PLANT CRAFT®

TSA36 LAWN SPIKE AERATOR



User Manual

[Revision 2.0]

READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description, and packaging.

Safety

Safety messages are designed to alert you to possible dangers or hazards that could cause death, injury or equipment or property damage if not understood or followed. Safety messages have the following symbols:



You WILL be KILLED or SERIOUSLY INJURED if you do not follow instructions.



You CAN be KILLED or SERIOUSLY INJURED if you do not follow instructions.



You CAN be INJURED if you do not follow instructions or equipment damage may occur.

It is vital that you read and understand this user manual before using the product, including safety warnings, and any assembly and operating instructions. Keep the manual for future reference.

Safety precautions and recommendations detailed here must be fully understood and followed to reduce the risk of injury, fire, explosion, electrical hazard, and/or property damage.

Safety information presented here is generic in nature – some advice may not be applicable to every product. The term "equipment" refers to the product, be it electrical mains powered, battery powered or combustion engine powered.

- **Before Use** - If you are not familiar with the safe operation/handling of the equipment or are in any way unsure of any aspect of suitability or correct use for your application, you should complete training conducted by a person or organization qualified in safe use and operation of this equipment, including fuel/electrical handling and safety.
- Do NOT operate the equipment in flammable or explosive environments, such as in the presence of flammable liquids, gases, or dust. The equipment may create sparks or heat that may ignite flammable substances.
- Keep clear of moving parts.
- Equipment may be a potential source of electric shock or injury if misused.
- Do NOT operate the equipment if it is damaged, malfunctioning or is in an excessively worn state.
- Do NOT allow others to use the equipment unless they have read this manual and are adequately trained.
- Keep packaging away from children - risk of suffocation! Operators must use the equipment correctly. When using the equipment, consider conditions and pay due care to persons and property.

General Work Area Safety

- Work areas should be clean and well it.
- Do not operate the equipment if bystanders, animals etc are within operating range of the equipment or the general work area.
- If devices are provided for connecting dust extraction / collection facilities, ensure these are connected and used properly. Dust collection can reduce dust-related hazards.

General Personal Safety

- Wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect from eye and ear injury, poisoning, burns, cutting and crush injuries. Protective equipment such as safety goggles, respirators, non-slip safety footwear, hard hat, hearing protection etc should be used for appropriate equipment / conditions. Other people nearby should also wear appropriate personal protective equipment. Do not wear loose clothing or jewellery, which can be caught in moving parts. Keep hair and clothing away from the equipment.
- Stay alert and use common sense when operating the equipment. Do not over-reach. Always maintain secure footing and balance.
- Do not use the equipment if tired or under the influence of drugs, alcohol, or medication.
- This equipment is not intended for use by persons with reduced physical, sensory, or mental capabilities.

General Fuel Safety

- Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources.
- Do not spill fuel. If you spill fuel, wipe it off the equipment immediately – if fuel gets on your clothing, change clothing.
- Do NOT smoke near fuel or when refuelling.
- Always shut off the engine before refuelling.
- Do NOT refuel a hot engine.
- Open the fuel cap carefully to allow any pressure build-up in the tank to release slowly.
- Always refuel in well ventilated areas.
- Always check for fuel leakage. If fuel leakage is found, do not start, or run the engine until all leaks are fixed.

General Carbon-Monoxide Safety

- Using a combustion engine indoors **CAN KILL IN MINUTES**. Engine exhaust contains carbon-monoxide – a poison you cannot smell or see.
- Use combustion engines OUTSIDE only, and far away from windows, doors, and vents.

