

LEHNER



VINERO®

Operating instructions with parts list

Control LAS 3
Software from version 2.0
Status: June 2009

Serial number:

Software version:

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1 What you should know

1.1 Foreword

Thank you for placing your trust in us. We congratulate you on your decision. With the **VINERO®**, you have acquired a high-quality and innovative product.

Thanks to its advanced design, meticulous material selection, state-of-the-art manufacturing techniques and the precision work of our employees, this equipment meets all efficiency, quality, reliability and value requirements.

Care and maintenance in accordance with the operating instructions ensures safe operation and maintains the value of your **VINERO®**.




1.2 Notes on these operating instructions

These operating instructions are a part of the **VINERO®** and must always be readily available. All persons who work with the **VINERO®** must read and follow the operating instructions.

They will learn about the technical details and how to control the machine and optimise its performance.

Warning notices

Warning notices in these operating instructions are identified as follows:

	Danger! Warning against immediate danger. Non-observance of appropriate measures may result in death and severe personal injury or serious damage to property..
	Warning! Warning of possible danger. Death, severe personal injury or serious damage to property are possible.
	Caution! Warning of possible dangerous situations. Slight personal injury or damage to property is possible.


1 What you should know

1.3 Intended use

The VINERO® is used exclusively for spreading fertilizer and seeds.

1.4 Warranty

We provide a guarantee of 6 months and warranty of 24 months on the VINERO®.

	<p>Caution! Defective plugs and cables or those of the wrong size can lead to functional deficiencies. Use original or cables and plugs approved by the manufacturer only.</p>
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Any changes to cable or plug connections without factory approval automatically invalidates the warranty. Motors may not be opened or dismantled.

Warranty repairs must be coordinated with the manufacturer before any work is started.

For replacement parts, additional expenses are automatically charged for any changes made to cables and plugs by the customer. Replacement parts are to be returned carriage paid.

Rusted bearings are not subject to the manufacturer's warranty.

Prior to assembly:

Check your VINERO® upon receipt for any damage caused in transit. Any such damage must be reported to the manufacturer within 24 hours of receipt.

1 What you should know

1.5 About your safety

- Carefully read and observe these operating instructions before use. Always keep these instructions at the point of use.
- Observe the accident prevention regulations, safety and operating regulations and the regulations for environmental protection.
- Observe all applicable standards and guidelines.
- When travelling on public roads and streets, observe the road traffic regulations.
- Observe the safety instructions.
- Immediately resolve any safety-related deficiencies.
- Keep out of the spreading zone. Make sure that no other persons are in the spreading zone.
- Do not touch the hopper during operation.
- Follow the safety guidelines of the package insert when spreading granulates.
- Do not undertake any repairs, maintenance or cleaning procedures on the VINERO® when the mains plug is connected.

1.6 Identification

The serial number of the spreader is located on the back of the framework.

Note the serial number in these operating instructions so that it is readily available for inquiries.

The hardware and software versions are briefly displayed when the control panel is connected.

Make a note of the software version in these operating instructions so that it is readily available for inquiries.

LEHNER GmbH
LAS3 V2.0

2 Starting up the VINERO®

2.1 Mounting the frame

The VINERO® can be screwed on directly or an auxiliary bracket used. Mounting holes have been provided on the back of the frame.

The recommended delivery height is approx. 0.2 m. Please refer to the spreading charts for precise details.

The VINERO® can be mounted at the front or back of the tractor. It can be fitted to tractors, all-terrain vehicles or cultivation machines. Because a full hopper makes the VINERO® considerably heavier, the load capacity of platform gates and other consoles is to be checked.

2.2 Electrical connection

Technical data

Operating voltage	10 to 15 volts
Fuse	25 A
Motor output	12 watts
Speed range	40 to 66 rpm
Power consumption of gear motor	0.4 - 1 A
Operating temperature	-10 to +70 °C
Storage temperature	-30 to +70 °C

Any changes to cable or plug connections without factory approval automatically invalidates the entire warranty. Changes to cables are taken into account in the case of repair.

You must consult with the manufacture before carrying out any cable modifications.


Power loss must be taken into account when extending cables. A poor power supply may prevent you from achieving the desired speed. A poor power supply can momentarily cause the spreader to fail completely.

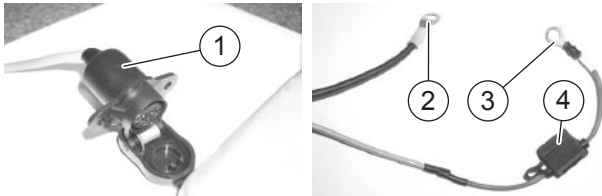
2 Starting up the VINERO®

2.3 Mounting the VINERO®

Check whether the hopper fits well in the hopper platform. Check that the VINERO® is securely attached:

2.4 Attaching the control panel

	<p>Caution, risk of short circuits! Ensure that the cable is not routed over any sharp edges.</p>
-----------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------



Mount support for the control panel in the vehicle cabin.

Plug the control panel cable into the 3-pin plug **1 of the carrier vehicle.**
If the plug is not available, use the provided battery cable:

Connect terminal **2** to -pin of the battery
(not to the body).

Connect terminal **3** (with fuse **4**) to +pin of the battery

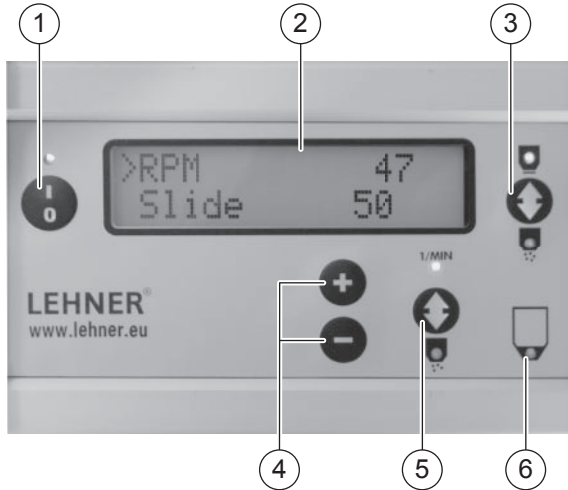
Place cable end with socket in carrier vehicle.

