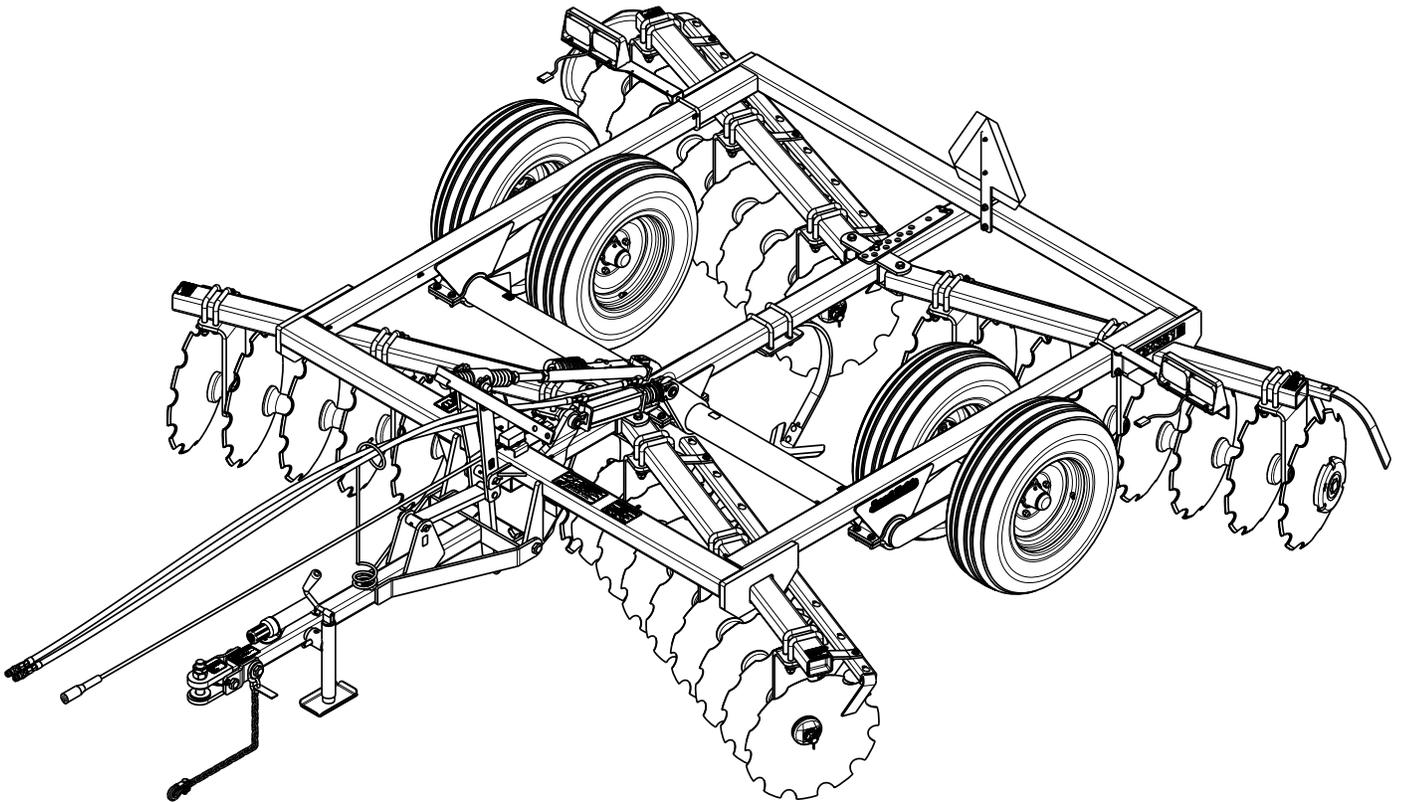


Disc Harrow

DH3510 & DH3512



25988

322-251M 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 or Spanish 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	<hr/> <hr/> <hr/>

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

California Proposition 65

 **WARNING:** Handling passenger or off-highway motor vehicle parts can expose you to chemicals such as phthalates and lead, which can cause cancer and reproductive harm. To minimize exposure, service the vehicle in a well-ventilated area, wear gloves, and wash your hands. For more information see www.P65Warnings.ca.gov/motor-vehicle-parts.



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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 on 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

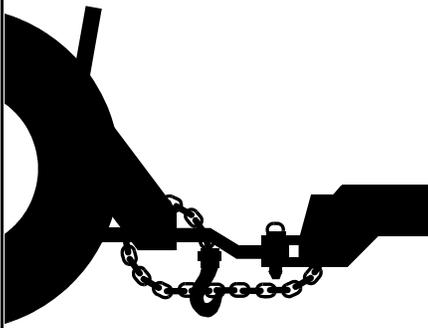
- ▲ If engaged, disengage power take-off.
- ▲ Park on solid, level ground and lower implement to ground or onto support blocks.
- ▲ Put tractor in park or set park brake.
- ▲ Turn off engine and remove ignition key to prevent unauthorized starting.
- ▲ Relieve all hydraulic pressure to auxiliary hydraulic 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.



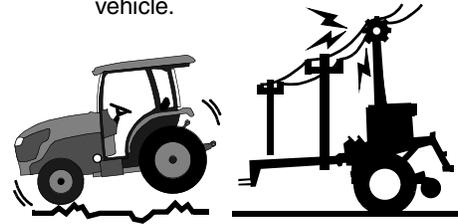
Towing Safely

- ▲ 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, weights 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.

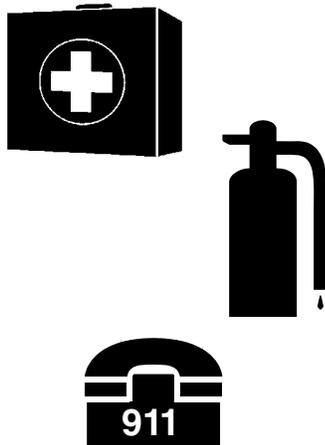
- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement.
- ▲ Inspect all parts. Make certain parts are in good condition & installed properly.
- ▲ Replace parts on this implement with genuine Land Pride parts only. Do not alter this implement 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 of.
- ▲ 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.



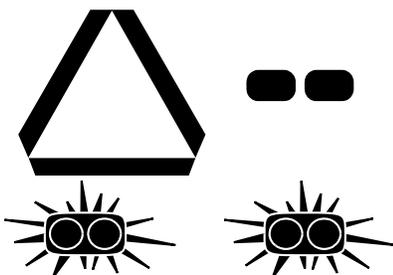
Avoid High Pressure Fluids

- ▲ 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 the operator against serious injury or death from falling and/or 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: <http://www.clickbeforeyoudig.com>
- ▲ 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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Important Safety Information

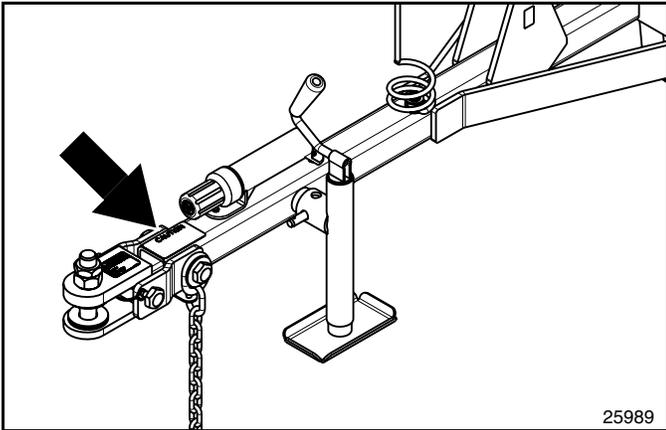
Safety Labels

Your Disc Harrow 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

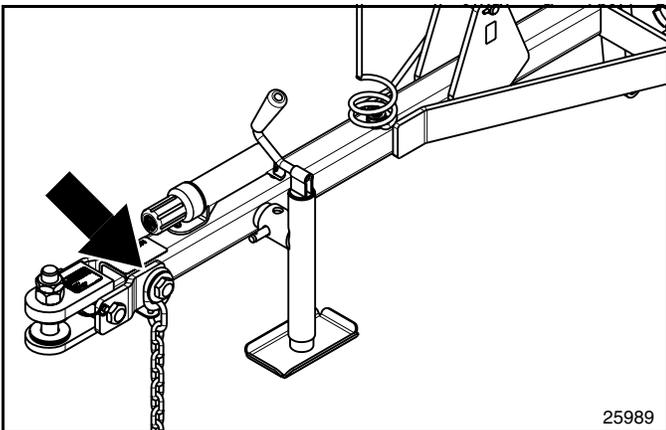
specified by Land Pride. When ordering new components make sure the correct safety labels are included in the request.

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 a similar type of straight edge.



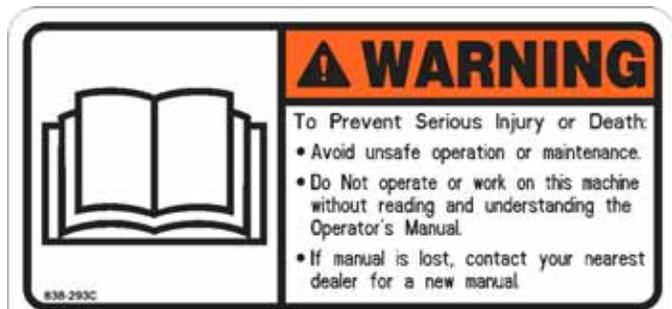
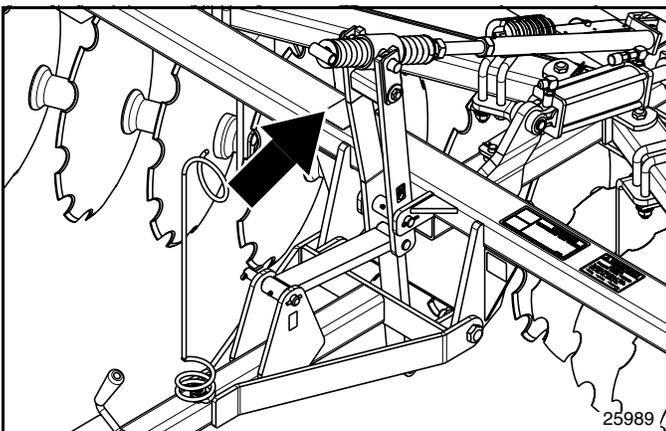
70412

838-588C
Warning: 20 MPH Speed Limit
1 Place



70256

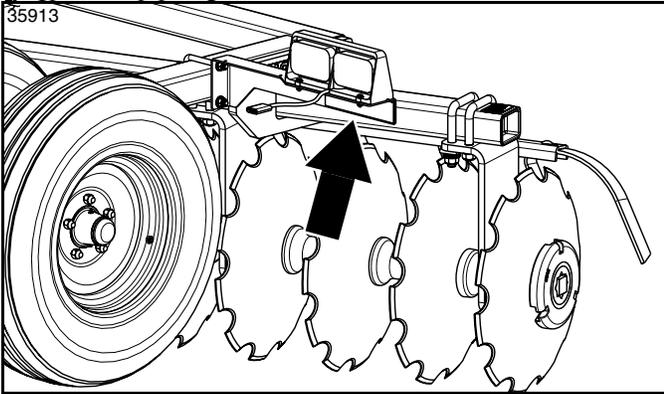
818-719C
Caution: Read Operator's Manual and List of Hazards
1 Place



70243

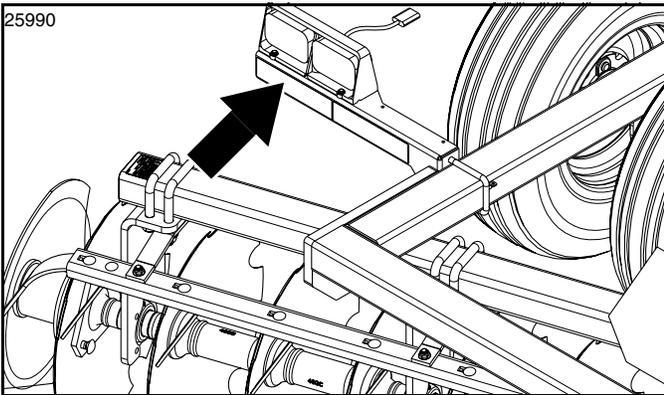
838-293C
Warning: Read Operator's Manual
1 Place

Important Safety Information

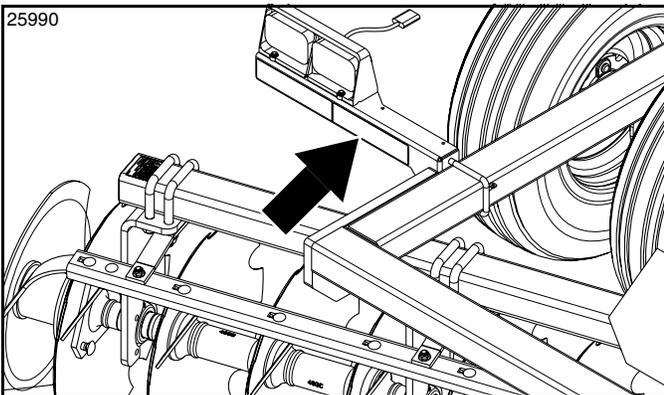


838-615C
Amber Reflector: 2" x 9"
2 Places

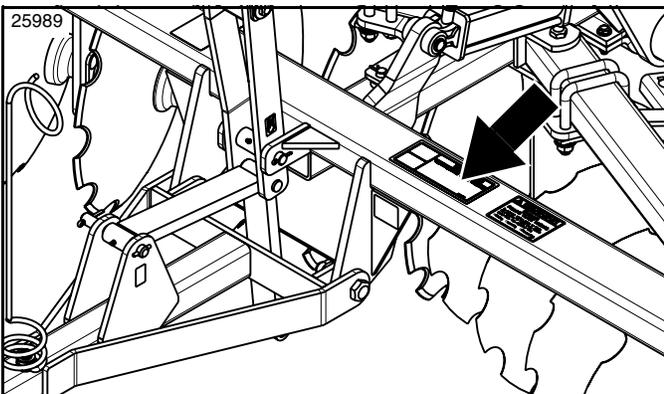
73138



838-614C
Red Reflector: 2" x 9"
2 Places



838-603C
Orange Reflector: 2" x 9"
2 Places

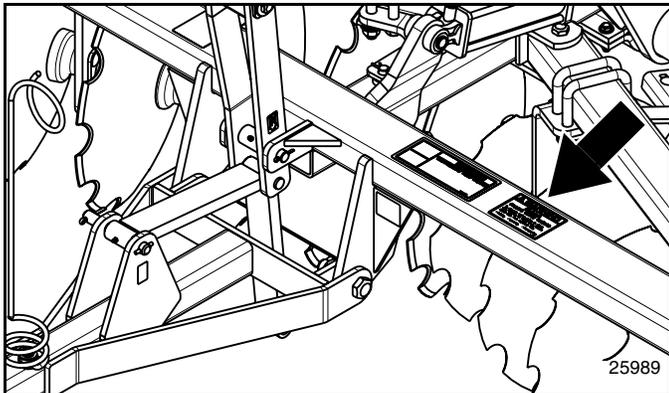


818-831C
Warning: High Pressure Fluid Hazard
1 Place

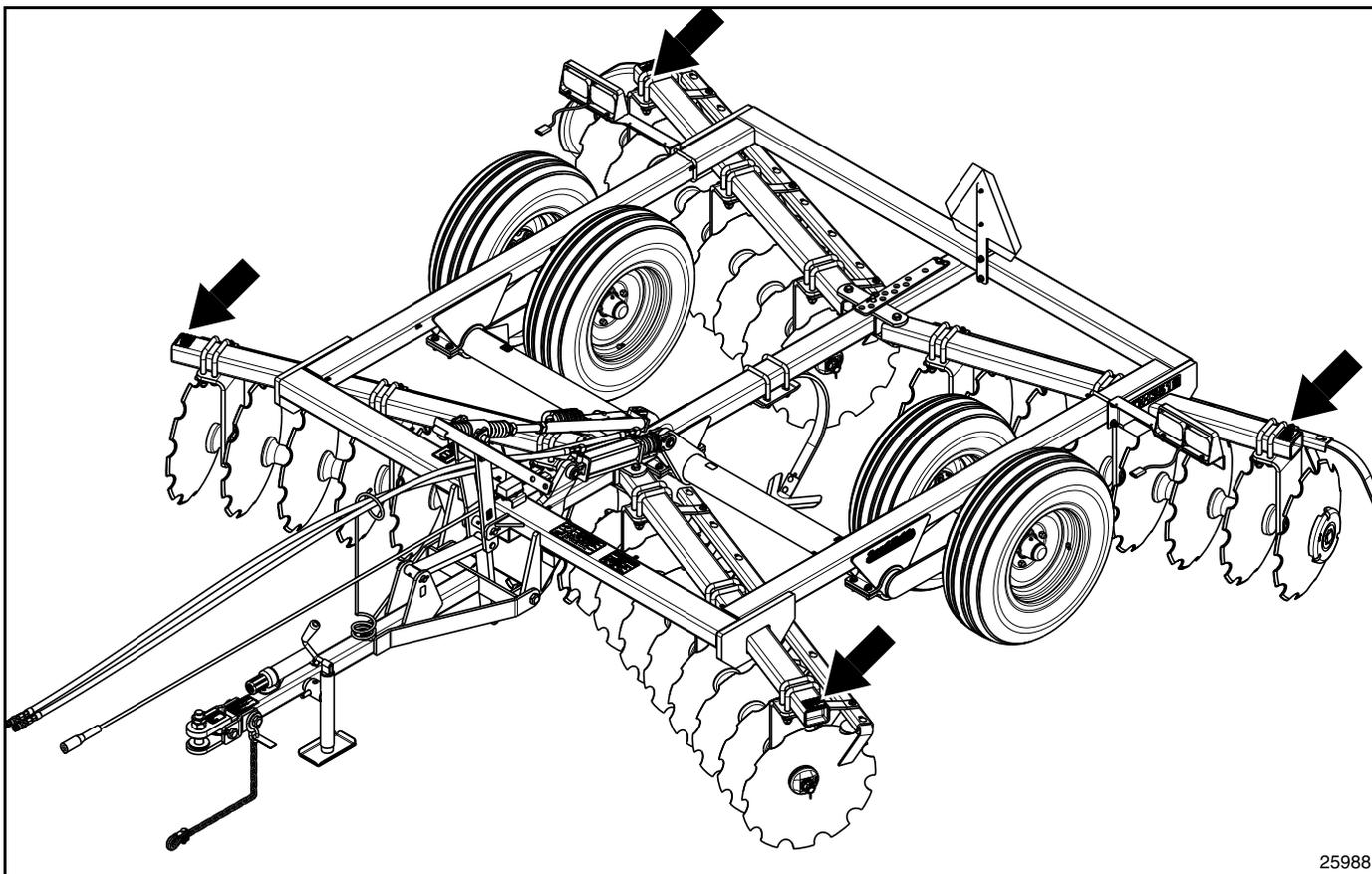
70659

Important Safety Information

70425



848-247C
 Warning: Crushing Falling Blade Hazard
 1 Place



70392



838-093C
 Warning: Sharp Object Hazard
 4 Places

Introduction

Land Pride welcomes you to the growing family of new product owners. This Disc Harrow 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 Disc Harrow.

