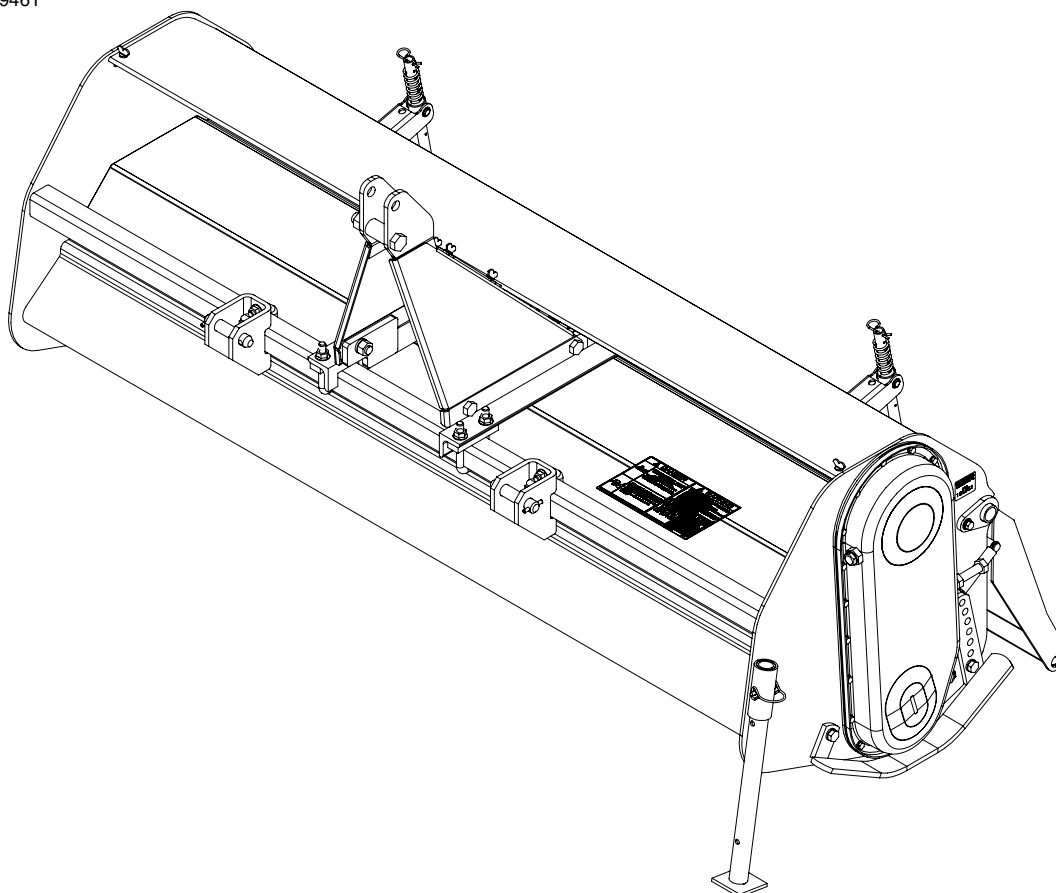


Rotary Tillers

RTA2072 & RTR2072

19461



311-328M 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	

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 on the left will take you to the Parts Manual for this equipment. Download the appropriate app on your smart phone. Scan 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

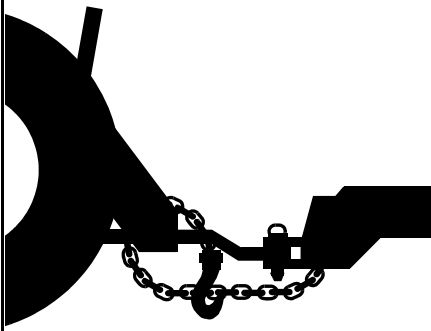
- ▲ If engaged, disengage power take-off.
- ▲ Park on solid, level ground and lower implement to ground or onto support blocks.
- ▲ Put tractor in park or set park brake.
- ▲ Turn off engine and remove ignition key to prevent unauthorized starting.
- ▲ Relieve all hydraulic pressure to auxiliary hydraulic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



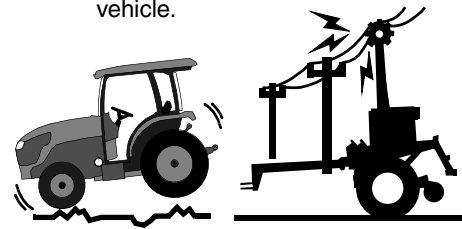
Towing Safely

- ▲ 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.

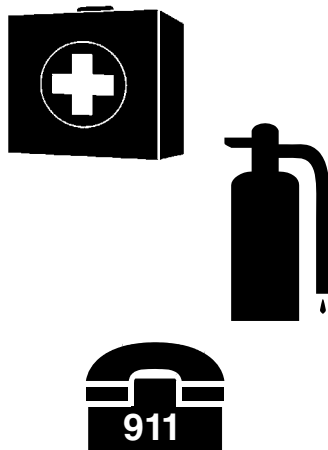
- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement.
- ▲ Inspect all parts. Make certain parts are in good condition & installed properly.
- ▲ Replace parts on this implement with genuine Land Pride parts only. Do not alter this implement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



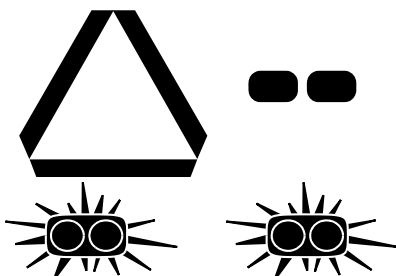
Avoid High Pressure Fluids

- ▲ 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.



