LEHNER

Operating manual with spare parts list

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Translation of the original version

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1 What you should know

1.1 Foreword

Congratulations on purchasing the **POLARO® L/XL**, a high-quality and innovative product. Thank you for placing your trust in us. 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.

Maintenance and cleaning work as described in the operating manual will ensure that your **POLARO® L/XL** is safe to use and maintains its value.

1.2 About this operating manual

This operating manual is an integral part of the **POLARO® L/XL** and must be kept readily available at all times. It must be read, understood and followed by everybody who works with the **POLARO® L/XL** . Keep the operating manual for future use. If you come to sell your **POLARO® L/XL** , give the buyer this operating manual; it is an integral part of the device.

1 What you should know

Warnings

Warnings in this operating manual are identified as follows:

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

1.3 Description of the POLARO® L/XL

The **POLARO® L/XL** is a spreader for spreading winter salt, gravel and sand. It consists of a solid frame, a spreading material tank, the electrical components and mechanical assemblies such as a screw conveyor and spreading device.
The electrical components comprise the drive motors for the screw conveyor and spreading disk, the vibrator, the terminal box, sensors, the data and battery cables and the control panel.

The screw conveyor transports the material from the tank to the spreading device with its spreading disk. The vibrator loosens the spreading material in the tank if necessary to make sure that it can flow through the system.

The control panel allows the speed of the screw and the spreading disk to be adjusted from the driver's cab.

The **POLARO® L/XL** must be mounted on the load space of approved carrier vehicles with an adequate axle load.

1 What you should know

Technical data

	POLARO® L	POLARO® XL
Dimensions L/W/H	1037/1056/820 mm	1394/1056/820 mm
Net weight	140 kg	155 kg
Capacity	380 l	550 l
Salt capacity	approx. 500 kg	approx. 720 kg
For 20 g/m²	25,000 m²	36,000 m²
Spreading width [m]	approx. 0.8 m - 6.0 m	
Max. output per minute of salt	approx. 55 kg	
Operating voltage	12 Volt	
Fuse	30 A	
Power of drive motor (spreading disc)	60 W	
Rating of screw motor	150 W	
Speed range of spreading disk	40 to 600 rpm	
Screw speed	2 - 54 rpm	
Power consumption of motor	14 A	16 A
Operating temperature	-10°C to +70°C	
Storage temperature	-30 °C to +70°C	
Length of battery cable	3 m + 6 m	
Length of data cable	2 m - 5 m - 10 m	
Electrical safety class	IP67	IP67

1 What you should know

1.4 Intended use

The **POLARO® L/XL** is a spreader for spreading winter salt, gravel and sand.

1.5 Reasonably predictable misuse

Use the device only on approved carrier vehicles with an adequate axle load.

Use the device only for approved spreading materials The device must not be used for spreading crop protection products.

1.6 Warranty

We provide a guarantee of 6 months and warranty of 12 months on the **POLARO® L/XL** .

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.

Any changes to cable or plug connections without factory approval automatically invalidates the entire warranty. Rusted bearings are not subject to the manufacturer's warranty. Motors must not be opened or dismantled.

On receipt:
Check your **POLARO® L/XL** for transport damage on receipt. Any such damage must be reported to the manufacturer within 24 hours of receipt.

1 What you should know

1.7 About your safety

- Carefully read and observe these operating instructions before use. Always keep these instructions to hand 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.
- Observe the safety instructions.
- Avoid injury to personnel or damage to vehicles incurring liability.
- Before operation, check that the spreader is safely and correctly attached to the carrier vehicle.
  - Do not take the spreader into operation if there are technical safety defects.
  - Make sure that technical safety defects are rectified immediately.
  - When travelling on public roads and tracks used by agricultural vehicles, follow the applicable rules of the road.
- There must be no other persons in the spreading zone.
  - Switch off the spreader for troubleshooting and cleaning work.
  - Disconnect the electrical power supply for maintenance work.
- Do not reach into the tank during operation.
  - Never reach into the rotating or blocked spreading disk whilst the motor is running.
  - Never reach into the rotating or blocked screw conveyor whilst the motor is running.
- It is essential to comply with the instructions of the spreading material manufacturer in question.
- Spreading tables and additional information about the spreading material used can be requested from the spreading material manufacturer in question.
- LEHNER Agrar GmbH cannot accept any liability for the storage and application of the spreading material.

1 What you should know

1.8 Emergency Stop switch

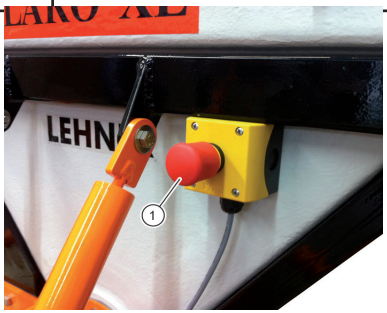
Warning!

Danger of death from non-functional safety equipment!

Your safety is only assured if all safety equipment is intact.

Therefore:

- Check before starting work that the safety equipment is functional and correctly installed.
- Never disable the safety equipment.
- Ensure that the Emergency Stop switch is accessible at all times.



The Emergency Stop switch **(1)** is on the control near the spreader.

If the Emergency Stop switch **(1)** is pressed, an emergency stop will be triggered in which all movement by the spreader will be stopped and all controls disabled. The vehicle will not be affected by this.

The buzzer indicates to the driver/operator that the Emergency Stop switch has been pressed. In addition, "Spreader connection" will be shown on the control panel display.

1 What you should know

Warning!

Danger of death by uncontrolled reactivation!

Uncontrolled reactivation may cause serious injuries or death.

Therefore:

- Before switching on again ensure that the cause of the Emergency Stop has been rectified.
- All safety equipment is installed and functional.
- Do not release the Emergency Switch until the danger has been eliminated.

After the Emergency Stop switch **(1)** has been pressed, it must be released before the device can be switched on again.

Switch off the spreader, switch it on again after 10 seconds,
see chapter 3.3 Switch spreader on and off.

2 Mounting and starting

2.1 Install the frame

Danger!

Danger of death of very serious injuries caused by falling loads

Lift the spreader only with adequately sized handling equipment and lifting gear
Do not stand under suspended loads.
When you place the spreader on the load space of the carrier vehicle, ensure that it is stable

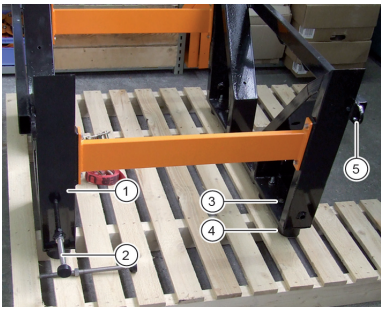
Caution!