Application

The Land Pride DH3510 ten foot and DH3512 twelve foot pull-type discs are perfectly matched for agricultural utility tractors having 45 to 100 drawbar horsepower. They have applications in seed bed preparation, soil pulverization, and tillage on smaller farms, ranches, construction sites, race tracks, rodeo grounds, nurseries, reclamation sites, and sod farms. Economy conscious customers will find them more than equal to just about any soil cultivation task you can throw at them. With choices of notched or smooth 20" or 22" discs mounted on fore and aft gangs that have easily adjustable angling, the DH3510 and DH3512 readily adapt to a wide range of tillage conditions.

See “**Specifications & Capacities**” on page 36 and “**Features & Benefits**” on page 38 for additional information and performance enhancing options.

Using This Manual

- This Operator’s Manual is designed to help familiarize the operator 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 the direction the operator faces while sitting in the operator’s seat looking forward unless otherwise stated.

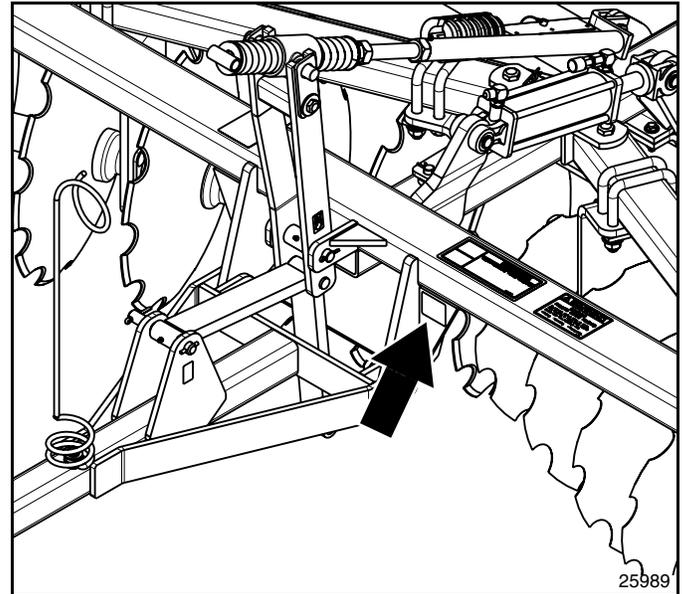
Owner Assistance

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 Disc Harrow 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 correspondence 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 Disc Harrow. 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. If you have any issues or questions with your new implement, please contact the service department at your local dealership to address your concerns.
2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the question/issue, 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
lpSERVICE@landpride.com



Section 1: Assembly & Set-up

Tractor Requirements

Tractor horsepower and weight must be capable of controlling the Disc Harrow under all operating conditions. Smaller horsepower and lighter weight tractors must not be used.

- DH3510 Model
 Horsepower 45-100 hp (33-75 kW)
 Hitch Type Drawbar
 Hydraulic Outlets 2 duplex outlets
- DH3512 Model
 Horsepower 55-100 hp (41-75 kW)
 Hitch Type Drawbar
 Hydraulic Outlets 2 duplex outlets

WARNING

To avoid serious injury or death:

Lightweight tractors with rear attached implements may need weights added to the front to maintain steering control. Consult your tractor Operator's Manual to determine weight requirements and maximum limitations.

Torque Requirements

Refer to “**Torque Values Chart for Common Bolt Sizes**” on page 42 to determine correct torque values when tightening hardware during assembly and maintenance.

Dealer Preparations

Read and understand the Operator's Manual. An understanding of how it works will aid in the assembly and setup.

Go through the “**Pre-Assembly Checklist**” on this page before assembling the Disc Harrow. Speed up your assembly task and make the job safer by having all needed parts and equipment readily at hand.

This harrow has been partially assembled at the factory. However, there are still some assembly requirements before the machine is ready for operation.

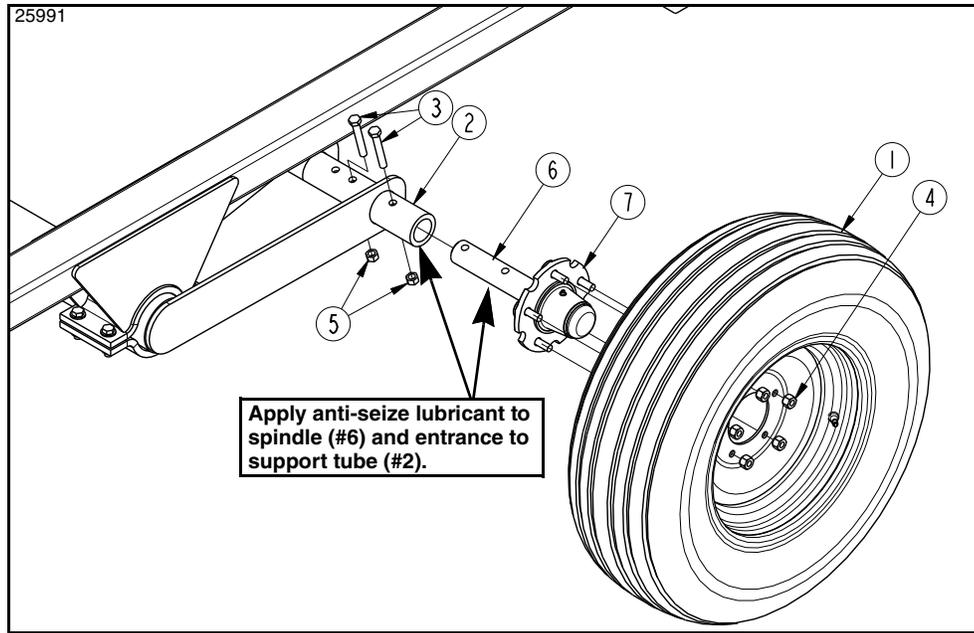
Pre-Assembly Checklist

4	Check	Reference
<input type="checkbox"/>	Make sure miscellaneous assembly tools are on hand: Hammer, tape measure, hacksaw, assortment of wrenches & sockets, 3/8" drill, drill bits, and spirit level.	
<input type="checkbox"/>	Have a forklift or hoist capable of 2500 lbs.	
<input type="checkbox"/>	Have a minimum of two people available during assembly and set-up.	
<input type="checkbox"/>	Check to see if auxiliary tractor weights are needed.	
<input type="checkbox"/>	Make sure quick disconnect adapters match tractor's duplex outlets.	
<input type="checkbox"/>	Make sure all major components and loose parts are shipped with the machine.	Section 1 & Section 2
<input type="checkbox"/>	Make sure working parts move freely, bolts are tight & cotter pins are spread.	Operator's Manual
<input type="checkbox"/>	Make sure all grease fittings are in place and lubricated.	Section 5 Page 34
<input type="checkbox"/>	Make sure all safety labels are correctly located and legible. Replace if damaged.	Pages 6 to 8
<input type="checkbox"/>	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 during assembly. Keep parts separated.	See Parts Manual 322-251P
<input type="checkbox"/>	Make sure all Red and Amber reflectors are correctly located and visible when machine is in transport position.	Page 7
<input type="checkbox"/>	Make sure all tires are inflated to the specified psi air pressure.	Section 8 Page 42
<input type="checkbox"/>	Make sure all wheel bolts and axle nuts are tightened to the specified torque.	Section 8 Page 42

Tractor Shutdown Procedure

The following are basic tractor shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your tractor Operator's Manual before leaving the operator's seat.

1. Reduce engine speed and disengage power take-off if engaged.
2. Park tractor and implement on level, solid ground.
3. Lower implement to ground or onto non-concrete support blocks.
4. Put tractor in park or set park brake, turn off engine, and remove ignition key to prevent unauthorized starting.
5. Relieve all hydraulic pressure to auxiliary hydraulic lines.
6. Wait for all components to come to a complete stop before leaving the operator's seat.
7. Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.



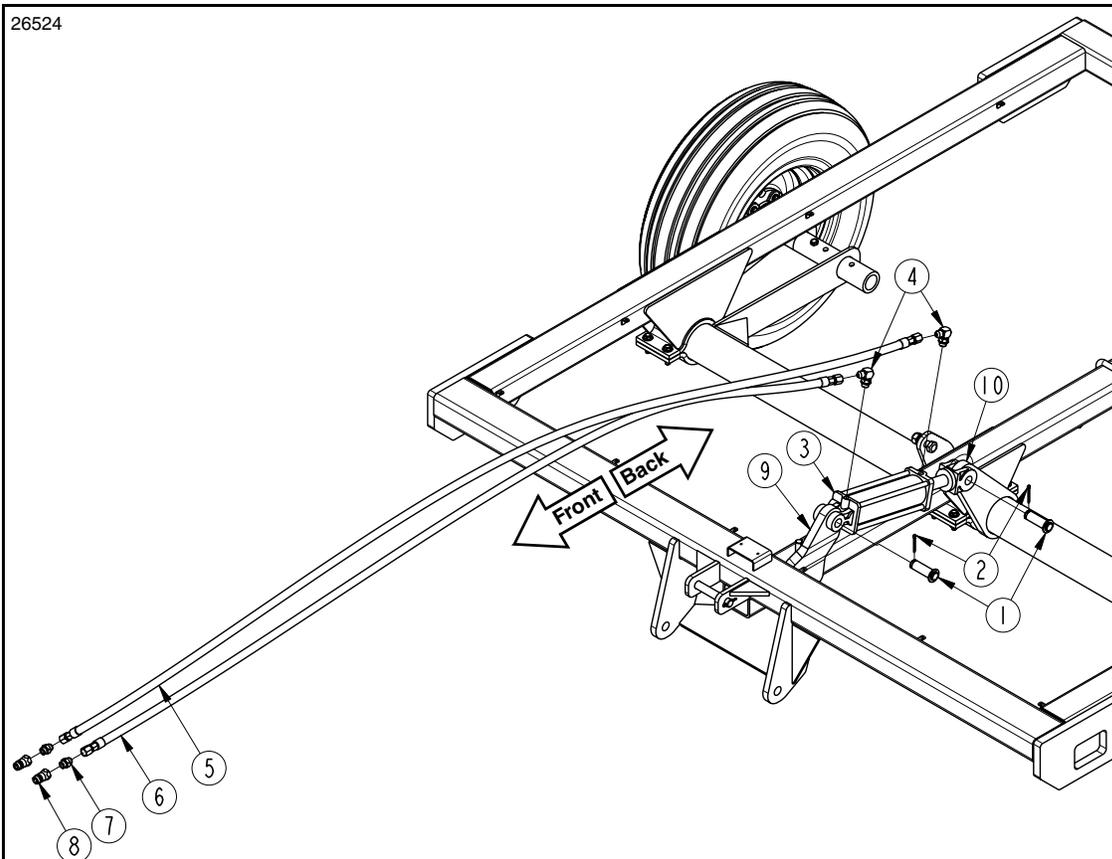
Single Wheel Assembly (Left Side Shown)
Figure 1-1

Single Wheel Assembly

Refer to Figure 1-1:

IMPORTANT: A forklift or adequate lifting device is recommended for lifting the main frame when installing wheels, hitch, and hydraulic cylinder.

1. Unpack Disc Harrow from shipping crate.
2. Support main frame with a suitable lifting device.
3. Verify fit-up of spindle (#6) to support tube (#2) by assembling them without anti-seize lubricant.
4. Remove spindle from support tube and apply a thin coat of anti-seize lubricant on the unpainted spindle shaft and a thin coat to the inside entrance of the spindle support tube.
5. Insert spindle (#6) into support tube (#2) and secure with two 1/2"-13 x 3 1/4" GR5 cap screws (#3) and 1/2" locknuts (#5). Tighten nuts to the correct torque.
6. Mount wheel (#1) to hub with five 1/2"-20 lug nuts (#4). Tighten lug nuts to the correct torque.
7. Repeat steps 2 to 6 for the opposite side.
8. See “**Dual Wheel Assembly**” on page 25 for instructions on installing optional dual wheels.



Hydraulic Cylinder Assembly
Figure 1-3

Hydraulic Cylinder Assembly



WARNING

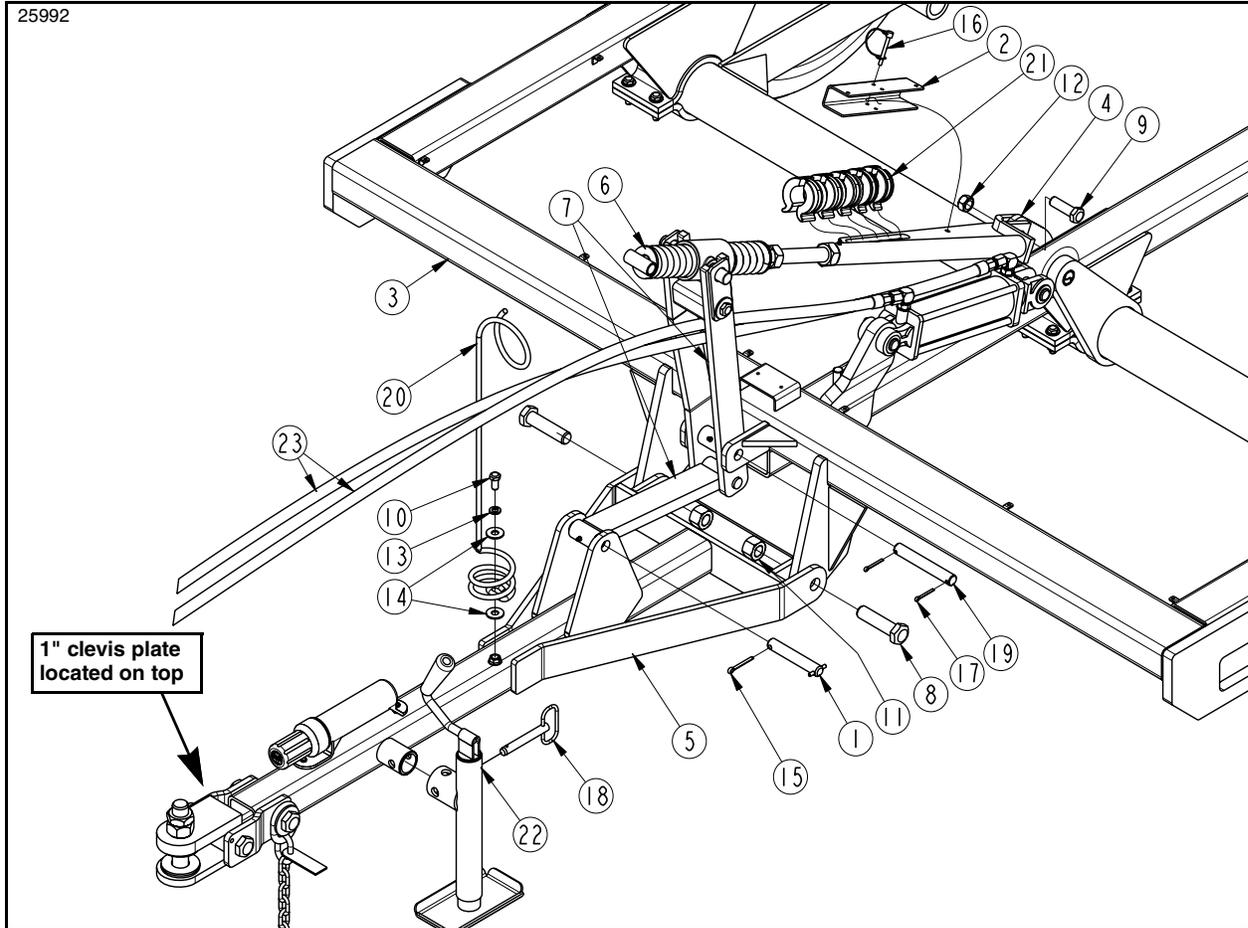
To avoid serious injury or death:

Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulics. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. **DO NOT DELAY.**

Refer to Figure 1-3:

IMPORTANT: Attach cylinder base to the front main frame lug. Hydraulic fittings will be stressed if cylinder base is attached to the rear main frame lug.

1. Install two 90 degree elbows (#4) in hydraulic cylinder (#3) with opened ends facing the base end of the cylinder. Tighten elbows as needed.
2. Screw 111" long hydraulic hose (#5) into the front elbow at the base end of the cylinder and tighten.
3. Screw 123" long hydraulic hose (#7) into the rear elbow at the rod end of the cylinder and tighten.
4. Thread adapter fittings (#6) onto the other end of the hydraulic hoses and tighten.
5. Thread couplers (#8) onto adapter fittings (#7) and tighten.
6. Purge hydraulic cylinder of air before continuing. Refer to "**Purge Hydraulic System**" on page 18 if the cylinder will not move smoothly.
7. Make sure hydraulic ports face up as shown. Attach base end of cylinder (#3) to the front lug (#9) with a 1" clevis pin (#1).
8. Secure clevis pin (#1) with cotter pin (#2). Bend one or both legs of the cotter pin.
9. Attach rod end of cylinder (#3) to axle lug (#10) with a 1" clevis pin (#1).
10. Secure clevis pin with cotter pin (#2). Bend one or both legs of the cotter pin.
11. If needed, adjust fittings on the cylinder to prevent hydraulic wear due to frame contact.