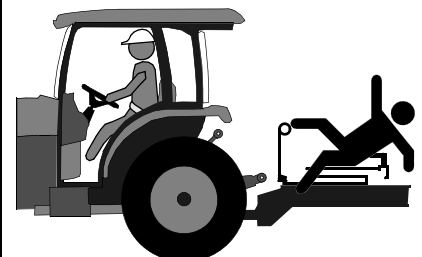
Use Seat Belt and ROPS

- ▲ 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 Rotary Tiller comes equipped with all safety labels in place. They were designed to help you safely operate your implement. Read and follow their directions.

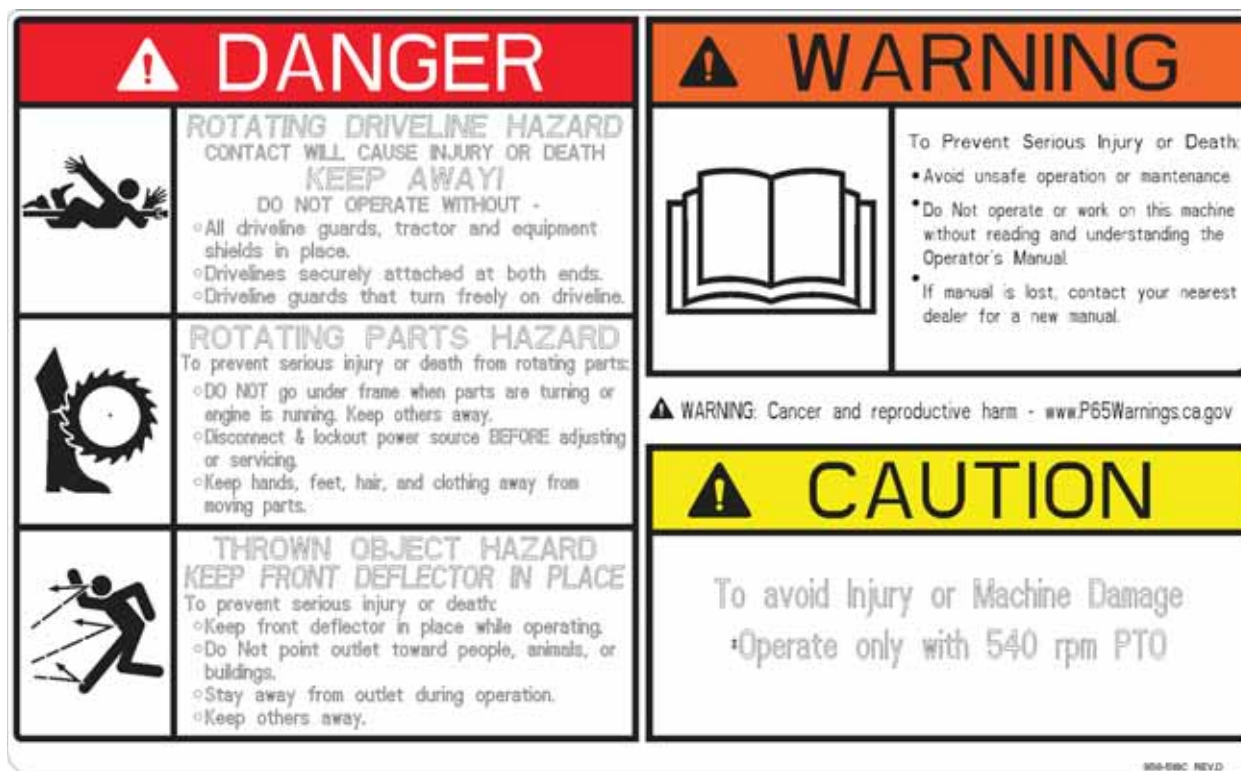
1. Keep all safety labels clean and legible.
2. Refer to this section for proper label placement. Replace all damaged or missing labels. Order new labels from your nearest Land Pride dealer. To find your nearest dealer, visit our dealer locator at www.landpride.com.
3. Some new equipment installed during 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.