Damage to carrier vehicle

Use carrier vehicles with an adequate axle load only.
Attach lashing straps on the carrier vehicle to suitably sized lashing eyelets.
If you use adjustable feet: Place the spreader against sturdy side boards only.

The **POLARO® L/XL** must be mounted on the load space of approved carrier vehicles with an adequate axle load. Refer to the gross weight of the filled spreader.

2 Mounting and starting



1. The spreader **(1)** is bolted to a special palette for transport.
Undo four screws **(3)** on the frame.

2. Position the spreader **(1)** on the load space of the carrier vehicle using adequately sized handling equipment and lifting gear.
The eight feet **(4)** of the frame must stand on the load space. It must be possible to lower the spreading device with out it striking the carrier vehicle or base.

3. Secure the spreader **(1)** using suitable lashing straps to all four lashing eyelets **(5)**.

4. Ensure that the lashing straps do not run over sharp edges, use protective hoses.

5. If necessary, place the spreader **(1)** against the side board using optional adjustable feet **(2)**.

6. Check the securing materials:
the spreader **(1)** must be secure on the carrier vehicle during operation as well.

	**Caution!** **Risk of equipment damage** Check the securing materials on the carrier vehicle before starting any journey.

2 Mounting and starting

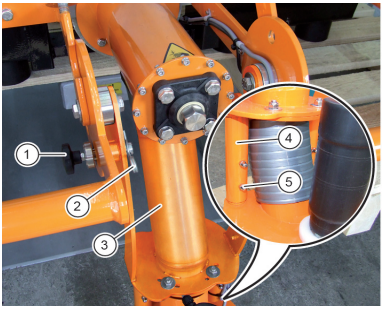
Packaging materials

Dispose of packaging materials properly or save them to return to the manufacturer.
Raised the special pallet, it is ideally designed for transporting the spreader.

2.2 Set the working height of the spreading disk

	**Caution!** **Risk of equipment damage** When raising and lowering the spreading device, the spreading disk and tank may be damaged. Hold the spreading device by the side bar to raise and lower it and raise or lower it carefully.

The recommended discharge height is 0.40 - 0.80 m.



1. Remove the spring-loaded pins **(2)** and locking bolts **(1)** on the right and left of the spreading device **(3)** and lower the spreading device **(3)**.

2. Carefully press the spreading device **(3)** against slight resistance, until the locking bolts **(1)** can be inserted into the bottom holes.

3. Secure the locking bolts **(1)** with the spring-loaded pens **(2)**.

4. Secure the disk mounting **(4)** to prevent it falling and undo and remove four screws **(5)**.

2 Mounting and starting

5. Slide the disk mounting **(4)** downwards or upwards to adjust the discharge height, whilst monitoring the drive motor cable.

6. Resecure the cable if necessary.

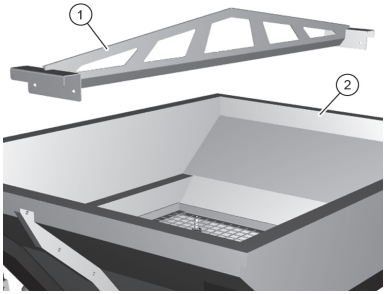
7. Secure the disk mounting **(4)** with four screws **(5)**.

2.3 Install the cross bar

Caution!

Risk of equipment damage

The tank may deform when it is filled
The crossbar must be fitted before the tank is filled so as to stabilise it.
Do not place any items, for example spreading material sacks, on the cross bar.



Secure the cross bar **(1)** in the centre on the edge of the spreading material tank **(2)**.

Note:
You can bolt the cross bar to the tank if you drill holes in the walls of the tank

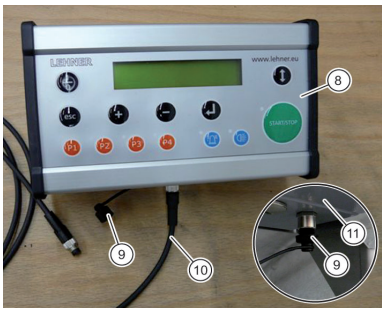
2 Mounting and starting

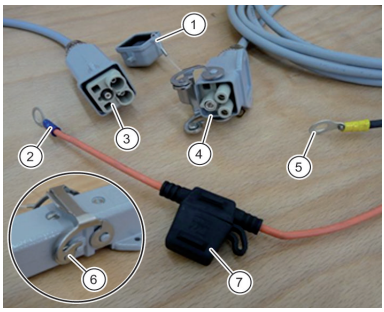
2.4 Electrical connection

	**Caution!** **Danger of short circuit** Ensure that the cables are routed without tension, kinking and chafing, and also avoid routing them around sharp edges.

	**Caution!** **Risk of equipment damage** Faulty cables or cables with incorrect dimensions can lead to malfunctions and damage to the device. Only use original cables, or ones approved by the manufacturer. Always fit the transport cover and lock it to protect electrical connections from damage.

Use only original cables or cables approved by the manufacturer, otherwise the complete warranty will automatically be invalidated. Changes to cables undertaken by the customer are taken into account in the case of repair.





1. Mount support for the control panel in the vehicle cabin.

2. Remove the transport cover **(9)** and connect the data cable **(10)** to the control panel **(8)** and terminal box **(11)** on the spreader.

3. Connect the battery cable:
Connect connector **(5)** to the negative pole on the battery.
Connect connector **(2)** (with fuse **(7)**) to the positive pole on the battery.

2 Mounting and starting

4. Remove the transport cover **(1)** and connect the two sockets **(3)** and **(4)**, ensuring that they are locked correctly **(6)**.

5. Secure the battery cable and data cable to the carrier vehicle.

The device is now ready for use.

2.5 Fill and cover the spreading material tank

Warning!

Risk of injury by falling tarpaulin

A falling tarpaulin may cause an accident to following traffic.
Always secure tarpaulins to all lashing eyelets.
Do not exceed the maximum speed of 100 km/h.

Caution!

Risk of health impairment from spreading material

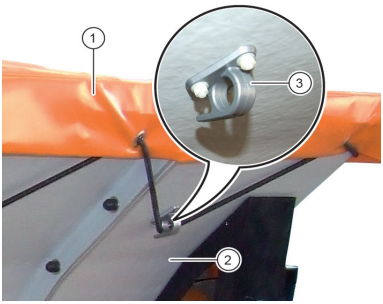
Comply with the regulations of the spreading material manufacturer.

Caution!

Risk of equipment damage

The tank may deform when it is filled
The cross bar must be fitted before the tank is filled so as to stabilise it.
Do not place any items, for example spreading material sacks, on the cross bar.

2 Mounting and starting



1. Check the tank **(2)** and clean it if necessary, there must be no foreign bodies, foil residue, packaging or similar items in the tank **(2)**.