Hitch Assembly
Figure 1-2

Hitch Assembly

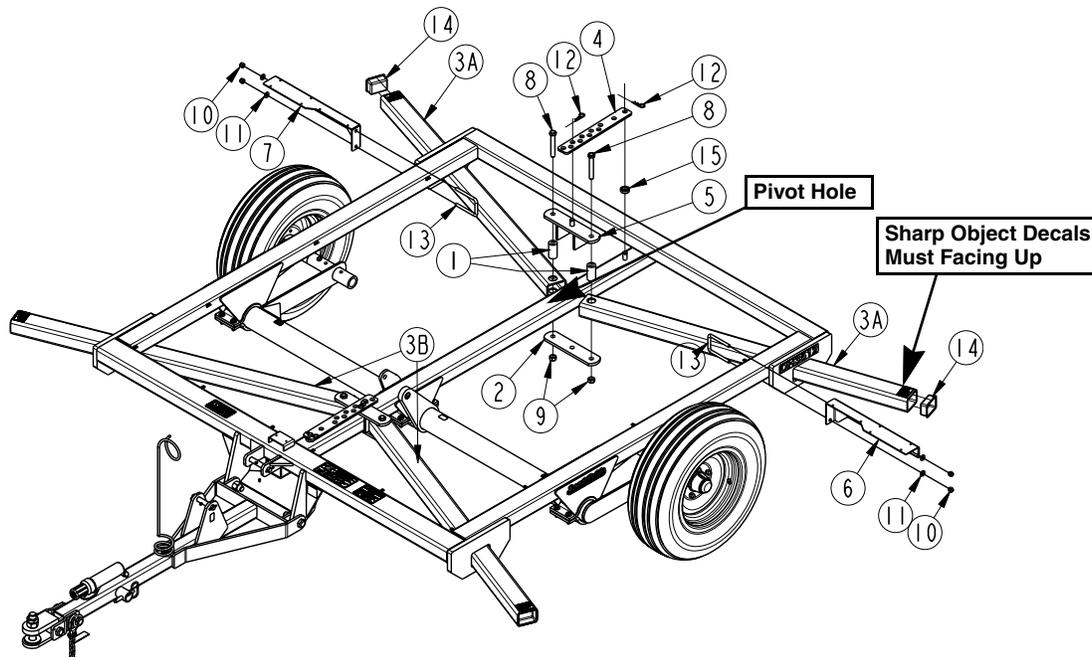
Refer to Figure 1-2:

1. Attach tongue (#5) to main frame (#3) with two 1"-8 x 4" GR5 cap screws (#8) and 1" nylock nuts (#11). Draw nuts up snug. **Do not tighten.**
 2. Rotate park jack (#22) to the upright position and retain with pin (#18). Extend jack to support hitch approximately 18" off the ground.
- NOTE:** Spring adjuster (#6) and pivot bracket (#7) are shipped shop assembled together.
3. Attach mid point of pivot bracket (#7) to the main frame (#3) with one 7/8" x 5 3/8" pin (#19) and two 3/16" x 1 1/2" cotter pins (#17). Bend one or both legs of cotter pins to prevent them from falling out.
 4. Attach pivot bracket (#7) to the tongue with lower hitch pin (#1) and 1/4" x 2" cotter pin (#15). Bend one or both legs of the cotter pin.
 5. Attach spring adjuster (#6) to axle lug (#4) with 3/4"-10 x 2 1/2" GR 5 cap screw (#9) and 3/4" top locknut (#12). Draw nut up snug. **Do not tighten.**

6. Insert 1/2"-13 x 1" GR5 bolt (#10) through lock washer (#13), flat washer (#14), spring hose loop (#20), flat washer (#14), and in welded nut on top of the hitch frame as shown. Tighten bolt (#10) to the correct torque.
7. Route hydraulic hoses (#23) through spring hose loop (#20).
8. Mount the five stroke control spacers (#21) onto the spring adjuster (#6) storage rack.
9. Attach cylinder transport lock (#2) to spring adjuster gusset with 1/4" wire retaining pin (#16).



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Swing Arm Assembly (Hydraulic Cylinder and Spring Adjuster Not Shown for Clarity)
Figure 1-5

Reflector/Light Brackets

Refer to Figure 1-5:

1. Attach left-hand reflector bracket (#6) and right-hand reflector bracket (#7) to the disc frame with Red & Orange reflectors facing rearward using 1/2"-13 u-bolts (#13), flat washers (#11), and hex nylock nuts (#10).
2. Tighten nylock nuts (#1) to the correct torque.

Swing Arm Assembly

Refer to Figure 1-5:

1. Insert swing arms (#3A) through slots at rear of mainframe with pivot hole end in first and sharp object decal on the other end facing up.
2. Connect the two arms together at the center with two spacers (#1), one top slide bracket (#5), one bottom slide bracket (#2), two 3/4"-10 x 5" GR5 hex head bolts (#8), and two 3/4" locknuts (#9). Tighten locknuts to the correct torque.
3. Insert 1/2" spacer (#15) over rear pin located on the main frame.
4. Install end hole on stabilizer bar (#4) over rear pin and third hole back from the opposite end over the top slide bracket pin.
5. Secure stabilizer bar with hairpin cotters (#12).
6. Press end caps (#14) into tube ends.

NOTE: Bolt (#8) must be inserted in the left side of the front slide bracket (#5) before positioning the slide bracket under the hydraulic lift cylinder.

7. Repeat steps 1 to 6 to install front swing arms (#3B).

Disc Gang Assembly

Refer to Figure 1-6:

! 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 feet and other body extremities out from under the disc gangs to prevent serious injury or death from crushing or falling blade hazard.

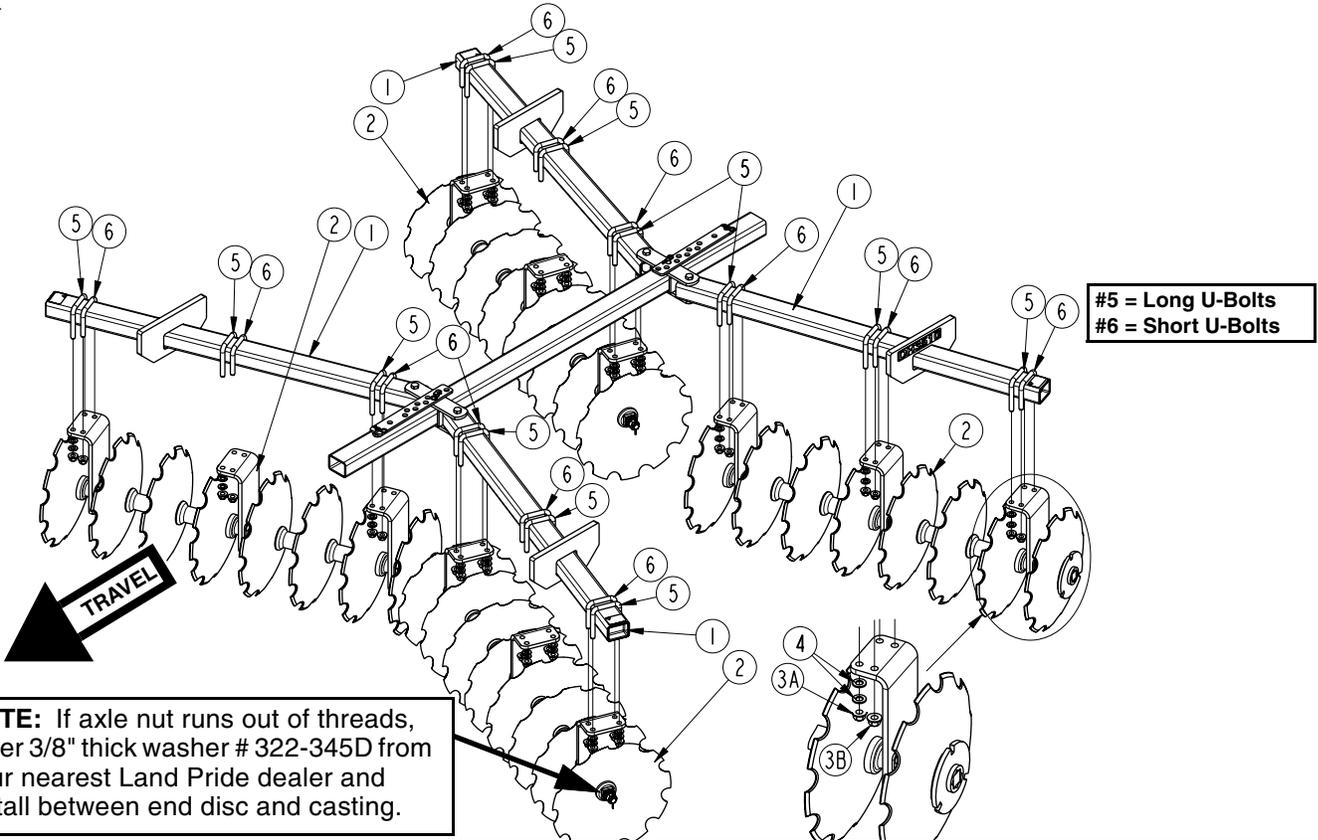
IMPORTANT:

- Make sure swing arms (#1) are attached to the frame before attaching disc gangs (#2) to the arms. See "Swing Arm Assembly" on page 14.
- Disc gangs are provided in 7 1/2" & 9" spacing and with plain or notched disc blades. Check with your dealer to determine which disc gangs are mounted on the front and which are mounted on the back.
- Front disc gangs are mounted with concave side of disc blades facing out and rear disc gangs with concave side facing in.
- **Do not install** flat washers (#4) and locknuts (#3A) until installation of optional scrapers.

IMPORTANT: U-bolts (#5) are longer for attaching optional scraper bars and are always located in the holes furthest away from the vertical leg of the disc gang mounting brackets.

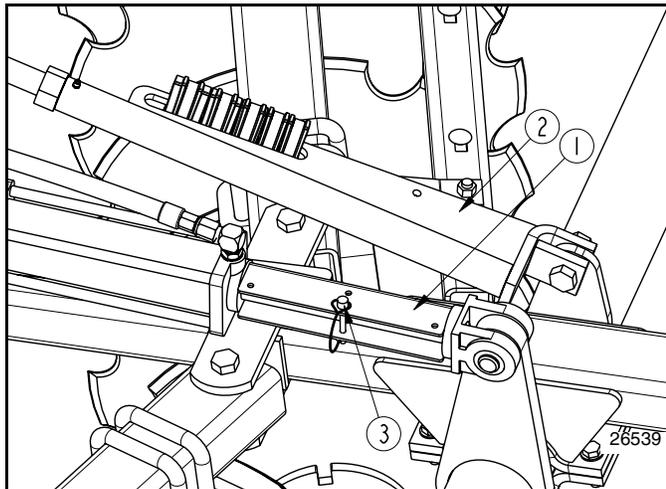
Section 1: Assembly & Set-up

25994



Disc Gang Assembly (Model DH3512 with 9" disc Spacing Shown)

Figure 1-6



Hydraulic Cylinder Transport Lock

Figure 1-4

Preparation Before Installing Disc Gangs

Refer to Figure 1-4:

1. Fully extend hydraulic cylinder.
2. Remove transport lock (#1) from storage bar (#2) and pin to cylinder rod with wire retaining pin (#3).
3. Retract cylinder until weight of Disc Harrow is supported by the transport lock.

Install Disc Gangs

Refer to Figure 1-6:

1. Start with the rear disc gangs (#2). Position them under the rear swing arms (#1) with concave side of disc blades facing in.
2. Lower the disc frame swing arms (#1) within close proximity of the mounting brackets as follows:

Method #1: Use the hydraulic cylinder to raise and lower the swing arms (#1).

Method #2: Raise the front of the disc up to lower the rear swing arms (#1) and raise the back of the disc up to lower the front swing arms (#1).
3. Align disc gangs (#2) with swing arms (#1) and then drop u-bolts (#5 & #6) over the swing arms into the mounting bracket holes. Take care to make sure the long u-bolts (#5) are mounted in the holes located farthest from the mounting bracket's vertical leg.
4. Continue lowering swing arms (#1) until they are touching the mounting bracket flanges.
5. Install 3/4" hex flange top locknuts (#3B) to the short u-bolts (#6). Draw nuts up loosely. **Do not tighten.**
6. Repeat steps 1-5 to attach the front disc gangs (#2) with concave side of disc blades facing out.

Section 1: Assembly & Set-up

Disc Gang Positioning

Refer to Figure 1-7 & Figure 1-8:

You must know the Disc Harrow model number and distance between disc blades or "Disc Spacing" to position disc gangs on the swing arms correctly.

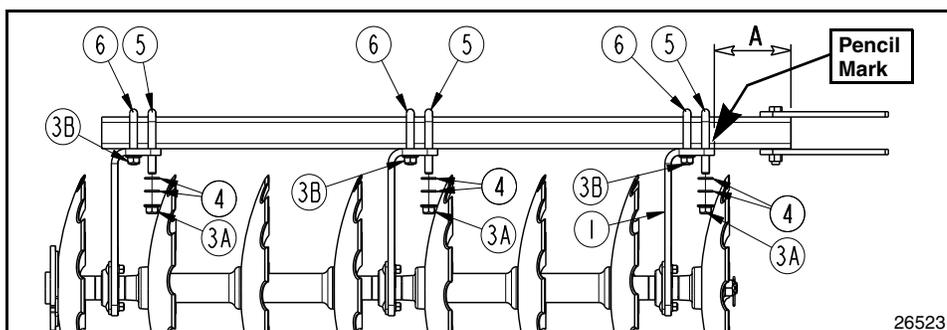
1. Measure distance between disc blades to determine the "Disc Spacing". Use this measurement to find dimensions A & B in the "Positioning Chart" below. Dimensions A & B are the distances from end of swing arms to end of the first inside mounting bracket flange (#1).
2. Make a pencil mark (Dimensions A & B) on the swing arm where the end of the mounting bracket flange begins.
3. Move disc gang along the length of the swing arm until end of inside mounting bracket flange is aligned with the pencil mark made on the swing arm.

IMPORTANT: Make sure all mounting bracket legs are vertical before tightening short u-bolts. This will ensure that the long u-bolts are spaced properly when mounting scraper channels.

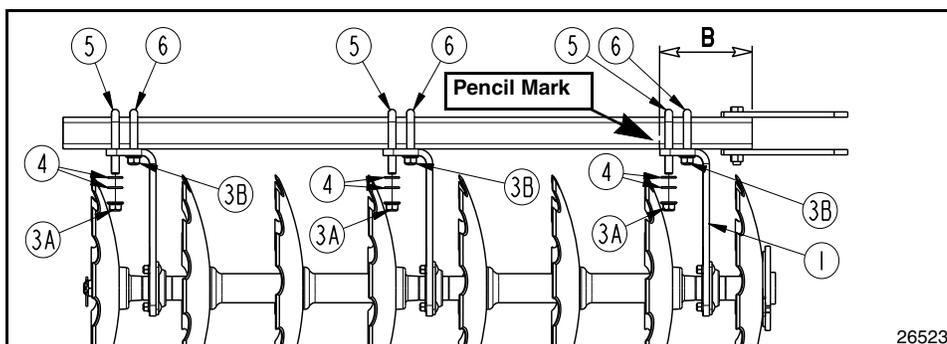
4. Tighten the short u-bolt (#6) for the inside mounting bracket (#1) to 170 ft-lbs (230 Nm). Do not attach nuts (#3A) to the long u-bolts.
5. Move out to the next mounting bracket. Align this bracket vertically and then tighten short u-bolt to 170 ft-lbs.
6. Continue moving out while aligning the mounting brackets vertically and then tightening the short u-bolts until all brackets have been secured.
7. Refer to "Disc Scrapers" & "Scraper Assembly" on page 22 if optional disc scrapers are included. Skip to step 8 if they are not included.
8. Install two flat washers (#4) and 3/4" hex flange top locknuts (#3A) to each leg of the long u-bolts (#5). Tighten nuts to 170 ft-lbs (230 Nm).