General Equipment Use and Care

- Keep packaging away from children and pets, potential risk of suffocation or choking.
- The equipment is designed for domestic use only.
- Handle the equipment safely and carefully.
- Before use, inspect the equipment for misalignment or binding of moving parts, loose components, damage, or any other condition that may affect its operation. If damaged, have the equipment repaired by an authorised service centre or technician before use.
- Prevent unintentional starting of the equipment - ensure equipment and power switches are in the OFF position before connecting or moving equipment. Do not carry equipment with hands or fingers touching any controls. Remove any tools or other items that are not a part of the equipment from it before starting or switching on.
- Do not force the equipment. Use the correct equipment for your application. Equipment will perform better and be safer when used within its design and usage parameters.
- Use the equipment and accessories etc. in accordance with these instructions, considering working conditions and the work to be performed. Using the equipment for operations different from those intended could result in hazardous situations.
- Always keep equipment components (engines, hoses, handles, controls, frames, housings, guards etc) and accessories (cutting tools, nozzles, bits etc) properly maintained. Keep the equipment clean and, where applicable, properly lubricated.
- Store the equipment out of reach of children or untrained persons. To avoid burns or fire hazards, let the equipment cool completely before transporting or storing. Never place or store the equipment near flammable materials, combustible gases, or liquids etc.
- The equipment is not weather-proof, and should not be stored in direct sunlight, at high ambient temperatures or locations that are damp or humid.
- Do not clean equipment with solvents, flammable liquids, or harsh abrasives.
- For specific equipment safety use and care, see Equipment Safety.

© Plant Craft

General Electrical Safety

- Inspect electrical equipment, extension cords, power bars, and electrical fittings for damage or wear before each use. Repair or replace damaged equipment immediately.
- Ensure all power sources conform to equipment voltage requirements and are disconnected before connecting or disconnecting equipment.
- When wiring electrically powered equipment, follow all electrical and safety codes.
- Always use a Residual Current Device (RCD) (GFCI) / Earth Leakage Circuit Breaker / Safety Switch when operating this item (electrical items only).
- High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal.

General Electrical Safety

- Electrically grounded equipment must have an approved cord and plug and be connected to a grounded electrical outlet.
- Do NOT bypass the ON/OFF switch and operate equipment by connecting and disconnecting the electrical cord.
- Do NOT use equipment that has exposed wiring, damaged switches, covers or guards.
- Do NOT use electrical equipment in wet conditions or in damp locations.
- Do NOT use electrical cords to lift, move or carry equipment.
- Do NOT coil or knot electrical cords, and ensure electrical cords are not trip hazards.

General Service Information

- The equipment must be serviced or repaired at authorised service centres by qualified personnel only.
- Replacement parts must be original equipment manufacturer (OEM) to ensure equipment safety is maintained.
- Do NOT attempt any maintenance or repair work not described in this manual.
- After use, the equipment and components may still be hot – allow the equipment to cool and disconnect spark plugs and/or electrical power sources and/or batteries from it before adjusting, changing accessories, or performing repair or maintenance.
- Do NOT adjust while the equipment is running.
- Perform service-related activities in suitable conditions, such as a workshop.
- Replace worn, damaged or missing warning/safety labels immediately.

Child Choking Hazard!



- **WARNING: CHOKING HAZARD - CHILDREN UNDER 8 YRS. CAN CHOKE OR SUFFOCATE ON SMALL PARTS. ADULT SUPERVISION REQUIRED.**
- Carefully inspect anything a baby or child could gain access to, including this product & packaging.
- Dangers include anything of a size that could become stuck or lodged in a baby or child's airway.
- Dangers include things like raw, hard fruit and vegetable pieces, large pieces of meat, bones or sausage skins, popcorn, nuts, hard lollies and corn chips, small magnets and batteries, coins, beads, marbles and small uninflated balloons, broken toys and smaller toys, buttons, keys, and coins. But there are also many more.
- Pay particular attention to accessories, nuts, bolts, screws, washers, caps, covers, loose parts, parts that could be removed or break off, pieces of packaging, staples, tape etc.
- In the case of any doubt, secure the item of concern in an appropriate manner, or completely remove the possibility of access by a baby or child.

Lawn Spike Aerator Safety

READ AND UNDERSTAND THIS MANUAL COMPLETELY BEFORE USING THE SPIKE AERATOR.

Operator must read and understand all safety and warning information, operating instructions, maintenance, and storage instructions before operating this equipment. Failure to properly operate and maintain the aerator could result in serious injury to the operator or bystanders.

