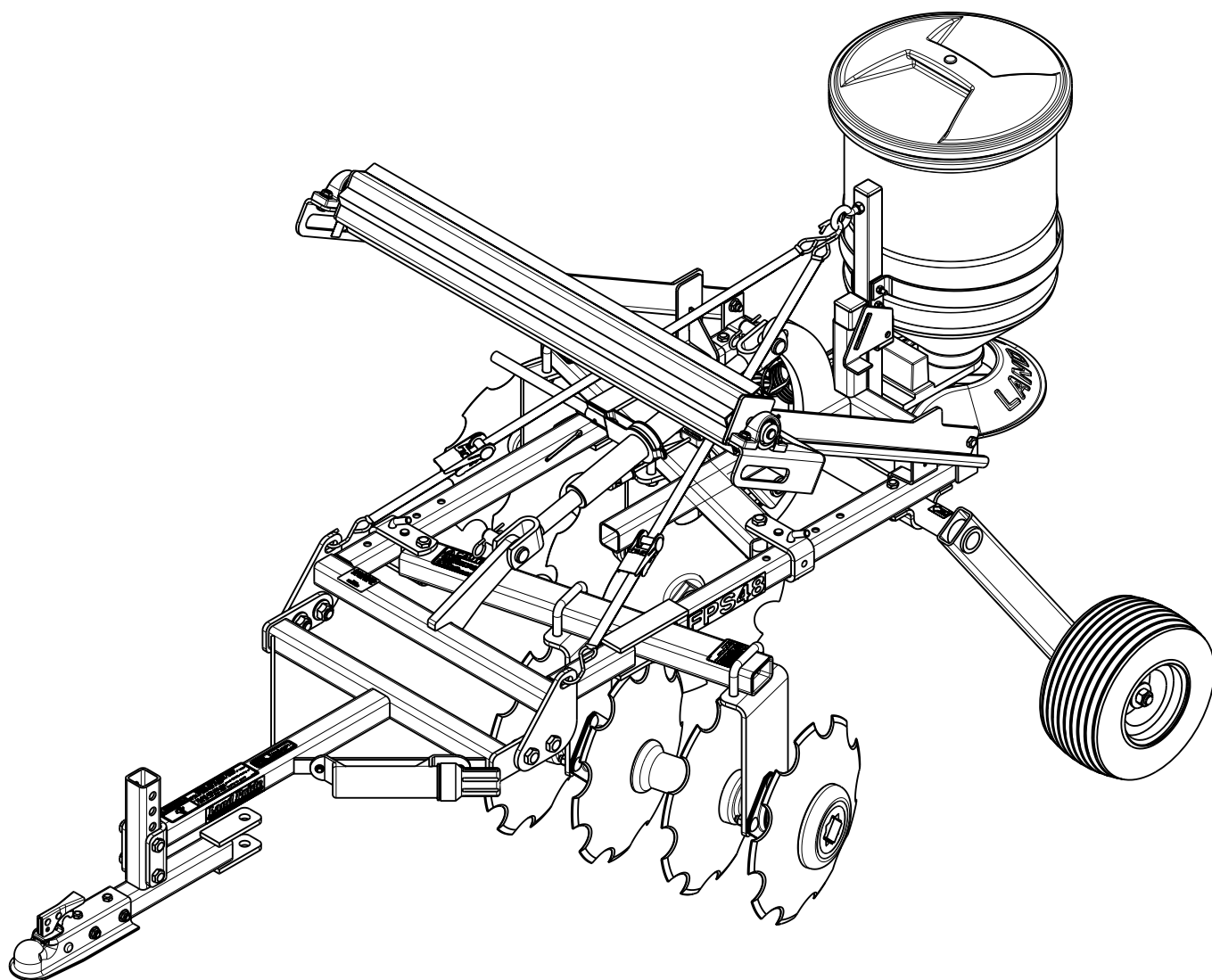


Food Plot Seeder

FPS48 Plot Ranger



23896

322-118M Operator's Manual



Read the Operator's Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

Cover photo may show optional equipment not supplied with standard unit.

For an Operator's Manual and Decal Kit in French Language, please see your Land Pride dealer.





Machine Identification

Record your machine details in the log below. If you replace this manual, be sure to transfer this information to the new manual.

If you, or the dealer, have added Options not originally ordered with the machine, or removed Options that were originally ordered, the weights and measurements are no longer accurate for your machine. Update the record by adding the machine weight and measurements provided in the Specifications & Capacities Section of this manual with the Option(s) weight and measurements.

Model Number	
Serial Number	
Machine Height	
Machine Length	
Machine Width	
Machine Weight	
Delivery Date	
First Operation	
Accessories	

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____



California Proposition 65

WARNING: Cancer and reproductive harm - www.P65Warnings.ca.gov

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Printed in the United States of America.



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See previous page for Table of Contents.



Parts Manual QR Locator

The QR (Quick Reference) code to the left will take you to the Parts Manual for this equipment. Download the appropriate App on your smart phone, open the App, point your phone on the QR code and take a picture.



Dealer QR Locator

The QR code to the left will link you to available dealers for Land Pride products. Refer to Parts Manual QR Locator on this page for detailed instructions.

Listed below are common practices that may or may not be applicable to the products described in this manual.

Safety at All Times

Careful operation is your best assurance against an accident.

All operators, no matter how much experience they may have, should carefully read this manual and other related manuals before operating the power machine and this implement.

- ▲ Thoroughly read and understand the "Safety Label" section. Read all instructions noted on them.
- ▲ Do not operate the equipment while under the influence of drugs or alcohol, as they impair your ability to safely and properly operate the equipment.
- ▲ The operator should be familiar with all functions of the tractor and attached implement, and be able to handle emergencies quickly.
- ▲ Make sure all guards and shields appropriate for the operation are in place and secured before operating the implement.
- ▲ Keep all bystanders away from equipment and work area.
- ▲ Start tractor from the driver's seat with hydraulic controls in neutral.
- ▲ Operate tractor and controls from the driver's seat only.
- ▲ Never dismount from a moving tractor or leave tractor unattended with engine running.
- ▲ Do not allow anyone to stand between the implement and tractor while backing up to the implement.
- ▲ Keep hands, feet, and clothing away from power-driven parts.
- ▲ While transporting and operating equipment, watch out for objects overhead and along the sides such as fences, trees, buildings, wires, etc.
- ▲ Do not turn tractor so tight as to cause hitched implement to ride up on the tractor's rear wheel.
- ▲ Store implement in a safe and secure area where children normally do not play. When needed, secure implement against falling with support blocks.



Look for the Safety Alert Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety and extra precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. Hazard control, and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.

Be Aware of Signal Words

A signal word designates a degree or level of hazard seriousness. They are:

- ▲ **DANGER:** Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
- ▲ **WARNING:** Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
- ▲ **CAUTION:** Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

Be Aware of Special Notices

Special notices are intended to point out important and helpful information that should be followed. They are usually placed inside a box. They are:

- IMPORTANT:** Indicates that equipment or property damage could result if instructions are not followed.
- NOTE:** Indicates supplementary explanations that will be helpful when using the equipment.

Safety Precautions for Children

Tragedy can occur if the operator is not alert to the presence of children. Children generally are attracted to implements and their work.

- ▲ Never assume children will remain where you last saw them.
- ▲ Keep children out of the work area and under the watchful eye of a responsible adult.
- ▲ Be alert and shut the implement and tractor down if children enter the work area.
- ▲ Never carry children on the tractor or implement. There is not a safe place for them to ride. They may fall off and be run over or interfere with the control of the power machine.
- ▲ Never allow children to operate the power machine, even under adult supervision.
- ▲ Never allow children to play on the power machine or implement.
- ▲ Use extra caution when backing up. Before the tractor starts to move, look down and behind to make sure the area is clear.

Tractor Shutdown & Storage

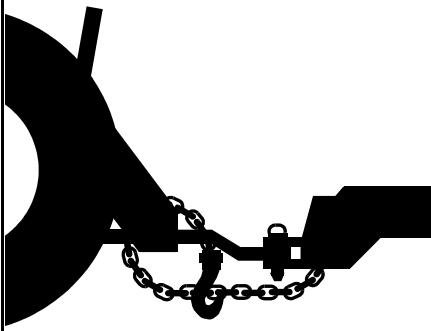
- ▲ If engaged, disengage power take-off.
- ▲ Park on solid, level ground and lower implement to ground or onto support blocks.
- ▲ Put tractor in park or set park brake.
- ▲ Turn off engine and remove ignition key to prevent unauthorized starting.
- ▲ Relieve all hydraulic pressure to auxiliary hydraulic lines.
- ▲ Wait for all components to stop before leaving operator's seat.
- ▲ Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.



Listed below are common practices that may or may not be applicable to the products described in this manual.

Use A Safety Chain

- ▲ A safety chain will help control drawn machinery should it separate from the tractor drawbar.
- ▲ Use a chain with the strength rating equal to or greater than the gross weight of the towed implement.
- ▲ Attach the chain to the tractor drawbar support or other specified anchor location. Allow only enough slack in the chain to permit turning.
- ▲ Always hitch the implement to the machine towing it. Do not use the safety chain to tow the implement.



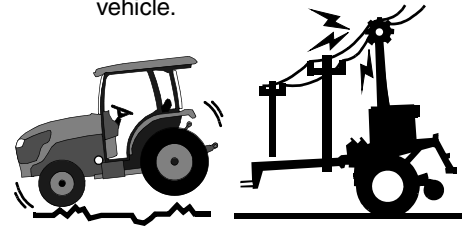
Towing Safely

- ▲ Comply with federal, state, and local laws.
- ▲ Use towing vehicle and trailer of adequate size and capacity. Secure equipment towed on a trailer with chocks, tie downs, and chains.
- ▲ **IMPORTANT:** Do not tow a load that is more than double the weight of the vehicle towing the load.
- ▲ Sudden braking can cause a towed trailer to swerve unexpectedly. Reduce speed if trailer is not equipped with brakes.



Transport Safely

- ▲ Comply with federal, state, and local laws.
- ▲ Avoid contact with any overhead utility lines or electrically charged conductors.
- ▲ Engage park brake when stopped on an incline.
- ▲ Maximum transport speed for an implement is 20 mph (32 km/h). **DO NOT EXCEED.**
- ▲ Never travel at a speed which does not allow adequate control of steering and stopping. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.
- ▲ Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.



Tire Safety

- ▲ Tire changing can be dangerous and must be performed by trained personnel using the correct tools and equipment.
- ▲ Always properly match the wheel size to the properly sized tire.
- ▲ Always maintain correct tire pressure. Do not inflate tires above recommended pressures shown in the Operator's Manual.
- ▲ When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.
- ▲ Securely support the implement when changing a wheel.
- ▲ When removing and installing wheels, use wheel handling equipment adequate for the weight involved.
- ▲ Make sure wheel bolts have been tightened to the specified torque.



Practice Safe Maintenance

- ▲ Understand procedure before doing work. Refer to the Operator's Manual for additional information.
- ▲ Work on a level surface in a clean dry area that is well-lit.
- ▲ Lower implement to the ground and follow all shutdown procedures before leaving the operator's seat to perform maintenance.
- ▲ Do not work under any hydraulically supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- ▲ Use properly grounded electrical outlets and tools.
- ▲ Use correct tools and equipment for the job that are in good condition.
- ▲ Allow equipment to cool before working on it.

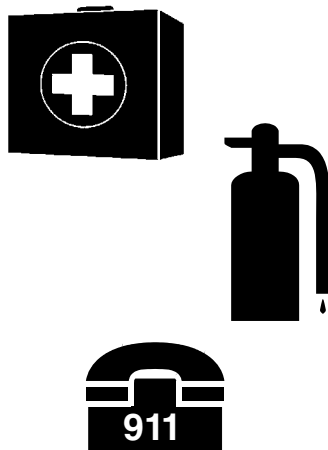
- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement.
- ▲ Inspect all parts. Make certain parts are in good condition & installed properly.
- ▲ Replace parts on this implement with genuine Land Pride parts only. Do not alter this implement in a way which will adversely affect its performance.
- ▲ Do not grease or oil implement while it is in operation.
- ▲ Remove buildup of grease, oil, or debris.
- ▲ Always make sure any material and waste products from the repair and maintenance of the implement are properly collected and disposed.
- ▲ Remove all tools and unused parts from equipment before operation.
- ▲ Do not weld or torch on galvanized metal as it will release toxic fumes.



Listed below are common practices that may or may not be applicable to the products described in this manual.

Prepare for Emergencies

- ▲ Be prepared if a fire starts.
- ▲ Keep a first aid kit and fire extinguisher handy.
- ▲ Keep emergency numbers for doctor, ambulance, hospital, and fire department near the phone.



Wear Personal Protective Equipment (PPE)

- ▲ Wear protective clothing and equipment appropriate for the job such as safety shoes, safety, glasses, hard hat, dust mask, and ear plugs.
- ▲ Clothing should fit snug without fringes and pull strings to avoid entanglement with moving parts.
- ▲ Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- ▲ Operating a machine safely requires the operator's full attention. Avoid wearing headphones while operating equipment.



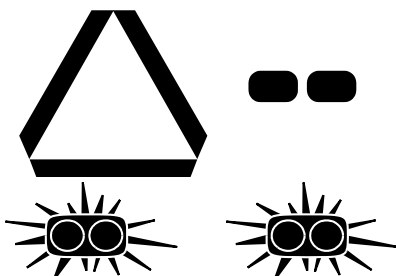
Avoid High Pressure Fluids

- ▲ Escaping fluid under pressure will penetrate the skin or eyes causing serious injury.
- ▲ Relieve all residual pressure before disconnecting hydraulic lines or performing work on the hydraulic system.
- ▲ Make sure all hydraulic fluid connections are properly tightened/torqued and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- ▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- ▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- ▲ **DO NOT DELAY.** If an accident occurs, seek immediate emergency medical care or gangrene may result.



Use Safety Lights and Devices

- ▲ A slow moving power machine can create a hazard when driven on public roads. They are difficult to see, especially at night.
- ▲ Flashing warning lights and turn signals are recommended whenever driving on public roads.
- ▲ For tractors and other agriculture equipment, a Slow Moving Vehicle (SMV) sign is required when traveling on public roads.



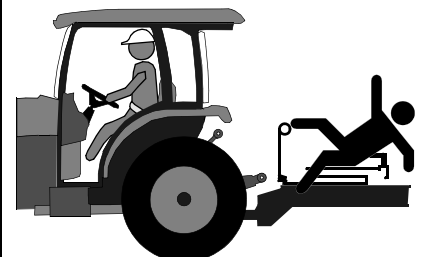
Use Seat Belt and ROPS

- ▲ Land Pride recommends the use of a CAB or roll-over-protective-structures (ROPS) and seat belt in almost all power machines. Combination of a CAB or ROPS and seat belt will reduce the risk of serious injury or death if the power machine should be upset.
- ▲ If ROPS is in the locked-up position, fasten seat belt snugly and securely to help protect against serious injury or death from falling and machine overturn.



Keep Riders Off Machinery

- ▲ Never carry riders on the tractor or implement.
- ▲ Riders obstruct operator's view and interfere with the control of the power machine.
- ▲ Riders can be struck by objects or thrown from the equipment.
- ▲ Never use the tractor or implement to lift or transport riders.



Listed below are common practices that may or may not be applicable to the products described in this manual.

Avoid Crystalline Silica (Quartz) Dust

Because crystalline silica is a basic component of sand and granite, many activities at construction sites produce dust containing crystalline silica. Trenching, sawing, and boring of material containing crystalline silica can produce dust containing crystalline silica particles. This dust can cause serious injury to the lungs (silicosis).

There are guidelines which should be followed if crystalline silica (quartz) is present in the dust.



