Fig. 31

- 
 Adopt value Impulses/100m.
- 
 Reject value Impulses/100m.

 The calibration value "Impulses/100m" is dependent on the seed drill type and the soil.

4.7 Setup menu

In the setup menu

- Diagnosis data for the customer service for maintenance or malfunctions are input/output
- The settings for the display are changed
- 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!



The last value displayed is stored.



Setup

Select "Setup" in the main menu!

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

- Diagnosis computer input (for safety reasons, for customer service only).
- Diagnosis computer output (for safety reasons, for customer service only).
- Enter simulated speed for continued working with defective distance sensor (see Seite 76).
- Terminal Setup (see Seite 33).
- Enter basic data (see page 27).

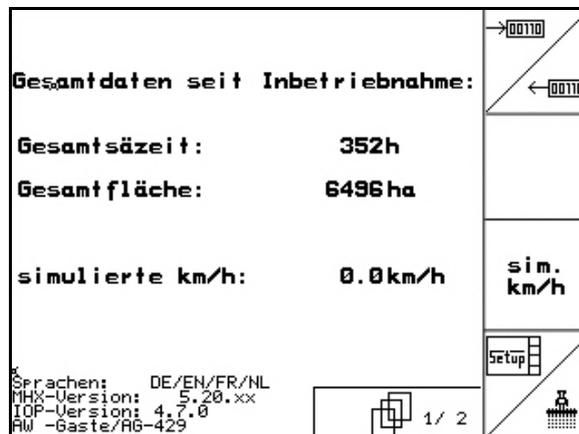


Fig. 32

Page 2  of the setup menu (Fig. 33):

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

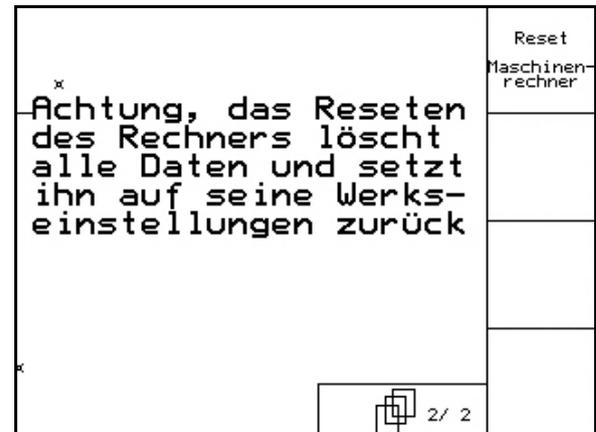


Fig. 33

Page 1  Basic data (Fig. 34):

- 
 Selecting machine type.
- 
 Configure the row deactivation, see page 29
- 
 Seeding coulter pressure remote control:
 - o On / Off
- 
 Fertiliser coulter pressure remote control:
 - o On / Off
- 
 Scraper remote control:
 - o On / Off

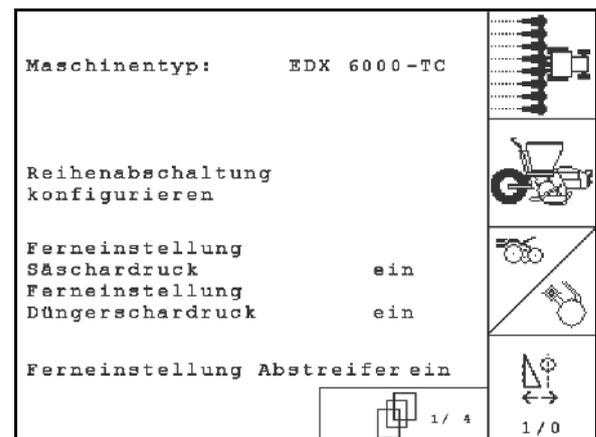


Fig. 34

Page 2 Basic data (Fig. 35):

- Selecting fertiliser tank.

- o Rear tank
- o Front tank
- o off

- Level sensor:

- o Seed
- o Fertiliser
- o Both (seed/fertiliser)
- o Off (no level sensor)

- Working position sensor
(see also page 30).

- Configure fertiliser dosing.
(see also page 32)

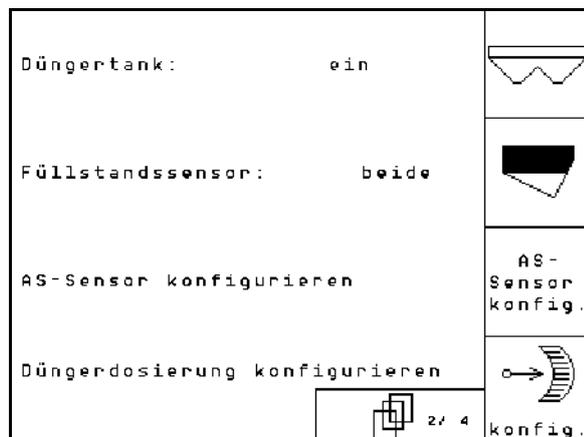


Fig. 35

Page 3 Basic data (Fig. 36):

- Enter number of sowing units

- Enter row spacing

- Set light barriers
(see also page 30).

- Oil level monitoring:

- o on / off

EDX with on-board hydraulics → on.

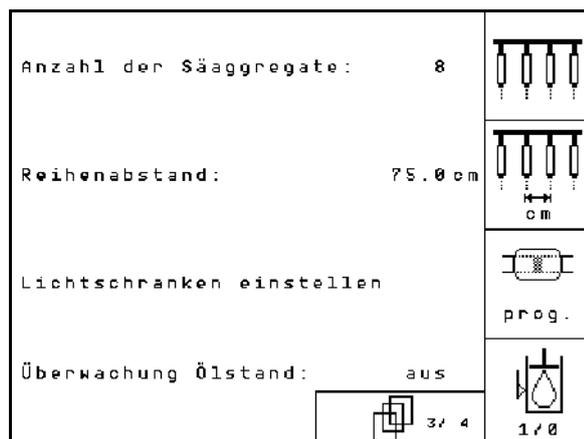


Fig. 36

- Enter the control factor for the diesel engines.
Standard value: 0,5
- Maximum deviation in % of blower fan speed for fertiliser dosing.
- Configure the micropellet spreader (hopper 2, 3) (see page 33)
- Pressure monitoring of the singling.
 - o on
 - o off

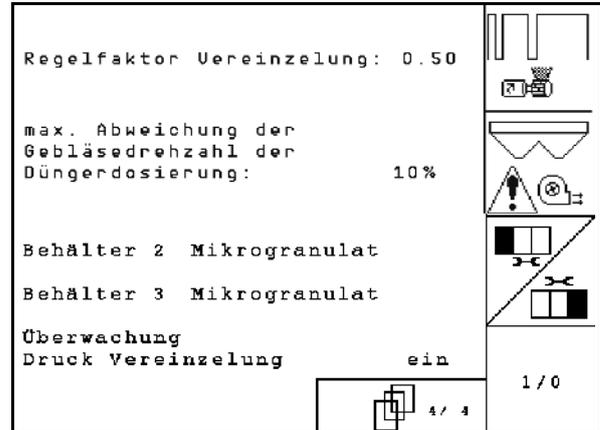


Fig. 37

4.7.1 Configure the row deactivation

- Select single-row control.
 - o on / off
- GPS switch: the GPS switch controls
 - o the drum of the singling,
 - o the single-row shut off.

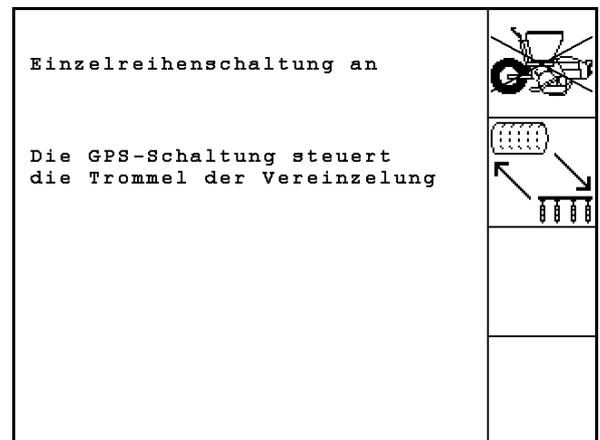


Fig. 38

If GPS switch controls the individual rows, there are brief accumulations of seed on the field when switching on again due to the nature of the system.

4.7.2 Setting light barriers (basic data )

-  **1** Program individual light barriers.
-  **1 - n** Program all light barriers.
-  Setting of the sensitivity:
 - o 50 standard
 - o 20 fine seed
-  Set the intensity of the opto-sensor.
 - o 7 Standard
-  Enter time in seconds to trigger alarm after leaving specified value (K/ha).
Standard value: 5 s
-  Enter time in seconds between starting of the dosing unit and switching on of monitoring.
Standard value: 5 s
-  Enter tolerance of light barriers in % until alarm is triggered.

einzelne Lichtschranke programmieren		
alle Lichtschranken programmieren		
Empfindlichkeit:	50	
Intensität:	7	
Zeit zwischen Abweichung und Auslösen Alarm:	8 s	
Zeit bis Start Überwach.:	8 s	
Toleranz der Lichtschranken	15 %	

Fig. 39

4.7.3 Working position sensor (basic data)



Working position sensor

- o Digital
- o Analogue (Standard)

Analogue:



- Enter threshold value of working position.

- o Values below the threshold value:
Working position = 1
- o Values above the threshold value:
Working position = 0

EDX 9000-TC: 1,43 V

EDX 6000-TC: 1,43 V

EDX 6000-2 / 2C: 3,60 V



- Enter threshold value of working position fertiliser metering.

EDX 6000-TC: 2,0 V

EDX 6000-2 / 2C: 3,9 V



- Enter threshold value of headland position.

- o When the threshold value is reached,
raising is stopped

EDX 9000-TC: 2,21 V

EDX 6000-TC: 2,21 V

EDX 6000-2 / 2C: 4,00 V

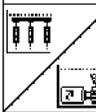
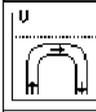
Arbeitsstellungs- sensor:	analog	AS- Sensor
Schwellwert Arbeits- stellung:	1.43U	
Schwellwert Arbeits- stellung Düngerdos.:	2.00U	
Schwellwert Vorgewende- stellung:	2.21U	

Fig. 40

4.7.4 Configure fertiliser dosing (basic data)



Configure fertiliser dosing



- Fertiliser dosing
 - o Vario gearbox(EDX 9000-T)
 - o Full dosing ((EDX 6000 / 6000-T)
 - o None

Vario gearbox



- Make gearbox basic settings (see page 67).



- Monitoring fertiliser.

- o 1 shaft
- o 2 shaft
- o Off



- Entry of alarm delay time of dosing unit in seconds

Electric full dosing:



- Enter running time for pre-metering fertiliser.



- Enter control factor for fertiliser dosing unit.

Standard value: 0.75

The following settings are used to spread sufficient fertiliser immediately after the turning process when using the implement:



- Entry of actual time from use of machine to reaching the planned speed.



- Calculative speed in % when using the machine.

This speed must be greater than the actual speed

Düngerdosierung: Variogetriebe	
Getriebegrunderstellung vornehmen	 cal.
Düngerüberwachung: 2 Wellen	
Alarmzeit Dosierwelle: 10s	 Alarm

Fig. 41

Düngerdosierung: Volldosierung	
Laufzeit für Vordosierung: 6s	
Regelfaktor: 0.75	
Startpunkt des Dosierens: (% vorg. Geschw.) 50%	
Zeit bis zum Erreichen der vorg. Geschwindigkeit: 10s	

Fig. 42

4.7.5 Configuring the micropellet spreader (basic data)

-  Micropellet spreader fitted
 - o on
 - o off
-  Enter the running time for the metering unit.
-  Enter the control factor for the metering unit.
-  Entry of actual time from lowering of machine to reaching the planned speed.
-  Calculative speed in % when lowering the machine.

This speed must be greater than the actual speed.
-  Headlands stop

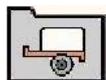
When spreading micropellets, the headlands stop must be switched on. This enables the interruption of the micropellet metering when lifting at the headlands.

 - o on
 - o off
-  Fill level sensor fitted
 - o on
 - o off

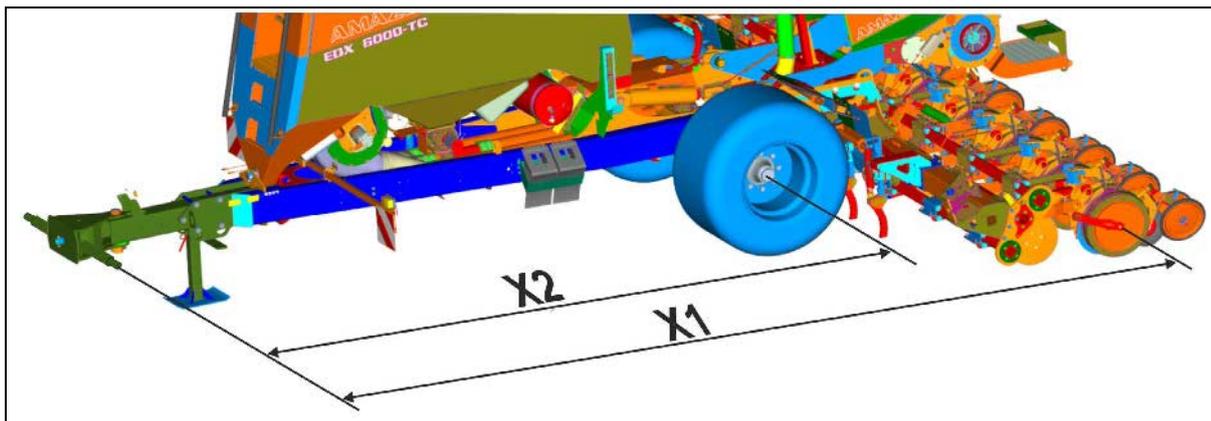
Behälter 2 Mikrogranulat: ein	
Laufzeit für Vordosierung: 6 s	
Regelfaktor: 1.000	
Startpunkt des Dosierers: 50 % (% vorg.Geschw.)	
Zeit bis zum Erreichen der vorg.Geschwindigkeit: 0 s	
Vorgewande-Stopp: ein	
Füllstandssensor: ein	

Fig. 43

4.8 Geometry data for implement menu



For the GPS switch application, it is necessary to determine and enter the geometry data X1 (and X2) with maximum precision in the AMATRON 3 implement menu.



