

K-TRONIC 2

Control system



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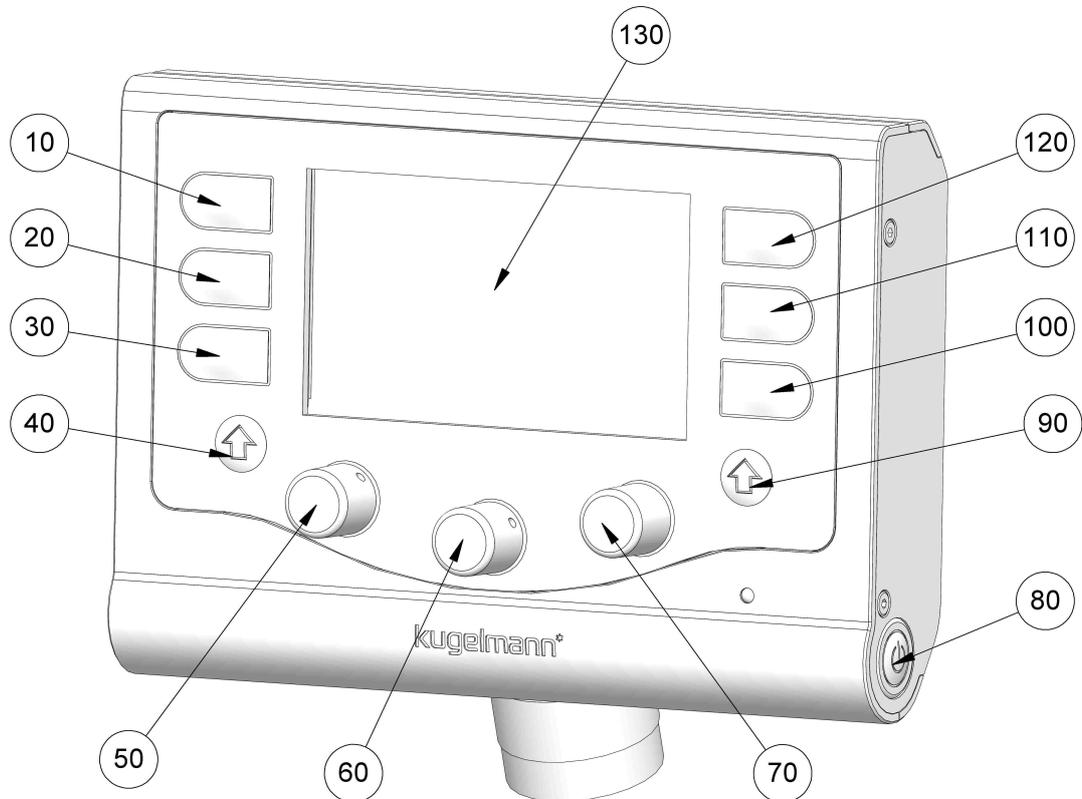
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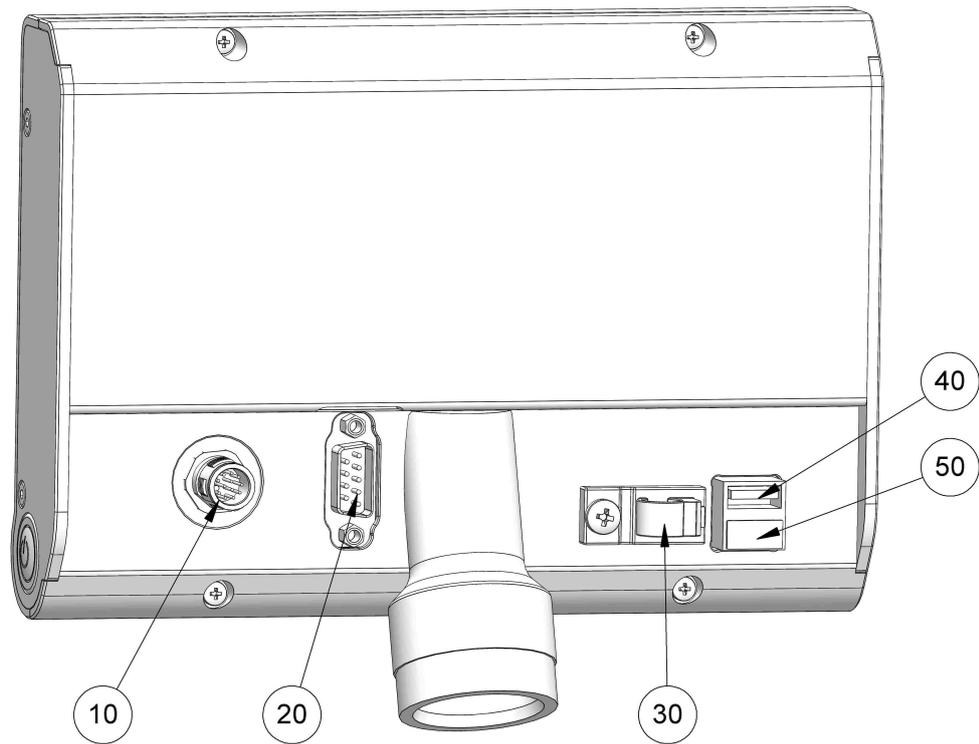
1 Content

