

User Manual

100proGreen Master Lawn Spiker Mammoth Professional Tow-Behind Lawn Aeration Roller



Obsah

User Manual	1
100proGreen Master Lawn Spiker Mammoth.....	1
Professional Tow-Behind Lawn Aeration Roller.....	1
1. Machine Overview	4
1.1 Purpose and Intended Use.....	4
1.2 Machine Advantages	4
1.3 Benefits of Use.....	4
1.4 100proGreen Brand Philosophy.....	5
2. Safety Instructions	5
2.1 General Safety Guidelines	5
2.2 Safety When Attaching to a Tractor or Towing Vehicle.....	5
2.3 Operational Safety	6
2.4 Safety During Maintenance and Storage	7
2.5 Recommendations for Safe Operation.....	7
3. Technical Specifications	7
3.1 Basic Parameters.....	7
3.2 Recommended Operating Conditions	7
4. Transport, Handling, and Storage	8
4.1 Delivery and Inspection Upon Receipt.....	8
4.2 Handling at Delivery	8
4.3 Transport	9
4.4 In-Season Storage	9
4.5 Off-Season Storage	9
5. Operation and Attachment.....	10
5.1 Attaching to the Towing Vehicle	10
5.2 Preparing the Machine for Work	10
5.3 Safety Precautions During Operation.....	11
5.4 Ending the Work	11
6. Maintenance, Cleaning, Spike Replacement, and Bearing Lubrication.....	12
6.1 Safety Guidelines for Maintenance	12
6.2 Routine Maintenance.....	12
6.3 Lubrication Points.....	12
6.4 Spike Maintenance.....	13

.....	13
6.5 <i>Post-Maintenance Inspection</i>	13
6.6 <i>End-of-Season Maintenance</i>	13
6.7 <i>Service Procedure – Spike Replacement and Lubrication of Central Segment Bearings</i>	14
6.9 <i>Procedure for Removing the Ballast Weights</i>	15
7. Troubleshooting	16
7.1 <i>Common Problems and Solutions</i>	16
7.2 <i>Procedure When a Problem Is Detected</i>	17
7.3 <i>Recommendations for Preventing Malfunctions</i>	17
8. Warranty and Service Information	17
8.1 <i>Warranty Conditions</i>	17
9. Final Provisions	17
10. Contact Information	18

1. Machine Overview

Thank you for choosing the 100proGreen Master Lawn Spiker Mammoth – a professional tow-behind aeration roller designed for large turf areas such as football and golf courses, parks, public green spaces, and extensive private lawns starting from approximately 500 m².

This robust and precisely engineered machine is built to provide highly effective soil aeration, helping you achieve a healthy, dense, and resilient lawn even under heavy use.

Aeration improves the penetration of water, oxygen, and nutrients into the soil, promoting strong root development and enhancing the overall vitality and longevity of the turf.

1.1 Purpose and Intended Use

The Master Lawn Spiker Mammoth is designed for mechanical aeration of turf surfaces using six independent spiking segments that precisely follow the contours of the terrain. This ensures effective aeration without damaging the turf, even on uneven ground.

The machine is suitable for:

- Professional sports and recreational facilities
- Public parks and municipal green spaces
- Larger private properties and gardens

Thanks to its versatile towing system, the roller can be easily attached to garden tractors, golf carts, or other small utility vehicles equipped with standard towing hitches.

1.2 Machine Advantages

- Six independent segments allow precise ground contour following.
- A robust, powder-coated steel frame ensures long service life and excellent corrosion resistance.
- A total of 384 stainless-steel spikes provide accurate and gentle soil penetration.
- Removable ballast weights (+80 kg) enable adjustment of aeration depth and intensity.
- Easy attachment to towing equipment and straightforward operation.
- Industrial-grade bearings ensure smooth rotation even during frequent use.
- Fast, low-maintenance servicing thanks to a clear, durable construction made from high-quality materials.

1.3 Benefits of Use

Regular use of the Master Lawn Spiker Mammoth:

- improves water infiltration and nutrient availability,
- reduces soil compaction and promotes root growth,
- increases the lawn's resistance to drought and heavy traffic,
- extends the lifespan and overall visual quality of the turf surface.

1.4 100proGreen Brand Philosophy

The 100proGreen brand is built on professional, hands-on experience from real landscaping and sports turf environments. All machines are tested under real working conditions to ensure maximum reliability and performance.

The Master Lawn Spiker Mammoth represents the pinnacle of this philosophy – a practical, robust, and precisely engineered solution for anyone seeking a flawless lawn without compromise.