Implement		X1 [cm]	X2 [cm]
EDX	9000-TC	820	597
	6000-2	140	
	6000-TC	725	509
	6000-2C	140	

4.9 GPS switch settings



For the GPS switch application, it is necessary to enter the on/off point delays in the AMATRON 3 GPS settings.

- On point delay [ms]
- Off point delay [ms]

EDX singling unit	Switch on	1200
	Switch off	200
EDX single row control	Switch on	1160
	Switch off	600



The stated values are recommendations, they should be checked in every case.

5 Use on the field



CAUTION

During travel to the field and on public roads, the AMATRON 3 should always be switched off!

→ Incorrect use leads to the risk of accidents!

Before starting the sowing, the AMATRON 3 must have received the following data:

- Job data (see Seite 12)
- Machine data (see Seite 23)
- Calibration test data (see Seite 17).

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



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

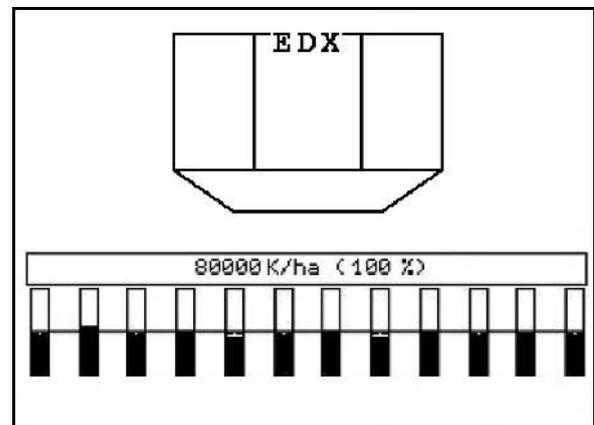


Fig. 44



The changed specified value is indicated in the work menu in grains/ha and per cent (Fig. 44)!

5.2 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. 45/1) are displayed in the work menu.

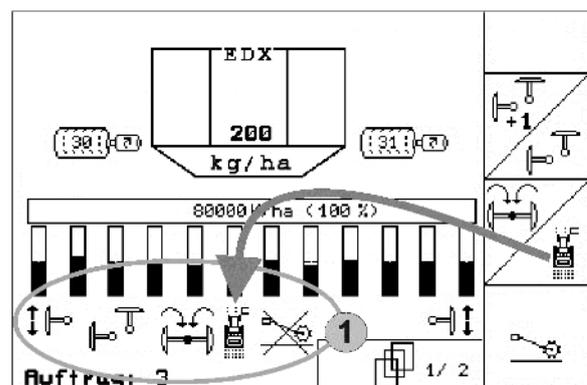


Fig. 45



Options which

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

5.3 Displaying work menu

Travel speed		Number in tramlining rhythm
Worked area		
Blower fan speed		
Seed or fertiliser		

Hopper 1, 2, 3	<table border="1"> <tr> <td>Micropellets left</td> <td>Fertiliser</td> <td>Micropellets right</td> </tr> <tr> <td> </td> <td> EDX 2 1 3 180 bar 150 160 bar </td> <td> </td> </tr> <tr> <td colspan="3" style="text-align: center;">kg / ha</td> </tr> </table>	Micropellets left	Fertiliser	Micropellets right		EDX 2 1 3 180 bar 150 160 bar		kg / ha			Fertiliser coulter pressure
Micropellets left	Fertiliser	Micropellets right									
	EDX 2 1 3 180 bar 150 160 bar										
kg / ha											
Seeding coulter pressure	Specified fertiliser quantity										
	Flashing symbol when container is empty (seed, fertiliser)										

Dosing unit:

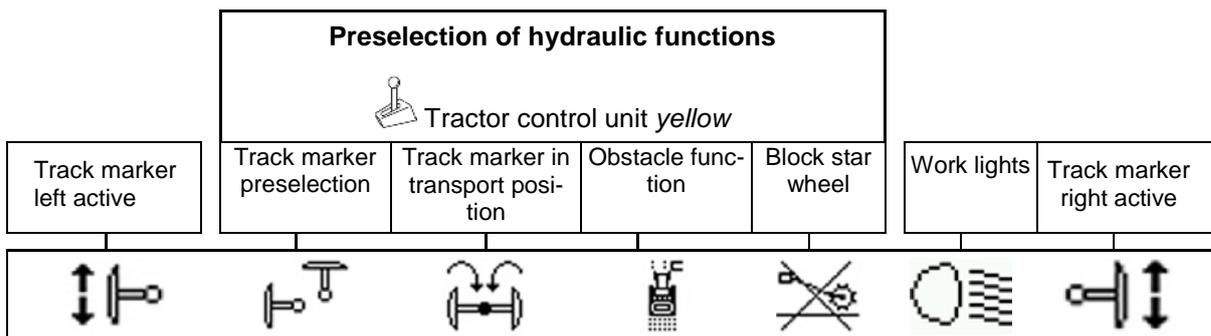
Speed		
Scraper		
Air pressure		

Dosing unit 2:

Only EDX 9000-T

Seed spread rate in indicated row

Total spread rate in grains/ha	Reihe 5: 76000K/ha 80000K/ha (100%)	Total spread rate in %
Dosing unit running		Spread rate is indicated as a bar chart.
Dosing unit not running		No seed is spread.
Dosing unit not running		→ Switching off by the section control.



5.4 Mini-view in the GPS switch

Mini-view is a section of the work menu that is shown in the Section Control menu.

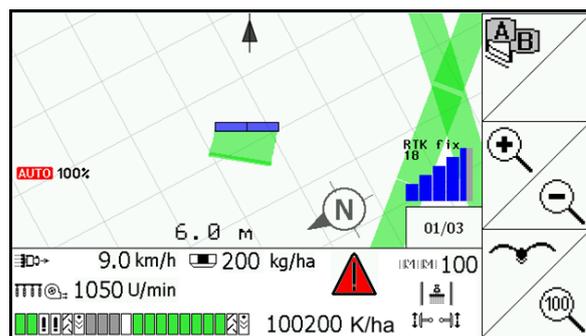


Fig. 46

Tractor speed	Fertiliser application rate	Alarm	tramline
9.0 km/h	200 kg/ha		26
1050 U/min	5 kg/ha		
Blower speed	Spread rate for micropellets (alternating display when 2 micropellet spreaders are fitted)		Field edge

Individual rows divided in 2 part width sections	Seed application rate	Track markers
	100200 K/ha	

Individual row status	
Actual quantity is equal to the target quantity (green)	Tramline
Switching off by Section Control	Actual quantity is not equal to target quantity
Permanently switched off	Target quantity is equal to zero

	<p>This symbol is shown in the work menu if there are fault messages.</p> <ol style="list-style-type: none"> Switch to the implement work menu. Rectify the displayed fault.
--	--

5.5 Functions in work menu

5.5.1 Tramlines

	Switch tramline counter forward / back
	Suppress shift on of tramline counter and allow again
	Switch tramline counter back to 1
	Change field edge left / right

The deactivated rows when creating a tramline are displayed in the Job menu.

Shifting the tramline counter forward when lifting the sowing unit can be suppressed.

The tramline counter can be switched forward and back manually.

Deactivating the tramline control in the job menu:

tramline →
enter a working width of 0 m on the care device.

- (1) Deactivated rows when creating tramlines
- (2) Creating tramlines activated in the setup menu
- (3) Current sowing line in tramline rhythm (tramline counter, starting with 1 at the beginning of the field)
- (4) Automatic counting of the tramline deactivated
- (5) Field edge positioned to the right in the direction of travel
- (6) Field edge positioned to the left in the direction of travel

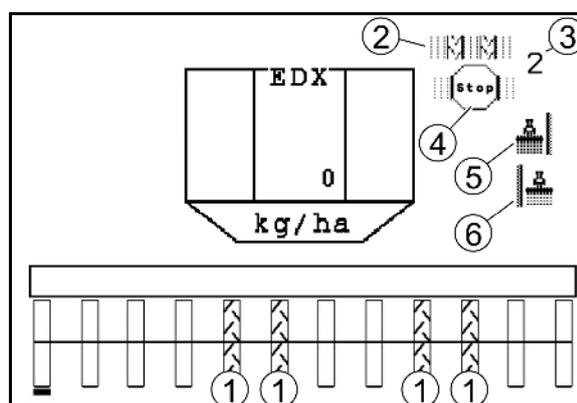


Fig. 47

Examples on creating tramlines

EDX working width: 6 m

Field sprayer working width: 24 m

The headlands comprise 3 turns with the EDX.

Procedure in order to be able to drive in circles when creating a tramline in the headlands:

1.  Before starting with the sowing, select the correct side of the field edge.
 2.  Stop the counting of the tramline counter.
 3.  Cancel the stop shortly before the first run has been completed.
- The tramline counting is continued when lifting and the side of the field edge changes.



Always make sure that the actual field edge corresponds with the display of the AMATRON 3.

4.  At the beginning of the second turn, position the field edge back to the correct side and
-  stop the counting of the tramline counter.
5. Continue carrying this out until the headlands have been processed completely.

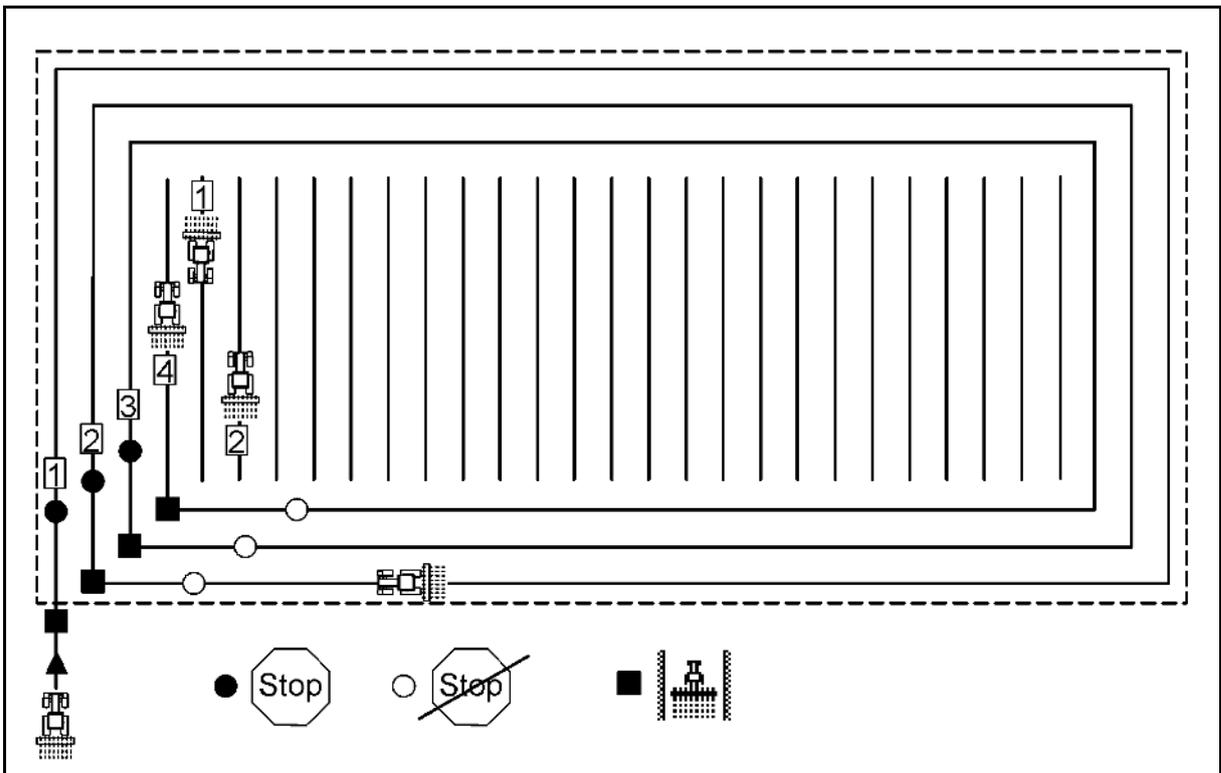


Fig. 48

5.5.2 Permanent tramlines



As well as creating tramlines for care devices, tramlines can also be created permanently.

When creating permanent tramlines, individual coulters are selected and deactivated.

