

# Operating and Maintenance Manual for AKKU 3000 type spray line marker



## CONGRATULATIONS ON CHOOSING THIS SPRAY LINE MARKER

Dear customer,

Please take your time and read carefully through this entire manual. You must make yourself familiar with the details as well as with the safe handling of your device before commissioning. Always keep this manual near the line marker so that it may be used as reference in case there are any questions.

Images are symbolic photos and not necessarily consistent with the current version. Technical changes, errors and misprints are reserved. The content of this manual has been checked for its consistency with the device described. Should there be doubts regarding the use, properties or handling with the device, please contact us prior to commissioning.

**Please keep this Operating Manual near the device and  
read it before the start of the work!**

**If you do not comply with this Operating Manual, we will  
have to reject any potential warranty claim.**

**We shall not assume any liability for the  
subsequent damages resulting from the non-  
compliance!**

**Please check the delivered goods for  
defects and completeness upon receipt.**



Type:  
Manufacturing and distribution:  
Name of the Managing Director:

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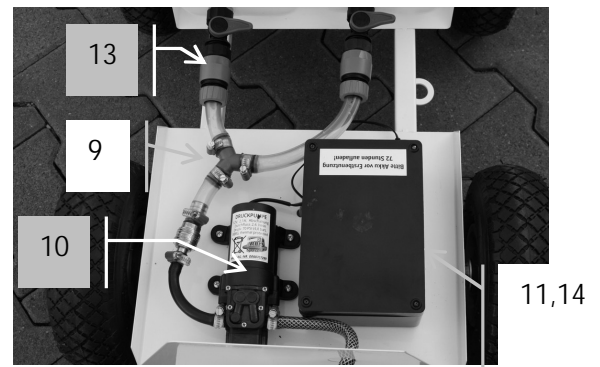
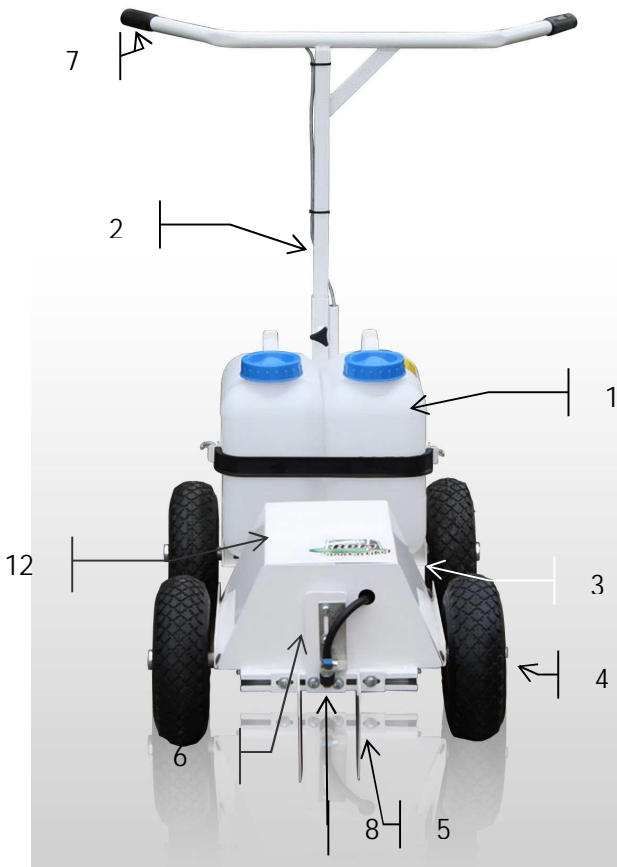
## Content

- |   |                          |
|---|--------------------------|
| 1 x AKKU 3000 type Spray Line Marker                                    | 1 x guide rail           |
| 1 x linear sheets (2 pcs)   | 1 x dirt protecting hood |
| 1 x electric pump, AKKU charging cable for battery (electric batteries) |                          |
| 1 x Operating Manual  |                          |