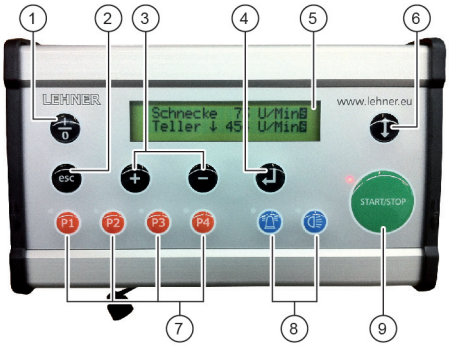
2. Fill the tank with spreading material immediately before starting work. Pour the spreading material slowly and evenly into the tank. Do not compact the spreading material.

3. Cover the tank **(2)** with a tarpaulin **(1)** and secure the tarpaulin **(1)** to the tank **(2)**:
Attach an expander to each lashing eyelet **(3)**.

Note:
The expander may be held on the tank by several lashing eyelets to secure the tarpaulin and prevent it being lost.

3 Operating the POLARO® L/XL

3.1 Controls on the control panel



1 Switching on / off

2 Esc key to go to the main menu

3 Plus and minus keys to change parameters

4 Enter key to confirm the selected menu or setting

5 Display

6 Change key to change between menus

7 Programme keys 1 - 4

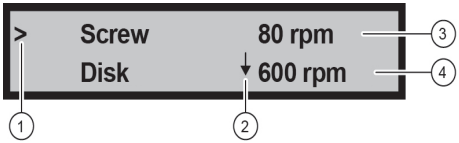
8 Assignment keys, for example for rotating light and working light

9 Start/Stop for various programs or spreaders

3 Operating the POLARO® L/XL

3.2 Indicators in the display

Main menu



1 Arrow denotes the active line

2 Spreading disk position

3 Screw speed

4 Spreading disk speed

Error message

For more information, see chapter 6.5 - Troubleshooting.

3 Operating the POLARO® L/XL

3.3 Switch the spreader on and off

Danger!

Risk of injury by accident

When travelling on public roads and tracks used by agricultural vehicles, follow the applicable rules of the road.

Warning!

Risk of injury

Do not take the spreader into operation if there are technical safety defects.

Press the key.
After a short time the speed of the screw and the spreading disk and the position of the spreading device will be shown in the display.

3.4 Switch the spreading disk and screw on and off

Warning!

Risk of injury by pressing the Start/Stop key

When you press the Start/Stop key the drive motor for the spreading disk will start immediately. The screw will start after a delay. Make sure that no-one is in the danger area when you switch the system on.

Press the key.
The screw and the spreading disk are now switched on.

3 Operating the POLARO® L/XL

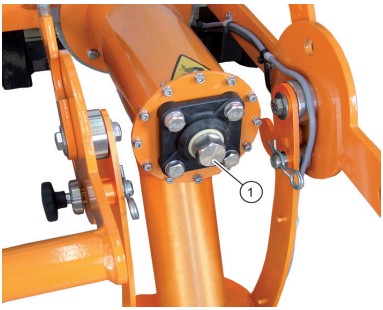
Screw drive automatic start/automatic clear

If an excessive load makes it difficult for the screw drive to start, the controller will switch to "Breakaway mode". The screw will change direction several times. If the screw is unable to break away by this action, the drive motor will be shut down automatically. The following message is shown in the display:

Spreader stopped
Spreader blocked

	**Warning!** **Risk of injury by unexpected starting of the screw or spreading disk** Switch off the spreader to rectify the fault.
	**Warning!** **Risk of falling** Do not climb onto the edge of the tank.
	**Caution!** **Risk of equipment damage** Components of the spreader may be damaged when loosening the spreading material. You should therefore loosen the spreading material carefully, without using sharp or unsuitable tools such as a crowbar.

3 Operating the POLARO® L/XL



To eliminate the blockage:

1. Switch off the spreader.
2. Turn the hex screw **(1)** to the right and left using a 27 mm wrench to move the screw manually.
3. Take the wrench of the hex screw **(1)**.
4. If necessary loosen the material carefully from the top, for example using a wooden stick.
5. Switch on the spreader again.

	**Caution!** **Risk of equipment damage** Do not use an extension handle on the wrench. There is a risk of breaking the screw, bearing and drive.

3 Operating the POLARO® L/XL

3.5 Calibration and spreading width

The spreading volume depends on the speed of the screw, it can be found through the calibration process.

Turning

Warning!

Risk of crush injury by rotating screw

Do not reach into the material discharge during the calibration. Ensure that nobody else can reach into the material discharge

Caution!

Risk of equipment damage

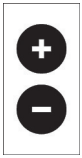
When raising and lowering the spreading device, the spreading disk and tank may be damaged.
Hold the spreading device by the side bar to raise it and carefully raise or lower it.

1. Raise the spreading device and secure it with both locking bolts and spring-loaded pins.

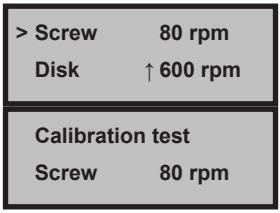
2. Place a suitable vessel under the material discharge to catch any material
Up to 65 litres of material may be discharged.

Press the key to switch on the control panel.

Press the key.
The calibration will be shown on the display
Press the key again to set the screw speed.



Press the key to set the screw speed.
We recommend that you start the calibration at low speed.



3 Operating the POLARO® L/XL

Press the key to start the calibration.
The calibration will stop automatically after 60 seconds.

3. Weigh the discharged material.

4. Repeat the calibration if necessary until you find a suitable screw speed.

Determining the spreading width

1. Spread on a firm surface.

2. Sweep up the spreading material into a strip lateral to the direction of travel and assess the side distribution.

Formulas

$$\frac{\text{Discharge volume in kg/min} \times 60}{\text{Output in g/m}^2 \times \text{Spreading width in m}} = \text{Speed in km/h}$$

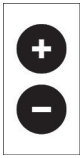
$$\frac{\text{Discharge volume in kg/min} \times 60}{\text{Speed in km/h} \times \text{Spreading width in m}} = \text{Output in g/m}^2$$

$$\frac{\text{Output in g/m}^2 \times \text{Speed in km/h} \times \text{Spreading width in m}}{60} = \text{Discharge volume in kg/min}$$

3 Operating the POLARO® L/XL

3.6 Set the speed of the screw/spreading disk

If necessary, press the button to select the screw or spreading disk; the arrow points to the first line in the display.



Press the key to set the screw speed. The speed can be set to any value.
Spreading disk speed: 40 to 600 rpm
Screw speed: 2 - 91 rpm
The set speed will be shown in the display for 10 seconds after which the actual speed will be shown.

Save current settings

You can save for different settings.

Press the program key for approx. 3 seconds.
The current settings will be saved.

Open saved settings

Press the appropriate program key.