- ▲ Be aware of and follow OSHA (or other local, State, or Federal) guidelines for exposure to airborne crystalline silica.
- ▲ Know the work operations where exposure to crystalline silica may occur.
- ▲ Participate in air monitoring or training programs offered by the employer.
- ▲ Be aware of and use optional equipment controls such as water sprays, local exhaust ventilation, and enclosed cabs with positive pressure air conditioning if the machine has such equipment. Otherwise respirators shall be worn.
- ▲ Where respirators are required, wear a respirator approved for protection against crystalline silica containing dust. Do not alter respirator in any way. Workers who use tight-fitting respirators can not have beards/mustaches which interfere with the respirator seal to the face.
- ▲ If possible, change into disposable or washable work clothes at the work site; shower and change into clean clothing before leaving the work site.
- ▲ Do not eat, drink, use tobacco products, or apply cosmetics in areas where there is dust containing crystalline silica.
- ▲ Store food, drink, and personal belongings away from the work area.
- ▲ Wash hands and face before eating, drinking, smoking, or applying cosmetics after leaving the exposure area.

Handle Chemicals Properly

- ▲ Protective clothing should be worn.
- ▲ Handle all chemicals with care.
- ▲ Follow instructions on container label.
- ▲ Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil, and property.
- ▲ Inhaling smoke from any type of chemical fire can be a serious health hazard.
- ▲ Store or dispose of unused chemicals as specified by the chemical manufacturer.



Dig Safe - Avoid Underground Utilities

- ▲ **USA: Call 811**
CAN: digsafecanada.ca
Always contact your local utility companies (electrical, telephone, gas, water, sewer, and others) before digging so that they may mark the location of any underground services in the area.
- ▲ Be sure to ask how close you can work to the marks they positioned.





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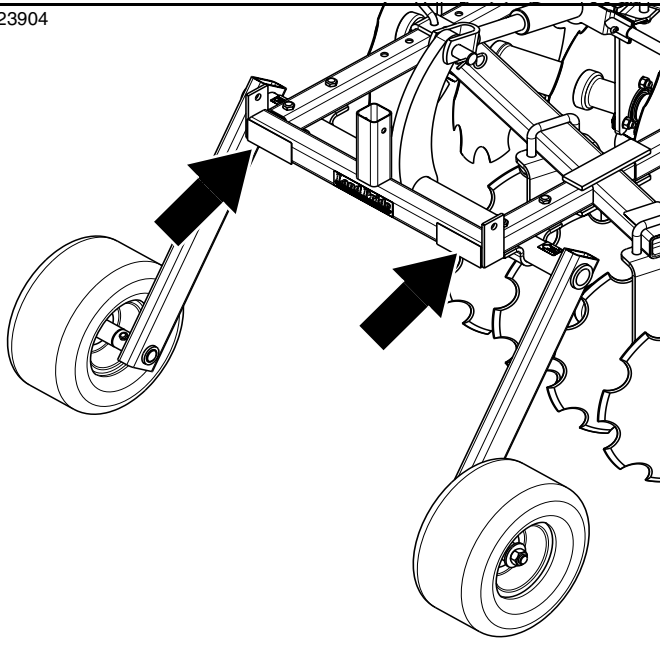
Safety Labels

Your Plot Ranger comes equipped with all safety labels in place. They were designed to help you safely operate your implement. Read and follow their directions.

1. Keep all safety labels clean and legible.
2. Refer to this section for proper label placement. Replace all damaged or missing labels. Order new labels from your nearest Land Pride dealer. To find your nearest dealer, visit our dealer locator at www.landpride.com.
3. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by Land Pride. When ordering new components make sure the correct safety labels are included in the request.

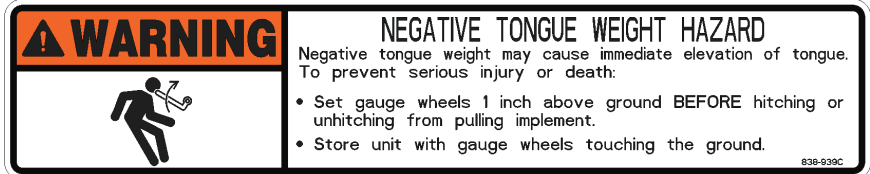
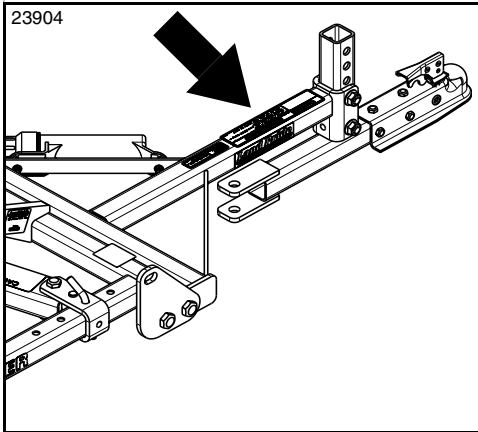
4. Refer to this section for proper label placement. To install new labels:
 - a. Clean surface area where label is to be placed.
 - b. Spray soapy water onto the cleaned area.
 - c. Peel backing from label and press label firmly onto the surface.
 - d. Squeeze out air bubbles with edge of a credit card or with a similar type of straight edge.

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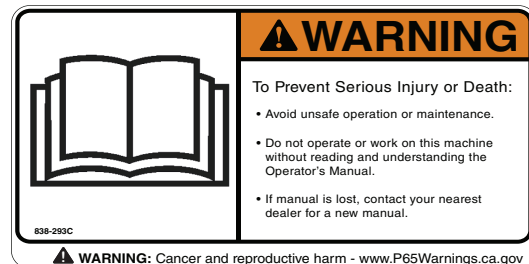
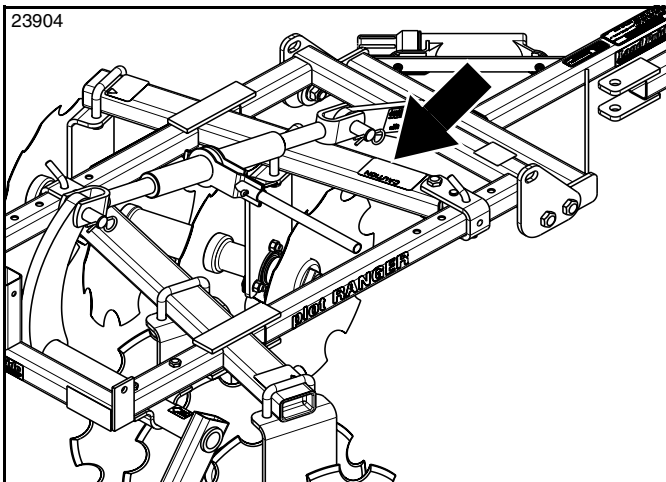


858-095C

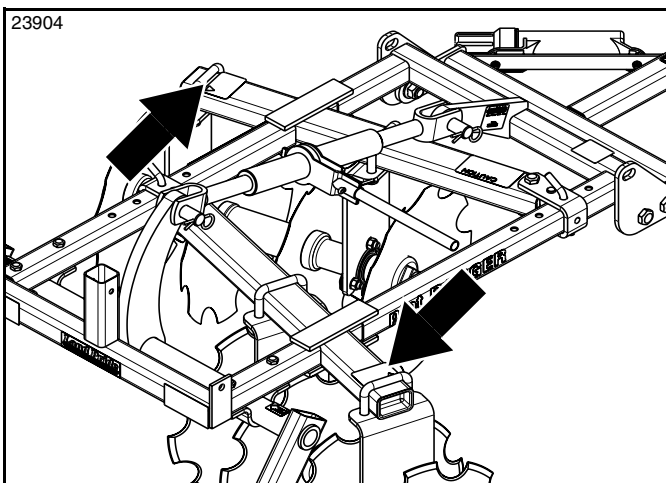
2" x 4 1/2" Red Reflector (2 places)



838-939C
Warning: Negative Tongue Weight



838-293C
Warning: TO Prevent Serious Injury or Death



838-093C
Warning: Sharp Object Hazard

Introduction

Land Pride welcomes you to the growing family of new product owners. This Plot Ranger has been designed with care and built by skilled workers using quality materials. Proper assembly, maintenance, and safe operating practices will help you get years of satisfactory use from this machine.

Application

The Land Pride Plot Ranger is a highly versatile full component package designed to open and break up soil surfaces by discing the soil for seedbed or planting preparation. It will then spread the seed while simultaneously pressing the seeds into the soil with a trailing fluted roller/packer. It can then be used to spread fertilizer, lime, gypsum, and other soil conditioning amendments at distances ranging from 4 ft. to 20 ft. The combination spin spreader/planter portion of this system can also be used in the off-season to spread sand or salt for winter icing or slick snow conditions.

The Plot Ranger is a pull type implement designed to be pulled behind smaller compact utility tractors, off road utility vehicles, and ATVs. This system can be easily raised out of working position and up onto transport wheels either manually or with a 12 volt linear actuator. The combination of maximum versatility and narrow transport width makes the Plot Ranger an excellent choice for applications in wild game food plots, hunting clubs, hunting resorts, ranches, farms, game preserves, landscaping, hobby farming, smaller nurseries, and gardens.

See “**Specifications & Capacities**” on page 30 and “**Features & Benefits**” on page 32 for additional information and performance enhancing options.

Using This Manual

- This Operator’s Manual is designed to help familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.
- The information contained within this manual was current at the time of printing. Some parts may change slightly to assure you of the best performance.
- To order a new Operator’s or Parts Manual, contact your authorized dealer. Manuals can also be downloaded, free-of-charge, from our website at www.landpride.com

Terminology

“Right” or “Left” as used in this manual is determined by facing the direction the machine will operate while in use unless otherwise stated.

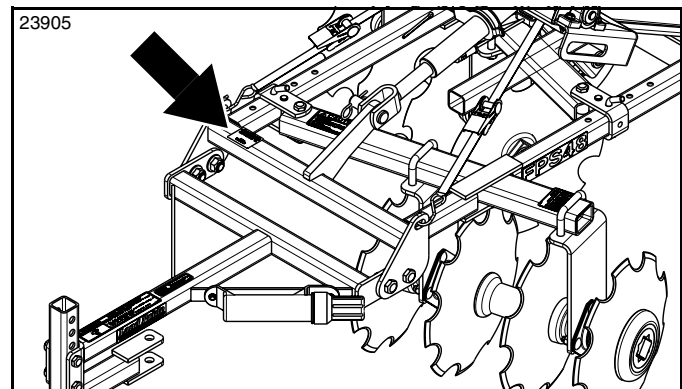
Owner Assistance

The dealer should complete the Online Warranty Registration at the time of purchase. This information is necessary to provide you with quality customer service.

The parts on your food plot seeder have been specially designed by Land Pride and should only be replaced with genuine Land Pride parts. Contact a Land Pride dealer if customer service or repair parts are required. Your Land Pride dealer has trained personnel, repair parts, and equipment needed to service the implement.

Serial Number

For quick reference and prompt service, record model and serial number on the inside cover page and again on the warranty page. Always provide model number and serial number when ordering parts and in all correspondences with your Land Pride dealer. For location of your serial number plate, see Figure 1.



Serial Number Plate Location

Figure 1

Further Assistance

Your dealer wants you to be satisfied with your new Plot Ranger. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

1. Discuss any problems you have with your implement with your dealership service personnel so they can address the problem.
2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the question/problem, and request assistance.
3. For further assistance write to:

Land Pride Service Department
1525 East North Street
 P.O. Box 5060
 Salina, Ks. 67402-5060
 E-mail address
lp servicedept@landpride.com



Section 1: Assembly & Set-up

Requirements

The Plot Ranger is designed to be pulled behind smaller compact utility tractors, off road utility vehicles, and ATVs.

Basic Requirements:

Horsepower Minimum 17 horsepower
Hitch Type Draw Bar or 2" Ball

Optional Equipment Requirements:

Linear Actuator Connection 12 Volt Battery Post
Spin Spreader Connection 12 V. Plug-in Receptacle

Dealer Preparations



WARNING

To avoid serious injury or death:

Be careful when working with disc blades as the edges are sharp. Wear gloves when working around disc blades. Keep others away.

This Plot Ranger is shipped almost completely assembled at the factory. Carefully follow instructions for final assembly.

Go through the “**Pre-Assembly Checklist**” on this page before assembling the food plot seeder. To speed up your assembly task and make the job safer, have all needed parts and equipment readily at hand.

Torque Requirements

Refer to “**Torque Values Chart**” on page 34 to determine correct torque values for common bolts.

Pre-Assembly Checklist

✓	Check	Page
☐	Make sure miscellaneous assembly tools are on hand: Hammer, tape measure, assortment of wrenches & sockets, and spirit level.	
☐	Have a forklift or hoist with properly sized chains and safety stands on hand that are sized for the job ready for the assembly task.	
☐	Have a minimum of two people available during assembly.	
☐	Make sure loose parts bag/box is shipped with the implement.	
☐	Make sure all major components and loose parts are shipped with the machine.	Operator's Manual
☐	Double check to make sure all fasteners & pins are installed in the correct location. Refer to the Parts Manual if unsure. NOTE: All assembled hardware from the factory has been installed in the correct location. Remember location of a part or fastener if removed. Keep parts separated.	Operator's Manual
☐	Make sure working parts move freely, bolts are tight & cotter pins are spread.	Operator's Manual
☐	Make sure all grease fittings are in place and lubricated.	Page 29
☐	Make sure all safety labels are correctly located and legible. Replace if damaged.	Page 6
☐	Make sure all red and amber reflectors are correctly located and visible when machine is in transport position.	Page 6
☐	Make sure all wheel bolts and axle nuts are tightened to the specified torque.	Page 34
☐	Make sure all tires are inflated to the specified psi air pressure.	Page 34

Hitch Assembly

Refer to Figure 1-1:

Refer to *Torque Values Chart* on page 34 for proper torque values when tightening nuts.

1. Attach front hitch frame (#3) to the disc frame with four 3/4" -10 x 1 3/4" GR5 hex head cap screws (#7) and 3/4" hex flange locknuts (#9). Tighten nuts to correct torque.
2. Position hitch assembly (#4), depending upon which will be used, with either the 2" ball or the clevis facing forward.
3. Attach hitch assembly (#4) to front hitch frame (#3) with two 5/8"-11 x 3 1/2" GR5 hex head cap screws (#6) and hex flange locknuts (#10). Tighten nuts to correct torque.

NOTE: The ball or clevis hitch may require repositioning after the Plot Ranger is attached to a small utility tractor, utility vehicle, or ATV. See "**Level Disc Harrow**" on page 20 for a detailed description of repositioning the hitch.

Rear Axle Assembly

Refer to Figure 1-1:

Refer to *Torque Values Chart* on page 34 for proper torque values when tightening nuts.

1. Position rear axle assembly (#2) under the disc frame with rear axle adjusting lug (A) oriented as shown.

IMPORTANT: Deformation of tube will occur if 1/2" hex flange locknuts (#8) are torqued more than 40 ft. lbs.

