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# Operating Instructions

## On-Board Computer

### LH 5000

Version LE 52.03,  
Version LE 52.04,  
Version LE 52.05,  
Version LE 52.06,  
Version LE 52.07



Safety is our concern

Art.Nr. 175 1322  
GB-7/02.03

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## DEFINED USE



- Read and adhere to these „General Health- and Safety precautions“, before putting the combination to work!

The Solitair with the on-board computer LH 5000 has been designed purely for cultivation of agricultural soil!

Any use beyond the one stipulated above is no longer considered as the defined use. The manufacturer does not accept any responsibility

for damage resulting from this; the operator himself carries the full risk!

Under „defined use“ the manufacturer’s prescribed operation-, maintenance- and repair conditions are to be adhered to!

- The Solitair with the on-board computer LH 5000 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!
- The accident prevention advice as well as the generally accepted safety technical, working, medical and road traffic rules should be adhered to!
- Any damage resulting from unauthorised changes to the machine invalidate the responsibility of the manufacturer!

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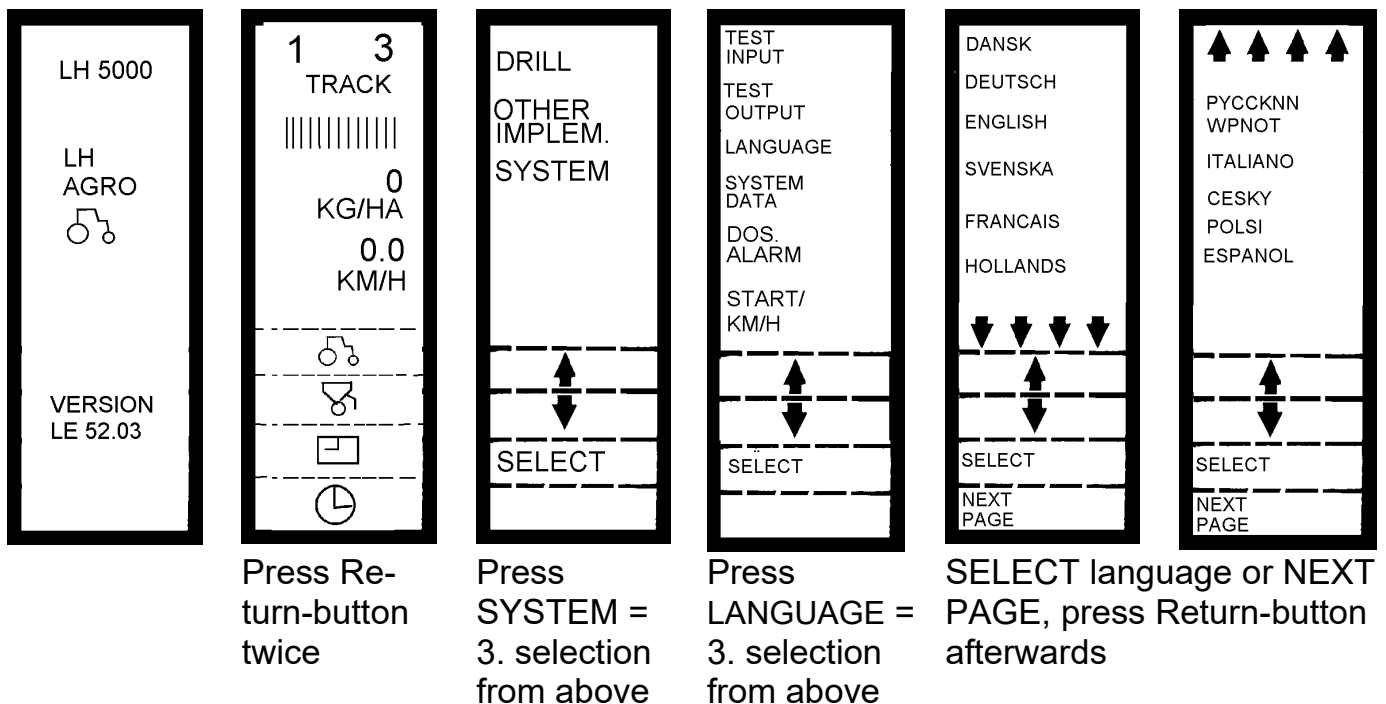
## 1 SELECTION OF LANGUAGE

In order to be able to operate the on-board computer LH 5000, the required language must be chosen.

Different languages are available:

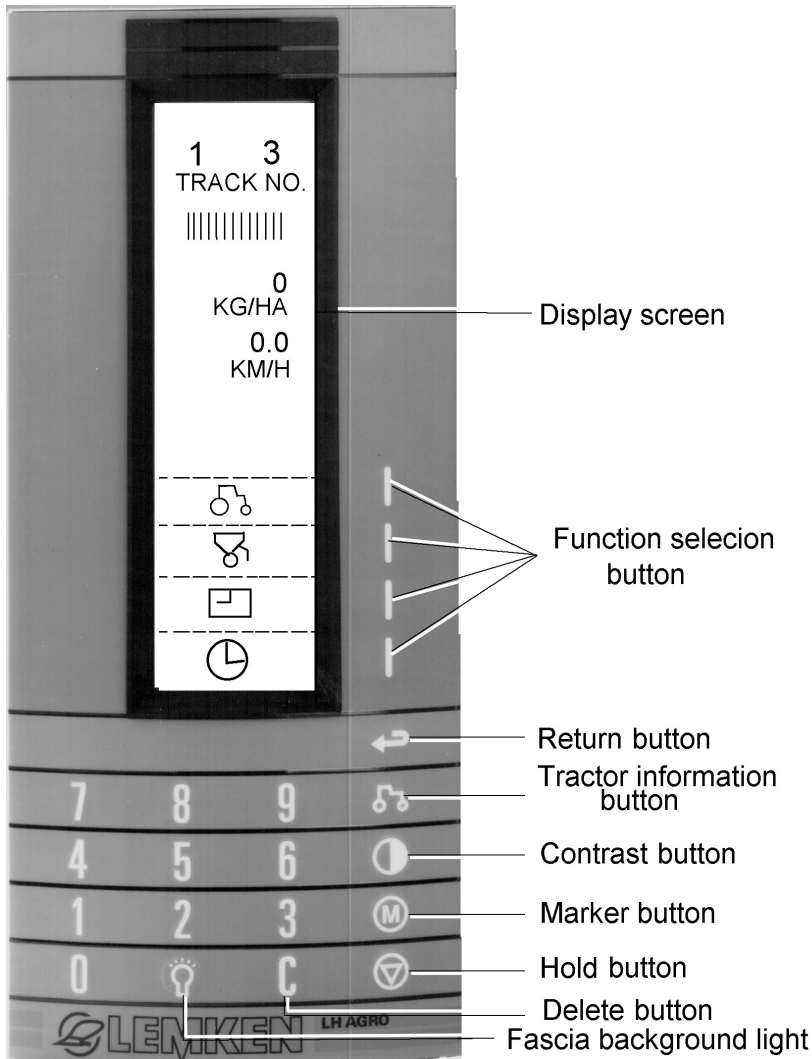
The desired language can be chosen as follows:

- Switch on the on-board computer LH 5000. If the machine is parked, ALARM-indications will appear on the screen. That's normal. The ALARM-indications will be confirmed by means of pressing the "OK" button. Now one can start choosing the language.
- Press the Return button several times until on the display screen the main menu selection "DRILL", "OTHER IMPLM.", "SYSTEM" appears.
- The main menu "SYSTEM" must be chosen.
- Now the menu selection "TEST INPUT", "TEST OUTPUT", "LANGUAGE", "SYSTEM DATA" appears.
- The menu "LANGUAGE" must be chosen. The selection of the available languages appears.
- Mark the desired language by means of the arrow buttons and choose it by pressing the button "SELECT". After that the Return-button should be pressed to confirm the selection and to return to the previous menu.



## 2 BUTTONS AND FUNCTIONS

The computer LH 5000 is provided with function buttons, firm buttons and a display. It is switched on by means of the toggle switch situated on the left side of the black console of the computer.



Switch on the on-board computer.

### Attention:

The computer LH 5000 must always be switched off, when parking the seed drill, in order to avoid discharging of the tractor battery.

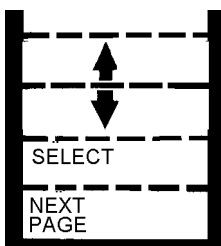
Firm buttons

### 2.1 Function Buttons

With the four function selection buttons

1. the basic menus, programs, menus and menu pages can be chosen and
2. one can leaf through the menu pages.

Each chosen function will be indicated directly to the left of the function button concerned.



Mark desired field on the display screen.

Choose marked field and activate it.

Leaf between the pages of the menu.

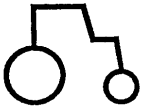
## 2.2 Firm Buttons

### *Return button*



This button is available for the confirmation of the entered data and returning to the previous menu.

### *Tractor information button*



By means of pressing this button some tractor functions appear, which are **not** relevant for the seed drill use. Press the Return-button to annul the tractor information.

### *Contrast*



Here an adjustment of the contrast can be made. After pressing this button the contrast of the display screen (bright/dark) can be adjusted.

At the top of the display the adjustment will be indicated. The normal adjustment is between 45-50.

Contrast + = dark display screen

Contrast - = bright display screen

When pressing the Delete-button = C the contrast will be adjusted to the default value of 50.

### *Marker button*



The marker button works as a book-mark, which can be put into the current page by means of pressing this button, before re-leafing.

By means of pressing the button again, one returns to the marked page.

**Warning:** The marker button only operates with the chosen implement and in the program "OPERATION".

### *Hold button*



By means of pressing this button an unintentional advancing of the tramline operation in the program "DRILL" will be prevented. The current position is kept, also if the seed drill is lifted. If the function is activated, "HOLD" appears on the display screen as a warning.

### *Delete button*



The delete button 'C' can be used together with the numerical keyboard for feeding data into the computer. With this button the chosen numbers can be deleted and the pulse counter set to zero in the menu "TEST FUNCTION".

### *Fascia background light*



This button is used for switching on and off the background light of the display screen.

