

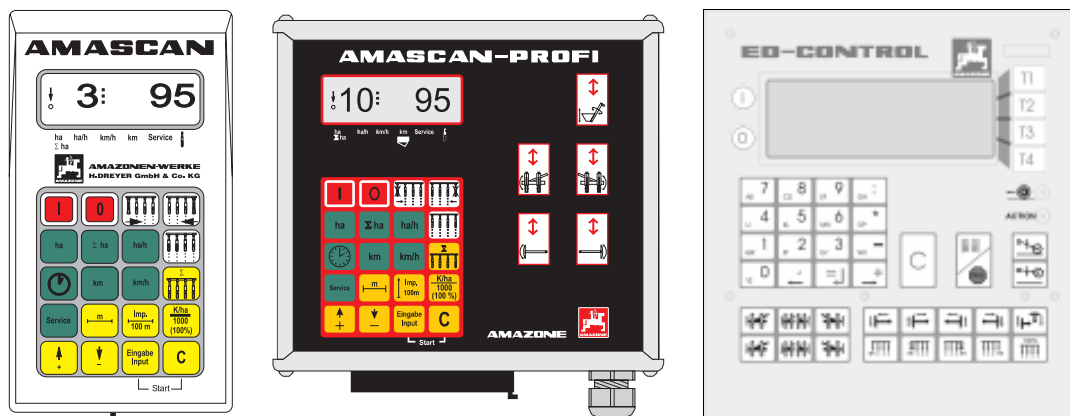
AMAZONE

Instruction Manual

On board computer

PRECISON AIR SEEDER

ED 02



MG 846
DB 700 (GB) 11.02
Printed in Germany



Before starting to operate, please carefully read and adhere to this instruction manual and safety advice.



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1. Details about the implement Amascan/Amascan profi/ED-Control

1.1 Range of application

The computer is a display-, controlling and monitoring device for Precision Airplanters.

The micro computer is provided with a memory and a lithium battery. All entered and determined values are stored for approx. 10 years, even if the on-board power supply is switched off.

Amascan und **Amascan profi** are suitable for Airplanters ED 02 with max. 12 sowing units.

1.2 Manufacturer

AMAZONEN-WERKE

H. DREYER GmbH & Co. KG

Postfach 51, D-49202 Hasbergen-Gaste / Germany

1.3 Conformity declaration

The calculator fulfils the EMV-guide line 89/336/EC.

1.4 Details when making enquiries and ordering.

When ordering spare parts indicate the serial-number of the computer.



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

1.5 Identification

Type plate on the on-board computer.



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

1.6 Declined use of the machine

The computer has exclusively be designed for the usual operation for agricultural machinery as a display, monitoring and controlling device in combination with the AMAZONE Airplanter ED.

The **computer** is a display- and monitoring device which has been designed for the common use in agriculture.

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

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

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

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

AMAZONE machines have been manufactured with great care, however, even in case of designed use, certain deviations from the seed rate of even a total failure cannot totally be excluded. These deviations may be caused e.g. by:

- Blocking or bridging (e.g. by foreign particles, bag residue, etc.).
- Wear of wearing parts (e.g. singling discs . . .).
- Wear of wearing parts (e.g. singling discs . . .).
- Incorrect drive RPM and travelling speed.
- Incorrect setting of the machine (incorrect mounting).

Therefore, check before any use and also during operation your machine for the proper function and sufficient seed rate accuracy.

Claims regarding damage not having occurred on the AMAZONE Airplanter itself would be rejected. This also applies to damage due to sowing errors. Modifications made to the AMAZONE Airplanter by the owner/user may result in consecutive damage and the manufacturer does not accept liability for such damage.



2. Safety

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

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

2.1 Dangers when not adhering to safety advice

Not adhering to the safety advice given

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

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

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

2.2 Qualification of operator

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

2.3 Symbols in this instruction manuals

2.3.1 General danger symbol

The safety advice in this operation manual which may lead to a danger of persons when not being observed, are identified with the general danger symbol (DIN 4844 W9).



2.3.2 Attention symbol

The safety advice in this operation manual which may cause dangers for the machine and its function when not being adhered to, are identified with the attention symbol.



2.3.3 Hint symbol

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



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

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

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

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

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

- Only install devices which have officially been authorised in your country.
- Firmly install the device.
- The use of portable or mobile devices inside the tractor cab is only permissible with a connection to a firmly installed external antenna..

2.5 Safety advice for repair work



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

3. Fitting instructions

3.1 Console and computer



Fit basic console (Fig. 1/2) (special option) within reach and sight to the right hand of the operator; it must be free of vibrations and electrically conductive inside the tractor cab. The distance from a radio transmitter and an antenna should at least be 1 m.

The **retainer** (Fig. 1/1) is pushed on to the tube of the console.

The optimum viewing angle of the display is between 45° and 90° seen from below. Bring into the desired position by swivelling the console.



Make sure that the computer housing receives via the console an electrically conductive connection to the tractor chassis. Scratch off all paint from the fitting surfaces.

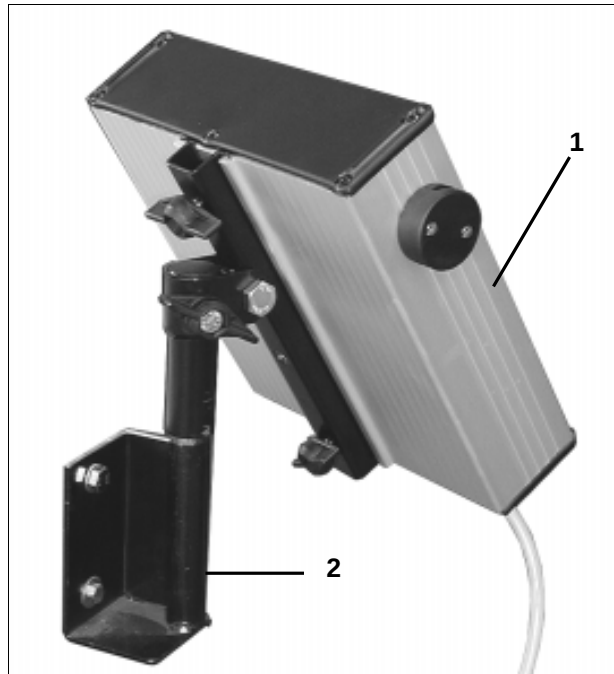


Fig. 1

3.2 Battery connection lead

The power supply is **12 V** and should be taken directly from the battery or from the 12 V-starter. Carefully lay the **cable** (17) and shorten if necessary. Fit the ring tongue for the earth cable (blue) and the wire end bushing for the + cable (brown) with appropriate pliers. The wire end bushing for the + cable is located in the connecting clamp of the fuse holder.

brown = + 12 volt
blue = mass

3.3 Connection of the implement

The airplanter ED mounted to the tractor is connected via one/two implement plugs.

Via the 39 pole implement plug "Electric" the computer receives information about the sensors and part section control switches.

Via the 30 pole implement plug "Hydraulic" the hydraulic functions of the machine are controlled (only for ED Control and Amascan Profi).

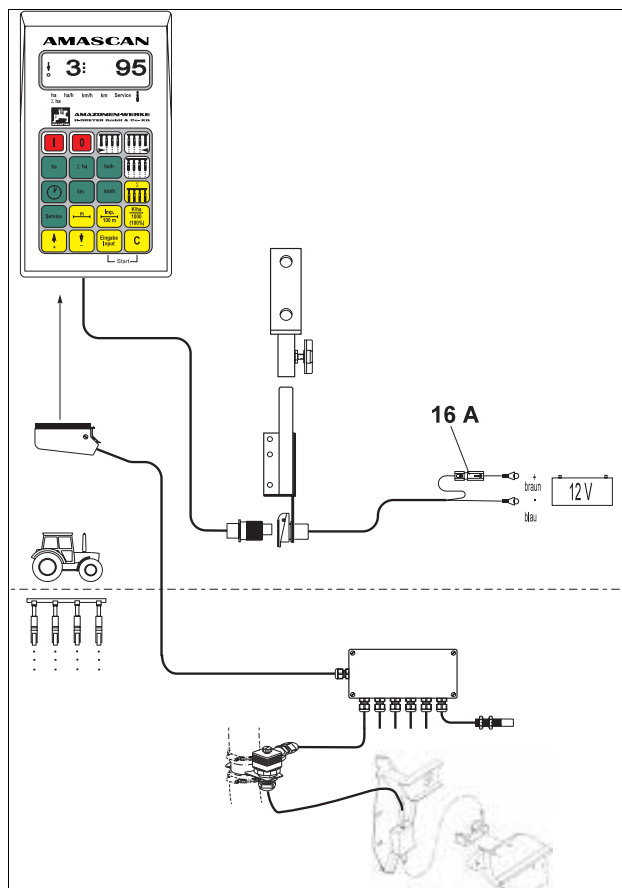


Fig. 2

4. Maintenance

4.1 Calculator

The calculator is maintenance-free. During winter store the calculator in a frost-free room and protect it from humidity.

4.2 Sensors

If dirty, clean the opto-sensor with a soft brush.

If the dirt cannot be removed without water, clean the opto sensor with dish water. Dry with a grease-free cloth.

The cleaning applies to the inside of the opto sensor (infrared diode and photo transistors)



Before starting to operate in the season clean the sensors by using dishwater and a soft brush. Dry afterwards.

The **movement sensor** (sensor "X") is maintenance-free.

4.3 Fault remedy



For searching faults please proceed in the outlined order.

Fault	Cause	Remedy
The calculator cannot be switched on	Wrong poling on the power supply	Check for proper poling
	Power supply interrupted	Check battery connecting lead fuse, binders of the battery and fuses.
	Total failure	Send the calculator to your dealer
The calculator shows HALP 88 or HALP 00	Memory failure	Send the calculator to your dealer



Fault	Cause	Remedy
The forward speed is not displayed.	Entering "Impulses/100 m" is missing.	Enter numbers of "Impulses/100 m".
	Sensor "X" does not send impulses to the calculator, the ring in the display does not flick while travelling.	Set the distance between Sensor "X" and impulse disc onto 3 to 4 mm.
		Connect cable properly in the distributor black = sw = Signal brown = br = +12 Volt blue = bl = - mass(earth)
		Sensor "X" is defect, replace.
	Drive interrupted (chain torn off).	Repair the chain.
The area is not displayed.	Working width has not been entered.	Enter working width.
The set application rate is not displayed. (Display 0 seed grains/ha).	Scraper position has not been set properly.	Re-adjust the scraper position.
		Seed box is empty.
	Opto sensor does not send any impulses to the calculator.	Sowing unit is defect. With the aid of the service-key determine the defective sowing unit and proceed as follows: Opto sensors are dirty, clean them thoroughly
		Check whether the opto sensor or the cable of the connecting unit are defect. Remove the cube plug and apply the adjacent cube plug. If the fault has been remedied, the cable is defect. If the fault has not been remedied, the opto sensor is defect.
		Connect the cables in the distributor in the appropriate manner green = gn = Signal brown = br = + 12 Volt white = ws = 0 Volt
		Sensor is defect, replace.
		Calculator is defect, replace.
		Distributor is defect, replace.
The display seed grains/ha heavily deviates.	The opto sensors send uneven impulses to the calculator.	Inaccurate seed placement – re-adjust sowing units properly.
		Opto sensors are dirty, clean them thoroughly.
	Cable is broken.	Find out the defective sowing unit. For this remove the relevant cube plug and apply the adjacent cube plug. If the fault has been remedied, the defective sowing unit has been found. If not, proceed in the same way for all sowing units.
Only 4 sowing units are monitored instead of 8.	"Number of sowing units" has not been entered correctly.	Enter "number of sowing units".

5. AMASCAN/AMASCAN profi

Please also observe para. 1, 2, 3, 4 and 5

5.1 Description of product

AMASCAN or **AMASCAN Profi** is a display- and monitoring- device for Airplanters ED with up to 12 sowing units maximum.

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

AMASCAN or **AMASCAN PROFI** (Fig. 3/...) consists of:

1. AMASCAN.
2. AMASCAN PROFI.



AMASCAN or **AMASCAN Profi** is installed on the tractor within view of the tractor operator on a mounting bracket (3) and a console (4).

3. Carrier.
4. Console battery power supply cable. Connect the battery power supply cable with the tractor battery.
5. Connecting unit **AMASCAN** for 6 or 12 rows with opto sensors (6), movement sensor (7) and connecting cable with implement plug (8). The connecting unit is fitted to the Airplanter.
6. Opto sensor. Each sowing unit is provided with an opto sensor.
7. Movement sensor (Sensor X) for travelled distance and area monitoring. This sensor simultaneously gives the reference signal for the operational situation (implement in operation "yes" (ja) / "no" (nein). The sensor fitted to the setting gearbox is transmitting impulses (Imp./100m), as soon as the gearbox input shaft is driven by the ground wheels.
8. Implement plug with 39-pole multiple plug. **AMASCAN** is connected to the connecting unit of the ED with the aid of the implement plug.
9. Cable-tree-system **AMASCAN Profi** for 12 rows in maximum incl. movement sensor (7).
10. Opto sensor for cable-tree-system.
11. Dummy coupling. Required for reducing the number of rows, e. g. from 8 rows sunflower to 6 rows maize.
12. AMFÜME for row fertiliser applicator. Electronic level indicator for visual and audible alarm on the **AMASCAN**.
13. AMFÜME for cable-harness system.