3.7 Set the working width

The spreading width depends on the condition of the spreading material and the speed of the spreading disk. The more coarse the spreading material, the larger the possible spreading width.

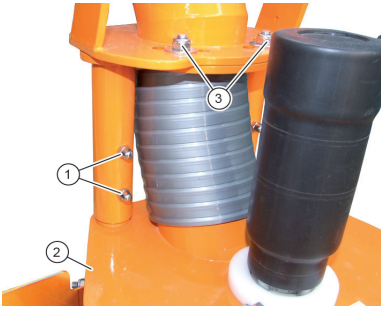
Increase/Reduce the speed of the spreading disk

3 Operating the POLARO® L/XL

3.8 Set the spreading zone

You can set the zone within which the spreading material is to be spread. This allows you to spread the material on a pavement for example when the carrier vehicle is running along the road.

Basic setting



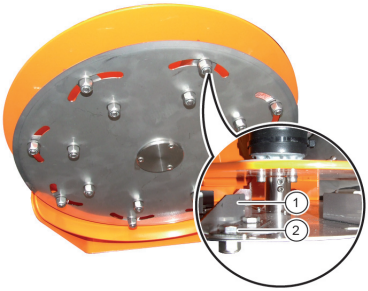
1. Undo the nuts **(3)** until the disk mounting **(2)** on the spreader device can be moved.

2. Set the disk mounting **(2)**:
Spread material to the left as you travel forwards:
Turn the disk mounting **(2)** to the left.
Spread material to the right as you travel forwards:
Turn the disk mounting **(2)** to the right.

3. Tighten the nuts **(3)**.

Note:
The two outer holes may also be used for the nuts **(3)**.

Final adjustment



You can adjust the winnowing fans on the spreading disk to improve the spreading zone:

1. Undo both screws **(2)** until the winnowing fan **(1)** can be moved.
2. Adjust the winnowing fan **(1)**:
3. Tighten both screws **(2)**.

3.9 Empty sensor

The empty sensor indicates that the tank is empty or that the material is no longer flowing.
The following message is shown in the display:

Spreader stopped
No material flow

3 Operating the POLARO® L/XL

3.10 Residual discharge

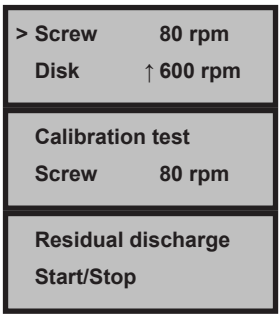
The tank should be emptied after use to prevent the material forming lumps or freezing, for example overnight due to humidity.

Press the key to switch on the control panel.

Press the key.
The calibration will be shown on the display

Press the key.
The residual discharge will be shown on the display.

Press the key to start and stop the residual discharge.



4 Settings and displays

The control panel enables you to set the language and make the following control settings:

- Reset day-hour counter
- Vibrator current threshold
- Vibrator on duty cycle

In addition you can view the service query.

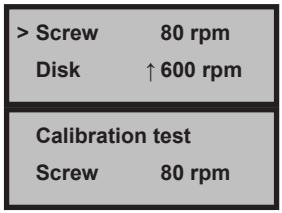
4.1 Make settings

Switch off the machine.

Press the key to switch on the control panel.

Press the key.
The calibration will be shown on the display

Press the button to select the desired menu item.



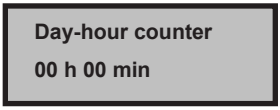
4 Settings and displays

4.2 Spreader settings

4.2.1 Reset day-hour counter

Press the key, the current value for the day-hour counter will be displayed.
Press the key again to reset the day-hour counter.

Press the key to save the setting.
Press the key again to return to the main menu.

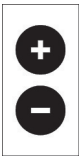


4.2.2 Vibrator current threshold

You can set the vibrator activation point for various spreading materials.

Press the key, the day-hour counter will be displayed.

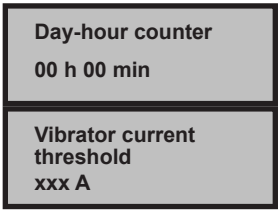
Press the key, the vibrator current threshold will be displayed.



Press the key to set the current threshold.
+ means: The vibrator will cut in earlier.
- means: The vibrator will cut in later.

Press the key to save the setting.

Press the key to return to the main menu.

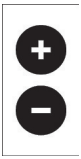


4 Settings and displays

4.2.3 Vibrator on duty cycle

Press the key, the day-hour counter will be displayed.

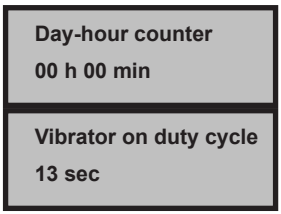
Press the key twice, the vibrator on duty cycle will be displayed.



Press the key to set the on duty cycle.
Setting range: 0 - 15 sec

Press the key to save the setting.

Press the key to return to the main menu.



4 Settings and displays

4.3 Service query

Voltage and current check

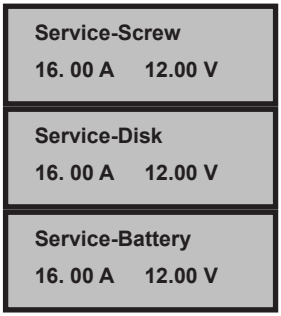
The spreader must be switched on to check the electrical voltage (in V) and current (in A).

Press the key, the electrical voltage and current for the screw will be displayed.

Press the key, the electrical voltage and current for the spreading disk will be displayed.

Press the key, the electrical voltage and current for the battery will be displayed.

Press the key to return to the main menu.



Display the control panel version

Press the key, the electrical voltage and current for the screw will be displayed.

Press the key four times, the control panel version of the spreader will be displayed.

Press the key to return to the main menu.

4 Settings and displays

Display the spreader version

Press the key, the electrical voltage and current for the screw will be displayed.

Press the key five times, the spreader version will be displayed.

Press the key to return to the main menu.

Display hours of service of the screw

Press the key, the electrical voltage and current for the screw will be displayed.

Press the key six times, the hours of service of the spreader will be displayed.

Press the key to return to the main menu.

Display hours of service of the disk

Press the key, the electrical voltage and current for the screw will be displayed.

Press the key seven times, the hours of service of the spreader will be displayed.

Press the key to return to the main menu.

4 Settings and displays

4.4 Language

Press the key, the language can now be set.

Language
German

Press the key to set the language.

Press the key to save the setting.
Press the key again to return to the main menu.

4.5 Device settings

Switch buzzer on and off

Press the key, the buzzer can now be switched on.
Press the key again to switch off the buzzer.

Buzzer
Yes*/No**

Press the key to save the setting.
Press the key again to return to the main menu.

Reset FW boot load

Press the key, the FW boot load can now be reset.
Press the key again to select the FW boot load.

FW boot load
No

Press the key to save the setting.
Press the key again to return to the main menu.