Operation Warnings

- Do not at any time carry passengers, sit, or stand on the aerator.
- Do not allow children to play on, stand upon or climb on the aerator.
- Always inspect the aerator before using to assure it is in good working condition.
- Replace or repair damaged or worn parts immediately.
- Always check and tighten hardware and assembled parts before operation.
- Do not exceed rated capacity – 36”/280lb, 48”/375lb & 60”/ 460lb.
- Avoid large holes and ditches when operating the equipment.
- Be careful when operating the aerator on steep grades (hill).
- ALWAYS operate at reduce speed in rough terrain, along creeks, ditches and on hillsides.
- Do not operate close to creeks, ditches, and public highways.
- To avoid personal injury and/or equipment damage DO NOT EXCEED 8KMH (5MPH).
- Only tow with recommended vehicles (Lawn/Garden Tractors and ATVs).
- Always refer to the vehicle owner’s manual for proper towing.
- Aerator is not designed to be used with zero-turn mowers.
- Always secure and lock aerator to the vehicle hitch before operating.

Crush and Cut Hazards

- Always keep hands and feet clear from moving parts while operating the equipment.
- Always clear and keep work area clean when operating.
- Always wear safety gear, eye protection, gloves and work boots when operating the aerator.

WARNING! THE WARNINGS, CAUTIONS, AND INSTRUCTIONS OUTLINED IN THIS INSTRUCTION MANUAL CANNOT COVER ALL POSSIBLE CONDITIONS OR SITUATIONS THAT MAY OCCUR. IT MUST BE UNDERSTOOD BY THE OPERATOR THAT COMMON SENSE AND CAUTION ARE FACTORS WHICH CANNOT BE BUILT INTO THIS PRODUCT AND MUST BE SUPPLIED BY THE OPERATOR. THIS

PRODUCT CAN EXPOSE YOU TO CHEMICALS INCLUDING LEAD AND LEAD COMPOUNDS WHICH ARE KNOWN TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

Assembly Is Required

This product requires assembly before use. See “Assembly” section for instructions. Because of the weight and/or size of the aerator, it is recommended that another adult be present to assist with the assembly. INSPECT ALL COMPONENTS closely upon receipt to make sure no components are missing or damaged.

About Your Spike Aerator

This spike aerator has a roughed steel construction and is designed to penetrate the soil up to 2.5 ” in depth, allowing for compact soil to be loosen. Aerators promote a health lawn by opening up the ground to allow water, air, and nutrients to reach your lawns root system. It is ideal for heavy-traffic areas (playgrounds and sports fields) and burned out, drought-damaged lawns. The steel roller will accommodate either water or sand depending on the operator’s needs. When using water always drain and remove the fill/drain plug to avoid freezing. The roller must be drained at temperatures below 32°F (0°C) to prevent damage.

Safety Symbols

The product may have safety warning labels attached to it, explained below. Understand the symbols on your product and their meanings. If any stickers become unreadable, unattached etc., replace them.



Flammable Material Hazard
Flammable liquids, gases, or substances etc may present. Avoid ignition sources and open flames. Danger of fire.



Read User Manual
Read and fully understand product safety warnings, operation, procedures etc before using the product.



Use Hand Protection
Wear appropriate hand protection and take due care as the product or use of the product may present hand hazards.



Carbon-Monoxide Hazard
Do not use the product in confined areas or without adequate ventilation. Carbon-monoxide poisoning can be fatal.



Electrocution / Electrical Shock Hazard
High voltage or high current electricity may be present or required by the product. Take due care when handling electrical products, cables, plugs and leads. Electrical shock can be fatal.



Toxic Fumes / Dust Hazard
Using the product or by-products from use may produce fumes, smoke or particles that could be harmful if inhaled. Wear appropriate breathing protection and have adequate ventilation.



Explosive Material Hazard
Combustible liquids, gases, or substances etc may be present. Avoid ignition sources and open flames. Danger of explosion.