### *Numerical keyboard*

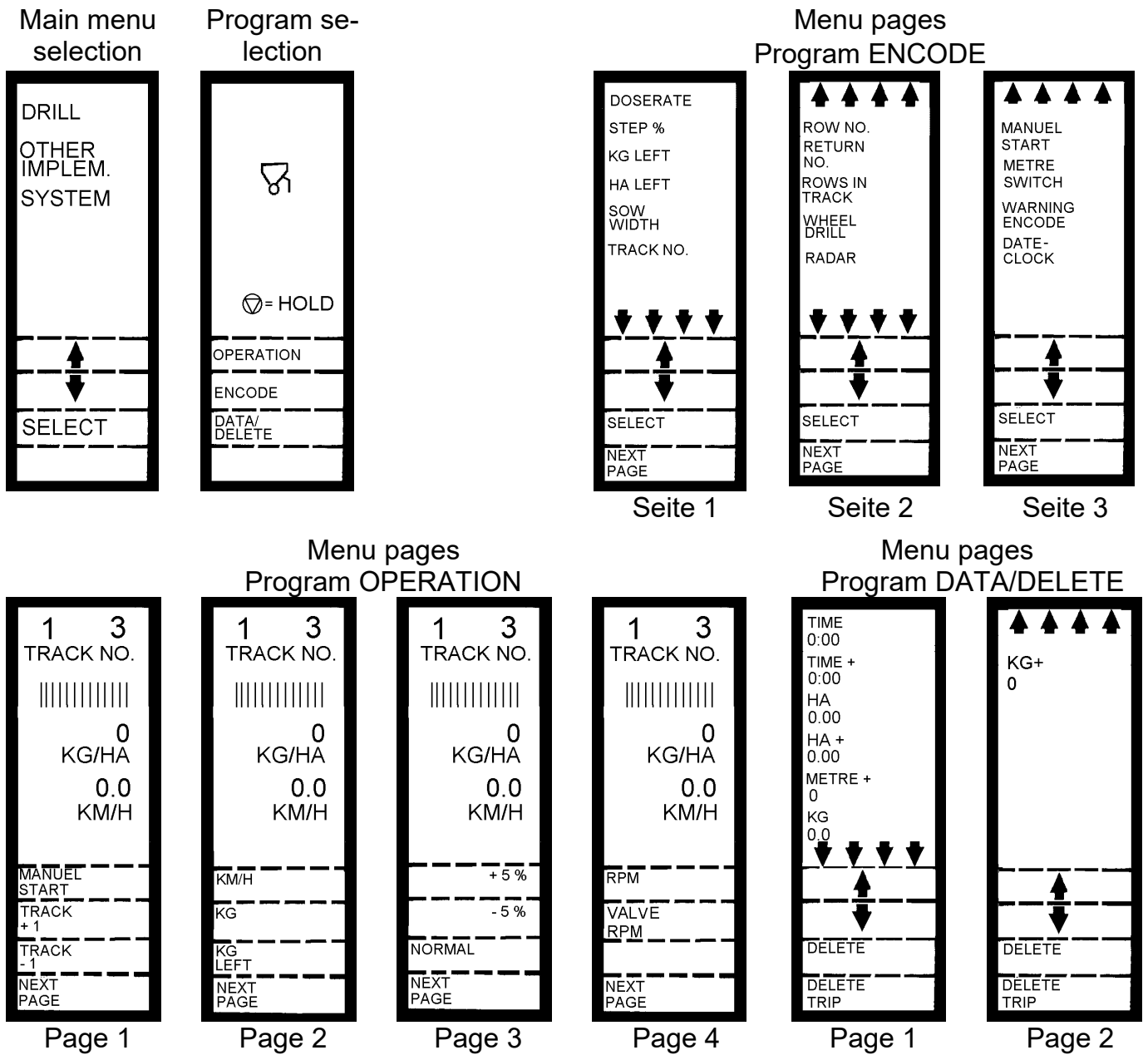
These buttons are only used in the program "ENCODE"

### 3 STRUCTURE OF PROGRAM AND MENU

The on-board computer LH 5000 is the brain controlling the Solitair. After entering all required data in the program ENCODE the LH 5000 is switched over to the program OPERATION. In the program OPERATION not only the important functions of the Solitair can be controlled, but also the seeding rate and the current track bout can be changed.

If it is desired to increase or reduce the seed rate or you wished to start immediately on a new field, it is not necessary to switch over to the program ENCODE, in order to encode new data.

In the program OPERATION it is also possible to arrange your preferred controlling menu. The below stated menu pages of the program OPERATION are standard ones.



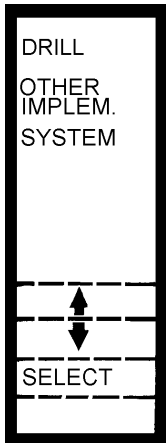
## 4 PROGRAM - ENCODE

In this program all data must be encoded, to ensure an exact seed rate per hectare and control of the seed drill.

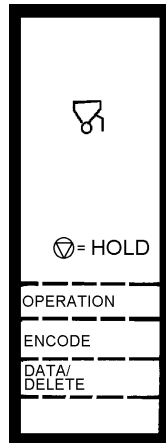
First the SOW WIDTH of the Solitair seed drill **must be** encoded.

Press RETURN-button until the main menu selection is reached.

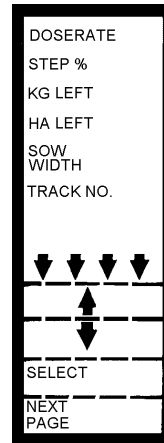
### 4.1 SOW WIDTH



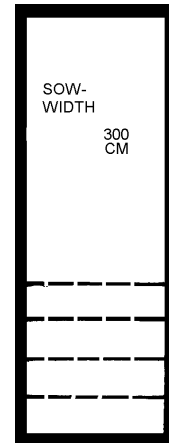
Select DRILL



Press ENCODE



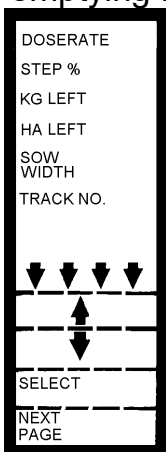
Select SOW WIDTH



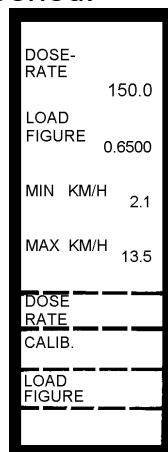
Encode the sow width in cm and press Return-button

### 4.2 DOSERATE – SEED RATE/CALIBRATION TEST

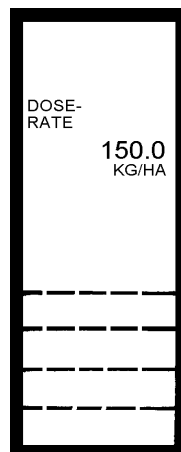
In the menu DOSERATE the seed rate in kg/ha is encoded and the calibration test carried out. For catching the seed the calibration trough must be brought into position and the emptying flaps opened.



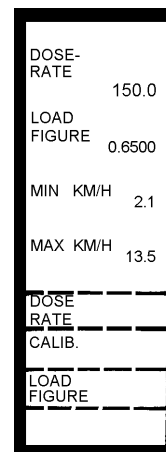
Select DOSERATE



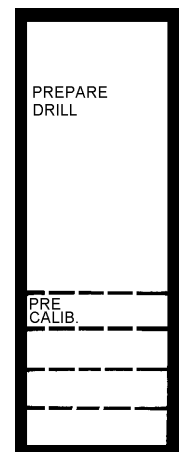
Press DOSERATE



Encode desired seed rate in kg/ha and press Return-button



Press CALIB.

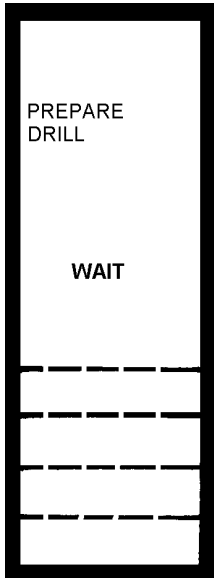


Press PRE CALIB.

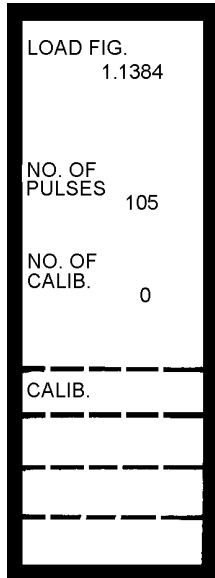
Now the seeding shaft is turning for 20 to 30 seconds, to ensure that the seed wheels are filled sufficiently with seed. After that the calibration trough must be emptied and positioned again and the emptying flaps opened again.



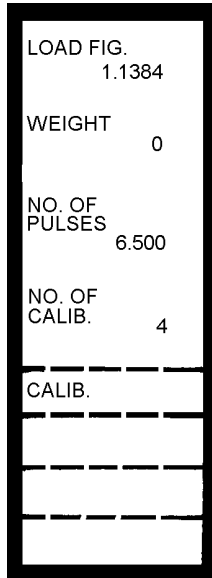
- When pressing CALIB. or PRE CALIB., the seeding shaft is turning. Danger of accident! Keep distance!



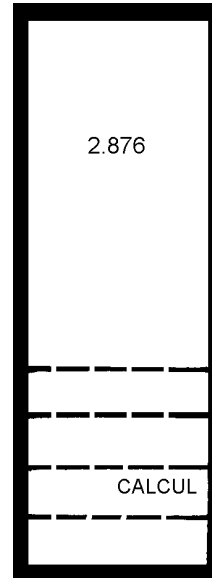
WAIT, as the seed wheel is turning 30 sec.



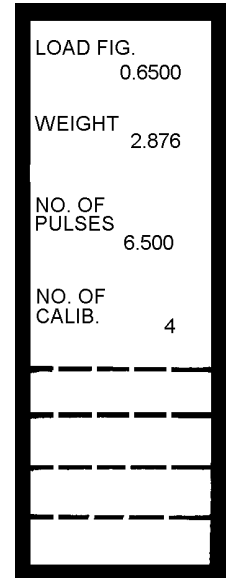
Press CALIB. several times until the calibration trough is filled up to 75 %.



Weigh the calibration test and encode it in grams.



Press CALCUL.



Press Return-button

Now the computer has adjusted the control of the seed drill to the desired seed rate in kg per hectare.

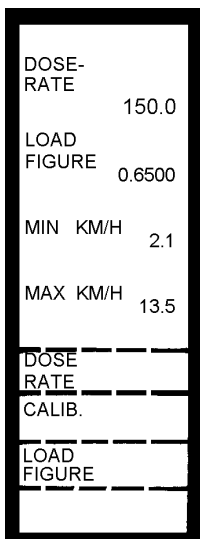
### NOTE!

After encoding the desired seed rate in kg/ha and pressing the Return-button, the display indicates the minimum and maximum working speed, possible with the encoded seed rate.

**Example:** MIN KM/H 2,1 and MAX KM/H 13,5!

In this example the working speed must always be higher than 2,1 km/h and always less than 13,5 km/h. If a speed is indicated as being too high or too low, the seeding wheels must be switched-on or off.

Indicated speed too high => switching off one or more seeding wheels  
Indicated speed too low => switching on one or more seeding wheels



**After switching on- or off the seeding wheels a new calibration test must always be carried out.**

#### 4.2.1 Calibration test

The Solitair has been prepared and pre-adjusted in the factory. So the following minimum adjustments have to be carried through, only:

- Seed rate kg/ha
- Switching on and off of seed wheels

After that carry through the calibration test as described in this instruction book.

After the calibration test the on-boards computer LH 5000 has carried through all adjustments for the correct seed rate per hectare.

If required the result of these adjustments can be checked by means of the calibration check.

#### 4.2.2 Calibration check

After the calibration test the emptying flaps stay open. With fully emptied calibration tray the drive wheel has to be turned in accordance to the following table to check whether the seed rate adjustment is correct.

The following table shows the drive wheel revolution for 1/10 ha and 1/50 ha.

Working width	Revolutions of drive wheel (WHEEL DRILL = 15)		STATUS	
	No. of revolutions 1/10 ha *	No. of revolutions 1/50 ha **	CAL FIG. 1.136	WHEEL DRILL 15.00
300	185,2	37	KG/HA 230	METRE SWITCH IMPLEM. SENSOR
400	138,8	27,8	TRACK NO. 4	
450	123,4	24,7	TRACK METHOD B	
500	111,1	22,2	SOW- WIDTH 300	
600	92,6	18,5	ROW NO 24	
800	69,4	13,9		
900	61,7	12,3		
1000	55,6	11,1		
1200	46,3	9,3		

Weigh the seed which is caught in the calibration tray and convert it to 1 ha by multiply it with 10 in connection with 1/10 ha and with 50 in connection with 1/50 ha.

As the calibration test of the Solitair is very precise, a calibration check is not necessary. The calibration check is though for those users, only, which will re-enact the calibration test and that related to the area of 1 ha.