2. Safety Instructions

Safe operation of the 100proGreen Master Lawn Spiker Mammoth is essential for protecting the operator, the towing vehicle, and the machine itself. Before using the equipment for the first time, carefully read all instructions below and follow them during every use and maintenance procedure.

2.1 General Safety Guidelines

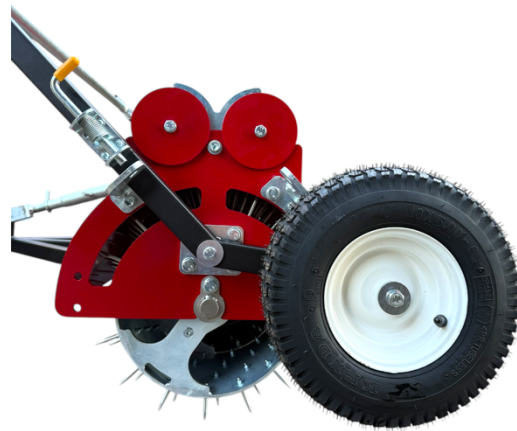
- The machine may be operated only by trained and competent persons familiar with this manual.
- Before each use, inspect the technical condition of the machine, especially the mounting of the segments, weights, spikes, and towing components.
- Do not exceed the recommended operating speed (maximum 10 km/h on level ground, maximum 5 km/h when turning).
- Keep hands, feet, and clothing away from moving parts at all times.
- Do not use the machine for any purpose other than that for which it is intended.

2.2 Safety When Attaching to a Tractor or Towing Vehicle

- Perform attachment only on a flat, firm, and stable surface.
- Secure the towing vehicle to prevent movement.
- Use only compatible towing hitches.
- After attachment, check that the drawbar is properly secured and that the tensioning rod (adjustment screw) is correctly set so the machine follows the terrain without excessive stress on the hitch. The ballast weights must remain in a horizontal position.



Obrázek 1. Vodorovné nastavení polohy závaží



Obrázek 2. Správně nastavená pracovní poloha

2.3 Operational Safety

- Before starting work, remove stones, branches, wires, and any other obstacles from the working area.
- Do not make sharp turns; doing so may damage both the turf and the machine.
- Do not perform maintenance or adjustments until all moving parts have come to a complete stop.
- When transporting the machine outside the working area, always lift the working segments using the transport wheels.
- Do not overload the machine; use only the specified ballast weights.



Obrázek 3. Přeprava na transportních kolech

2.4 Safety During Maintenance and Storage

- Always secure the machine against movement before performing any service or cleaning.
- Do not use high-pressure cleaners directly on bearings or threaded components.
- After each use, remove soil and grass residues from the spikes.
- Clean the machine thoroughly before long-term storage.
- Store in a dry and well-ventilated area, out of reach of children.

2.5 Recommendations for Safe Operation

- Wear sturdy footwear and work gloves.
- Do not operate the machine during heavy rain or on waterlogged ground.
- After each working shift, perform a visual inspection of all spikes and segments.
- If unusual noise or vibration occurs, stop work immediately and inspect the machine.

3. Technical Specifications

The following technical parameters describe the construction, dimensions, and essential features of the 100proGreen Master Lawn Spiker Mammoth. These specifications are mandatory for correct assembly, operation, and maintenance.

3.1 Basic Parameters

- Equipment type: Tow-behind lawn aeration roller
- Intended use: Professional maintenance and regeneration of turf areas – sports fields, golf courses, large gardens, etc.
- Working width: 150 cm
- Total width (with transport wheels): 180 cm
- Construction: Six independent spiking segments mounted on a shaft; robust steel chassis with powder coating; stainless-steel components in high-stress areas
- Rollers: Segment design, galvanically zinc-coated
- Spikes: 384 replaceable stainless-steel spikes, length 50 mm, diameter 7 mm
- Optional: Cross spikes, length 50 mm, diameter 7 mm
- Bearings: Each segment equipped with high-quality stainless-steel bearings
- Transport wheels: Pneumatic wheels 13×5.00-6
- Weights: 2 removable weights adding +80 kg; total machine weight approx. 255 kg (with weights)
- Drawbar: Universal system suitable for standard towing hitches
- Adjustment: Tensioning rod (turnbuckle) with clevis eyes for precise leveling and pressure control
- Surface treatment: Powder coating of steel components, galvanic zinc coating of rollers, stainless-steel elements
- Color: RAL 3003 – Ruby Red

3.2 Recommended Operating Conditions

- Driving speed: Max. 10 km/h on level ground; max. 5 km/h when turning or maneuvering
- Suitable soil types: Sandy-loam, loam, and moderately clay soils
- Unsuitable conditions: Waterlogged, rocky, or frozen surfaces

4. Transport, Handling, and Storage

Proper handling and transport of the 100proGreen Master Lawn Spiker Mammoth are essential for operator safety and long service life of the machine. Follow the instructions below during delivery, relocation, and storage.