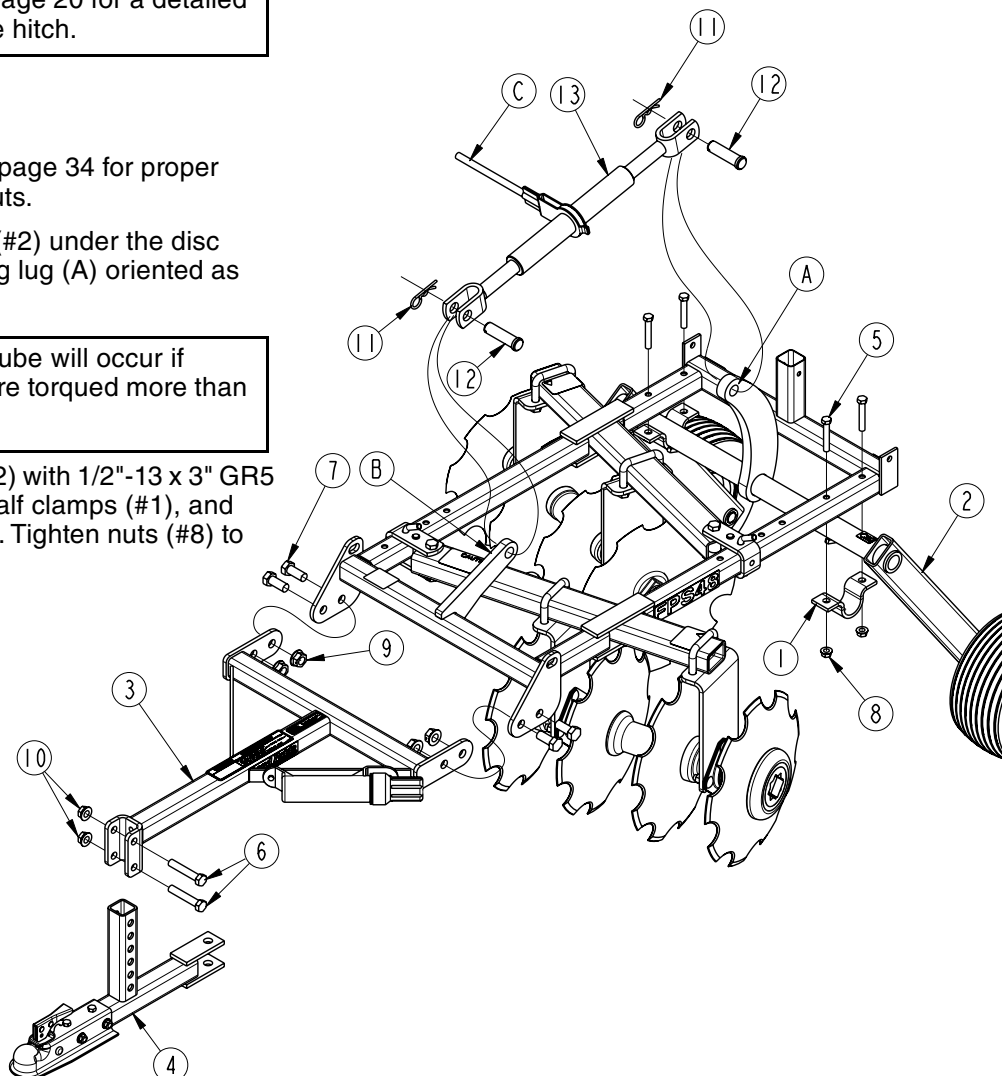
2. Attach rear axle assembly (#2) with 1/2"-13 x 3" GR5 hex head cap screws (#5), half clamps (#1), and 1/2" hex flange locknuts (#8). Tighten nuts (#8) to 40 ft.-lbs. of torque.

Ratchet Jack Assembly

Refer to Figure 1-1:

The Plot Ranger is shipped with a Ratchet Jack (#13) or an optional Linear Actuator will be packaged separate if purchased with the unit. See "**Linear Actuator**" on page 11 if one is included.

1. Remove hair pin cotter (#11) and 1" x 3 3/16" clevis pins (#12) from both ends of the ratchet jack.
2. Attach lower end of ratchet jack to the front mounting lug (B) as shown with clevis pin (#12) and secure it with hair pin cotter (#11).
3. Operate ratchet jack handle (#C) to move the upper clevis until it aligns with the rear axle adjusting lug hole (A).
4. Attach upper end of ratchet jack to the rear axle adjusting lug (A) as shown with clevis pin (#12) and secure it with hair pin cotter (#11).



**Ratchet Jack Assembly
Figure 1-1**



Spin Spreader

Refer to Figure 1-4 on page 12:

Install spreader assembly as follows:

1. Remove spin spreader and all component from the shipping box.

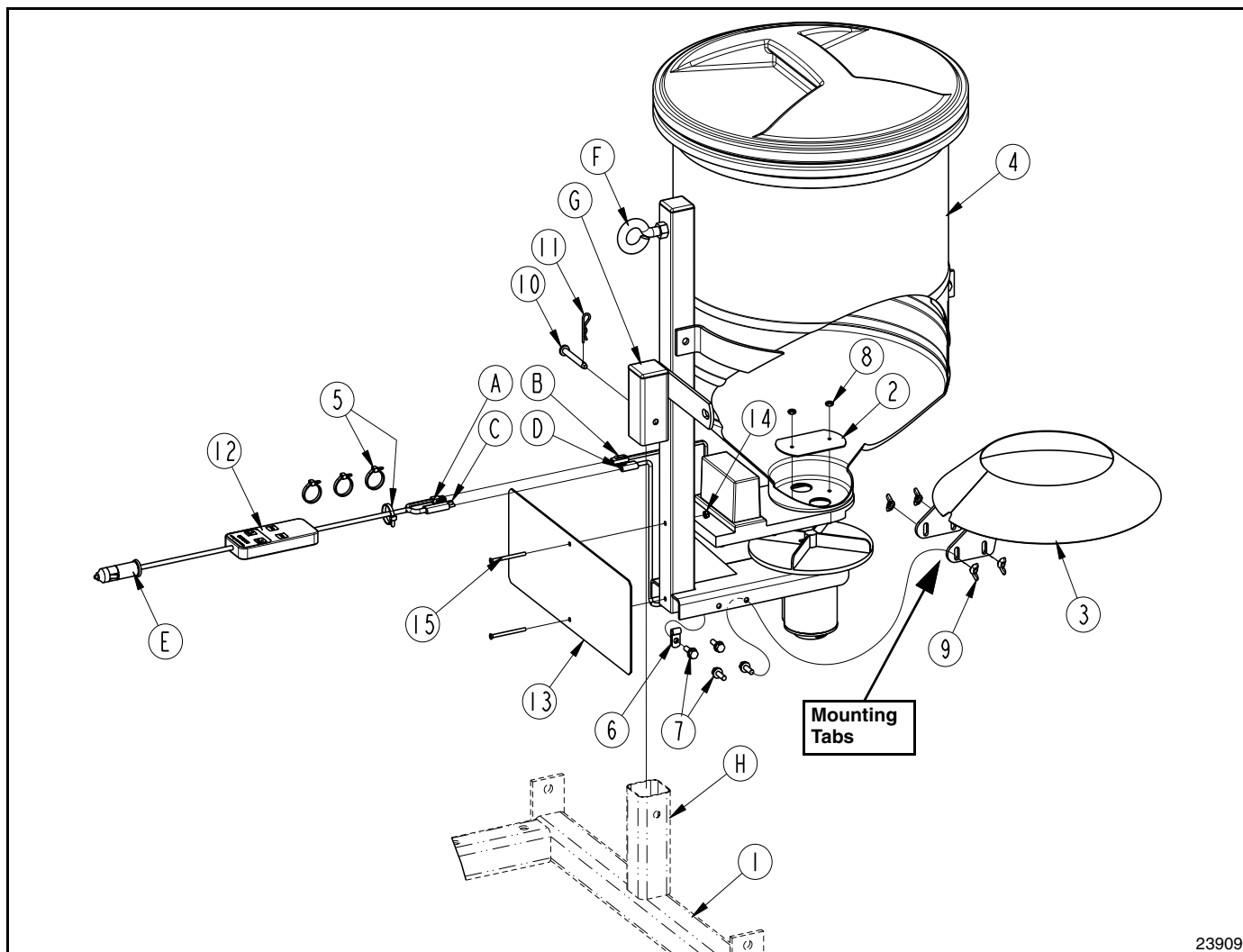
NOTE: The restrictor plate (#2) is used to restrict product flow out of the two hopper openings. Some applications will require removal of the restrictor plate to allow a higher discharge rate. Other applications will require the restrictor plate be installed to decrease the discharge rate.

2. (Optional) Install restrictor plate (#2) as shown on top of existing nuts. Install stainless steel hex nuts (#8) and tighten.
3. Being careful not to damage the electrical wiring, drill out pop rivet and remove wire clip (#6).
4. Insert spin motor wiring into the new wire clip (#6).

NOTE: The spin deflector (#3) diverts seed to 48" width. It can be installed depending on your seed dispersal needs.

Installation Note: Spin deflector (#3) can be installed without removing hopper (#11). Install spin deflector (#3) by holding mounting tabs to the rear and slide deflector between hopper (#11) and spin plate (#12). Rotate deflector mounting tabs around to the front to line up with side holes.

5. (Optional) Attach spin deflector (#3) and new wire clip (#6) to the lower channel bracket with 1/4"-20 x 3/4" GR5 hex flange serrated screws (#7) and wing nuts (#9). Hand tighten wing nuts.
6. Bolt 5 1/2" x 14 3/4" splash plate (#13) to the vertical tube with #10-32 x 2" flat head machine screws (#15) and nylock nuts (#14). Tighten nuts.
7. Slide spreader mounting bracket (G) into disc frame support tube (H). Secure with 5/16" x 2 1/2" clevis pin (#10) and hair pin cotter (#11).



Spin Spreader Assembly
Figure 1-4

23909

Section 1: Assembly & Set-up

Refer to Figure 1-5:

8. Attach one end of a ratchet tie down strap to the spreader eyebolt (F) and the other end to the front hole (G) located on the left side of the disc frame as shown in Figure 1-5. Tighten strap only enough to remove slack.
9. Attach a second tie down strap to the same spreader eyebolt (F) and to hole (H) located on the right side of the disc frame as shown in Figure 1-5. Tighten strap only enough to remove slack.
10. Tighten both tie down strap equally to prevent spreader box from jiggling in its mount. Do not over tighten.



CAUTION

To avoid minor or moderate injury:

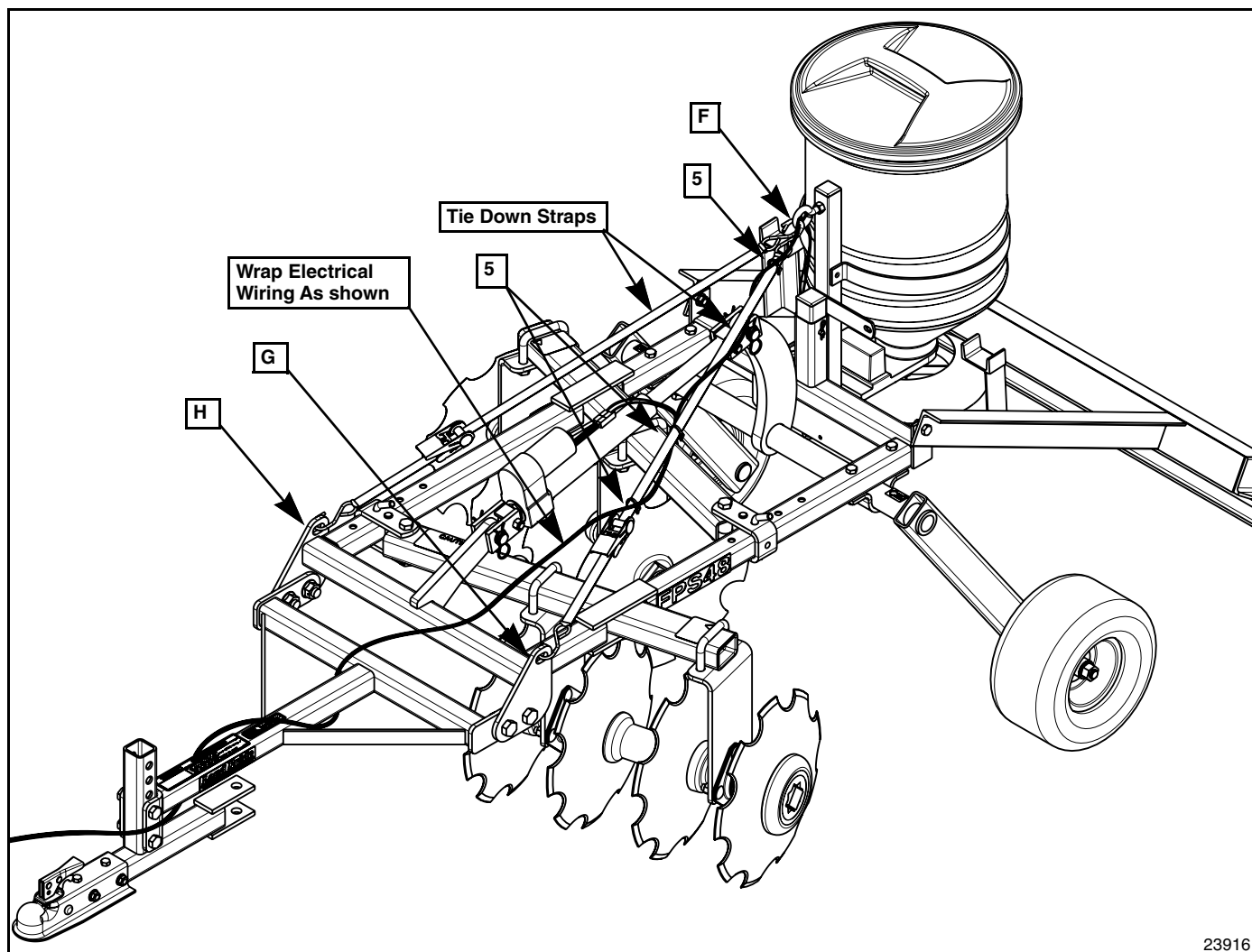
Make sure electrical wiring is supported in such a way that it will not make contact with trash, lift mechanism, rotating discs, pinch points, vehicle rotating components, vehicle hot exhaust, etc.

Refer to Figure 1-4 on page 12:

11. Store hand controller (#12) in a dry location. The following steps are required if installing at set-up:
 - a. Thread hand control wires with white connector (A) and black connector (C) through eye bolt (F).
 - b. Plug white connector (A) into the feedgate connector (B) and black connector (C) into the spin motor connector (D).
 - c. Wrap wires around one of the tie down strap and along the hitch frame as shown in Figure 1-5 below.
 - d. Plug lighter plug (E) into a 12 volt accessory receptacle.

Refer to Figure 1-5:

NOTE: Ties (#5) may be used to secure electrical wiring. If ties are used, attach them loosely or out of material that can be removed easily to allow easy removal of electrical components for dry storage.



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Plot Ranger Assembly
Figure 1-5



Section 2: Operating Procedures

Operating Checklist

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training involved in the operation, transport, storage, and maintenance of the seeder. Therefore, It is absolutely essential that no one operates the seeder unless they have read, fully understood, and are totally familiar with the Operator's Manual. Make sure the operator has paid particular attention to:

- **Important Safety Information**, page 1
- **Section 1: Assembly & Set-up**, page 9
- **Section 2: Operating Procedures**, page 14
- **Section 3: Adjustments**, page 19
- **Section 4: Optional Equipment**, page 26
- **Section 5: Maintenance & Lubrication**, page 27

Operator's Responsibilities



DANGER

To avoid serious injury or death:

- Do not allow anyone near the vehicle or implement while operating. Stop operation if bystanders are too close. They can be hit by flying projectiles, become entangled in the equipment, or ran over.
- Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to the hydraulics is off.



WARNING

To avoid serious injury or death:

- Never make contact with underground utilities such as electrical power lines, gas lines, phone lines, etc. They can cause serious injury or death from electrocution, explosion, or fire. Always call 811 (USA) or local utility companies before digging so that they can mark the location of underground services in the area. For contact information, see Dig Safe in the "Important Safety Information" starting on page 1.
- Allow only persons to operate this implement who have fully read and comprehended this manual, and who have been properly trained in the safe operation of this implement. Serious injury or death can result from the inability to read, understand, and follow instructions provided in this manual.
- Never carry riders on the implement or power machine. Riders can obstruct the operator's view, interfere with controls, be pinched by moving components, become entangled in rotating components, struck by objects, thrown about, fall off and be run over, etc.
- Do not use implement for a purpose other than the work it is designed to do as defined in this manual.