Positioning Chart

Distance From End of Swing Arm to End of Mounting Bracket Flange			Model DH3510 Disc Spacing		Model DH3512 Disc Spacing	
			7 1/2" (19 cm)	9" (23 cm)	7 1/2" (19 cm)	9" (23 cm)
See Figure 1-7	A	in (cm)	7 1/16 (17.9)	7 5/8 (19.4)	6 15/16 (17.6)	7 1/2 (19.1)
See Figure 1-8	B	in (cm)	8 7/8 (22.5)	9 1/2 (24.1)	8 7/16 (21.4)	9 1/16 (23)

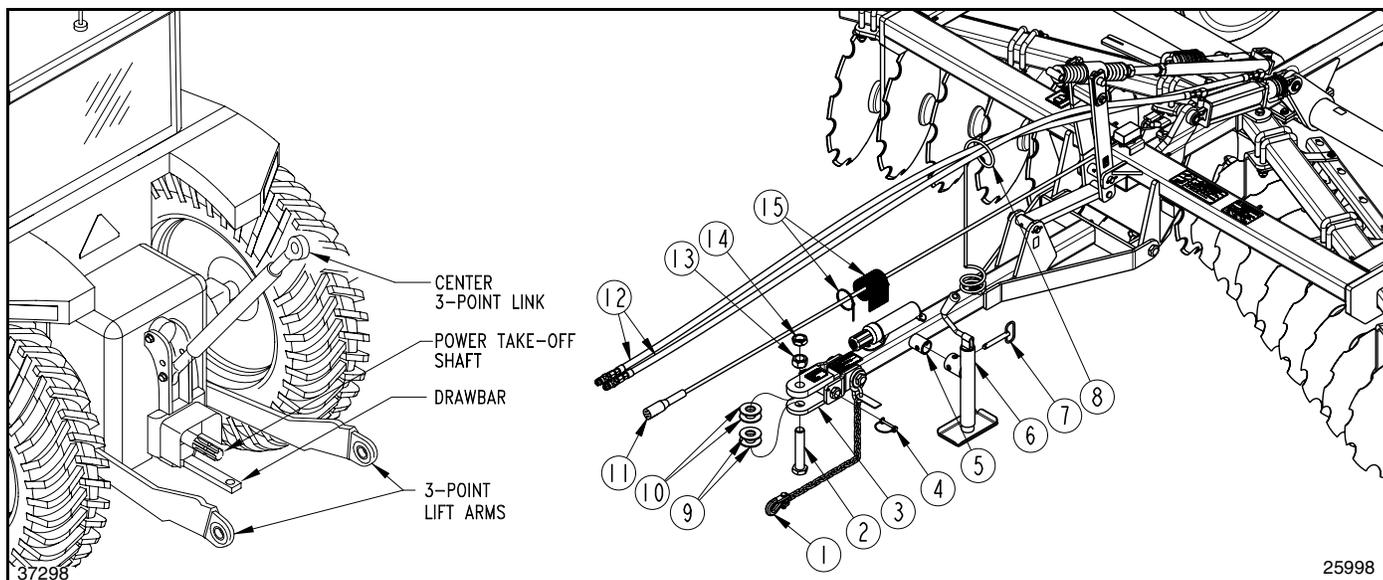


Rear Gang Position on Swing Arms (Right Side Shown)
Figure 1-7



Front Gang Position on Swing Arms (Right Side Shown)
Figure 1-8

Section 1: Assembly & Set-up



Tractor Hook-up
Figure 1-9

Adjustment Lever Storage

Refer to Figure 2-9 on page 25:

Store adjustment lever (#6) in a suitable location. One location would be pinned under stabilize bar (#8) with hairpin cotter (#7) as shown. If disc gang is angled such that pinning the bar in front does not work, then try pinning it behind.

Tractor Hook-up



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 controls while a person or animal is directly behind the power machine or near the implement.



WARNING

To avoid serious injury or death:

- Always follow “Tractor Shutdown Procedure” provided in this manual before dismantling the tractor.
- Park jack must be installed and retaining jack pin must be fully inserted and secured before working on or around an implement not connected to a tractor.

Refer to Figure 1-9:

1. Make certain park jack (#6) is properly attached to implement hitch mount (#5) and secured with detent pin (#7).
2. Pivot clevis hitch (#3) up horizontally and support in this position with wire retaining pin (#4).
3. Start tractor and raise lower 3-point arms fully up. Back tractor within close proximity of clevis (#3).
4. Raise or lower park jack (#6) to align clevis (#3) with tractor drawbar. Drawbar should fit between lower and upper plates of clevis.
5. Back tractor up to implement hitch clevis (#3) until holes in drawbar and clevis are aligned.
6. Remove wire retaining pin (#4) and store in a safe place for future use.
7. Insert 1 1/4" flat washers (#9 & #10) equally above and below tractor drawbar until both spaces between drawbar and clevis plates are filled. This will reduce drawbar wear.
8. Insert 1 1/4" -7 x 6 1/2" GR5 hex bolt (#2) through bottom clevis hole, 1 1/4" washers (#9), tractor drawbar, remaining 1 1/4" washers (#10) and out through upper clevis hole. Secure hex bolt with hex nut (#13) and jam nut (#14). Tighten hex nut snugly to remove all play and then back nut one-quarter turn. Tighten Jam nut (#14) tight against hex nut (#13).
9. Lower park jack (#6) until implement weight is removed from park jack. Rotate park jack counterclockwise 90 degrees and reinsert detent pin (#7) for storage.
10. Attach hitch safety chain (#1) to tractor. Adjust chain length to remove all slack except what is necessary to permit turning. Lock chain hook securely to the safety chain.
11. Pin tractor drawbar in fixed center position.

Hook-up Hydraulics

The standard set-up requires one duplex outlet to operate the two-way lift cylinder.

Refer to Figure 1-9 on page 17:

1. If not already completed, route hydraulic hoses (#12) through hose spring support loop (#15).
2. Connect quick release coupler on end of hydraulic hoses (#12) to tractor remote outlet.
3. Start tractor and operate control lever to raise and lower Disc Harrow. If the implement works opposite of what it should, shut tractor down and switch hydraulic hose connections at the duplex outlet. Refer to **“Tractor Shutdown Procedure”** on page 10.
4. Cycle lift cylinder back and forth several times to purge air from it. If operation continues to be sluggish, it may be necessary to purge air from the cylinder and hydraulic lines. Refer to **“Purge Hydraulic System”** on this page.

Purge Hydraulic System



WARNING

To avoid serious injury or death:

Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulics. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. DO NOT DELAY.

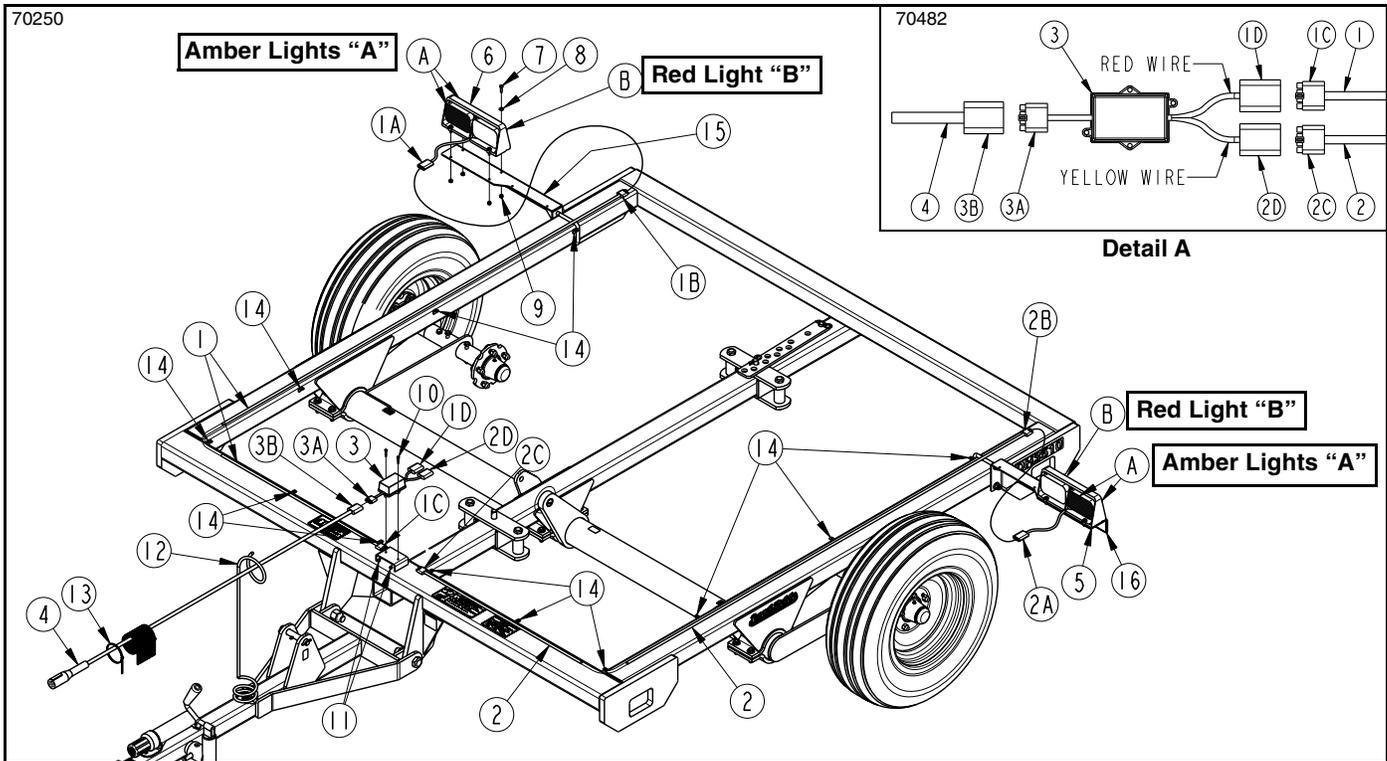
1. Shut tractor down and relieve all hydraulic pressure before dismounting. Refer to **“Tractor Shutdown Procedure”** on page 10.
2. With implement lowered to the ground, remove connecting pin from rod end of cylinder. Block cylinder support in a vertical position with rod end up.
3. Cycle hydraulic system to extend and retract the cylinder. Repeat this process 2 times ending with cylinder fully retracted.
4. Shut tractor down and relieve all hydraulic pressure before dismounting.
5. Crack fitting at the rod end of cylinder to allow air to escape.
6. Restart tractor and slowly activate tractor control lever to extend the cylinder rod until air free oil leaks from the fitting.
7. Follow tractor shutdown procedures before dismounting tractor.
8. Tighten fitting on the rod end of cylinder.
9. Pin clevis on rod end of cylinder to the Disc Harrow.
10. Crack fitting at the base end of the cylinder and repeat steps 6-8.
11. Tighten fitting on base end of cylinder.
12. Slowly cycle Disc Harrow to transport position while checking to make sure hydraulic hoses are not pinched in the process.



Section 1: Assembly & Set-up

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Section 1: Assembly & Set-up



LED Light Kit Assembly (Mainframe shown without components for clarity)
Figure 1-10

LED Light Kit Assembly

Refer to Figure 1-10:

The lead wiring harness (#4) is equipped with a 7-way round pin connector. Make sure your tractor is equipped with the 7-pin electrical outlet shown in Figure 1-11 on page 21.

1. Lower Disc Harrow until discs and wheels are resting on the ground.
2. Shut tractor down properly before dismounting. Refer to **"Tractor Shutdown Procedure"** on page 10.

IMPORTANT: Amber lights "A" are located outside facing front and back. Red lights "B" are located inside facing back only.

3. Mount right-hand light (#6) on top of the right-hand reflector bracket (#15) as shown with Red light facing back and to the inside.
 - a. Secure light assembly (#6) with 1/4"-20 x 1" GR 5 hex bolts (#7), flat washers (#8) and nylock nuts (#9) as shown.
 - b. Tighten nylock nuts (#9) to the correct torque.
4. Mount left-hand light (#5) on top of the left-hand reflector bracket (#16) as shown with Red light facing back and to the inside.
 - a. Secure light assembly (#5) with 1/4"-20 x 1" GR 5 hex bolts (#7), flat washers (#8) and nylock nuts (#9).
 - b. Tighten nylock nuts (#9) to the correct torque.

5. Attach enhance module (#3) to the mainframe as shown with #10-24 x 1" cap screws (#10) and nylock nuts (#11). Tighten nylock nuts.

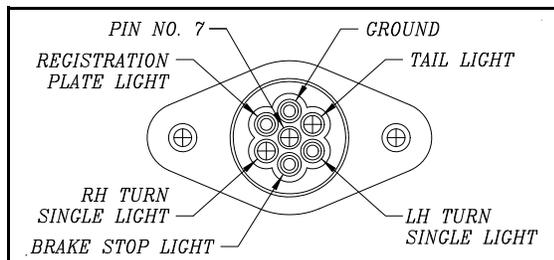
IMPORTANT: Connectors on wire harness (#1 & #2) are labeled "Light" on one end and "Enhancer" on the other end. Ends labeled "Light" connect to the light assemblies (#5 & #6). Ends labeled "Enhancer" connect to enhance module (#3).

6. Plug "Light" connector (#1B) on the right-hand side to connector (#1A) for LED light (#6).
7. Plug "Light" connector (#2B) on the left-hand side to connector (#2A) for LED light (#5).
8. Route wire harnesses (#1 & #2) on both sides of the mainframe to the front and along the front beam to enhance module (#3).

IMPORTANT: See Detail A: Connector (#1D) has a Red wire and connects to wire harness (#1) on the right side. Connector (#2D) has a yellow wire and connects to wire harness (#2) on the left side.

Section 1: Assembly & Set-up

9. **See Detail A:** Plug wire harnesses (#1, #2, & #4) to enhance module (#3) as follows:
 - a. On the right side, plug “Enhance” connector (#1C) to connector (#1D). Connector (#1D) has a Red wire.
 - b. On the left side, plug “Enhance” connector (#2C) to connector (#2D). Connector (#2D) has a Yellow wire.
 - c. Attach lead wire harness (#4) with connector (#3B) to connector (#3A).
10. There are six tabs (#14) for harness (#1) and six tabs (#14) for harness (#2). Add cable ties (#13) to wire harnesses (#1, & #2) using holes in tabs (#14) to secure the harnesses. Draw cable ties up loosely.
11. Add remaining cable ties to all wire harnesses as needed to protect the harnesses from damage.



Tractor 7-Pin Electrical Outlet

Figure 1-11

Hook-up LED Lights

Refer to Figure 1-10 on page 20:

1. Route lead wire harness (#4) through spring hose loop (#12).
2. Connect wire harness (#4) to the tractor’s 7-way round pin receiver. See Figure 1-11 above.
3. Start tractor and operate lights to verify hook-up is operating properly:
 - a. Turn on head lights to verify Red lights illuminate.
 - b. Turn on flasher lights to verify Amber light are blinking on and off.
4. If lights did not operate properly, recheck hook-up of wire harnesses (#1, #2, & #4). Make necessary changes to the harnesses and repeat step 3 above.
5. Recheck routing of wire harnesses to make sure they will not pinch as the Disc Harrow is raised and lowered.
6. Make final adjustments to harnesses (#1, #2, & #4) and cable ties (#13) as needed. When completed, draw all cable ties up tight.

Section 2: Optional Equipment Set-up

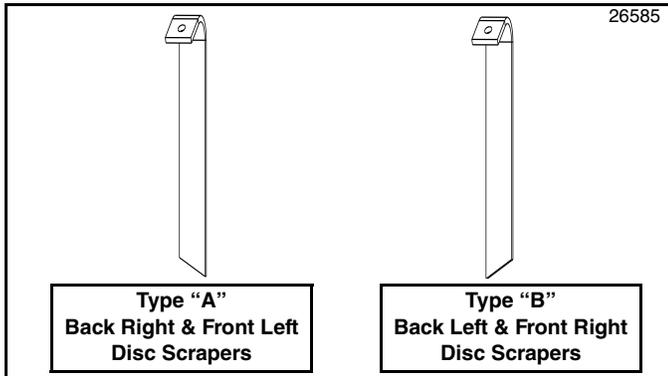
Disc Scrapers

Refer to Figure 2-1:

Orient disc scrapers as shown in Figure 2-1 to determine scraper types.

The bottom of Type "A" is skewed up to the left and mounted on the back right and front left disc gangs.

The bottom of Type "B" is skewed up to the right and mounted on the back left and front right disc gangs.



Disc Scraper Orientation
Figure 2-1

Scraper Assembly

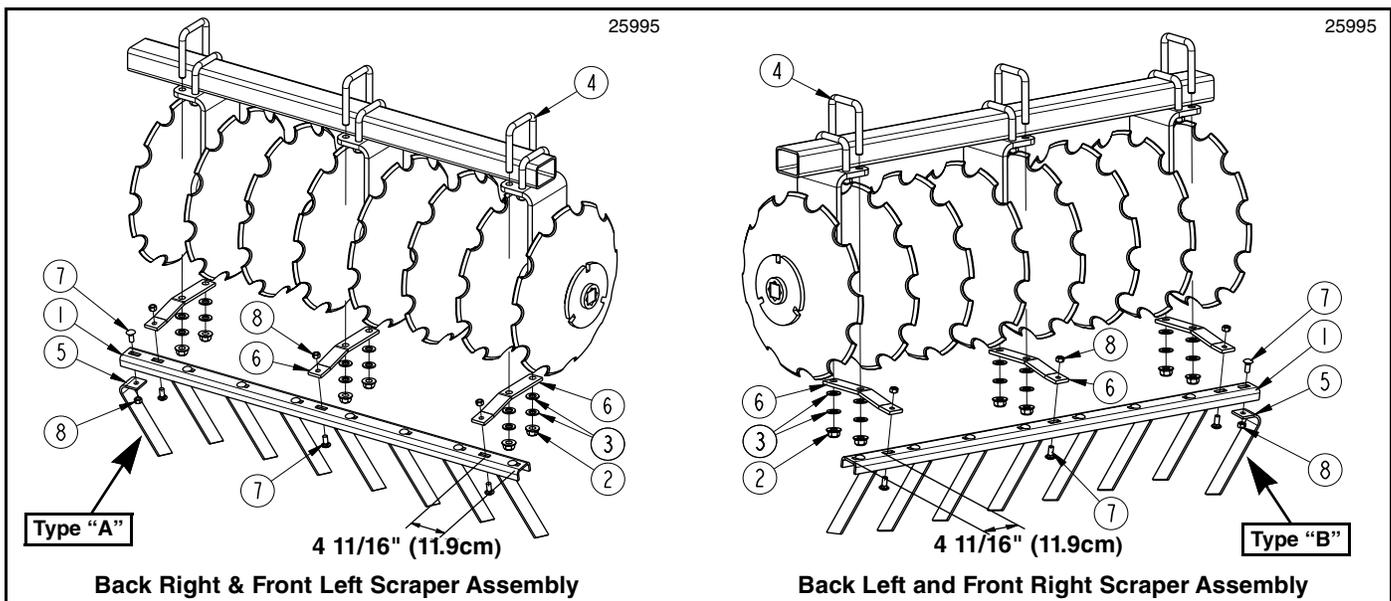
Refer to Figures 2-2, 2-3, 2-4 & 2-5:

1. Determine correct orientation of scraper mounting brackets (#1) by locate the figure that illustrates your Disc Harrow model number and disc blade spacing. Be sure to check the disc blade spacing on both the front and rear disc gangs as they can be different. Mounting brackets for disc gangs with 7 1/2" blade spacing will have more square holes than ones with 9" blade spacings.