Plug the spreader cable into the 16-pin plug of the control panel.
The battery cable supplied must be used to ensure an optimum power supply.

Your device is now ready to operate.

3 Operating the VINERO®

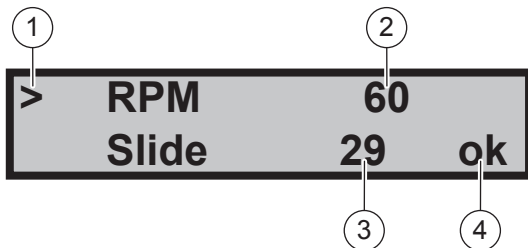
3.1 Controls on the control panel



- 1 Switching on / off
- 2 Display
- 3 Opening and closing the slide
Slide open: green LED lights up
Slide closed: yellow LED lights up
- 4 Setting the speed or slide
- 5 Switch to change between speed and slide
- 6 Empty indicator

3 Operating the VINERO®

3.2 The display

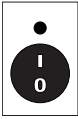


- 1 Arrow denotes the active line
- 2 Agitator speed
- 3 Slide opening
- 4 OK sign for open slide

Error messages, also see Troubleshooting chapter.

3 Operating the VINERO®

3.3 Switching on / off



Press the button.
The speed of the agitator and the slide opening is displayed. The slide is always closed when switching on the drive motor.

> Speed	60
Slide	29



Press the button.
The slide is opened, the green LED lights up.
The drive motor starts.

> Speed	60
Slide	29 ok

If this message is displayed, a cable is damaged or a plug disconnected.

> Speed	60
Connecting spr.	

Low temperatures can cause the empty indicator to respond slowly.
To check the adjustment:

Allow the spreader to run for approx. 1 minute with the slide closed.
If the slide is then opened, the empty indicator must be activated after approx. 5 seconds.

If this doesn't happen, move the empty indicator 5% into the negative range; see Settings and displays chapter, Adjusting the empty indicator.


3 Operating the VINERO®

Autostart

If the motor is difficult to start due to heavy loads, start the motor up to 10 times in alternating motor direction. If the mixer does not break free as a result, the motor is automatically switched off.

The following message is displayed:

Agitator blocked Slide 29

	<p>Danger!</p> <p>Never open the hopper or touch the spreading disc when the drive motor is running.</p> <p>Switch off the drive motor and ensure that the motor is stopped before opening the hopper or touching the agitator.</p>
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To eliminate the blockage:

Switch off the machine.

Empty hopper and check for foreign bodies.

Check power supply.

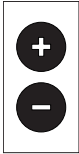
3 Operating the VINERO®

3.4 Setting the speed



If necessary, press the button to select the speed; the arrow points to the first line in the display.

> Speed	60
Slide	29



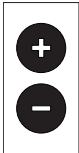
Press the button to set the speed.
The speed can be adjusted continuously from 40 - 66 rpm.
The optimum speed is 66 rpm.
The setpoint speed is displayed for 10 seconds, after which the actual speed is displayed.

3.5 Setting the slide opening



If necessary, press the button to select the slide. The arrow points to the second line in the display.

Speed	60
> Slide	29



Press the button to adjust the slide opening.
You can take the required slide opening from the spreading chart.

3 Operating the VINERO®

3.6 Opening/closing the slide

	<p>Danger! The drive motor starts immediately when switched on. Make sure the danger area is clear when starting.</p>
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Press the button to open or close the slide.
Slide open: green LED lights up
Slide closed: yellow LED lights up

> Speed	60
Slide	29 ok

Slide monitoring

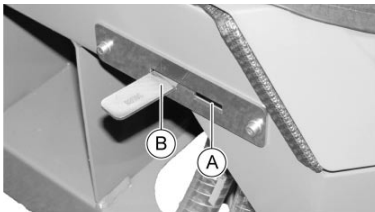
If the slide does not reach the specified position within 10 seconds, the spreader switches off.

The following message is shown in the display:

Slide not open or **Slide not closed**. 5 warning signals also sound. For troubleshooting, see Troubleshooting chapter.

Manual adjustment

The number of hoses to be used can be selected by manually setting the slider. The number depends on the slide; see Slide Settings.

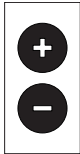


Lever in position **A** for all hoses.
Lever in position **B** for some of the hoses.

3 Operating the VINERO®

3.7 Performing the slide reference run

The slide motor and control panel are adjusted to match each other at the factory. The setting can be lost in the course of time or when replacing the control panel.



Switch off the machine.

Press and hold the button for switching between speed and slide and the + button to switch the machine on.

The slide performs its reference run.

Approx. 240 is displayed as the upper value and approx. 40 as the lower value; in the second line the message **OK** is displayed.

Switch machine off at ON/OFF switch so that the values are stored.

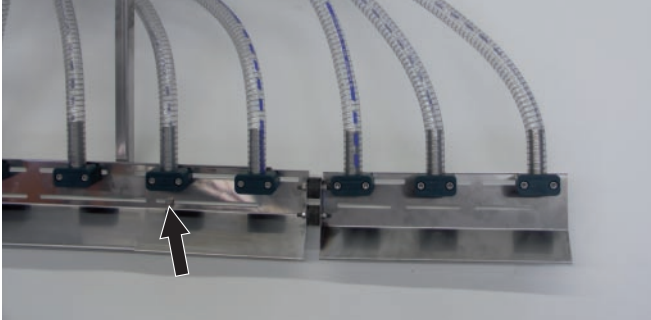
If a slide reference run cannot be performed, the following message flashes on the display: **slide not calib.**

Check the mechanical clearance of the slide, the cable and the connectors. Then perform the reference run again.