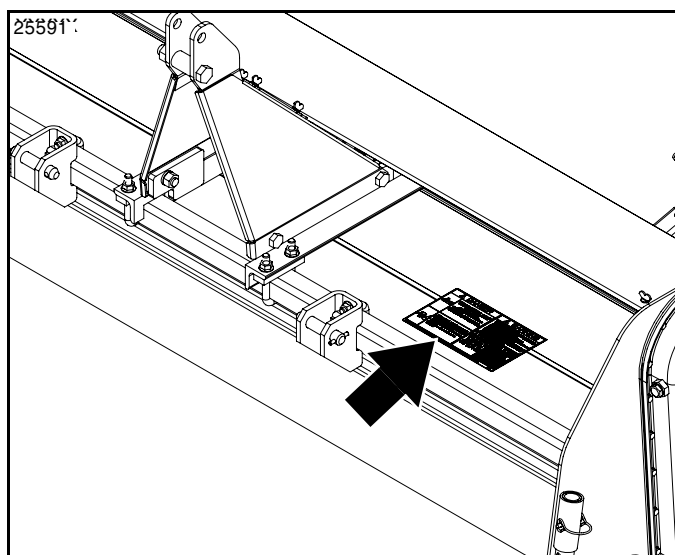
4. Refer to this section for proper label placement.

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.



39236



858-518C (RTR20 Series)

Danger/Warning/Caution Combo: List of Safety Hazards
1 Place

! DANGER	
	ROTATING DRIVELINE HAZARD CONTACT WILL CAUSE INJURY OR DEATH KEEP AWAY! DO NOT OPERATE WITHOUT - ◦ All driveline guards, tractor and equipment shields in place. ◦ Drivelines securely attached at both ends. ◦ Driveline guards that turn freely on driveline.
	ROTATING PARTS HAZARD To prevent serious injury or death from rotating parts: ◦ DO NOT go under frame when parts are turning or engine is running. Keep others away. ◦ Disconnect & lockout power source BEFORE adjusting or servicing. ◦ Keep hands, feet, hair, and clothing away from moving parts.

! WARNING

To Prevent Serious Injury or Death:

- Avoid unsafe operation or maintenance.
- Do Not operate or work on this machine without reading and understanding the Operator's Manual.

If manual is lost, contact your nearest dealer for a new manual.

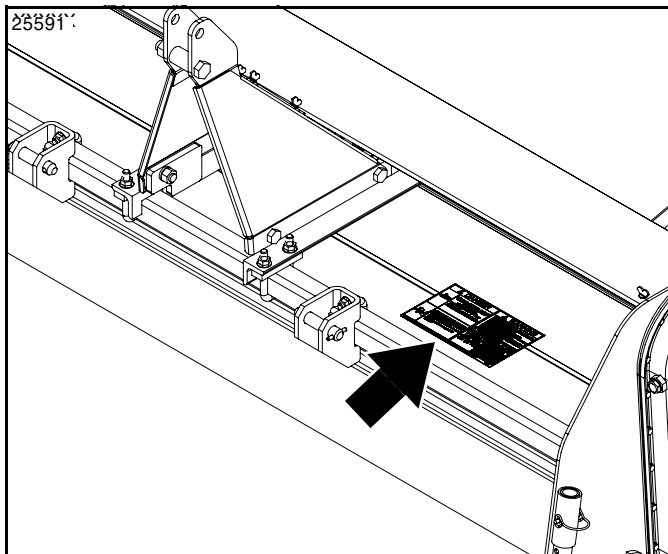
! WARNING: Cancer and reproductive harm - www.P65Warnings.ca.gov

! CAUTION

To avoid Injury or Machine Damage

- Operate only with 540 rpm PTO

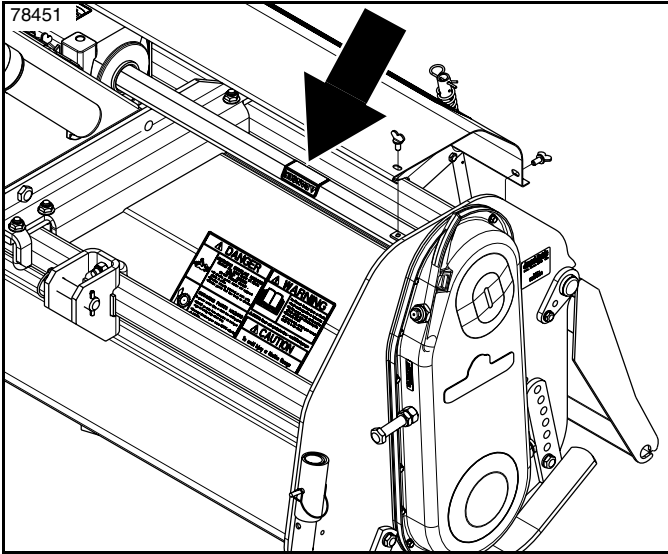
858-519C REV.C



858-519C (RTA 20 Series)