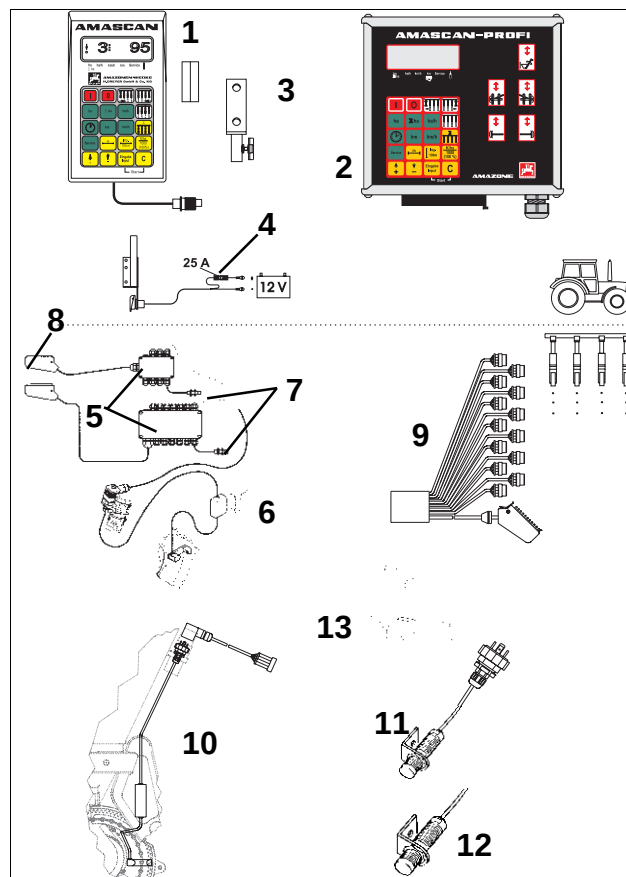


Fig. 3

AMASCAN and its functions:

- Function monitoring of the individual sowing units.
 - After having dropped from the singling disc and passed the opto sensor (**Fehler! Verweisquelle konnte nicht gefunden werden.**6/6) (infrared light barrier), every individual seed grain creates an impulse which monitors the sowing units.
 - The currently counted number of seed grains is extrapolated to seed grains/ha, shown on the display and compared with the pre-determined rated value.
 - **If the rated value falls short by more than 15 % a honk sounds and the arrow above the symbol "sowing unit" flicks.** Simultaneously the number of the defect unit is shown on the display with the **actual value** (seed grains/ha)/1000.
- Determination of the worked area per task in [ha].
- Determination of the worked total area, e. g. per season in [ha].
- Display of the current area efficiency in [ha/h].
- Determination of the time of operation in [h].
- Display of the travelled distance in [km].

AMASCAN PROFI and it's hydraulic functions

- Folding in and out right hand boom.
- Folding in and out left hand boom.
- Folding in and out right hand track marker.
- Folding in and out left hand track marker.
- Filling auger: lowering and switching on drive / lifting and switching off drive.

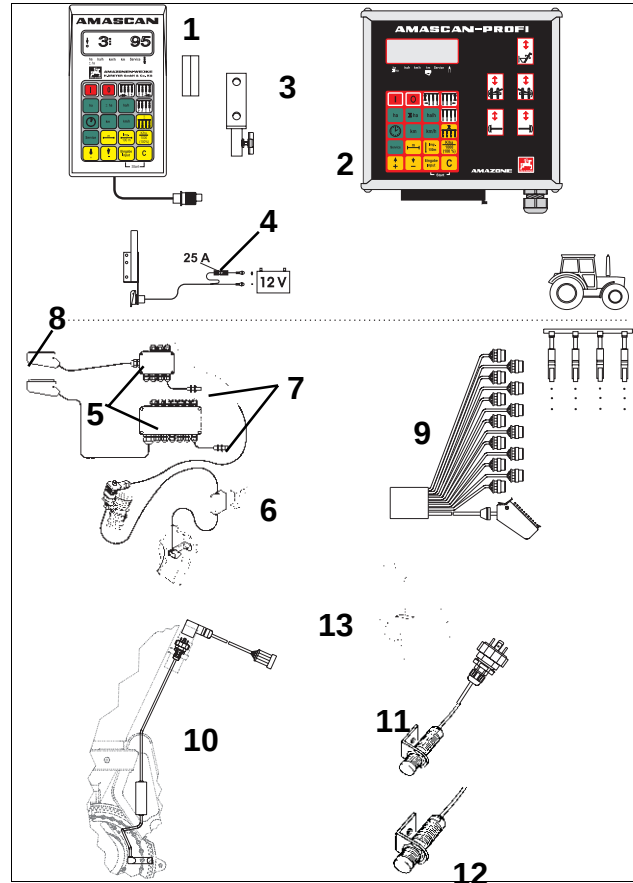


Fig. 4

When the Airplanter is in operational position the following data are shown on the 6-digit display (Fig. 5/1):

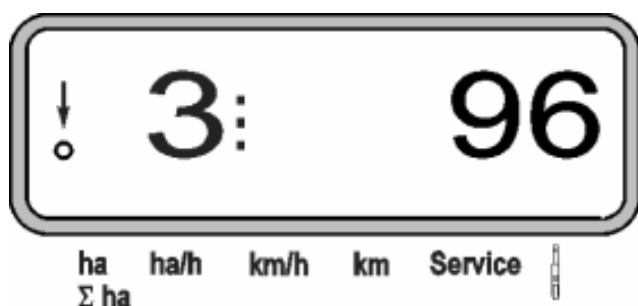
- right hand – the current number [seed grains/ha]/1000 (Fig. 5/2).
- on the left hand side (Fig. 5/3) the display (figures 1, 2, 3 etc.) changes automatically after 5 seconds. The number of the actually monitored sowing unit is shown.

If the computer recognises a defect on one of the sowing units or a deviation from the pre-set rated value, the arrow above the symbol "sowing unit" flicks. At the same time the number of the defect sowing unit (e. g. 3) with its current value (e. g. 50) (seed grains/ha)/1000 is shown on the display and an audible alarm sounds (honking).



Seen in travelling direction the sowing units are numbered from the left hand outer side to the right hand outer side. That means, seen in travelling direction, the sowing unit on the left hand outer side bears the number 1, etc..

Display in case of a defect sowing unit



- the vertical arrow (Fig. 5/4) and the flicking circle below (Fig. 5/5), as soon as the movement sensor (Sensor "X") is transmitting impulses to the AMASCAN.

The key pad (Fig. 5/6) is divided into the following areas:

- Red = Implement on / off.
- Green = Function keys (display of the determined data).
- Yellow = Input keys (entering the machine data).
- White = Control keys (monitoring function to switch on or off one or several units for a short time).

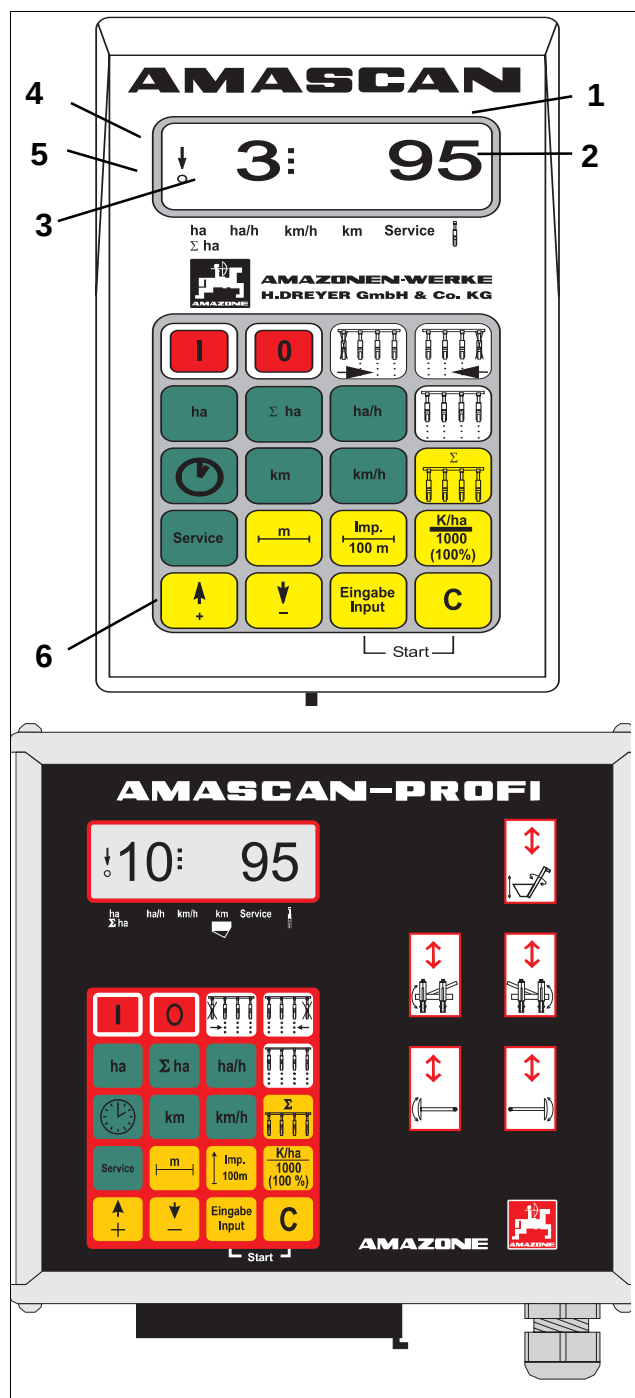


Fig. 5



Table 5.1: Keypad layout

Key	Function
	ON key
	OFF key
	Display of the covered area [ha] after having entered the "start function"
	Display of the covered total area
	Display area efficiency in [ha/h]
	Display working time in [h] after having entered the "start function"
	Display of the travelled distance in [km] after having entered the "start function"
	Display of the operational speed in [km/h]
	Checking the monitoring function
	Working width in [m] – display and entering
	Entering the number of sowing units
	Imp/100 m – display and entering (directly or via the calibration procedure)
	Rated value seed grains/ha)/1000] display and entering

Key	Function
	Input key for increasing the displayed value
	Input key for reducing the displayed value
	Key used to confirm all entries
	Correction key
	Pre-selection switching on/off sowing units beginning at the r.h. outer side.
	Pre-selection switching on/off sowing units beginning at the l.h. outer side.
	Complete reset the switching off of the sowing units.

5.2 Putting to operation

- Plug the implement plug of the Airplanter ED, mounted to the tractor, on to **AMASCAN** or **AMASCAN Profi**.

Before starting to operate check the implement specific data by pressing the corresponding keys in the mentioned order or enter newly:

1. Switch on **AMASCAN** or **AMASCAN Profi**.
2. Check distance sensor calibration value "Imp./100m" and correct if necessary (by direct entering the calibration of the movement sensor).
3. Check the working width [m] and correct if necessary.
4. Enter the rated value for the application rate [(seed grains/ha)/1000].
5. Check the number of sowing units and correct if necessary.
6. Release start function and start sowing operation.

5.3 Operating procedure and description of the keypad

Before starting operation AMASCAN or AMASCAN Profi requires the implement specific data (values) in order to monitor the connected Airplanter ED:



After having pressed the corresponding key



or.  or  or  and then pressing the keys  or  these data (values) can be dialled directly on the display.



After having dialled the desired values via the keys  or  always press key  in order to store the dialled value.



By the first pressing on one of the keys  or  the display jumps by one position into the desired direction.

5.3.1 Operating sequence

1. AMASCAN or AMASCAN Profi on/off switching

By pressing key  AMASCAN or AMASCAN Profi is switched on and by pressing key  it is switched off.

When switched on the calculator tests itself. Then automatically the function is dialled which was displayed before the calculator had been switched off.

In case of a fault in the electronic system, the device shows:

HALP 00 or **HALP 88**

In this case return the computer for repair.



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

2. Calibrating the distance sensor

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

There are two possibilities to enter the calibration value "Imp./100m":

- The value "Imp./100m" is known and dialled via the keypad.
- The value "Imp./100m" is unknown and should be determined by driving down a calibration distance.

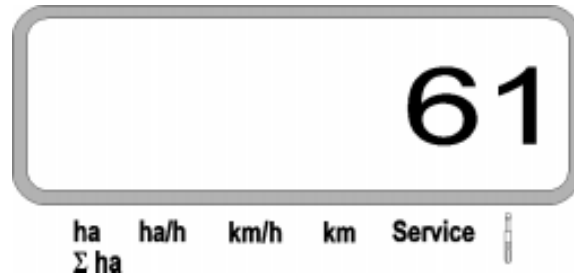


As the calibration value "Imp./100m" depends soil, we recommend that you always newly determine this value by driving down a calibration distance, in case of heavily deviating types of soil.

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

- Press key  with the tractor stopped.
- Dial the known calibration value "Imp./100m" via the keys  or .

Display of the dialled calibration value



- Press key  to store the dialled calibration value.
- Once again press key  to check the stored calibration value. Now the dialled calibration value should appear on the display.

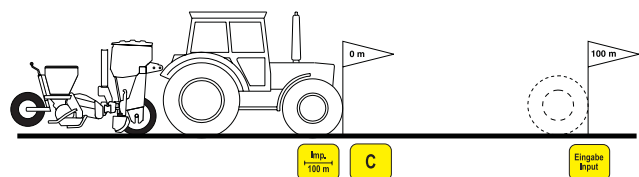


In case of deviations between

- the sown application rate and the actually covered area
- the covered area determined by AMASCAN or AMASCAN Profi and the actually covered area
- newly determine the calibration value by driving down a 100 m calibration distance (please refer to item b).