2. Select the correct mounting bracket (#1) for the back right disc gang and then orient the square bolt holes in the mounting bracket to match the square bolt holes in the mounting bracket shown in the illustration.

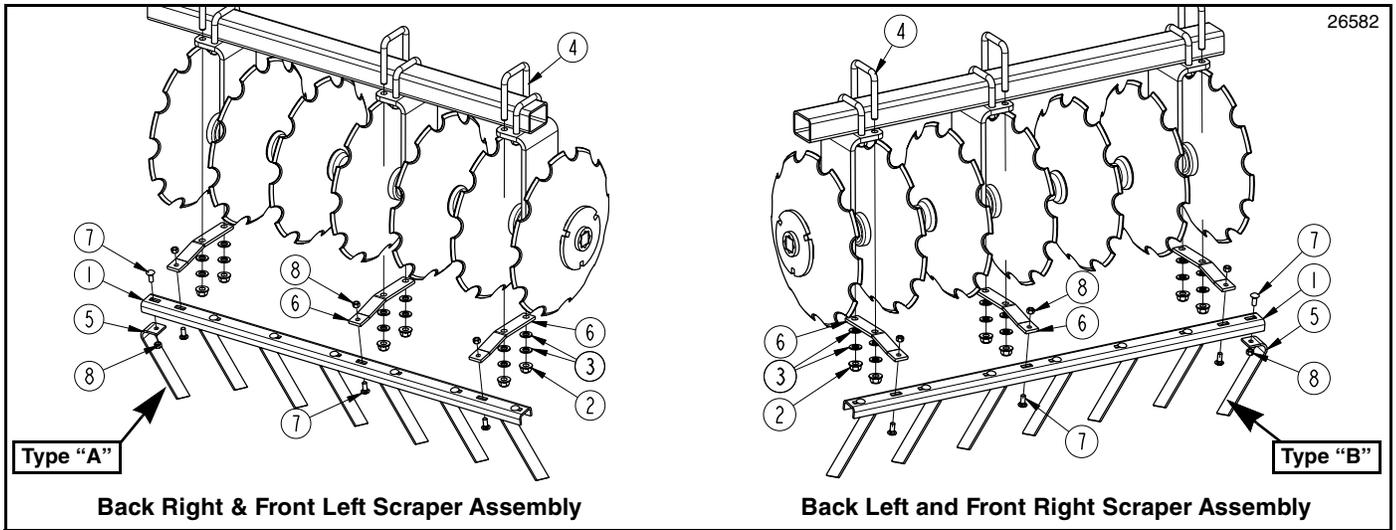
IMPORTANT: Disc scrapers (#5) must point in towards the disc concave surfaces. Hex head square neck bolts (#7) can be inserted from the bottom or top when attaching disc scrapers.

3. Bolt Type "A" disc scrapers to scraper mounting bracket (#1) with 1/2"-13 x 1 1/4" GR5 round head square neck bolts (#7) and 1/2" hex flange lock nuts (#8). Draw nuts up snug. Do Not tighten.
4. Attach scraper hangers (#6) to the long u-bolts (#4) with 3/4" flat washers (#3) and 3/4" hex flange locknuts (#2). Draw nuts up snug. Do not tighten.
5. Attach scraper mounting bracket (#1) to scraper hangers (#6) with 1/2"-13 x 1 1/4" GR5 round head square neck bolts (#7) and 1/2" hex flange lock nuts (#8). Draw nuts up snug. Do not tighten.
6. Recheck fit-up of the scraper assembly and then tighten u-bolt hex flange nuts (#2) and scraper hanger locknuts (#8) to the correct torque.
7. Adjust individual scrapers (#5) to be within close contact without touching the disc blade. Tighten scraper mounting nuts (#8) to the correct torque. See "Disc Scraper Adjustments" on page 27 for detailed scraper adjustment instructions.
8. Repeat steps 2 - 7 for the front left scraper assembly with Type "A" scrapers.
9. Repeat steps 2 - 7 for the back left scraper assembly with Type "B" scrapers.
10. Repeat steps 2 - 7 for the front right scraper assembly with Type "B" scrapers.



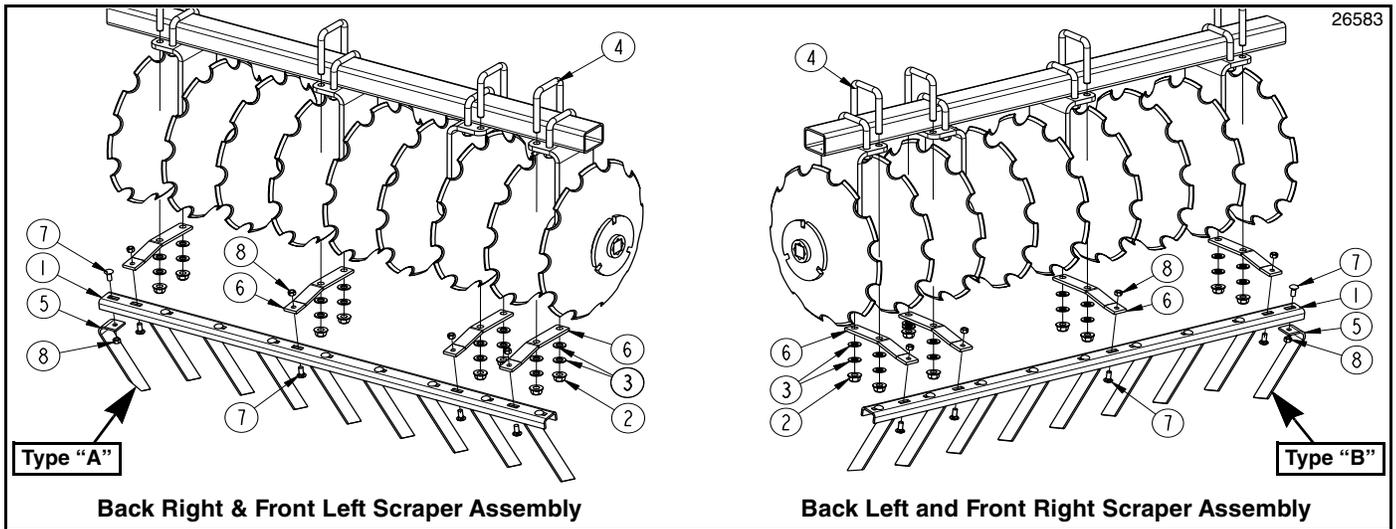
Model DH3510 Disc Harrow With Blades Spaced 7 1/2" Apart
Figure 2-2

Section 2: Optional Equipment Set-up



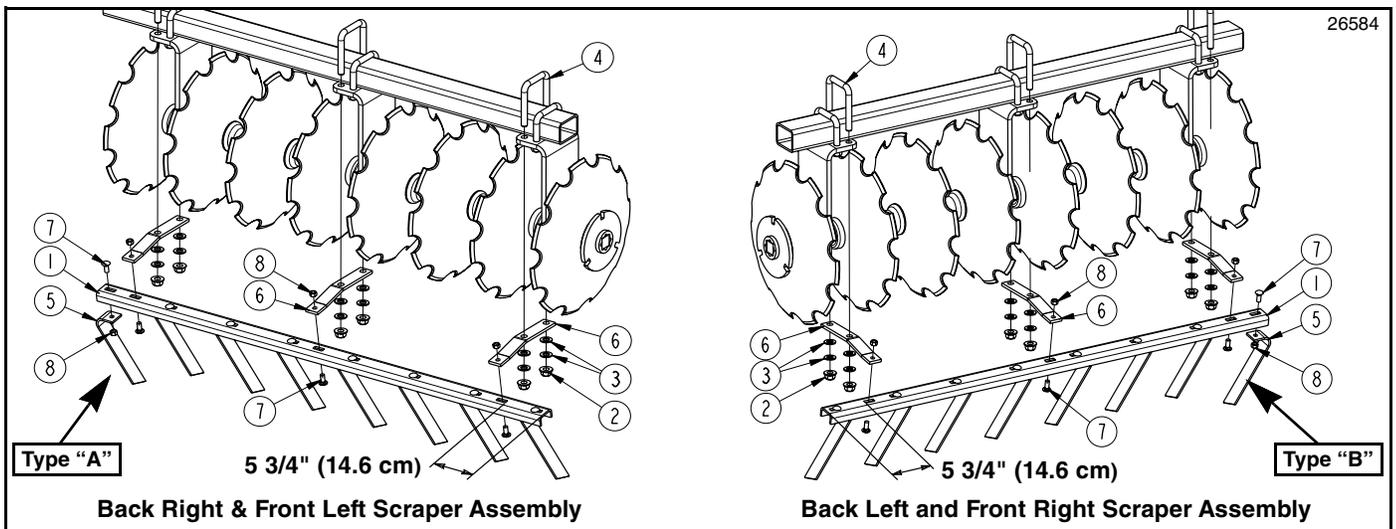
Model DH3510 Disc Harrow With Blades Spaced 9" Apart

Figure 2-3



Model DH3512 Disc Harrow With Blades Spaced 7 1/2" Apart

Figure 2-4



Model DH3512 Disc Harrow With Blades Spaced 9" Apart

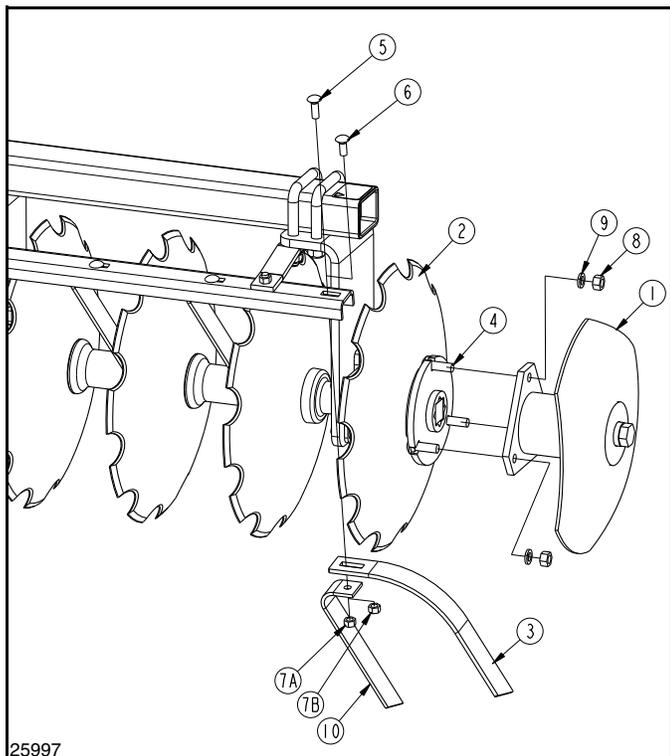
Figure 2-5

Section 2: Optional Equipment Set-up

Furrow Filler Assembly

Refer to Figure 2-6:

1. Attach furrow filler (#1) to the right back end disc with 5/8"-11 x 2" GR5 round head square neck bolt (#4), spring lock washers (#9) and 5/8" hex nut (#8).
2. Tighten nuts to the correct torque.
3. Repeat steps 1 & 2 for the left side.



Right Rear Furrow filler & Scraper Assembly
Figure 2-6

Furrow Scraper Assembly

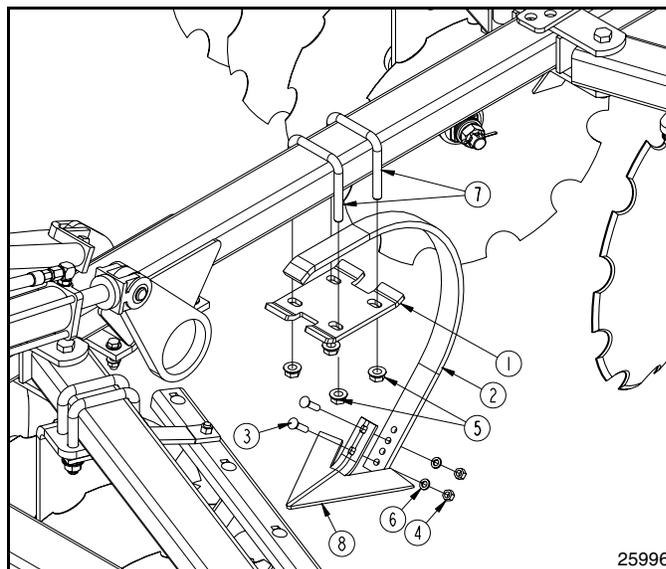
Refer to Figure 2-6:

1. Remove existing 1/2" x 1 1/4" round head bolt (#6), hex nut (#7B) and end scraper (#10). Keep scraper for reuse.
2. Attach right furrow scraper (#3) and end scraper (#10) to scraper bar with new 1/2"-13 x 1 1/2" GR5 round head square neck bolt (#5) and 1/2" hex locknut (#7A). Make sure furrow scraper is positioned above the end scraper as shown.
3. Tighten nut to the correct torque.
4. Repeat steps 1, 2 & 3 for the left side furrow scraper.
5. Adjust individual scrapers to be within close contact with disc concave surfaces without touching. See "Disc Scraper Adjustments" on page 27.

Center Sweep Assembly

Refer to Figure 2-7:

1. Attach sweep arm (#2) to the main frame at about mid point between the front disc gangs and rear disc gangs with two 5/8"-11 x 4 1/32" x 4 3/4" u-bolts (#7), spring bracket (#1), and hex flange locknuts (#5).
2. Tighten locknuts to the correct torque.
3. Mount center sweep (#8) to the sweep arm in the lowest position if disc blades are 22" in diameter. Mount in the highest position if disc blades are 20" in diameter. Use 7/16"-14 x 1 3/4" GR3 plow bolts (#3), lock washers (#6), and hex nuts (#4) when mounting.



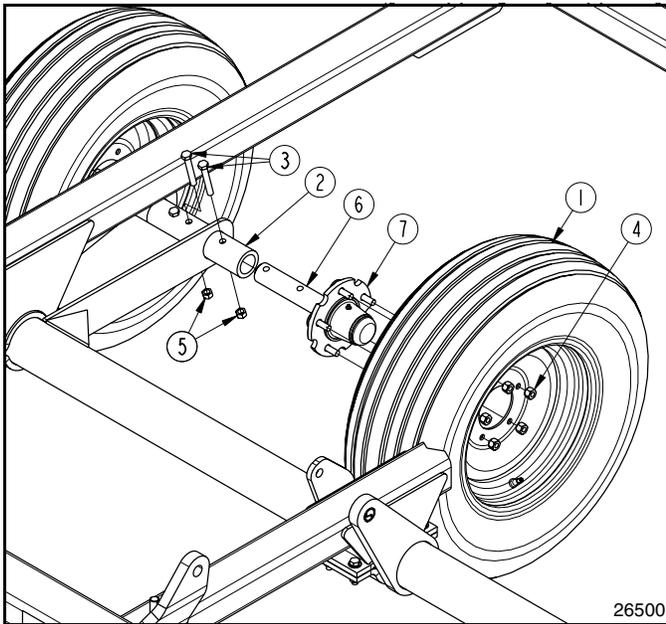
Center Sweep Assembly
Figure 2-7

Section 2: Optional Equipment Set-up

Dual Wheel Assembly

Refer to Figure 2-8:

1. Support main frame off the floor with a suitable lifting device.
2. Install single bolt-on spindle (#6) to inside of axle frame (#2) with two 1/2"-13 x 3 1/4" GR5 hex head cap screws (#3) and 1/2" hex locknuts (#5). Tighten nuts to the correct torque.
3. Mount wheel (#1) to hub (#7) with five 1/2"-20 lug nuts (#4). Tighten lug nuts to the correct torque.
4. Repeat steps 2 to 6 for the opposite side.

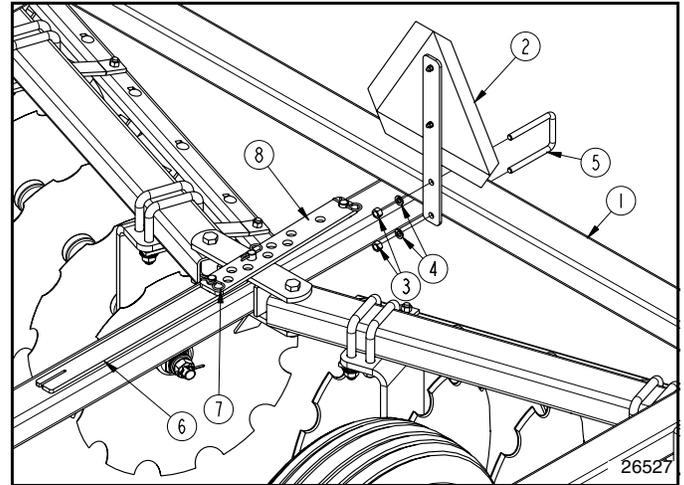


Single Wheel Assembly (Right Side Shown)
Figure 2-8

Slow Moving Vehicle Sign

Refer to Figure 2-9:

Attach slow moving vehicle sign (#2) to the back of the frame (#1) with 1/2"-13 x 3 1/32" x 5" u-bolt (#5), spring lock washers (#4) and 1/2" hex nuts (#3). Tighten nuts to the correct torque.



Slow Moving Vehicle Sign
Figure 2-9

Section 3: Adjustments

Out-of-Field Adjustments

Some adjustments can be made on concrete slabs or on a good level surface.

Side to Side Leveling

Check tire pressure. All tires should have equal pressure. See “**Tire Inflation Chart**” on page 42. Unequal tire pressure will allow the disc to dig in deeper on the side with the lowest tire pressure. This will make the Disc Harrow pull at an angle to the direction of travel.