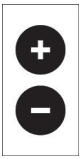
4 Settings and displays

Set the display contrast

You can set the vibrator activation point for various spreading materials.

Press the key, the display contrast will be displayed.

Display contrast
xxx %



Press the key to set the display contrast:
+ means: The contrast will be increased.
- means: The contrast will be reduced.

Press the key to save the setting.

Press the key to return to the main menu.

5 Maintenance/Cleaning/Upkeep

5.1 Cleaning

Warning!

Risk of injury by unexpected starting of the screw or spreading disk

Switch off the spreader and secure it against being switched on again before starting any maintenance and cleaning work.

Warning!

Risk of injury from catapulted spreading material

Always wear goggles and gloves for cleaning work.
Comply with the regulations of the spreading material manufacturer.

1. Empty the spreader after every use.
2. Clean the spreader and carrier vehicle with a broom.
3. Remove salt residue with water if necessary.
4. Clean the area around the screw drive motor if necessary.
5. Do not direct pressure cleaners at electrical components.

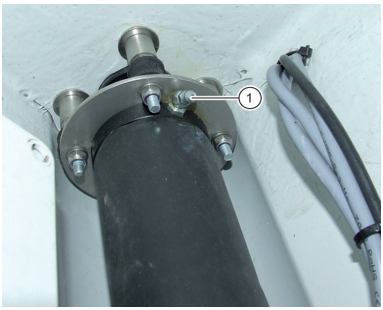
5 Maintenance and cleaning

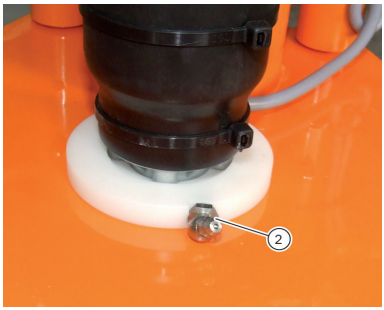
5.2 Maintenance

Carry out all maintenance work correctly otherwise the manufacturer's warranty may be invalidated.

Note:
The plain, flange and joint bearings on the spreading device's screw require no maintenance and must not be greased.

Lubricate drive motors





Every week (at the latest after 40 hours of use) and before length the periods of inactivity, for example at the end of the season.

1. Grease the grease nipples **(1)** and **(2)** using a grease gun.
2. Remove surplus grease.

5 Maintenance and cleaning

5.3 Upkeep

Warning!

Risk of injury by unexpected starting of the screw or spreading disk

Disconnect the power and secure it to prevent it being switched on again before starting any upkeep work.

Warning!

Risk of injury due to high component weight

Raise heavy components with support.

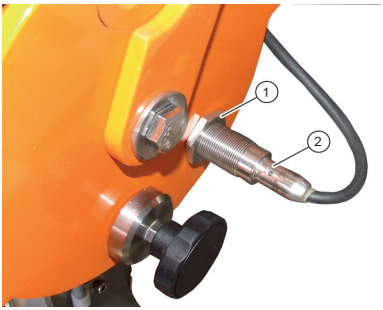
Caution!

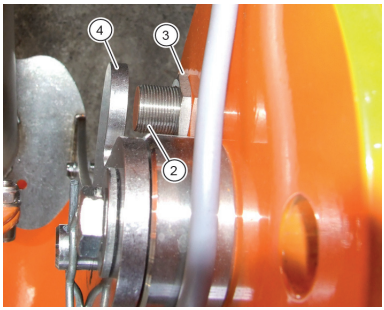
Danger of short circuit

Ensure that the cables are routed without tension, kinking and chafing, and also avoid routing them around sharp edges.

5 Maintenance and cleaning

Install and remove sensor





1. Disconnect the power supply.
2. Disconnect the electrical cable at the terminal box and make a note of the cable route for later installation.
3. Undo and remove the nut **(3)**.
4. Remove the sensor **(2)**.
5. Install the parts in reverse order.

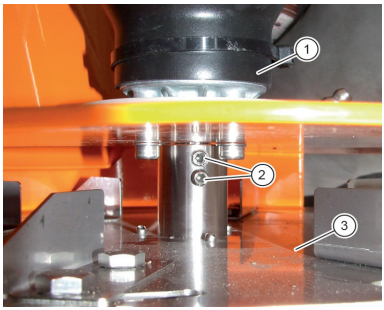
Note for installation:

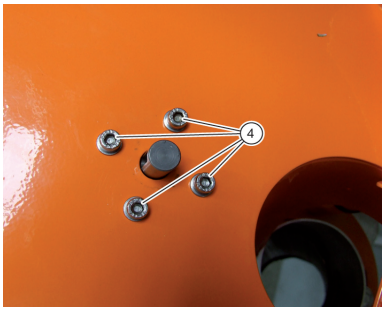
The spacing between the switch surface **(4)** and sensor **(2)** must be 2 - 4 mm and can be adjusted using the nut **(1)**.

	**Warning!** **Risk of injury due to high component weight** Raise the vibration screen and vibrator with support.

5 Maintenance and cleaning

Remove and fit the spreading disk drive motor





1. Disconnect the power supply.

2. Disconnect the electrical cable at the terminal box and make a note of the cable route for later installation.

3. Undo the pin screws **(2)** on the spreading disk **3** and pull the spreading disk **(3)** downwards.

4. Undo the cheesehead screws **(4)** from below and remove them and then remove the drive motor **(1)**.

5. Take the spacer ring off the motor shaft.

6. Clean the support surface of the spacer ring and motor shaft.

7. Apply a thin coating of conventional copper paste to the motor shaft.

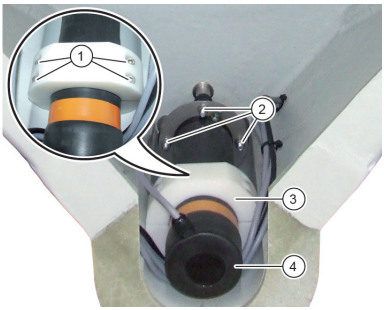
8. Install the parts in reverse order.

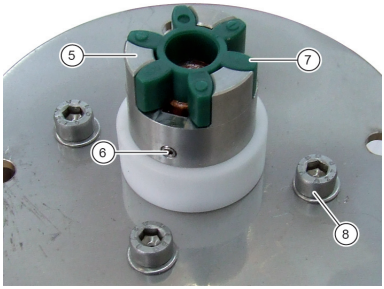
Note for installation:

Apply medium-strength liquid thread locker (Loctite) to the cheesehead screws **(4)** on the spreader disk **(3)** and insert them.