4.1 Delivery and Inspection Upon Receipt

- Upon delivery, check the machine for completeness and damage.
- The machine is delivered fully assembled on a pallet.
- The package includes: Main frame with segments, drawbar with tensioning rod (turnbuckle), 2 removable weights, and transport wheels.

4.2 Handling at Delivery

- Work with two persons and an appropriate lifting device (manual hoist, pallet truck, forklift, or telehandler).
- Handle the machine only by its solid frame components—never by the spikes, segments, or bearings.
- For lifting, use a strap placed through both securing steel plates designed for handling and stabilizing the transport wheels.
- Avoid impacts and sudden movements.
- The machine is fixed to the pallet with wooden blocks; unscrew and remove these blocks. After releasing, lift the machine onto the transport wheels and secure with the locking pin. To lift the machine, brace yourself and push the steel lever upwards—this releases the transport wheels, allowing them to be locked into the steel plate.
- Use the transport wheels for relocation and keep the working segments raised.
- Never place the machine with spikes facing downward on a hard surface; always use wooden boards.



Obrázek 4. zdvihací plotny se zavlečenou kurtou

4.3 Transport

- Transport the machine only in a horizontal position with the transport wheels securely locked.
- Before moving the machine, check the following: correct attachment of the weights, secure fastening of the shaft and segments, and proper locking of the drawbar.
- When transporting the machine on a trailer or vehicle, use securing straps and ensure the machine cannot shift during transport.

4.4 In-Season Storage

- After each use, clean the machine thoroughly to remove grass, soil, and moisture.
- Allow the machine to dry completely and store it under a shelter.

4.5 Off-Season Storage

- Before winter storage, perform complete cleaning, inspection, and preservation of all metal parts.
- Apply a thin layer of oil or protective lubricant to the spikes and bearings.
- Recommended storage environment: dry, well-ventilated, with relative humidity not exceeding 60%.
- Store the machine on a flat surface with a wooden underlay and the spikes lowered onto the wooden board. Keep the transport wheels raised in working position.

5. Operation and Attachment

Proper operation of the machine is essential for achieving optimal results and ensuring long service life. Before each use, inspect the technical condition of the machine and follow the steps below.

5.1 Attaching to the Towing Vehicle

- Perform attachment on a flat, firm, and stable surface.
- Secure the towing vehicle to prevent movement.
- Connect the machine to the towing hitch using the drawbar coupling.
- Use the tensioning rod (turnbuckle) to adjust the machine to a level position; the roller and the weights must be horizontal.
- Check all connections and spikes.
- Lift the machine onto the transport wheels and move it to the working area.

5.2 Preparing the Machine for Work

- Remove stones, branches, wires, and any other obstacles from the working area.
- Position the machine on the working surface and secure the towing vehicle against movement.
- Check the towing connection and ensure the weights are positioned horizontally.
- Release the transport wheel pins and lower the spikes to the ground using the steel lever.
- Ensure the transport wheels are securely locked in the raised position.
- Start moving slowly.
- Maintain a consistent driving speed: maximum 10 km/h on level ground; maximum 5 km/h when turning or maneuvering.
- Operate in straight passes with slight overlap to ensure uniform aeration.
- Avoid sharp turns and high-speed rotations; this may damage the turf or the spikes.
- Monitor the roller during work; all segments must rotate smoothly without vibration.

**Tip: If the soil is too soft, remove the ballast weights.
Proper adjustment is indicated by a uniform penetration depth
across the entire working width of the roller.**



Obrázek 5. správně nastavený stroj v pracovní poloze

5.3 Safety Precautions During Operation

- Never reach toward moving parts of the machine.
- Do not operate the machine during heavy rain or on waterlogged soil.
- If unusual noises or vibrations occur, stop immediately and identify the cause.

5.4 Ending the Work

- Raise the working segments using the transport wheels.
- Clean the spikes to remove soil and grass residues.
- Check whether any spikes are missing or damaged; replace them if necessary.

6. Maintenance, Cleaning, Spike Replacement, and Bearing Lubrication

Regular maintenance and proper cleaning are essential to ensure long service life and trouble-free operation. Follow the recommended intervals and procedures below.