- Do not use implement as a man lift, work platform or as a wagon to carry objects. It is not properly designed or guarded for this use.
- Do not stand or climb on the implement.
- Be careful when working with disc blades as the edges are sharp. Wear gloves when working around disc blades. Keep others away.
- Dress properly for the job. Do not wear loose fitting clothing or clothing with pull strings. Keep long hair tucked in. Clothing and hair can become entangled in rotating components. Wear footwear that will improve footing on slippery surfaces.
- Select a safe ground speed that will allow adequate control of steering and stopping. Never exceed 20 mph (32 km/h) with attached equipment. Rough terrain requires a slower speed.
- Make sure safety labels are in their proper location and are in good condition before operating the attached implement. Read and obey all instructions on the labels.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the implement back into service.
- The roller packer is heavy. It is best to lower the disc harrow to the ground before rotating the roller packer down or up over the seeder box.
- Always use the handle on the left side frame when rotating the roller packer down or up. Never grab the packer by the roller when raising and lowering.
- Do not alter implement or replace parts on the implement with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the implement. Replace parts only with genuine OEM parts.



CAUTION

To avoid minor or moderate injury:

Disconnect electrical power to the linear actuator and spin spreader before working on or around the disc harrow and spin spreader.

IMPORTANT: Never back up with roller packer on the ground. Damage to the Plot Ranger could result.

Hook-up Plot Ranger



DANGER

To avoid serious injury or death:

A crushing hazard exists while connecting and disconnecting the implement. Keep people and animals away while backing-up to the implement or pulling away from the implement. Do not operate hydraulic or electrical controls while a person or animal is directly behind the power machine or near the implement.

Section 2: Operating Procedures

**WARNING**

To avoid serious injury or death:

The disc harrow tongue can have negative tongue weight that may cause immediate elevation of tongue. Set gauge wheels 1" above ground before hitching or unhitching from implement. Store implement with gauge wheels touching the ground.

1. Back vehicle up to the Plot Ranger hitch until holes in the drawbar and clevis are aligned or until the ball is aligned with the ball hitch.
2. If gauge wheels are resting on the ground, operate ratchet jack or linear actuator to raise the wheels off the ground 1".
 - For instructions on how to hook-up the linear actuator, refer to step 4 for wiring.
 - For instructions on how to operate the ratchet jack or linear actuator, refer to “**Raising & Lowering the Unit**” on page 15.
3. Attach hitch as follows:
 - Clevis Type Hitch: Insert customer supplied pin through the clevis and drawbar. Secure pin in place with customer supplied keeper pin.
 - 2" Ball Type Hitch: Drop hitch over 2" ball and rotate latch lever down to secure the hitch to the ball. A customer supplied pin may be inserted through the hole in the latch to secure it in place.

**CAUTION**

To avoid minor or moderate injury:

Make sure electrical wiring is supported in such a way that it will not make contact with trash, lift mechanism, rotating discs, pinch points, vehicle rotating components, vehicle hot exhaust, etc.

Refer to Figure 1-2 on page 11:

4. (Optional) Linear Actuator Electrical Hook-up:
 - a. Plug connector (E) into connector (F).
 - b. Wrap electrical wiring around one of the tie down straps and along the hitch frame as shown in Figure 1-5 on page 13.
 - c. Attach black wire alligator clip (C) to the negative (-) battery post.
 - d. Attach white wire alligator clip (D) to the positive (+) battery post.

Refer to Figure 1-4 on page 12:

5. (Optional) Spin Controller Electrical Hook-up:
 - a. Thread hand control wires with white connector (A) and black connector (C) through eye bolt (F).
 - b. Plug white connector (A) into the feedgate connector (B) and black connector (C) into the spin motor connector (D).
 - c. Wrap wires around one of the tie down strap and along the hitch frame as shown in Figure 1-5.

- d. Plug lighter plug (E) into a 12 volt accessory receptacle.

Refer to Figure 1-5 on page 13:

NOTE: Ties (#5) may be used to help secure the electrical wiring. If they are used, attach them loosely or out of material that can be removed to allow removal of electrical components for dry storage.

6. Raise Plot Ranger off the ground before towing.

Raising & Lowering the Unit**Ratchet Jack**

The disc harrow can be raised or lowered by setting the ratchet mechanism on the jack handle and then pumping the jack handle to raise or lower the disc harrow.

Linear Actuator (Optional)

Operate the toggle switch at the control box to raise and lower the disc harrow.

Transport Plot Ranger**WARNING**

To avoid serious injury or death:

When traveling on public roadways, travel in such a way that faster moving vehicles may pass safely. Use hazard lights, clean reflectors, and a slow moving vehicle sign that is visible from the back to warn operators in other vehicles of your presence. Always comply with all federal, state, and local laws.

1. The disc harrow should be lifted as high as possible to clear the ground when transporting.
2. Always travel with the roller packer rotated above the disc frame. It is best when transporting to secure the roller packer with a customer supplied tie down cord stretching from the lift handle to the front left corner of the disc frame.
3. Select a safe ground travel speed when transporting from one area to another. Do not travel over 20 mph (32 kph) with the Plot Ranger.
4. Always travel on roadways in such a way that faster moving vehicles may pass you safely.
5. When traveling over rough or hilly terrain, shift vehicle to a lower gear.
6. Never back-up with the roller packer down.
7. Be aware of a possible negative hitch weight that could cause loss of vehicle control. Add weight to the rear of the vehicle if needed.
8. Do not lower unit while transporting on a road. Damage to unit and or road may occur.
9. Be sure to reduce tractor ground speed when turning. Leave enough turning clearance to clear obstacles such as buildings, trees, and fences.



Calibrating the Spin Controller

Refer to Figure 2-1:

IMPORTANT: To assure proper operation, the Plot Ranger controls should be calibrated each time it is plugged into the 12 volt receptacle or if you lose power to receptacle.

IMPORTANT: Make sure the spin spreader is empty and the vehicle is running when calibrating.

1. Thoroughly lubricate the spreader before calibrating.
2. Calibrate the control unit by holding the **OFF** button down and momentarily pressing the **ON** button. While in the calibration mode, the lights will flash rapidly. Once calibration is complete, the lights will go out and gate will close. The unit is now ready for operation.
3. Set dispensing amount by pressing the **MORE** or **LESS** buttons to achieve the desired gate opening. Position 1 is the minimum amount and position 6 is the maximum amount of material flow. The Material Flow light flashes when unit is not running (**OFF**) and is on solid when unit is running (**ON**).
4. While moving at a constant rate, start material spreading by pressing the **ON** button.

NOTE: The **MORE** or **LESS** buttons may be pressed at anytime to achieve the desired material flow rate.

5. Press the **OFF** button to stop the spin motor and close the control gate.

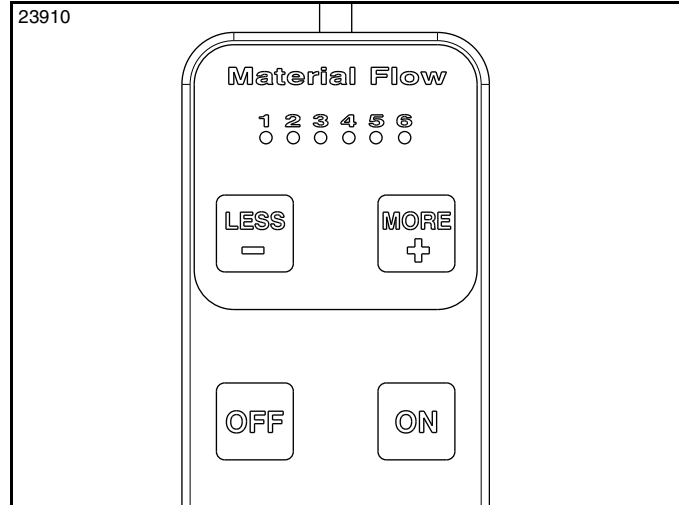
Field Set-up



WARNING

To avoid serious injury or death:

- Wear eye protection to prevent getting chemicals and/or dirt in the eyes while cleaning the implement.
 - Wear proper protective clothing when servicing or lubricating the spin seeder. Refer to chemical manufacturers' labels for specific clothing requirements.
1. Prior to operation, thoroughly lubricate the spin spreader. Check for proper operation of the mechanisms by running the spin motor and slide gate at no-load. See "**Calibrating the Spin Controller**" on page 16.
 2. Review spreader rate charts beginning on pages 22. Make initial setting to the spin spreader controller (positions 1 through 6) and install or remove the restrictor plate as needed.
 3. Install the spin deflector if a narrow pattern (48" spreading width) is desired or remove the spin deflector if a wide pattern is preferred.



Spin Spreader Controller
Figure 2-1

4. Lower the Plot Ranger to the ground and make a run with the spin spreader turned off. Make depth, angle, and level adjustments to the disc harrow. Refer to "**Section 3: Adjustments**" on page 19.
5. Press the **OFF** button to make sure the spin spreader gate is closed and fill the bin with product.
6. With the disc blades on the ground, rotate the roller packer over the spin seeder and onto the ground.
7. Make another run with the spin spreader turned on to check product dispersion rate.

IMPORTANT: Always make sure you are traveling before turning the spin spreader on. Always turn the spin spreader off before end of travel. Running the spreader while not traveling will discharge too much material in one spot.

NOTE: A good method for checking product dispersion is to fill the bin with the required pounds of material to cover 1,000 sq. ft. in a straight run. A 4 ft. wide pattern would require 250 ft. of straight run. You should run out of product at the end of the 250 ft. If not, make the following adjustments:

1. Increase travel speed to disperse less product per sq. ft. or decrease speed to disperse more.
2. If the speed you are traveling is preferred, change position number on the controller to disperse more or less product.
3. You may also want to adjust the spin deflector at the wing nuts to control placement of product.
4. Make a new run to recheck dispersion rate.



Field Operation



WARNING

To avoid serious injury or death:

Be careful when working with disc blades as the edges are sharp. Wear gloves when working around disc blades. Keep others away.

IMPORTANT: Making too sharp a turn with disc blades in the ground can damage the blades.

1. After initial adjustments have been made and you have hooked up to disc harrow, you are ready to start discing.
2. Lower disc harrow to the ground and start traveling forward. Turn the spin spreader on after forward travel has started and off before travel has stopped. Your travel speed will be determined by soil conditions and material dispersion.
3. Allow room to make wide turns or lift the unit out of the ground to make sharp turns.
4. Do not disc in reverse (traveling backward). The Plot Ranger is designed for working the soil while traveling forward only. Damage to the harrow and roller packer may occur. The recommended procedure for making sharp corners or harrowing in tight places is:
 - a. With the disc harrow in the ground, rotate roller packer up over disc harrow.
 - b. Lift disc harrow up.
 - c. Back up into corner or other tight areas.
 - d. Lower harrow to ground and proceed with discing going forward. Stop and lower roller packer as soon as there is room for it to be lowered.
 - e. Turn on the seeder if it is being used.

Refer to Figure 2-2:

5. Do not cross a ditch at a 90 degree angle (straight on)! Damage to the disc harrow and/or vehicle may occur while crossing at a 90 degree angle. Always cross a ditch on a diagonal.

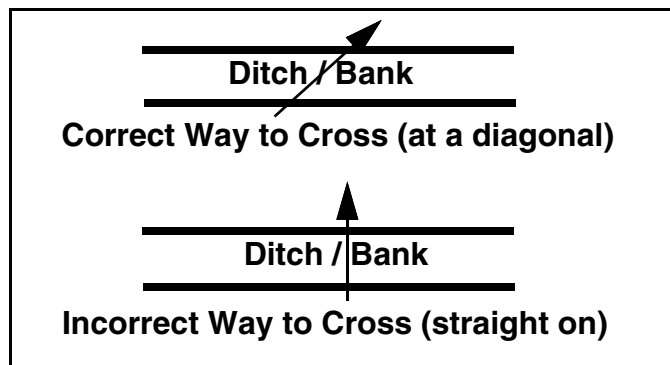


Figure 2-2

Unhook Plot Ranger



DANGER

To avoid serious injury or death:

A crushing hazard exists while connecting and disconnecting the implement. Keep people and animals away while backing-up to the implement or pulling away from the implement. Do not operate hydraulic or electrical controls while a person or animal is directly behind the power machine or near the implement.



WARNING

To avoid serious injury or death:

The disc harrow tongue can have negative tongue weight that may cause immediate elevation of tongue. Set gauge wheels 1" above ground before hitching or unhitching from implement. Store implement with gauge wheels touching the ground.

1. Park on a level solid surface.
2. Lower disc blades to the ground and raise carriage wheels approximately 1" off the ground. Do not raise wheels all the way up as this allows the unit to tip backward.
3. Shut vehicle engine off and engage parking brake.
4. (Optional) Spin Controller Electrical:
 - a. Unplug lighter plug from 12 volt accessory receptacle.
 - b. Unplug hand control from the feedgate.
 - c. Unplug hand control from the spin motor.
5. (Optional) Linear Actuator Electrical:
 - a. Unplug the connector at the actuator.
 - b. Disconnect the black wire alligator clip from the negative (-) battery post.
 - c. Disconnect the white wire alligator clip from the positive (+) battery post.
6. Unhitch Plot Ranger from vehicle.

IMPORTANT: Protect the spin controller and actuator controller from moisture by storing them in a dry location.

IMPORTANT: Read and understand all instructions to "Clean the Spin Spreader" on page 27 before cleaning the spreader.

7. Properly clean the spin spreader per the instructions on page 27.
8. Remove and store spin spreader, spin controller, and actuator controller in a dry location.
9. Refer to "Long-Term Storage" on page 28 if the Plot Ranger is to be stored for the season.



General Operating Instructions

Before putting your Land Pride FPS48 Plot Ranger into service you must thoroughly review the Operator's Manual. Once you have read the Operator's Manual and properly set up your Land Pride Plot Ranger system and attached it to the vehicle you intend to pull it with, you should be ready to head for the planting site. You should have already removed any sizable tree limbs, rocks, or extraneous debris, and should have mowed any tall grass or weeds. You might have already plowed this area previously in preparation for planting. Do not attempt to disc wet or mucky soil and all areas should be well drained and capable of being walked on without having the soil stick to your shoes.

The disc can be lowered to the ground with either the manual ratchet lever or the optional 12 volt linear actuator with electrical lead. Discing action will commence as soon as the unit is lowered to the ground and you begin to pull the unit forward. You will need to make sure you raise the transport wheels high enough to allow for adequate disc penetration. Your travel speed forward will be determined by soil conditions, depth of penetration, and available horsepower of the pulling vehicle. Never try to disc in reverse and when you reach the end of a pass, either raise the unit up on the transport wheels, or make a wide sweeping turn to realign for the next pass. Turning too sharply with the disc in the ground will cause extreme side loading on the discs that could result in damage. Disc gang adjustments may be required to make discing and cultivation action more or less aggressive. This is achieved by raising the disc into transport position, pulling the locking pins, and making the required adjustments to the front and rear gangs. The Operator's Manual illustrates this process very clearly.

Ground conditions and the seedbed finish you require will determine how you position the angles of your front and rear disc gangs. Both of the front and rear disc gangs have four angle adjustment positions. The more aggressive you set the angle of the gangs, the more aggressive the cutting action in the soil profile will be. The more aggressive the cutting action is, the more horsepower will be required to pull your unit. Achieving the desired effect may require a little experimentation in your given conditions. If the soil is building up on or sticking to your discs, then the soil is too wet and discing operations should be discontinued until the ground is drier and more workable.