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

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



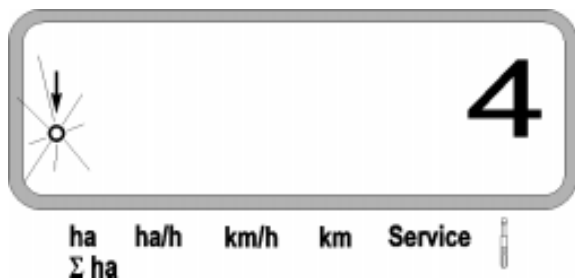
- Bring tractor to start position and Airplanter ED into operational position (if necessary, lift the sowing units to interrupt the drive of the sowing units).
- Press key  keep pressed and simultaneously press key .

Accurately drive down the calibration distance from the starting to the ending point (when starting the counter returns to "0"). The display shows the currently determined impulses.



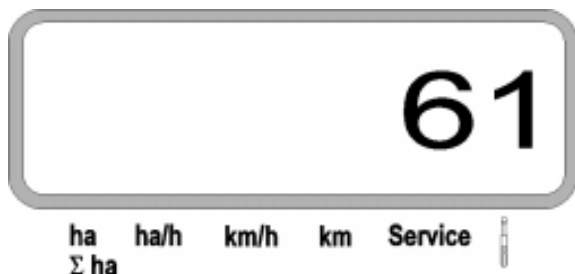
When driving down the calibration distance, do not press any key.

Display during calibrating



- Stop after 100 m. Now the number of determined impulses is shown on the display.
- Press key  to store the displayed, determined calibration value (Imp./100 m).

Display of the determined calibration value



- Once more press key  to check the stored calibration value. Now, the determined calibration value (Imp./100 m) should appear on the display.
- Enter the determined calibration value into Table 5.2.

Table 5.2: Soil related calibration value "Imp./100m"

Type of soil	Imp./100m
Soft soil	
Medium heavy soil	
Hard soil	

3. Working width

For determining the operated area **AMASCAN** or **AMASCAN Profi** requires information about the working width. The working width should be entered as follows:

- Press key .
- Via the keys  or  dial the desired working width [m] on the display, e. g. "3.00" for 3 m working width.

Display working width



- Press key  and thus store the dialled value.
- Once again press key  to check the stored value. On the display then the chosen figure, e. g. "3.00" should appear.



4. Application rate



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

Example:

Desired: **95.000 seed grains per hectare**

Row spacing R: **0,75 m**

Singling disc: **30 holes.**

Determined seed grain spacing a: **14,04 cm**
(please refer to chapter 7.5)

Singling disc used: **30 holes**

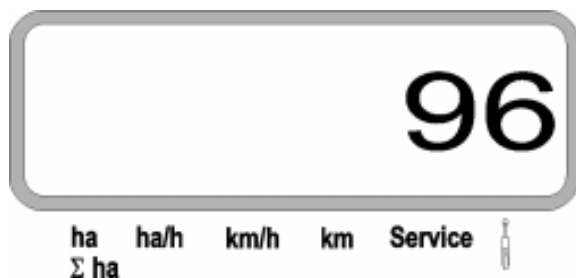
- Take from the gearbox setting table a seed grain spacing nearest to the determined seed grain spacing whereby you have to bear in mind the holes in the singling discs.

seed grain spacing found in the table: **13,9 cm**

- In the "**review table seed grains / ha singling disc 30 holes**" find the **seed grain spacing 13,9 cm**. Read off this line underneath row spacing R = **75 cm** the number of **95923 seed grains/ha** (95923 seed grains/ha corresponds to 96000 seed grains/ha).

- Press key .
- Via the key or dial the desired application rate [(seed grains/ha)/1000] on the display, e. g. "96" for 96000 seed grains/ha.

Display of the desired application rate



- Press key . The dialled value "96" will be stored.
- press once again key to check the stored value. On the display then the figure "96" should appear.

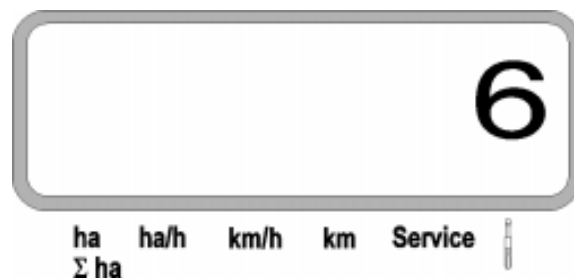
5. Entering the number of sowing units



The entered value must not exceed the figure "12" (12 sowing units in maximum).

- Press key
- Via the keys or dial the figure for the number of sowing units on the display (e.g. "6" for 6 sowing units).

Display number of sowing units



- Press The dialled value "6" is stored.

- Once again press key to check the stored value. On the display the figure "6" must be shown.

6. Starting the sowing procedure

Before starting operation, actuate the "start function"

Then the implement is ready for operation. For this

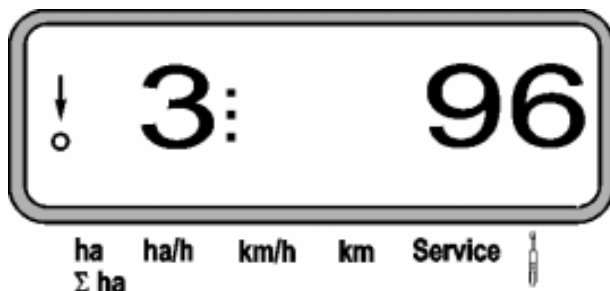
press key , keep it pressed and simultaneously press key .



This way, the memory of the function keys , and return to "0".

5.4 Sowing operation

Display "operation"



Explanation for the display "operation"



The vertical arrow is shown when the implement is in operational position. During travel the circle below must flick. That means that the sensor for storing the covered area and the travelled distance is transmitting impulses to **AMASCAN** or **AMASCAN Profi**.

3:

This display (figures 1, 2, 3 etc.) automatically changes after 5 seconds. The number of the current monitored sowing unit id displayed.

: 96

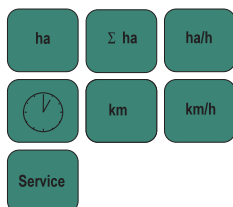
During the sowing operation the display shows the actual seed rate, e. g. "96" for 96000 seed grains/ha.



If the actual seed rate deviates by 15 % an audible signal sounds. An arrow appears above the sowing unit symbol and the sowing unit with the incorrect seed rate is displayed.

Description of the function keys

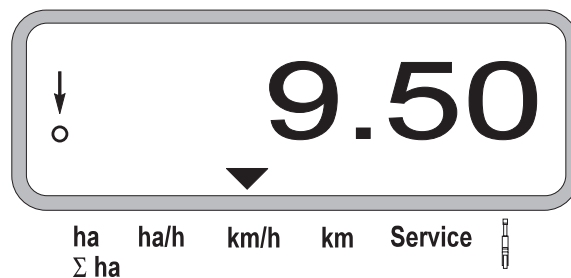
Via the function keys



the determined data can be displayed during sowing at any time.

By pressing one of the following function keys the desired value (e.g. 9.50 for 9,5 km/h) will appear for approx. 5 seconds.

Display after the function key km/h has been pressed



On the lower edge of the display the arrow points towards the symbol of the currently pressed function key. Thereafter, the computer automatically switches back to the "operational display".

1. Part area after having actuated the "start function"

After having pressed the key **ha** the **covered area** in [ha] is displayed (e.g. 10.5110 for 10,5110 ha), which had been covered **after having actuated the "start function"**.



Only the covered area is determined at which the Airplanter is in operational position.

Display after having pressed key "ha"

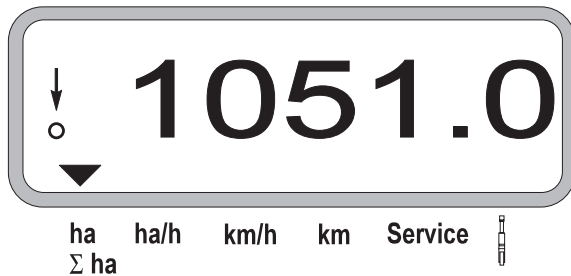




2. Total area, e. g. one season

After having pressed key  the **covered total area** is displayed in [ha] (e.g. 1051.0 for 1051 ha).

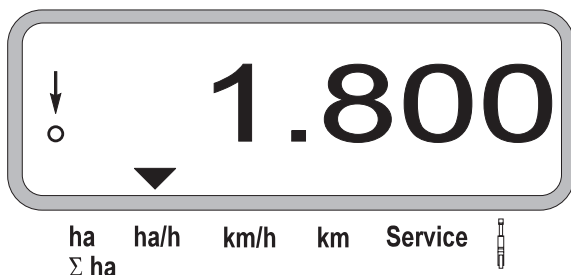
Display after having pressed key "Σ ha"



3. Area efficiency

After pressing key  the current area efficiency is displayed in [ha/h] (e.g. 1.800 for 1,8 ha/h).

Display after having pressed key "ha/h"



4. Hours of operation

After pressing key  the operational time is displayed in [h] (e.g. 1:15:51 for 1 hour 15 min. 51 sec.), which passed after having actuated the "start function".

Display after having pressed key "clock" ("Uhr")



If the tractor engine is stopped and thus the computer currentless the time interception is inter-

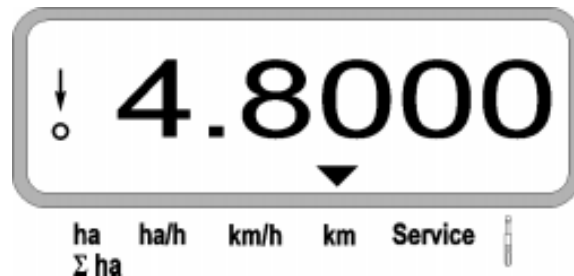
rupted. After the tractor has been started again the time interception is automatically continued.

During operation the time interception can be stopped by pressing key  twice. After pressing this key again the time interception is continued.

5. Travelled distance

After pressing key  the distance [km] is displayed (e.g. 4.8000 for 4,8 km), which has been travelled after having actuated the "start function"..

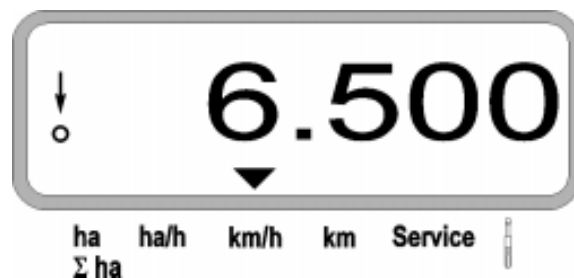
Display after having pressed key "km"



6. Operational speed

After pressing key  the actual operational speed is displayed [km/h] (e.g. 6.500 for 6,5 km/h).

Display after having pressed key "km/h"



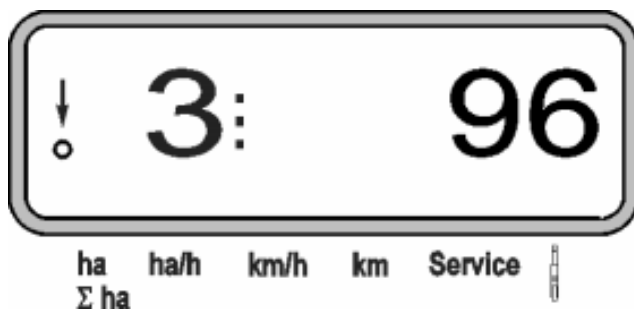
7. Service-key for checking the function ability of the opto sensors

After pressing the key  the service function is dialled.

If now the light barrier on one of the opto sensors is interrupted,

- the computer displays the sowing unit number into which this opto sensor is installed (e.g. "1" for the outer left hand sowing unit) and
- at the same time a honk signal sounds.

Display after having pressed the key "Service"



This display is only shown for about 1 second.



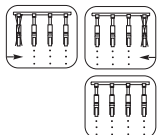
Do not push any firm particles into the sowing coulters. These might damage the opto sensor.

5.5 Switching on and off or monitoring the on/off switching of the individual sowing units during sowing operation



Sowing units with solenoid can be switched off.

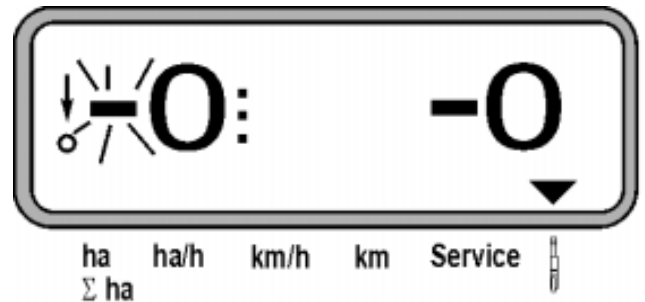
On sowing units without solenoid only the monitoring is switched off.

Via the white control keys  the switching

on and off (or the monitoring function) of the individual sowing units can be switched during operation.

Press once key  or  to pre-select from which side (l.h. / r.h.) the individual sowing units should be switched off. The display shows the side by a flashing minus.

Display after having pressed the key



With the minus key  the sowing units can be switched off by each one key pressure, starting from the outer side.

With the plus key  the sowing units can be switched on, starting from the inner side.