Front to Rear Leveling

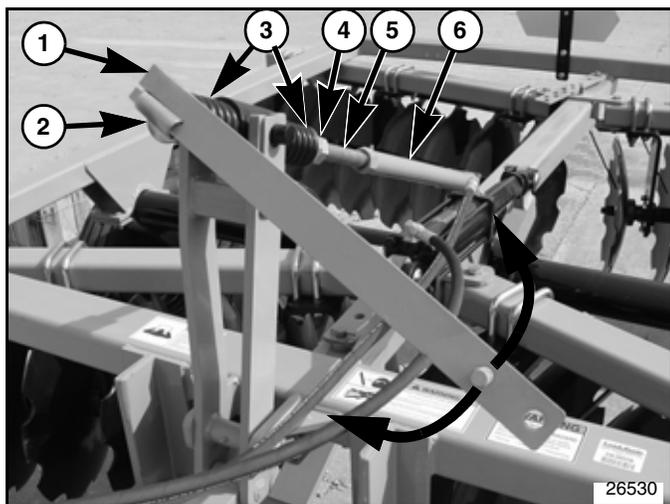
Refer to Figure 3-1:

WARNING

To avoid serious injury or death:

- Total compressed length of leveling springs (#3) is 12 1/2" between flat washers. Never adjust nuts (#4) to compress springs under 12 1/2". Compressing springs too tight can damage the spring adjuster resulting in flying projectiles and sudden drop of the Disc Harrow.
- Do not fully unscrew spring adjuster rod (#5) from adjuster tube (#6). Unscrewing the rod will result in a sudden drop of the front disc gangs. Maximum allowable exposed rod (#5) between nuts (#4) and adjuster tube (#6) is 15".

Most operating problems are due to unequal pressure and penetration of the front and rear gangs. Preset the harrow with the rear disc blades almost touching the ground and the front disc blades approximately 2 inches off the ground as follows:



Front to Back Leveling
Figure 3-1

Refer to Figure 3-7 on page 28:

1. Lower Disc Harrow until rear disc blades are almost touching the ground. Raise implement slightly and then add stroke control spacers (#4 & #5) to the cylinder rod until rod is full.
2. Lower machine until cylinder is pressing against the stroke control spacers.

Refer to Figure 3-1:

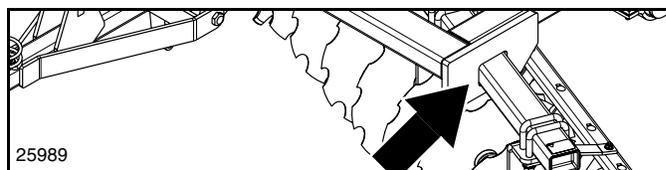
3. Turn spring adjuster to position the front disc blades approximately 2 inches above the rear disc blades as follows:
 - Turn spring adjuster (#2) clockwise with adjusting lever (#1) to lower the rear disc blades.
 - Turn spring adjuster (#2) counterclockwise with adjusting lever (#1) to raise the rear disc blades.

Disc Gang Angle Adjustment

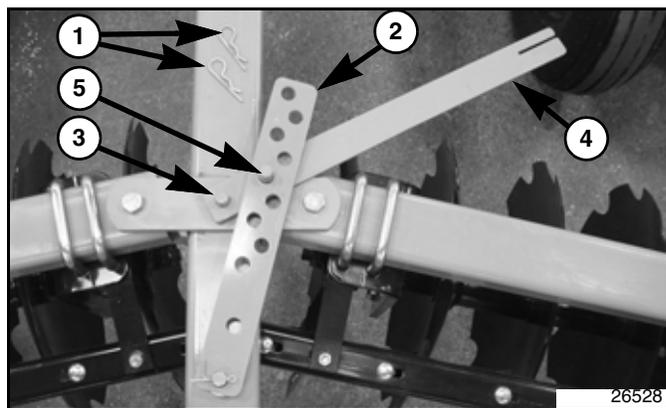
CAUTION

To avoid minor or moderate injury:

Refer to Figure 3-2. Keep everyone clear of swing arm hanger brackets while adjusting disc gang angles. Body extremities can become pinched in the bracket openings.



Pinch Point Hazard
Figure 3-2



Disc Gang Angle Adjustment (Rear Gangs Shown)
Figure 3-3

It is best if the disc gang angles are set at the smallest angle required to do the job. Refer to values provided in Figure 3-4 when adjusting the front disc gang angle and Figure 3-5 when adjusting the rear disc gang angle. A good starting angle is 18.5 degrees for the front gangs and 16.5 degrees for the rear gangs.

Refer to Figure 3-3:

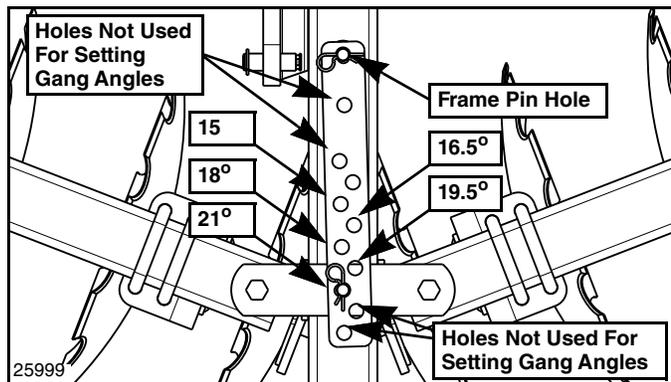
Make adjustments with disc gangs off the ground:

1. Remove hairpin cotters (#1) from rear gang slide mount.
2. Remove stabilizing bar (#2) from pin (#3).
3. Place hole in adjusting lever (#4) over pin (#3). Make sure pin (#5) on adjusting lever is facing up.
4. Place one of the holes in stabilizing bar (#2) over pin (#5).

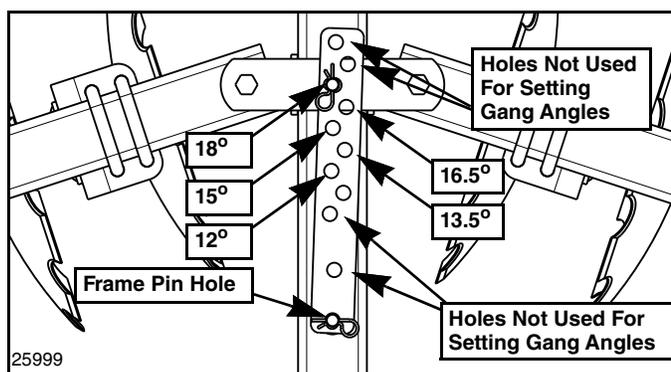
Section 3: Adjustments

Refer to Figure 3-4 & Figure 3-5:

- Determine which hole to select in the stabilizing bar when setting disc gangs to the desired angle.



Front Disc Gang Angles
Figure 3-4



Rear Disc Gang Angles
Figure 3-5

Refer to Figure 3-3 on page 26:

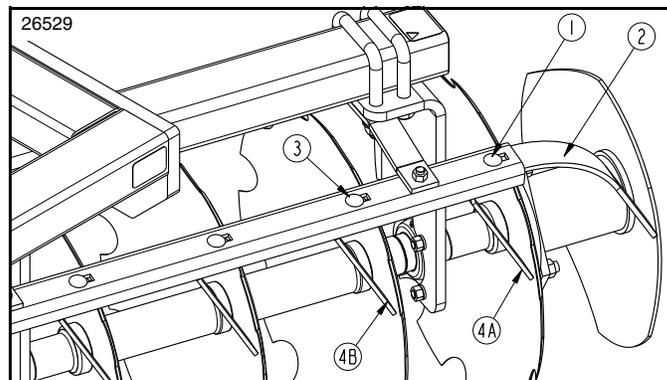
- Pull or push on lever handle (#4) to move disc gangs forward or rearward until selected hole in stabilizing bar aligns with pin (#3).
- Remove adjusting lever (#4) and place stabilizing bar (#2) on pin (#3).
- Replace hairpin cotters (#1).
- Repeat steps 1 to 8 for the front gangs.
- Store adjusting lever under one of the stabilizing bars when completed. Make sure all hairpin cotters (#1) have been replaced.

Disc Scraper Adjustments

Refer to Figure 3-6 (Right Rear Disc Gang):

NOTE: Rear furrow filler scraper (#2) is optional and may not be included with your Disc Harrow.

- Loosen bolt (#1) and adjust furrow filler scraper (#2) and scraper (#4A) as close to the disc blades as possible without touching.
- Tighten 1/2" -13 GR5 carriage bolt #1 to the correct torque.



Disc Scraper Adjustment
Figure 3-6

- Loosen remaining bolts (#3) and adjust remaining cup scrapers (#4B) as close to the disc blades as possible without touching.
- Tighten each 1/2" -13 GR5 carriage bolt #3 to the correct torque after adjusting the cup scraper (#4B) associated with that bolt.
- Repeat scraper adjustment steps 1 to 4 on all four disc gangs.

In-Field Adjustments

Final adjustments will need to be made while operating the Disc Harrow in the field. Make sure you have properly hooked-up to your tractor, lubricated the Disc Harrow, made a full bolt inspection, and completely read this manual before going to the field.



WARNING

To avoid serious injury or death:

Wear gloves and be careful when working around or with Disc blades. The blade cutting edge is sharp.

IMPORTANT:

- Damage to the harrow can occur if it is not lifted out of the ground before making sharp turns.
- Make sure tractor drawbar is pinned in the center position and tractor 3-Point arms are positioned so that they will not make contact with the Disc Harrow hitch.
- The Disc Harrow tires can be raised off the ground to add weight to the disc gangs. However, **DO NOT** add any additional weight to the Disc Harrow in an attempt to make the disc blades sink into the ground deeper. Instead, make additional passes over the worked area.
- Each adjustment affects another. Therefore, make only one adjustment at a time and then test that adjustment before continuing.
- Make each trial run with tractor in the same gear and at the same speed. Varying tractor speed while making adjustments will only make adjusting the Disc Harrow harder.

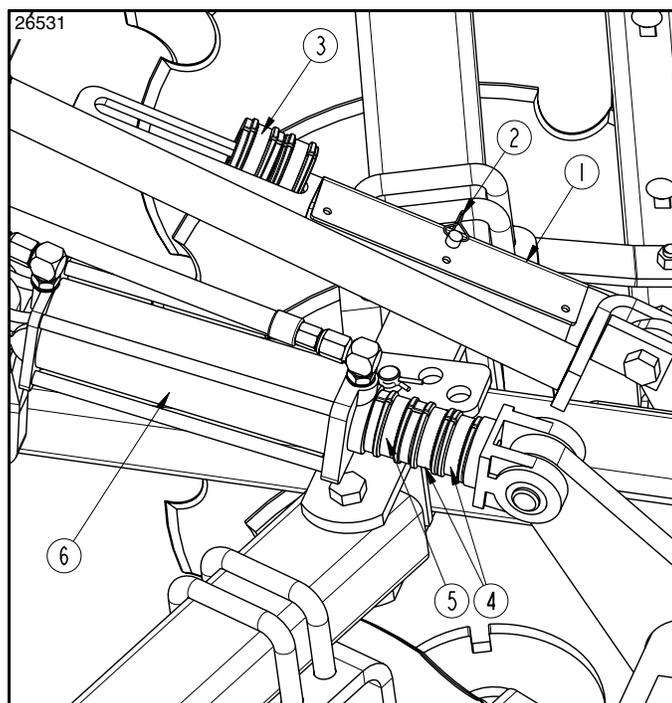
Section 3: Adjustments

Hydraulic Cylinder Depth Adjustment

Refer to Figure 3-7:

IMPORTANT: Because soil firmness varies from field to field, make depth adjustments while working in the field.

1. Remove all stroke control spacers (#4 & #5) from the hydraulic cylinder.
2. Lower Disc Harrow to desired working depth and travel forward. Your travel speed will be determined by soil conditions.
3. When working depth is achieved, stop tractor, shut tractor engine off, and remove switch key.
4. Select required size and number of stroke control spacers (#3) that will fit between hydraulic cylinder and rod eye clevis. The following spacers are available.
 - Two 1" (2.5 cm) spacers
 - One 1 1/4" (3.2 cm) spacer
 - One 1 1/2" (3.8 cm) spacer
 - One 1 3/4" (4.4 cm) spacer
5. Return to the tractor and raise the Disc Harrow up. Once fully raised, turn tractor engine off and remove switch key.
6. Install preselected stroke control spacers (shown as #4 & #5 in this example) on the cylinder rod.
7. Lower Disc Harrow against installed stroke control spacers. Recheck working depth. If needed, adjust size and quantity of stroke control spacers until desired working depth is achieved.



Hydraulic Cylinder Depth Adjustment
Figure 3-7

Disc Gang Angle

Increasing the disc gang angle will help the Disc Harrow to penetrate the soil and remove vegetation. However, too much angle can cause the Disc Harrow to operate erratically. Therefore, it is best if the disc gang angles are set at the smallest angle required to do the job. Make sure the angle of the front disc gangs is 3 degrees more than the rear disc gangs.

See also Section 8: Troubleshooting for helpful solutions to setting the disc gang angles.

Disc Leveling Front To Rear

Refer to Figure 3-1 on page 26:

The truest way to level your disc from front to rear is to observe behind the center of the Disc Harrow. In most soil conditions, a slight ridge in the center is actually a level operation. More air pockets will form where soil is thrown against each other, causing a small ridge to form that will disappear after a soaking rain.

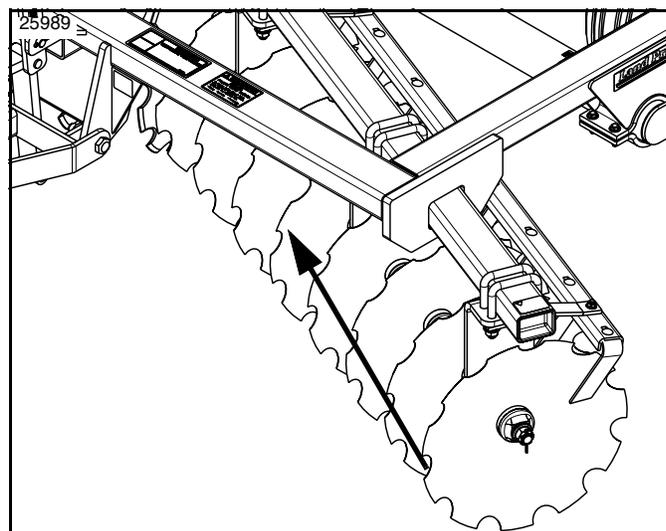
1. If unit is leaving a significant ridge in the center, raise disc rear gangs by turning spring adjuster (#2) counterclockwise.
2. If unit is leaving a furrow (valley) in the center, lower the rear disc gangs by turning spring adjuster (#2) clockwise.
3. See also Section 8: Troubleshooting for helpful solutions to leveling the Disc Harrow.

Disc Blade Replacement

Refer to Figure 3-8:

When replacing notched disc blades, assemble the disc blades in a spiral pattern.

See note in Figure 1-6 on page 15: Order 3/8" thick washer(s) from your nearest Land Pride dealer if axle nut(s) runs out of threads before the disc blades are tight on the axle.



Disc Replacement (Spiral)
Figure 3-8



Section 4: Operating Procedures

Operator’s Responsibilities

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 Disc Harrow. It is absolutely essential that no one operates the harrow 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 10
- **Section 2: Optional Equipment Set-up**, page 22
- **Section 3: Adjustments**, page 26
- **Section 4: Operating Procedures**, page 29
- **Section 5: Maintenance & Lubrication**, page 32

Perform the following inspections before using your Disc Harrow.

Operating Checklist

✓	Check	Ref.
	Read “ Important Safety Information ”	1
	Read all of the “Tractor Hook-up” and preparation instructions.	17
	Read “ Section 4: Operating Procedures ”	29
	Lubricate the harrow as needed. Refer to “ <i>Lubrication Points</i> ”.	34
	Check harrow initially and periodically for loose bolts & pins. Pay special attention to disc gang hanger bolts and axle nuts. Refer to “Torque Values Chart”.	42

! DANGER

To avoid serious injury or death:

- Do not allow anyone near the tractor 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.
- 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.
- 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 operate this implement who have fully read and comprehended this manual, and who are properly trained in the safe operation of this implement.
- Do not use implement to lift objects; to pull objects such as fence posts, stumps, etc; or to push objects. The unit is not designed or guarded for these uses.
- Never carry riders on the equipment 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 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.
- 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.
- Keep everyone away from the Disc Harrow while raising, lowering, and transporting the implement to protect against falling blade hazard.
- Always make sure the tractor is shut off and no one is near the tractor when installing stroke control spacers and/or transport lock. Also, keep away from possible pinch points during installation as the hydraulic lines could burst dropping the unit suddenly.
- Do not use tires as a step or lean against them. They can suddenly move even when they appear to be solidly against the ground causing a falling hazard against metal protruding objects and sharp disc blades.
- 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.
- Pin drawbar in the fixed center position and make sure tractor 3-Point arms are positioned so that they will not make contact with the Disc Harrow hitch.
- Raise Disc Harrow out of the ground to make sharp turns. Do not turn tractor tires into the tongue or frame. Doing this can result in loss of control and/or damage the implement. Slow down and watch tractor tires carefully when forced to make sharp turns.
- Do not use implement to lift objects; to pull objects such as fence posts, stumps, etc; or to push objects. The unit is not designed or guarded for these uses.
- Do not use implement to tow other equipment unless it is designed with a tow hitch. Doing so can result in loss of control and damage the equipment.