**Warning:** Turn the drive wheel during the calibration check with a continuously speed which corresponds to the approximate working speed and which is higher than 3 km/h. The No. of revolutions must be correct also with regard to the figures behind the comma, as a 1/2 turn too less or too much leads to a deviation of 2,7 % already (with 1/50 ha in combination with 6 m working width).

The calibration check is based on the adjustment in the factory with a drive wheel circumference of – “WHEEL DRILL = 15 cm per pulse”. This corresponds to a wheel circumference of 1,8 m.

If the status display indicates different values, for example “WHEEL DRILL 14,16, for example after an automatic calibration of the wheel circumference, the No. of the revolutions must be calculated as follows:

Working width	Wheel circumference* in m	No. of revolutions** 1/10 ha	No. of revolutions*** 1/50 ha
300	1,7	196	39,2
400	1,7	147	29,4
450	1,7	130,7	26,1
500	1,7	117,6	23,5
600	1,7	98	19,6
800	1,7	73,5	14,7
900	1,7	65,4	13,1
1000	1,7	58,8	11,8
1200	1,7	49	9,8

Wheel circumference = cm per pulse x 12

**Example:**

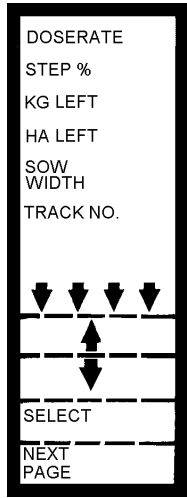
\* Wheel circumference = 14,16 cm per pulse x 12 pulses = 170 cm = 1,7 m

\*\*  $\frac{1.000 \text{ m}^2}{\text{Working width} \times \text{Wheel circumference}} = \text{No. of revolutions}$

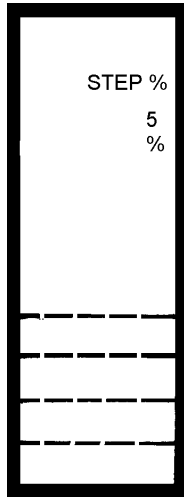
\*\*\*  $\frac{200 \text{ m}^2}{\text{Working width} \times \text{Wheel circumference}} = \text{No. of revolutions}$

### 4.3 STEP %, KG LEFT, HA LEFT

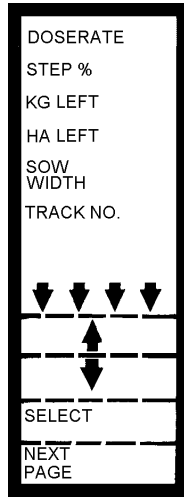
In the sub menu STEP % the size of the steps of the proportional increase or decrease of the seed rate kg/ha can be encoded. The percentage is identical for the increase and decrease of the seed rate.



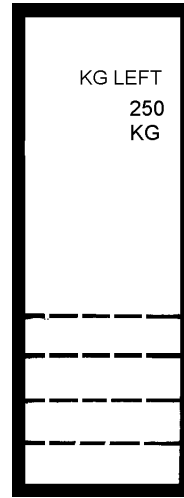
Select STEP % .



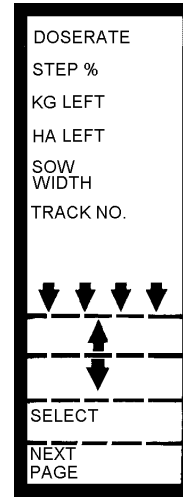
Encode the value of percentage and press Return-button



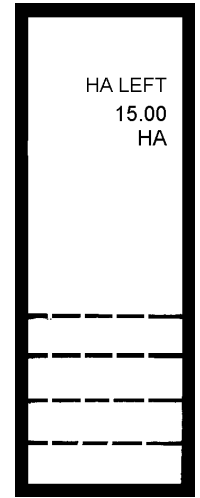
Select KG LEFT



Encode weight of the filled-in seed in kg and press Return-button



Select HA LEFT



Encode the size of the field in ha and press Return-button.

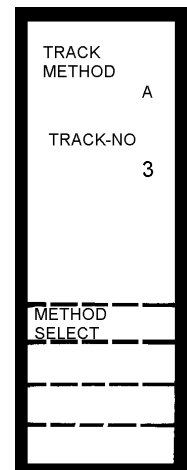
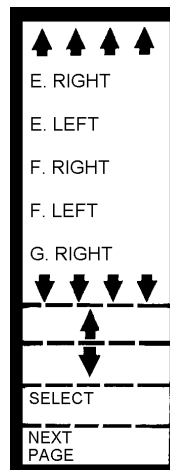
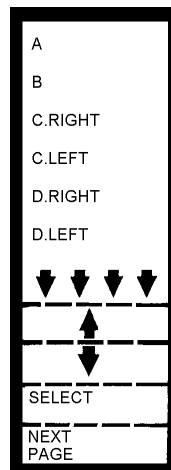
In the sub menu **KG LEFT** the weight of seed in the hopper is encoded. If during work seed has to be refilled, the re-filled quantity has to be added to the quantity left in the hopper.

In the sub menu **HA LEFT** the size of the field is encoded. The time calculation when the work is expected to be finished is dependent on this encode.

### 4.4 TRACKS (Tramline options)











In this sub menu the method and rhythm of the tramline is encoded. In total seven different methods each with two variants are available.

1. Method A, even or uneven
2. Method B, even or uneven
3. Method C, right or left
4. Method D, right or left
5. Method E, right or left (from version 52.04 on)
6. Method F, right or left (from version 52.06 on)
7. Method G, right or left (from version 52.06 on)
8. Method H, right or left (from version 52.07 on)



Method A has to be selected, when the tramline should be made in the middle of the rhythm. The rhythm must be encoded by means of the key-board. When chosen this method it is only possible to start work at the left field end.

Method B has to be selected, when the tramline should be made at the end of the rhythm. The rhythm must be encoded by means of the key-board.

A B C.RIGHT C.LEFT D.RIGHT D.LEFT    SELECT NEXT PAGE	TRACK METHOD A TRACK-NO 3 METHOD SELECT	TRACK METHOD B TRACK-NO 3 METHOD SELECT	TRACK METHOD C.RIGHT IMPL.          15M START          RIGHT METHOD SELECT	TRACK METHOD C.LEFT IMPL.          15M START          LEFT METHOD SELECT	TRACK METHOD D.RIGHT IMPL.      16/27M START          RIGHT METHOD SELECT	TRACK METHOD D.LEFT IMPL.      16/27M START          LEFT METHOD SELECT
 E. RIGHT E. LEFT F. RIGHT F. LEFT G. RIGHT    SELECT NEXT PAGE	TRACK METHOD E.RIGHT IMPL.      6/21M START          RIGHT METHOD SELECT	TRACK METHOD E.LEFT IMPL.      6/21M START          LEFT METHOD SELECT	TRACK METHOD F.RIGHT IMPL.      12/18M START          RIGHT METHOD SELECT	TRACK METHOD F.LEFT IMPL.      12/18M START          LEFT METHOD SELECT	TRACK METHOD G.RIGHT IMPL.      6/20M START          RIGHT METHOD SELECT	
 G. LEFT H. RIGHT H. LEFT    SELECT NEXT PAGE	TRACK METHOD G.LEFT IMPL.      6/20M START          LEFT METHOD SELECT	TRACK METHOD H.RIGHT IMPL.      6/39M START          RIGHT METHOD SELECT	TRACK METHOD H.LEFT IMPL.      6/39M START          LEFT METHOD SELECT			

Method C.RIGHT is selected, when the working width of the following implement (sprayer) is 2,5 times wider than the width of the seed drill and when starting to seed on the right side of the field.

Method C.LEFT is selected, when the working width of the following implement (sprayer) is 2,5 times wider than the width of the seed drill and when starting to seed on the left side of the field.

Method D.RIGHT is selected, when the working width of the following implement (sprayer) is 4,5 times wider than the width of the seed drill and when starting to seed on the right side of the field.

Method D.LEFT is selected, when the working width of the following implement (sprayer) is 4,5 times wider than the width of the seed drill and when starting to seed on the left side of the field.

Method E.RIGHT is selected, when the working width of the following implement (sprayer) is 3,5 times wider than the width of the seed drill and when starting to seed on the right side of the field.

Method E.LEFT is selected, when the working width of the following implement (sprayer) is 3,5 times wider than the width of the seed drill and when starting to seed on the left side of the field.

Method F.RIGHT is selected, when the working width of the following implement (sprayer) is 1,5 times wider than the width of the seed drill and when starting to seed on the right side of the field.

Method F.LEFT is selected, when the working width of the following implement (sprayer) is 1,5 times wider than the width of the seed drill and when starting to seed on the left side of the field.

Method G.RIGHT is selected, when the working width of the following implement (sprayer) is 3,33 times wider than the width of the seed drill and when starting to seed on the right side of the field.

Method G.LEFT is selected, when the working width of the following implement (sprayer) is 3,33 times wider than the width of the seed drill and when starting to seed on the left side of the field.

Method H.RIGHT is selected, when the working width of the following implement (sprayer) is 6,5 times wider than the width of the seed drill and when starting to seed on the right side of the field.

Method H.LEFT is selected, when the working width of the following implement (sprayer) is 6,5 times wider than the width of the seed drill and when starting to seed on the left side of the field.

Select desired method and press Return-button.

#### 4.4.1 Uneven method A

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
1-3	2-3 ■   ■ ■   ■	3-3	1-3	2-3 ■   ■ ■   ■	3-3	1-3	2-3 ■   ■ ■   ■	3-3	1-3

Example: Rhythm 3

With an uneven rhythm the tramline will be made in the middle bout.

With the rhythm 3 the tramline will be made in the second track.

With the rhythm 5 the tramline will be made in the third track.

With the rhythm 7 the tramline will be made in the fourth track.

With the rhythm 9 the tramline will be made in the fifth track.

#### 4.4.2 Even method A

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
1-4	2-4 ■   ■ ■   ■	3-4 ■   ■	4-4	1-4	2-4 ■   ■ ■   ■	3-4 ■   ■	4-4	1-4	2-4 ■   ■ ■   ■

Example: Rhythm 4

The tramline will be made in two bouts in the middle of the even rhythm.




With rhythm 4 the tramline will be made in the second and third track.

With rhythm 6 the tramline will be made in the third and fourth track.

With rhythm 8 the tramline will be made in the fourth and fifth track.

With rhythm 10 the tramline will be made in the fifth and sixth track.

#### 4.4.3 Uneven method B

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
2-3	 3-3	1-3	2-3	 3-3	1-3	2-3	 3-3	1-3	2-3

Example: Rhythm 3



With rhythm 3 the tramline will be made in the third track.

With rhythm 5 the tramline will be made in the fifth track.

With rhythm 7 the tramline will be made in the seventh track.

With rhythm 9 the tramline will be made in the ninth track.

#### 4.4.4 Even method B

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
1/2	3-4	 4-4	1-4	2-4	3-4	 4-4	1-4	2-4	3-4

Example: Rhythm 4

With rhythm 4 the tramline will be made in the fourth track.

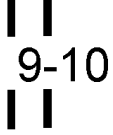
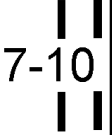
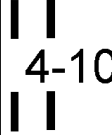
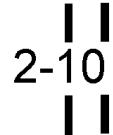
With rhythm 6 the tramline will be made in the sixth track.

With rhythm 8 the tramline will be made in the eighth track.

With rhythm 10 the tramline will be made in the tenth track.

With the even method B it must be seeded with half working width of the seed drill for the first track. Therefore the appropriate shutter slides of the dosage units must be closed.