After pressing key  all sowing units are switched on again and the operational display appears again.



All sowing units are automatically switched on again if the AMASCAN or AMASCAN PROFI realises an interruption of the operational position, i. e. the movement sensor does not send impulses any more. This is the case, e.g. when the machine is raised at the headlands, however also when it is stopped in the field.

5.6 Permanent switching off (of switching off the monitoring) of individual sowing units

Besides the switching of the sowing units from outside towards the inner side any desired sowing unit can additionally be switched off for a lasting time.



This setting remains existing beyond switching off and on the AMASCAN and the lifting.

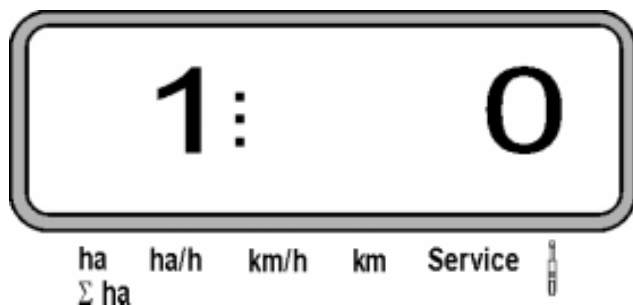
The setting is deleted via key  Then all sowing units are switched on again.

To allow a check of the permanent switching off, the disengaged rows are still monitored in the operational display (The seed rate must be 0).

Press key "Number of sowing units / permanent"



for 5 seconds until the display



appears.

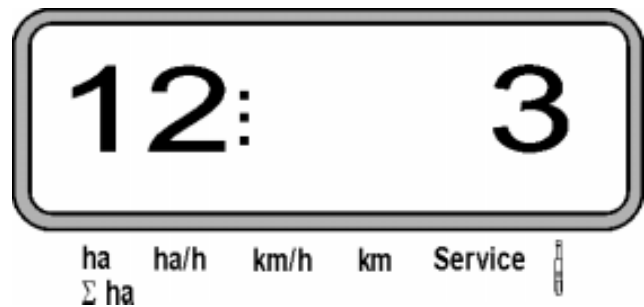
The left hand figure indicates the sowing unit [1 for sowing unit on the outermost left hand side].

With the keys  (switching off) and  (switching on) the right hand figure can be changed.

- 1 = Sowing permanently switched off (of monitoring switched off)
- 0 = Sowing unit permanently switched on (or monitoring switched on)

Press key  "enter" and switch on/off the next sowing unit.

After the entering for the last sowing unit has been confirmed the following information is shown.



- Left hand: Number of sowing units
- Right hand: Number of sowing unit **not** switched off.

6. ED-Control

Please also refer to para. 1, 2, 3, 4 and 5

6.1 Description of product

6.1.1 Description of system

ED-Control can be used on Airplanters as a displaying, monitoring and controlling device.

For monitoring the sowing units each individual seed grain produces an impulse after it has left the singling disc and passed the opto sensor (infrared light barrier).

The actually registered number of seed grains is extrapolated on seed grains/ha, shown on the display and compared with the pre-set rated value.

In addition the actual forward speed (km/h), the tramline and the switched off sowing units are displayed during operation.

For every job the travelled kilometres (km), worked area (ha) and the working hours (h) of implement, tractor and operator are stored. 12 jobs can be stored. Thereafter the first job will be overwritten.

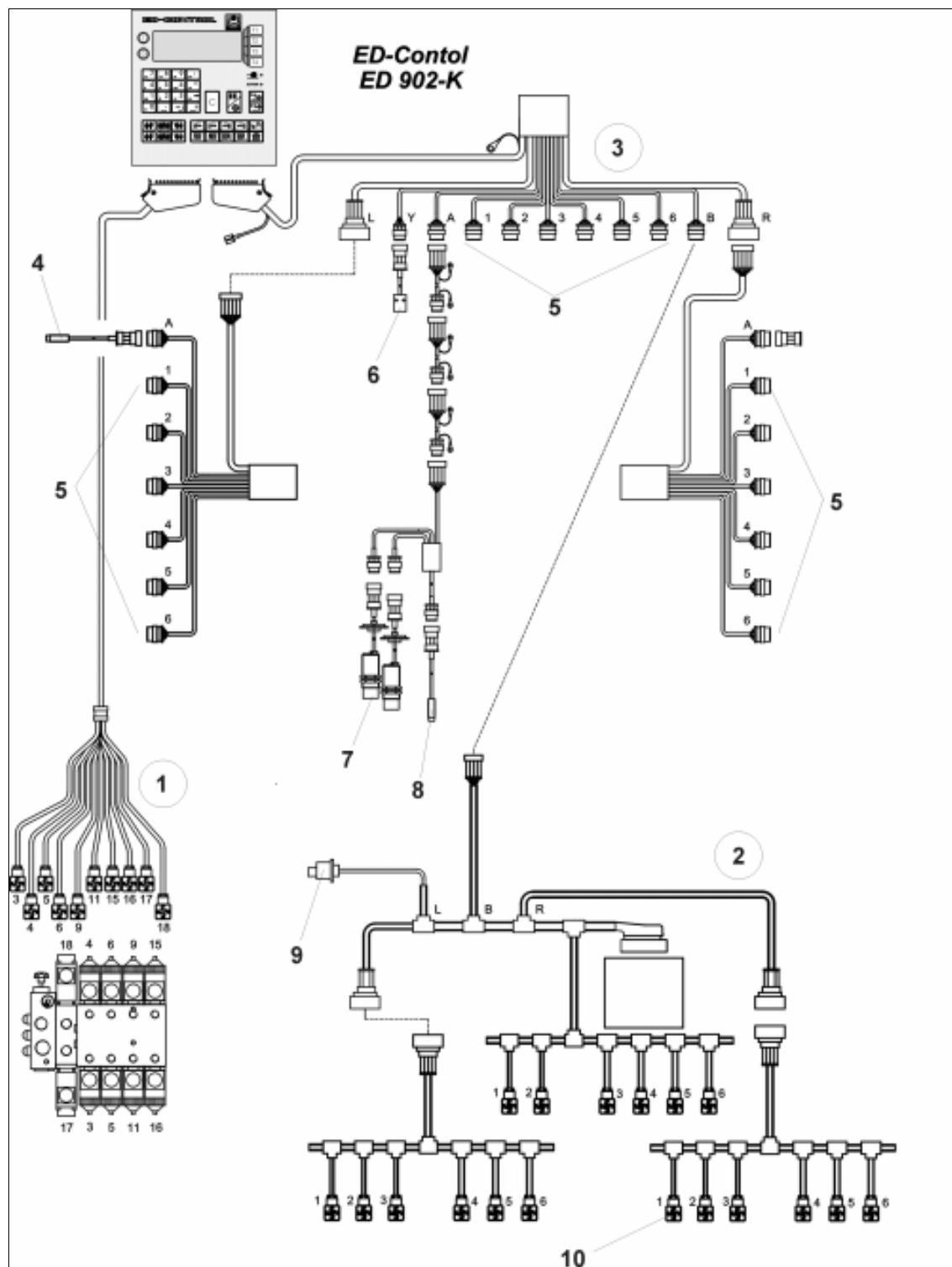
The hydraulic functions

- Folding in and out
- Track marker actuation
- Starwheel lifting / lowering

are approached via ED Control.

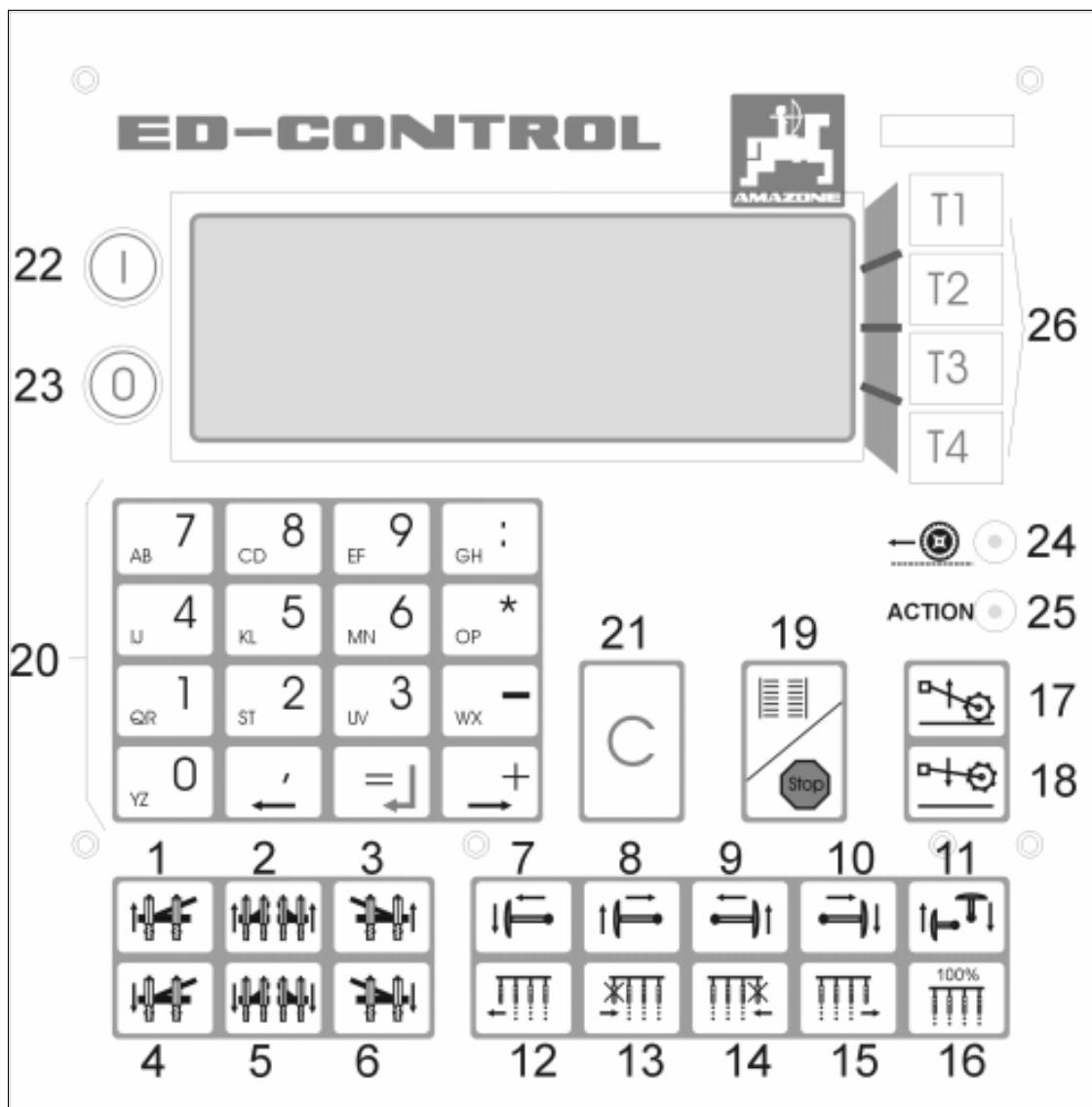
The unit consists of the computer with connecting cable and console.

6.1.2 Circuit diagram



- | | | | |
|----|-----------------------------|-----|--|
| ① | Hydraulic cable harness | 6. | Hydraulic safety sensor |
| ② | Switching off cable harness | 7. | Sensor filling level fertiliser hopper |
| ③ | Monitoring cable harness | 8. | Drive monitoring fertiliser hopper |
| 4. | Sensor impulses/100m | 9. | Power supply tractor |
| 5. | Opto sensor | 10. | Switching off sowing unit |

6.1.3 Key overview



Folding in and out booms:

1. Folding in left hand boom
 - only for ED602
2. Folding in both booms
3. Folding in right hand boom
 - only ED602
4. Folding out left hand boom
 - only ED602
5. Folding out both booms
6. Folding out right hand boom
 - only for ED602



For folding in and out the booms keep keys pressed until the procedure has been finished.

Folding in and out track markers:

7. Folding out left hand track marker
8. Folding in left hand track marker
9. Folding in right hand track marker
10. Folding out right hand track marker



For folding in and out the track markers keep keys pressed until the procedure has been finished.

11. Changing track marker (at the headlands **prior to raising** the implement)
 - Press key before turning at the fields' end – track marker is lifted
 - When turning both track markers are in a lifted position.
 - After turning press key – track marker is lowered.



Before starting sowing operation hydraulically lower both track markers (keys 7 and 9) and then press track marker change key (11) until the correct track marker is folded out.

Switching on and off part sections:

12. Switching on part sections left hand side
 - with every key pressure one switched off row is switched on from inside to outside.
13. Switch off part sections left hand side
 - by every key pressure one row is switched off from outside to inside.
14. Switch off part sections right hand side
 - by every key pressure one row is switched off from outside to inside.
15. Switching on part sections right hand side
 - with every key pressure one switched off row is switched on from inside to outside.
16. Switching on all part sections
 - All switched off rows are switched on again.



The part sections switched off are displayed in the operational menu (see para. 6.2.4 operational menu)

Lifting / lowering the starwheel

17. Lifting the starwheel
18. Lowering the star wheel

Stopping the automatic switching rhythm of the tramline control

19. Allows raising the track marker (with profi control) and stopping the sowing operation whereby the tramline control does not shift on.
20. Figure block for entering data
21. Correction key for 10 digit key pad
22. Switching on ED Control
23. Switching off ED Control
24. LED flicks permanently while travelling
25. LED flicks permanently when the ED is in operational position
26. T1-T4 Keys for menu choice

6.1.4 Menu review

- Entering implement data. T3
 - Impulses per 100m.
 - Enter number of rows and spacing.
 - Selection filling level sensor.
 - Setting tramline rhythm.
 - Switching off rows.