→ The permanent single row activation can only be activated on the side in the Job menu where the function fields of the single rows are.

- The deactivation can be reset in the same manner.

The permanent switching off of the coulters also remains maintained after switching the operating terminal back on.

Creating the permanent tramlines is, for example, used for irrigation vehicles.

- (1) Coulters switched off permanently
- (2) Movable bar for marking a coulters.

Creating a permanent tramline:

1.  Select single-row control in the job menu.
2.  Select the coulters.
3.  Switch the coulters on / off.

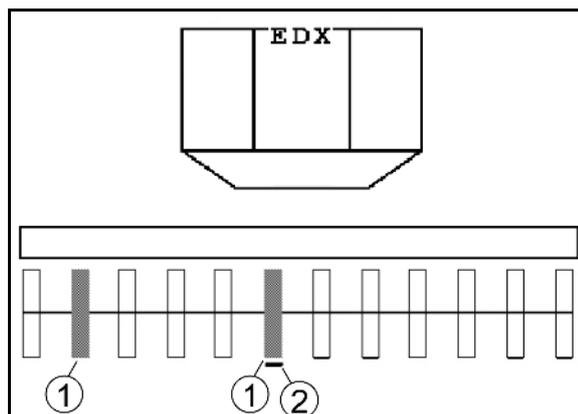
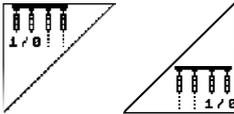
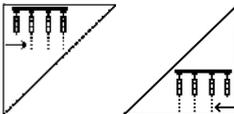
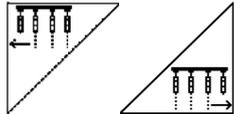
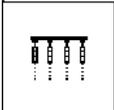


Fig. 49

5.5.3 Single-row switch-off

	<p>Row deactivation on one side left / right</p>
	<p>Deactivate single rows from outside left / right</p>
	<p>Activate single rows from outside left / right</p>
	<p>Activate all rows that have been deactivated</p>

Single rows can be deactivated / activated from the outside in the Job menu.



All rows are activated automatically after the headlands.

- (1) Rows deactivated from outside

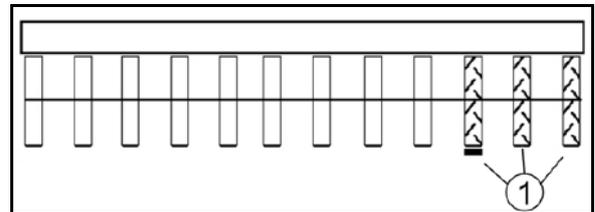


Fig. 50

- (2) Rows on one side deactivated (EDX 6000)

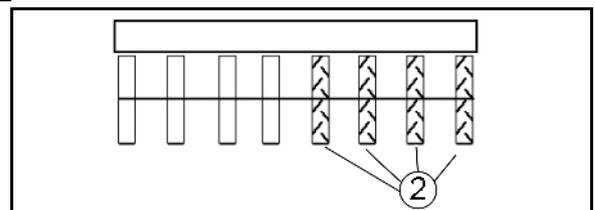


Fig. 51

- (1) Rows on one side deactivated (via drive motor EDX 9000-TC)

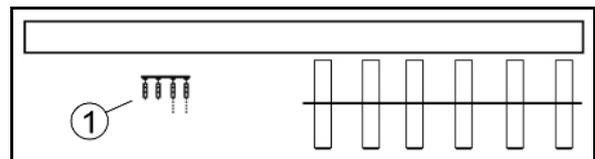
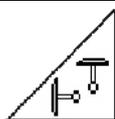


Fig. 52

5.5.4 Track marker



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



Manual track marker preselection

Track marker preselection

	Alternating mode left / right (Active track marker automatically changes at headlands)	
	Always right track marker	
	Always both track markers	
	No track marker	
	Always left track marker	

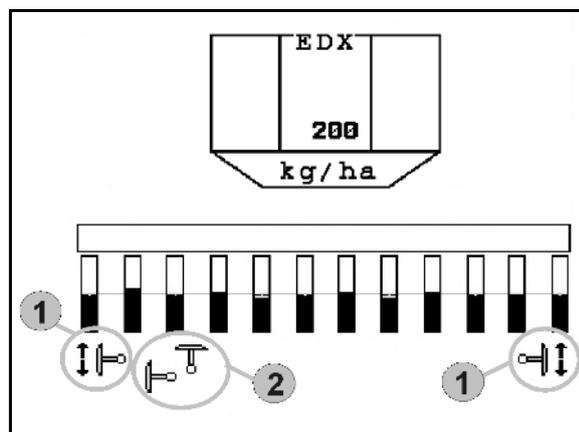
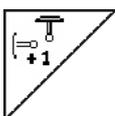


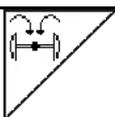
Fig. 53

- Display of active track marker (Fig. 53/1)
- Display of track marker preselection (Fig. 53/2)



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.



Fold track marker to transport position

Allows folding in of the track markers to transport position.

-  Preselect complete folding in (Fig. 54/1).
- When the machine is raised, the track markers fold in to transport position.
-  Cancel preselection.
- When the machine is raised, the track markers fold to vertical position.

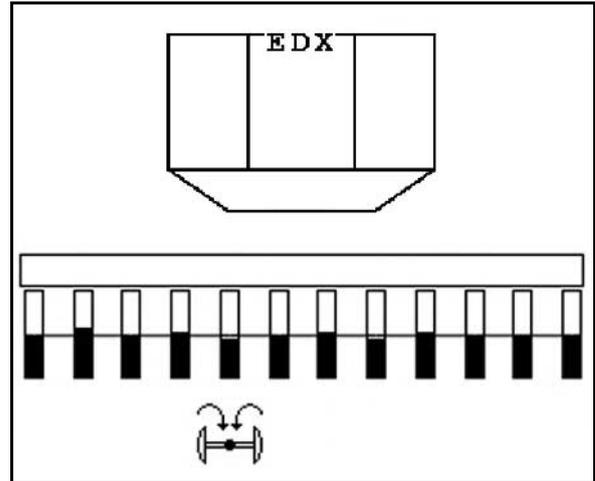
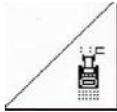


Fig. 54



The function "Folding both track markers to transport position" can be combined with the obstacle function.

Before the obstacle, both track markers are then folded to transport position. After the obstacle, the active track marker is folded out.



Track marker obstacle switching

For passing obstacles on the field.

1.  Preselect obstacle switching (Fig. 55).
2. Operate tractor control unit *yellow*.
- Raise the track marker
3. Pass obstacle.
4. Operate tractor control unit *yellow*.
- Lower the track marker
5.  Cancel preselection.

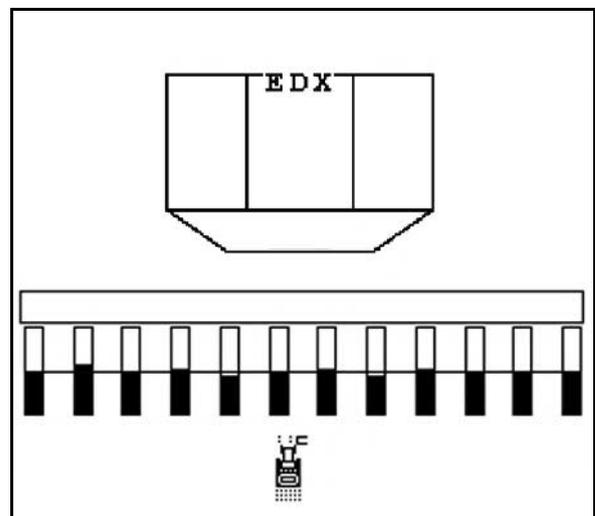


Fig. 55

5.5.5 Star wheel EDX 9000-TC



Block star wheel lowering

When driving in working position with raised star wheel, no seed or fertiliser is spread.

1.  Preselect Block star wheel (Fig. 56).
- When the machine is lowered, the star wheel is kept raised.
2.  Cancel preselection.

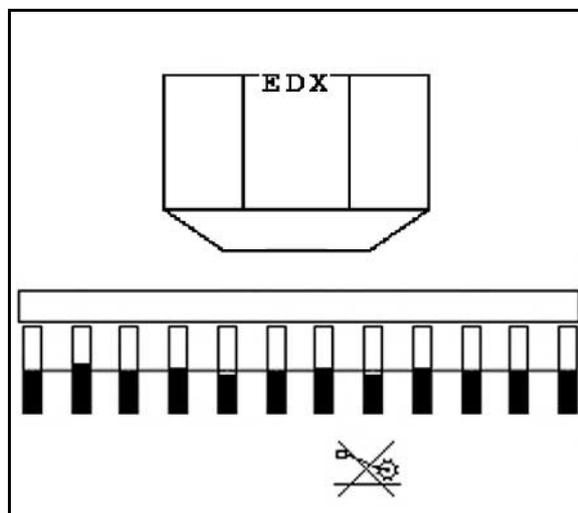


Fig. 56

5.5.6 Folding the machine (EDX 6000-T, EDX 9000-T)



Fold the machine in / out

-  Change to Folding submenu (Fig. 57).

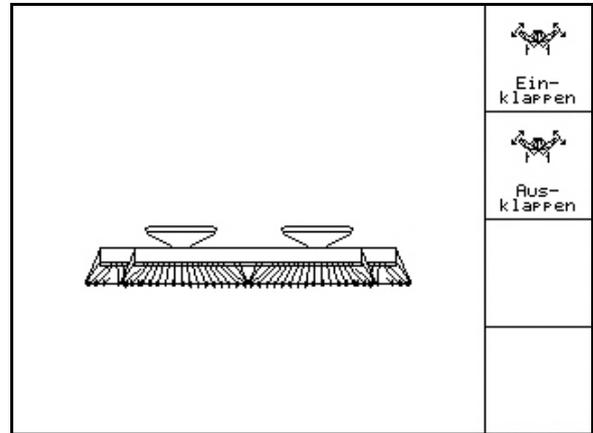


Fig. 57

Folding out

-  Preselect Folding out.
- Operate tractor control unit *yellow*.
→ Lift extension arm from transportation hook.
→ Display: Safe folding out possible! (Fig. 59)
- Operate tractor control unit *green*.
→ Extension arms fold out.
- Operate tractor control unit *yellow*.
→ Lower the rear frame.
-  Back to work menu.

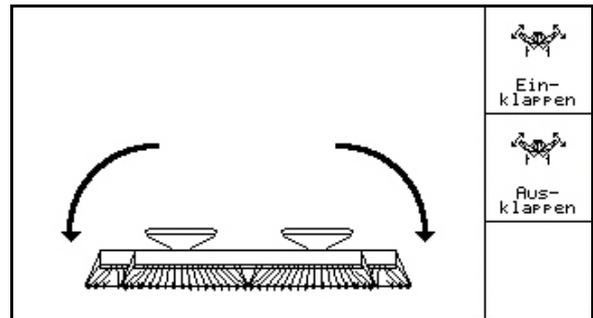


Fig. 58

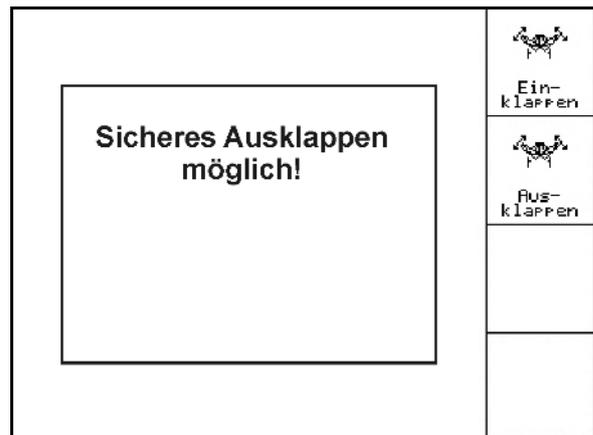


Fig. 59

Folding in

1.  Preselect Folding in. (Fig. 60).

 Beforehand, move track marker to transport position, see page 42!

2. Operate tractor control unit *yellow*.
 - Swivel up the rear frame to end position.
 - Display: Safe folding in possible! (Fig. 61)

 **CAUTION**
Possible risk of damage to the machine when swivelling up the rear frame!
 Swivel up the rear frame only to end position. Do **not** again actuate Tractor control unit *yellow*!

3.  Confirm the display.
4. Operate tractor control unit *green*.
 - Fold in the machine.
5. Operate tractor control unit *yellow*.
 - Place the extension arm in the transportation hook.
6.  Back to work menu.

 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!