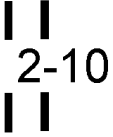
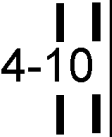
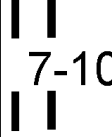
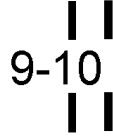
#### 4.4.5 Method C.RIGHT

↓	↑	↓	↑	↓	↑	↓	↑	↓	↑
10-10		8-10		6-10	5-10		3-10		1-10

Example: 6 m seed drill for 15 m following implement (sprayer) or  
4 m seed drill for 10 m following implement (sprayer)

With the method C.RIGHT the rhythm can not be changed. Method C.RIGHT must be encoded, when the following implement (sprayer) works 2,5 times wider than the seed drill and when starting to work on the right side of the field.

#### 4.4.6 Method C.LEFT

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
1-10		3-10		5-10	6-10		8-10		10-10

Example: 6 m seed drill for 15 m following implement (sprayer)  
4 m seed drill for 10 m following implement (sprayer)

With the method C.LEFT the rhythm can not be changed. Method C.LEFT must be encoded, when the following implement (sprayer) works 2,5 times wider than the seed drill and when starting to work on the left side of the field.

#### 4.4.7 Method D.RIGHT

↓	↑	↓	↑	↓	↑	↓	↑	↓	↑
10-18	9-18	8-18	7-18    	6-18	5-18	4-18	3-18    	2-18	1-18

↓	↑	↓	↑	↓	↑	↓	↑	↓	↑
2-18	1-18	18-18	17-18	16-18    	15-18	14-18	13-18	12-18    	11-18

Example: 4 m seed drill for 18 m following implement (sprayer) or  
6 m seed drill for 27 m following implement (sprayer)

With the method D.RIGHT the rhythm can not be changed. Method D.RIGHT must be encoded, when the following implement (sprayer) works 4,5 times wider than the seed drill and when starting to work on the right side of the field.

#### 4.4.8 Method D.LEFT

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
1-18	2-18	3-18    	4-18	5-18	6-18	7-18    	8-18	9-18	10-18

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
11-18	12-18    	13-18	14-18	15-18	16-18    	17-18	18-18	1-18	2-18

Example: 4 m seed drill for 18 m following implement (sprayer) or  
6 m seed drill for 27 m following implement (sprayer)

With the method D.LEFT the rhythm can not be changed. Method D.LEFT must be encoded, when the following implement (sprayer) works 4,5 times wider than the seed drill and when starting to work on the left side of the field.

#### 4.4.9 Method E.RIGHT (from version 52.04 on)

↓	↑	↓	↑	↓	↑	↓	↑	↓	↑
10 - 14	9 - 14    	8 - 14	7 - 14	6 - 14    	5 - 14	4 - 14	3 - 14	2 - 14    	1 - 14

↓	↑	↓	↑	↓	↑	↓	↑	↓	↑
6 - 14    	5 - 14	4 - 14	3 - 14	2 - 14    	1 - 14	14 - 14	13 - 14    	12 - 14	11 - 14

Example: 6 m seed drill for 21 m following implement (sprayer)

With the method E.RIGHT the rhythm can not be changed. Method E.RIGHT must be encoded, when the following implement (sprayer) works 3,5 times wider than the seed drill and when starting to work on the right side of the field.

#### 4.4.10 Method E.LEFT (from version 52.04 on)

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
1 - 14	2 - 14    	3 - 14	4 - 14	5 - 14	6 - 14    	7 - 14	8 - 14	9 - 14    	10 - 14

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
11 - 14	12 - 14	13 - 14    	14 - 14	1 - 14	2 - 14    	3 - 14	4 - 14	5 - 14	6 - 14    

Example: 6 m seed drill for 21 m following implement (sprayer)

With the method E.LEFT the rhythm can not be changed. Method E.LEFT must be encoded, when the following implement (sprayer) works 3,5 times wider than the seed drill and when starting to work on the left side of the field.

#### 4.4.11 Method F.RIGHT (from version 52.06 on)

↓	↑	↓	↑	↓	↑
 6 - 6 	5 - 6	 4 - 6 	 3 - 6 	2 - 6	 1 - 6 

Example: 12 m seed drill for 18 m following implement (sprayer)

With the method F.RIGHT the rhythm can not be changed. Method F.RIGHT must be encoded, when the following implement (sprayer) works 1,5 times wider than the seed drill and when starting to work on the right side of the field.

#### 4.4.12 Method F.LEFT (from version 52.06 on)

↑	↓	↑	↓	↑	↓
 1 - 6 	2 - 6	 3 - 6 	 4 - 6 	5 - 6	 6 - 6 

Example: 12 m seed drill for 18 m following implement (sprayer)

With the method F.LEFT the rhythm can not be changed. Method F.LEFT must be encoded, when the following implement (sprayer) works 1,5 times wider than the seed drill and when starting to work on the left side of the field.

#### 4.4.13 Method G.RIGHT (from version 52.06 on)

↓	↑	↓	↑	↓	↑	↓	↑	↓	↑
10-10	9-10    	8-10	7-10	6-10    	5-10	4-10	3-10	2-10    	1-10

Example: 6 m seed drill for 20 m following implement (sprayer)  
 9 m seed drill for 30 m following implement (sprayer)

With the method G.RIGHT the rhythm can not be changed. Method G.RIGHT must be encoded, when the following implement (sprayer) works 3,33 times wider than the seed drill and when starting to work on the right side of the field.

#### 4.4.14 Method G.LEFT (from version 52.06 on)

↑	↓	↑	↓	↑	↓	↑	↓	↑	↓
1-10	2-10    	3-10	4-10	5-10    	6-10	7-10	8-10	9-10    	10-10

Example: 6 m seed drill for 20 m following implement (sprayer)  
 9 m seed drill for 30 m following implement (sprayer)

With the method G.LEFT the rhythm can not be changed. Method G.LEFT must be encoded, when the following implement (sprayer) works 3,33 times wider than the seed drill and when starting to work on the left side of the field.

#### 4.4.15 Method H.RIGHT (from version 52.07 on)

↑	↓	↑	↓	↑	↓	↑	↓	↑
9 - 26	8 - 26	7 - 26	6 - 26	5 - 26	4 - 26    	3 - 26	2 - 26	1 - 26
↓	↑	↓	↑	↓	↑	↓	↑	↓
18-26	17- 26    	16- 26	15-26	14-26	13-26	12-26	11-26	10-26    
↑	↓	↑	↓	↑	↓	↑	↓	↑
	26-26	25-26	24-26	23-26    	22-26	21-26	20-26	19-26

Example: 6 m seed drill for 39 m following implement (sprayer)

With the method H.RIGHT the rhythm can not be changed. Method H.RIGHT must be encoded, when the following implement (sprayer) works 6,5 times wider than the seed drill and when starting to work on the right side of the field.

#### 4.4.16 Method H.LEFT (from version 52.07 on)

↑	↓	↑	↓	↑	↓	↑	↓	↑
1-26	2-26	3-26	4-26    	5-26	6-26	7-26	8-26	9-26
↓	↑	↓	↑	↓	↑	↓	↑	↓
10-26    	11-26	12-26	13-26	14-26	15-26	16-26	17-26    	18-26
↑	↓	↑	↓	↑	↓	↑	↓	↑
19-26	20-26	21-26	22-26	23-26    	24-26	25-26	26-26	

Example: 6 m seed drill for 39 m following implement (sprayer)

With the method H.LEFT the rhythm can not be changed. Method H.LEFT must be encoded, when the following implement (sprayer) works 6,5 times wider than the seed drill and when starting to work on the left side of the field.

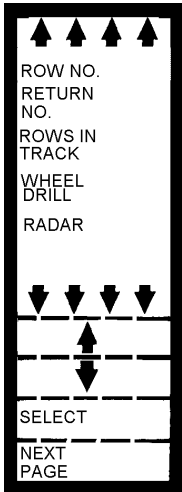
#### 4.5 ROW NO., RETURN NO. and ROWS IN TRACK

In the sub menu ROW NO. the complete number of distributor exits will be encoded. The number always corresponds to the number of coulters plus the number of seeding pipes which will be led back to the hopper permanently.

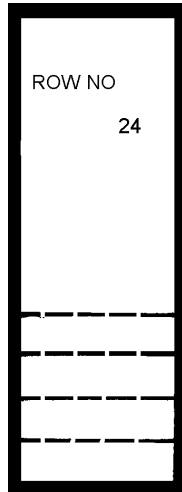
In the sub menu RETURN NO. the number of distributor exits will be encoded, which are permanently connected to the hopper and not to the seeding coulters.

In the sub menu ROWS IN TRACK the number of coulters will be encoded, which will be switched off when making tramlines

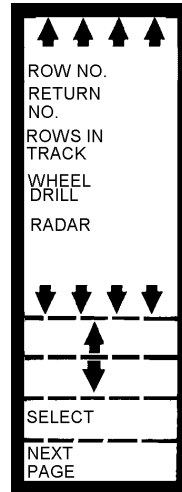
Solitair	Row distance	ROW NO. (encoded value) Number of distributor exits	Effective row number	RETURN NO.	ROWS IN TRACK (Tramlines)				
					0	2x1	2x2	2x3	2x4 4x2
9/300	125	24	24	0	0	2	4	6	8
	150	20	20	0	0	2	4	6	8
	175	18	17	1	0	2	4	6	8
9/400 (K) 10/400 K	125	32	32	0	0	2	4	6	8
	150	28	27	1	0	2	4	6	8
	175	28	23	5	0	2	4	6	8
9/450 (K) 10/450 K	125	36	36	0	0	2	4	6	8
	150	32	30	2	0	2	4	6	8
	175	28	26	2	0	2	4	6	8
9/500 (K) 10/500 K	125	40	40	0	0	2	4	6	8
	150	36	34	2	0	2	4	6	8
	175	32	29	3	0	2	4	6	8
9/600 (K) 10/600 K	125	48	48	0	0	2	4	6	8
	150	40	0	0	0	2	4	6	8
	175	36	34	2	0	2	4	6	8
12/800 K	125	64	64	0	0	2	4	6	8
	150	54	54	0	0	2	4	6	8
	175	48	46	2	0	2	4	6	8
12/900 K	125	72	72	0	0	2	4	6	8
	150	60	60	0	0	2	4	6	8
	175	54	52	2	0	2	4	6	8
12/1000 K	125	80	80	0	0	2	4	6	8
	150	72	68	4	0	2	4	6	8
	175	60	58	2	0	2	4	6	8
12/1200 K	125	96	96	0	0	2	4	6	8
	150	80	80	0	0	2	4	6	8
	175	72	68	4	0	2	4	6	8



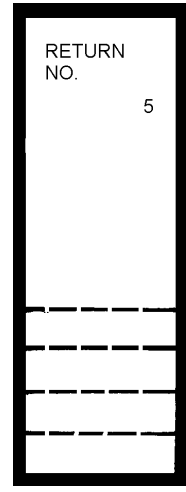
Select ROW NO.



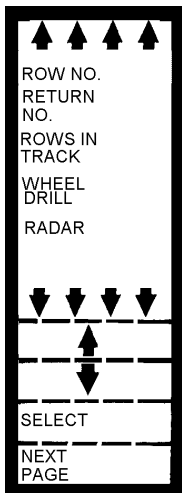
Encode the total number of seeding coulters and press Return-button



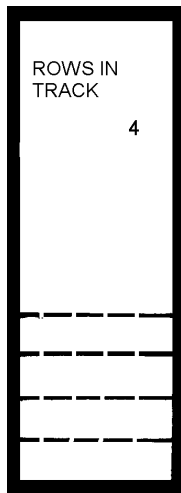
Select RETURN NO.