- Start a new job T1
 - Name / address
 - rated value seed grains / ha
 - enter commend
 - Daily counter
 - Display of travelled Km and working hours
 - Display area efficiency
 - Display of deposited seed grains per row

- Operational menu T4 (menu during operation)
Display:
 - travelled Km
 - seed grains /ha in row 1-18
 - tramline
 - sowing units switched off
 - tramline rhythm No.
 - number of tramlines until repeat

Enter:

 - Switch tramline +1
 - Switch tramline -1
 - Finish job
 - Store job

- Memory T2
 - Selection of memory
 - Display of stored jobs (max 12)
 - Delete all memories

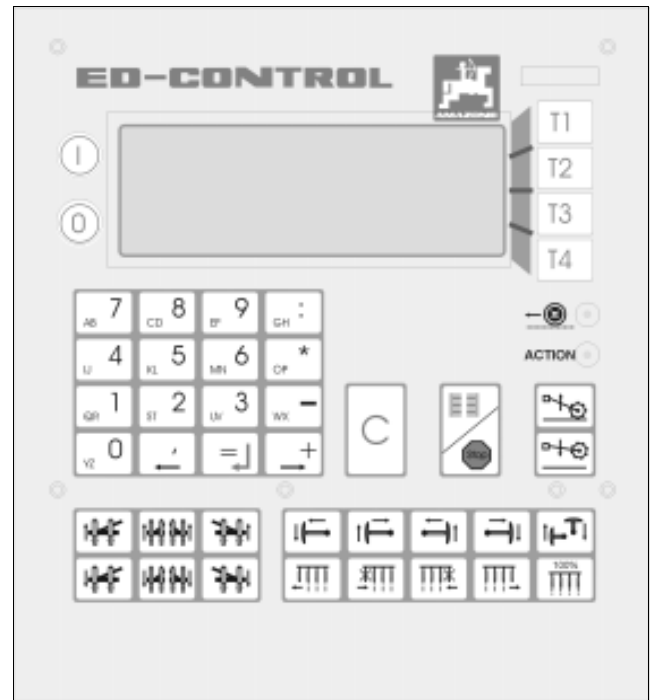


Fig. 6

Selection menu:

Auswahl	Auftrag	T1
	Speicher	T2
Menü	Maschine	T3
	Arbeit	T4

Fig. 7

6.1.5 Operating the Digit keyboard

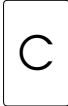
- For numerical entering press key once.
- The digit block can also be used as a pocket calculator (four basic operations).
- For entering texts press the relevant first letter on the key pad once and the second twice. Wait until the cursor advances.
- The cursor can be moved manually with  forwards and  backwards. Already entered values can be overwritten.
- Confirm all correct entering with  (Return)
- Previous entering can be deleted with  (Cancel).



Fig. 8

6.1.6 Contrast control of display

The contrast of the display can be changed as follows.

- Contrast gets darker when  +  (Cancel + starwheel lifting) are pressed simultaneously.
- Contrast gets brighter when  +  (Cancel + starwheel lowering) are pressed simultaneously.

6.2 Putting into operation

6.2.1 Switching on and off the implement

By pressing key  **ED-Control** is switched on and by pressing key  it is switched off .

When switching on, the display shows the language selected, the creation date of the computer, the version number and the implement type (Fig. 9).



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

After approx. 10 seconds the computer automatically displays the select menu (Fig. 10).

If is also possible to call at any time the choice menu from the sub menu by pressing key .

15:02:02	Italiano	T1
2:00	Cesky	T2
Ed602 K	English	T3
Angeschaltet	Deutsch	T4

Fig. 9

Auswahl	Auftrag	T1
	Speicher	T2
Menü	Maschine	T3
	Arbeit	T4

Fig. 10

6.2.2 Entering implement data

- In the choice menu (Fig. 11) press key  (implement). The first menu sub item "impulses per 100 m" will appear.

Auswahl	Auftrag	T1
	Speicher	T2
Menü	Maschine	T3
	Arbeit	T4

Fig. 11

6.2.2.1 Menu impulses per 100 m

To determine the actual forward speed **ED-Control** requires the calibration value "impulses/100 m". The value 58 in the menu item implement has been installed by the factory.

- Press  (Return).
- Press  (Weiter) (proceed).
- The display for gearbox and radar must be 0.

In order to consider a possible wheel slip, determine the value "impulses/100 m" by a calibration. (para.6.3.)

Impulse/100m	Menü	T1
58 Gerät	Kalibr.	T2
0 Getr.		T3
0 Radar	Weiter	T4

Fig. 12

6.2.2.2 Menu row number and spacings

- Via the digit keyboard enter the number of rows, (example 16)
- press  (Return).
- Enter the spacing between the rows in cm via the Digit keyboard (example 45,0)

- Press  (Return).
- Press  (Weiter) (proceed)

- The functions of the opto sensor can be checked in the sub menu service 

- Press  (return) (zurück).

Maschine	Menü	T1
Reihen:	Service	T2
Anzahl 16		T3
Abstand: 45,0	Weiter	T4

Fig. 13

Service		T1
Optogeber-		T2
kontrolle		T3
Reihe: 0	Zurück	T4

Fig. 14

6.2.2.3 Menu filling level sensor

- If a filling level sensor is available confirm with  (yes).
- If **no** filling level sensor is available confirm with  (no).
- Press  (Weiter) (proceed)

Maschine	Menü	T1
Füllstands-	ja	T2
Sensor vor-	-> nein	T3
Handen ?	Weiter	T4

Fig. 15

6.2.2.4 Menu tramline control

- Via the digit keyboard enter the number for the tramline rhythm. Take this number from the chapter "tramline rhythm".
- The length (number of tramlines) is displayed according to the tramline rhythm No.
- Press (Weiter) (proceed)

Maschine	Menü	T1
Fahrg.Rhythm		T2
Nr: 96		T3
Länge: 16	Weiter	T4

Fig. 16

6.2.2.5 Automatic row switch off

- (Keine) (none) if no row switching off is available
- (Elec.), if an electric row switching off is available.
- (Hydr.), if a hydraulic row switching off is available..
- (Weiter) (proceed)

Maschine	Keine	T1
Reihenabsch.	→ Elek.	T2
	Hydr.	T3
	Weiter	T4

Fig. 17

6.2.3 Creating a new job

- Via the digit keyboard enter job number, name and address.
- Press (Return).
- (Weiter) (proceed)

Auftrag	Menü	T1
Nr.: 1		T2
Name/Adresse		T3
—	Weiter	T4

Fig. 18

6.2.3.1 Entering the seed rate

- Via the digit keyboard enter the rated value of the seed rate.
- Press (Return).
- (Weiter) (proceed)

Auftrag	Menü	T1
Aufwandmenge		T2
Sollwert		T3
_90000 K/ha	Weiter	T4

Fig. 19

6.2.3.2 Enter comment

- Via the Digit keyboard enter a comment.
- Press  (Return).
-  (proceed)

Auftrag	Menü	T1
Kommentar:		T2
–		T3
	Weiter	T4

Fig. 20

6.2.3.3 Daily counter

- Display of the total number of seed grains (in thousand) and hectare for this job.
-  (Total)
-  (proceed)

Tageszähler	Menü	T1
586,4 St	Total	T2
0,3217 ha		T3
	Weiter	T4

Fig. 21

6.2.3.4 Total counter

- Display of seed grains (in thousand) and hectare since last deletion (set to zero)
-  (Löschen) – Stunden (cancel) hours
-  (Löschen) – Hektar (cancel) hectares
-  (Weiter) (proceed)

Totalzähler		T1
0 St	Löschen	T2
0 ha	Löschen	T3
	Weiter	T4

Fig. 22

6.2.3.5 Display of working data

- Display for
 - travelled kilometres
 - operating time of machine
 - operating time of tractor
 - working hours of the operator
-  (Weiter) (proceed)

0,477 km	Menü	T1
0,08 h Mas.		T2
0,08 h Zugm		T3
1,79 h Fahr	Weiter	T4

Fig. 23

6.2.3.6 Display area efficiency

Display for total area and average area efficiency.

- T4 (Weiter) (proceed)

0,00 ha/h	Menü	T1
3,87 ha/h		T2
Zapfwelle:		T3
0 l/min	Weiter	T4

Fig. 24

6.2.3.7 Display of the deposited seed grains

Display of the deposited seed grains (in thousand)
per row

page

- T2 (up) and T3 (down).

- T4 (Weiter) (proceed)

R 1: 4,3	Menü	T1
R 2: 656,1	↑	T2
R 3: 653,4	↓	T3
R 4: 576,1	Weiter	T4

Fig. 25

6.2.4 Operational menu

6.2.4.1 Checking menu during operation

1	0,0km/h	Menü	T1
2	Reihe: 9	Ende	T2
3	0 K/ha		T3
4	SG 2	Weiter	T4
			5

Fig. 26

1. Travelling speed
2. Check cycling sowing units
For each 3 seconds every switched on sowing unit is displayed.
3. Display actual seed rate (seed grains/ha) on the displayed sowing unit.



If a sowing unit provides less than 80 % of the rated value, a warning signal sounds.

4. Actually travelled tramline
5. Display "filling" in conjunction with a signal sound indicates that fertiliser should be re-filled.

- T2 Finish job.
- T4 (Weiter) (proceed) menu tramline rhythm.

Check menu during operation with rows switched off

0,0km/h	Menü	T1
Reihe: 9	Ende	T2
0 K/ha		T3
Li:3 Re:5	Weiter	T4

Fig. 27

6. Number of switched off sowing units on the left hand side.
7. Number of switched off sowing units on the right hand side.

6.2.4.2 Filling in fertiliser by using the filling auger

Only for ED 602 K with rear tank for fertiliser.

When the display "filling" (Fig. 26/5) appears in the operational menu press key  in order to get into the menu "filling auger" (Befüllschnecke)

-  Lower filling auger.

back up to the tipper lorry.

-  (Ein) (on) switch on filling auger.

Fill fertiliser hopper.

-  Lift filling auger.

-  (Weiter) (proceed) operational menu

Proceed with operation

Befüllschnecke	EIN	T1
	↑	T2
	↓	T3
	Weiter	T4

Fig. 28

6.2.4.3 Tramline rhythm

During operation the actual travelled tramline can be changed.

-  (Fahrg./Tramline +1) Tramline plus one
-  (Fahrg./Tramline-1) Tramline minus one

This becomes necessary if the tramline counter unintentionally goes on counting due to the actuation of the track marker.

- In case of larger deviations the value can be entered via the Digit keyboard .  Press (return)

-

For changing the tramline rhythm move the cursor with  (Return) into the intended line, enter new No.

-  (Weiter) (proceed) the display changes again to the check menu (para. **Fehler! Verweisquelle konnte nicht gefunden werden.**)



The shifting on of the tramline counter when the track marker is raised in front of an obstacle can be stopped by ini-

tially actuating the stop key 

Fahrg. Rhythm.	Menü	T1
Särgasse: 1	Fahrg.+1	T2
Rhythmus: 102	Fahrg.-1	T3
Länge: 28	Weiter	T4

Fig. 29

6.2.4.4 Finish the job

- T2 (nein) (no) Job **shall not** be finished.
- T3 (ja) (yes) Finish job and store. The ED-control automatically jumps to the menu: creating a new job (para. 6.2.3).

Auftrag	Menü	T1
Beenden und	Nein	T2
Abspeichern?	Ja	T3
		T4

Fig. 30

6.2.5 Memory

- T2 (Memory) from the choice menu.
- Max. 12 jobs can be stored, then the first one will be over written.

Auswahl	Auftrag	T1
	Speicher	T2
Menü	Maschine	T3
	Arbeit	T4

Fig. 31

6.2.5.1 Selection of a memory

- T2 (Löschen) (delete) ED-Control jumps to the menu delete (Fig. 33).
- T3 (NÄSpeich) (next memory) Page the stores jobs from 1 to max. 12.
- T4 (Weiter) (proceed)

Speicher:	1	Menü	T1
		Löschen	T2
Masch.Nr	0	NÄSpeich	T3
ED602 K	FT	Weiter	T4

Fig. 32

6.2.5.2 Erase the complete memory

- T2 (nein) (no) stored jobs are not erased
- T3 (Ja) (yes) **All** stored jobs are erased.

Speicher:		T1
	nein	T2
Löschen?	Ja	T3
		T4

Fig. 33

6.2.5.3 Display of the stored data

- In memory 1 the menu (Fig. 34) shows the travelled km, the finished area and the sown seed grains in thousand for this job.

- T4 (Weiter) (proceed)

Speicher 1:	Menü	T1
0,000 km		T2
0,00 ha		T3
0,0 St	Weiter	T4

Fig. 34

- In memory 1 the menu (Fig. 35) shows the operational time in hours for the machine, the tractor and the working hours for the operator.

- T4 (Weiter) (proceed)

Speicher 1:	Menü	T1
0,00 h Mas.		T2
0,00 h Zugm		T3
0,00 h Fahr	Weiter	T4

Fig. 35

- In Memory 1 the menu (Fig. 36) shown the number of the deposited seed grains per row

- page

- T2 (up) and T3 (down) T4 (Weiter) (proceed)

R 1:	0,0	Menü	T1
R 2:	0,0		T2
R 3:	0,0		T3
R 4:	0,0	Weiter	T4

Fig. 36

- The menu (Fig. 37) shows the entered comment.