3 Operating the VINERO®

3.8 Setting the working width (special accessory)

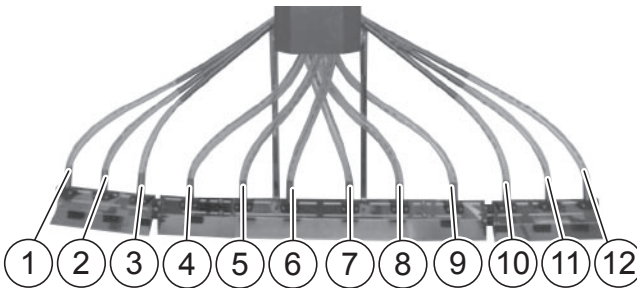
The Vario-rail can be set to a working width of between 0.8 and 1.6 m.



Undo screws (arrowed) and set distributor rails to the desired width.

3.9 Setting the lateral distribution (special accessory)

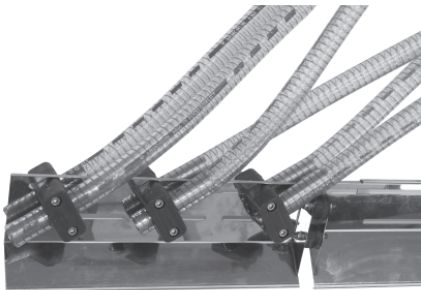
For wide area output all hoses are positioned vertically on the Vario-rail:



3 Operating the VINERO®

For fertilising rows, the hoses on the Vario-rail are positioned at an angle. The inner hoses can each be positioned next to an outer hose.

6-hose version:



3-hose version:



3.10 Empty signal indicator

The empty indicator shows you when the spreading material in the hopper falls below a specific fill level:

The following message flashes on the display for approx. 5 seconds:
Hopper empty, 8 warning signals sound and the red LED flashes on the empty indicator.

To switch off the empty signal:

Close the slide or switch off the spreader.

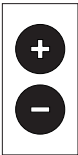
4 Settings and displays

The operating panel can be used to make the following settings:

- Language
- Empty warning
- EHR signal
- EHR cycle (special equipment for headland manager)
- Empty warning adjustment
- Control type

4.1 Making settings

Switch off the machine.

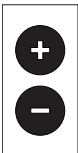


Press both buttons at the same time to switch on the machine.
The language selection is displayed.

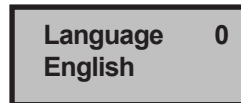


Press the button to select the desired menu item.

4.2 Language



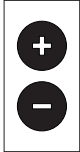
Press the button to set the language.



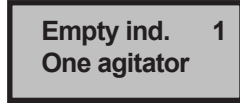
Press toggle switch: Setting saved, next menu item
or
press main switch: Setting saved and machine switched off.

4 Settings and displays

4.3 Selecting the empty indicator



Press the button to select the empty indicator.
Via agitator motor (1) with soft agitator,
via external empty indicator (2) - not
programmed
or
empty indicator switched off (0)



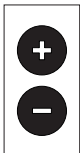
Press toggle switch: Setting saved, next
menu item
or
press main switch: Setting saved and
machine switched off.

4.4 Setting signal for electronic lifting gear control (EHR)

When the spreader is equipped with the headland manager accessory, the hydraulic signal of the tractor can be detected. The signal is emitted when lifting or lowering.

The spreader is set at the factory for the signal when lifting.

If the tractor emits the hydraulic signal when lowering, you can adjust the spreader.



Press the button to set the EHR signal.
EHR signal for lifting:
High active is displayed.
EHR signal for lowering:
Low active is displayed.

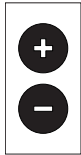


Press toggle switch: Setting saved, next
menu item
or
press main switch: Setting saved and
machine switched off.

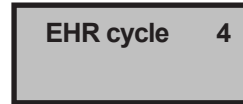
4 Settings and displays

4.5 Setting cycle for electronic lifting gear control (EHR) (special equipment for headland manager)

If the spreader is equipped with the headland manager accessory, a specific cycle can be set for opening the slide.



Press button to select the EHR cycle between 1 and 10.



Press toggle switch: Setting saved, next menu item
or
press main switch: Setting saved and machine switched off.

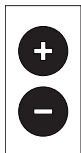
4.6 Adjusting the empty indicator

Depending on the requirement and spreading material, the empty indicator can be set to respond earlier or later.

The value for the empty indicator to switch on (if the spreading material falls below a certain fill level) can be adjusted from -50 to +50.

Note:

Depending on the spreading material or material humidity, the remainder level may vary somewhat.



Press the button to set the respective value.

Factory setting is 0

With + values, the empty indicator responds at a higher fill level.

With - values, the empty indicator responds at a lower fill level.



4 Settings and displays



Press toggle switch: Setting saved, next menu item
or
press main switch: Setting saved and machine switched off.

4.7 Displaying the spreader type

The control is provided for a variety of spreaders.
The VINERO® is programmed at the factory.



Press toggle switch: Setting saved, next menu item
or
press main switch: Setting saved and machine switched off.

Spread. type 0
VINERO

4.8 Checks

Voltage check

In order to check the operating voltage (in V), the spreader must be on and the hopper filled.



Press the button for 5 seconds.
The operating voltage is displayed for 8 seconds.

Voltage 14.0 V

Performance check

The motor is set at the factory. No changes are permitted, since otherwise the drive and control parameters no longer match.

To check the performance data, the spreader must be on.