## Description of devices:

Spray line marker with electric pump system. The suction or feeding through for the spray line marker of AKKU 3000 type is generated by an electric pump and equipped with an automatic shutdown when the operating lever is actuated. Electricity is generated via an electric pump (12V, 2.1A) and transports a volume of 2.6 l/min. The pump pressure is 4.8 bar. The pump can be controlled via an ON/OFF switch on the guide rail. The

spraying system is designed to be visible from the front. The line with can be set within a range from 50 to 120 mm. The wagon has 2 plastic water container with 13 liter capacity with its own regulating or outlet shut-off valve and can be easily removed from the rack in order to be emptied or cleaned.



- |                          |         |
|--------------------------|---------|
| (1) water tank (2 piece) | 60-4011 |
| (2) Guide rail           | 60-4012 |
| (3) Tubular steel frame  | 60-4013 |
| (4) Bogie wheels         | 60-4016 |
| (5) Linear sheet, 1 set  | 60-4017 |
| (6) Valve Holder         | 60-4047 |
| (7) Rubber handles       | 60-7064 |
| (8) Fan nozzle, cpl.     | 60-7016 |
| (9) Pressure tube, cpl.  | 60-3023 |
| (10) Electric pump       | 60-3020 |

- |                                   |         |
|-----------------------------------|---------|
| (11) Battery (not in the Picture) | 60-3021 |
| (12) Dirt protecting hood         | 60-4018 |
| (13) Shut-off ball valves         | 60-1023 |
| (14) Battery-Holder               | 60-3023 |

**Use:**

The spray line marker of AKKU 3000 type is only suitable for spraying the paint on areas covered with turf. It may only be used in the outdoor environment.



**Improper use may result in serious injury and damages to the environment. !**



**Use only the spare parts and accessories from the manufacturer, otherwise we will not be liable!**

Use only genuine turf marking paints **without solvents**, as they have been offered by various paint manufacturers in the meantime. These paints are characterised by high opacity and luminosity as well as short drying time. They are environmentally friendly because they contain no harmful additives that destroy or inhibit the growth of the grass.

**Not suitable for:**

- Flammable liquids and caustic or ammonia-containing substances
- Hydrogen peroxide and similar oxygen-releasing agents
- Solvents and solvent-containing liquids
- Viscous, sticky or residue forming fluids (fats)
- Use in food handling sectors

**Assembly instructions and commissioning:**

After having unpacked the device, first make sure that the basic equipment is fully provided. It consists of the **AKKU 3000 spray line marker**, the **linear sheets**, the **paint filling funnel with sifter**, the **dirt protecting hood**, the **electric pump with battery** as well as the **charging cable**.

First of all, after this check, insert the guide rail (Side 1, Ill. 2) into the square frame and secure it at the preferred height using the wing bolts. Check whether the ON/OFF switch (2) is positioned on the guide rail. The electric pump and battery are already installed so that no further work is necessary. The battery needs to be charged. Loosen the tension belt of the container and remove the water canister. Now open the lid on the water tank, fill it with water and seal it again using the screw cap and put the canister back to the place provided for it.

Now the entire canister with the turf marker paint is available for your work. The shut-off ball valves (13) can remain locked until you bring the device to the site where it is to be used. Open the shut-off ball valve once on the site and press the switch on the guide rail.



2) ON/OFF switch

**ⓘ Please open only the shut-off ball valve on the water canister for the initial spray test!**

The pressure switch integrated in the pump is intended to be used as a safety device for emergency shutdown, so please always switch off the pump using the ON/OFF switch on the guide rail during any longer idling. A possible dry run may not be longer than 5 minutes.

**ⓘ Please refer to the operating instructions listed below to find the explanation about the use and recharging of the pump and battery!**

**ⓘ Charge the battery at least 72 hours before the first use of the pump!**

**ⓘ Not completely discharged the battery**

**ⓘ Charge the battery at least 12 hours**

### Regulation of the mixing ratio:

You can influence the mixing ratio of the paint and water by controlling the shut-off ball valve (15). When the shut-off ball valve is wide open, the same volume will be sucked in from both canisters and mixed together!