- T4 (Weiter) (proceed) ED-Control shows the next memory.

Speicher: 1	Menü	T1
Kommentar		T2
		T3
	Weiter	T4

Fig. 37

6.3 Determination of the calibration value

In case of prevailing heavily changing soils and deviations between

- the seed rate sown and the desired seed rate
- the worked area determined and displayed by EC-Control and the actual worked area

the calibration value should be determined again.

Carefully measure the test distance of exactly 100 m in the field. Clearly mark beginning and end of the test distance.

- Bring vehicle into start position.
- Press key **T3** (implement) in the choice menu
- Select **T2** (calibr.).
- With **T1** (return) the calibration procedure can be stopped.
- Carefully drive down the test distance from the beginning to the end point. After the first impulse when the tractor has been started the counter jumps to "0". The determined impulses are shown on the display.
- Press **=** (Return).
- Press **T4** (Weiter) (proceed).
- Insert the determined calibration figure into the table.

Kind of soil	Imp./100m
Soft soil	
Medium soil	
Heavy soil	

Auswahl	Auftrag	T1
	Speicher	T2
Menü	Maschine	T3
	Arbeit	T4

Fig. 38

Impulse/100m	Menü	T1
58 Gerät	Kalibr.	T2
0 Getr.		T3
0 Radar	Weiter	T4

Fig. 39

Kalibrierung	Zurück	T1
Genau 100m abfahren		T2
dann stoppen und		T3
"Eingabe" drücken		T4

Fig. 40

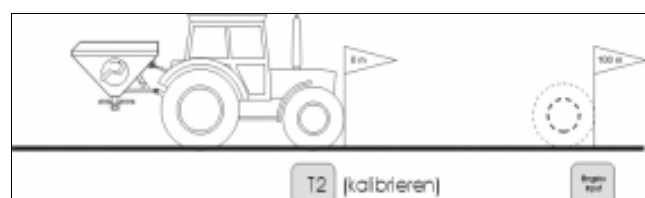


Fig. 41

6.4 Enter the implement code

The implement code should be entered again when

- it is intended to operate ED-Control with another Airplanter ED.
- Ed-Control is supplied as a spare part.

Standard setting of the implement code: **00** (ED-Control without hydraulic control.)

-  +  (Cancel + M) press simultaneously. The monitor menu is shown on the display.
- In line "Address" enter the code for the new settings **E088** (Fig. 42/1) via the ten digit key pad and confirm with  (Return) .
-  (ändern) (change) the cursor jumps onto the last line
- The first two figures indicate the machine type (Fig. 42/2).
- 00 = Machine without hydraulic
- 01 = ED 902 (without tank)
- 02 = ED 902 with front tank
- 03 = ED 602 (without tank)
- 04 = ED 602 with front tank
- 05 = ED 602 with rear tank

Enter the relevant No. and confirm with  (Return) .

- Switch off  and again on  ED Control.

- Again press simultaneously  +  (Cancel + M). The monitor menu is shown on the display.
- In line "address" enter the code for the new settings **E000** (Fig. 43/1) via the ten digit key pad.
- Confirm with  (Return) .



When the implement code is changed all stored data (job, implement data) will be erased automatically.

Monitor		+ Pos.	T1
Adresse:	E088	- Pos.	T2
Inhalt:		ändern	T3
00CB0D500014		Zurück	T4

Fig. 42

Monitor		+ Pos.	T1
Adresse:	E000	- Pos.	T2
Inhalt:		ändern	T3
0A5500000080		Zurück	T4

Fig. 43



-  (ändern) (change) the cursor jumps to the last line.
- The first figure of the last line must be **0** (Fig. 43/2).
- Confirm with  (Return)
- Switch off  and again on  ED-Control.

6.5 Tramline controls

The following tables refer to the operation beginning on the left hand side (field's border on the left hand side). Otherwise the tramline No. in the **operational menu** would have to be initially changed as follows:

- With key  (Weiter) (proceed) change from the operational to the menu tramline rhythm.
- Enter the new tramline No. into the line tramline.
- Confirm with  (Return).

6.5.1 12 rows, 0.45m row spacing, 1,8m tractor track, Field border on left hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
11,7	4	26	1 2 4 6 8 10 12 13	12 9 11,7 9,5 7,3 5,1 3 2	14 15 17 19 21 23 25 26	1 4 2,6 4,8 6,10 8,12 10 11
12,15	5	18	1 2 4 6 8 9	12 9 10,6 7,3 4 1	10 11 13 15 17 18	1 4 3,7 6,10 9 12
14,85	6	22	2 4 5 7 8 10	10,6 1 4 9 12 7,3	13 15 16 18 19 21	3,7 12 9 4 1 6,10
15,3	7	34	2 5 7 8 10 11 13 16	9,5 2,6 12 9 3 2 8,12 7,3	19 22 24 25 27 28 30 33	4,8 11,7 1 4 10 11 5,1 6,10
16,2	1	6	2	8,4	5	5,9
18,00	2	10	2 5	6,2 11	6 9	10 3,7
19,8	8	22	2 3 6 10	4 1 8,4 12,8	13 14 17 21	9 12 5,9 1,5
20,25	9	30	2 3 6 10 13 14	4 1 7,3 10,6 12 9	17 18 21 25 28 29	9 12 6,10 3,7 1 4
20,7	10	46	2 3 6 10 14 18 21 22	3 2 5,1 7,3 9,5 11,7 12 9	25 26 29 33 37 41 44 45	10 11 8,12 6,10 4,8 2,6 1 4



**12 Rows, 0.45m Row spacing, 1,8m Tractor track,
Field border on left hand side**

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
21,15	11	94	2	3	49	10
			3	2	50	11
			6	4	53	9
			7	1	54	12
			10	5,1	57	8,12
			14	2,6	61	7,11
			18	7,3	65	6,10
			22	8,4	69	5,9
			26	9,5	73	4,8
			30	10,6	77	3,7
			34	11,7	81	2,6
			38	12,8	85	1,5
			41	12	88	1
			42	9	89	4
			45	11	92	2
			46	10	93	3
21,6	3	4	2	2	3	3
23,85	12	106	3	1,5	56	12,8
			7	6,10	60	7,3
			11	11	64	2
			12	10	65	3
			16	9,5	69	4,8
			20	4	73	9
			21	1	74	12
			25	2,6	78	11,7
			29	7,11	82	6,2
			33	12	86	1
			34	9	87	4
			38	8,4	91	5,9
			42	3	95	10
			43	2	96	11
			47	3,7	100	10,6
			51	8,12	104	5,1
24,3	13	18	3	2,6	12	11,7
27,0	14	10	7	8,12	16	5,1
27,9	15	62	3	5,9	8	8,4
27,9	15	62	3	6,10	34	7,3
			8	5,1	39	8,12
			13	10	44	3
			14	11	45	2
			18	1	49	12
			19	4	50	9
			24	11,7	55	2,6
			29	4,8	60	9,5
28,35	16	42	3	6,10	24	7,3
			8	4	29	9
			9	1	30	12
			13	12	34	1
			14	9	35	4
			19	3,7	40	10,6
29,7	17	22	3	8,12	14	5,1
			9	2,6	20	11,7

12 Rows, 0.45m Row spacing, 1,8m Tractor track,
Field border on left hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
30,15	18	134	3	8,12	70	5,1
			9	3,7	76	10,6
			14	3	81	10
			15	2	82	11
			20	8,4	87	5,9
			25	12	92	1
			26	9	93	4
			31	7,11	98	6,2
			37	2,6	104	11,7
			42	4	109	9
			43	1	110	12
			48	9,5	115	4,8
			53	11	120	2
			54	10	121	3
			59	6,10	126	7,3
			65	1,5	132	12,8
31,95	19	142	3	10	74	3
			4	11	75	2
			9	9	80	4
			10	12	81	1
			15	8,12	86	5,1
			21	7,11	92	6,2
			27	6,10	98	7,3
			33	5,9	104	8,4
			39	4,8	110	9,5
			45	3,7	116	10,6
			51	2,6	122	11,7
			57	1,5	128	12,8
			62	1	133	12
			63	4	134	9
			68	2	139	11
			69	3	140	10
32,4	20	6	3	11	4	10
32,85	21	146	3	11	76	2
			4	10	77	3
			9	12	82	1
			10	9	83	4
			16	12,8	89	1,5
			22	11,7	95	2,6
			28	10,6	101	3,7
			34	9,5	107	4,8
			40	8,4	113	5,9
			46	7,3	119	6,10
			52	6,2	125	7,11
			58	5,1	131	8,12
			64	4	137	9
			65	1	138	12
			70	3	143	10
			71	2	144	11



**12 Rows, 0.45m Row spacing, 1,8m Tractor track,
Field border on left hand side**

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
33,3	22	74	3	12	40	1
			4	9	41	4
			10	11,7	47	2,6
			16	9,5	53	4,8
			22	7,3	59	6,10
			28	5,1	65	8,12
			34	3	71	10
			35	2	72	11
36	23	20	4	10,6	11	3
			10	2	17	7,11

**6.5.2 12 Rows, 0.45m Row spacing, 2.25m Tractor track,
Field border on left hand side**

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
11,7	24	26	1	11	14	2
			2	9	15	4
			4	12,7	17	1,6
			6	10,5	19	3,8
			8	8,3	21	5,10
			10	6,1	23	7,12
			12	4	25	9
			13	2	26	11
12,15	25	18	1	12	10	1
			2	8	11	5
			4	10,5	13	3,8
			6	7,2	15	6,11
			8	4	17	9
14,85	26	22	9	2	18	11
			2	10,5	13	3,8
			4	1	15	12
			5	5	16	8
			7	9	18	4
15,3	27	34	8	11	19	2
			10	7,2	21	6,11
			2	10,5	19	3,8
			5	1,6	22	12,7
			7	11	24	2
			8	9	25	4
			10	4	27	9
			11	2	28	11
			13	7,12	30	6,1
			16	8,3	33	5,10

6.5.3 12 Rows, 0.5m Row spacing, 1.5m Tractor track, Field border on left hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
12	28	2	1	11	2	11
15	29	10	2 4	11,8 5,2	7 9	2,5 8,11
16	30	8	2 4	10,7 2	5 7	2 7,10
18	31	6	2	8,5	5	5,8
20	32	10	2 5	6,3 11	6 9	11 3,6
21	33	14	2 6	5,2 11,8	9 13	8,11 2,5
24	34	4	2	2	3	2
27	35	18	3 7	2,5 8,11	12 16	11,8 5,2
28	36	14	3 7	3,6 11	8 12	11 6,3
30	37	10	3	5,8	8	8,5
32	38	16	3 8	7,10 2	9 14	2 10,7
33	39	22	3 9	8,11 2,5	14 20	5,2 8,11
36	40	6	3	11	4	11

6.5.4 12 Rows, 0.5m Row spacing, 2m Tractor track, Field border on left hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
12	41	2	1	11	2	10
15	42	10	2 4	11,7 5,1	7 9	2,6 8,12
16	43	8	2 4	10,6 2	5 7	3 7,11
18	44	6	2	8,4	5	5,9
20	45	10	2 5	6,2 11	6 9	10 3,7
21	46	14	2 6	5,1 11,7	9 13	8,12 2,6
24	47	4	2	2	3	3
27	48	18	3 7	2,6 8,12	12 16	11,7 5,1
28	49	14	3 7	3,7 11	8 12	10 6,2
30	50	10	3	5,9	8	8,4
32	51	16	3 8	7,11 2	9 14	3 10,6
33	52	22	3 9	8,12 2,6	14 20	5,1 11,7
36	53	6	3	11	4	10



6.5.5 18 Rows, 0.45m Row spacing, 1.8m Tractor track, Field border on left hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
11,7	54	26	1	12,16	14	7,3
			3	2,6	16	17,13
			4	9,5	17	10,14
			5	18	18	1
			6	15	19	4
			7	8,12	20	11,7
			8	3	21	16
			9	2	22	17
			10	13,9	23	6,10
			11	14,18	24	5,1
			13	4,8	26	15,11
12,15	55	6	1	12,16	4	7,3
			3	3,7	6	16,12
14,85	56	22	1	15	12	4
			2	18	13	1
			3	12,16	14	7,3
			5	9,13	16	10,6
			7	6,10	18	13,9
			9	3,7	20	16,12
			10	1	21	18
			11	4	22	15
15,3	57	34	1	16	18	3
			2	17	19	2
			3	14,18	20	5,1
			5	12,16	22	7,3
			7	10,14	24	9,5
			9	8,12	26	11,7
			11	6,10	28	13,9
			13	4,8	30	15,11
			15	2,6	32	17,13
			16	1	33	18
			17	4	34	15
16,2	58	2	1	17		
			2	16		
18,00	59	20	2	18,14	13	3,7
			4	14,10	15	7,11
			6	10,6	17	11,15
			8	6,2	19	15
			10	2	20	18
			11	3		
19,8	60	22	2	16,12	14	12,8
			4	8,4	16	4
			7	1,5	17	1
			9	9,13	19	5,9
			11	17	21	13,17
			12	16		
20,25	61	10	2	16,12	7	3,7
			4	7,3	9	12,16