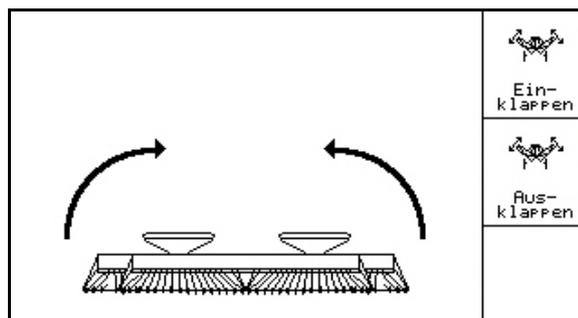


Fig. 60



Fig. 61

5.5.7 Setting sowing coultter pressure

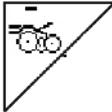
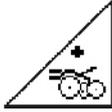
	<p>Reduce sowing coultter pressure.</p>
	<p>Increase sowing coultter pressure.</p>

Fig. 62: Display of selected coultter pressure

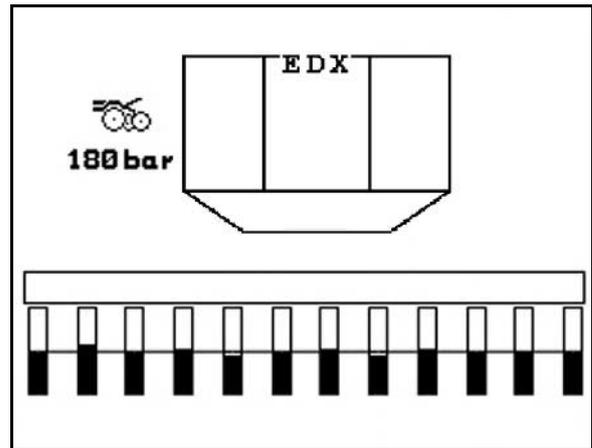


Fig. 62

5.5.8 Setting fertiliser coultter pressure

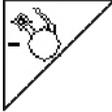
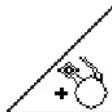
	<p>Reduce fertiliser coultter pressure.</p>
	<p>Increase fertiliser coultter pressure.</p>

Fig. 63: Display of fertiliser coultter pressure

	<p>The coultter pressure influences the placement depth of the fertiliser.</p> <p>Reduced coultter pressure → lower fertiliser placement depth</p> <p>Increased coultter pressure → greater fertiliser placement depth</p>
---	--

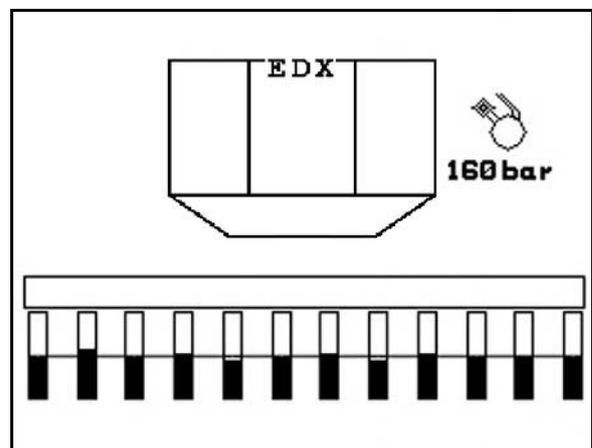


Fig. 63

5.5.9 Fertiliser metering



With each press of the button, the fertilise quantity is increased or reduced by the percentage application rate (e.g. +/-10%).

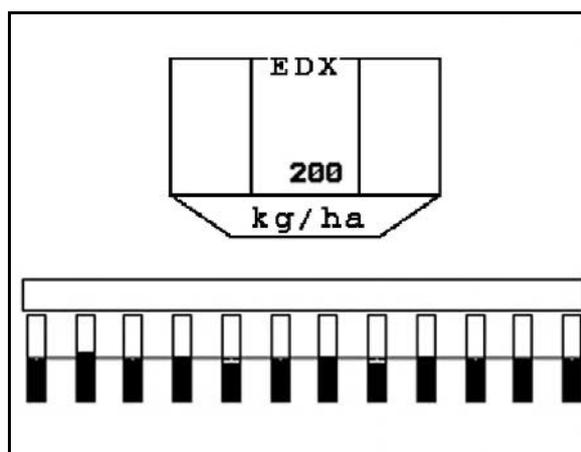
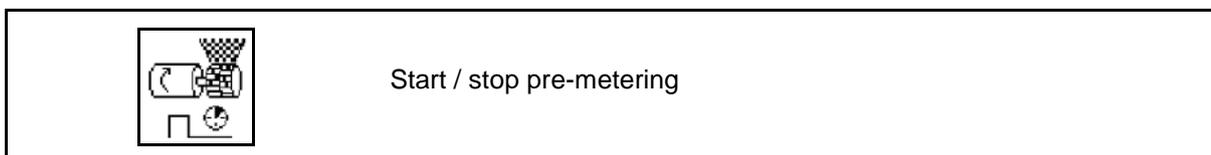


Fig. 64

Fertiliser pre-metering



- At the start of sowing: when starting from standstill, activate full metering in order to ensure sufficient fertiliser discharge over the first metres.

- 
 Pre-metering fertiliser starts for the specified period.

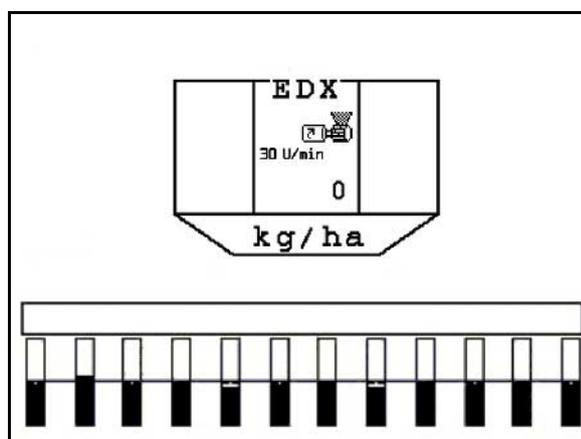
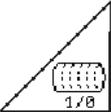


Fig. 65

5.5.10 Seed dosing



Start / stop seed pre dosing

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

1.  Start pre dosing.
- Pre dosing ensures complete filling of the drum during dosing (Fig. 66).

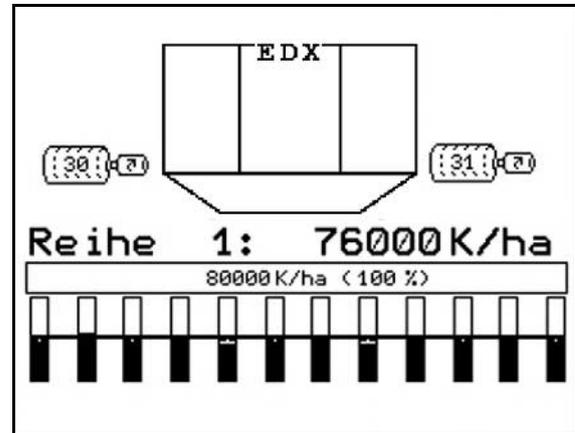
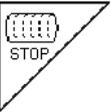


Fig. 66



Keep seed dosing unit switched off

In order to prevent unintended starting of the seed 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. 67: Display Seed dosing unit switched off

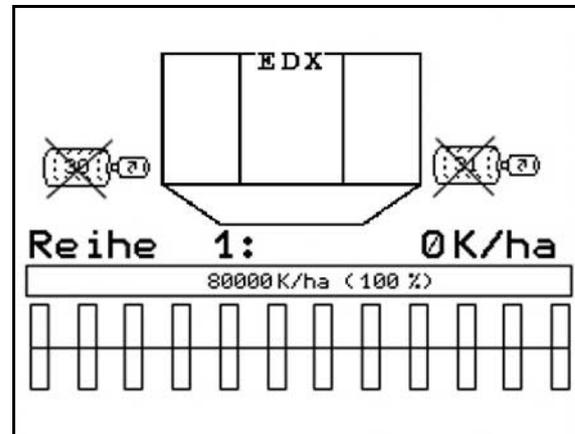
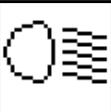


Fig. 67

5.5.11 Work lights front tank



Switch the front tank work lights on / off

5.5.12 Display Blower fan speed for fertiliser dosing / seed dosing



When the key is pressed, the display appears for 10 seconds.

Fig. 68:

(1) Blower fan speed for fertiliser dosing

→ Minimum value: 3500 rpm

→ Maximum value: 3800 rpm

(2) Standard value:

Blower fan speed for seed dosing

→ Minimum value: 3500 rpm

→ Maximum value: 4000 rpm

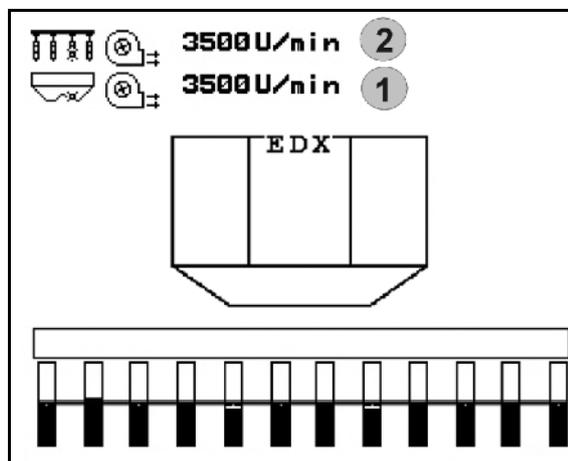


Fig. 68

5.5.13 Selectable display, air pressure in seed dosing unit / Speed of dosing unit



When the key is pressed, the display appears for 10 seconds.

Fig. 69:

(1) Air pressure in seed dosing unit in mbar.

Or

(2) Speed of dosing unit in rpm

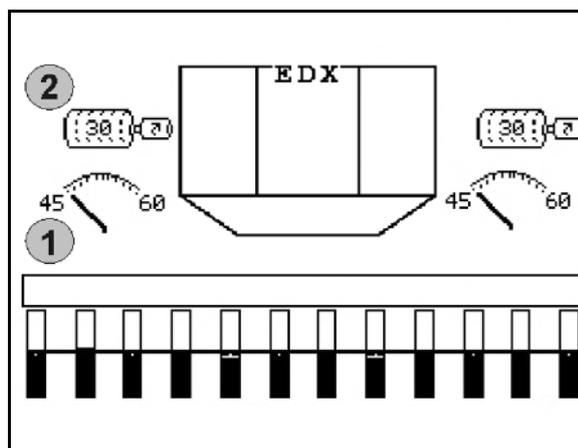
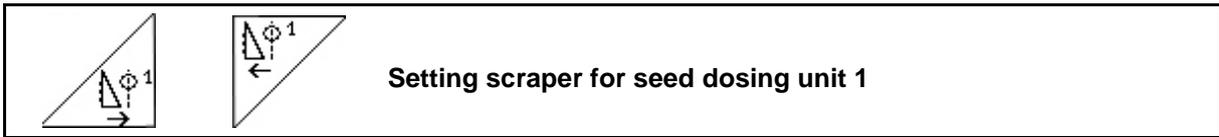
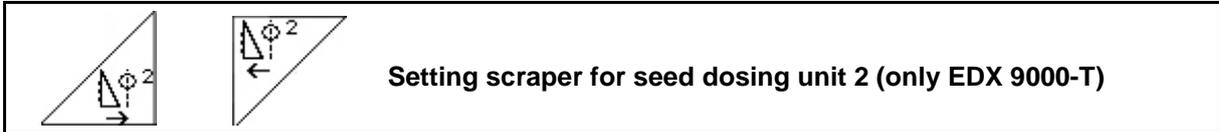


Fig. 69

5.5.14 Scraper of seed dosing unit



Setting scraper for seed dosing unit 1



Setting scraper for seed dosing unit 2 (only EDX 9000-T)



Fading in / out position of scraper in Working menu

The scraper on the drum of the seed dosing unit prevents the formation of double layers.

The scraper can be set in the range from 0 to 100.

- Direction 0 for less aggressive position of the scraper and large grain size.
- Direction 100 for aggressive position of the scraper and small grain size.
- Standard value for maize: 50
- Standard value for sunflowers: 65

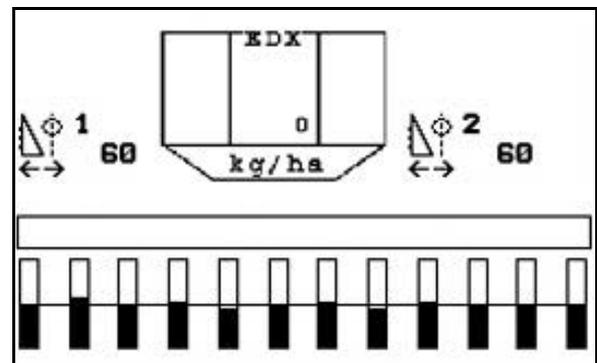


Fig. 70

Fig. 70/...

- (1) Display, position of scraper 1
- (2) Display, position of scraper 2

1. Fade in position of scraper in Working menu.

2. Set scraper.

3. EDX 9000-T: Set both scrapers.

4. If desired, fade out display.

→ Speed of dosing motor / Air pressure of dosing unit is displayed.

5.5.15 Micropellet spreader

The implement can also be equipped with 2 micropellet spreaders.

For the active micropellet spreader, the metering unit starts as soon as the implement moves into working position.