Danger/Warning/Caution Combo: List of Safety Hazards
1 Place

Important Safety Information

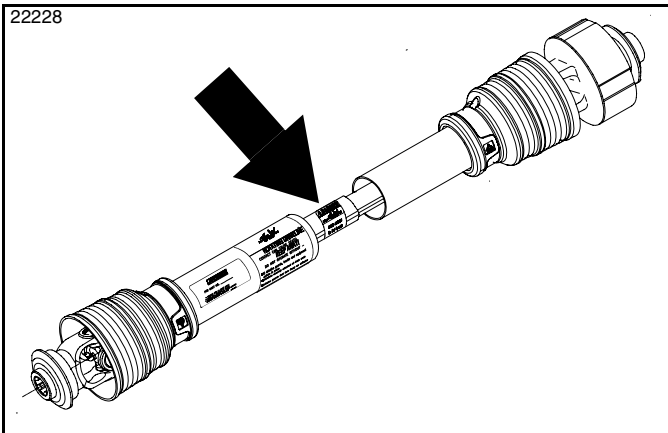


70358



818-543C

Danger: Guard Missing Hazard - Do not Operate
1 Place

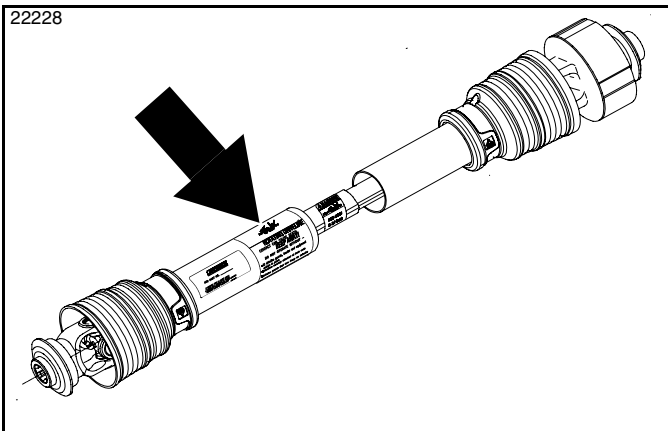


70374



818-540C

Danger: Guard Missing Hazard - DO NOT Operate
1 Place: On the driveline outer profile



70375



818-552C

Danger: Rotating Driveline - Keep Away
1 Place: On the driveline outer shield



Introduction

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

Application

The RTA20 & RTR20 Series Rotary Tillers are just right for home gardening, landscape work, vegetable farming, or food plot maintenance. Available in three widths, the 20 Series Rotary Tiller turns up hard packed ground, leaving a perfect seedbed for gardens to grass. Land Pride's RTA20 forward rotating tiller can work in all types of ground conditions, with best results being obtained in fairly mellow conditions. The RTR20 Series Rotary Tillers feature a reverse tilling action for tougher ground conditions. The reverse action "sucks" the tiller into the ground, which prohibits the tiller from "walking" on hard ground. The RTR20 Series Tiller also incorporates spring loaded "sifting" rods behind the tines to help bury large rocks and debris. The reverse action of the rotor brings material up and over the top. Rocks and vegetation cannot get through the sifting rods so they fall first. Soil continues to get sifted before it falls, building a layer of large to small dirt clods burying the rocks and vegetation. Reverse tilling can reduce the number of trips needed to turn the soil over.

See "**Specifications & Capacities**" on page 31 and "**Features & Benefits**" on page 32 for additional information and performance enhancing options.

Using This Manual

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

Terminology

"Right" or "Left" as used in this manual is determined by the direction the operator faces while sitting in the operator's seat looking forward unless otherwise stated.

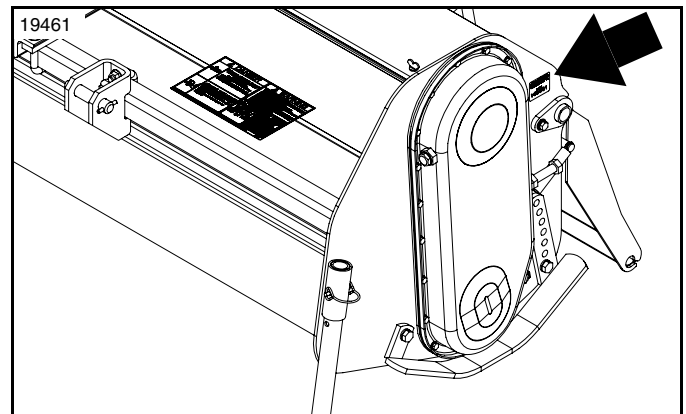
Owner Assistance

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 Rotary Tiller 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 Rotary Tiller. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

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

Land Pride Service Department
1525 East North Street
P.O. Box 5060
Salina, KS. 67402-5060

E-mail address
lpSERVICE@landpride.com



Section 1: Assembly & Set-Up

Dealer Preparations

WARNING

To avoid serious injury or death:

An unsupported parked tiller can tip over easily. Always use its park stand and when needed, non-concrete support blocks to keep the tiller from tipping onto a person.

This unit is shipped almost completely assembled. Carefully follow instructions for final assembly.

Before attempting assembly, go through the “Pre-Assembly Checklist” below. Having all the needed parts and equipment readily at hand will speed up your assembly task and will make the job as safe as possible.