18 Rows, 0.45m Row spacing, 1.80m Tractor track

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
20,7	62	46	2	15,11	25	4,8
			4	5,1	27	14,18
			7	6,10	30	13,9
			9	16	32	3
			10	17	33	2
			12	11,7	35	8,12
			14	1	37	18
			15	4	38	15
			17	10,14	40	9,5
			20	17,13	43	2,6
			22	7,3	45	12,16
21,15	63	94	2	15,11	49	4,8
			4	4	51	15
			5	1	52	18
			7	8,12	54	11,7
			10	18,14	57	1,5
			12	7,3	59	12,16
			15	5,9	62	14,10
			17	16	64	3
			18	17	65	2
			20	10,6	67	9,13
			23	2,6	70	17,13
			25	13,17	72	6,2
			28	13,9	75	6,10
			30	2	77	17
			31	3	78	16
			33	10,14	80	9,5
			36	16,12	83	3,7
			38	5,1	85	14,18
			41	7,11	88	12,8
			43	18	90	1
			44	15	91	4
			46	8,4	93	11,15
21,6	64	8	2	14,10	5	3
			4	2	7	11,15
23,85	65	106	2	12,8	55	7,11
			5	6,10	58	13,9
			8	14,10	61	5,9
			11	4,8	64	15,11
			14	16,12	67	3,7
			17	2,6	70	17,13
			20	18,14	73	1,5
			22	1	75	18
			23	4	76	15
			25	17	78	2
			26	16	79	3
			28	3	81	16
			29	2	82	17
			31	15	84	4
			32	18	85	1
			34	5,1	87	14,18
			37	13,17	90	6,2
			40	7,3	93	12,16
			43	11,15	96	8,4
			46	9,5	99	10,14
			49	9,13	102	10,6



18 Rows, 0.45m Row spacing, 1.80m Tractor track

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
23,85	65	106	52	11,7	105	12,8
24,3	66	6	2	11,7	5	8,12
27,0	67	10	2	8,4	6	16
			5	17	9	5,9
27,9	68	62	2	7,3	33	12,16
			6	17,13	37	2,6
			9	10,14	40	9,5
			12	1	43	18
			13	4	44	15
			16	11,7	47	8,12
			19	16	50	3
			20	17	51	2
			23	6,10	54	13,9
			26	5,1	57	14,18
			30	15,11	61	4,8
28,35	69	14	2	7,3	9	12,16
			6	16,12	13	3,7
29,7	70	22	2	5,1	13	14,18
			6	11,7	17	8,12
			10	17,13	21	2,6
30,15	71	134	2	5,1	69	14,18
			6	10,6	73	9,13
			10	15,11	77	4,8
			13	17	80	2
			14	16	81	3
			17	12,16	84	7,3
			21	7,11	88	12,8
			25	2,6	92	17,13
			28	4	95	15
			29	1	96	18
			32	9,5	99	10,14
			36	14,10	103	5,9
			39	18	106	1
			40	15	107	4
			43	13,17	110	6,2
			47	8,12	114	11,7
			51	3,7	118	16,12
			54	3	121	16
			55	2	122	17
			58	8,4	125	11,15
31,95	72	142	62	13,9	129	6,10
			66	18,14	133	1,5
			2	3	58	17,13
			3	2	62	18,14
			6	4	65	18
			7	1	66	15
			10	5,1	69	17
			14	6,2	70	16
			18	7,3	73	16
			22	8,4	74	17
			26	9,5	77	15
			30	10,6	78	18
			34	11,7	81	14,18
			38	12,8	85	13,17
			42	13,9	89	12,16
			4	14,1	93	11,15

18 Rows, 0.45m Row spacing, 1.80m Tractor track

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
31,95	72	142	50	15,11	97	10,14
			54	16,12	101	9,13
			105	8,12	129	2,6
			109	7,11	133	1,5
			113	6,10	136	1
			117	5,9	137	4
			121	4,8	140	2
			125	3,7	141	3
32,4	73	4	2	2	3	3
32,85	74	146	2	2	75	17
			3	3	76	16
			6	1	79	18
			7	4	80	15
			11	1,5	84	18,14
			15	2,6	88	17,13
			19	3,7	92	16,12
			23	4,8	96	15,11
			27	5,9	100	14,10
			31	6,10	104	13,9
			35	7,11	108	12,8
			39	8,12	112	11,7
			43	9,13	116	10,6
			47	10,14	120	9,5
			51	11,15	124	8,4
			55	12,16	128	7,3
			59	13,17	132	6,2
			63	14,18	136	5,1
			67	15	140	4
			68	18	141	1
			71	16	144	3
			72	17	145	2
33,3	75	74	2	1	39	18
			3	4	40	15
			7	2,6	44	17,13
			11	4,8	48	15,11
			15	6,10	52	13,9
			19	8,12	56	11,7
			23	10,14	60	9,5
			27	12,16	64	7,3
			31	14,18	68	5,1
			35	16	72	3
			36	17	73	2
36	76	40	3	3,7	25	7,11
			7	11,15	29	15
			12	18,14	30	18
			16	10,6	34	14,10
			20	2	38	6,2
			21	3		



6.5.6 18 Rows, 0.45m Row spacing, 2,25m Tractor track Field border on left hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
11,7	77	26	1	11,16	14	8,3
			3	1,6	16	18,13
			4	10,5	17	9,14
			5	17	18	2
			6	15	19	4
			7	7,12	20	12,7
			8	4	21	15
			9	2	22	17
			10	14,9	23	5,10
			11	13,18	24	6,1
			13	3,8	26	16,11
12,15	78	6	1	12,17	4	7,2
			3	3,8	6	16,11
14,85	79	22	1	15	12	4
			2	17	13	2
			3	12,17	14	7,2
			5	9,14	16	10,5
			7	6,11	18	13,8
			9	3,8	20	16,11
			10	1	21	18
			11	5	22	14
15,3	80	34	1	15	18	4
			2	17	19	2
			3	13,18	20	6,1
			5	11,16	22	8,3
			7	9,14	24	10,5
			9	7,12	26	12,7
			11	5,10	28	14,9
			13	3,8	30	16,11
			15	1,6	32	18,13
			16	2	33	17
			17	4	34	15

6.5.7 18 Rows, 0.5m Row spacing, 1.5m Tractor track, Field border on left hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
12	81	4	1 2	11,14 2	3 4	2 14,11
15	82	10	1 3 5	14,17 8,11 2,5	6 8 10	5,2 11,8 17,14
16	83	16	1 3 5 7 8	15,18 11,14 7,10 3,6 2	9 10 12 14 16	2 6,3 10,7 14,11 18,15
18	84	2	1	17	2	17
20	85	20	2 4 6 8 10	18,15 14,11 10,7 6,3 2	11 13 15 17 19	2 3,6 7,10 11,14 15,18
21	86	14	2 4 6	17,14 11,8 5,2	9 11 13	2,5 8,11 14,17
24	87	8	2 4	14,11 2	5 7	2 11,14
27	88	6	2	11,8	5	8,11
28	89	28	2 5 8 11 14	10,7 11,14 6,3 15,18 2	15 18 21 24 27	2 18,15 3,6 14,11 7,10
30	90	10	2 5	8,5 17	6 9	17 5,8
32	91	32	2 6 9 13 16	6,3 14,11 15,18 7,10 2	17 20 24 27 31	2 10,7 18,15 11,14 3,6
33	92	22	2 6 10	5,2 11,8 17,14	13 17 21	14,17 8,11 2,5
36	93	4	2 3	2 2		



6.5.8 18 Rows, 0.5m Row spacing, 2.0 m Tractor track, Field border on left hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
12	94	4	1 2	11,15 2	3 4	3 14,10
15	95	10	1 3 5	14,18 8,12 2,6	6 8 10	5,1 11,7 17,13
16	96	16	1 2 3 5 7 8	15 18 11,15 7,11 3,7 2	9 10 12 14 16	3 6,2 10,6 14,10 18,14
18	97	2	1	17	2	16
20	98	20	2 4 6 8 10 11	18,14 14,10 10,6 6,2 2 3	13 15 17 19 20	3,7 7,11 11,15 15 18
21	99	14	2 4 6	17,13 11,7 5,1	9 11 13	2,6 8,12 14,18
24	100	8	2 4	14,10 2	5 7	3 11,15
27	101	6	2	11,7	5	8,12
28	102	28	2 5 8 11 12 14	10,6 11,15 6,2 15 18 2	15 18 21 24 27	3 18,14 3,7 14,10 7,11
30	103	10	2 5	8,4 17	6 9	16 5,9
32	104	32	2 6 9 10 13 16	6,2 14,10 15 18 7,11 2	17 20 24 27 31	3 10,6 18,14 11,15 3,7
33	105	22	2 6 10	5,1 11,7 17,13	13 17 21	14,18 8,12 2,6
36	106	4	2 3	2 3		

6.5.9 12 Rows, 0.45m Row spacing, 1.8m Tractor track Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
11,7	107	26	1	1	14	12
			2	4	15	9
			4	2,6	17	11,7
			6	4,8	19	9,5
			8	6,10	21	7,3
			10	8,12	23	5,1
			12	10	25	3
			13	11	26	2
12,15	108	18	1	1	10	12
			2	4	11	9
			4	3,7	13	10,6
			6	6,10	15	7,3
			8	9	17	4
			9	12	18	1
14,85	109	22	2	3,7	13	10,6
			4	12	15	1
			5	9	16	4
			7	4	18	9
			8	1	19	12
			10	6,10	21	7,3
15,3	110	34	2	4,8	19	9,5
			5	11,7	22	2,6
			7	1	24	12
			8	4	25	9
			10	10	27	3
			11	11	28	2
			13	5,1	30	8,12
			16	6,10	33	7,3
16,2	111	6	2	5,9	5	8,4
18,00	112	10	2	7,11	6	3
			5	2	9	10,6
19,8	113	22	2	9	13	4
			3	12	14	1
			6	5,9	17	8,4
			10	1,5	21	12,8
20,25	114	30	2	9	17	4
			3	12	18	1
			6	6,10	21	7,3
			10	3,7	25	10,6
			13	1	28	12
			14	4	29	9
20,7	115	46	2	10	25	3
			3	11	26	2
			6	8,12	29	5,1
			10	6,10	33	7,3
			14	4,8	37	9,5
			18	2,6	41	11,7
			21	1	44	12
			22	4	45	9



12 Rows, 0.45m Row spacing, 1.8m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
21,15	116	94	2	10	49	3
			3	11	50	2
			6	9	53	4
			7	12	54	1
			10	8,12	57	5,1
			14	11,7	61	6,2
			18	6,10	65	7,3
			22	5,9	69	8,4
			26	4,8	73	9,5
			30	3,7	77	10,6
			34	2,6	81	11,7
			38	1,5	85	12,8
			41	1	88	12
			42	4	89	9
			45	2	92	11
			46	3	93	10
21,6	117	4	2	11	3	10
23,85	118	106	3	12,8	56	1,5
			7	7,3	60	6,10
			11	2	64	11
			12	3	65	10
			16	4,8	69	9,5
			20	9	73	4
			21	12	74	1
			25	11,7	78	2,6
			29	6,2	82	7,11
			33	1	86	12
			34	4	87	9
			38	5,9	91	8,4
			42	10	95	3
			43	11	96	2
			47	10,6	100	3,7
			51	5,1	104	8,12
24,3	119	18	3	11,7	12	2,6
27,0	120	10	7	5,1	16	8,12
			3	8,4	8	5,9
27,9	121	62	3	7,3	34	6,10
			8	8,12	39	5,1
			13	3	44	10
			14	2	45	11
			18	12	49	1
			19	9	50	4
			24	2,6	55	11,7
			29	9,5	60	4,8
28,35	122	42	3	7,3	24	6,10
			8	9	29	4
			9	12	30	1
			13	1	34	12
			14	4	35	9
			19	10,6	40	3,7
29,7	123	22	3	5,1	14	8,12
			9	11,7	20	2,6

12 Rows, 0.45m Row spacing, 1.8m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
30,15	124	134	3	5,1	70	8,12
			9	10,6	76	3,7
			14	10	81	3
			15	11	82	2
			20	5,9	87	8,4
			25	1	92	12
			26	4	93	9
			31	6,2	98	7,11
			37	11,7	104	2,6
			42	9	109	4
			43	12	110	1
			48	4,8	115	9,5
			53	2	120	11
			54	3	121	10
			59	7,3	126	6,10
			65	12,8	132	1,5
31,95	125	142	3	3	74	10
			4	2	75	11
			9	4	80	9
			10	1	81	12
			15	5,1	86	8,12
			21	6,2	92	7,11
			27	7,3	98	6,10
			33	8,4	104	5,9
			39	9,5	110	4,8
			45	10,6	116	3,7
			51	11,7	122	2,6
			57	12,8	128	1,5
			62	12	133	1
			63	9	134	4
			68	11	139	2
			69	10	140	3
32,4	126	6	3	2	4	3
32,85	127	146	3	2	76	11
			4	3	77	10
			9	1	82	12
			10	4	83	9
			16	1,5	89	12,8
			22	2,6	95	11,7
			28	3,7	101	10,6
			34	4,8	107	9,5
			40	5,9	113	8,4
			46	6,10	119	7,3
			52	7,11	125	6,2
			58	8,12	131	5,1
			64	9	137	4
			65	12	138	1
			70	10	143	3
			71	11	144	2