Encode the total number of permanent return pipes and press Return-button



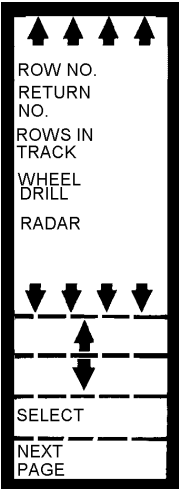
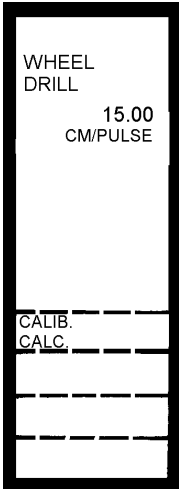
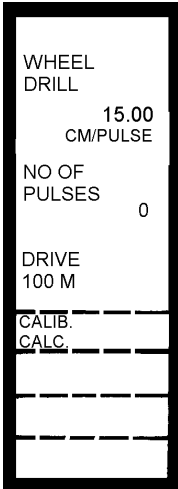
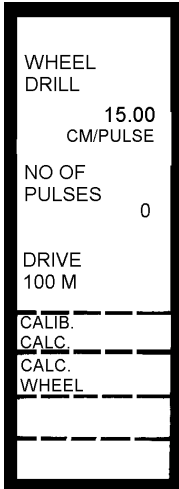
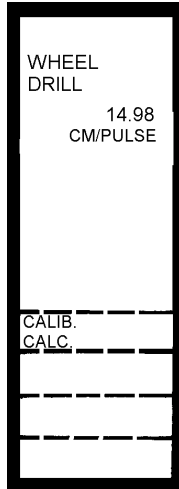
Select ROWS IN TRACK



Encode the total number of distributor exits being closed when making a tramline and press Return-button

The exactness of the hopper level control KG/LEFT depends on the exact encoding of the values for the ROW NO., the RETURN NO. and the ROWS IN TRACK.

## 4.6 WHEEL DRILL (Spike wheel of the seed drill)

	Manual calibration		Automatic calibration	
				
<p>Select WHEEL DRILL</p>	<p>Enter 15.00 and press Return- button</p>	<p>First press C- button and then CALIB.CALC. After that drive 100 m</p>	<p>Press CALC. WHEEL</p>	<p>Press Return- button</p>

### 4.6.1 Manual Calibration

The distance covered per pulse must be entered in cm. The value 15 for 15 cm per impulse should be entered, if no automatic calibration is desired. 15 cm per pulse is a theoretical guide number, only.

As no slippage is considered, the deviation of the desired seed rate can be more than 10 %. it is therefore recommended that automatic calibration is chosen.

### 4.6.2 Automatic Calibration

The automatic calibration also considers the slippage of the spike wheel (18), which provides the on-board computer with the required pulses. Therefore always the automatic calibration should be chosen, in order to reach an accurate seed rate in kg per ha.

The automatic calibration is done as follows:

1. Measure a distance of 100 m, mark start and end point and drive to the start point.
2. Press the "C"-button for setting the indicated value CM/IMP to zero.
3. Press "CALIB. CALC."
4. Drive 100 m and stop exactly at the end point.
5. Press the flashing "CALC. WHEEL" button; the wheel circumference will be calculated. This value includes also the slippage of the ground wheel. The calculated value in cm/pulse, e.g. 14.98, will be indicated automatically on the display.

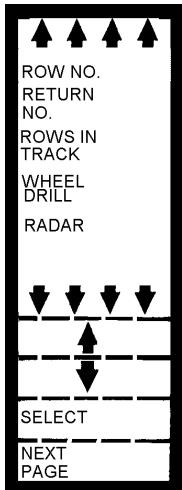
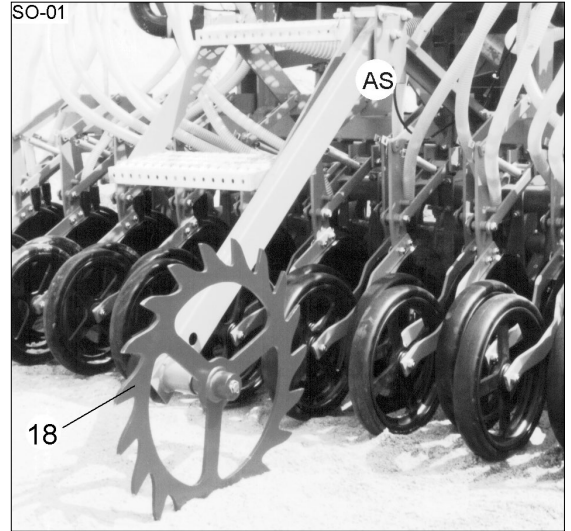
#### 4.7 RADAR

This submenu cannot be used at the moment. It is used as preparation for future uses.

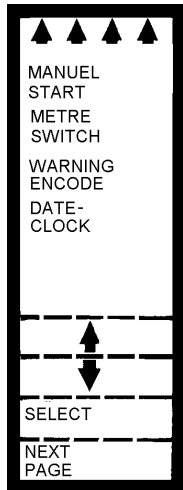
#### 4.8 MANUAL START

This function can be chosen, if it is desired to start the seeding shaft drive manually. The period of time in seconds the seeding shaft turns before the ground wheel (18) take over control, can be entered here, for example 5 seconds.

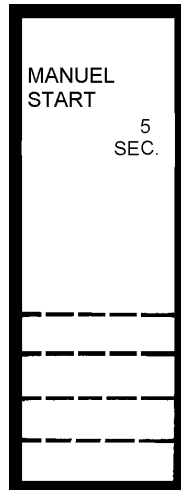
MANUAL START can only be used when the seed drill is in working position



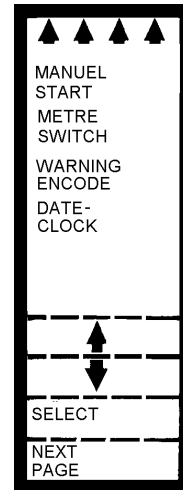
Select  
MANUAL  
START



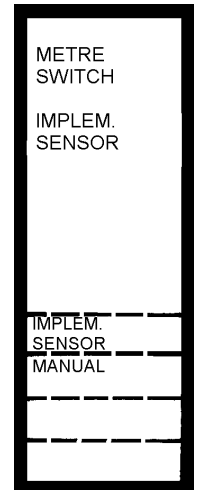
Select  
MANUEL START



Enter time in seconds the seeding shaft should turn and press Return-button



Select  
METRE  
SWITCH

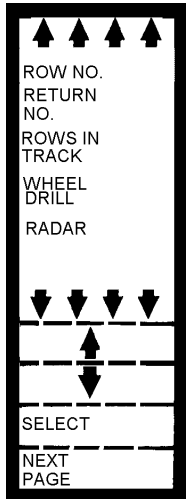


IMPLEM.  
SENSOR must  
be selected.

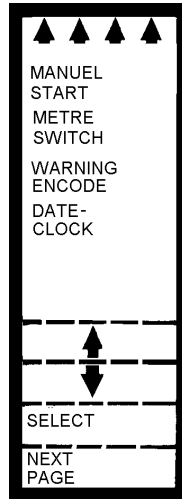
#### 4.9 METRE SWITCH

With metre switch selected, choose whether the meter counter should be started or stopped manually or by means of the implement sensor. The "IMPLEM. SENSOR" should be selected, meaning the tramline sensor of the drill.

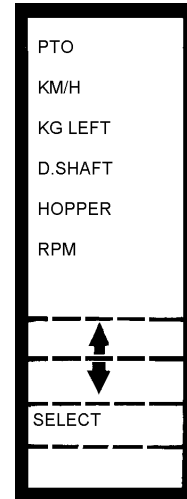
## 4.10 WARNING ENCODE



NEXT PAGE

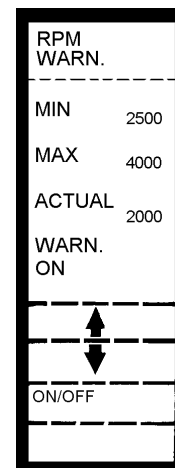
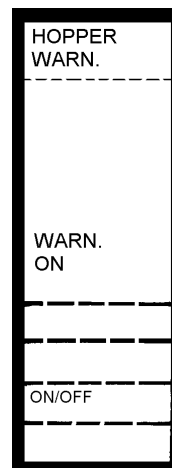
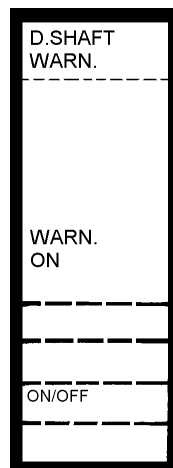
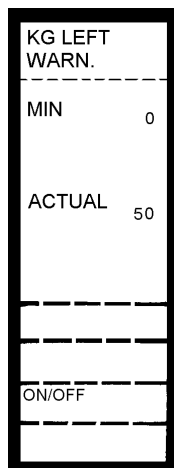
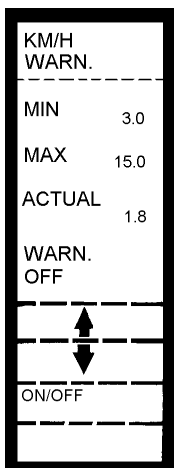


Select  
WARNING ENCODE



These warnings can be selected and each switched on or off.

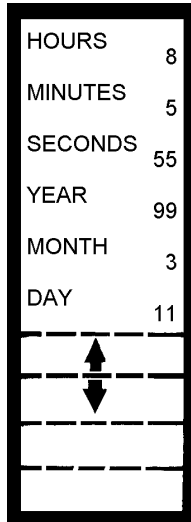
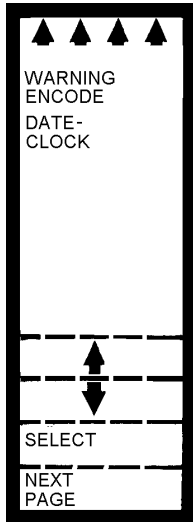
- PTO:** PTO RPM, but only, if a sensor is provided at the PTO shaft. Not relevant to the Solitair.
- KM/H:** Maximum and minimum working speed.
- KG LEFT:** Seed amount left in the hopper, when warning should be given.
- D.SHAFT:** Warning, when the seeding shaft is stopping. **(This warning should never be switched off).**
- HOPPER:** Warning when the seed level in the hopper is too low (by means of seed level sensor)
- RPM:** Maximum and minimum fan RPM.



Switch warning always to WARN. ON

With warnings KM/H WARN. and RPM WARN. the minimum and maximum limit values can be entered.

#### 4.11 DATE-CLOCK



In this sub menu the time and date are entered. Therefore select the corresponding field in the display by means of the arrow-buttons and enter the exact time and date.

Select  
DATE-CLOCK

#### 4.12 ENCODE, short instruction


Encoding data has been described in detail in section 4 PROGRAM ENCODE. Follow these encoding steps as a minimum.

- Select the desired language in the main menu SYSTEM!
- Enter the working width (SOW WIDTH) of the seed drill in cm!
- Enter the seed rate per hectare (DOSAGE) in kg/ha!
- Enter ROW NO., RETURN NO. and ROWS IN TRACK. Incorrect or not complete statements lead to deviations with the seed rate and to an incorrect hopper control.
- Carry out a calibration test (CALIB.CALC., CALIB)!
- Select METHOD and rhythm of the tramline operation!
- Carry out an automatic calibration (WHEEL DRILL) or enter 15.00 cm/pulse!
- As metre switch select IMPLEMENT SENSOR!