Pre-Assembly Checklist

✓	Check	Page
☐	Have a forklift or hoist with properly sized chains and safety stands capable of lifting and supporting the equipment on hand.	
☐	Have a minimum of 2 people on hand while assembling.	
☐	Make sure all major components and loose parts are shipped with the machine. Refer to this manual if unsure.	
☐	Make sure working parts move freely, bolts are tight and cotter pins are spread. Refer to this Operator's Manual.	
☐	Double check to make sure all fasteners and pins are installed correctly. Use the Parts Manual if unsure.	
☐	NOTE: Small hardware shipped loose from the factory is contained in a bag. Larger parts are attached to the shipping crate. All factory assembled hardware should be installed in their correct location. Remember their location if removed. Keep removed parts separated.	
☐	Make sure all safety labels are correctly located and legible. Replace if damaged.	Page 6
☐	Make sure all grease fittings are in place and lubricated. Refer Lubrication Points.	Page 29
☐	Check fluid level in the gearbox and chain cases. Refer Lubrication Points.	Page 30 Page 30

Tractor Requirements

Tractor horsepower should be within the range noted below. Tractors outside the horsepower range must not be used.

Rear Power Take-Off Speed 540 rpm
Maximum Power Take-Off Rating 75 hp (56 kW)
Hitch Type. 3-Point Cat. 1

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.

- Do not use a power take-off adapter with a quick hitch. The adapter will increase strain on the tractor's power take-off shaft causing possible damage to shaft and driveline. It will also defeat the purpose of the tractor's power take-off shield.

Torque Requirements

Check to see that all nuts are tightened. Refer to “Torque Values Chart” on page 34 to determine correct torque values for common bolts.

Manual Storage Container

Refer to Figure 1-1 on page 11:

Attach manual storage container (#26) to the left-hand top hitch half (#3) with 1/4"-20 x 1" GR5 hex head bolts (#27), flat washers (#28), and hex nylock nuts (#29). Tighten nylock nuts to the correct torque

Park Stand Assembly

Refer to Figure 1-1 on page 11:

WARNING

To avoid serious injury or death:

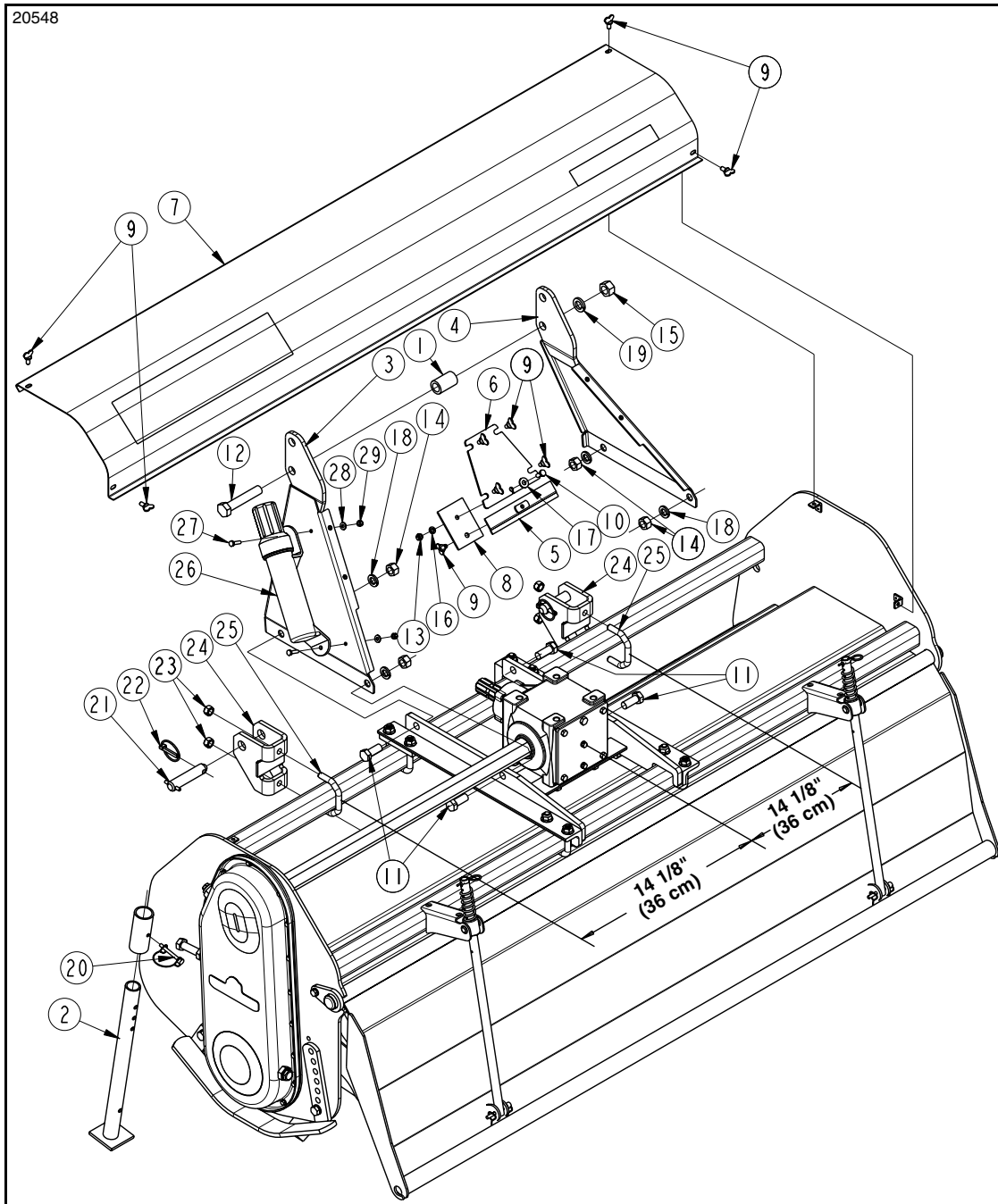
An unsupported parked tiller can tip over easily. Always use its park stand and when needed, non-concrete support blocks to keep the tiller from tipping onto a person.