12 Rows, 0.45m Row spacing, 1.8m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
33,3	128	74	3	1	40	12
			4	4	41	9
			10	2,6	47	11,7
			16	4,8	53	9,5
			22	6,10	59	7,3
			28	8,12	65	5,1
			34	10	71	3
			35	11	72	2
36	129	20	4	3,7	11	10
			10	11	17	6,2

6.5.10 12 Rows, 0.45m Row spacing, 2,25m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
11,7	130	26	1	2	14	11
			2	4	15	9
			4	1,6	17	12,7
			6	3,8	19	10,5
			8	5,10	21	8,3
			10	7,12	23	6,1
			12	9	25	4
			13	11	26	2
12,15	131	18	1	1	10	12
			2	5	11	8
			4	3,8	13	10,5
			6	6,11	15	7,2
			8	9	17	4
			9	11	18	2
14,85	132	22	2	3,8	13	10,5
			4	12	15	1
			5	8	16	5
			7	4	18	9
			8	2	19	11
			10	6,11	21	7,2
15,3	133	34	2	3,8	19	10,5
			5	12,7	22	1,6
			7	2	24	11
			8	4	25	9
			10	9	27	4
			11	11	28	2
			13	6,1	30	7,12
			16	5,10	33	8,3

6.5.11 12 Rows, 0.5m Row spacing, 1,5m Tractor track Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
12	134	2	1	2	2	2
15	135	10	2 4	2,5 8,11	7 9	11,8 5,2
16	136	8	2 4	3,6 11	5 7	11 6,3
18	137	6	2	5,8	5	8,5
20	138	10	2 5	7,10 2	6 9	2 10,7
21	139	14	2 6	8,11 2,5	9 13	5,2 11,8
24	140	4	2	11	3	11
27	141	18	3 7	11,8 5,2	12 16	2,5 8,11
28	142	14	3 7	10,7 2	8 12	2 7,10
30	143	10	3	8,5	8	5,8
32	144	16	3 8	6,3 11	9 14	11 3,6
33	145	22	3 9	5,2 11,8	14 20	8,11 5,2
36	146	6	3	2	4	2

6.5.12 12 Rows, 0.5m Row spacing, 2m Tractor track Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
12	147	2	1	2	2	3
15	148	10	2 4	2,6 8,12	7 9	11,7 5,1
16	149	8	2 4	3,7 11	5 7	10 6,2
18	150	6	2	5,9	5	8,4
20	151	10	2 5	7,11 2	6 9	3 10,6
21	152	14	2 6	8,12 2,6	9 13	5,1 11,7
24	153	4	2	11	3	10
27	154	18	3 7	11,7 5,1	12 16	2,6 8,12
28	155	14	3 7	10,6 2	8 12	3 7,11
30	156	10	3	8,4	8	5,9
32	157	16	3 8	6,2 11	9 14	10 3,7
33	158	22	3 9	5,1 11,7	14 20	8,12 2,6
36	159	6	3	2	4	3



6.5.13 18 Rows, 0.45m Row spacing, 1,8m Tractor track Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
11,7	160	26	1 3 4 5 6 7 8 9 10 11 13	7,3 17,13 10,14 1 4 11,7 16 17 6,10 5,1 15,11	14 16 17 18 19 20 21 22 23 24 26	12,16 2,6 9,5 18 15 8,12 3 2 13,9 14,18 4,8
12,15	161	6	1 3	7,3 16,12	4 6	12,16 3,7
14,85	162	22	1 2 3 5 7 9 10 11	4 1 7,3 10,6 13,9 16,12 18 15	12 13 14 16 18 20 21 22	15 18 12,16 9,13 6,10 3,7 1 4
15,3	163	34	1 2 3 5 7 9 11 13 15 16 17	3 2 5,1 7,3 9,5 11,7 13,9 15,11 17,13 18 15	18 19 20 22 24 26 28 30 32 33 34	16 17 14,18 12,16 10,14 8,12 6,10 4,8 2,6 1 4
16,2	164	2	1	2	2	3
18,00	165	20	2 4 6 8 10 11	1,5 5,9 9,13 13,17 17 16	13 15 17 19 20	16,12 12,8 8,4 4 1
19,8	166	22	2 4 7 9 11 12	3,7 11,15 18,14 10,6 2 3	14 16 17 19 21	7,11 15 18 14,10 6,2
20,25	167	10	2 4	3,7 12,16	7 9	16,12 7,3

18 Rows, 0.45m Row spacing, 1,8m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
20,7	168	46	2	4,8	25	15,11
			4	14,18	27	5,1
			7	13,9	30	6,10
			9	3	32	16
			10	2	33	17
			12	8,12	35	11,7
			14	18	37	1
			15	15	38	4
			17	9,5	40	10,14
			20	2,6	43	17,13
			22	12,16	45	7,3
21,15	169	94	2	4,8	49	15,11
			4	15	51	4
			5	18	52	1
			7	11,7	54	8,12
			10	1,5	57	18,14
			12	12,16	59	7,3
			15	14,10	62	5,9
			17	3	64	16
			18	2	65	17
			20	9,13	67	10,6
			23	17,13	70	2,6
			25	6,2	72	13,17
			28	6,10	75	13,9
			30	17	77	2
			31	16	78	3
			33	9,5	80	10,14
			36	3,7	83	16,12
			38	14,18	85	5,1
			41	12,8	88	7,11
			43	1	90	18
			44	4	91	15
			46	11,15	93	8,4
21,6	170	8	2	5,9	5	16
			4	17	7	8,4
23,85	171	106	2	7,11	55	12,8
			5	13,9	58	6,10
			8	5,9	61	14,10
			11	15,11	64	4,8
			14	3,7	67	16,12
			17	17,13	70	2,6
			20	1,5	73	18,14
			22	18	75	1
			23	15	76	4
			25	2	78	17
			26	3	79	16
			28	16	81	3
			29	17	82	2
			31	4	84	15
			32	1	85	18
			34	14,18	87	5,1
			37	6,2	90	13,17



18 Rows, 0.45m Row spacing, 1,8m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
23,85	171	106	40	12,16	93	7,3
			43	8,4	96	11,15
			46	10,14	99	9,5
			49	10,6	102	9,13
			52	8,12	105	7,11
24,3	172	6	2	8,12	5	11,7
27,0	173	10	2	11,15	6	3
			5	2	9	14,10
27,9	174	62	2	12,16	33	7,3
			6	2,6	37	17,13
			9	9,5	40	10,14
			12	18	43	1
			13	15	44	4
			16	8,12	47	11,7
			19	3	50	16
			20	2	51	17
			23	13,9	54	6,10
			26	14,18	57	5,1
			30	4,8	61	15,11
28,35	175	14	2	12,16	9	7,3
			6	3,7	13	16,12
29,7	176	22	2	14,18	13	5,1
			6	8,12	17	11,7
			10	2,6	21	17,13
30,15	177	134	2	14,18	69	5,1
			6	9,13	73	10,6
			10	4,8	77	15,11
			13	2	80	17
			14	3	81	16
			17	7,3	84	12,16
			21	12,8	88	7,11
			25	17,13	92	2,6
			28	15	95	4
			29	18	96	1
			32	10,14	99	9,5
			36	5,9	103	14,10
			39	1	106	18
			40	4	107	15
			43	6,2	110	13,17
			47	11,7	114	8,12
			51	16,12	118	3,7
			54	16	121	3
			55	17	122	2
			58	11,15	125	8,4
			62	6,10	129	13,9
			66	1,5	133	18,14

18 Rows, 0.45m Row spacing, 1,8m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
31,95	178	142	2	16	73	3
			3	17	74	2
			6	15	77	4
			7	18	78	1
			10	14,18	81	5,1
			14	13,17	85	6,2
			18	12,16	89	7,3
			22	11,15	93	8,4
			26	10,14	97	9,5
			30	9,13	101	10,6
			34	8,12	105	11,7
			38	7,11	109	12,8
			42	6,10	113	13,9
			46	5,9	117	14,10
			50	4,8	121	15,11
			54	3,7	125	16,12
			58	2,6	129	17,13
			62	1,5	133	18,14
			65	1	136	18
			66	4	137	15
			69	2	140	17
			70	3	141	16
32,4	179	4	2	17	3	16
32,85	180	146	2	17	75	2
			3	16	76	3
			6	18	79	1
			7	15	80	4
			11	18,14	84	1,5
			15	17,13	88	2,6
			19	16,12	92	3,7
			23	15,11	96	4,8
			27	14,10	100	5,9
			31	13,9	104	6,10
			35	12,8	108	7,11
			39	11,7	112	8,12
			43	10,6	116	9,13
			47	9,5	120	10,14
			51	8,4	124	11,15
			55	7,3	128	12,16
			59	6,2	132	13,17
			63	5,1	136	14,18
			67	4	140	15
			68	1	141	18
			71	3	144	16
			72	2	145	17



18 Rows, 0.45m Row spacing, 1,8m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
33,3	181	74	2	18	39	1
			3	15	40	4
			7	17,13	44	2,6
			11	15,11	48	4,8
			15	13,9	52	6,10
			19	11,7	56	8,12
			23	9,5	60	10,14
			27	7,3	64	12,16
			31	5,1	68	14,18
			35	3	72	16
			36	2	73	17
36	182	40	3	16,12	25	12,8
			7	8,4	29	4
			12	1,5	30	1
			16	9,13	34	5,9
			20	17	38	13,17
			21	16		

6.5.14 18 Rows, 0.45m Row spacing, 2,25m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
11,7	183	26	1	8,3	14	11,16
			3	18,13	16	1,6
			4	9,14	17	10,5
			5	2	18	17
			6	4	19	15
			7	12,7	20	7,12
			8	15	21	4
			9	17	22	2
			10	5,10	23	14,9
			11	6,1	24	13,18
			13	16,11	26	3,8
12,15	184	6	1	7,2	4	12,17
			3	16,11	6	3,8
14,85	185	22	1	4	12	15
			2	2	13	17
			3	7,2	14	12,17
			5	10,5	16	9,14
			7	13,8	18	6,11
			9	16,11	20	3,8
			10	18	21	1
			11	14	22	5

18 Rows, 0.45m Row spacing, 2,25m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
15,3	186	34	1	4	18	15
			2	2	19	17
			3	6,1	20	13,18
			5	8,3	22	11,16
			7	10,5	24	9,14
			9	12,7	26	7,12
			11	14,9	28	5,10
			13	16,11	30	3,8
			15	18,13	32	1,6
			16	17	33	2
			17	15	34	4

6.5.15 18 Rows, 0.5m Row spacing, 1,5m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
12	187	4	1	8,5	3	17
			2	17	4	5,8
15	188	10	1	5,2	6	14,17
			3	11,8	8	8,11
			5	17,14	10	2,5
16	189	16	1	4,1	9	17
			3	8,5	10	13,16
			5	12,9	12	9,12
			7	16,13	14	5,8
			8	17	16	1,4
18	190	2	1	2	2	2
20	191	20	2	1,4	11	17
			4	5,8	13	16,13
			6	9,12	15	12,9
			8	13,16	17	8,5
			10	17	19	4,1
21	192	14	2	2,5	9	17,14
			4	8,11	11	11,8
			6	14,17	13	5,2
24	193	8	2	5,8	5	17
			4	17	7	8,5
27	194	6	2	8,11	5	11,8
28	195	28	2	9,12	15	17
			5	8,5	18	1,4
			8	13,16	21	16,13
			11	4,1	24	5,8
			14	17	27	12,9
30	196	10	2	11,14	6	2
			5	2	9	14,11
32	197	32	2	13,16	17	17
			6	5,8	20	9,12
			9	4,1	24	1,4
			13	12,9	27	8,5
			16	17	31	16,13

**18 Rows, 0.5m Row spacing, 1,5m Tractor track****Field border on right hand side**

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
33	198	22	2 6 10	14,17 8,11 2,5	13 17 21	5,2 11,8 17,14
36	199	4	2	17	3	17

6.5.16 18 Rows, 0.5m Row spacing, 2m Tractor track**Field border on right hand side**

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
12	200	4	1 2	8,4 17	3 4	16 5,9
15	201	10	1 3 5	5,1 11,7 17,13	6 8 10	14,18 8,12 2,6
16	202	16	1 2 3 5 7 8	4 1 8,4 12,8 16,12 17	9 10 12 14 16	16 13,17 9,13 5,9 1,5
18	203	2	1	2	2	3
20	204	20	2 4 6 8 10 11	1,5 5,9 9,13 13,17 17 16	13 15 17 19 20	16,12 12,8 8,4 4 1
21	205	14	2 4 6	2,6 8,12 14,18	9 11 13	17,13 11,7 5,1
24	206	8	2 4	5,9 17	5 7	16 8,4
27	207	6	2	8,12	5	11,7
28	208	28	2 5 8 11 12 14	9,13 8,4 13,17 4 1 17	15 18 21 24 27	16 1,5 16,12 5,9 12,8
30	209	10	2 5	11,15 2	6 9	3 14,10
32	210	32	2 6 9 10 13 16	13,17 5,9 4 1 12,8 17	17 20 24 27 31	16 9,13 1,5 8,4 16,12

18 Rows, 0.5m Row spacing, 2m Tractor track
Field border on right hand side

Working width sprayer [m]	Tramline rhythm number in ED-Control	Length of tramline until repeat	Tramline	Switched off sowing unit	Tramline	Switched off sowing unit
33	211	22	2 6 10	14,18 8,12 2,6	13 17 21	5,1 11,7 17,13
36	212	4	2 3	17 16		







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