**i** The less water is sucked in, the thicker the end paint for marking will be!

### Shutdown and cleaning or maintenance of the device:

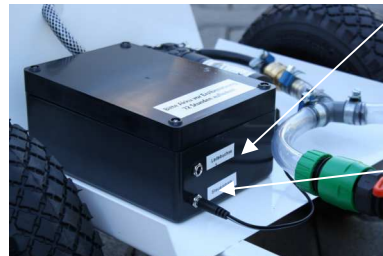
After the work has been finished:

1. Switch the ON/OFF switch on the guide rail to OFF.
2. Disconnect the suction tube from the marking paint canister. This is to be rinsed under running water until it is clean!
3. Switch the ON/OFF switch on the guide rail to ON and let the residual water be released from the water canister only until the clean water spurts out from the nozzle (if the water canister is empty, please refill it with approximately one liter of water)!

***This is important so that no paint remains inside the tubes, the nozzle and the pump, and clogs them!***

4. Once again, switch the ON/OFF switch on the guide rail to OFF.
5. Unscrew the fan nozzles and rinse them with water. If the paint has already formed sediments, please leave the nozzles in a water container over night and let it soak.
6. In case of low performance, please load using the attached charging cable

- Unplug the Control current (Fig. 3)
- Insert the plug of the charging cable in Charging socket
- Charge the battery using the provided charging cable
- green pilot light is illuminated



3)  
charging  
socket

4) Control  
current

7. Disconnect the quick connector from the water canister, remove and empty the water canister, seal with the screw cap and mount it again.
8. If there are still **some paint residuals** in the paint canister, please close it with the original screw plug and **NOT** with the provided screw cap. Due to the suction tube, it is not airtight and the turf marker paint may dry out!

**i** The full functionality of the wagon will be preserved by the time of the next use if these cleaning instructions are observed!!

### Causes of malfunction

Pump does not build up pressure

- Clogged: Loosen the tube in front of the valve holder using the tube clamp and let it hang downwards, and start the pump. Should the paint be fed through, the fan nozzle is clogged. Remove and clean the fan nozzle!
- there may also be clogs in the water canister (or something similar) which prevent the suction

## **Application and Operating Manual for the Electric Pump**

### **Preparation / Safety instructions:**

All preparations and maintenance works may only be performed when the engine is not running. The engine with all the poles has to be disconnected from the power supply before the beginning of work or maintenance. Make sure that unintentional switching on is not possible and if necessary, disconnect the electric clutch on the guide rail. Please make sure that the tubes and cables are not exposed to much stress. Suction and pressure tube should have as short route as possible.

- During operation, the ambient temperature may not drop below 0°C or exceed +40°C.
- The pump may only be used in the horizontal position. Modification to the pump as well as a modification to the pump mounting is not allowed. Any safety instruction and warranty claims may lapse if that is done and the functionality of the spray line marker may be compromised.
- Foreign bodies can clog the membranes or valves. This will reduce the pump performance. In order to prevent this, the water container, the paint container and the suction tube have to be regularly cleansed after each use and checked for foreign bodies, lumps or similar irregularities!



### **Electrical connection & wiring**

Type:	2/3 piston diaphragm pump	Engine type:	Electric motor
Dry run:	up to max. 5 min.	Current consumption:	0.5 A max. 10.5 A
Pump pressure:	max. 4.8 bar	Motor housing:	Aluminium
Output:	max. 2.6 l/min.	Pump body:	Nylon66 (30% GFRP)
Suction lift:	pre-filled 5 m	Membrane:	TPU, EPDM; NBR
Pressure switch:	Triggering pressure up to 8.6 bar	ambient temperature	0 to 40° C
Liquid temp.:	+1 to +60 °	Sound intensity:	about 39 dBA at 1 m
Rotation speed:	690 rev/min.		