6.1 Safety Guidelines for Maintenance

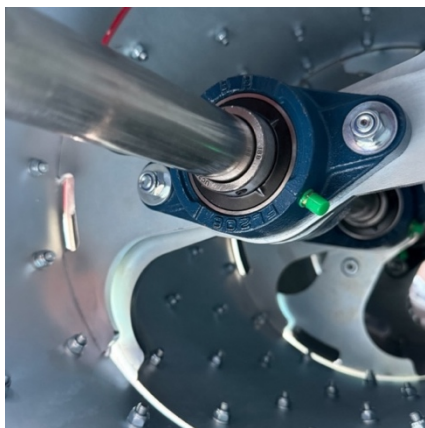
- Secure the machine against movement before starting any maintenance work.
- Ensure the machine stands on a firm and level surface.
- Place the spikes on a wooden board and lock the transport wheels in the working position.

6.2 Routine Maintenance

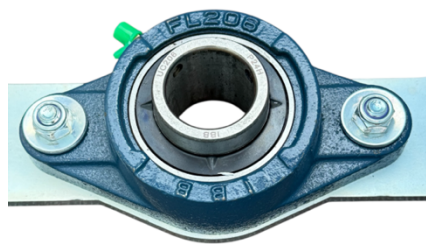
- **After each use:** Clean the spikes and segments to remove soil and grass; rinse the frame and wheels with water and allow all metal parts to dry thoroughly.
- **Weekly (under frequent use):** Check the spike wear and replace any damaged or bent spikes; check all bolts for tightness and verify tire pressure (recommended 1.5 bar).
- **After the season:** Carry out a full inspection of the frame and bearings; apply protective coating to all steel components and lubricate the segment bearings.

6.3 Lubrication Points

- Each roller segment is equipped with a grease fitting for lubrication.
- Use high-quality grease (recommended lithium or graphite-based).
- Apply grease using a grease gun until the bearing housing is filled but not overflowing.
- Wipe away any excess grease with a clean cloth.
- Recommendation: Lubricate the bearings after each season or every 5 to 6 months, especially when operating in wet or dusty environments.



Obrázek 7 ložisko umístěné v segmentu



Obrázek 8 detail ložiska a mazacího bodu

6.4 Spike Maintenance

- Regularly check the spikes for straightness and correct length.
- Replace spikes that show significant wear or bending.
- Use only original 100proGreen stainless-steel replacement spikes.
- Spikes are secured with threaded nuts; tighten them carefully to avoid damaging the fine thread.



Obrázek 9 segment s hroty



Obrázek 10 demontáž/montáž hrotů

6.5 Post-Maintenance Inspection

After each maintenance procedure, check the following:

- Free rotation of all segments
- Tightness of all connections and secure fastening of the weights
- Air pressure in the transport wheels (recommended 1.5 bar)
- Condition of the lubricant and cleanliness of the bearings
- Proper functioning of the tensioning rod

6.6 End-of-Season Maintenance

At the end of the season, perform the following steps:

- Thoroughly clean the entire machine
- Inspect the frame, bearings, and spikes for any damage
- Treat all steel and stainless-steel components with a protective preservative
- Store the machine according to the instructions in Section 4.5

Regular maintenance reduces the risk of malfunctions and significantly extends the service life of the equipment. Neglecting maintenance may lead to premature wear of components and may void the warranty.

6.7 Service Procedure – Spike Replacement and Lubrication of Central Segment Bearings

This procedure is intended for professional maintenance or experienced users.

Preparation and Procedure:

- Secure the machine against movement; the machine must stand on a firm, level wooden platform.
- Lock the transport wheels in the working position.
- Prepare the necessary tools: Allen keys, combination wrenches, a ratchet, a securing strap, a grease gun, and clean cloths.



Obrázek 11 pracovní nástroje

Disassembly Procedure:

Loosen the two bolts on the main support shaft (one on each side); the machine will separate into the frame and the working segments.

Using a securing strap threaded through the steel handling plates and appropriate lifting equipment, lift the frame and place it in a prepared safe location. *Do not leave the frame suspended by the plates for an extended period, as deformation may occur.*

Begin on the side with the spacer ring; remove the ring and set it aside.

Loosen the segment from the shaft by unscrewing the Allen bolts (four per segment – two on each bearing housing).

Remove the segment and perform spike replacement or bearing lubrication as needed.

Repeat the procedure for the remaining segments.

The last segment is usually not removed; if removal is necessary, mark its position relative to the end of the shaft and the spacer ring. The gap between the shaft end and the ring must be **12 mm**.

Reassembly:

8. Reinstall the segments in their original order and tighten all fastening bolts.
9. Reattach the frame onto the main shaft.
10. Check for smooth rotation of all segments and confirm overall correct functionality.