Once you are satisfied that you have achieved the right finish, it's time to determine what your spin spreader settings need to be. Land Pride has furnished you with the seed rate charts that provides suggested settings for eleven of the most popular types of seeds typically used in wild game food plots. We have also provided suggested guidelines for distribution of fertilizers, gypsum, and lime. Due to the wide number of possibilities and variables that can and do come into play when planting, fertilizing, or making soil amendments,

Land Pride makes absolutely no guarantees or warranties with respect to fertilizer applications, or actual seed distribution and germination rates.

Initial calibration and set up of the seeder mechanism should be accomplished with no seed in the hopper. Using the rate charts you will need to determine which one of the six position settings you will need to use. You do need to determine whether or not you will need to use the restrictor plate in the seed gate opening. You will also need to determine what your forward travel speed needs to be. We highly recommend the use of a global positioning device (GPS) to help maintain your actual ground speed when planting. To calibrate your seeder metering system connect your power cable to a 12 volt receptacle. Turn the power on. Now hold down on the off button and press the on button momentarily to synchronize the controller with the seed gate. While in the calibration mode, the lights will flash rapidly. Once calibration is complete, the lights will go out and the gate will close. The unit is now ready for operation.

Press the + positive or - negative control button until the red light is on directly below the position setting you want. Now when you hit the off button, the seed gate in the hopper will close and you can safely put seed in the hopper.

When you hit the on button, the seed gate will now automatically open to the position setting you have chosen and spinner will begin rotating and distributing seed. At that time you should also be traveling at the ground speed you have preselected for the proper distribution rate, you should have the disc on the ground in working position, and the fluted roller/packer should be flipped down in working position to help achieve maximum seed to soil contact. When you hit the off button again the seed gate will automatically close and the spinner will stop. If you need to adjust the seed rate up or down this can be done at any time by simply pushing the negative or positive control buttons to change the indicated position settings. This seeder has some minimal overlap which will generally result in a more uniform stand between adjacent planting passes.

Once you are finished using your Plot Ranger, park it on a dry and level surface, clean it, and make it ready for the next use. Never leave seed, fertilizer, or any other materials in the hopper or serious damage to the seed metering system could result. Put the lid on the seed hopper and store the electronic lead controls in a clean and dry manner. Attaching and detaching the ball or pin type pull hitch can be easily accomplished by lowering the disc to the ground and slightly raising the transport wheels to achieve neutral or slightly negative tongue weight. Be careful not to achieve too much negative tongue weight or the hitch could jump quickly upward when released from the hitch. With a little practice you will be able to achieve excellent results from your Land Pride Plot Ranger. See "**Features and Benefits**" section or "**Product Specifications**" for additional information and performance enhancing options.

Section 3: Adjustments

Disc Gang Adjustments

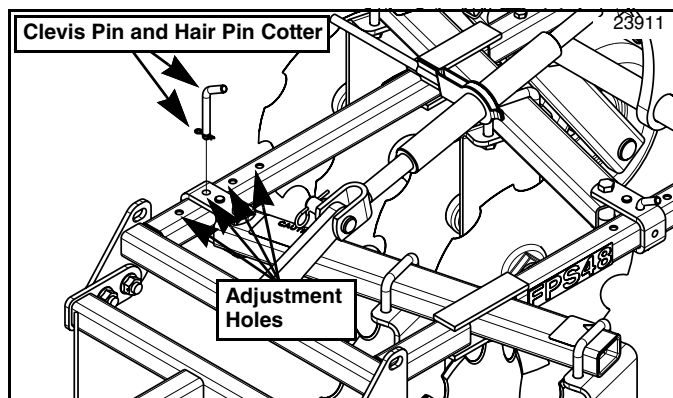


WARNING

To avoid serious injury or death:

- Be careful when working with disc blades as the edges are sharp. Wear gloves when working around disc blades. Keep others away.
- Properly block and secure disc in the raised position prior to changing gang angles, gang position, disc replacement or during maintenance. Keep feet out from under the disc blades during adjustments or maintenance.
- Perform maintenance only on equipment that is not running. Place power machine in park or set park brake, shut engine off, remove switch key, and wait for all moving components to come to a complete stop before dismounting.

1. Park implement on a flat, level surface.
2. Place power machine in park or set park brake, shut engine off, and remove switch key before dismounting. Also, refer to shutdown instructions in the power machine Operator's Manual.
3. Place support blocks/jack stands under the main frame and lower the disc onto the supports.



Disc Adjustments
Figure 3-1

Disc Gang Angle

Refer to Figure 3-1:

The Plot Ranger is designed for ease of angling with the front and rear discs having four angle positions: (0, 7, 14, and 21 degrees.) Disc angle in Figure 3-1 are shown at 14 degrees.

NOTE: Increasing disc gang angle makes for a more aggressive cut to remove more vegetation and requires more horsepower to pull the implement.

Decreasing disc gang angle will give a better ground finish, remove less vegetation, and requires less horsepower.

1. Remove hairpin cotter and hitch pin.
2. Slide disc gangs to desired position and replace hitch pin. Secure hitch pin with hairpin cotter.

Disc Gang Position

Refer to Figure 3-2:

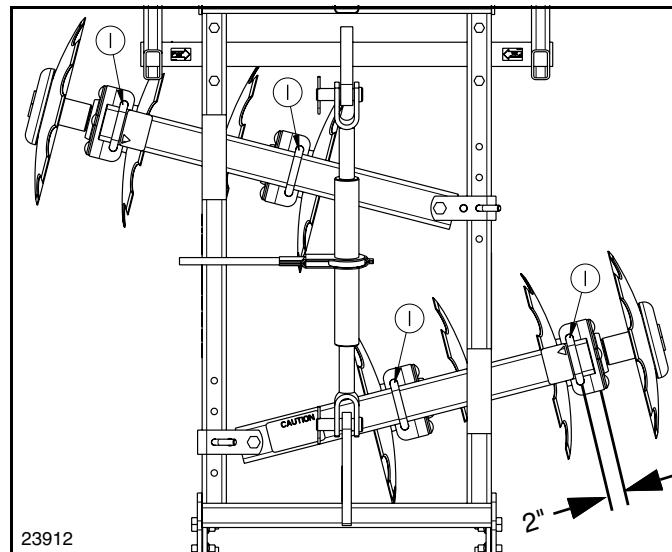


WARNING

To avoid serious injury or death:

Do not remove u-bolt nuts to reposition the disc gangs. Only loosen them. If u-bolt nuts are removed, disc gangs will drop causing injury to the body.

1. Loosening u-bolts (#1) and sliding the disc gangs in or out to desired position. The recommended position is 2" from end of steel tube as shown.
2. Tighten u-bolts to the proper torque once the gangs have been set to the desired position.

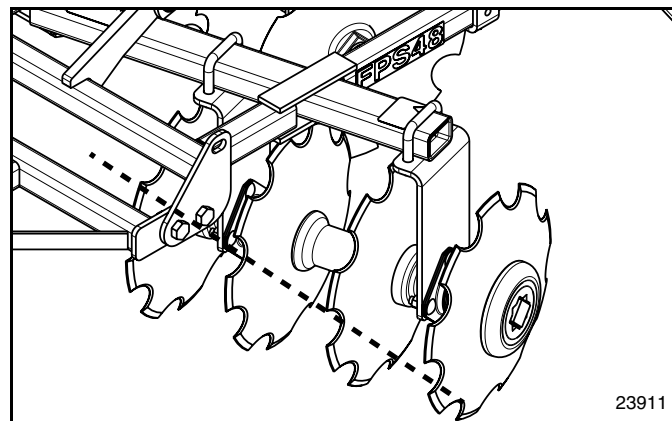


Disc Adjustments
Figure 3-2

Disc Blade Replacement

Refer to Figure 3-3:

When replacing notched disc blades, assemble disc blades with the notches in a spiral pattern as shown.



Disc Replacement (Spiral)
Figure 3-3



Level Disc Harrow

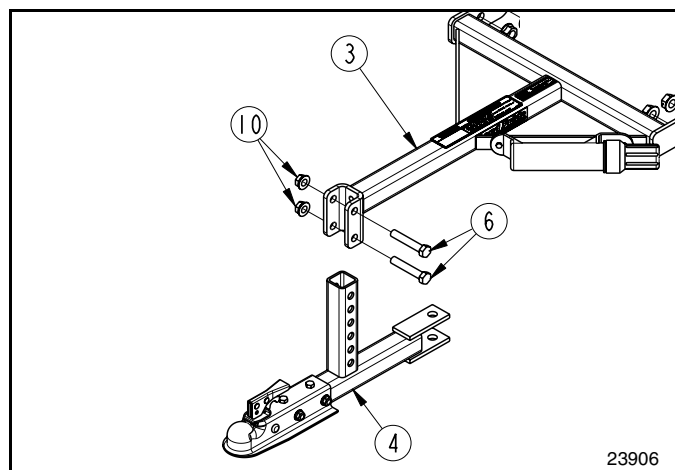
The disc harrow frame should be level when working soil. That is to say, the front disc and rear disc should be in the ground equal distances.

1. Determine the amount of distance the hitch assembly (#4) will need to be raised or lowered to pull unit level while working ground.
2. Raise unit out of the ground and locate a level surface to park.
3. Set vehicle's park brake, shut off engine, chalk front, and back wheels of the Plot Ranger and unhitch unit from vehicle.

Refer to Figure 3-4:

4. Level frame by removing two 5/8"-11 x 3 1/2" GR5 hex head cap screws (#6) and hex flange lock nuts (#10).
5. Reposition hitch assembly (#4) by the predetermined amount arrived in step 1.
6. Reinstall two 5/8"-11 x 3 1/2" GR5 hex head cap screws (#6) and hex flange locknuts (#10). Tighten nuts to the proper torque. Refer to *Torque Values Chart* on page 34 for proper torque values.
7. Repeat steps 1 to 6 if unit is still not level while working a plot.

NOTE: Hitch #4 can be flipped upside down and installed from top side. Ball hitch would need to also be flipped and remounted.



Hitch Assembly
Figure 3-4

Spin Spreader Adjustments

Adjustments to the spin spreader controller and spin deflector are provided in detail in Section 2 under “Calibrating the Spin Controller” and “Field Set-up” on page 16.

DISCLAIMER: The seed rate charts are intended as guidelines only. Land Pride accepts no responsibility for actual site application rates or germination rates. These rates can vary dramatically due to varying conditions and operator skill level.

NOTE: If vehicle does not have a speed meter or no way to calculate speed, a hand held Global Positioning System (GPS) that indicates speed is available at most sporting goods stores.



Section 3: Adjustments

Spin Spreader Rates (English) Narrow Pattern Calculations

Calculations in the “**English Seed Rate Chart**” on page 22 with 48" spread width are based on:

- With spin deflector attached.
- With and without restrictor plate.
- Dispersal pattern at 48" width.
- Traveling at 1 mph (mile per hour)

NOTE: Data in the “**English Seed Rate Chart**” is based on traveling 1 mph. To calculate discharge rate at other speeds, divide the data in the chart by the mph you are traveling.

EXAMPLE:

Refer to “English Seed Rate Chart” on page 22:

If you are dispersing alfalfa at 1 mph with the spin controller set on position 2, the discharge rate will be 515.6 lbs/acre or 11.8 lbs/1000 sq. ft. If you are driving at 4 mph, calculate discharge rate as follows:

- Divide 515.6 by 4 = 128.9 lbs/acre.
- Divide 11.8 by 4 = 2.9 lbs/1000 sq. ft.

REMEMBER: Increasing travel speed decreases amount of material being applied.

Wide Pattern Calculations

Calculations in the “**English Seed Rate Chart**” on page 23 are based on:

- With spin deflector removed.
- With or without restrictor plate.
- Dispersal pattern at widths indicated in the chart.
- Traveling at 1 mph (mile per hour).
- Refer to the Seed Rate Chart for the spread width of a particular seed.

NOTE: Data in the “**English Seed Rate Chart**” is based on traveling at 1 mph. To calculate discharge rate at other speeds, divide the data in the chart by the mph you are traveling.

Refer to EXAMPLE:

Refer to “English Seed Rate Chart” on page 23:

If you are dispersing alfalfa, the spread width will be 20 ft. If you are traveling 1 mph with the spin controller set on position 2, the discharge rate will be 103.1 lbs/acre or 2.4 lbs/1000 sq. ft. If you are driving at 5 mph, calculate the discharge rate as follows:

- Divide 103.1 by 5 = 20.6 lbs/acre.
- Divide 2.4 by 5 = 0.5 lbs/1000 sq. ft.

REMEMBER: Increasing travel speed decreases the amount of material being applied.

Spin Spreader Rates (Metric) Narrow Pattern Calculations

Calculations in the “**Metric Seed Rate Chart**” on page 24 with 1.22 meters spread width are based on:

- With spin deflector attached.
- With and without restrictor plate.
- Dispersal pattern at 1.22 meters width.
- Traveling at 1 kph (kilometers per hour)

NOTE: Data in the “**Metric Seed Rate Chart**” is based on traveling 1 kph. To calculate discharge rate at other speeds, divide the data in the chart by the kph you are traveling.

EXAMPLE:

Refer to “Metric Seed Rate Chart” on page 24:

If you are dispersing alfalfa at 1 kph with the spin controller set on position 2, the discharge rate will be 930.1 kgs/hectare or 93.0 kgs/1000 sq. m. If you are driving at 4 kph, calculate discharge rate as follows:

- Divide 930.1 by 4 = 232.5 kgs/hectare.
- Divide 93.0 by 4 = 23.25 kgs/hectare.

REMEMBER: Increasing travel speed decreases amount of material being applied.

Wide Pattern Calculations

Calculations in the “**Metric Seed Rate Chart**” on page 25 are based on:

- With spin deflector removed.
- With or without restrictor plate.
- Dispersal pattern at widths indicated in the chart.
- Traveling at 1 kph (kilometers per hour).
- Refer to the Seed Rate Chart for the spread width of a particular seed.

NOTE: Data in the “**Metric Seed Rate Chart**” is based on traveling at 1 kph. To calculate discharge rate at other speeds, divide the data in the chart by the kph you are traveling.

EXAMPLE:

Refer to “Metric Seed Rate Chart” on page 25:

If you are dispersing alfalfa, the spread width will be 6.1m. If you are traveling 1kph with the spin controller set on position 2, the discharge rate will be 930.1 kgs/hectare or 93.0 kgs/1000 sq. m. If you are driving at 5 kph, calculate discharge rate as follows:

- Divide 186.0 by 5 = 37.2 kgs/hectare.
- Divide 18.6 by 5 = 3.7 kgs/1000 sq. ft.

REMEMBER: Increasing travel speed decreases the amount of material being applied.



English Seed Rate Chart for Narrow Pattern

Four foot width with spin deflector.

Pounds per acre and pounds per 1000 square feet at 1 mile per hour travel speed.