Cutting / Amputation Hazard
The product may have blades, edges or mechanical devices that can cause severe cut injury to fingers, limbs etc. Take due care when handling and using the product.



Crush Hazard
The product may have blades, edges or mechanical devices that can cause severe crush injury to fingers, limbs etc. Take due care when handling and using the product.



Single Operator Only
The product must be operated by a single person only. More than one person operating the product may introduce additional hazards.



Use Face Protection
Wear appropriate full-face protection and take due care as the product or use of the product may present face and eye hazards.



Use Foot Protection
Wear appropriate foot protection and take due care as the product or use of the product may present foot hazards.



Use Eye / Ear / Head Protection
Wear appropriate eye and / or ear and / or head protection and take due care as the product or use of the product may present eye, hearing, and head hazards.



Running Hazard
Do not run on or near the product as doing so may present a fall hazard.



Diving Hazard
Do not dive into the product as doing so may present a neck / head injury hazard.



Adult Supervision Required
Always supervise children and other users of a product to prevent drowning or injury.



Skin Penetration / Puncture Hazard
The product may produce pressure, emit liquids or objects that can cause severe injury to fingers, limbs, blood etc. Take due care when handling and using the product.



Hot Surface Hazard
Be aware that the product may produce high temperatures and hot surfaces that can cause burn injuries.



Flying Debris Hazard
Be aware that the product or use of the product may present hazards produced by flying debris. Wear appropriate clothing and protective devices.



Moving Parts Hazard
Be aware that the product contains or uses mechanical devices that move or rotate. Always wait for moving parts to stop fully before handling the product, adjusting, maintenance etc.

© Plant Craft



Carbon-Monoxide Hazard
Do not use the product in confined areas or without adequate ventilation. Carbon-monoxide poisoning can be fatal.



Pull Hazard
Be aware that the product contains or uses mechanical devices that can pull in objects and can cause severe injury to fingers, limbs etc. Take due care when handling and using the product.



Slope / Fall Injury Hazard
Be aware that using the product on sloping surfaces or in slippery conditions may present additional dangers from falls and contact with blades, moving parts, hot surfaces etc.



"Slam Dunk" Warning
Do NOT attempt "slam dunk" manoeuvres as this may result in severe injury due to falling, product breakage or collapse etc.



Electrocution / Electrical Shock Hazard - Outdoor
High voltage or high current electricity may be present or required by the product. Do NOT use in rain, damp, or wet conditions. Electrical shock can be fatal.



Electrocution / Electrical Shock Hazard - Disconnect
High voltage or high current electricity may be present or required by the product. Always disconnect the product from the electrical supply before handling the product, adjusting, maintenance etc.



Power Line Electrocution Hazard
High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal.



"Kick-Back" Hazard
High level of "kick-back" hazard that can cause the machine to suddenly rotate towards operator. Kick-back injury can be fatal.



Winch Operator Position Hazard
Do NOT stand between winch and load. Do NOT use winch to move people.



Winch Lift Hazard
Do NOT LIFT load vertically. Use machine to PULL only.



Cable Hazard
Ensure that load bearing cable is not kinked or knotted.



Winch Cable Hazard
Ensure that there is a minimum number of cable coils on winching mechanism.



Winch Hook Hazard
Carry hook to load – do NOT throw or run.



Flash / Blinding Hazard
Wear appropriate eye protection for welding. Direct exposure to weld arcs may cause permanent eye injury.



Laser Hazard
Laser may be in use – do NOT look directly at laser or allow others to.



Choking Hazard
Children under 8 yrs. Can choke or suffocate on small parts. Adult supervision required.