1. Insert park stand (#2) in support tube.
2. Adjust park stand to a height that will support the tiller level while resting on its skid shoes.
3. Secure park stand with wire retaining pin (#20). Make sure wire retainer is hooked over the end of the retaining pin.

3-Point Hitch Assembly

Refer to Figure 1-1 on page 11:

1. Install right and left-hand top hitch halves (#3 & #4) to the inside of hitch mounting bars with 5/8"-11 x 1 1/2" GR5 hex head bolts (#11), hex nuts (#14), and lock washers (#18). Do not tighten bolts at this time.
2. Insert top hitch spacer tube (#1) between the left and right-hand hitch halves as shown and secure with 3/4"-10 x 4" GR5 hex bolt (#12), nut (#15), and lock washer (#19).
3. Tighten all bolts (#11 & #12) to correct torque values.
4. Attach lower hitch clevises (#24) to tiller main frame with 1/2" u-bolts and nylock hex nuts (#23). Do not tighten bolts.
5. Position center of lower hitch clevises (#24) 14 1/8" (36 cm) away from center of gearbox input shaft. When positioned correctly, center of lower hitch clevises should be 28 1/4" (71.8 cm) apart. Once centered, tighten nylock nuts (#23) to the correct torque.
6. Insert lower hitch pins (#21) into lower hitch clevis and secure with linchpins (#22).



Hitch, Stand & Shaft Cover Assembly
Figure 1-1

Driveline Guard

Refer to Figure 1-1:

1. Assemble clamp (#5) to plate (#8) with one of the wing bolts (#9).
2. Assemble driveline guard (#6) to the top hitch halves (#3 & #4) with four wing bolts (#9).
3. Install cover (#7) to tiller with wing bolts (#9).
4. Fasten plate (#8) to driveline guard (#6) with 5/16" bolt (#10), flat washer (#17), lock washer (#16) & nut (#13). Make sure clamp (#5) catches front lip of cover (#7).

Driveline Installation

IMPORTANT: The driveline must be lubricated before putting it into service. Refer to “**Lubrication Points**” on page 29.

The driveline supplied with the tiller has either a friction slip clutch or a shear-bolt type to protect the tiller and tractor from shock loads. Always engage power take-off at low engine rpm to minimize start-up torque loads.

Refer to Figure 1-2: The shear-bolt driveline has a pull collar coupler on the tractor end and a push pin coupler on the implement end.

Refer to Figure 1-3: The friction slip clutch driveline has a pull collar coupler on the tractor end and a conical-dog pin coupler on the implement end.

An additional driveline may be required if the tiller is used on more than one tractor or if a quick hitch is used.

Refer to Figure 1-4:

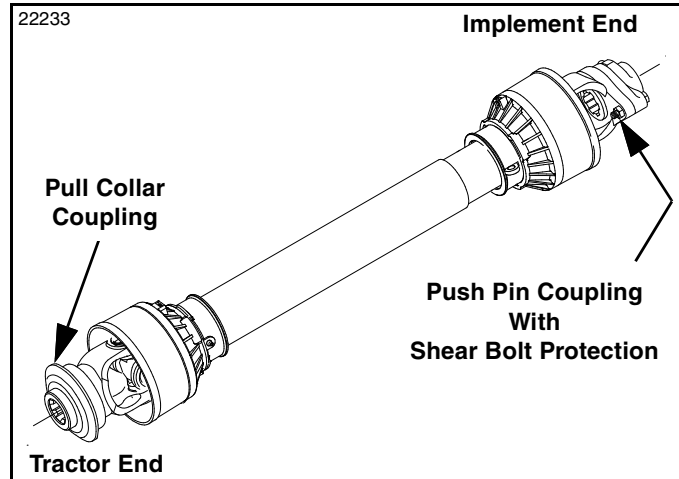
1. Remove fasteners and gearbox cover.
2. Remove gearbox shaft protector (#3) and discard.

Shear-bolt Driveline

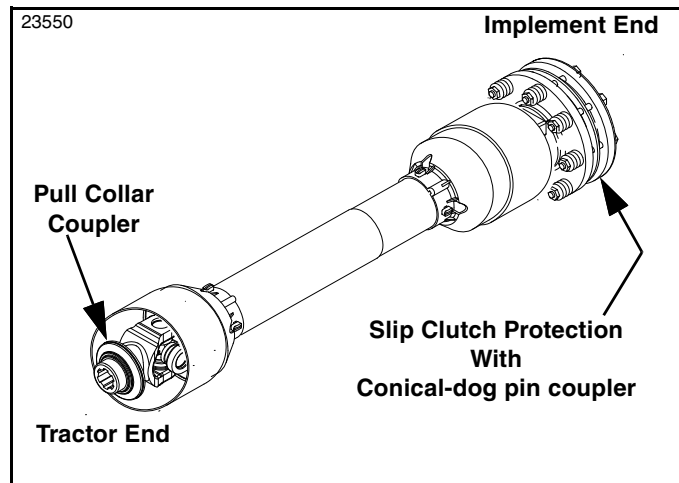
- a. Push down on coupler and hold while sliding coupler (#2) onto the gearbox input shaft.
- b. Release coupler pin and continue to slide the coupler on the shaft until the pin locks in place.