Alfalfa		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	129.9	515.6	1108.8	1817.1	2003.9	1989.9
	Lbs/1000 sq. ft.	3.0	11.8	25.5	41.7	46.0	45.7
Unrestricted		Restrictor required (See above data with restrictor)					
Biologic		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	0.0	100.7	312.7	405.1	481.8
	Lbs/1000 sq. ft.	0.0	0.0	2.3	7.2	9.3	11.1
Unrestricted	Lbs/acre	0.0	41.3	154.3	349.0	644.3	1574.1
	Lbs/1000 sq. ft.	0.0	1.0	3.5	8.0	14.8	36.1
MegaPlot		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	0.0	0.0	821.3	1884.3
	Lbs/1000 sq. ft.	0.0	0.0	0.0	0.0	18.9	43.3
EasyPlot		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	0.0	0.0	0.0	419.9
	Lbs/1000 sq. ft.	0.0	0.0	0.0	0.0	0.0	9.6
Clover (Ladina)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	147.3	620.4	1161.6	1908.6	2101.3	2151.6
	Lbs/1000 sq. ft.	3.4	14.2	26.7	43.8	48.2	49.4
Unrestricted		Restrictor required (See above data with restrictor)					
Clover (Red)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	92.8	348.6	750.3	1256.1	1499.4	1835.6
	Lbs/1000 sq. ft.	2.1	8.0	17.2	28.8	34.4	42.1
Unrestricted		Restrictor required (See above data with restrictor)					
Clover (Yellow Sweet)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	482.6	1586.5	1702.0	1706.5	1715.2	1805.1
	Lbs/1000 sq. ft.	11.1	36.4	39.1	39.2	39.4	41.4
Unrestricted		Restrictor required (See above data with restrictor)					
Oats		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	152.2	1020.9	1172.3	2074.9
	Lbs/1000 sq. ft.	0.0	0.0	3.5	23.4	26.9	47.6
Ryegrass (annual)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	121.3	358.1	469.8	502.4	525.9
	Lbs/1000 sq. ft.	0.0	2.8	8.2	10.8	11.5	12.1
Unrestricted	Lbs/acre	0.0	363.4	999.9	1810.1	3410.6	0.0
	Lbs/1000 sq. ft.	0.0	8.3	23.0	41.6	78.3	0.0
Sorghum		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	215.7	614.6	1002.0	1041.6	1059.7
	Lbs/1000 sq. ft.	0.0	5.0	14.1	23.0	23.9	24.3
Unrestricted		Restrictor required (See above data with restrictor)					
Soybeans		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	0.0	0.0	0.0	1541.5
	Lbs/1000 sq. ft.	0.0	0.0	0.0	0.0	0.0	35.4
Gypsum (pelletized)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	1027.5	3557.4	5568.8	5999.4
	Lbs/1000 sq. ft.	0.0	0.0	23.6	81.7	127.8	137.7
Prilled Fertilizer		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	0.0	852.2	1196.3	1228.8	1234.6
	Lbs/1000 sq. ft.	0.0	0.0	19.6	27.5	28.2	28.3
Unrestricted	Lbs/acre	0.0	742.5	2148.3	4244.6	6761.7	7212.2
	Lbs/1000 sq. ft.	0.0	17.1	49.3	97.4	155.2	165.6
Sand		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	0.0	573.8	1564.2	2047.7	2716.7
	Lbs/1000 sq. ft.	0.0	0.0	13.2	35.9	47.0	62.4
Unrestricted	Lbs/acre	0.0	0.0	1536.6	4050.8	5443.4	7154.4
	Lbs/1000 sq. ft.	0.0	0.0	35.3	93.0	125.0	164.2
Salt		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	0.0	593.6	972.7	1060.1	1134.0
	Lbs/1000 sq. ft.	0.0	0.0	13.6	22.3	24.3	26.0
Unrestricted	Lbs/acre	0.0	848.5	3460.9	6857.4	9820.8	10513.8
	Lbs/1000 sq. ft.	0.0	19.5	79.5	157.4	225.5	241.4



Section 3: Adjustments

English Seed Rate Chart for Wide Pattern

Width varies without spin deflector.

Pounds per acre and pounds per 1000 square feet at 1 mile per hour travel speed.

Alfalfa (20 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	26.0	103.1	221.8	363.4	400.8	398.0
	Lbs/1000 sq. ft.	0.6	2.4	5.1	8.3	9.2	9.1
Unrestricted		Restrictor required (See above data with restrictor)					
Biologic (20 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	0.0	20.1	62.5	81.0	96.4
	Lbs/1000 sq. ft.	0.0	0.0	0.5	1.4	1.9	2.2
Unrestricted	Lbs/acre	0.0	8.3	30.9	69.8	128.9	314.8
	Lbs/1000 sq. ft.	0.0	0.2	0.7	1.6	3.0	7.2
MegaPlot (20 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	0.0	0.0	164.3	376.9
	Lbs/1000 sq. ft.	0.0	0.0	0.0	0.0	3.8	8.7
EasyPlot (12 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	0.0	0.0	0.0	140.0
	Lbs/1000 sq. ft.	0.0	0.0	0.0	0.0	0.0	3.2
Clover (Ladina) (20 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	29.5	124.1	232.3	381.7	420.3	430.3
	Lbs/1000 sq. ft.	0.7	2.9	5.3	8.8	9.7	9.9
Unrestricted		Restrictor required (See above data with restrictor)					
Clover (Red) (20 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	18.6	69.7	150.1	251.2	299.9	367.1
	Lbs/1000 sq. ft.	0.4	1.6	3.5	5.8	6.9	8.4
Unrestricted		Restrictor required (See above data with restrictor)					
Clover (Yellow Sweet) (20 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	96.5	317.3	340.4	341.3	343.0	361.0
	Lbs/1000 sq. ft.	2.2	7.3	7.8	7.8	7.9	8.3
Unrestricted		Restrictor required (See above data with restrictor)					
Oats (25 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	24.4	163.4	187.6	332.0
	Lbs/1000 sq. ft.	0.0	0.0	0.6	3.8	4.3	7.6
Ryegrass (Annual) (12 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	40.4	119.4	156.6	167.5	175.3
	Lbs/1000 sq. ft.	0.0	0.9	2.7	3.6	3.8	4.0
Unrestricted	Lbs/acre	0.0	121.1	333.3	603.4	1136.9	0.0
	Lbs/1000 sq. ft.	0.0	2.8	7.7	13.9	26.1	0.0
Sorghum (25 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	34.5	98.3	160.3	166.7	169.6
	Lbs/1000 sq. ft.	0.0	0.8	2.3	3.7	3.8	3.9
Unrestricted		Restrictor required (See above data with restrictor)					
Soybeans (25 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	0.0	0.0	0.0	246.6
	Lbs/1000 sq. ft.	0.0	0.0	0.0	0.0	0.0	5.7
Gypsum (pelletized) (20 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Lbs/acre	0.0	0.0	205.5	711.5	1113.8	1199.9
	Lbs/1000 sq. ft.	0.0	0.0	4.7	16.3	25.6	27.6
Prilled Fertilizer (20 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	0.0	162.3	227.9	234.1	235.2
	Lbs/1000 sq. ft.	0.0	0.0	3.7	5.2	5.4	5.4
Unrestricted	Lbs/acre	0.0	141.4	409.2	808.5	1287.9	1373.7
	Lbs/1000 sq. ft.	0.0	3.3	9.4	18.6	29.6	31.5
Sand (25 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	0.0	91.8	250.3	327.6	434.7
	Lbs/1000 sq. ft.	0.0	0.0	2.1	5.8	7.5	10.0
Unrestricted	Lbs/acre	0.0	0.0	245.9	648.1	870.9	1144.7
	Lbs/1000 sq. ft.	0.0	0.0	5.6	14.9	20.0	26.3
Sand (25 ft. Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Lbs/acre	0.0	0.0	95.0	155.6	169.6	181.4
	Lbs/1000 sq. ft.	0.0	0.0	2.2	3.6	3.9	4.2
Unrestricted	Lbs/acre	0.0	135.8	553.7	1097.2	1571.3	1682.2
	Lbs/1000 sq. ft.	0.0	3.1	12.7	25.2	36.1	38.6



Metric Seed Rate Chart for Narrow Pattern

1.22 Meters Width With Spin Deflector.

Kilograms per hectare and pounds per 1000 square meters at 1 kilometer per hour travel speed.

Alfalfa		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	234.4	930.1	2000.1	3277.7	3614.8	3589.4
	Kilgrams per 1000 Sq. Meters	23.4	93.0	200.0	327.7	361.4	358.9
Unrestricted		Restrictor required (See above data with restrictor)					
Biologic		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	0.0	181.6	564.0	730.7	869.1
	Kilgrams per 1000 Sq. Meters	0.0	0.0	18.2	56.4	73.1	86.9
Unrestricted	Kilgrams per hectare	0.0	74.4	278.3	629.5	1162.3	2839.4
	Kilgrams per 1000 Sq. Meters	0.0	7.5	27.8	62.9	116.2	284.0
MegaPlot		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Kilgrams per hectare	0.0	0.0	0.0	0.0	1481.5	3399.0
	Kilgrams per 1000 Sq. Meters	0.0	0.0	0.0	0.0	148.1	339.9
EasyPlot		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Kilgrams per hectare	0.0	0.0	0.0	0.0	0.0	757.5
	Kilgrams per 1000 Sq. Meters	0.0	0.0	0.0	0.0	0.0	75.7
Clover		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	265.6	1119.1	2095.3	3442.9	3790.4	3881.1
	Kilgrams per 1000 Sq. Meters	26.6	111.9	209.6	344.3	379.0	388.1
Unrestricted		Restrictor required (See above data with restrictor)					
Clover (Red)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	167.4	628.7	1353.5	2265.7	2704.7	3311.2
	Kilgrams per 1000 Sq. Meters	16.7	62.9	135.4	226.6	270.5	331.1
Unrestricted		Restrictor required (See above data with restrictor)					
Clover (Yellow Sweet)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	870.6	2861.7	3070.1	3078.3	3093.9	3256.1
	Kilgrams per 1000 Sq. Meters	87.1	286.2	307.0	307.9	309.4	325.6
Unrestricted		Restrictor required (See above data with restrictor)					
Oats		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Kilgrams per hectare	0.0	0.0	274.6	1841.6	2114.7	3742.7
	Kilgrams per 1000 Sq. Meters	0.0	0.0	27.4	184.2	211.4	374.3
Ryegrass (annual)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	218.8	645.9	847.5	906.3	948.7
	Kilgrams per 1000 Sq. Meters	0.0	21.8	64.6	84.8	90.6	94.8
Unrestricted	Kilgrams per hectare	0.0	655.5	1803.7	3265.0	6152.1	0.0
	Kilgrams per 1000 Sq. Meters	0.0	65.5	180.3	326.5	615.2	0.0
Sorghum		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	389.2	1108.7	1807.4	1878.8	1911.5
	Kilgrams per 1000 Sq. Meters	0.0	38.9	110.9	180.7	187.9	191.2
Unrestricted		Restrictor required (See above data with restrictor)					
Soybeans		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Kilgrams per hectare	0.0	0.0	0.0	0.0	0.0	2780.6
	Kilgrams per 1000 Sq. Meters	0.0	0.0	0.0	0.0	0.0	278.1
Gypsum (pelletized)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor		Not Compatible with restrictor (See Unrestricted data below)					
Unrestricted	Kilgrams per hectare	0.0	0.0	1853.5	6417.0	10045.1	10821.9
	Kilgrams per 1000 Sq. Meters	0.0	0.0	185.4	641.7	1004.5	1082.2
Prilled Fertilizer		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	0.0	1537.3	2157.8	2216.6	2227.0
	Kilgrams per 1000 Sq. Meters	0.0	0.0	153.7	215.8	221.7	222.7
Unrestricted	Kilgrams per hectare	0.0	1339.3	3875.2	7656.6	12197.0	13009.5
	Kilgrams per 1000 Sq. Meters	0.0	134.0	387.5	765.6	1219.7	1301.0
Sand		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	0.0	1035.0	2821.6	3693.6	4900.5
	Kilgrams per 1000 Sq. Meters	0.0	0.0	103.5	282.2	369.4	490.1
Unrestricted	Kilgrams per hectare	0.0	0.0	2771.7	7306.9	9818.9	12905.3
	Kilgrams per 1000 Sq. Meters	0.0	0.0	277.1	730.7	981.9	1290.5
Sand		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	0.0	1070.7	1754.6	1912.3	2045.5
	Kilgrams per 1000 Sq. Meters	0.0	0.0	107.1	175.5	191.3	204.5
Unrestricted	Kilgrams per hectare	0.0	1530.6	6242.9	12369.6	17715.1	18965.1
	Kilgrams per 1000 Sq. Meters	0.0	153.1	624.3	1236.9	1771.5	1896.5



Section 3: Adjustments

Metric Seed Rate Chart for Wide Pattern

Width Varies Without Spin Deflector.

Kilograms per hectare and pounds per 1000 square meters at 1 kilometer per hour travel speed.

Alfalfa (6.1 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	46.9	186.0	400.0	655.5	723.0	717.9
	Kilgrams per 1000 Sq. Meters	4.7	18.6	40.0	65.5	72.3	71.8
Unrestricted	Restrictor required (See above data with restrictor)						
Biologic (6.1 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	0.0	36.3	112.8	146.1	173.8
	Kilgrams per 1000 Sq. Meters	0.0	0.0	3.6	11.3	14.6	17.4
Unrestricted	Kilgrams per hectare	0.0	14.9	55.7	125.9	232.5	567.9
	Kilgrams per 1000 Sq. Meters	0.0	1.5	5.6	12.6	23.2	56.8
MegaPlot (6.1 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Not Compatible with restrictor (See Unrestricted data below)						
Unrestricted	Kilgrams per hectare	0.0	0.0	0.0	0.0	296.3	679.8
	Kilgrams per 1000 Sq. Meters	0.0	0.0	0.0	0.0	29.6	67.9
EasyPlot (3.66 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Not Compatible with restrictor (See Unrestricted data below)						
Unrestricted	Kilgrams per hectare	0.0	0.0	0.0	0.0	0.0	252.5
	Kilgrams per 1000 Sq. Meters	0.0	0.0	0.0	0.0	0.0	25.2
Clover (Ladina) (6.1 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	53.1	223.8	419.1	688.6	758.1	776.2
	Kilgrams per 1000 Sq. Meters	5.3	22.4	41.9	68.8	75.8	77.6
Unrestricted	Restrictor required (See above data with restrictor)						
Clover (Red) (6.1 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	33.5	125.7	270.7	453.1	541.0	662.2
	Kilgrams per 1000 Sq. Meters	3.4	12.6	27.1	45.3	54.0	66.2
Unrestricted	Restrictor required (See above data with restrictor)						
Clover (Yellow Sweet) (6.1 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	174.1	572.4	614.0	615.6	618.8	651.2
	Kilgrams per 1000 Sq. Meters	17.4	57.2	61.3	61.6	61.9	65.1
Unrestricted	Restrictor required (See above data with restrictor)						
Oats (7.62 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Not Compatible with restrictor (See Unrestricted data below)						
Unrestricted	Kilgrams per hectare	0.0	0.0	43.9	294.7	338.3	598.8
	Kilgrams per 1000 Sq. Meters	0.0	0.0	4.4	29.5	33.8	59.8
Ryegrass (Annual) (3.66 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	72.9	215.3	282.5	302.1	316.2
	Kilgrams per 1000 Sq. Meters	0.0	7.3	21.5	28.3	30.2	31.6
Unrestricted	Kilgrams per hectare	0.0	218.5	601.2	1088.3	2050.7	0.0
	Kilgrams per 1000 Sq. Meters	0.0	21.8	60.1	108.8	205.0	0.0
Sorghum (7.62 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	62.3	177.4	289.2	300.6	305.8
	Kilgrams per 1000 Sq. Meters	0.0	6.2	17.7	28.9	30.1	30.6
Unrestricted	Restrictor required (See above data with restrictor)						
Soybeans (7.62 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Not Compatible with restrictor (See Unrestricted data below)						
Unrestricted	Kilgrams per hectare	0.0	0.0	0.0	0.0	0.0	444.9
	Kilgrams per 1000 Sq. Meters	0.0	0.0	0.0	0.0	0.0	44.5
Gypsum (pelletized) (6.1 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Not Compatible with restrictor (See Unrestricted data below)						
Unrestricted	Kilgrams per hectare	0.0	0.0	370.7	1283.4	2009.0	2164.4
	Kilgrams per 1000 Sq. Meters	0.0	0.0	37.1	128.3	200.8	216.4
Prilled Fertilizer (6.4 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	0.0	292.8	411.0	422.2	424.2
	Kilgrams per 1000 Sq. Meters	0.0	0.0	29.3	41.1	42.2	42.4
Unrestricted	Kilgrams per hectare	0.0	255.1	738.1	1458.4	2323.2	2478.0
	Kilgrams per 1000 Sq. Meters	0.0	25.5	73.7	145.8	232.2	247.7
Sand (7.62 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	0.0	165.6	451.4	591.0	784.1
	Kilgrams per 1000 Sq. Meters	0.0	0.0	16.6	45.2	59.1	78.4
Unrestricted	Kilgrams per hectare	0.0	0.0	443.5	1169.1	1571.0	2064.8
	Kilgrams per 1000 Sq. Meters	0.0	0.0	44.3	116.9	157.0	206.4
Salt (7.62 m Spread Width)		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
W/Restrictor	Kilgrams per hectare	0.0	0.0	171.3	280.7	306.0	327.3
	Kilgrams per 1000 Sq. Meters	0.0	0.0	17.1	28.0	30.6	32.8
Unrestricted	Kilgrams per hectare	0.0	244.9	998.9	1979.1	2834.4	3034.4
	Kilgrams per 1000 Sq. Meters	0.0	24.5	99.8	197.8	283.3	303.3

Section 4: Optional Equipment

Linear Actuator

A 12 volt DC Linear Actuator may be purchased to raise and lower the disc harrow at the touch of a switch. It makes turning around quick and easy as it takes less space to turn around when the discs are out of the ground. Included with it is a wiring harness and toggle switch. It is easy to install and mounts to the same holes as the Ratchet Jack. For more information, see “**Linear Actuator**” on page 11.