4 Settings and displays



Press the button for min. 5 seconds.
The following information is displayed as long as the button is pressed:

TLP 23.4 W 2800
91R 3.4V 1.0A

Line 1: current drive motor, power consumption in watts and the exact speed.

Line 2: R value for factory-internal data, the motor voltage in volts, the current consumption of the motor in amps.

4.9 Spreading width and turning procedure

Please note when turning that the turning quantities may differ from the quantities when using the device, as there may be vibrations.

Calculation according to the following formula

$$\frac{\text{kg/min} \times 600}{\text{Speed} \times \text{spreading width (m)}} = \text{Output (kg/ha)}$$

$$\frac{\text{kg/min} \times 600}{\text{Output/ha (kg)} \times \text{spreading width (m)}} = \text{Speed (km/h)}$$

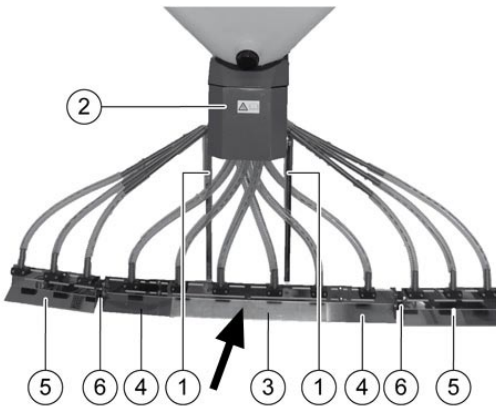
$$\frac{\text{Speed (km/h)} \times \text{output /ha (kg)} \times \text{spreading width (m)}}{600} = \text{kg/min}$$

5 Special accessories

5.1 Attach standard rail

The standard rail is mounted directly onto the carrier vehicle. The hoses can be connected independently of the numbering.

5.2 Attach Vario rail



Mount the rails **1** on the frame **2**

Mount distribution rail **3** on bars **1**, paying attention to mounting direction (arrowed).

Mount distributor rails **4** on distributor rail **3**.

Mount distributor rails **5** with 4 rubber buffers **6** onto distributor rail **3**.

Connect the hoses of the distributor rail to the spreader, paying attention to the numbering.

5 Special accessories

5.3 Headland manager

When lowering the hydraulics, the slide must be opened manually the first time.



Press the button.

The slide is opened, the green LED lights up.

If the headline manager is connected, an * is displayed at the end of the first line.

Speed	66*
Slide	29

With the headline manager, the slide is automatically opened when lowering the hydraulic and automatically closed when lifting.

The slide can **be manually** opened and closed from the control panel.

The signal can be detected by means of a 7-pin plug or a sensor signal.

7-pin plug



1. Connect the connecting cable of the control panel to the 7-pin signal plug of the tractor.
2. Set the EHR signal of the spreader depending on whether the tractor emits the hydraulic signal when lifting or lowering.

5 Special accessories

Sensor signal



1. Mount the sensor in the joint section of the lower link.
2. Mount the magnetic encoder to the lower link.
3. Set position position of sensor and magnetic encoder. noting that the switching area of the sensor is at the side. Maximum spacing 10 mm.

Hydraulics at bottom:

sensor not in range of magnetic sensor.

Hydraulics at top:

sensor must be in field of magnetic encoder.

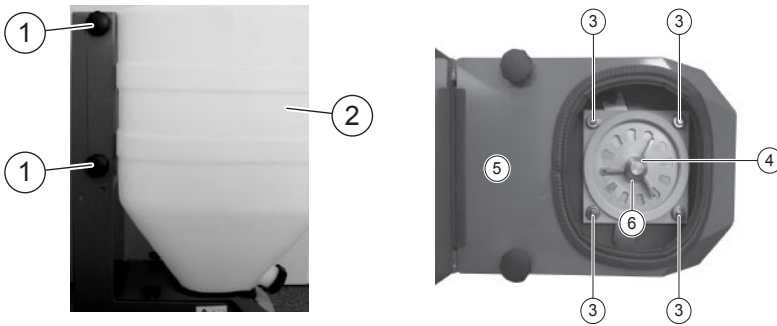
When raising the hydraulics, the sensor must not exit the magnetic sensor range because otherwise the slide will opened again.

6 Maintenance and cleaning

6.1 Service

The dosing device and slide should be inspected and cleaned from time to time.

In particular, spreading material with a high dust content can cause the slide unit to clog.



1. Remove screws **1** on the right and left.
 2. Remove the hopper **2**.
 3. Remove four screws at the side.
 4. Remove the cover plate **5**.
 5. Undo screw **6** and remove agitator **4**.
 6. Remove nuts **3**.
 7. Dismantle the hopper platform and remove flow plates.
 8. Clean the slide unit with a broom or compressed air.
- For corrosive spreading material, regularly remove and clean the motor, and fill the shaft end with grease or copper compound.




6.2 Cleaning

The hopper can be almost fully emptied by means of the residual discharge.