1 Content.....	2
2 User interface.....	3
3 Display view.....	5
4 Meaning of buttons.....	7
5 Switch on / off control system.....	9
6 Spreading operation.....	10
7 Setting of spreading width.....	11
8 Output rates.....	12
9 Switch on/off working headlights.....	14
10 Switch on/off rotating beacon.....	15
11 Double spreading density.....	16
12 Operator level 1 and 2.....	17
13 Path-dependence and manual operation.....	18
14 Electrical monitoring of spreading process.....	22
15 Setting of automatic spreading image.....	23
16 Electrical adjustment of spread pattern.....	24
17 Switch on/off brine spreading.....	26
17.1 Changing the brine proportion.....	28
18 Motor unit.....	29
18.1 Start motor unit.....	29
18.2 Switch off motor unit.....	30

2 User interface



Pos. No.	Function
10	Rotating beacon / Flasher
20	Working headlight
30	Function key 1
40	Actual value button
50	Turning knob spreading material left
60	Turning knob for setting the spreading width
70	Turning knob spreading material right
80	ON / OFF
90	Button for spreading material
100	Function key 2
110	Function key 3
120	Spreading operation / Pause
130	Display

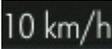


Pos. No.	Function
10	Socket master - connecting cable
20	Serial interface RS232
30	Cable support
40	USB port 1
50	USB port 2 (not occupied)

3 Display view



		Rotating beacon ON / OFF	see Chapter 10. "Switch on/off rotating beacon", page 15
		Working headlight ON / OFF	see Chapter 9. "Switch on/off working headlights", page 14
		Double spreading density ON / OFF	see Chapter 11. "Double spreading density", page 16
		SPREADING / PAUSE	see Chapter 6. "Spreading operation", page 10
		Operator level LEVEL1 / LEVEL2	see Chapter 12. "Operator level 1 and 2", page 17
		Maximum spreading rate ON / OFF	see Chapter "Maximum spreading rate"
		Teach in ON / OFF	
		Motor unit ON / OFF	see Chapter 18. "Motor unit", page 29

		Electrical monitoring of spreading process ON / OFF	see Chapter 14. "Electrical monitoring of spreading process", page 22
		Brine spreading ON / OFF	see Chapter 17. "Switch on/off brine spreading", page 26
		Spreader works path-dependent / manually	see Chapter 13. "Path-dependence and manual operation", page 18
		Electrical adjustment of spread pattern	see Chapter 16. "Electrical adjustment of spread pattern", page 24
		Outside temperature display	
		Percentage of pre-wetted salt during brine spreading [%]	see Chapter 17.1 "Changing the brine proportion", page 28
		Driving speed	
		Output counter left chamber	see Chapter "Output counter"
		Output counter brine reservoir	see Chapter "Output counter"
		Output counter right chamber	see Chapter "Output counter"
		Spreading material and spreading rate [g/m ²] left chamber	see Chapter 8. "Output rates", page 12
		Spreading material and spreading rate [g/m ²] right chamber	see Chapter 8. "Output rates", page 12
		Spreading width [m]	see Chapter 7. "Setting of spreading width", page 11

4 Meaning of buttons

Button	Meaning
	Function key 1 <ul style="list-style-type: none"> • Confirm and continue to next menu mask
	Spreading / Pause button <ul style="list-style-type: none"> • Previous menu mask
	Turning knob left/middle/right: <ul style="list-style-type: none"> • Turning respective turning knob to continue to the next/previous menu option. • Turning respective turning knob to confirm the respective menu option. • Pressing and turning the turning knob to skip whole numbers for settings • Turning the turning knob to skip in steps of 0.01 for settings
	Rotating beacon / Flasher button <ul style="list-style-type: none"> • Exit menu
	Turning knob left/right <ul style="list-style-type: none"> • Start / Confirm
	Function key 3 <ul style="list-style-type: none"> • Switching on respective option
	Function key 3 <ul style="list-style-type: none"> • Switching off respective option
	Function key 1 <ul style="list-style-type: none"> • Information on respective menu option
	Function key 2 <ul style="list-style-type: none"> • Settings
	Working headlight button <ul style="list-style-type: none"> • Save



Rotating beacon / Flasher button

- Reset output counter right chamber



Working headlight button

- Reset output counter brine



Function key 1

- Reset output counter left chamber

5 Switch on / off control system

Switch on control system:

1



Switch on control system



Switch off control system:

1



Switch off control system

6 Spreading operation

Start spreading:

Control system and spreader are set to "PAUSE" ⇒



"PAUSE" changes to output rates: right chamber (50 g/m²) + left chamber (50 g/m²) = Total (100 g/m²) ⇒

Push spreading / pause button



Pause:



Control system and spreader are set to "PAUSE" again ⇒

Push spreading / pause button



7 Setting of spreading width

This chapter gives you information on the following:

- Chapter "*Configuration of spreading width*"

The spreading width is infinitely variable.