- (1) Spread rate in kg/ha for micropellet spreader on the left
- (2) Spread rate in kg/ha for micropellet spreader on the right
- (3) Display for low fill level in hopper 2

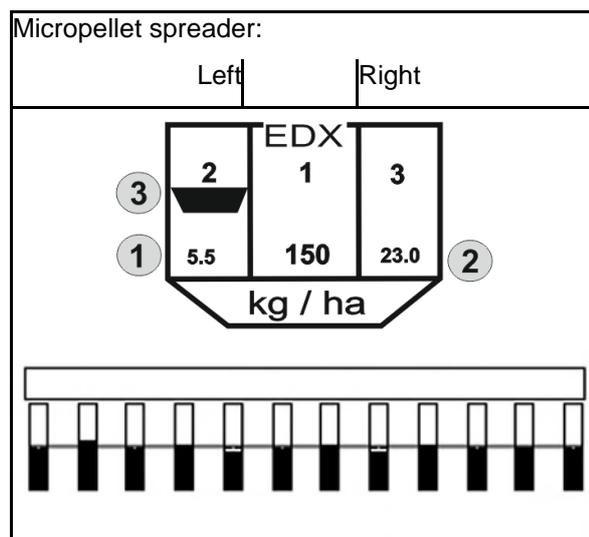
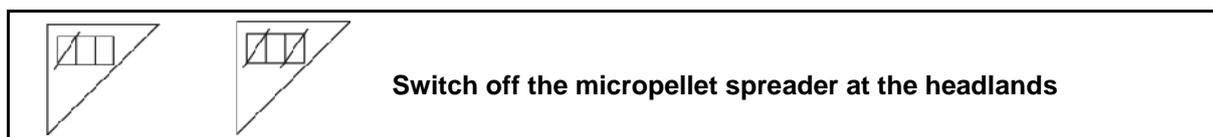


Fig. 71



Application of insecticides, pesticides or fungicides

The micropellet spreader must be switched off in working position, before the spreading devices are lifted out in headlands position.

If 2 micropellet spreaders are installed, they can only be switched off together.

The micropellet spreader is automatically switched back on again after the headlands as soon as the working position is reached.

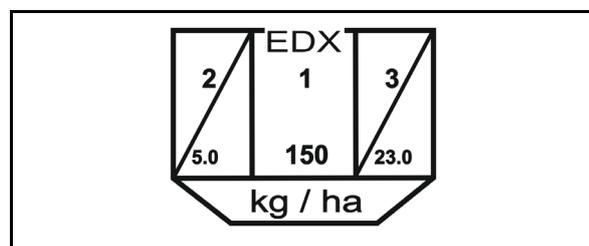
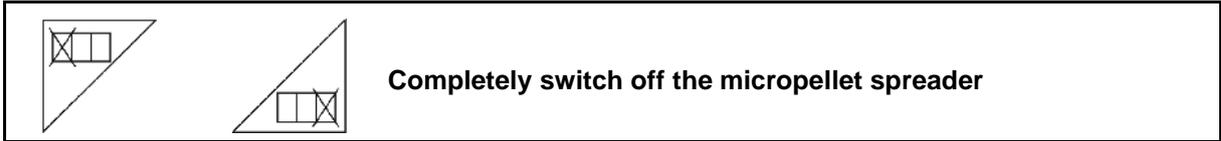


Fig. 72

Spreading of fertiliser or seeds

The micropellet spreader is automatically switched off as soon as the headlands position is reached.



- 
 When not in use, completely switch off the micropellet spreader on the left
- 
 When not in use, completely switch off the micropellet spreader on the right

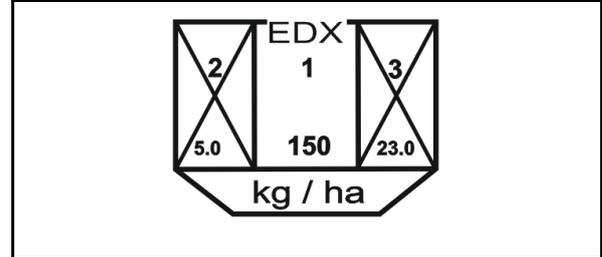


Fig. 73



After switching on the terminal again, the micropellet spread is switched on again.

When not in use, switch the micropellet spreader off again before beginning work.



- + Increase the spread rate by 10% each time the button is pressed.
 - Decrease the spread rate by 10% each time the button is pressed.
- (1) The changed spread rate in kg/ha will be shown on the display.

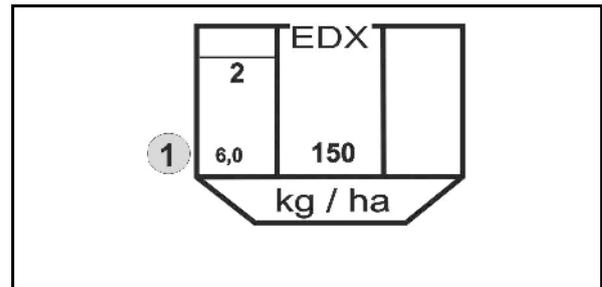


Fig. 74

5.6 Procedure for use

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

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

- Operate **tractor control unit yellow**:
 - Lowering of the machine
 - Lock the star wheel
 - Move the preselected track marker to the operational position
- or:**
 - Hydraulic preselection functions (obstacle function)
- Operate **tractor control unit green**:
 - Hydraulic preselection functions (Fold machine extension arms)
- Operate **tractor control unit red**:
 - Switch the blower fan on/off.
- 5. Start the sowing.
- During the sowing, the **AMATRON 3** 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.

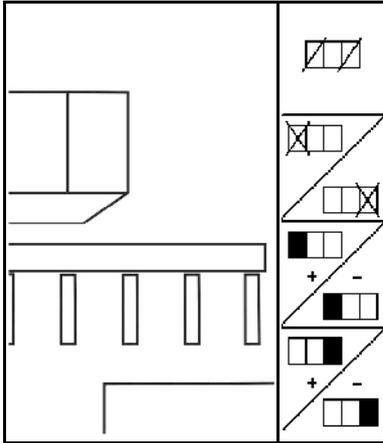
After use:

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

5.6.1 Work menu key assignment

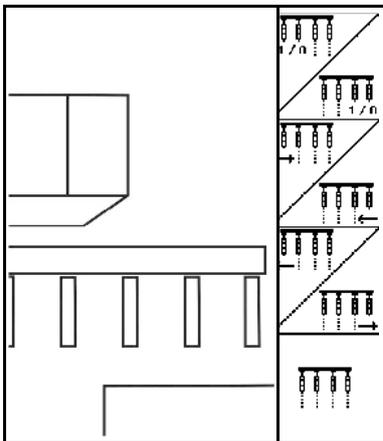
Key assignment option for micropellets

Description of the function fields

		See section	
		5.5.15	Switch off the micropellet spreader on the headlands
		5.5.15	Completely switch off the micropellet spreader on the left
			Completely switch off the micropellet spreader on the right
		5.5.15	Increase the spread rate for the micropellet spreader on the left
			Reduce the spread rate for the micropellet spreader on the left
		5.5.15	Increase the spread rate for the micropellet spreader on the right
			Reduce the spread rate for the micropellet spreader on the right

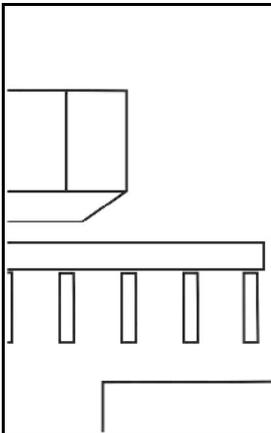
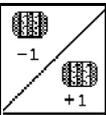
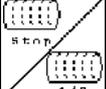
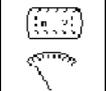
Key assignment option for single row control

Description of the function fields

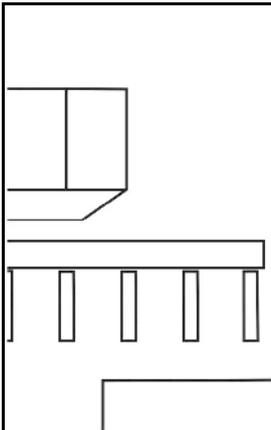
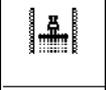
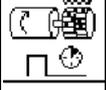
		See section	
		5.5.3	Row deactivation on one side left
			Row deactivation on one side right
		5.5.3	Deactivate single rows from outside left
			Deactivate single rows from outside right
		5.5.3	Activate single rows from outside left
			Activate single rows from outside right
		5.5.3	Activate all rows that have been deactivated

Work menu key assignment EDX 6000-2 / EDX 6000-2C

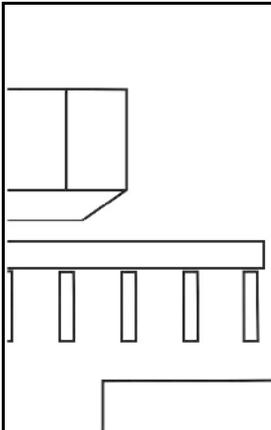
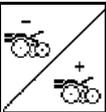
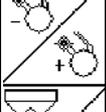
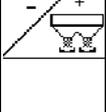
Page 1: Description of the function fields

		See Section	
		5.5.1	Switch tramline counter back Switch tramline counter forward
		5.5.1	Suppress shift on of tramline counter and allow again
		5.5.10	Keep seed metering unit switched off Start / stop seed pre-metering
		5.5.13	Selectable display air pressure in seed metering unit / Speed of metering unit

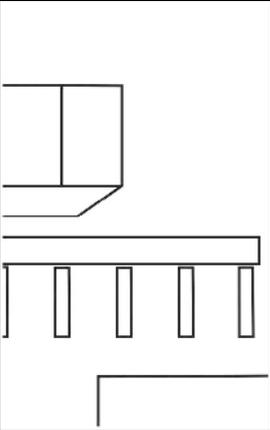
Page 1 **Shift**: Description of the function fields

		See Section	
		5.5.1	Switch tramline counter back to 1
		5.5.1	Change field edge left / right
		5.5.9	Start / stop pre-metering

Page 2: Description of the function fields

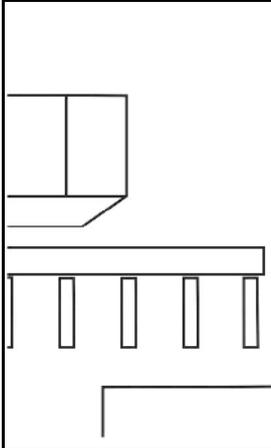
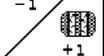
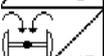
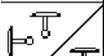
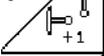
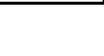
		See Section	
		5.5.7	Reduce sowing coulter pressure. Increase sowing coulter pressure.
		5.5.8	Reduce fertiliser coulter pressure. Increase fertiliser coulter pressure.
		5.5.9	Reduce fertiliser quantity Increase fertiliser quantity

Description of the function fields

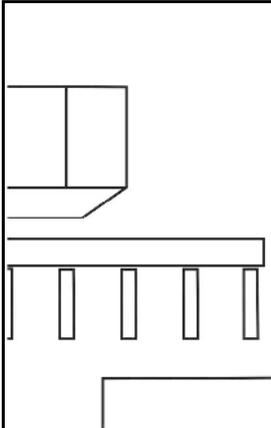
		See Section	
		5.5.14	Setting scraper for seed dosing unit 1
	Abber. position 00001000	5.5.14	Fading in / out position of scraper in Working menu

Tastenbelegung Arbeitsmenü EDX 6000-TC / 9000-TC

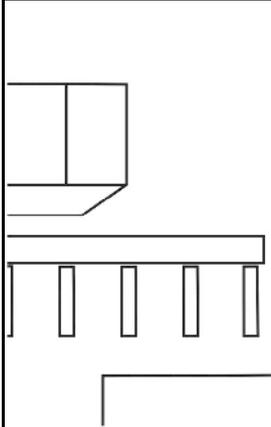
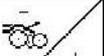
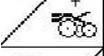
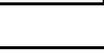
Page 1: Description of the function fields

		See Section	
		5.5.1	Switch tramline counter back
		5.5.4	Switch tramline counter forward
		5.5.4	Fold track marker to transport position
		5.5.4	Track marker obstacle switching
		5.5.4	Manual track marker preselection
		5.5.4	Track marker shifting on in alternating mode
	5.5.3	Suppress shift on of tramline counter and allow again	
	5.5.5	Block star wheel lowering (only EDX 9000-TC)	

Page 1 **Shift:** Description of the function fields

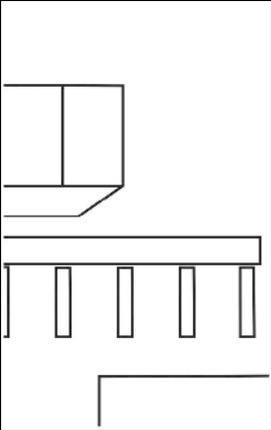
		See Section	
		5.5.1	Switch tramline counter back to 1
		5.5.1	Change field edge left / right
			

Page 2: Description of the function fields

		See Section	
		5.5.6	Fold the machine in / out
		5.5.7	Reduce sowing coulter pressure.
		5.5.7	Increase sowing coulter pressure.
		5.5.8	Reduce fertiliser coulter pressure.
		5.5.8	Increase fertiliser coulter pressure.
		5.5.9	Reduce fertiliser quantity (only EDX 6000-TC)
	5.5.9	Increase fertiliser quantity (only EDX 6000-TC)	

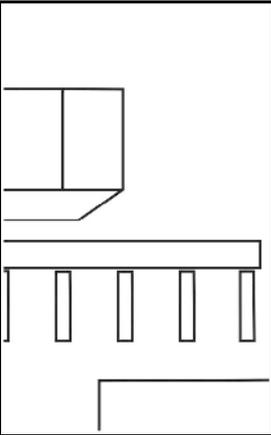
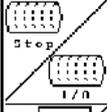
Page 2 **Shift:**

Description of the function fields

		See Section	
		5.5.11	Switch the front tank work lights on / off

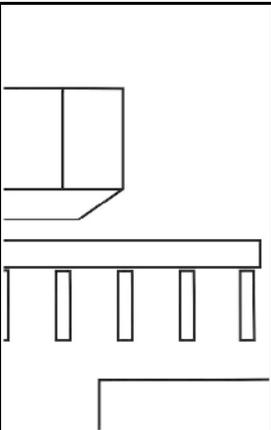
Page 3:

Description of the function fields

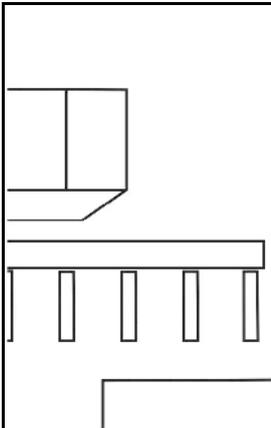
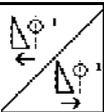
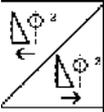
		See Section	
			
		5.5.10	Keep seed dosing unit switched off Start / stop seed predosing
		5.5.12	Display Blower fan speed (EDX 9000-TC)
		5.5.13	Selectable display air pressure in seed dosing unit / Speed of dosing unit

Page 3 **Shift:**

Description of the function fields

		See Section	
			
		5.5.9	Start / stop pre-metering (nur EDX 6000-TC)

Description of the function fields

		See Section	
		5.5.14	Setting scraper for seed dosing unit 1
		5.5.14	Setting scraper for seed dosing unit 2 (only EDX 9000-TC)
		5.5.14	Fading in / out position of scraper in Working menu

6 Multi-function stick / AmaPilot

6.1 Learn menu



The learn menu is started through the main menu.