1. Unscrew hopper.
2. Clean spreader and hopper with a broom.

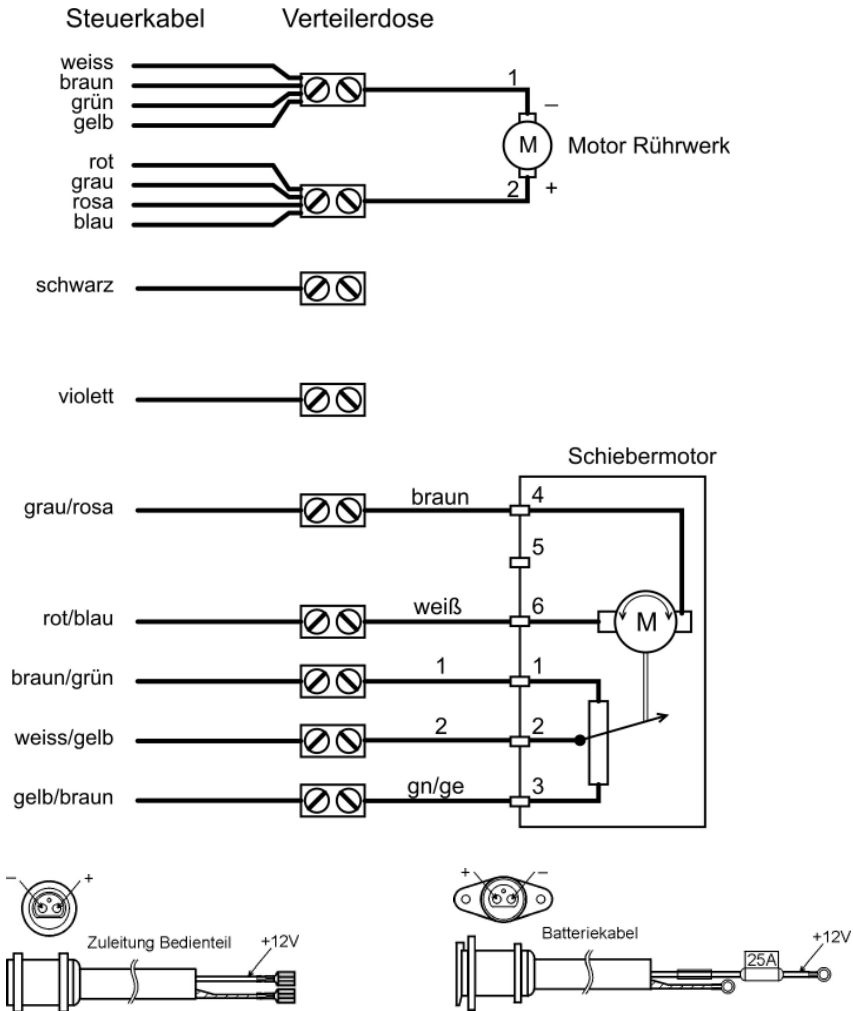
7 Appendix

7.1 EU Declaration of Conformity

 	<p>We,</p> <p>LEHNER Agrar GmbH Häuslesäcker 5-9 D-89198 Westerstetten Tel.: (+49) 07348 95 96 - 0 Fax: (+49) 07348 95 96 - 40 www.lehner.eu info@lehner.eu</p> <p>declare that the 12 volt spreader VINERO® conforms to the following directives: Machinery Directive 98/37/EC, Low Voltage Directive 73/23/EEC, EMC Directive 89/336/EEC, EC Directive 93/68/EEC, as well as other relevant EC directives.</p> <p>Westerstetten, 01.03.2007</p> <p></p>
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7 Appendix

7.2 Distribution box reference list



Key

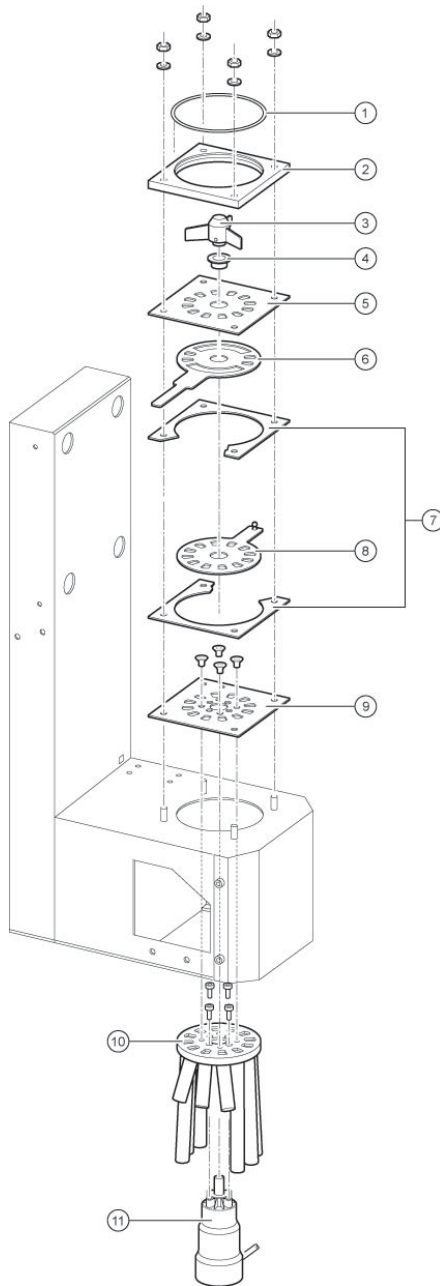
Steuerkabel	Control cable	Zuleitung Bedienteil	Control panel supply line	gelb	yellow	grau	grey
Verteilerdose	Junction box	Batteriekabel	Battery cable	rot	red	blau	blue
Motor Streuteller	Spreading disc motor	weiss	white	rosa	pink		
Motor Rührwerk	Mixer motor	braun	brown	schwarz	black		
Schiebermotor	Slide motor	grün	green	violett	violet		

7 Appendix

VINERO® parts list

Designation	Quantity	Material	Size
1 Hopper	1	Plastic	70/100/170 ltr.
2 Sealing cap	1	Plastic	
3 Discharge cover	1	Plastic	
4 Edge guard with padding for hopper	1	Plastic	
5 Cover plate	1	VA	
6 Edge guard with padding	1	Plastic	
7 Steel frame	1	VA	
8 Front plate	1	VA	
9 Hopper bracket	1	VA	100/170 ltr.
10 Knurled screw	4	Plastic / VA	M 8/15
11 Chain guide	1	Plastic	
12 Ball joint head	1	Plastic	Left thread
13 Rubber grommet	1	Plastic	
14 Adjuster slide guide	1	VA	
15 Plastic clamp	1	Plastic	
16 Control cable with plug	1		6/11 meters
17 Distributor box	1	Plastic	
18 Pushrod	1	VA	
19 Chain motor	1		
20 Control panel	1		
21 Upper part of bracket	1	Steel	
22 Lower part of bracket		Steel	