© Plant Craft

Table of Contents

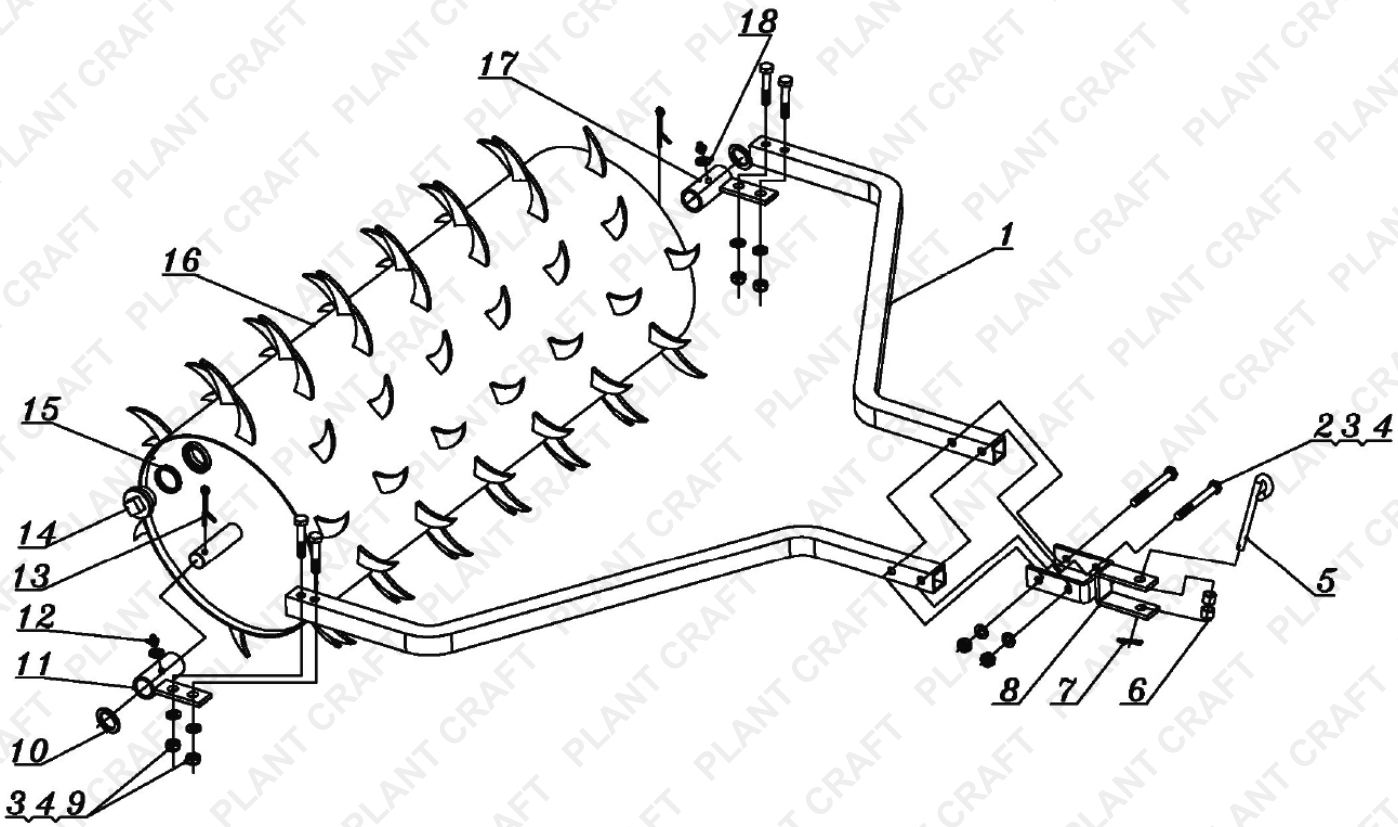
Safety **2**
Safety Symbols 5
Parts Identification **8**
Exploded Parts Drawing and Parts List **9**
Assembly **10**
Operation **12**
Soil and Lawn Preparation 12
Using Your Plug Aerator 12
Maintenance **13**
Storage **13**
Specifications **14**

Parts Identification



No.	Name
1	**Steel Drum Body** – Use water or sand do not exceed listed rated capacity
2	**Hitch Bracket** – Attaches to Steel Drum Body
3	**Hitch** – Pin-type design use only with approve vehicles
4	**Joint Bushing / Grease Fitting** – Grease before using