Obrázek 12 krok č.1



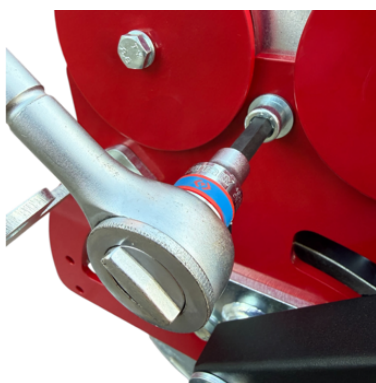
Obrázek 13 krok č. 2



Obrázek 14 demontovaný segment

6.9 Procedure for Removing the Ballast Weights

- Using an Allen key, unscrew the bolts located between the rollers (weights) and release the weight holder.
- With two persons, carefully remove the weights.
- When reinstalling, ensure the weights are correctly seated and securely fastened.



7. Troubleshooting

The machine is designed for reliable, durable, and nearly maintenance-free operation. However, long-term use or incorrect adjustment may lead to certain issues. The following overview helps with quick identification and resolution.

7.1 Common Problems and Solutions

Segment does not rotate or rotates irregularly:

- *Cause:* Contaminated or seized bearings
Solution: Clean and lubricate, or replace if necessary
- *Cause:* Soil buildup on segments
Solution: Clean thoroughly

Spikes do not penetrate deep enough:

- *Cause:* Insufficient ballast weight
Solution: Add weights or ensure weights are positioned horizontally
- *Cause:* Soil is too dry or too hard
Solution: Water the area 1–2 days before use

Spikes bend or break:

- *Cause:* Obstacles present in the working area
Solution: Remove obstacles; replace damaged spikes
- *Cause:* Excessive downward pressure
Solution: Reduce ballast weight and adjust horizontal alignment

Rollers produce excessive noise or vibration:

- *Cause:* Loose bearings or segments
Solution: Tighten bolts and inspect bearings
- *Cause:* Uneven weight distribution
Solution: Adjust the position of the weights

Machine is difficult to pull or bounces:

- *Cause:* Excessive operating speed
Solution: Do not exceed 10 km/h

Spikes become excessively clogged with soil:

- *Cause:* Operation in waterlogged soil
Solution: Wait until the soil has dried
- *Cause:* Insufficient cleaning
Solution: Clean after each use

Machine tilts to one side during operation:

- *Cause:* Incorrect adjustment of the tensioning rod
Solution: Adjust the rod length

7.2 Procedure When a Problem Is Detected

- Stop work and bring the towing vehicle to a complete halt.
- Raise the working roller using the transport wheels.
- Perform a visual inspection of all machine components.
- Identify the cause of the issue and correct it using the guidance above.
- Conduct a short test run on a small area.

7.3 Recommendations for Preventing Malfunctions

- Clean the machine regularly and check the tightness of bolts, spikes, and weight attachments.
- Avoid operating on waterlogged, rocky, or frozen surfaces.
- Follow the transport and storage instructions in Section 4.
- Use only original 100proGreen replacement parts.

8. Warranty and Service Information

8.1 Warranty Conditions

The 100proGreen Master Lawn Spiker Mammoth is covered by a **24-month warranty** from the date of purchase, unless otherwise stated in the purchase contract or delivery note.

The warranty covers manufacturing and material defects that occur during normal use in accordance with this manual.

The warranty does not cover:

- Damage resulting from incorrect operation, improper handling, or overloading
- Normal wear of working components (spikes, bearings, tires, surface coating)
- Damage caused by impact, dropping, corrosion, or storage in damp environments
- Damage resulting from the use of non-original spare parts or accessories
- Malfunctions caused by failure to follow the instructions in this manual

9. Final Provisions

Following the instructions in this manual is essential for ensuring long-term reliability, efficient operation, and safe use of the 100proGreen Master Lawn Spiker Mammoth. Please keep this manual for the entire lifetime of the machine.

If you want, I can now format the complete manual into a clean PDF-ready structure, create a table of contents, or adjust the language tone (more technical, more user-friendly, etc.).

10. Contact Information



KONTAKTY:

Dovozce do ČR:

Zídekhk s.r.o.
Václavské náměstí 823/33
110 00 Praha 1
Czech Republic

e-mail: info@zidekhk.com
e-mail: info@100progreen.cz
Tel.: 00420 606 840 365
www.zidekhk.com
www.100progreen.cz



Výrobce:

Christian Lechtenböhmer
100proGreen
Valentinstrasse 177
45896 Gelsenkirchen
Germany