7 Appendix



7 Appendix

Parts list for VINERO® slide unit

Designation	Quantity	Material	Size
1 Hopper seal	1	Rubber	140
2 Hopper platform	1	plastic	150/150/15
3 Agitator	1	VA	
4 Guide bush for slide	1	Plastic	
5 Dosing plate	1	VA	2 mm
6 Adjuster slide	1	VA	2 mm
7 Slide guide	2	VA	2.5 mm
8 Dosing slide	1	VA	2 mm
9 Base plate	1	VA	4 mm
10 Tube plate	1	Plastic	
11 Drive motor	1		

7 Appendix

7.4 Troubleshooting

Troubleshooting LEHNER VINERO		Status: 07/2008
The following information should help you resolve minor problems yourself. You are welcome to call us as needed. We are glad to help.		
Problem	Cause	Solution
No display	Polarity reversed or fuse has blown	Check connections and fuses
Mixer does not turn over	Foreign bodies in the agitator	Empty hopper and check for foreign bodies
Agitator does not turn over	Power supply failed or too weak	Check power supply.
Slide not calib.	Reference run could not be performed	Query diagnosis at factory.
Spreading disc does not reach set speed	Foreign body on the agitator, load too great or power supply too weak	Check agitator, agitator paddle see Section 3.7 Check power supply
Slide jams	Spreading material or dirt is jammed between the slide plates	Clean slide
On the display: Agitator blocked	Agitator does not turn; switched off after 10 attempts Material may be compacted or blocked by foreign bodies	Check agitator and, if necessary, try starting again
On the display: Slide not open	Slide could not go into position when opening	Check slide for contamination, or perform reference run; see section: Reference run for slide. Cable not plugged in, motor defective
On the display: Slide not closed	Slide could not go into position when closing	Check slide for contamination, or perform reference run; see section: Reference run for slide
The version is displayed again and again.	Fuse oxidised, loose contact.	Check contacts and fuses
Slide does not open although no error message is displayed.	Mechanical damage to slide mechanism	Check slide motor and transfer mechanism
On the display: Connecting spr.	Control panel plug not connected to spreader or cable damaged	Check plug connections and lines
Empty indicator does not respond	Empty indicator is set too low	Adjust empty signal (see Section 4.6)
Headland manager closes the slide when lowering hydraulics and opens when lifting	Signal incorrectly applied	Turn signal. See EHR signal
Headline manager does not always close	Distance to magnetic sensor too great	Check distance, max. 10 mm.

7 Appendix

White clover		Stopwatch is activated on actuation of slide and slide closes on expiry of period!!											
Time open:													
	g/min Ø per hose	Hose number											
	g/min Ø overall	1	2	3	4	5	6	7	8	9	10	11	12
V1	354,3	369	423	411	386	373	339	311	318	319	352	302	323
V2		364	429	415	390	379	346	322	326	320	360	302	323
V1	310,0	326	377	363	336	322	292	262	274	279	310	264	282
V2		319	380	371	346	335	304	272	282	277	321	262	283
V1	270,4	292	342	328	303	289	260	228	238	248	270	223	246
V2		284	335	323	303	284	256	227	238	235	273	223	242
V1	237,4	255	295	291	268	249	223	195	208	223	241	188	211
V2		253	305	289	268	253	226	195	206	220	241	189	206
V1	195,5	210	259	244	228	195	174	152	173	183	199	154	174
V2		208	261	248	228	195	176	152	173	183	199	150	173
V1	153,6	110	225	209	111	165	148	124	141	150	168	114	131
V2		167	222	209	185	154	134	115	140	148	163	118	136
V1	124,8	124	190	179	94	132	117	95	112	123	132	86	101
V2		124	192	183	91	135	119	98	115	123	140	88	102
V1	100,7	92	159	148	136	98	83	69	87	93	107	59	72
V2		92	161	151	135	102	85	69	88	92	107	59	72
V1	71,3	55	131	119	107	67	53	39	60	66	79	33	44
V2		58	133	122	105	68	55	40	60	65	79	32	42
V1	39,7	28	97	88	73	37	24	14	23	30	47	9	17
V2		28	98	85	54	32	22	14	27	29	47	11	19
V1	17,8	10	68	58	37	9	4	3	2	2	16	1	4
V2		7	66	56	39	11	6	1	7	2	16	1	2
V1 = 1st attempt													
V2 = 2nd attempt													
Check settings with field samples.										© LEHNER			