Exploded Parts Drawing and Parts List



Ref#	Description	Qty.
1	U- Roller Bracket	2
2	Hex Bolt M10x85	2
3	Flat Washer Ø10	6
4	Nylon Lock Nut M10	6
5	Hitch Pin	1
6	Bushing	2
7	R Pin	1
8	Hitch Bracket	1
9	Hex Bolt M10x55	4

Ref#	Description	Qty.
10	Back Plate Ø43×Ø26×3	2
11	Joint Bushing (Right)	1
12	Grease Fitting	2
13	Cotter Pin Ø5x50	2
14	Fill/Drain Plug	1
15	Washer Ø40×Ø33×5	1
16	Steel Roller	1
17	Joint Bushing (Left)	1
18	Lock Washer Ø6	2

© Plant Craft

Assembly

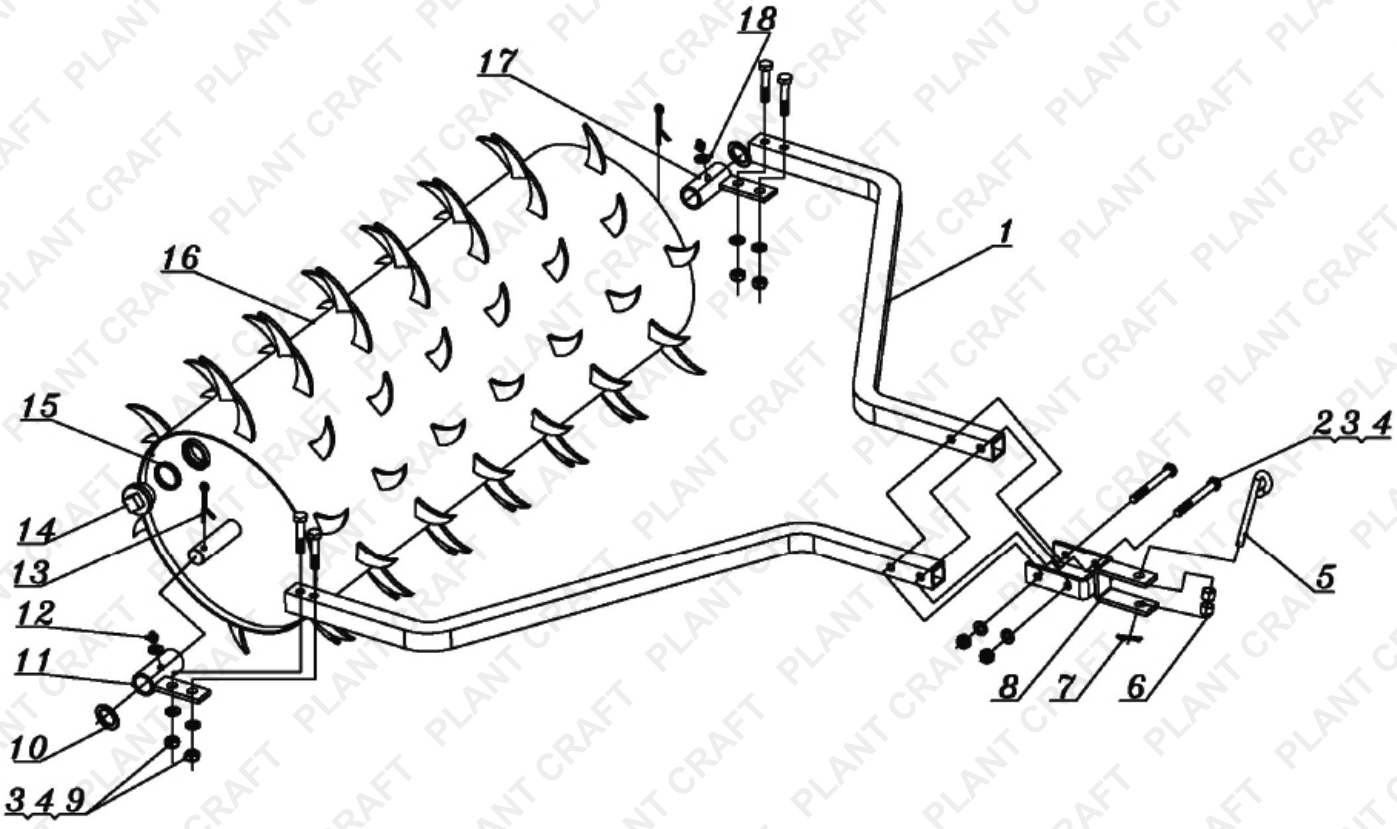
CAUTION! Read and follow all instructions for assembly and operation. Failure to properly assemble this equipment could result in serious injury to the user or bystanders, or cause equipment damage. When assembling or using the aerator exercise caution at all times, the spikes are sharp and may result in serious injury to the user or bystanders.