Friction Slip Clutch Driveline

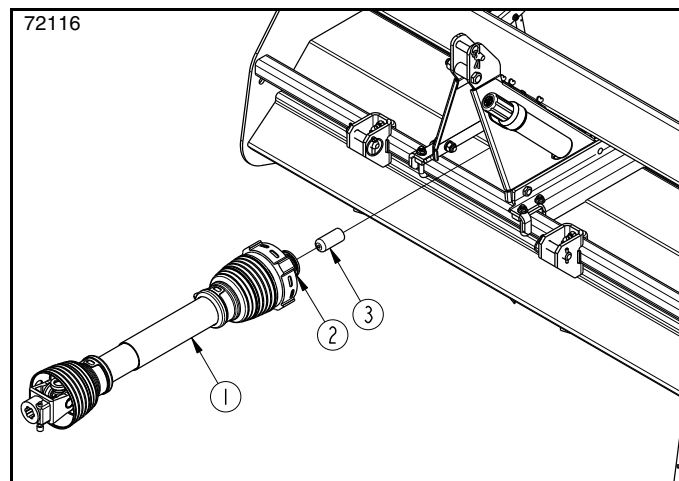
- a. Remove existing nut, flat washer, and conical-dog pin from driveline coupler (#2).
 - b. Slide coupler (#2) onto the gearbox input shaft. Align the conical-dog pin hole in the coupler with the groove around the gearbox input shaft.
 - c. Attach coupler to the input shaft with removed conical-dog pin, flat washer, and nut. Tighten nut to the correct torque.
3. Push/pull on the coupler to ensure it is securely fastened to the gearbox input shaft.
 4. Secure gearbox protection cover to the 3-point hitch frame with removed hardware. Tighten hardware to the correct torque.
 5. Collapse driveline (#1) by pushing the tractor end of the driveline toward the implement.



Shear Bolt Protection With Push Pin Coupler
Figure 1-2



Slip Clutch Protection With Conical-dog Coupler Pin
Figure 1-3



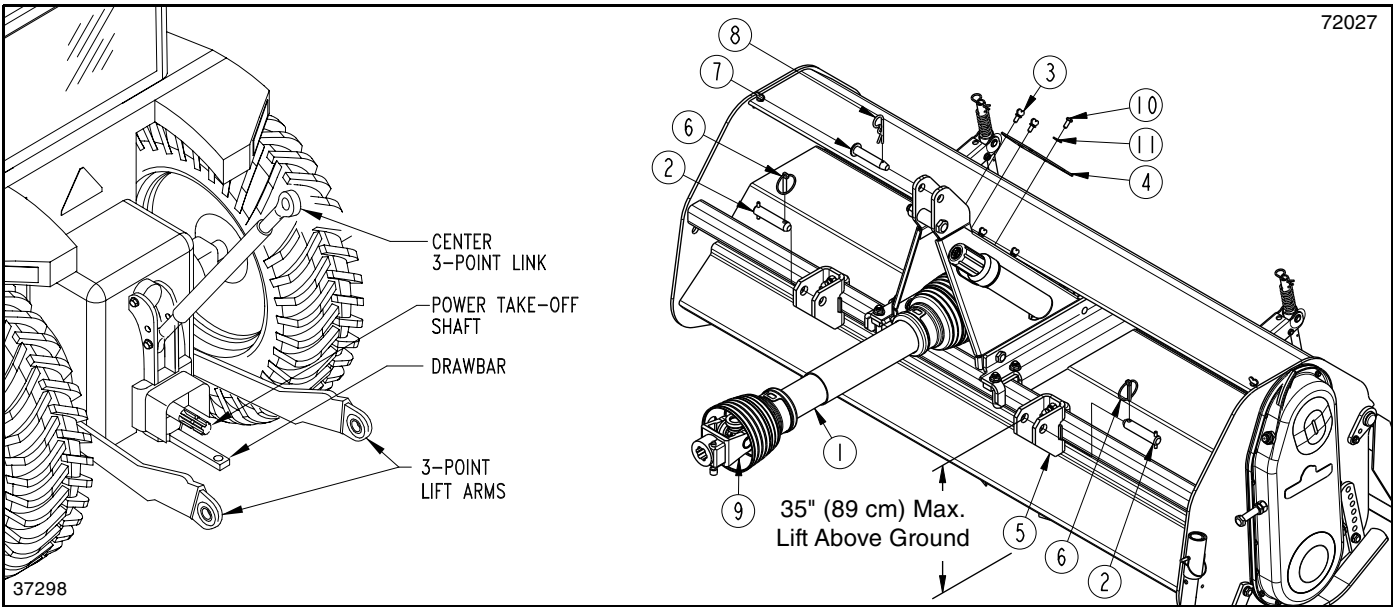
Driveline Installation
Figure 1-4



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 switch 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.