7 Appendix

Phacelia		Stopwatch is activated on actuation of slide and slide closes on expiry of period!!											
Time open:													
	g/min	Hose number											
	Ø per hose	1	2	3	4	5	6	7	8	9	10	11	12
V.1	38	543	558	274	553	378	548	540	542	555	562	536	523
V.2		539	555	253	558	433	547	542	538	562	554	558	528
V.1	36	540	549	164	549	397	552	542	537	555	549	535	528
V.2		544	551	185	536	416	548	537	540	560	546	444	520
V.1	34	537	538	123	536	383	537	537	518	544	545	531	505
V.2		531	539	135	529	553	538	363	514	538	511	504	497
V.1	32	437	525	517	485	512	493	483	465	490	510	475	485
V.2		481	521	514	490	518	501	491	464	494	520	418	455
V.1	30	416	469	452	408	432	411	394	338	382	426	206	353
V.2		509	470	450	391	426	400	386	313	383	414	192	364
V.1	28	331	409	351	319	343	329	306	241	280	332	147	275
V.2		326	408	365	328	341	340	310	247	291	335	144	260
V.1	26	180	279	277	270	287	272	205	216	228	240	156	160
V.2		189	285	280	267	279	257	206	207	212	227	181	176
V.1	24	168	230	220	197	202	193	177	146	165	181	129	134
V.2		141	205	203	190	170	182	168	143	153	164	108	120
V.1	22	84	166	160	140	124	125	97	94	97	117	67	82
V.2		79	166	164	137	130	137	104	94	100	116	71	81
V.1	20	59	130	122	109	91	100	74	73	75	86	48	55
V.2		58	130	120	102	107	94	76	64	73	82	46	54
V.1	18	25	67	59	44	43	38	31	29	37	42	16	20
V.2		27	69	60	51	48	36	29	35	35	44	15	21
V.1	16	22	62	59	50	32	22	17	26	33	38	14	18
V.2		17	52	50	45	33	23	22	25	32	34	11	14
V.1	14	8	39	34	33	13	8	7	13	2	16	4	6
V.2		5	20	18	17	7	4	3	8	9	6	2	3
V.1 = 1st attempt													
V.2 = 2nd attempt													
Check settings with field samples.													
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Fodder radish		Stopwatch is activated on actuation of slide and slide closes on expiry of period!!!											
Time open:													
	g/min	Hose number											
	Ø per hose	1	2	3	4	5	6	7	8	9	10	11	12
	Ø overall												
V1	38	816	843	874	854	837	840	842	814	818	810	808	818
V2		728	850	870	862	857	848	852	818	835	807	811	825
V1	36	836	805	853	833	840	833	824	800	802	798	790	804
V2		802	834	862	848	841	836	828	789	803	797	794	795
V1	34	768	793	789	755	799	780	737	728	741	747	722	736
V2		769	803	801	770	792	762	766	732	739	744	724	712
V1	32	694	730	709	653	696	656	610	609	645	647	637	617
V2		692	725	708	640	697	624	597	596	631	654	634	652
V1	30	586	637	588	548	525	488	486	426	511	553	519	547
V2		575	621	424	562	573	515	516	414	508	514	523	545
V1	28	489	547	133	447	504	448	434	339	426	449	403	448
V2		474	536	381	454	480	344	422	364	380	395	395	431
V1	26	392	417	366	361	385	340	316	243	296	320	287	319
V2		373	441	396	342	363	327	308	254	235	339	277	235
V1	24	248	311	271	230	291	258	266	124	196	221	166	203
V2		248	290	284	240	280	198	215	139	166	223	169	202
V1	22	123	170	124	109	134	120	104	67	101	116	80	98
V2		169	216	227	160	218	158	140	81	110	161	104	141
V1	20	102	169	123	97	124	93	72	44	59	88	60	78
V2		100	170	114	96	135	90	74	56	65	94	64	79
V1	18	47	93	71	53	67	46	38	21	26	43	31	35
V2		57	97	82	34	66	54	38	25	24	48	35	38
V1	16	24	50	49	10	23	7	18	7	8	25	9	20
V2		27	56	38	25	12	5	7	11	9	24	7	21
V1	14	6	7	14	2	3	2	3	1	13	6	27	5
V2		11	21	6	5	3	2	2	1	2	3	5	10
V1 = 1st attempt													
V2 = 2nd attempt													
Check settings with field samples.							© LEHNER						

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KAS														
Time open: Stopwatch is activated on actuation of slide and slide closes on expiry of period!!														
		g/min	Hose number											
	Slide	g/min	1	2	3	4	5	6	7	8	9	10	11	12
V 1	38	Ø overall 18545,4	1473	1530	1646	1632	1642	1588	1550	1560	1552	1520	1470	1474
V 2			1478	1528	1674	1626	1638	1532	1502	1514	1526	1498	1472	1464
V 1	36	1503,3	1458	1364	1630	1600	1640	1510	1464	1468	1508	1572	1420	1384
V 2			1460	1520	1646	1594	1622	1478	1436	1458	1494	1466	1430	1458
V 1	34	1409,3	1388	1484	1540	1440	1548	1376	1334	1368	1376	1380	1380	1396
V 2			1372	1448	1436	1446	1504	1406	1322	1364	1408	1350	1364	1392
V 1	32	1143,1	1220	1186	1232	1116	1286	1202	1112	1156	1162	1218	1190	1228
V 2			1160	1052	1004	884	1100	1134	1082	1078	1128	1138	1152	1214
V 1	30	847,8	962	704	598	615	844	922	882	817	1042	1046	1046	830
V 2			1016	770	622	384	902	916	733	875	958	922	954	988
V 1	28	552,0	718	487	419	385	616	682	458	535	216	668	666	729
V 2			614	487	348	362	401	730	505	550	652	588	693	739
V 1	26	341,9	476	252	263	197	480	464	311	259	407	292	436	431
V 2			438	308	267	262	402	433	237	88	437	315	398	353
V 1	24	177,5	341	64	94	133	288	192	189	132	113	185	149	326
V 2			267	51	93	145	257	143	244	95	64	227	227	241
V 1	22	78,9	150	26	33	41	60	127	46	7	11	79	135	155
V 2			113	90	37	22	124	148	81	50	18	96	80	164
V 1	20	16,6	199	28	5	22	1	10	25	24	4	5	0	41
V 2			30	11	11	5	0	36	24	7	6	4	32	31
V 1	18	5,0	60	15	5	0	2	4	5	6	4	6	0	11
V 2			14	12	1	1	0	4	8	3	0	0	5	5
V 1 = 1st attempt														
V 2 = 2nd attempt														
Check settings with field samples.										© LEHNER				