SPIKE AERATOR COMPONENT PARTS AND ASSEMBLY

Take all parts out of the shipping crate and inspect components to ensure there are no missing pieces before starting to assemble the spike aerator.

TOOLS REQUIRED (not included):

- 10mm Wrench
- 17mm Wrench
- Large Adjustable Wrench (Fill/Drain Plug)



1. Locate and layout all hardware and component parts.
2. Attach the U- Roller bracket (#**1**) to the joint bushing (#**11**& #**17**) using flat washer Ø10 (#**3**), nylon lock nut M10 (#**4**) and hex bolt M10x55 (#**9**).
3. Attach the joint bushing (#**11**& #**17**) to the axle of steel roller (#**16**), put a flat washer Ø24 (#**10**), then insert a cotter pin (#**13**).
4. Attach the hitch bracket (#**8**) to the U-Roller bracket (#**1**) using hex bolt M10x85 (#**2**), flat washer Ø10 (#**3**), nylon lock nut M10 (#**4**).
5. Insert hitch pin with 2 bushing (#**6**) and R pin (#**7**).

6. Tighten the grease fitting (#**12**) to the joint bushing (#**11** & #**17**). Attach lock washer Ø6 (#**18**) in the middle of joint bushing and grease fitting.
7. Securely tighten all hardware before using.
8. Fill roller with water or sand do not exceed rated capacity.
9. Place Washer (**15**) over hole and secure with Fill/Drain Plug (**14**) and tighten.
10. Grease or oil bushings before using.

Operation

WARNING! Before operating or using the spike aerator, review the instructions below and safety information. Failure to follow these instructions may result in property damage or injury to the operator or bystanders.

IMPORTANT: Aerating is putting small holes in the soil up to 2.5 inches in depth to create small reservoirs that will bring oxygen, fertilizer, and water down to the roots. For best aerating results follow the soil/lawn preparation and operating aerator procedures.

Soil and Lawn Preparation

1. Remove large and small debris from work area.
2. If the ground is hard and dry, it is recommended the ground be sprinkled or watered for one or two hours prior to aerating.
3. If the ground is wet or muddy DO NOT attempt to aerate.
4. Mow lawn and remove loose clippings before aerating.

Using Your Plug Aerator

1. DO NOT at any time carry passengers, sit or stand on the spike aerator.
2. Never attach a garden hose to the fill/drain hole when filling the roller. Dangerous pressure build up can occur.
3. Only tow with recommended vehicles (Lawn/Garden Tractors and ATVs).
4. Refer to the vehicle owner's manual for proper safety and towing instructions.
5. Always secure and lock the aerator to the vehicle hitch before operating.
6. Always make sure that the tow vehicle and the combined weight of the operator MUST BE greater than the load of the lawn roller for proper control.
7. Start vehicle engine with the controls in neutral position, put throttle at the slowest engine speed. Put transmission in low gear first, allowing spikes to enter the ground. Increase the speed as work conditions permit.
8. Vehicle braking and stability may be affected with the attachment of this equipment.
9. Never exceed 5mph when towing the aerator.
10. Aerate in the straightest line as possible making overlapping passes to increase the spike point pattern.
11. DO NOT make sharp turns that may cause the vehicles tires to rub against the aerator.
12. Avoid extremely sharp turns when using the aerator to prevent damage to lawn.
13. DO NOT cross over walks or drives with the spike aerator.
14. On sloped lawns, always aerate in an up and down direction. DO NOT attempt to aerate across the slope always go in an up and down direction.
15. Always use caution when backing the aerator to avoid "jack-knifing". Always back up in a straight line.
16. Do not exceed rated capacity.