5 Maintenance and cleaning

Remove and fit the screw drive motor





1. Disconnect the power supply.

2. Disconnect the electrical cable at the terminal box and make a note of the cable route for later installation.

3. Undo and remove four nuts **(2)**.

4. Undo and remove four cheesehead screws **(1)** and remove the upper shell support ring **(3)**.

5. Remove the drive motor **(4)**.

6. Undo the pin screw **(6)** and take the claw coupling **(5)** off the drive motor **(4)**.

7. Check the star **(7)** for signs of possible damage and replace it if necessary.

8. Remove the grease chamber.

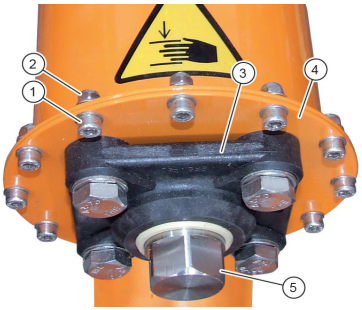
9. Undo four cheesehead screws **(8)** and take off the motor flange.

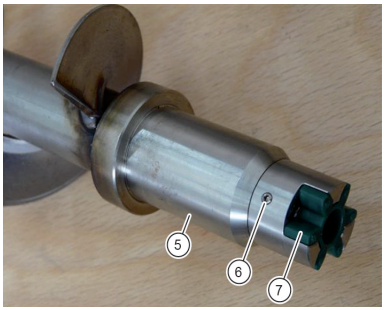
10. Clean motor shaft and contact surface apply thin coat of conventional copper paste.

11. Fit parts in reverse order.

5 Maintenance and cleaning

Remove and fit the screw



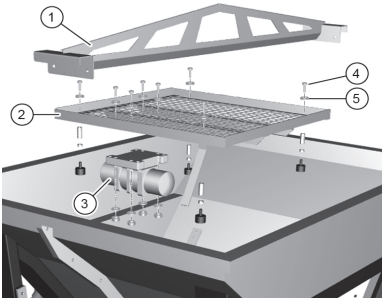


1. Disconnect the power supply.
2. Undo twelve screws **(1)** and nuts **(2)**.
3. Remove the cover **(4)** with flange bearing **(3)**.
4. Carefully take the screw **(5)** out of the spreader.
5. Undo the pin screw **(6)** and take the claw coupling **(7)** off the screw **(5)**.
6. Install the parts in reverse order.

Note for installation:
When installing the screw ensured that the claw coupling engages correctly. Do not use force to install the screw.

5 Maintenance and cleaning

Remove and fit the vibrator



1. Disconnect the power supply.
2. Remove the side member **(1)**.
3. Disconnect the electrical cable at the terminal box and make a note of the cable route for later installation.
4. Undo four screws **(4)** and remove them with the spring rings **(5)**.
5. Tip the vibration screen **(2)**.
6. Secure the vibrator **(3)** to prevent it falling out, undo the screws and remove them with the spring rings.
7. Remove the vibrator **(3)**.
8. Install the parts in reverse order.

5 Maintenance and cleaning

5.4 Transport and storage

Caution!

Risk of equipment damage

Place the device on a clean, dry surface with an adequate load capacity. Completely empty the device before periods of lengthy inactivity.

The tank can be almost fully emptied by means of the residual discharge. For information on residual discharge, see chapter 3.10 Residual discharge.

Clean the spreader, see chapter 5.1 Cleaning.

Raise the spreading device and secure it with both locking bolts and spring-loaded pins.

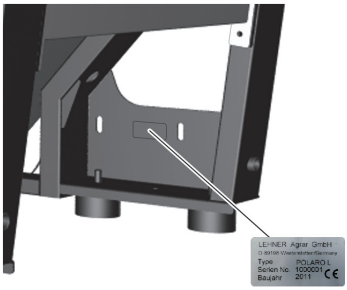
We recommend that you use the special pallet to transport the spreader to protect it from being damaged.

6 Appendix

6.1 EC declaration of conformity

6 Appendix

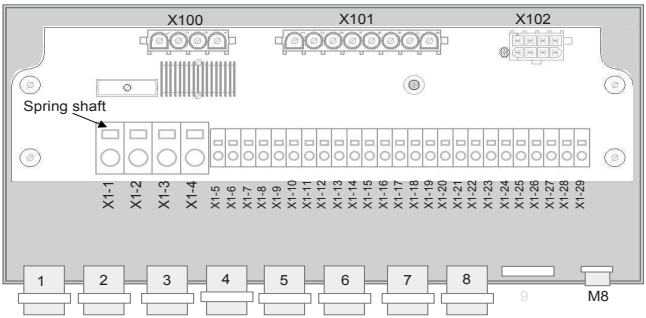
6.2 Identification



The serial number of the spreader is applied to the rear of the frame. Note the serial number in this operating manual so that it is readily available for inquiries.

6 Appendix

6.3 Distribution box reference list



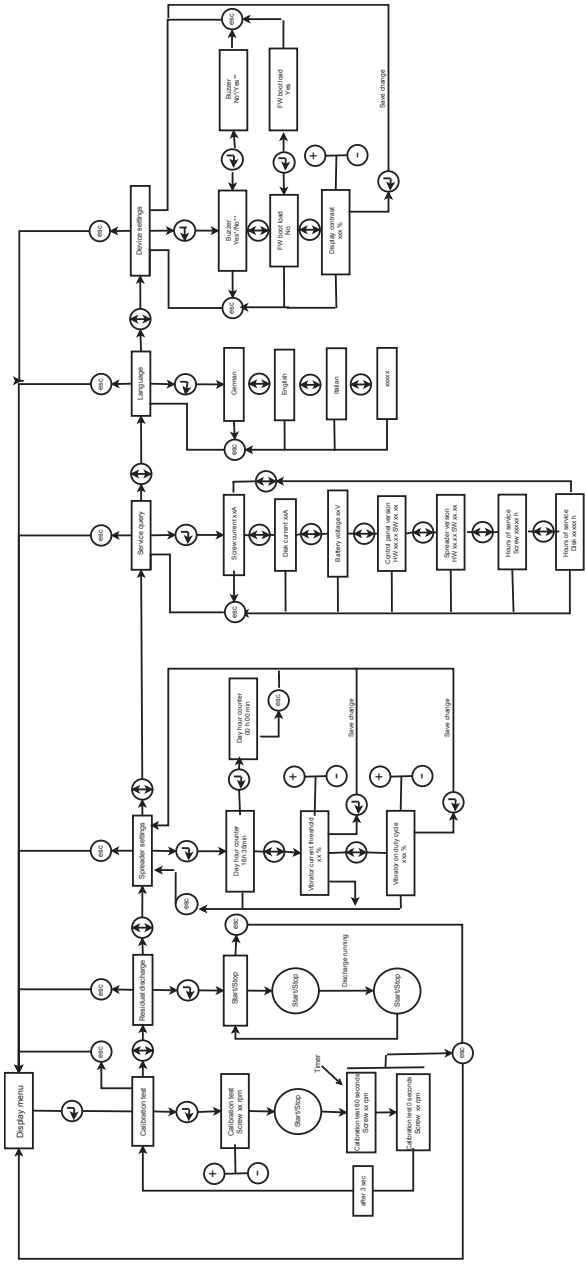
Contact number	Signal name	Recommended screw connection No.
X1-1	Battery supply cable +12V	1
X1-2	Battery supply cable, ground	1
X1-3	Vibrator	2
X1-4	Vibrator +	2
X1-5	Screw motor +	3
X1-6	Screw motor -	3
X1-7	Disk motor +	4
X1-8	Disk motor -	4
X1-9	Working late +	5
X1-10	Working late -	5
X1-11	Warning light +	6
X1-12	Warning light -	6
X1-13	Reserve OUT1 +.	
X1-14	Reserve OUT1 -	
X1-15	Emergency Stop +	7
X1-16	Emergency Stop -	7
X1-17	Positive supply to spreader proximity switch	8
X1-18	Spreader proximity switch signal	8
X1-19	Spreader proximity switch GND	8
X1-20	Reserve	
X1-21	Reserve	
X1-22	Reserve	
X1-23	Reserve	
X1-24	Reserve	
X1-25	Reserve	
X1-26	Controller supply +12V	M8
X1-27	RS485 A	M8
X1-28	RS485 B	M8
X1-29	Controller supply ground	M8