That is all!

Now in the sub menu WARN. ENCODE the D.SHAFT WARN. must always be switched on, so that when the seeding shaft stops a warning will be given and if desired switch on the HOPPER. WARN.

Press the Return-button several times until the program selection will be reached.

Press OPERATION and  , in order to reach the control menus.

The STATUS indications appearing from time to time, in the display, have to be checked and confirmed by means of the Return-button.

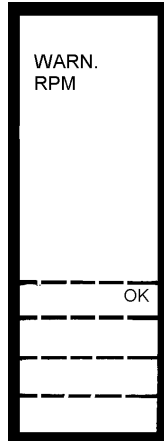
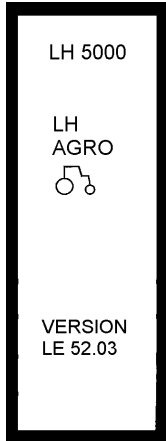
## 5 PROGRAM OPERATION

There are two methods of getting to get into the program OPERATION, after the computer has been switched on:

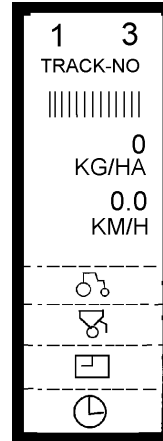
1. the direct way
2. the informative way


### Direct way

Switch on the computer



If a warning signal appears, press OK

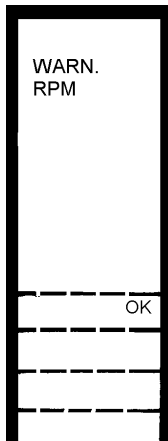
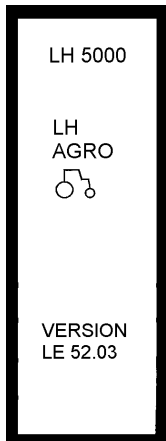


Press , in order to reach the program OPERATION

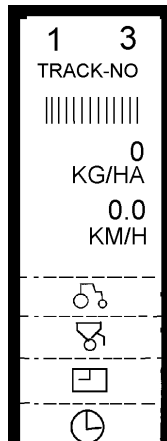
### Informative way

The informative way should be taken if it is desired to check before starting to seed whether all adjustments or entered data are correct. All entered data are listed on two STATUS pages.

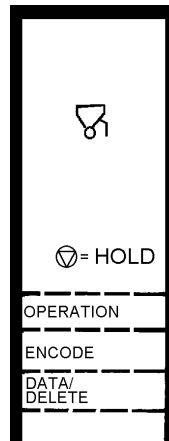
Switch on the computer



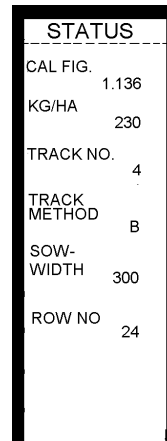
If a warning signal appears, press OK



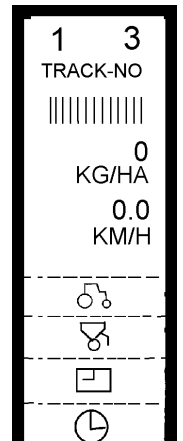
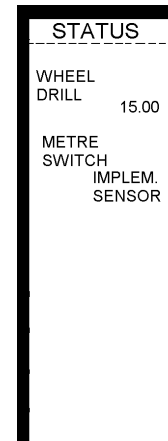
Press Return-button once




Press OPERATION

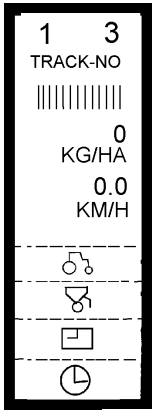



If the encodes are correct, the Return-button must be pressed. If they are not correct, they must be corrected in the program ENCODE

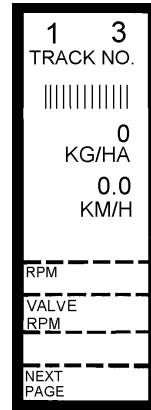
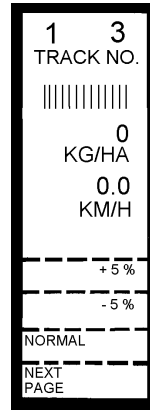
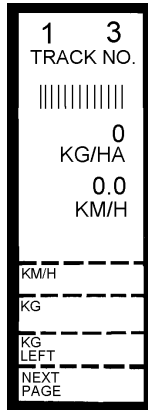
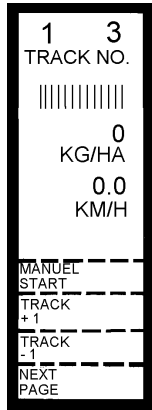


Press , in order to reach the program OPERATION

## 5.1 Control menus



Press 

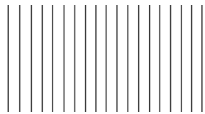


There are four different control menus in the program OPERATION. Press NEXT PAGE, in order to reach the desired control menu.

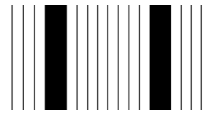
### 5.1.1 Firm control information

There are four firm control functions in all control menus being indicated on the top of the display.

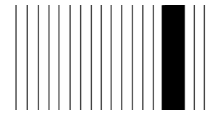
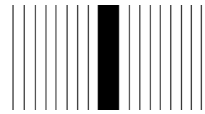
1. The current track No. (on the top left of the display) 1 3
2. The encoded tramline rhythm (on the top right of the display) 1 3
3. A graph of the tramline (see following sketch)
4. The current seed rate in **KG/HA.**, with the exception of the RPM control of the E-motor.



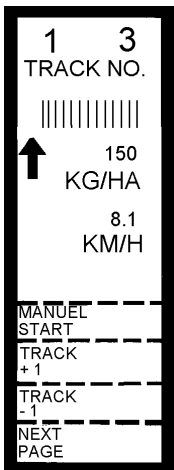
No tramline will be made



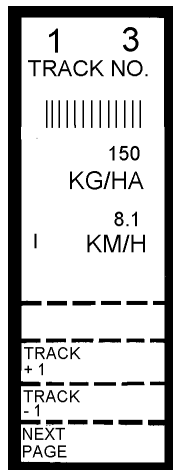
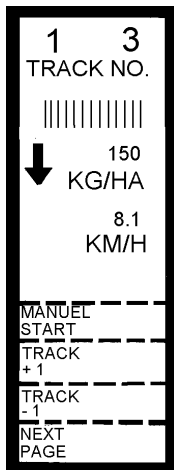
A tramline is just made. Depending on the method A, B, C, D, E, F, G or H the tramline will be indicated correspondingly.



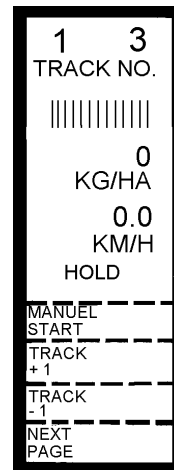
Depending on the operating state the following indications appear:



The arrows show, that the seed rate is being regulated up or down. That is normal.



When I appears, the implement/tramline sensor is activated and the seeding shaft stops. This is normal, when the seed drill is lifted.

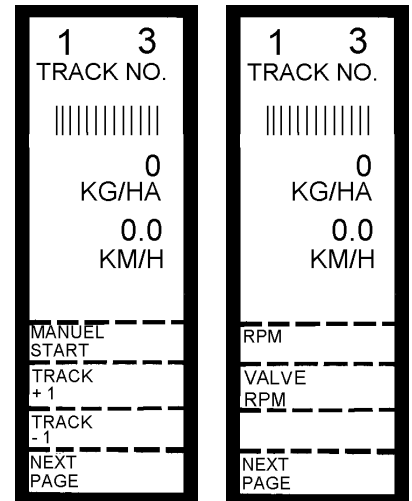


The hold-button has been pressed, thereby the tramline switch will not be activated.

### 5.1.2 Additional Selectable Control Functions

Besides the four firm control functions a fifth control function can be indicated in the display.

As the fifth control function either the current working speed KM/H, the seed quantity used KG, the quantity left in the hopper KG LEFT, the fan RPM or the value WANTED or ACTUAL of the ELECTRIC MOTOR RPM can be indicated. Therefore the corresponding page of the menu must be called up.



Select KM/H, KG, KG LEFT, RPM or VALVE RPM

**ATTENTION:** If the RPM of the electric motor is indicated, the indication of the current seed rate KG/HA is not applicable.

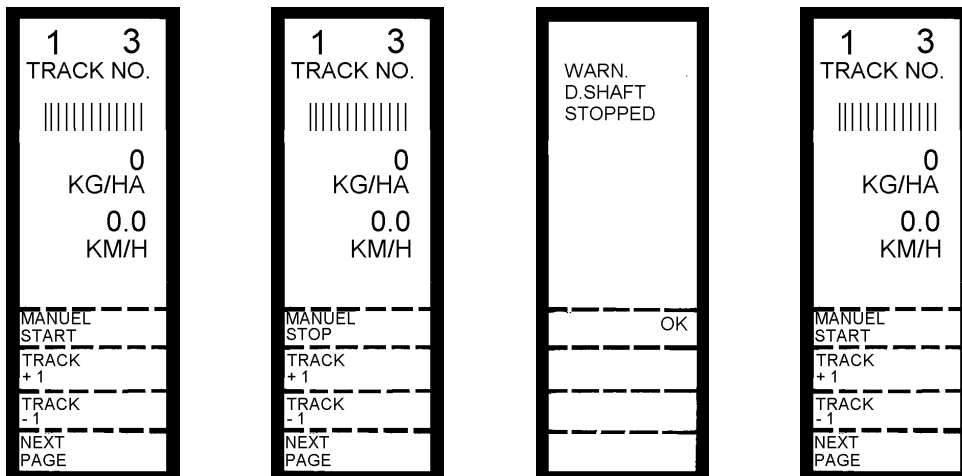
## 5.2 Steering Functions

### 5.2.1 Manual Starting or Stopping of the Seeding Shaft

If it is required that the seeding shaft should start to turn in working position before the ground wheel supplies the control pulses, MANUAL START must be pressed. As soon as MANUAL START has been pressed and the seeding shaft is turning, MANUAL STOP appears at the bottom of the display.

If it is required to interrupt the seeding although the ground wheel is turning, MANUAL STOP has to be pressed.

As soon as MANUAL STOP has been pressed and the seeding shaft stops, the warning: D.SHAFT STOPPED appears.



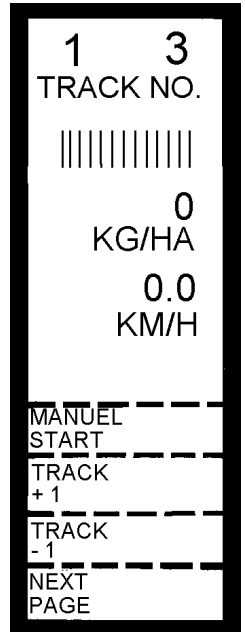
The warning will be confirmed by pressing the OK-button. If it is required to seed further, MANUAL START must be pressed again. If the tramline sensor gets a contact for the tramline switch, e.g. with lifted seed drill or lifted coulter bar, the indication MANUAL START disappears.

### 5.2.2 Setting the current tramline track

Before seeding the current track must be set to the corresponding method and rhythm of the tramline.

By pressing the button TRACK +1 the current track will be counted up.  
By pressing the button TRACK -1 the current track will be counted down.