WARNING! The spike aerator must be drained at temperatures below 32°F (0°C) to prevent damage. When the roller is not being used always drain the water out and leave the fill/drain plug out.

© Plant Craft

Maintenance

WARNING! Improper maintenance and storage of the spike aerator may void your warranty.

ATTENTION: Surface corrosion will occur on metal surfaces over time and the rate of oxidation depends on factors such as proximity to the ocean and humidity or condensation of water vapour on metal surfaces. To mitigate this, WD40 can be used to remove surface corrosion then, when applied periodically, it will prevent rust from forming.

- ALWAYS disconnect equipment from towing vehicle when cleaning or servicing the unit.
- After each use drain water and leave plug out.
- Rinse/dry the lawn roller after each use.
- Before using, grease axle and all moving parts as needed.
- Periodically check all fasteners for tightness.
- Annually clean and lightly lubricate parts.
- Use a glossy enamel spray paint to touch up scratched or worn painted metal surfaces.
- Never exceed the rated capacity of the lawn roller, it will do damage.

IMPORTANT: If a part needs replacement, only use parts that meet the manufacturer's specifications. Replacement parts that do not meet specifications may result in a safety hazard or poor operations.

Storage

- Never leave water in the roller for extended periods of time.
- Remove fill/drain plug when storing.
- Always drain water from the roller to keep it from freezing.
- Before storing make sure the lawn roller is clean and dry for years of trouble-free service.
- Store indoors or protected area during severe weather and winter months.

© Plant Craft

Specifications

Type	Tow behind
Material	Steel
Aerator Width	36” / 92cm
No. of Spikes	78
Max Coring Depth	2 ½” / 63mm
Connection Type	Universal hitch pin
Max Speed	8km/h
Max Ballast	91L of water

© Plant Craft



Some experts believe that the incorrect or prolonged use of almost any product may cause serious injury or death. To help reduce your risk of serious injury or death, refer to the information below. For more information, see www.datastreamserver.com/safety

- Consult all documentation, packaging, and product labelling before use. Note that some products feature documentation available online. It is recommended to print and retain the documentation.
- Before each use, check the product for loose/broken/damaged/missing parts, wear, or leaks (if applicable). Never use a product with loose/broken/damaged/missing parts, wear, or leaks.
- Products must be inspected and serviced (if applicable) by a qualified technician every 6 months. This is based on average residential use by persons of average size and strength, and on a property of average metropolitan size. Use beyond these recommendations may require more frequent inspections/servicing.
- Ensure that all users of the product have completed a suitable industry recognised training course before being allowed access to the product.
- The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or description of application. Be sure to attain third-party approval from a qualified specialist for your application before use, regardless of any assurances from the retailer or its representatives.
- This product is not intended for use where fail-safe operation is required. As with any product (for example, automobile, computer, toaster), there is the possibility of technical issues that may require the repair or replacement of parts, or the product itself. If the possibility of such failure and the associated time it may take to rectify could in any way inconvenience the user, business, or employee, or financially affect the user, business, or employee, then the product is not suitable for your requirements. This product is not intended for use where incorrect operation or a failure of any kind, including but not limited to, a condition requiring product return, replacement, parts replacement, or service by a technician may cause financial loss, loss of employee time or an inconvenience requiring compensation.
- If this product has been purchased in error when considering the information presented here, contact the retailer directly for details of their returns policy, if required.

© Plant Craft. All rights reserved. No part of this document, including descriptive content, concepts, ideas, diagrams, or images may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, scanning, or recording, or any information storage and retrieval system, without express permission or consent from the publisher.