	Already cabled on delivery
	Not required or not fitted

Connections X100, X101 and X102 connect the electronic components in the power section in the cover to the distributor board on the base of the housing.
The plug geometry means that the plugs cannot be mixed up.

6 Appendix

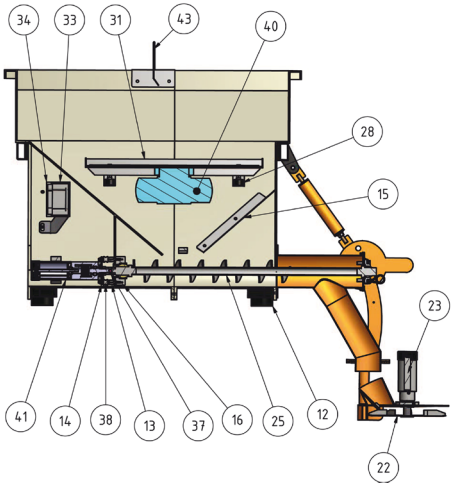
6.4 Control panel diagram



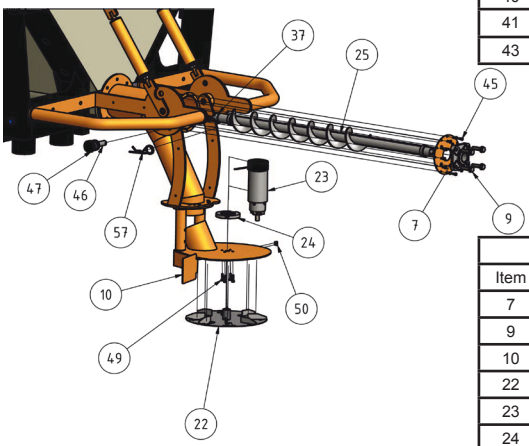
LEHNER POLARO® L/XL error diagnostic		Last updated: 10/2011
The following information should help you resolve minor problems yourself. You are welcome to call us as needed. We are glad to help.		
Problem	Cause	Solution
No display	+ and - poles interchanged, fuses defective, plug connection not made.	Check polarity, swap if necessary, replace fuses if necessary, check plug connections.
Spreader stops	Emergency Stop switch pressed.	Before switching on-again ensure that the cause of the Emergency Stop has been rectified. Release Emergency Stop switch.
Screw conveyor not turning. "Spreader stopped" "Screw blocked"	Lumpy or frozen material in tank, material too compacted, foreign bodies in screw area, fall tube blocked. Claw coupling defective, motor defective.	Free the shaft with a 27 mm wrench at the front shaft end. Clear the tank and shred and/or remove foreign bodies or lumpy material. Check fall tube and clear if necessary. Call service technician.
Screw conveyor does not reach set speed.	Excess load, plain bearing or motor bearing not running smoothly	Increase the speed to maximum for approx. 10 seconds. Check that the motor turns easily, replace motor if necessary, check battery voltage, lubricate at regular intervals (see chapter 5.2 Maintenance).
"Spreader stopped" "No material flow"	Bridge formation due to spreading material being highly frozen or too compacted. Incorrect vibration time or vibration duration. Screw not turning.	Loosen spreading material using a wooden stick (broom handle)!!! Refer to the safety instructions!!! Change the vibration time and/or vibration duration (see chapter 4).
"Spreading disk does not reach set speed. Spreading disk not turning. "Disk error"	Excess load, motor bearing not running smoothly, blockage caused by material, motor defective.	Clear disk; increase the speed to maximum for approx. 10 seconds. Caution!! Check the surrounding area before you do this. The spreading width will be increased as a result! Check that the motor turns easily, replace motor if necessary, check battery voltage, check cabling, lubricate at regular intervals (see chapter 5.2 Maintenance).
Vibrator does not vibrate	Vibration duration set to 0 seconds, cable break, motor defective.	Change vibration duration (factory setting 4 seconds) on control panel, call service technician.
"Residual discharge“ or "Calibration test" "Disk down" although the disk has been swung upwards.	Sensor defective, sensor cable broken, metallic object in front of the sensor.	Remove object, call service technician.

6 Appendix

6.6 Spare parts list



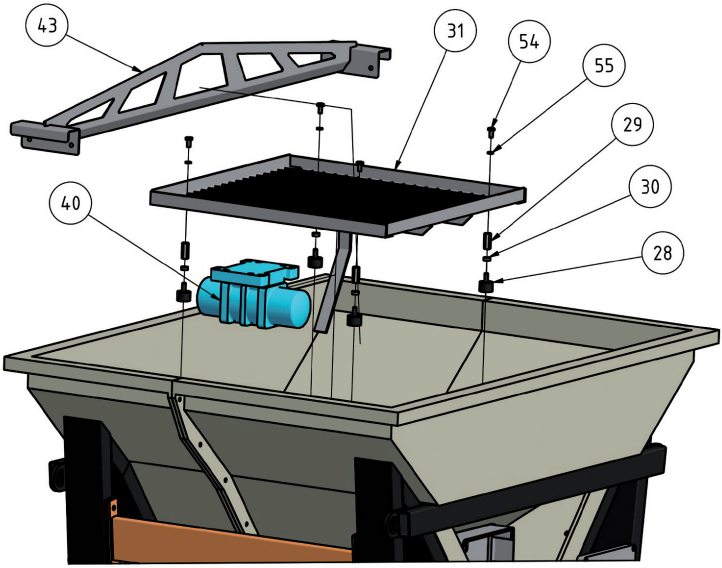
Parts list		
Item	Number	Component number
1	1	81176 Rear module, discharge side
2	1	81175 Front module, motor side, GRP
7	1	81260 Flange bearing EFSM-30
12	8	81201 Vibration element, type D, 75x55, M12
13	4	81242 Stud bolt, screw conveyor
14	1	81223-1 Motor flange, screw conveyor
15	1	81252 Pressure relief plate
16	1	81261 Articulated bearing KGLM-30
22	1	81250 Spreading disk L/XL
23	1	9416355380_IAM_000 Drive motor POLARO
25	1	81316 Screw conveyor L
28	4	81200 Rubber-metal buffer type A vibrator quality
31	1	81238 Vibrator screen_L
33	1	81287-1 Terminal box, power section
34	1	81287-2 Power section cover
37	1	81204 Claw coupling, Servomax
38	4	81302 Rubber-metal buffer AK 20x15
40	1	81199 External vibrator
41	1	81157 Drive motor, screw conveyor
43	1	81319 Cross bar L/XL tank