Linear Actuator	
Part No.	Part Description
322-119A	ELECTRIC LIFT ACTUATOR PACKAGE

Spin Spreader and Rear Packer

A Spin Spreader and Rear Packer may be purchased to distribute seed, fertilizer, chemicals, and other products over the ground. Included with it is a Rear Packer used to press product into the soil. Spreading widths may be controlled to approximately 48" or may be allowed to spread the full spin sling pattern of about 20 to 25 feet. This allows the user to distribute product only behind the disc harrow or to cover a broad area when controlled distribution width is not required. The unit is electrically operated and plugs into a 12 volt receptacle. Included with the wiring harness is a controller to turn the unit on and off and to open the gate in increments for dispersing product at varying amounts. For more information, see “**Rear Packer**” on page 11, “**Spin Spreader**” and “**Calibrating the Spin Controller**” on pages 11, 12 and 16.

Spin Spreader & Rear Roller	
Part No.	Part Description
322-120A	SPIN SPREADER & REAR ROLLER PACKAGE

Extension Tube

(For Attaching to a 2" Receiver Hitch)

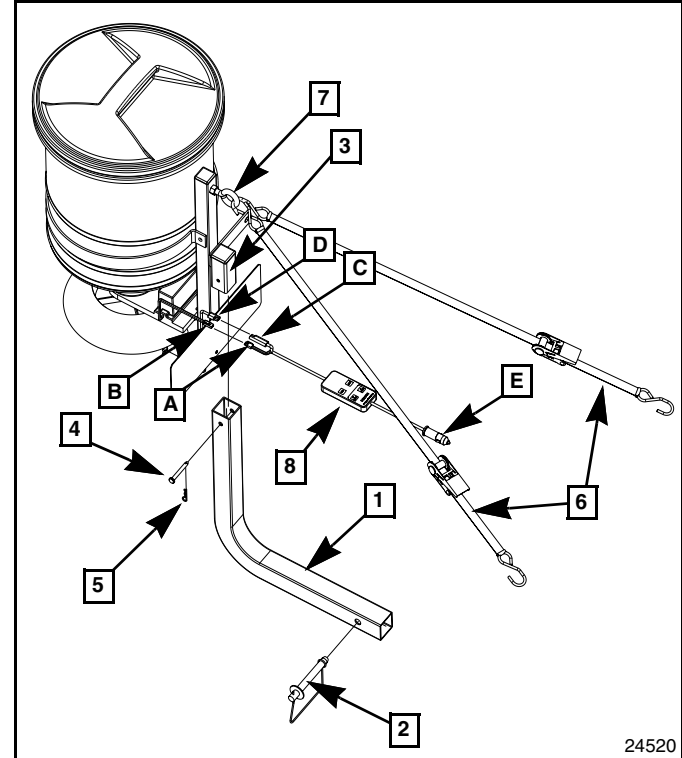
An extension tube and wire pin snap lock may be purchased for the purpose of attaching the spin spreader to any vehicle equipped with a 2" receiver hitch and 12 volt accessory receptacle. Adding the extension tube provides an alternate method to spread seeds, **Prilled** fertilizer, sand, or salt without hooking-up to the Plot Ranger.

Extension Tube & Wire Pin Snap Lock

Part No.	Part Description
322-100D	EXTENSION TUBE, SPIN SPREADER
805-370C	PIN WIRE SNAP LOCK 5/8 X 4

Refer to Figure 4-1:

1. Insert extension tube (#1) into your vehicle's 2" receiver hitch. Secure with wire pin snap lock (#2).
2. Slide spreader mounting bracket (#3) over extension tube. Secure in place with existing 5/16" x 2 1/2" clevis pin (#4) and hair pin cotter (#5).
3. Attach one end of each ratchet tie down strap (#6) to the spreader eyebolt (#7) and the other ends to the vehicle in a V-pattern as shown.
4. Tighten tie down straps to prevent spreader box from jiggling in its mount. **Do not over tighten.**
5. Plug hand controller (#8) to spin spreader as follows:
 - a. Plug white connector (A) into the feedgate connector (B).
 - b. Plug black connector (C) into the spin motor connector (D).
 - c. Plug lighter plug (E) into a 12 volt accessory receptacle.
6. See “**Calibrating the Spin Controller**” on page 16.



Extension Tube Hook-up
Figure 4-1

Section 5: Maintenance & Lubrication

Maintenance

Proper service and adjustment are key to the long life of any implement. With careful systematic inspection you can avoid many costly repairs and downtime.

Torque all nuts to the torque value listed on page 34 after the first initial 5 hours of field operation.



DANGER

To avoid serious injury or death:

Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to the hydraulics is off.

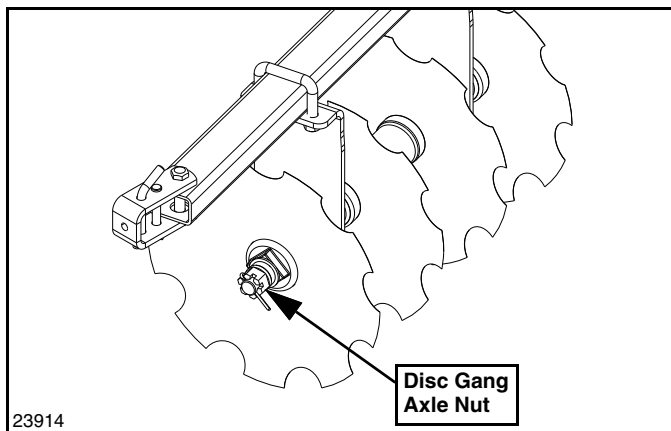


WARNING

To avoid serious injury or death:

- Allow only persons to perform maintenance on this implement who have been properly trained in its safe operation.
- Make sure controls are all in the neutral position or park before starting the power machine.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the implement back into service.
- Do not alter implement or replace parts on the implement with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the implement. Replace parts only with genuine OEM parts.

IMPORTANT: Refer to Figure 5-1. Torque disc gang axle nuts to 250 ft. lbs. after the first initial 5 hours of operation. Failure to tighten the axle nuts may result in the nut becoming loose or lost resulting in possible damage to the axle and/or disc gang.



Disc Gang Axle Nut Location
Figure 5-1

Daily Operational Checks

1. Clean unit of dirt and trash to minimize rusting and wear.
2. Visually inspect all nuts for tightness. Torque loose nuts to the torque value listed on page 34.
3. Inspect all bearings for wear. Replace any worn out bearings.
4. Replace any decals that are worn or damaged.
5. Prior to operation, thoroughly lubricate the spin spreader.
6. Check for proper operation of the spin spreader mechanisms by running the machine at no-load for a few minutes.
7. Adjust the distributing assembly for spreading the quantity desired and recheck adjustment accuracy.
8. All spreader parts must be cleaned properly after every use to extend its life and efficiency. See “Clean the Spin Spreader” on page 27.

Clean the Spin Spreader



WARNING

To avoid serious injury or death:

- Wear eye protection to prevent getting chemicals and/or dirt in the eyes while cleaning the implement.
- Wear proper protective clothing when servicing or lubricating the spin seeder. Refer to chemical manufacturers' labels for specific clothing requirements.

Fertilizer is extremely corrosive and all remaining particles include dust particles should be removed from the spreader soon after application.

IMPORTANT: Remove spin controller and discharge gate before washing the spin spreader.

1. Remove all product left in the holding tank.
2. Disconnect and store the spin controller in a dry location.
3. **DO NOT wash feedgate with water.** Remove the two screws from the bottom of the gate and slide the gate forward until it drops off the unit. Be careful not to lose the screws.
4. Use a soft bristle brush to clean the felt and remove any dust from around the gear or on the felt.
5. Completely wash the rest of the spin spreader with water and dry thoroughly.
6. Add a light coat of oil on all metal parts and motor to help prevent rusting and corrosion.
7. Reinstall the feedgate.
8. Store spin spreader and electrical controls in a location that is sheltered from moisture.



Long-Term Storage

Clean, inspect, service, and make necessary repairs to the implement when storing it for long periods and at the end of the season. This will help to ensure the unit is ready for field use the next time you hook-up to it.

1. Clean and store the spin spreader as outlined above.
2. Clean the disc harrow of dirt and trash to minimize rusting and wear.
3. Inspect for loose, damaged or worn parts.
4. Inspect all bearings for wear. Replace any worn out bearings.
5. Inspect all nuts for tightness. Torque loose nuts to the torque value listed on page 34.
6. Clean dirt, oil, and grease from areas where paint has been chipped or scratched. Prime bare metal surfaces after cleaning and repaint to prevent rust.
7. Repaint parts where paint is worn or scratched to prevent rust. Ask your Land Pride dealer for aerosol touch-up paint. Paint is also available in touch-up bottles with brush, quarts, and gallon sizes by adding TU, QT, or GL to the end of the aerosol part number.

Touch-Up Paint	
Part No.	Part Description
821-011C	PAINT LP BEIGE Spray Can
821-011CTU	PAINT LP BEIGE BOTTLE WITH BRUSH
821-011CQT	PAINT LP BEIGE QUART
821-011CGL	PAINT LP BEIGE GALLON

8. Replace all worn, damaged or missing decals.
9. Lubricate as noted in “**Lubrication Points**” starting on page 29.
10. Spray cutting blades with a rust inhibitor or paint to prevent rust.
11. Store food plot seeder on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer implement life.
12. Unhook the food plot seeder. Refer to “**Unhook Plot Ranger**” on page 17.

Lubrication Points

Lubrication Legend



Multi-purpose
spray lube



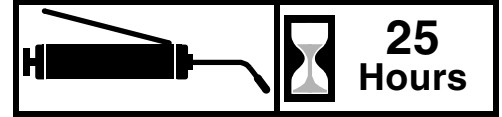
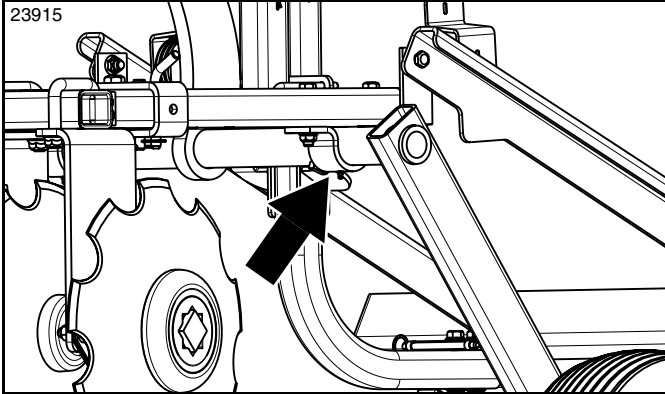
Multi-purpose
grease lube



Multi-purpose
oil lube



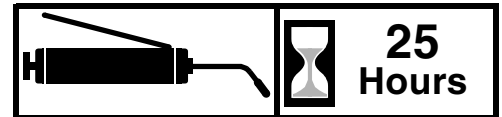
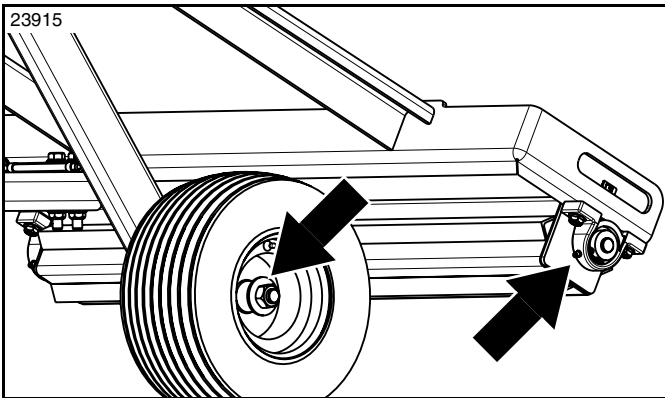
Intervals in hours at which
lubrication is required



Rear Axle Tube

2 - Zerks

Type of Lubrication: Multi-purpose Grease
Quantity = Grease until visible at edge of Pivot Tube
Half Clamp.

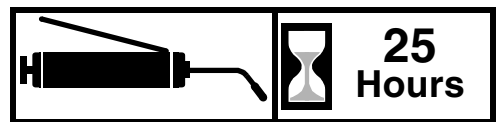
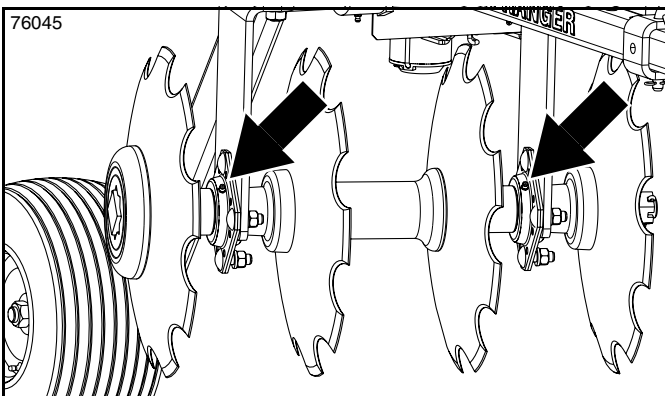


Wheel Bearings & Rear Packer Bearings

2 - Zerks (Wheel bearings)

2 - Zerks (Rear packer bearings)

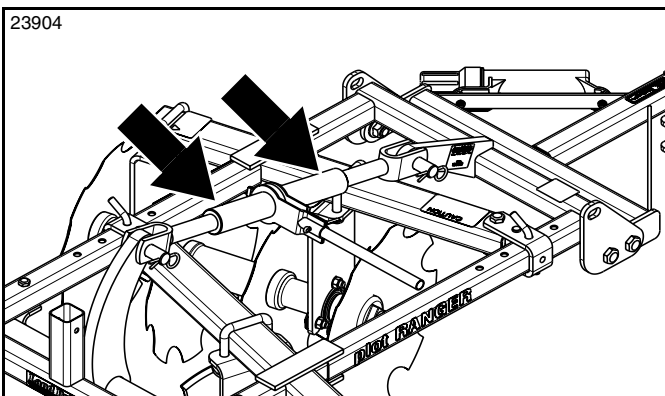
Type of Lubrication: Multi-purpose Grease
Quantity = As Required.



Disc Gang Bearings

2 - Zerks

Type of Lubrication: Multi-purpose Grease
Quantity = As Required.