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Bellmix Mulchgrass 500														
Stopwatch is activated on actuation of slide and slide closes on expiry of period!!														
Time open:														
	g/min	g/min	Hose number											
Slide	Ø per hose	Ø overall	1	2	3	4	5	6	7	8	9	10	11	12
V1	38	173.0	175	174	166	157	172	165	171	176	177	180	163	170
V2			172	175	178	157	180	168	178	180	181	184	173	180
V1	36	176.2	159	171	175	167	175	166	183	178	188	187	167	174
V2			175	176	184	158	180	175	190	169	187	190	173	181
V1	34	175.2	177	168	182	173	148	177	196	154	191	181	177	182
V2			176	170	185	162	158	176	190	154	183	179	186	180
V1	32	166.0	1992	173	143	183	130	164	159	185	144	184	177	185
V2			169	145	168	132	160	174	180	156	185	177	176	168
V1	30	148.3	1779	160	154	161	107	134	166	160	135	164	173	160
V2			140	166	148	124	108	149	151	126	150	174	154	138
V1	28	111.5	1339	96	106	124	117	103	130	157	89	125	131	120
V2			75	119	129	38	158	126	135	114	144	147	112	46
V1	26	67.9	815	39	66	64	60	79	95	82	79	107	46	73
V2			65	45	48	87	46	103	93	109	99	8	71	30
V1	24	30.7	369	33	3	14	21	33	53	43	57	33	26	30
V2			36	6	19	18	58	42	58	23	51	20	34	13
V1	22	21.7	260	21	7	10	9	21	29	32	29	37	32	17
V2			18	2	9	9	24	36	34	32	34	33	29	8
V1	20	9.5	114	11	6	4	4	4	22	6	15	4	10	11
V2			14	5	4	4	8	15	23	18	5	11	11	7
V1	18	5.3	63	6	3	4	1	7	8	5	6	4	9	8
V2			10	2	2	2	4	7	6	4	5	5	9	5
V1	16	1.4	17	5	0	0	0	1	1	1	2	2	1	2
V2			2	0	1	0	2	1	2	3	1	1	3	1
V1 = 1st attempt														
V2 = 2nd attempt														
Check settings with field samples.														
The flow properties of grass seed are greatly affected by external factors such as moisture content and humidity.														
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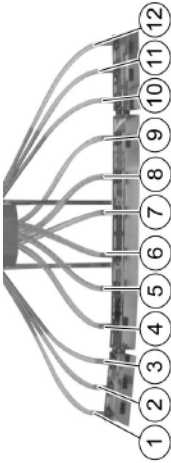
Bellmix Mulchgrass 300															
Time open: Stopwatch is activated on actuation of slide and slide closes on expiry of period!!															
		g/min		Hose number											
	Slide	Ø per hose	Ø overall	1	2	3	4	5	6	7	8	9	10	11	12
V1	38	168,0	2017	174	168	174	169	119	169	169	175	170	168	165	169
V2				172	169	172	174	139	164	179	179	168	179	174	175
V1	36	176,8	2122	180	184	182	187	137	168	177	185	180	182	176	180
V2				177	174	171	168	181	178	181	183	181	176	180	176
V1	34	178,8	2145	177	174	171	168	181	178	185	176	181	176	180	176
V2				190	174	173	177	180	181	187	178	190	180	179	178
V1	32	174,1	2089	174	183	177	169	158	173	176	181	172	186	177	173
V2				167	181	179	162	174	171	174	168	182	174	185	162
V1	30	155,2	1862	168	172	163	117	156	160	164	161	153	174	171	163
V2				148	190	60	84	102	161	161	167	179	173	169	148
V1	28	94,0	1128	91	38	23	107	113	112	118	143	127	118	107	87
V2				115	92	58	106	115	86	104	46	154	8	77	111
V1	26	49,8	597	47	43	26	45	27	74	51	75	105	3	49	50
V2				52	16	21	15	41	64	72	69	111	21	61	56
V1	24	18,0	216	12	3	9	3	7	18	27	6	9	19	23	19
V2				27	8	8	4	13	33	35	31	29	32	26	31
V1	22	8,7	105	8	4	4	3	13	12	14	15	10	11	16	15
V2				5	3	1	2	9	4	11	7	14	4	13	11
V1	20	6,3	76	3	1	1	1	11	8	10	6	11	2	9	9
V2				4	2	1	2	11	9	9	9	9	9	8	7
V1	18	2,3	28	1	0	1	0	3	4	5	2	5	2	2	3
V2				0	0	1	0	3	5	5	2	3	3	2	4
V1	= 1st attempt														
V2	= 2nd attempt														
Check settings with field samples.															
The flow properties of grass seed are greatly affected by external factors such as moisture content and humidity.															
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7 Appendix

7.6 Slide settings

Version with 12 hoses

Number of opened hoses in position A: 12 (Exception: slide 81035)



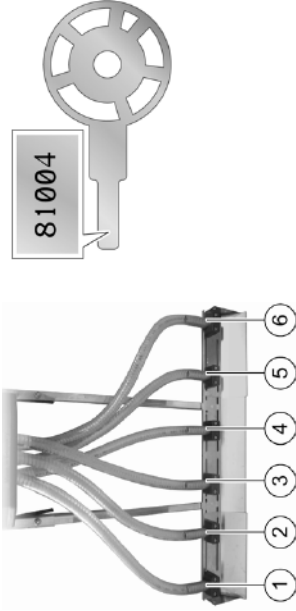
Number of opened hoses in position B:	Opened hose												Slide number	
	1	2	3	4	5	6	7	8	9	10	11	12		
2	■												■	81006
4	■	■											■	81003
6	■	■	■										■	80986
6				■	■	■							■	81007
6	■	■	■	■	■								■	81008
6	■	■	■	■	■	■							■	81035
Position A: 6														
8			■	■	■	■	■						■	80987
10													■	81001

■ = Hose opened


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Version with 6 hoses

Number of opened hoses in position A: 6



Number of opened hoses in position B:	Opened hose						Slide number
	1	2	3	4	5	6	
1							
2							81004
4							80955

 = Hose opened

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