Section 4: Operating Procedures

Transporting

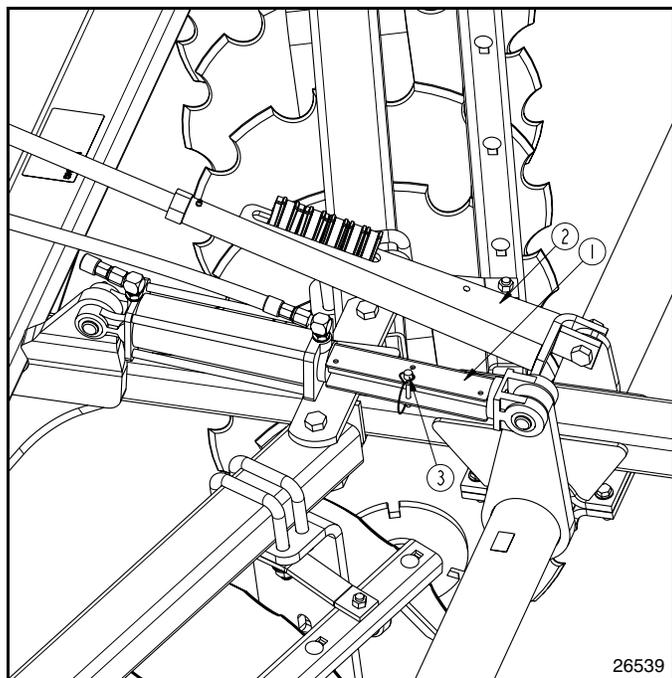
WARNING

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.

Refer to Figure 4-1:

1. Raise Disc Harrow fully up with tractor hydraulic control lever.
2. Remove transport lock (#1) from storage bar (#2) and pin to cylinder rod with wire retaining pin (#3) to make transporting safe.



Hydraulic Cylinder Transport Lock
Figure 4-1

3. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.
4. Do not lower unit while transporting on pavement, blacktop, or road. Damage to unit and/or road may occur.
5. Select a safe ground travel speed when transporting from one area to another. Never travel faster than 20 mph when transporting.
6. Be sure to reduce tractor ground speed when turning; and, leave enough clearance so that the Disc Harrow does not contact obstacles such as buildings, trees, or fences.
7. When traveling over rough or hilly terrain, shift tractor to a lower gear.

Field Operating Instructions

Final adjustments will need to be made while operating the Disc Harrow in the field. See “In-Field Adjustments” on page 27 for final adjusting instructions.

NOTE: Disc Harrows with disc blades spaced 7 1/2" apart are primarily used to pulverize soil. They work best in tilled soil. Disc blades spaced 9" apart are recommended for cutting non-tilled soil.

WARNING

To avoid serious injury or death:

Raise Disc Harrow out of the ground to make sharp turns. Do not turn tractor tires into the tongue or frame. Doing this can result in loss of control and/or damage the implement. Slow down and watch tractor tires carefully when forced to make sharp turns.

1. Raise unit out of the ground to make sharp turns. When making sharp turns, make sure the tractor tires do not make contact with the Disc Harrow hitch.
2. Do not disc in reverse (traveling backwards). The Disc Harrow is designed to work soil while traveling forward only. Damage to the harrow may occur.
3. Do not back Disc Harrow into corners and tight places with disc gangs down. Instead, lift unit up and back unit into the corner or tight area. Lower disc to the ground and then proceed forward.
4. It is best to work ground traveling with a ditch and not across. Raise Disc Harrow up to cross shallow ditches straight on at 90 degrees. Crossing a ditch on the diagonal can damage the disc and/or tractor especially if a disc gang on one side digs into the ground. **Never cross deep ditches.**

Unhook Disc Harrow

Unhook Disc Harrow from the tractor as follows:

1. Park on a level solid surface.
2. Remove all stroke control spacers from hydraulic cylinder and place on storage rack. Lower Disc Harrow until wheels are resting on the ground.
3. Place tractor gear selector in park, set park brake, shut tractor engine off, and remove switch key. Move cylinder lift lever back and forth to release hydraulic line pressure.
4. Rotate park jack on the tongue down and install detent pin to lock park jack in place. Set jack to desired height to maintain proper hook-up height.
5. Unhook hydraulic hoses from tractor and store hose ends on hydraulic hose loop.
6. Un-bolt hitch from tractor. Once tractor is clear of hitch, reinstall bolt, washers, and nuts to the Disc Harrow clevis hitch for safe keeping.
7. See “Long-Term Storage” on page 33 if Disc Harrow is to be stored for a long time.

Section 4: Operating Procedures

General Operating Instructions

Before putting your Land Pride 35 Series Disc Harrow into service you must thoroughly review the Operator's Manual. Once you have read the Operator's Manual and properly attached your Land Pride Disc Harrow on your tractor drawbar, you should be ready to raise it into transport position and head for the work site. You should have already removed any sizable tree limbs, rocks, or debris from this area. 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.

Discing action will commence as soon as you lower the disc from transport position, the unit touches the ground, and tractor begins to move forward. Your travel speed forward will be determined by soil conditions and available tractor horsepower. Never try to disc in reverse and when you reach the end of a pass, raise the unit up into transport before turning. Trying to turn sharply with the unit in the ground will cause extreme side loading on the discs and may cause damage. Making disc gang adjustments is relatively easy by raising the disc off of the ground, pulling the locking pin, making the required gang angle adjustment, and then reverse the process till your back in action.

Ground conditions and the 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 five angle adjustment positions. The best ground finish will usually be achieved when the rear gang is set at a slightly lesser angle than the front gang. 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 dry and more workable. Optional disc scrapers are recommended and will significantly improve overall performance in conditions where soil continually tends to buildup or stick to discs.

Once you are finished using your disc and you have traveled to your equipment storage area, lower it out of transport position parking it on a dry and level surface. Clean it, service it, and make it ready for the next use by replacing any parts that may have become excessively worn or damaged during field operation.

With a little practice you will be able to achieve excellent results from your Land Pride 35 Series Disc Harrow. See "**Features and Benefits**" section or "**Specifications & Capacities**" for additional information and performance enhancing options.

Section 5: Maintenance & Lubrication

General Maintenance Information

The parts on your Disc Harrow have been specially designed and should only be replaced with genuine Land Pride parts. Do not alter the harrow in a way which will adversely affect its performance.

Proper servicing and adjustments are key to the long life of any implement. With careful inspection and routine maintenance, you can avoid costly downtime and repair.

Check all bolts after using the unit for several hours to be sure they are tight. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Land Pride dealer.

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

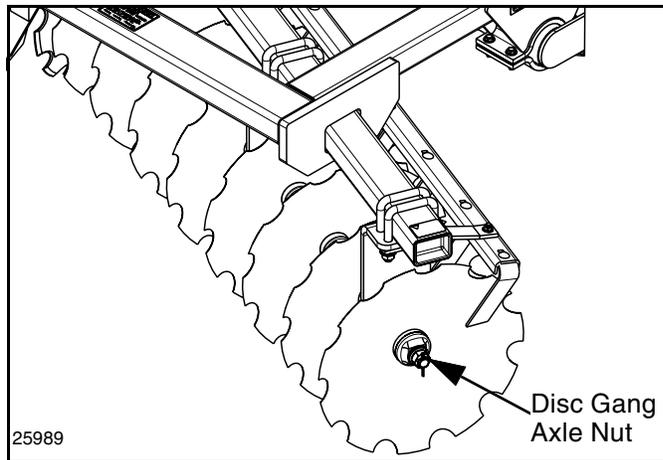
To avoid serious injury or death:

- *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.*
- *Make sure controls are all in the neutral position or park before starting the power machine.*
- *Wear gloves and be careful when working around or with Disc blades. The blade cutting edge is sharp.*
- *Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulics. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. DO NOT DELAY.*

Tractor Maintenance

One of the most important things you can do to prevent hydraulic system problems is ensure that your tractor's reservoir remains free of dirt and contamination.

Use a clean cloth to wipe hose ends before attaching them to your tractor. Replace your tractor's hydraulic filter element at the prescribed intervals. These simple maintenances will go a long way to prevent occurrence of control valve and hydraulic cylinder problems.



Disc Gang Axle Nut Location
Figure 5-1

IMPORTANT: Refer to Figure 5-1. Torque disc gang axle nuts to 500 ft. lbs. after the first initial 5 hours of operation. Not tightening the axle nuts may result in the nut becoming loose or lost resulting in possible damage to the axle and/or disc gang.

See note in Figure 1-6 on page 15: Use the extra washers provided with u-bolt hardware bag if an axle nut runs out of threads before the disc blades are tight on the axle.

Daily Operational Checks

1. Clean the 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 42.
3. Inspect all bearings for wear. Replace any worn out bearings.
4. Lubricate unit as required. See Lubrication Points on page 34 for detailed lubrication information.
5. Replace any decals that are worn or damaged.



Section 5: Maintenance & Lubrication

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 off any dirt and grease that may have accumulated on the Disc Harrow and moving parts. Scrape off compacted dirt and then wash surface thoroughly with a garden hose.
2. Inspect all nuts for tightness. Torque loose nuts to the torque value listed on page 42.
3. Inspect all bearings for wear. Replace any worn out bearings.
4. Clean dirt, oil, and grease from areas where paint has been worn, chipped, or scratched. Prime bare metal surfaces after cleaning and repaint to prevent rust. Ask your dealer for Land Pride 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.

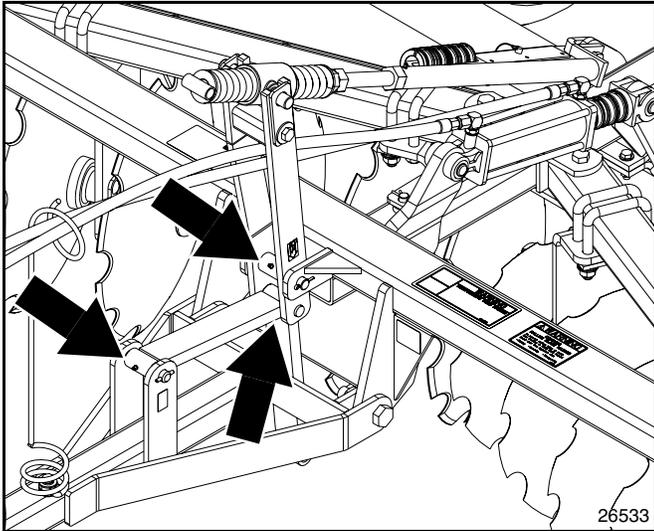
Land Pride Touch-up Paint	
Part No.	Part Description
821-011C	PAINT LP BEIGE SPRAY CAN
821-066C	PAINT ORANGE SPRAY CAN
821-070C	PAINT GP GLOSS BLACK SPRAY CAN

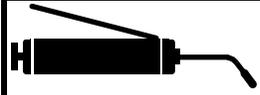
5. Replace any decals that are worn or damaged.
6. Lubricate Disc Harrow per the Lubrication Section starting on page 34 to keep moisture out of moving components. Be sure to lubricate Spring Adjuster Tube as noted in the section to prevent moisture from collecting in the bottom of the tube and freezing.
7. Spray cutting blades with a rust inhibitor or paint to prevent rust.



Lubrication Points

Lubrication Legend	 Multi-purpose spray lube	 Multi-purpose grease lube	 Multi-purpose oil lube	 50 Hrs	Intervals in hours at which lubrication is required

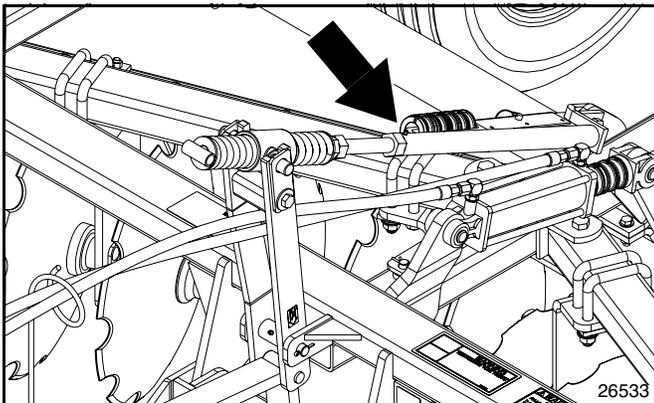


	 25 Hours
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Hitch Pivot Points

3 Zerks

Type of Lubrication: Multi-purpose Grease



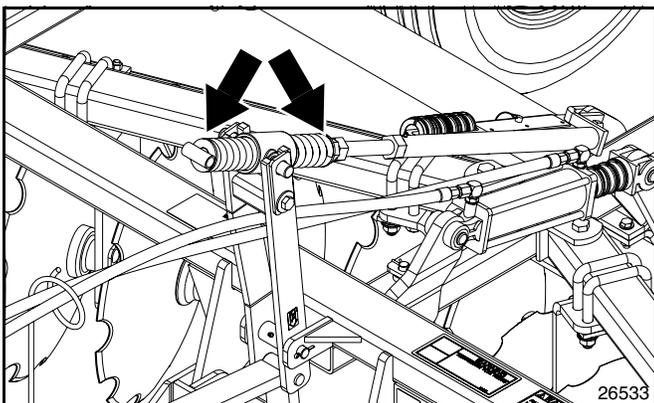
	Seasonally
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Spring Adjuster Tube

1 Zerk

Type of Lubrication: Multi-purpose Grease

Add 2 to 3 pumps when needed to lubricate the threads and when storing your Disc Harrow for winter to keep moisture from collecting in the bottom of the tube and freezing.



	 As Required
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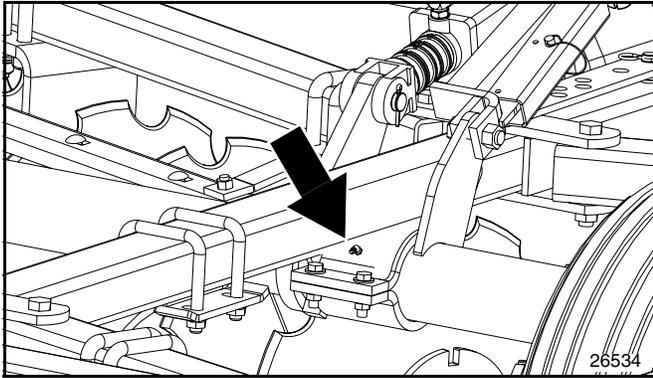
Spring Washers

Spring Bearing Surfaces (2-places)

Type of Lubrication: Silicon Spray

Spray silicon on flat washers at both ends of springs to make turning spring adjuster easier.

Section 5: Maintenance & Lubrication

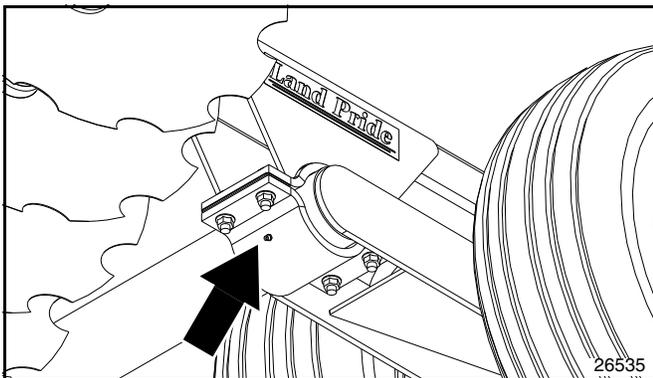


Axle Top Clamp Half

3 Zerks

Type of Lubrication: Multi-purpose Grease

Lower Disc Harrow until wheels are resting on the ground to relieve pressure on upper clamp halves before applying grease.

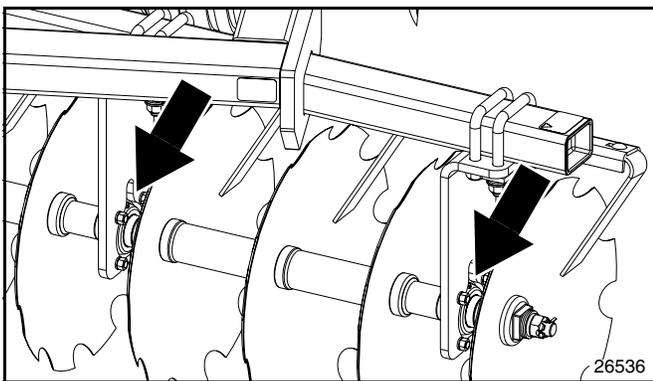


Axle Bottom Clamp Half

3 Zerks

Type of Lubrication: Multi-purpose Grease

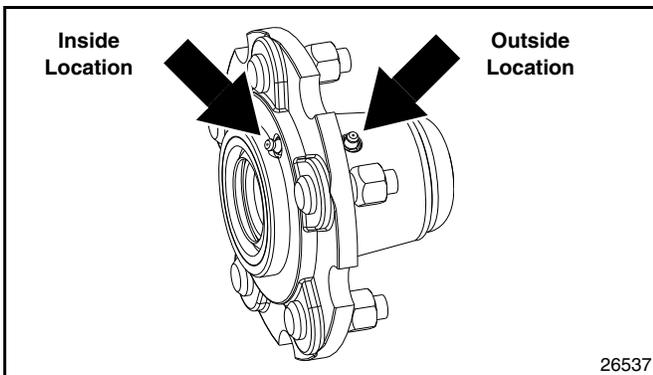
Raise Disc Harrow up until gangs are slightly off the ground to relieve pressure on lower clamp halves before applying grease.



Disc Gang Hanger Bearings

1 Zerk for every hanger bearing

Type of Lubrication: Multi-purpose Grease



Wheel Hub

1 Zerk per wheel hub

Depending on which wheel you have, the zerk may be located inside the hub or outside the hub. See illustration.