Ratchet Jack

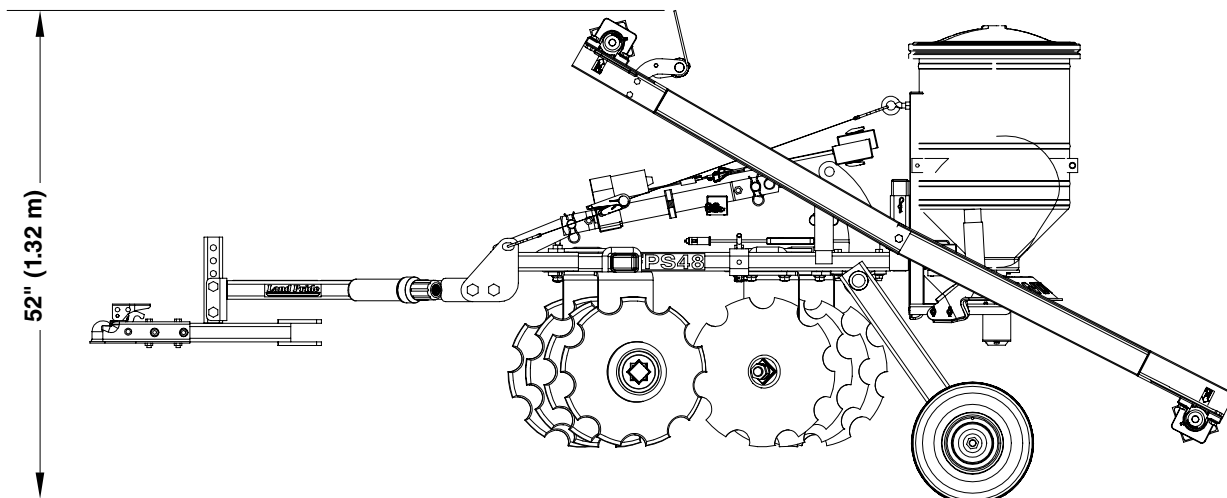
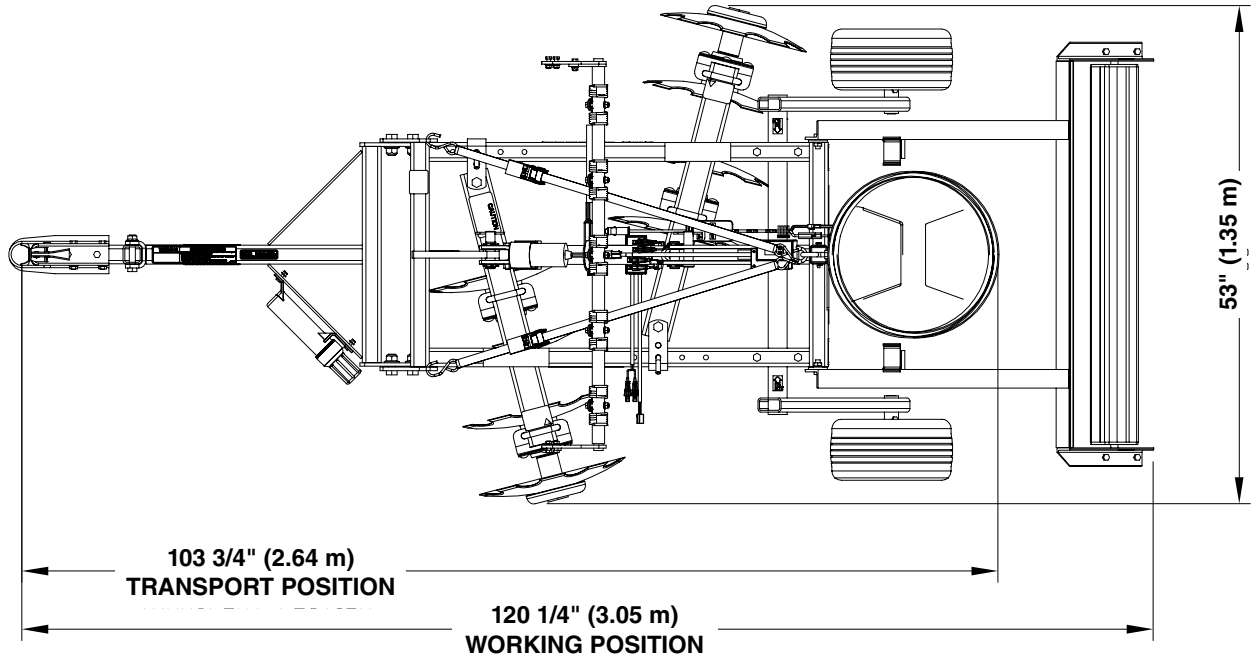
2 Zerks

Type of Lubrication: Multi-purpose Grease
Quantity = As Required.



FPS48

Description	Specification
Hitch Type	Pull type with optional 2" (5.1 cm) ball hitch or clevis hitch
Base Unit Weight	370 lbs (167.8 kg)
Base Unit Weight	510 lbs (231.3 kg) (With Spin Spreader and roller.)
Hitch Weight	170 lbs (77.1 kg) (In transport position with roller up and 100 lbs (45.4 kg) in Spin Spreader hopper.)
Hitch Height with Tongue Level	Adjustable from 15 1/2" to 31" (39.4 cm to 78.7 cm) with wheels in transport position. Adjustable from 9 5/8" to 21 3/4" (24.4 cm to 55.2 cm) with discs sitting on the ground.
Disc Cutting Width	40" to 50" (1.02 m to 1.27 m)
Minimum ATV Size	350 cc
Minimum Tractor/vehicle Size	17 hp (12.7 kw)
Height	52" (1.32 m)
Length	104" (2.64 m)
Width	54" (1.37 m)
Weight Load on Each Disc	46 lbs (20.9 kg)
Number of Disc Blades	8
Disc Blade Size & Type	16" (40.6 cm) Notched
Blade Spacing	7 1/2" (19.1 cm)
Transport / Gauging Tires	13" (33.0 cm) Diameter 4 ply tubeless
Bearing Hanger	3/8" (10 mm) Plate
Bearing Type, 2 per Gang	Self aligning, disc gang flange bearings with grease zerk
Gang Tube	3" x 2" (7.6 cm x 5.1 cm)
Gang Axle	1" (2.5 cm) Square high carbon steel
Disc Angle	Front Gang: 0, 7, 14 & 21 degrees Rear Gang: 0, 7, 14 & 21 degrees
Frame Construction	2" x 2" (5.1 cm x 5.1 cm) Square tubular design
Lifting Device	Ratchet Jack or 12 volt Linear Actuator
12 Volt Actuator Amperage	34 amps at startup. 28 amps during normal operation.
Rear Axle pivot Type	Greasable
Rear Roller Bearing	Greasable
Optional Spin Spreader and Packer	
Packer Roller Width	40 7/16" (1.03 m)
Spreading Device	Spin Spreader, 12V
Spreader Hopper Loading Height	42" (1.07 m) off ground
Spin Spreader Volume/Capacity	2 cu. ft. (15 gallons)(56.8 L) (100 lbs (45.4 kg) Maximum capacity weight)
Wide Spread Pattern Without Deflector	20 to 25 ft. (6.10 m to 7.62m) (Actual spread pattern is dependent upon product type and condition during application.)
Spin Spreader Deflector	Diverts seed to smaller spreading width. Seed rate charts calculated at 48" (1.22 m)
Small Seed Restrictor	Restricts small seed for smaller distribution levels.
Spin Spreader Electrical	
Fuse Rating	15 AMPS maximum
Start-Up Amps	4 Amps (Spreading Material)
Normal Operating Amps	.5 Amps (Spreading material)



26757



FPS48

Features	Benefits
Working Widths	40" to 50"
Weight	510 lbs. Heavy construction helps penetrate ground.
2" Square frame tube	Frame tubing is stronger than angle iron.
Adjustable gang angles	Cutting aggressiveness can be adjusted on the front and rear up to 21 degrees.
3" x 2" Gang tube, 1" sq. gang axles, high carbon steel	high carbon square axles offer great strength in punishing conditions.
16" Notched disc blades	Notched blades for aggressive digging and cutting action.
3/8" Thick bearing hangers	Heavy-duty hangers resist the high torque from U-bolts.
Self aligning bearings	Self-aligning bearings with grease offer long life while pounding through hard ground.
Rear Roller	40 7/16" Packing width, Pivots for storage without talking spreader off unit.
Spin Spreader Deflector	Allows to reduce seed dispersion width down to 48"
Seed hopper height	Loading height (42") for easy of use.
Spin Spreader Restrictor Plate	Allows smaller seed to be run through the spreader at a lower volume per acre.



FPS48 Troubleshooting Chart

Problems	Cause	Solution
Disc Gang squeals or does not rotate	Disc gang bearings lacking lubrication.	Lubricate bearings. See "Lubrication Points" on page 29.
	Bearings are worn out.	Replace all bearings that do not turn freely.
	Disc gang is clogged with dirt and trash around the bearing hangers.	Clean disc gang of dirt and trash.
Faulty Electrical Wiring (Electrical components won't operate. Also see electrical component below.)	Electrical fuse is bad.	Replace any bad fuse.
	Electrical wiring connections have become disconnected.	Reconnect all connections.
	Electrical connections are dirty or corroded.	Clean all connections and reconnect. Replace any connections that is corroded beyond cleaning.
	Insulation is worn allowing bare wire to make contact with metal.	Cover exposed wiring with electrical tape or replace wiring.
	Electrical wiring is cut or broken inside insulation.	Splice or replace wiring.
Electrical Actuator won't operate.	Electrical wiring is at fault.	See Problems: "Faulty Electrical Wiring."
	Actuator is in need of repair or replacement.	See your nearest Land Pride dealer.
Spin Spreader gate won't open/close.	Electrical wiring is at fault.	See Problems: "Faulty Electrical Wiring."
	Spin Spreader controls are in need of calibration.	Calibrate Spin Spreader controls.
	Gate is stuck.	Clean gate and gate track.
	Control unit is faulty.	Replace Wire Harness.
Spin Spreader motor won't operate.	Electrical wiring is at fault.	See Problems: "Faulty Electrical Wiring."
	Motor is in need of repair or replacement.	See your nearest Land Pride dealer.
	Control unit is faulty.	Replace Wire Harness.
Spin Spreader discharge pattern is more than 48"	Spin deflector is not attached.	Attach spin deflector.
	Spin deflector is not adjusted.	Attach spin deflector.
	Spin deflector is worn.	Replace spin deflector.
Spin Spreader discharge pattern is less than it should be.	Spin plate is worn or broken	Replace spin plate.
	Spin motor does not operate.	See Problems: "Spin motor won't operate"
	Spin deflector is attached.	Remove Spin deflector.
Spin Spreader is not discharging enough product.	Material flow setting to too low.	Increase Material Flow setting.
	Ground speed is too fast.	Decrease vehicle speed.
	Product size is too large.	Remove Restrictor Plate in hopper.
Spin Spreader discharges too much product.	Material flow setting to too high.	Decrease Material Flow setting.
	Ground speed is too slow.	Increase vehicle speed.
	Product size is too small.	Install Restrictor Plate in hopper.



Torque Values Chart For Common Bolt Size													
Bolt Size (inches)	Bolt Head Identification						Bolt Size (Metric)	Bolt Head Identification					
	 Grade 2	 Grade 5	 Grade 8	 Class 5.8	 Class 8.8	 Class 10.9							
in-tpi ¹	N · m ²	ft-lb ³	N · m	ft-lb	N · m	ft-lb	mm x pitch ⁴	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12	M 5 X 0.8	4	3	6	5	9	7
1/4" - 28	8.5	6	13	10	18	14	M 6 X 1	7	5	11	8	15	11
5/16" - 18	15	11	24	17	33	25	M 8 X 1.25	17	12	26	19	36	27
5/16" - 24	17	13	26	19	37	27	M 8 X 1	18	13	28	21	39	29
3/8" - 16	27	20	42	31	59	44	M10 X 1.5	33	24	52	39	72	53
3/8" - 24	31	22	47	35	67	49	M10 X 0.75	39	29	61	45	85	62
7/16" - 14	43	32	67	49	95	70	M12 X 1.75	58	42	91	67	125	93
7/16" - 20	49	36	75	55	105	78	M12 X 1.5	60	44	95	70	130	97
1/2" - 13	66	49	105	76	145	105	M12 X 1	90	66	105	77	145	105
1/2" - 20	75	55	115	85	165	120	M14 X 2	92	68	145	105	200	150
9/16" - 12	95	70	150	110	210	155	M14 X 1.5	99	73	155	115	215	160
9/16" - 18	105	79	165	120	235	170	M16 X 2	145	105	225	165	315	230
5/8" - 11	130	97	205	150	285	210	M16 X 1.5	155	115	240	180	335	245
5/8" - 18	150	110	230	170	325	240	M18 X 2.5	195	145	310	230	405	300
3/4" - 10	235	170	360	265	510	375	M18 X 1.5	220	165	350	260	485	355
3/4" - 16	260	190	405	295	570	420	M20 X 2.5	280	205	440	325	610	450
7/8" - 9	225	165	585	430	820	605	M20 X 1.5	310	230	650	480	900	665
7/8" - 14	250	185	640	475	905	670	M24 X 3	480	355	760	560	1050	780
1" - 8	340	250	875	645	1230	910	M24 X 2	525	390	830	610	1150	845
1" - 12	370	275	955	705	1350	995	M30 X 3.5	960	705	1510	1120	2100	1550
1-1/8" - 7	480	355	1080	795	1750	1290	M30 X 2	1060	785	1680	1240	2320	1710
1-1/8" - 12	540	395	1210	890	1960	1440	M36 X 3.5	1730	1270	2650	1950	3660	2700
1-1/4" - 7	680	500	1520	1120	2460	1820	M36 X 2	1880	1380	2960	2190	4100	3220
1-1/4" - 12	750	555	1680	1240	2730	2010	¹ in-tpi = nominal thread diameter in inches-threads per inch ² N · m = newton-meters ³ ft-lb= foot pounds ⁴ mm x pitch = nominal thread diameter in millimeters x thread pitch						
1-3/8" - 6	890	655	1990	1470	3230	2380							
1-3/8" - 12	1010	745	2270	1670	3680	2710							
1-1/2" - 6	1180	870	2640	1950	4290	3160							
1-1/2" - 12	1330	980	2970	2190	4820	3560							
Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.													
All locknuts or lubricated fasteners: Use 75% of torque value. (i.e. 1/2"-13 GR5 = 76 ft-lb; 75% of 76 or .75 x 76 = 57 ft-lb)													

Tire Inflation Chart	
Tire Size	Inflation PSI
13" Dia 4 ply Tubeless	28

Warranty

Land Pride warrants to the original purchaser that this Land Pride product will be free from defects in material and workmanship beginning on the date of purchase by the end user according to the following schedule when used as intended and under normal service and conditions for personal use.

Overall Unit: One year Parts and Labor

Bearings: One year Parts and Labor

Discs: Discs are considered wear items

This Warranty is limited to the repair or replacement of any defective part by Land Pride and the installation by the dealer of any such replacement part, and does not cover common wear items. Land Pride reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Land Pride's judgment shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. Misuse also specifically includes failure to properly maintain oil levels, grease points, and driveline shafts.

Claims under this Warranty should be made to the dealer which originally sold the product and all warranty adjustments must be made through an authorized Land Pride dealer. Land Pride reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Land Pride liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Land Pride shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Land Pride within 30 days from the date of purchase.

IMPORTANT: The Online Warranty Registration should be completed by the dealer at the time of purchase. This information is necessary to provide you with quality customer service.

Model Number _____

Serial Number _____



Corporate Office: P.O. Box 5060
Salina, Kansas 67402-5060 USA
www.landpride.com