Example for basic setting (5,0 m)



Turn middle turning knob to set spreading width (4,5 m)



8 Output rates

The output rates for the left and right spreading chamber can be set to different values. If different spreading materials exist in the chambers, it is possible to set any desired mixing ratio of both spreading materials.

Example for basic setting (right chamber = 50 g/m², left chamber = 50 g/m²).



Turn right turning knob to change output rate of right chamber (Example: 57 g/m²)



Turn left turning knob to change output rate of left chamber (Example: 58 g/m²)



If the spreading button is pressed, the sum of the output rates is shown in the middle.

In this example ($50 \text{ g/m}^2 + 50 \text{ g/m}^2 = 100 \text{ g/m}^2$) \Rightarrow



Hinweis

Part of brine of pre-wetted salt equipment (here FS35) indicates the percentage of brine (if switched on) based on the total output:

- Brine spreading (in this example FS35) is attributed to the percentage of salt, i.e. the proportion of salt (50 g/m^2) contains 35% of brine.
 - \Rightarrow Example: 32.5 g/m^2 salt + 17.5 g/m^2 brine = 50 g/m^2 (combined)
 - \Rightarrow Brine proportion (in this example 35 %) is only attributed to salt or refined salt.

9 Switch on/off working headlights



Working headlights switched on



Working headlights switched off



Error



Press briefly

Working headlights on



Press briefly

Working headlights off



10 Switch on/off rotating beacon



Rotating beacon switched on



Rotating beacon switched off



Error



Press briefly

Rotating beacon on



Press briefly

Rotating beacon off



11 Double spreading density



The double quantity of spreading material is put out.



Simple mode, no double output

Example:

Simple mode



Hold down

Double spreading density



Hinweis

The double quantity of spreading material is spread as long as the button is pushed down.

12 Operator level 1 and 2

You have the possibility to store two different data sets for the two operator levels.



Operator level 1



Operator level 2

Example:

Operator level 1



Push

Operator level 2



Hinweis

After switching on, you always start at operator level 1.

13 Path-dependence and manual operation

Difference path-dependence and manual operation:



Path-dependent spreading

The control system calculates the quantity of spreading material for the spreading operation on the basis of the vehicle speed.



Manual operation

During manual operation, the control system calculates the quantity of spreading material for the spreading operation by means of the set simulation speed (see Chapter "Simulation speed"), regardless of the actual vehicle speed.

Change from **path-dependence to manual operation**:

1 Start screen



2 left

Press and hold down actual value button



3



Press manual operation button



4



left

Release actual value button



Change from **manual operation to path-dependence**:

1



2



Press and hold down actual value button



3



Press path-dependence button



4



Release actual value button



Hinweis

After each restart, the control system works path-dependent!

14 Electrical monitoring of spreading process

The electrical spreading control monitors whether spreading material is put out or not.



Spreading material leaves rotating spreading disc



No spreading material is spread

15 Setting of automatic spreading image



- 1 Turn middle turning knob to the right to set the automatic spreading image to the right.
- 2 Press middle turning knob and turn it to the left to set the automatic spreading image to the left.

16 Electrical adjustment of spread pattern

This chapter gives you information on the following:

- Chapter "Configuration of electrical adjustment of spreading pattern"
- Chapter "Servo motor turned"
- Chapter "Mechanical limits"



The spreading image can be shifted to the left or right side.

- 1 Press and turn the middle turning knob to shift the spreading pattern to the left or to the right.



Position of spreading pattern

Example: Spreading pattern to the far left →



Example: Spreading pattern to the far right →



**Hinweis**

For each operator level, it is possible to set a different position for the electrical adjustment of the spreading pattern.

17 Switch on/off brine spreading

Switch on brine spreading:

1  right

Press and hold down spreading material button



2 

Press briefly



3  right

Release spreading material button



Switch off brine spreading:

1  right

Press and hold down spreading material button



2 

Press briefly



3  right

Release spreading material button



17.1 Changing the brine proportion

Follow the steps below to change the brine proportion:

1  right

Press and hold down spreading material button



2

Turn middle turning knob



3 

Change the brine proportion to FS20, for example

4  right

Release spreading material button

18 Motor unit

This chapter gives you information on the following:

- Chapter "Configuration of motor unit"
- Chapter 18.1 "Start motor unit ", page 29
- Chapter 18.2 "Switch off motor unit", page 30



Motor unit is running



Motor unit not running



Preheating and warming up of the motor unit

18.1 Start motor unit



Hinweis

In case of motor units with petrol version, it may be necessary to switch on the ignition at the motor unit.

The ignition has to be switched off after operation.

1 Start screen



2  left

Press and hold down actual value button

3



Warm-up period, no operating state (only with diesel engine!)

4



left

After approx. 2 minutes, the motor unit switches to the operating state (only with diesel engine!)

18.2 Switch off motor unit

1



left



Press briefly



Release actual value button



Press and hold down actual value button

2



Motor unit stops.

3



left



Press briefly



Release actual value button