Type of Lubrication: Multi-purpose Grease

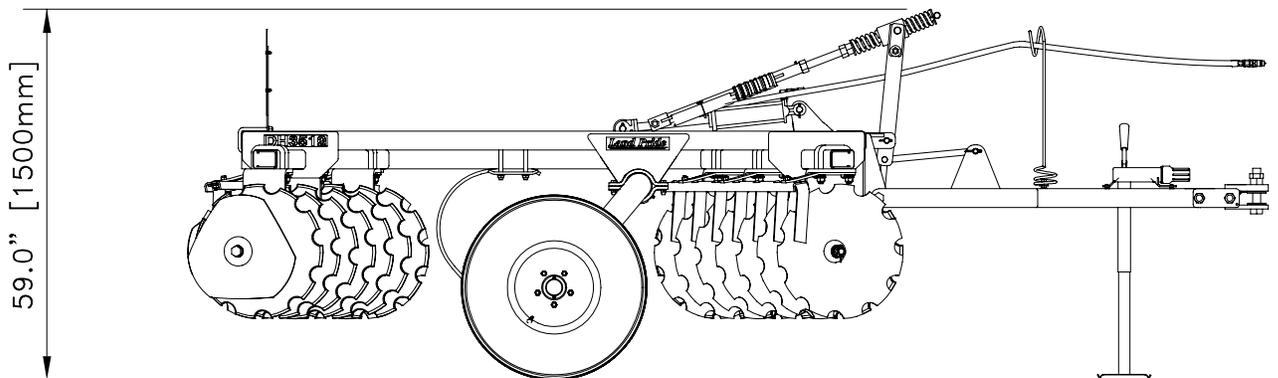
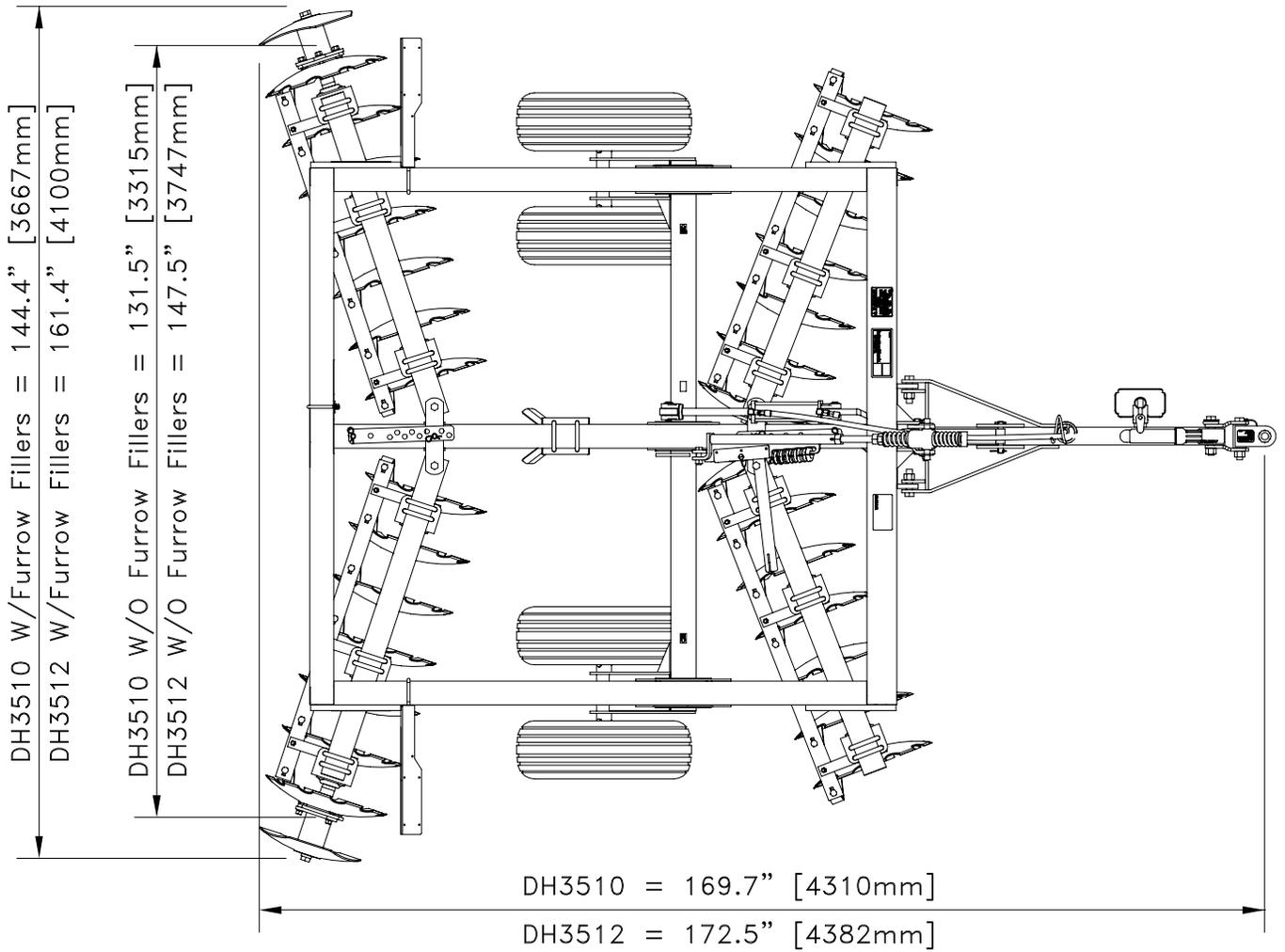
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Section 6: Specifications & Capacities



DH35 Series

Specifications & Capacities			
Model Numbers	Units	DH3510	DH3512
Drawbar horsepower requirement	hp (kW)	45-100 (33-75)	55-100 (41-75)
Weight with 20" notched discs on 7 1/2" (19 cm) blade spacing and no other options	lbs (kg)	2,491 (1130)	2,747 (1246)
Tongue Weight	lbs (kg)	179 (81)	172 (78)
Hitch type	in (cm)	Pull-type w/clevis & hole for 1 1/4 (3.2) pin	
Hitch frame construction	in (cm)	3 x 3 x 1/4 (7.6 x 7.6 x 0.6) Wall tubing w/hose carrier and park jack mount	
Transport width	ft-in (m)	10'-10" (3.3) Base unit	12'-4" (3.76) Base unit
Max. cultivation width	ft-in (m)	10'-6" (3.2) Approx.	12'-0" (3.66) Approx.
Mainframe Width	in (m)	93 (2.36)	
Approx weight load on each blade with 7.5" (19 cm) blade spacing	lbs (kg)	79 to 84 (36 to 38)	76 to 82 (35 to 37)
Approx weight load on each blade with 9" (23 cm) blade spacing	lbs (kg)	87 to 93 (40 to 42)	81 to 86 (37 to 39)
Disc blade sizes and types	in (cm)	20 or 22 (51 or 56) Notched or smooth	
Disc blade spacing	in (cm)	7.5 or 9 (19 or 23)	
Disc bearing type		Greaseable & triple lip sealed ball bearings	
Number of bearings		12 For all ten foot disc configurations	12 For 9" (23 cm) disc spacing 16 For 7.5" (19 cm) disc spacing
Forward gang angle adjustment		Single pin adjustment to 15, 16 1/2, 18, 19 1/2, or 21 degrees	
Rear gang angle adjustment		Single pin adjustment to 12, 13 1/2, 15, 16 1/2, or 18 degrees	
Side mainframe construction	in (cm)	3 x 4 x 3/16 (7.6 x 10.2 x 0.5) Wall tubing with gussets	3 x 4 x 3/16 (7.6 x 10.2 x 0.5) Wall tubing with gussets
Mainframe front tube	in (cm)	5 x 3 x 1/4 (12.7 x 7.6 x 0.6) Wall tubing	
Center gang beam construction	in (cm)	4 x 3 x 1/4 (10.2 x 7.6 x 0.6) Wall tubing	
Gang swing arm	in (cm)	4 x 3 x 1/4 (10.2 x 7.6 x 0.6) Wall tubing	
Gang axle construction	in (cm)	1 1/8" Square hi-strength steel	
Front to rear leveling system		Manual crank adjustment	
Depth control		Cylinder stroke control spacers	
Hydraulic cylinder for depth/lift control		3" x 8" Hydraulic cylinder with hoses and fittings	
Transport tires & rims		Two 9.5L x 15 tires mounted on 15" x 6"	5-bolt rims
Disc scrapers		Optional	
Center sweep kit		Optional	
20" Rear furrow filler pair		Optional	
18" Rear furrow filler pair		Optional	
Dual wheel transport kit		Optional	



26581

Overall Dimensions
Figure 6-1



DH35 Series

Features	Benefits
Two working widths and several models to choose from	Designed to meet the operational and geographical needs of our customers.
Pull-type clevis hitch attachment for 45 to 100 hp tractors	Allows easy one person attachment to a wider range of lower priced new or used utility tractors.
High weight per blade concentration	Makes for easier disc penetration.
Heavy duty carrier frame and tongue construction	Provides for years of dependable service and performance.
Single pin release and lock on five position gang angling front and rear	Makes gang adjustments for less or more aggressive tillage an easy task.
Notched or smooth disc selection in 20" or 22" disc sizes	Lets customers choose a configuration that's just right for their tillage task.
Greasable triple sealed disc bearing	Provides for ease of service and longer bearing life.
Large transport tires with option of adding two more	Provides capability of road and field transport over tough surface conditions.
Hydraulic depth and transport control	Goes from working to transport position and back again with easy single tractor hydraulic control lever manipulation.
Front to rear leveling system	Provides uniform front to rear disc gang penetration.
Optional dirt scrapers	Keeps discs from balling up with sticky mud.
Optional 18" and 20" furrow filler blades	Provides for more uniform finish on multiple pass applications.
Optional center sweep kit	Provides more consistent uniform finish between gangs.
2 Rear disc choices	Choose Notched or Smooth rear discs to achieve your desired finish.



Section 7: Features & Benefits

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DH35 Series Troubleshooting Chart

Problem	Cause	Solution
Disc Harrow makes a high center ridge.	Disc blades are moving too much soil to the center.	Tilt Disc Harrow up at the rear by turning spring adjuster counterclockwise. See "Front to Rear Leveling" on page 26.
		Set tractor draw bar in its lowest possible position by flipping the offset drawbar over.
		Decrease tractor speed.
		Increase spacing between disc gangs by moving all gang hangers on both sides away from the center equal amounts.
Disc Harrow cuts a furrow (valley) in the center.	Disc blades are not moving enough soil to the center.	Tilt Disc Harrow down at the rear by turning spring adjuster clockwise.
		Set tractor draw bar in its highest possible position. This can be done by flipping an offset drawbar over.
		Increase tractor speed.
		Reduce spacing between rear disc gangs by moving all gang hangers on both sides toward the center by equal amounts.
Disc Harrow makes ridges on the out side cuts and furrows just inside the ridges.	Too much soil is thrown out by the front disc gangs.	Check front to rear disc leveling. Raise front disc gangs with spring adjuster by turning it 2 or 3 revolutions clockwise.
		Reduce front disc gang angle by one position.
		Set tractor draw bar in its lowest possible position by flipping the offset drawbar over.
		Add disc furrow fillers to the rear disc gangs. See "Furrow Filler Assembly" on page 24.
Disc Harrow makes a furrow on the out side cuts and a ridge just inside the furrow.	Rear disc gangs are set too wide and picks up soil beyond where the front gangs throw it out.	Reduce spacing between rear disc gangs by moving all rear gang hangers in toward the center equal amounts.
		Raise front disc gangs by turning spring adjuster clockwise.
		Furrow fillers on the end of the rear disc gangs may be too large.
Disc Harrow does not pull straight and/or shifts from side to side.	Front disc gangs run deeper than the rear disc gangs.	Tilt Disc Harrow down at the rear by turning spring adjuster clockwise.
	Disc gangs are not centered on the frame.	Center disc gangs on the Disc Harrow.
	Front disc gangs not at the same angle.	Set Front disc gangs at the same angle.
	Rear disc gangs not at the same angle.	Set Rear disc gangs at the same angle.
Disc Harrow leaves a depression in the worked soil behind tractor wheels	Tire slippage, heavy tractor, soft soil conditions.	Add duals, increase tractor speed, increase gang angle and/or increase cutting depth.
		Tilt Disc Harrow down at the rear by turning spring adjuster clockwise.



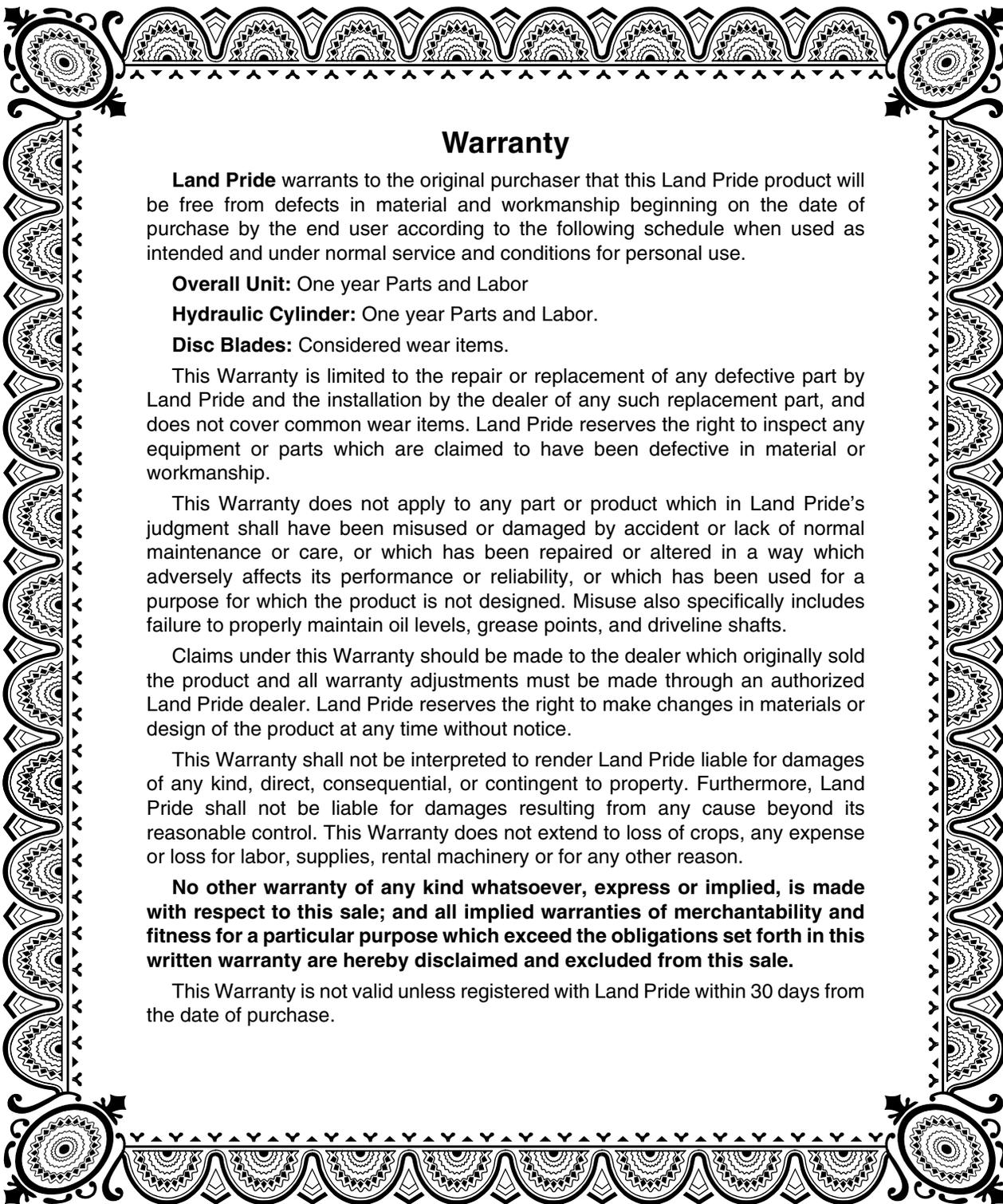
DH35 Series Troubleshooting Chart

Problem	Cause	Solution
Disc Harrow won't settle down and operate smoothly.	Disc gang angles are set too high.	Set disc gang angles at the smallest angle required to do the job. Make sure front disc gangs are set 3 degrees higher than the rear disc gang angles
Disc Harrow does not penetrate soil properly.	Disc gangs are not set at enough angle.	Increase disc gang angles. Make sure the front disc gangs are set 3 degrees more than the rear disc gangs.
	Tires are not raised off the ground.	Raise Disc Harrow tires off the ground by fully retracting hydraulic lift cylinder.
	Not enough weight with tires raised off the ground.	Fill Disc Harrow tires with water or calcium chloride. Do not add weight such as tractor weights to the Disc Harrow frame.
Outside front disc blades and/or gang axle is bending or breaking.	Making sharp turns and crossing ditches with Disc Harrow in the ground.	Raise Disc Harrow out of the ground when making sharp turns and crossing ditches. Do Not cross deep ditches.
	Gang axles become loose	Keep disc gang axle nuts tight. See "Additional Torque Values" on page 42.
Disc gang axles keep coming loose or are bending.	Disc components are not sliding on axle giving a false sense of tightness	Check fit-up of all disc components. Make sure they are all tight against one another. Especially check to make sure end washers and disc blades are on correct.
	Foreign objects that become clamped between disc components and fall out through use.	Completely disassembly disc gang components and clean thoroughly before reassembling. Check spacers for uneven edges that will not allow a tight seal between disc blade and spacer.
	Solid obstructions in the soil such as rocks and stumps.	Remove solid obstructions, raise disc up above solid objects or go around. Travel 3 mph or slower over small obstructions.
Bearing problems	Bent gang axle causing bearing to wobble.	Replace gang axle and damaged bearings.
	Foreign objects and/or dirt caught between spacer and disc blades causing bearing to wobble.	Completely disassembly disc gang components and clean thoroughly before reassembling. Replace damaged bearings.
	Abrasive material such as wire rubbing against the bearing and destroying its seals.	Remove abrasive material right away. Replace damaged bearings.
	Contaminated bearings caused by not cleaning the grease zerks before adding grease to the bearings.	Always clean grease zerks before pumping grease into the bearings. Replace damaged bearings.
	Pumping grease into the bearing too fast in cold weather will pop off bearing seals.	Pump grease into the bearings slower especially in cold weather. Replace all damaged bearings.



Torque Values Chart for Common Bolt Sizes													
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)													
Additional Torque Values													
Wheel Hex Slotted Nut 3/4"-16 UNF							Tighten nut until wheel turns hard. Back nut off until wheel turns freely. Install cotter pin.						
Disc gang axle nuts							500 ft. lbs (678 Nm)						

Tire Inflation Chart	
Tire Size	Inflation PSI
9.5L x 15 x 8 ply rib Implement	44



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

Hydraulic Cylinder: One year Parts and Labor.

Disc Blades: 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