Depending on the method and rhythm the current track must be adjusted according to the following table for the first track.



Current track for the first track on the field	Method	Rhythm
1	Uneven method A	3, 5, 7 and 9
1	Even method A	4, 6, 8 and 10
2	Uneven method B	3
3	Uneven method B	5
4	Uneven method B	7
5	Uneven method B	9
2	Even method B	4
3	Even method B	6
4	Even method B	8
5	Even method B	10
With the even method B it must be seeded with half working width of the seed drill for the first track. Therefore the stop slides of the dosage units concerned must be closed.		
1	Method C.RIGHT	10 (2,5)
1	Method C.LEFT	10 (2,5)
1	Method D.RIGHT	18 (4,5)
1	Method D.LEFT	18 (4,5)
1	Method E.RIGHT	14 (3,5)
1	Method E.LEFT	14 (3,5)
1	Method F.RIGHT	6 (1,5)
1	Method F.LEFT	6 (1,5)
1	Method G.RIGHT	10 (3,33)
1	Method G.LEFT	10 (3,33)
1	Method H.RIGHT	26 (6,5)
1	Method H.LEFT	26 (6,5)

With the method C a rhythm of 10 will be indicated although every 2,5 tracks a tramline will be made = rhythm 2,5.

With the method D a rhythm of 18 will be indicated although every 4,5 tracks a tramline will be made = rhythm 4,5.

With the method E a rhythm of 14 will be indicated although every 3,5 tracks a tramline will be made = rhythm 3,5.

With the method F a rhythm of 6 will be indicated although every 1,5 tracks a tramline will be made = rhythm 1,5.

With the method G a rhythm of 10 will be indicated although every 3,33 tracks a tramline will be made = rhythm 3,33.

With the method H a rhythm of 26 will be indicated although every 6,5 tracks a tramline will be made = rhythm 6,5.

This kind of indication of the rhythm is correct and not a fault.

### 5.2.3 Changing the seed rate

In the program OPERATION change to the right menu page.

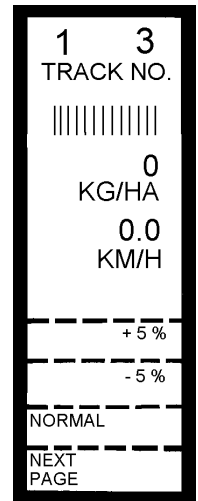
The seed rate can be increased or decrease, by a percentage already having been entered in the program ENCODE (STEP), + 5% or – 5% for example.

Therefore the button +5% or –5% must be pressed.

Each time one of the buttons (+5% and –5%) is pressed, the seed rate is increasing or decreasing by the pre-adjusted percentage.

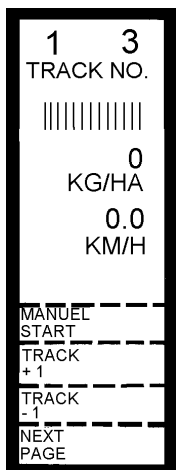
Example: If the button +5% is pressed twice, the seed rate is increasing by 10 %. The modification of the seed rate = 10 % is flashing on the display. The new seed rate in KH/HA will also be indicated on the display. (165 KG/HA, if previously 150 KG/HA have been seeded).

When pressing the button NORMAL, the programmed seed rate will be seeded again.

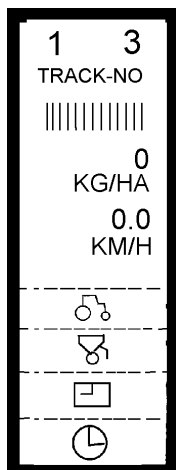



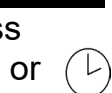
### 5.3 Hectare Information and Time Function

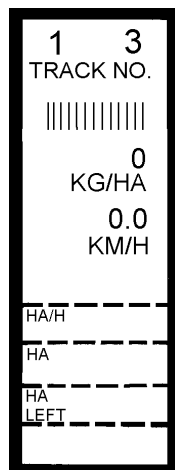
Instead of the fifth control function (5.2) either hectare or time information can be indicated on the display, instead.



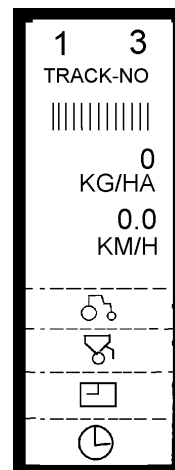
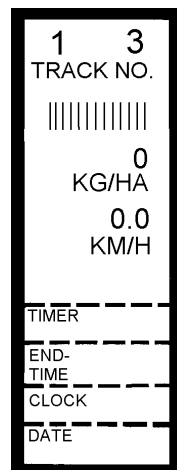
Press Return-button



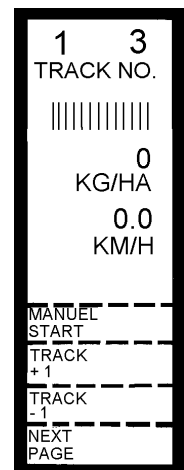
Press  or 



Select function and press Return-button



Press 



**HA/H:** Shows the hectare performance per hour.

**HA:** Shows the cultivated area in hectare.

**HA LEFT:** Shows the area, which still has to be cultivated.

**TIMER:** Timer for measuring the work time of a particular field. The timer is started and stopped manually.

**ENDTIME:** Shows the time the work is expected to be finished.

**CLOCK:** Shows the time in hours, minutes and seconds.

**DATE:** Shows the date in day, month and year.

## 6 PROGRAM DATA/DELETE

In this program the working time per field, the total working time, the hectare per field and the total area will be counted.

The counted data can also be deleted in this program.

**TIME:** Time per field in hours and minutes

**TIME +:** Total time in hours

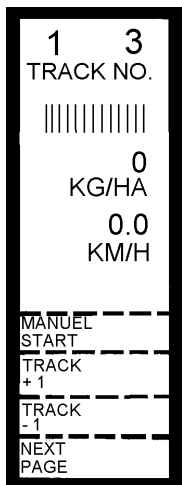
**HA:** Cultivated area per field (ha)

**HA +:** Total area (ha)

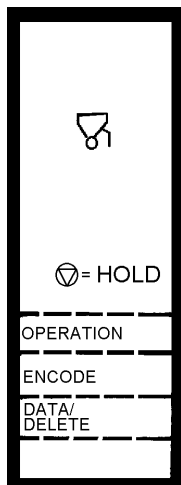
**METRE +:** Distance covered (m)

**KG:** Seed rate per field (kg)

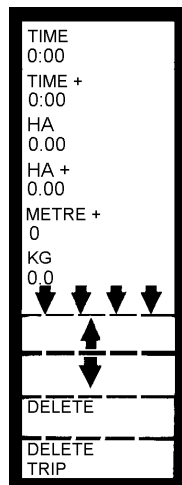
**KG+:** Total seed rate (kg)



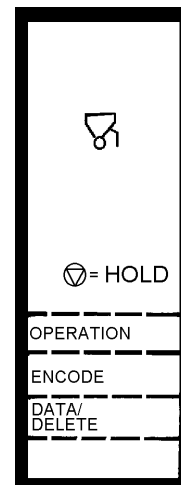
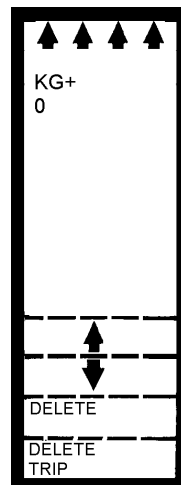
Press Return-button twice



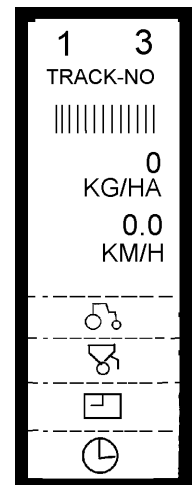
Press DATA/DELETE



Mark counter to be deleted and press DELETE. If DELETE TRIP is pressed 'Time per field' and 'Hectare per field' will be deleted by one press. Press Return-button



Press OPERATION

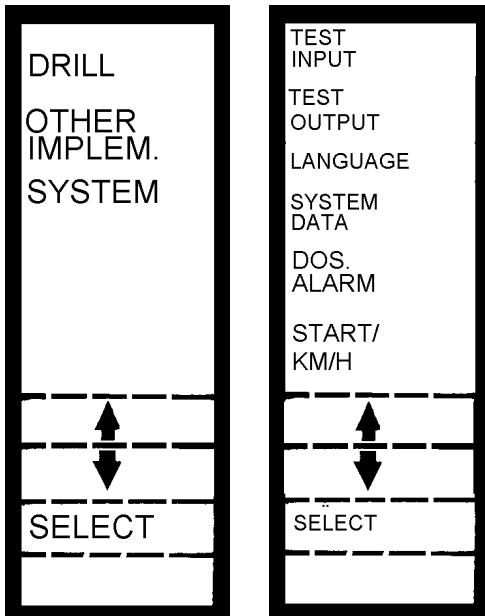


Press  , in order to reach the program OPERATION

## 7 MAIN MENU SYSTEM

Besides the selection of the language also the sensors, dose rate warning and controls systems of the seed drill can be checked in this main menu.

After selection of the main menu the following indication appears =>



### *TEST INPUT*

Test of all inputs of all sensors.

### *TEST OUTPUT*

Test of all outputs of all sensors.

### *LANGUAGE*

Here the desired language can be chosen.

### *SYSTEM DATA*

This function isn't available for user. It includes important system data, which the user may not change.

### *WARN.DOS.*

Here the allowed proportional deviation of the seed rate and the time of reaction when the warning signal should appear after exceeding the allowed deviation can be entered in seconds.

### *START KM/H.*

Here the starting speed, with which the on-board computer LH 5000 starts the control of the seeding rate kg/ha, can be entered.

## 7.1 TEST INPUT

On the left side of the display screen is a counter for each type of input, which records the pulses. On the right side the input status will be shown.

Trail 1 to 5 is valid for DRILL and OTHER IMPLEM.

RADAR		
0	HI	
PTO		
0	HI	
WHEEL		
TRAKTOR		
0	HI	
DIESEL		
0	HI	
IMPLEM.		
0	HI	
TRAIL. 1:		
0	HI	
TRAIL. 2:		
0	HI	
TRAIL. 4:		
0	LO	
TRAIL. 7:		
0	LO	
TRAIL. 8:		
0	LO	
TRAIL. 15:		
0	LO	
TRAIL. 16:		
0	LO	

### 1. RADAR

Radar signal when driving forward slowly.

### 2. PTO - PTO shaft

Signal of the PTO shaft, when turning (if fitted).

### 3. WHEEL TRACTOR

Signal of the wheel sensor when driving forward slowly.

### 4. DIESEL

Signal of the fuel-flow meter for the fuel consumption.

### 5. IMPLEM.

Signal with lifted implement of the lift contact or the sensors when fitted on the lift arm.

6 to 11 are valid for DRILL

### 6. TRAIL. 1:

Signal of the revolution sensor of the seeding shaft.

### 7. TRAIL. 2:

Signal of the revolution sensor of the electric motor of the seeding shaft.

### 8. TRAIL. 4:

Signal of the wheel sensor of the seed drill.

### 9. TRAIL. 7:

Signal of the implement/ tramline sensor of the seed drill.

### 10. TRAIL 8:

Signal of the RPM sensor of the fan.

### 11. TRAIL. 15:

Signal of the hopper level sensor.

### 12. TRAIL 16:

Signal of the switch signal to the tramline motor valve.