-  Multi-function stick learn menu
-  AmaPilot learn menu

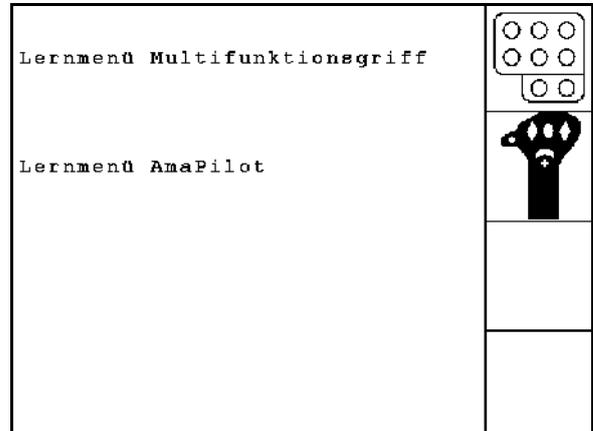


Fig. 75

When pressing a button on the multi-function stick, the respective function appears on the display.

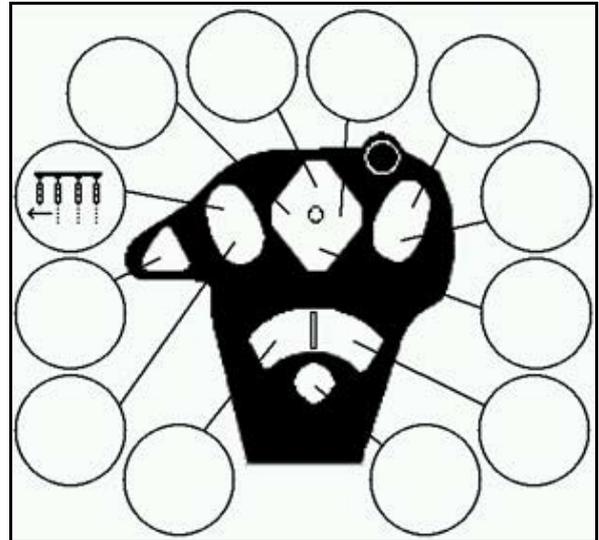


Fig. 76

6.2 AmaPilot

AmaPilot enables the operation of all important functions.

30 functions can be selected by pressing with your thumb. For this purpose, two additional levels can be also be switched on.

- Standard level
- Level 2 when trigger on the back is held

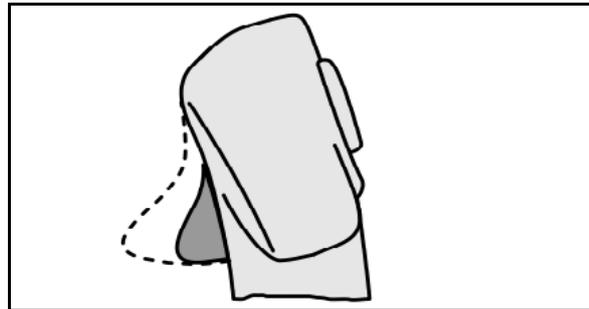


Fig. 77

- Level 3 after switching the lit-up button

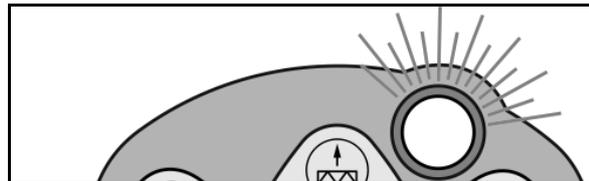
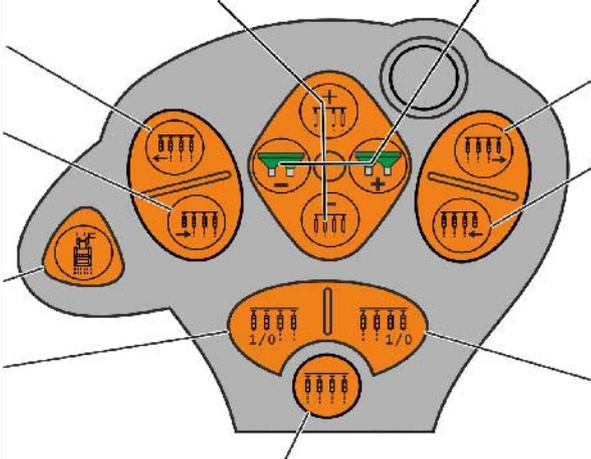


Fig. 78

AmaPilot assignment

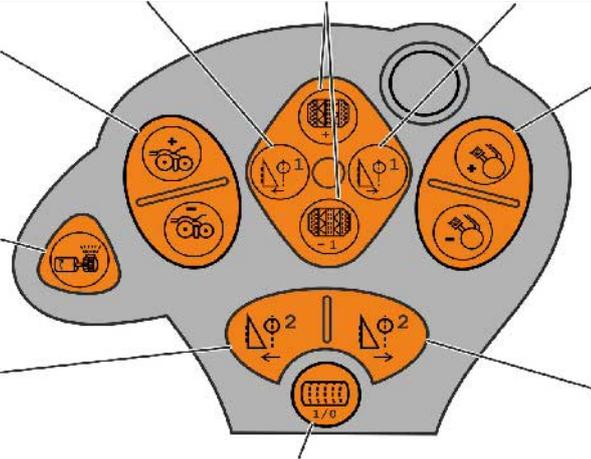
Standard level:



Increase / reduce the seeding rate		Increase / reduce fertiliser quantity	
Switch on boom part width section to the left		Switch off boom part width sections from the right	
Switch off boom part width sections from the left		Switch on part width sections to the right	
Track marker obstacle function			
Switch left half part width section on / off		Switch right half part width sections on / off	
	Activate all boom part width sections		

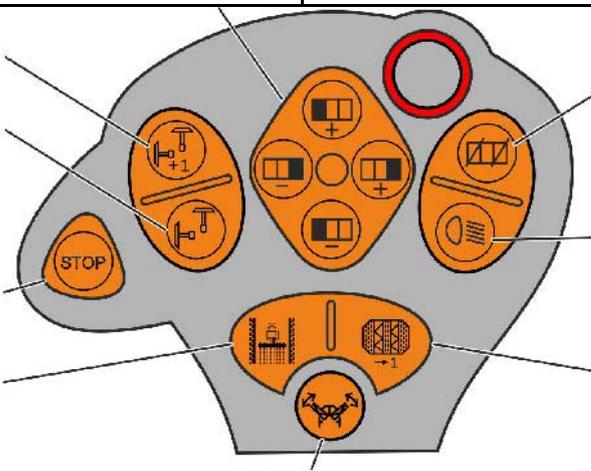
Level 2:



Reduce scraper bar position 1		Tramline +/-		Increase scraper bar position 1	
Increase / reduce seeding coulter pressure		Increase / reduce fertiliser coulter pressure			
Fertiliser pre-metering					
Reduce scraper bar position 2		Increase scraper bar position 2			
		Seed pre-metering			



Level 3:

Increase / decrease micropellet spreader spread rate		
Track markers extend in alternating mode		Switch off the micropellet spreader on the headlands
Track marker pre-selection		
Tramline stop		Work lights
Change field edge		Switch tramline back to 1
		Folding

6.3 Multifunction stick

Installation

The multifunction stick (Fig. 79/1) 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 multifunction stick (Fig. 79/2).

Insert the connector (Fig. 79/3) from the multifunction stick into the centre sub-D socket on the AMATRON 3.

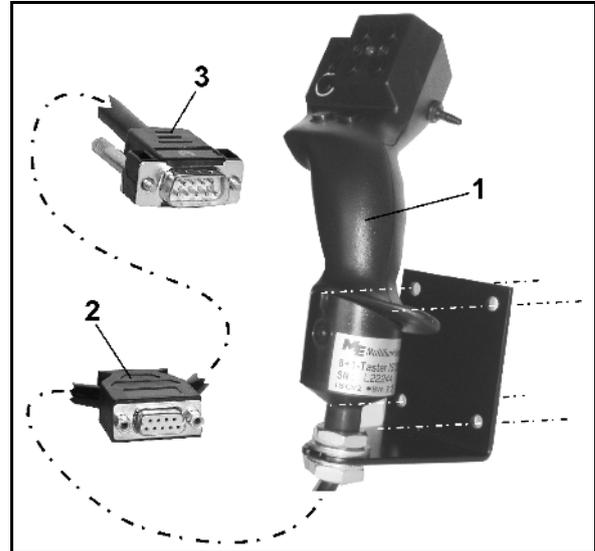


Fig. 79

Function

The multifunction stick functions are only found in the AMATRON 3 work menu. It allows blind operation of the AMATRON 3 in use on the field.

To operate the AMATRON 3, the multifunction stick (Fig. 80) has 8 buttons (1 - 8). In addition, the assignment of the keys can be changed 3-fold by means of a switch (Fig. 81/2).

The switch default position is

-  central position (Fig. 81/A) and can be pressed
-  up (Fig. 81/B) or
-  down (Fig. 81/C).

The position of the switch is indicated by an LED (Fig. 81/1).

-  LED yellow
-  LED red
-  LED green

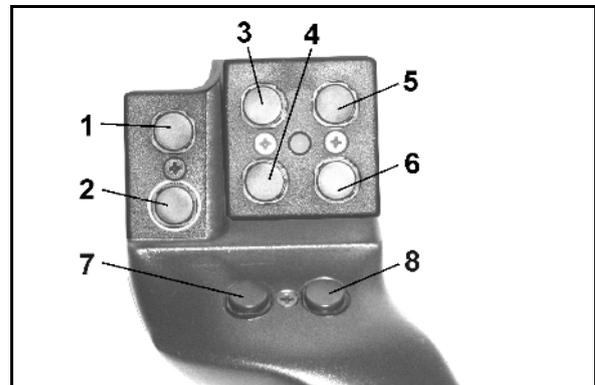


Fig. 80

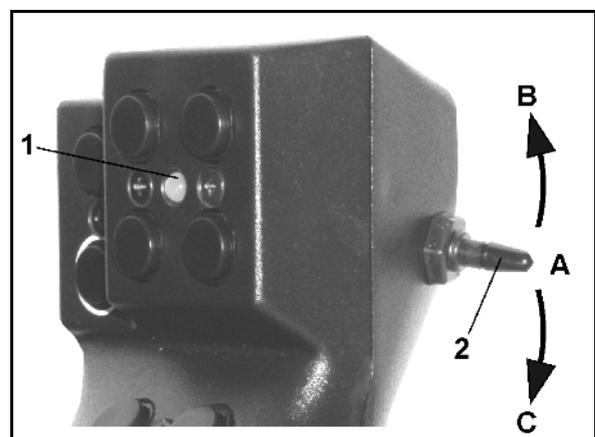
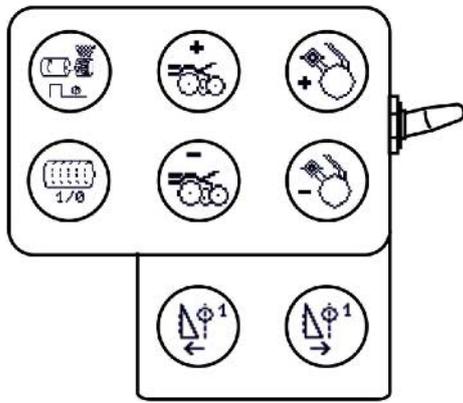
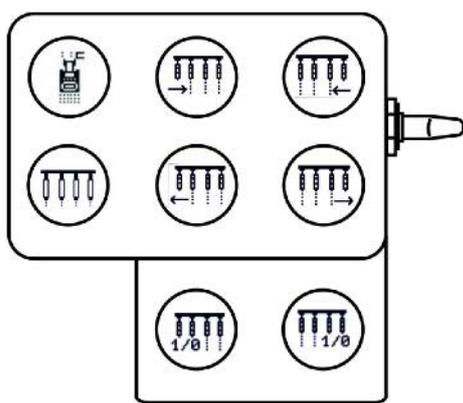
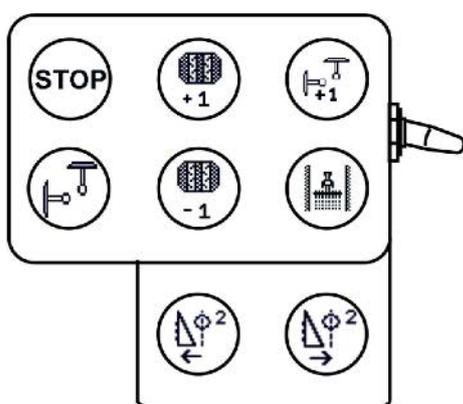