Parts list		
Item	Number	Component number
7	1	81260 Flange bearing EFSM-30_0
9	4	Machine screw- M10 x 40
10	1	81221-3 Deflector plate L/XL
22	1	81250 Spreading disk L/XL
23	1	80141 Drive motor POLARO
24	1	81220 Space O-ring with lubricating groove
25	1	81316 Screw conveyor L
37	1	81204 Claw coupling, Servomax
45	12	Cheese head screw - M5 x 12
46	2	81215 Locking bolt
47	2	81020 Star handle screws M6x14
49	4	Cheese head screw - M5 x 20
50	2	Pin screw BS 4168 - M6 x 10
57	2	81348 Spring-loaded plug with double bend

6 Appendix

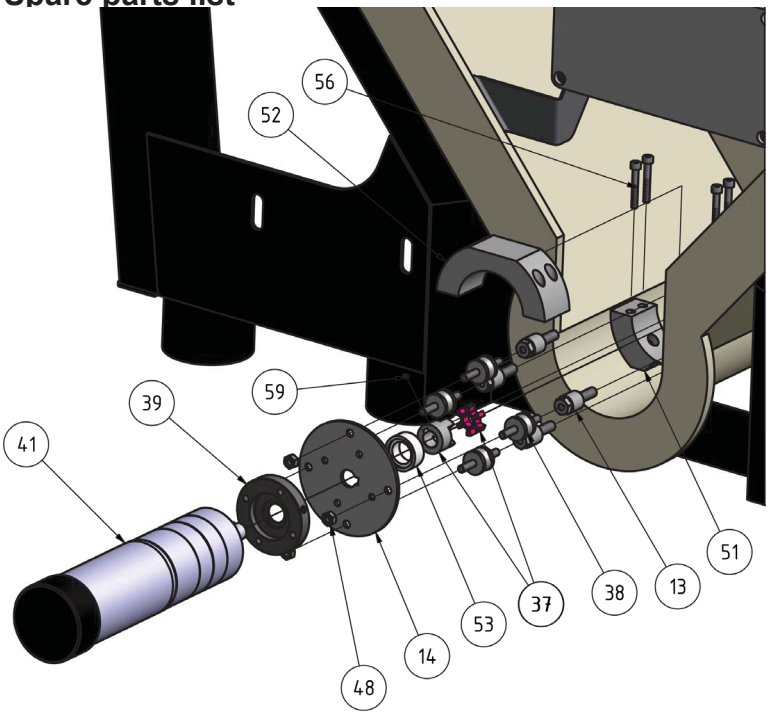
6.6 Spare parts list



Parts list		
Item	Number	Component number
28	4	81200 Rubber-metal buffer type A vibrator quality
29	4	Long nut M8x35
30	4	81351 Spacer, vibrator PA
31	1	81238 Vibrator screen_L
40	1	81199 External vibrator
43	1	81319 Cross bar XXL tank
54	4	Hex screw - M8 x 16-8.8
55	4	Spring ring DIN 7980 - 8

6 Appendix

6.6 Spare parts list



Parts list		
Item	Number	Component number
13	4	81242 Stud bolt, screw conveyor
14	1	81223-1 Motor flange, screw conveyor
37	1	81204 Claw coupling, Servomax
38	4	81302 Rubber-metal buffer AK 20x15
39	1	80453 Motor cover, Saline + screw conveyor
41	1	81157 Drive motor, screw conveyor
48	6	Nut - M6
51	1	81247 Support ring, screw drive with groove
52	1	81247 Support ring, screw drive upper shell
53	1	81237 Grease chamber
56	4	Cheese head screw - M5 x 35 8.8
58	4	Cheese head screw - M5 x 25 8.8
59	1	Pin screw BS 4168 - M3 x 4

6 Appendix

6.6 Spare parts list

Item	Number	Component number
07	1	81260 Flange bearing EFSM-30_0
09	4	Machine screw- M10 x 40
10	1	81221-3 Deflector plate L/XL
12	8	81201 Vibration element, type D, 75x55, M12
13	4	81242 Stud bolt, screw conveyor
14	1	81223-1 Motor flange, screw conveyor
15	1	81252 Pressure relief plate
16	1	81261 Articulated bearing KGLM-30
22	1	81250 Spreading disk L/XL
23	1	80141 Drive motor POLARO
24	1	81220 Space O-ring with lubricating groove
25	1	81316 Screw conveyor L
25	1	81317 Screw conveyor XL
28	4	81200 Rubber-metal buffer type A vibrator quality
29	4	Long nut M8x35
30	4	81351 Spacer, vibrator PA
31	1	81238 Vibrator screen_L
33	1	81287-1 Terminal box, power section
34	1	81287-2 Power section cover
37	1	81204 Claw coupling, Servomax
38	4	81302 Rubber-metal buffer AK 20x15
39	1	80453 Motor cover, Saline + screw conveyor
40	1	81199 External vibrator
41	1	81157 Drive motor, screw conveyor
43	1	81319 Cross bar XXL tank
45	12	Cheese head screw - M5 x 12
46	2	81215 Locking bolt
48	6	Nut - M6
49	4	Cheese head screw - M5 x 20
50	2	Pin screw BS 4168 - M6 x 10
51	1	81247 Support ring, screw drive with groove
52	1	81247 Support ring, screw drive upper shell
53	1	81237 Grease chamber
54	4	Hex screw - M8 x 16-8.8
55	4	Spring ring DIN 7980 - 8
56	4	Cheese head screw - M5 x 35 8.8
57	2	81348 Spring-loaded plug with double bend
58	4	Cheese head screw - M5 x 25 8.8
59	1	Pin screw BS 4168 - M3 x 4