*Turn drive wheel, in order to create a signal for testing purposes!*

*When the counters 6 to 8 are changing, the entrances are o.k.*

*The sensor inside the hopper must be checked separately.*

*The counter of the tramline sensor counts only, when the sensor gets in contact with metal, e.g. when lifting the Solitair.*

*The counter of the fan sensor counts only when the fan is turning.*

## 7.2 TEST OUTPUT

Here all outputs can be checked (can only be used in connection with DRILL).  
At the top of the display screen the status of all outputs will be shown.

OUT 1	HI
OUT 2	HI
OUT 3	HI
OUT 4	HI
POT 1: 48	
POT 2: 49	
OUT 1	
OUT 2	
OUT 3	
OUT 4	

POT 1 and POT 2 not used.

### **OUT1**

Signal which controls the tramline (when pressing the function button OUT1 the tramline valves will function).

### **OUT2**

Signal which controls the revolution speed of the seeding shaft drive motor (when pressing the function button OUT2 the seeding shaft drive motor operates).

### **OUT3**

Not used.

### **OUT4**

Not used.

## 7.3 LANGUAGE

See section 1.0.

## 7.4 SYSTEM DATA

This function isn't available for the user. It contains system data, which cannot be changed.

## 7.5 DOS.ALARM – Dose rate alarm

Here the allowed proportional deviation of the seed rate and the minimum motor RPM, in percent and the time of reaction before the warning signal appears, after exceeding the allowed deviation. Enter in seconds.

Up to the versions 52.04 ex factory 5 %, 20 seconds and 300 1/min are adjusted.

**If the Solitair is equipped with an E-motor fitted in front, the minimum motor RPM must be set from 300 1/min. to 150 1/min.! This is also valid for Solitair 12 K and - 10 K.**

With the versions from 52.05 on ex factory 5 %, 20 seconds and 150 1/min are adjusted.

**If the Solitair is equipped with an E-motor fitted at the rear, the minimum motor RPM must be set from 150 1/min. to 300 1/min.!**

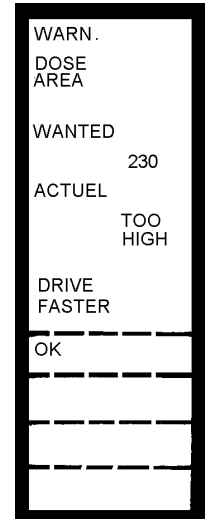
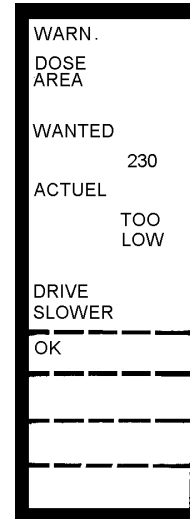
This value should not be changed.

%	
5	
TIME	
20	
SEC.	
MIN	
RPM	
300	
↑↓	

With a deviation of 5 % via a time of 20 seconds the following warning appears ->

If it is not possible to drive faster or slower the seed drill must be adjusted again by switching on or off seed wheels.

After this adjustment a new calibration test must be done.



### 7.6 START KM/H

Here the starting speed, with which the on-board computer LH 5000 starts the control of the seeding rate kg/ha, can be entered.

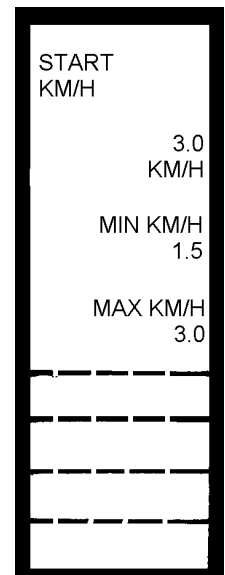
The choice is:

Starting speed : MIN KM/H 1,5 and  
MAX KM/H 3,0

As standard the recommended starting speed of 3 km/h is encoded.

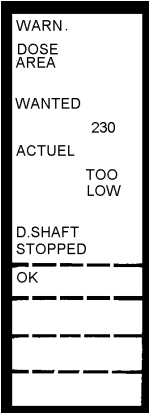
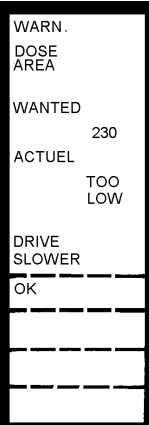
The starting speed of 1,5 km/h should only be chosen, when due to insufficient tractor power the working speed / starting speed of 3 km/h will not be reached or reached extremely late.

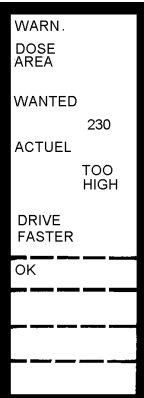
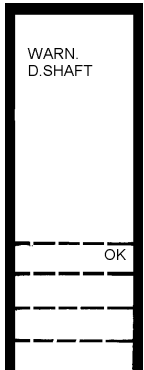
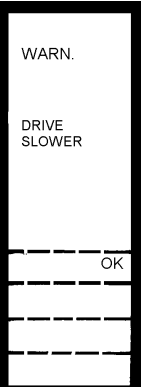
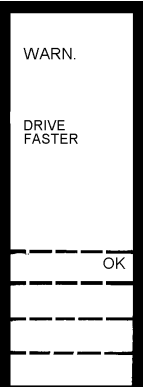
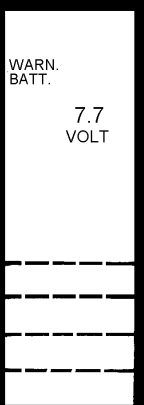
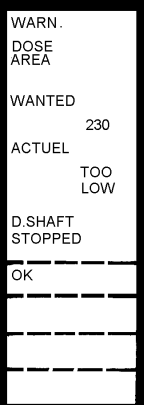
When the starting speed will not be reached, too much seed will be sown, and that in a proportion starting speed / reached speed.

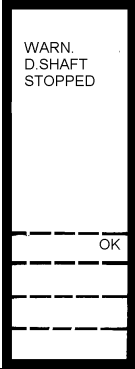
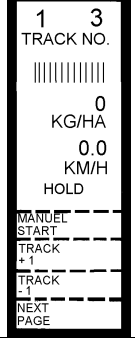
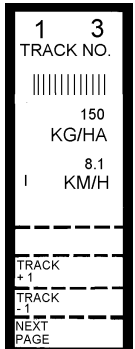


If the starting speed is reached, the LH 5000 controls the seed drill precise within the speed range which is indicated after the calibration test, e.g. 0,8 km/h up to 14 km/h or 1,6 km/h to 28 km/h.

## 8 ERROR MESSAGE

Failure	Reason	Remedy
It is not possible to switch on the computer	Fuse in the battery connecting lead is blown	Replace fuse Part-No. 373 1302
	Fuse in the tractor installed wiring kit is blown	Replace fuse Part-No. 373 1303
	Failure in the pin connection	Check and repair the pin connection
	Computer is defect	Replace on-board computer, but only if the tractor battery, all fuses and pin connections have been checked previously
Electric-motor does not run. The computer shows warning signals during work. The seeding shaft is stopped. 	The seeding shaft is blocked	Locate and repair the reason for blockage
	None or bad power supply to the circuit board for the control of the Electric-motor	Check and repair connection poles of the battery Check and repair multi-plug
	Failure in the cable to the sensor of the Electric-motor	Check and repair cable and cable connections
	Sensor of Electric-motor defect	Replace sensor Part-No. 573 4366
	Circuit board for controlling the E-motors is defect	Replace circuit board
Electric-motor runs. The computer shows warning signals during work. 	The working speed or the seed rate are outside the control range of the electric motor	Turn the drive cassette, <b>switch on seed wheels</b> and make a new calibration test.

	<p>The working speed or the seed rate are outside the control range of the electric motor</p>	<p>Turn the drive cassette, <b>switch off seed wheels</b> and make a new calibration test.</p>
<p>The seeding shaft stops and the E-motor is turning</p> 	<p>Drive cassette is defect Drive cassette has not been fitted</p> <p>Defective sensor of the seeding shaft</p> <p>Incorrect adjustment of the seeding shaft</p>	<p>Repair drive cassette Fit drive cassette</p> <p>Exchange the sensor</p> <p>Adjust seeding shaft correctly (approx. 2 mm distance to the pulse pick-up)</p>
<p>The on-board computer shows the following warning, the seeding shaft is still turning</p>  	<p>The motor does not reach the desired RPM. The selected working speed is outside the control range of the E-motor</p>	<p>Drive with acceptable working speed <b>DRIVE SLOWER</b> <b>DRIVE FASTER</b></p> <p>Turn drive cassette and carry out new calibration test</p> <p>Switch on or off the seed wheels and carry out new calibration test.</p>
 	<p>Tractor battery voltage too low</p> <p>Bad power supply of the circuit board due to bad connection to the battery or bad pin connections</p>	<p>Check battery and alternator and repair them if required.</p> <p>Switch off non essential power consuming equipment</p> <p>Check and repair cable and pin connection of the circuit board of the motor steering</p>

<p>After pressing the button MANUAL STOP the E-motor stops. (This is no failure)</p> 	<p>As desired the on-board computer stops the seeding shaft and therefore the Electric-motor</p>	<p>Press OK-button and MANUAL START button or switch the tramline sensor by means of lifting the seed drill</p>
<p>E-Motor does not operate. The computer does not show any warning during work</p>	<p>In the program ENCODE the wheel circumference of the spike wheel has not been entered (WHEEL DRILL)</p>	<p>Enter 15 cm/pulse manually or carry out automatic calibration test</p>
	<p>Cable or cable connections to the sensor of the spike wheel are defective</p>	<p>Check and repair cable and cable connections</p>
<p>Sensor of the ground wheel is defective</p>	<p>Replace sensor Part-No. 573 4366</p>	
<p>The current track No. will not advanced, if the Solitair is lifted</p>	<p>Cable or cable connections to the tramline sensor are defect</p>	<p>Check and repair cable and connections to the tramline sensor</p>
	<p>Tramline sensor defective or has no contact Distance too large</p>	<p>Check and replace if required the tramline sensor Check distance and adjustment of the sensor</p>
	<p>The HOLD button has been pressed. This stops automatically the counting of the current track No. HOLD is flashing!</p>	<p>Press HOLD-button once in order to switch on the automatic counting of the current track No.</p>
	<p>The tramline sensor shows contact when the Solitair is lowered</p>	<p>Check adjustment of the sensor</p>
	<p>The tramline sensor shows contact when the Solitair is lifted</p>	<p>This is correct</p>

<p>KMH WARN.</p> <p>MIN 3.0</p> <p>MAX 15.0</p> <p>ACTUAL 1.8</p> <p>WARN. OFF</p> <p>ON/OFF</p>	<p>RPM WARN.</p> <p>MIN 2500</p> <p>MAX 4000</p> <p>ACTUAL 2000</p> <p>WARN. ON</p> <p>ON/OFF</p>	<p>KG LEFT WARN.</p> <p>MIN 0</p> <p>ACTUAL 50</p> <p>ON/OFF</p>	<p>HOPPER WARN.</p> <p>WARN. ON</p> <p>ON/OFF</p>	<p>The warning limits of the working speed KM/H, fan RPM, quantity left in the hopper KG LEFT, are outside the preset range</p>	<p>Adjust working speed and fan RPM, fill up with seed</p>
<p>WARN. OUTPUT</p>	<p>A short circuit from the cable to the sensor</p>	<p>Eliminate short circuit</p>			
<p>WARN. DATA FAILURE</p>	<p>Failure in the data memory of the computer</p>	<p>Press Return-button. After that check all encoded data If this failure appears again, replace computer</p>			