Fig. 81

6.4 Key layout:

Key		
1 	Fertiliser pre-metering* ¹	
2 	Seed pre-metering	
3 	Increase seeding coulter pressure	
4 	Reduce seeding coulter pressure	
5 	Increase fertiliser coulter pressure	
6 	Reduce fertiliser coulter pressure	
7 	Reduce scraper position 1	
8 	Increase scraper position 1	
1 	Obstacle	
2 	Activate all boom part width sections	
3 	Switch off boom part width sections from the left	
4 	Switch on boom part width section to the left	
5 	Switch off boom part width sections from the right	
6 	Switch off boom part width sections to the right	
7 	Switch left half boom part width sections on / off* ²	
8 	Switch right half boom part width sections on / off* ²	
1 	Tramline stop	
2 	Track marker pre-selection	
3 	Tramline +	
4 	Tramline -	
5 	Track marker +1	
6 	Changing the field edge	
7 	Reduce scraper position 2* ³	
8 	Increase scraper position 2* ³	

*¹ only EDX 6000 with electrically actuated fertiliser metering

*² only EDX 9000-TC / EDX 6000 with single-row control

*³ only EDX 9000-TC

7 Maintenance

7.1 Gearbox calibration

Machines with remote-controlled fertiliser dosing must be calibrated

- before initial use, if the **AMATRON 3** is not delivered with the machine from the factory, but is installed subsequently.
- in event of deviations between the display in the terminal and the gearbox scale.



Gearbox basic settings, see page 28 and page 32.

Page 1  01/02 of the setup menu

1.  Gearbox calibration submenu:
2.  Move the gearbox lever in the direction of the scale 0 reading until the LED on the electric motor lights up.
3.  Move the gearbox to a scale value greater than 80.
4.  Confirm the settings and enter the scale value indicated by the gearbox lever on the scale in the menu window that opens (Fig. 83).



Always read off the scale value from directly in front to avoid errors!

After the calibration procedure, move the gearbox to another scale value. The displayed value should correspond to the scale value.

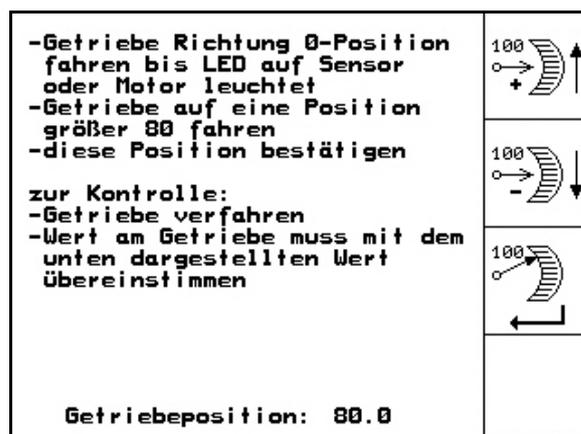


Fig. 82

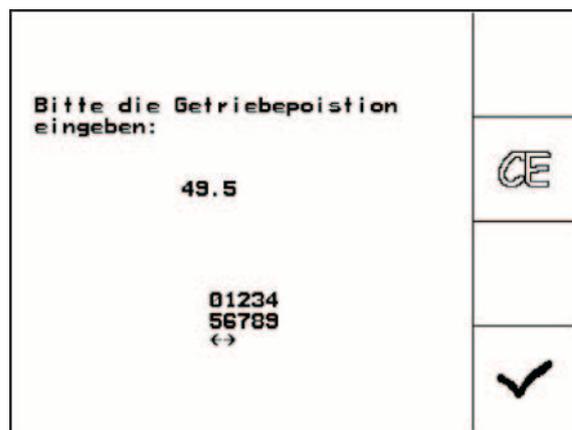


Fig. 83

7.2 Programming the light barriers



Setting the light barriers, see page 30!

Programming individual light barriers

Setup / Basic data



To assign an individual light barrier to the correct row, proceed as follows:

1.  Submenu
Programming individual light barriers.
2.  Start programming
3. Remove the main connector for the light barriers.
4. Connect only the light barrier to be programmed to the main connector.
5. Disconnect and reconnect the light barrier to be programmed.
6. The programmed light barrier is indicated in the respective row (Fig. 84).
7. Reconnect all light barriers in the row.

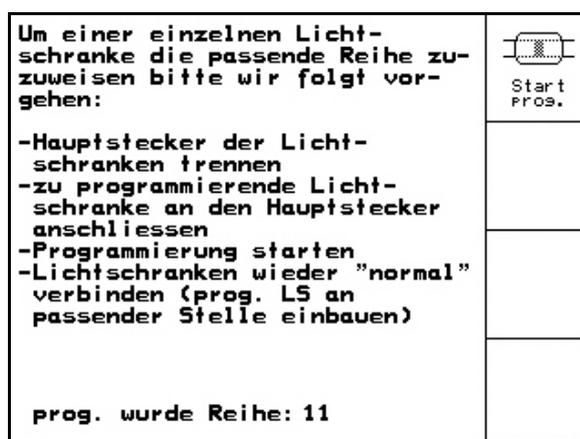


Fig. 84

Programming all light barriers

To assign all light barriers to the correct row, proceed as follows:

1.  Submenu
Programming all light barriers.
 2.  Program all light barriers.
 3. Connect all light barriers in the row.
 4. Detach all the light barrier connections.
 5. Make connection for light barrier 1 (connection starting from left).
- An acoustic signal is given.
6. Connect all the other light barriers consecutively.

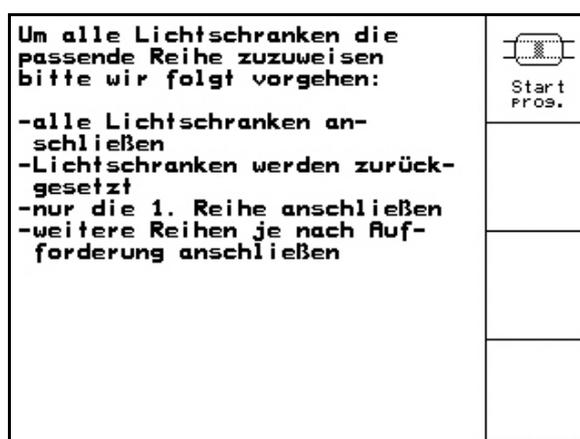


Fig. 85

8 Alarms and messages

Message:

A fault message 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.

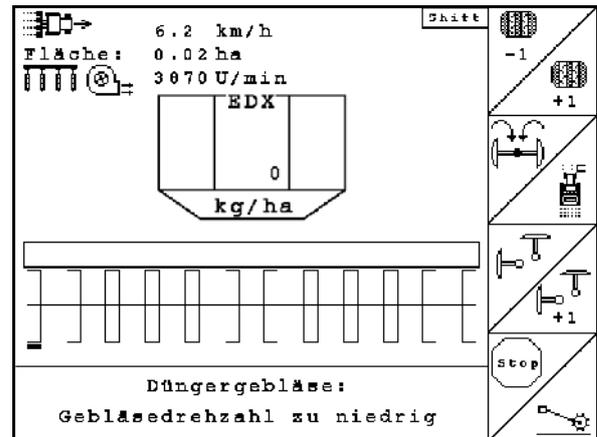


Fig. 86

Alarm:

A warning message 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. 87



Alarms and messages

Message	Type	Cause	Remedial action	Message
F2001	"STOP" button is still active	Message	The "STOP" button has been pressed to interrupt the counting for the rhythms of tramline control	Press the "STOP" button again
F2002	Insufficient fertiliser metering speed	Message	Requested metering unit speed not allowed (full metering unit)	Drive faster Speed calculation is wrong (pulse per 100 m) Target fertiliser rate is too low
F2003	Fertiliser metering speed too high	Message	Requested metering unit speed not allowed (full metering unit)	Drive slower speed calculation is wrong (pulses per 100 m) Target fertiliser rate is too high
F2004	Insufficient fertiliser filling level	Alarm	Sensor does not detect any fertiliser in the detection range	Top up fertiliser Sensor position incorrect Call up diagnostics menu (e.g. sensor defective)
F2005	Fertiliser setpoint cannot be maintained	Message	Application rate cannot be maintained with the set parameters at current ground travel speed.	Drive slower / faster Speed of metering unit fluctuates excessively Speed calculation wrong (pulses per 100 m) Target fertiliser quantity too high / too low
F2006	speed too high	Message	Excessive operational speed	Drive slower speed calculation is wrong (pulses per 100 m)
F2007	Gaps in row: x	Message	Optosensor x is detecting too few grains for row x	Clean optosensor Remove clogging grain Check the seat of the injection hose Check the fluidised bed Change scraper bar setting
F2008	Double layers in row: x	Message	Optosensor x is detecting too many grains for row x	Check the seat of the injection hose Check the flow bed Change scraper bar setting
F2009	Please press Shift and Scroll	Message	The "Call up terminal setup" button has been pressed	Press key combination indicated
F2010	Seed fill level in singling unit 1 is too low	Alarm	Sensor (B10) for fill level on the left (1) does not detect any seed in the detection range	Check the sensor in the diagnostics menu Check the position of the sensor Check sensor connections and plug contacts
F2011	Insufficient metering speed	Message	Requested speed of singling drum is impermissible	Drive faster Speed calculation is wrong (pulses per 100 m) Target seeding rate is too low
F2012	Excessive seed metering speed	Message	Requested speed of singling drum is impermissible	Drive slower Speed calculation is wrong (pulses per 100 m) Target seeding rate is too high
F2013	Seed fill level in singling unit 2 is too low	Alarm	Sensor (B11) for fill level on the right (2) does not detect any seed in the detection range	Top up seed Sensor position incorrect Distribute seed uniformly (driving on slopes) Call up diagnostics menu (e.g. sensor is defective)
F2014	"Stop metering unit" activated	Message	Stop function for the metering unit selected after detecting the speed	Press the "STOP" button again

F2015	All optosensors have been detected	Message	Calling up the Service button in the main menu	No remedial action required: all activated optosensors have been successfully registered
F2016	Setpoint deviates significantly from the calibration value	Alarm	Deviation greater than 50% between target fertiliser quantity in the calibration menu and job menu	Call up the Calibration menu in order to determine a new fertiliser calibration factor or ignore the error message by confirming with the input key (caution, incorrect spread rate is possible!)
F2017	Attention! You are changing the basic setting of the machine	Alarm	Call up the setup button in the main menu	Continue in setup with ESC, back to the main menu with the input key
F2018	Do you want to delete this job?	Alarm	"Delete job" key actuated	Delete the job with the input key, delete and cancel with ESC
F2019	Do you really want to reset?	Alarm	Security query after calling up the implement computer or resetting the AMATRON	Go back with "No" ESC or reset all data to the factory settings with "Yes" input key
F2020	Pulses per 100 m missing	Alarm	Number of pulses per 100 m is set to zero in the implement setup while detecting driving motion	Stop driving and determine/enter pulses per 100 m
F2021	Geared motor does not respond	Alarm	Despite selecting the electric Vario gearbox, no communication was detected by the computer for the remote control	Check the connection of the fertiliser remote control unit or choose a different fertiliser metering unit Test manual movement of the motor in the diagnostics menu
F2022	Seed singling unit 1 is not responding	Alarm	Despite speed detection, no rotation of the singling drum was detected	Check the connection to the gearbox motor Test manual activation of the motor in the diagnostics menu
F2023	Seed singling unit 2 is not responding	Alarm	Despite speed detection, no rotation of the singling drum was detected	Check the connection to the gearbox motor Test manual activation of the motor in the diagnostics menu
F2024	Fertiliser metering shaft does not turn	Alarm	Despite speed detection, no rotation of the fertiliser metering unit was detected	Check connection of motor and sensor Check the position of the sensor Remove any blockage of the drive Check rate setting at the Vario gearbox. Setting in AMATRON 3:- Alarm delay time of metering shaft- Fertiliser monitoring (number of shafts)- Fertiliser hopper (off/on)
F2025	Machine computer has failed	Alarm	Communication with second implement computer (hydraulic computer) not possible	Check connections of the computer; check plugs and computer function Check if the wrong implement type has been selected
F2026	Speed of the seed singling units left and right deviates too much from each other	Alarm	The rotations of the seed motors deviate too much from one another	Remove the blockage in the singling unit Check the plug contacts