**Attention: The values of the pressure altitude and flow output are maximum values. They can hardly be reached in this practice. Correct calculation based on the pump characteristic curve. Flow pressure and quantity depend on each other. The closer the flow rate is, the higher the pressure is**

### **Operation**

- If vibrations occur during the operation, or the operation is irregular or if excessive noise is generated, or if the pump does not work, immediately shut down the pump in order to prevent damages. The shut-off ball valve on the water tank has to be opened and the suction tube has to be submerged in the turf marker paint to be pumped.

#### **An event. Dry running of the pump may not last longer than 5 minutes!**

- The liquid may not contain any foreign bodies. If so, they must be eliminated.
- Prior to EVERY commissioning, check the tightness of the connections of the pump in general, the electrical cable and check if all housing, pump and device screws are secured tightly.
- Make sure that the pump is always protected from contamination with the provided dirt protecting hood. Do not use the device when it rains or snows!

### **Storage**

- All commissioning, standstill and maintenance works have to be carried out when the machine is switched off and when it is disconnected from the power supply.
- Disconnect the motor with all the poles from the power source.
- Make sure that the voltage is not present!
- Check again whether the tubes or the interior of the pump is free from the paint and unplug the suction tubes.
- The pump/battery has to be stored clean, protected from dust and frost.

### **Cleaning and maintenance**

Regular maintenance extends the life expectancy of the pump. They will thank you with a long trouble-free operation.

Use the original spare parts only. Maintenance and repair have to be carried out by the manufacturer only. Otherwise, the warranty will be void.

Damages that occur as a result of improper or neglected maintenance are not covered by the warranty.

Malfunctions which can be resolved by the user belong to the normal maintenance but not to the warranty.

## Precaution



Before the beginning of any work, the pump has to be cooled down to the ambient temperature, the pump has to be separated with all poles from the power supply and accidental switching on has to be prevented.



Declaration of Conformity:

We hereby declare that the pump delivered by us is compliant with the essential requirements of the following directives: 98/37/EEC

## Application and operating instructions of the battery

The battery serves as the power supply for the electric pump of the spray line marker and may only be used for it. The battery may not be used as a source of energy for any other device, due to the risk of physical injury. Compliance with the above listed operating instructions is a prerequisite for the proper use of the battery!



### Electrical Safety



#### **FIRE HAZARD! SHORT CIRCUIT!**

→ Do not bridge the battery contacts with metal parts.

Inspect before each use! Carry out a visual check of the battery before each use

→ Never charge the battery in the proximity of acids or flammable materials.

Only the charging cable supplied may be used as a charging cable. Use of any other charging cable may destroy the battery or even cause a fire!

→ Explosion Hazard! Keep the battery away from heat and fire! Do not place it on radiators or expose to strong solar radiation for any longer periods of time!

Use and charge the battery only at an ambient temperature ranging between 5°C and 45°C. Let the battery cool down after being heavily used. A too hot battery may not be charged!

The charging cable has to be regularly checked for signs of damage or aging (brittleness) and may only be used when in perfect condition.

→ Overvoltage / AC voltage / voltage fluctuations destroy the battery and the charging cable

Ensure the correct mains voltage. Protect against surges / lightnings!

### Storage



Battery may never be stored at temperatures higher than 45°C or exposed to prolonged sunlight. Ideally, the battery should be stored at temperatures below 25°C, which reduces self-discharging to a minimum rate. **Never store the battery when it is connected to the charging cable!** Keep out of reach of children.

**Always store the battery on places which are protected from static electricity and frost!**

### Maintenance



Make sure that the surfaces of the battery as well as the contacts of the battery always remain clean and dry, before you start using the battery or the charging cable. Clean the battery with a soft, dry cloth when dirty and never under running water.

### Disposal



Once their operating life expires, the electric pump and the battery may not be disposed of with normal household waste. Ask the municipal waste disposal centre to carry out the proper disposal.