Alarms and messages

F2027	Fertiliser metering unit on the left is not turning	Alarm	Despite speed detection, no rotation of the left-hand fertiliser metering unit was detected (EDX 9000-TC)	Check connection of motor and sensor Check the position of the sensor Remove any blockage of the drive Check rate setting at the Vario gearbox Setting in AMATRON 3: - metering shaft alarm time - fertiliser monitoring unit (number of shafts) - fertiliser hopper (Off/On)
F2028	Fertiliser metering unit on the right is not turning	Alarm	Despite speed detection, no rotation of the right-hand or front hopper fertiliser metering unit was detected (EDX 9000-TC, -2CF)	Check connection of motor and sensor Check the position of the sensor Remove any blockage of the drive Check rate setting at the Vario gearbox Setting in AMATRON 3: - metering shaft alarm time - fertiliser monitoring unit (number of shafts) - fertiliser hopper (Off/On)
F2029	Working position sensor has failed	Alarm	The voltage value of the analogue AS sensor is outside of 0.5 ... 4.5 V	Check sensor in the diagnostic menu Digital sensor installed / selected instead of analogue sensor Check the position of the sensor. Check rod guide for determining the position for damage Check the connections and plug contacts of the sensor
F2030	Fold / unfold position reached	Alarm	Reach threshold value for folding	Execute fold-in or fold-out via the control units
F2031	Regulation of the metering unit not possible	Alarm	Speed of metering unit cannot be maintained during the calibration process	Check input of target quantity Calibration factor correct (e.g. very small) Calibrate again
F2032	Scraper bar position 1 not reached	Alarm	The movement to a request scraper bar position (left) cannot be reached	Check the position of the turning angle sensor Check function of the sensor / motor in the diagnostics menu
F2033	Scraper bar position 2 not reached	Alarm	The movement to a request scraper bar position (right) cannot be reached	Check the position of the turning angle sensor Check function of the sensor / motor in the diagnostics menu
F2034	Scraper bar motor 1 failed	Alarm	Load current circuit for the scraper bar motor 1 (left) interrupted	Check plug contact for the motor Call up diagnostics menu
F2035	Scraper bar motor 2 failed	Alarm	Load current circuit for the scraper bar motor 2 (right) interrupted	Check plug contact for the motor Call up diagnostics menu
F2036	Potentiometer for scraper bar 1 has failed	Alarm	The voltage value of the analogue sensor (left) is outside of 0.5 ... 4.5 V	Check the sensor in the diagnostics menu Check the position of the sensor Check sensor connections and plug contacts
F2037	Potentiometer for scraper bar 2 has failed	Alarm	The voltage value of the analogue sensor (right) is outside of 0.5 ... 4.5 V	Check the sensor in the diagnostics menu Check the position of the sensor Check sensor connections and plug contacts
F2038	The implement computer for the scraper bar remote control is not reacting	Alarm	Communication with mini job computer - remote scraper bar adjustment not possible	Check connections of the computer; check plug contacts and computer function; check loop-in of the computer (integrate CAN_IN and CAN_OUT in the machine cable, plug in mini job computer on the separate connection)

F2039	Check the oil level of the on-board hydraulics	Alarm	Sensor does not detect any oil in the detection range	Check oil level Test the function in the diagnostics menu Check the position of the sensor Check selection of fertiliser monitoring unit (on/off)
F2040	Maximum speed of blower fan exceeded	Alarm	Blower fan speed greater than 4200 rpm	Reduce speed Check sensor position
F2041	Maximum speed of seed blower fan exceeded	Alarm	Seed blower fan speed greater than 4200 rpm	Reduce speed Check sensor position
F2042	Fertiliser blower fan maximum speed exceeded	Alarm	Fertiliser blower fan speed greater than 4200 rpm	Reduce speed check sensor position
F2043	Fertiliser blower fan: Blower fan speed too high	Message	Target speed of fertiliser blower has been exceeded	Adjust the actual speed of the fertiliser blower fan Increase the value of the target speed of the fertiliser blower fan
F2044	Fertiliser blower fan: blower fan speed is too low	Message	The target speed of the fertiliser blower fan has not been reached	Adjust the actual speed of the fertiliser blower fan Decrease the value of the target speed of the fertiliser blower fan.
F2045	Singling unit: maximum pressure exceeded	Message	The maximum specified pressure is exceeded	Minimise the blower fan speed of the singling blower If necessary, increase the value Call up diagnostics menu (e.g. sensor is defective)
F2046	Singling unit: minimum pressure undercut	Message	The defined minimum pressure has been undercut	Check drum charge (turn forward) Increase blower speed of the singling blower If necessary, reduce the value Call up Diagnostics menu (e.g. sensor is defective)
F2047	Singling unit 1 maximum pressure exceeded	Message	The defined maximum pressure has been exceeded	Minimise the blower fan speed of the singling blower If necessary, increase the value Call up diagnostics menu (e.g. sensor is defective)
F2048	Singling unit 1 minimum pressure undercut	Message	The defined minimum pressure has been undercut	Check drum charge on the left singling unit (turn forward) Increase blower speed of the singling blower If necessary, reduce the value Call up Diagnostics menu (e.g. sensor is defective)
F2049	Singling unit 2 maximum pressure exceeded	Message	The defined maximum pressure has been exceeded	Minimise the blower fan speed of the singling blower If necessary, increase the value Call up diagnostics menu (e.g. sensor is defective)
F2050	Singling unit 2 minimum pressure undercut	Message	The defined minimum pressure has been undercut	Check drum charge on the right singling unit (turn forward) Increase blower speed of the singling blower If necessary, reduce the value Call up Diagnostics menu (e.g. sensor is defective)
F2051	The seed blower fan speed is too low	Alarm	Blower fan speed less than 200 rpm	Increase rpm of seed and/or fertiliser blower fan Call up diagnostics menu (sensor defective)



Alarms and messages

F2053	Pressure sensor singling 1 failed	Alarm	The voltage value of the analogue sensor (left) is outside of 0.5 ... 4.5 V	Check the sensor in the diagnostics menu Check the position of the sensor Check sensor connections and plug contacts
F2054	Pressure sensor singling 2 failed	Alarm	The voltage value of the analogue sensor (right) is outside of 0.5 ... 4.5 V	Check the sensor in the diagnostics menu Check the position of the sensor Check sensor connections and plug contacts
F2055	Fill level microgranulate 1 too low	Alarm	Sensor for fill level on the left does not detect any seed in the detection range	Top up left-hand micropellet hopper Sensor position incorrect Call up Diagnostics menu (e.g. sensor is defective)
F2056	Fill level microgranulate 2 too low	Alarm	Sensor for fill level on the right does not detect any seed in the detection range	Top up right-hand micropellet hopper Sensor position incorrect Call up Diagnostics menu (e.g. sensor is defective)
F2059	Micropellet spreader 1: Motor is not reacting!	Alarm	Despite speed detection, no pulses are being received from the drive motor for the left-hand micropellet spreader	Check the connection for the left-hand motor and the sensor Remove any blockage of the drive Check target rate setting and calibration factor Check the sealing lip setting or roller size
F2061	Micropellet spreader 2: Motor is not reacting!	Alarm	Despite speed detection, no pulses are being received from the drive motor for the right-hand micropellet spreader	Check the connection for the left-hand motor and the sensor Remove any blockage of the drive Check target rate setting and calibration factor Check the sealing lip setting or roller size
F2063	Micropellet spreader: no communication to job computer	Alarm	Communication with mini job computer for micropellet spreader (left) not possible	Check connections of the computer; check plug contacts and computer function Check loop-in of the computer (integrate CAN_IN and CAN_OUT in the implement cable, plug in mini job computer on the separate connection) Check the encoding plug (without bridge)
F2064	Micropellet spreader 2: no communication to job computer	Alarm	Communication with mini job computer for micropellet spreader (right) not possible	Check connections of the computer; check plug contacts and computer function Check loop-in of the computer (integrate CAN_IN and CAN_OUT in the implement cable, plug in mini job computer on the separate connection) Check the encoding plug (with bridge)
F2067	Pre-selected speed changed	Alarm	The pre-selected speed no longer corresponds to the speed during calibration	Call up the Calibration menu in order to determine the new calibration factor or ignore the error message by confirming with the input key (caution, incorrect spread rate is possible!)
F2068	Fertiliser blower fan speed too low	Alarm	Blower fan speed smaller than 200 rpm	Increase the speed of the blower fan Call up Diagnostics menu (e.g. sensor is defective)
F2069	PLEASE NOTE! The basic setting of the implement may not be changed while driving	Alarm	A speed is recorded from the implement when entering the setup	Stop driving the implement, if applicable Check the speed (v=0 km/h) in the Work menu

F2070	Calibration step 00	Note	Confirmation required for the set parameter	Confirm with the input key or correct the parameter with ESC
F2071	Calibration step 01	Note	Confirm the previous steps for correct calibration	Confirm with the input key or correct the parameter with ESC
F2073	Calibration step 02	Note	Feedback about an active calibration procedure	The calibration procedure stops after the set area It is possible to cancel with ESC The procedure can be manually terminated with Enter, and the quantity can be entered
F2074	Calibration step 03	Note	Feedback about a comparison between the previous and current calibration factors	After checking the values, confirm with Enter and calibrate again if necessary
F2087	Micropellet spreader 1 target quantity faster	Message	Requested metering unit speed is too low (left-hand micropellet spreader drive)	Drive faster Speed calculation is wrong (pulses per 100 m) Target quantity is too low Check metering roller size
F2088	Micropellet spreader 1 target quantity slower	Message	Requested metering unit speed is too high (left-hand micropellet spreader drive)	Drive slower Speed calculation is wrong (pulses per 100 m) Target quantity is too high Check metering roller size
F2089	Micropellet spreader 2 target quantity faster	Message	Requested metering unit speed is too low (right-hand micropellet spreader drive)	Drive faster Speed calculation is wrong (pulses per 100 m) Target quantity is too low Check metering roller size
F2090	Micropellet spreader 2 target quantity slower	Message	Requested metering unit speed is too high (right-hand micropellet spreader drive)	Drive slower Speed calculation is wrong (pulses per 100 m) Target quantity is too high Check metering roller size
F2091	Stop implement and blower fan	Alarm	A speed or a blower fan speed is detected when entering residual emptying	Stop driving the implement Stop blower fan Check sensors if necessary
F2092	Metering flap open and tank installed?	Alarm	Confirmation as to whether the metering flap is open and a collecting bucket has been installed	If these steps are accomplished, continue with Enter
F2093	Supply voltage not reached	Alarm	The voltage for the electronics or load has dropped below 10 V	Check connection to the battery (fuse) Check state of the battery, start tractor if necessary Check supply line to the implement

9 Malfunction

9.1 Failure of the distance sensor

In event of failure of the distance sensor (Impulses/100m), which is fitted to the gearbox, operation can be continued after the 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.

1.  Select **Setup** in the main menu.
2.  Enter a simulated speed.



- During the work, the simulated speed entered must be maintained.
- As soon as impulses are registered by the distance sensor, the computer switches to the actual speed of the distance sensor!

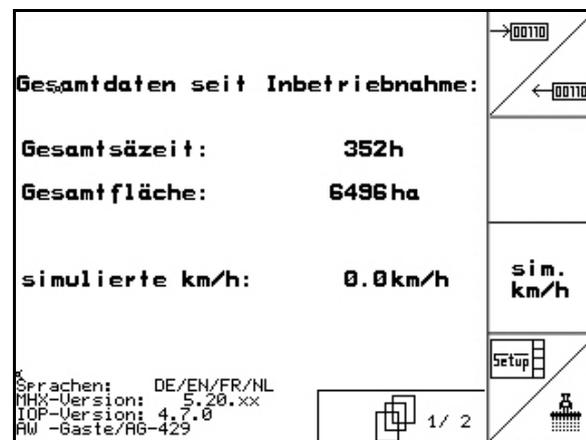


Fig. 88

9.2 Switching off defective light barrier

A defective light barrier is indicated in the work menu by the display of a reduced quantity K/ha.

The display of a reduced quantity may also have other causes.

Switch off the defective light barrier:

1.  Select **Setup** in the main menu.
2.  Select Diagnosis input.
3. Select page 3 .
4.  Actuate the Shift key.
5. Press .
6. Select  or  row.
7.  Switch off monitoring.
8. Press .

 When a light barrier is switched off, there is no monitoring of the respective sowing unit.

Diagnose Einzellichtschranke		nächste Reihe
Lichtschranke/Reihe:	1	
Diode 1:	<input type="text"/>	
Diode 2:	<input type="text"/>	vorher. Reihe
Diode 3:	<input type="text"/>	
Diode 4:	<input type="text"/>	
Diode 5:	<input type="text"/>	
Empfindlichkeit:	0	
Intensität:	0	
Überwachung:	ein	
		
		1/0

Fig. 89

9.3 Switch off defective pressure sensor

Ein A defective pressure sensor is displayed by a message.

Switching off defective pressure sensor:

1.  Select **Setup** in the main menu.
 2.  Select basic data.
- Switch off monitoring singling pressure.

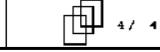
Regelfaktor Vereinzlung: 0.50	
Mikrogranulat 1	
Mikrogranulat 2	
Überwachung Druck Vereinzlung	aus
	
	1/0

Fig. 90