Tractor Hook-Up
Figure 1-5

Tractor Hook-Up

Refer to Figure 1-5:

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:

- Do not raise center of lower 3-point hitch pins more than 35" (89 cm) above ground with power take-off engaged. Do not engage power take-off if hitch pins are more than 35" (89 cm) above ground. The driveline can break and send projectiles.
- Always follow "Tractor Shutdown Procedure" provided in this manual before dismounting the tractor.
- An unsupported parked tiller can tip over easily. Always use its park stand and when needed, non-concrete support blocks to keep the tiller from tipping onto a person.

IMPORTANT: The tractor's lower 3-point arms must be stabilized to prevent side-to-side movement. Most tractors have sway blocks or adjustable chains for this purpose.

IMPORTANT: To prevent damaging the park stand, always store the stand in its transport position before moving the tiller.

NOTE: Land Pride's Quick Hitch can be attached to the tractor to provide quick and easy 3-point hook-up and detachment. An additional driveline may be required if a Quick Hitch is used. See your nearest Land Pride dealer to purchase a Quick Hitch.

Refer to Figure 1-5:

1. Make sure you have read and follow all Safety Alerts and Important notes listed in this section.
2. The tiller is equipped with a Cat. I hitch. Make sure your tractor's hitch is compatible with the tiller's hitch.
3. Ensure lower 3-point lift arms are blocked to prevent excessive side-to-side movement.
4. Move or remove drawbar to prevent interference with tiller driveline. See tractor Operator's Manual for instructions.

NOTE: Hairpin cotter (#8) and hitch pin (#7) are customer supplied.

5. If installed, remove linchpins (#6), hitch pins (#2), hairpin cotter (#8), and hitch pin (#7).
6. Slowly back tractor to tiller while using tractor's 3-point control lever to align holes in lower 3-point lift arms with tiller clevises (#5).
7. Shut tractor down before dismounting. Refer to "Tractor Shutdown Procedure" on page 13.
8. Secure tractor's 3-Point lower hitch arms to the lower clevises using 7/8" diameter hitch pins (#2). Secure hitch pins with linchpins (#6).
9. Secure tractor's top center link to the tiller hitch plates using customer supplied 3/4" diameter hitch pin (#7) and hairpin cotter (#8).



Section 1: Assembly & Set-Up

10. With gear selector in park or park brake set, start tractor and raise tiller just high enough to be able to remove the park stand.
11. Without lowering the tiller, shut tractor down before dismounting. Refer to **“Tractor Shutdown Procedure”** on page 13.
12. Place a level on the end plate and adjust tractor’s top center link to level the tiller from front to back.
13. Place the level on the square tube and adjust one of the two tractor’s lower 3-Point arms up or down to level tiller from left to right.
14. Remove park stand from its mounting tube. Turn park stand upside down and reinsert it several inches through the top of the mounting tube. Secure park stand using one of the upper three holes with existing wire retaining pin.
15. Start tractor and raise tiller fully up. Measure vertical distance from center of 3-point hitch pins (#2) to ground. If distance exceeds 35" (89 cm), adjust tractor’s 3-point lift height limiter to set maximum hitch pin lift height at 35" (89 cm).

Driveline Hook-Up

Refer to Figure 1-5 on page 14:



DANGER

To avoid serious injury or death:

- Do not engage power take-off while connecting or disconnecting the driveline, or while someone is standing near the driveline. A person’s body and/or clothing can become entangled in the driveline.
- All guards and shields must be installed and in good working condition while operating the implement.
- Do not use a power take-off adapter. The adapter will increase strain on the tractor’s power take-off shaft causing possible damage to shaft and driveline. It will also defeat the purpose of the tractor’s power take-off shield.



WARNING

To avoid serious injury or death:

- Always follow **“Tractor Shutdown Procedure”** provided in this manual before dismounting the tractor.
- Select a safe ground speed that will allow adequate control of steering and stopping. Never exceed 20 mph (32 km/h) with attached equipment. Rough terrain requires a slower speed.
- Check driveline when lowering tiller into the ground to make sure it does not interfere with the tractor drawbar at maximum depth. If needed, shut tractor off and move or remove drawbar to prevent damage to the driveline.
- A rotating driveline must not exceed an angle of 25 degrees up or down, and never engage a driveline while at an angle exceeding 25 degrees up or down. The driveline can break and send flying projectiles.

IMPORTANT: Check driveline collapsible and maximum length before completing **“Driveline Hook-Up”** instructions. Structural damage to the tractor and implement can occur if these checks are not made. Refer to **“Check Driveline Collapsible Length”** on page 16 and **“Check Driveline Maximum Length”** on page 17.

IMPORTANT: Drivelines with friction clutches must go through a “run-in” prior to initial use and after long periods of inactivity. For detailed instructions, see **“Driveline Maintenance”** on page 24.

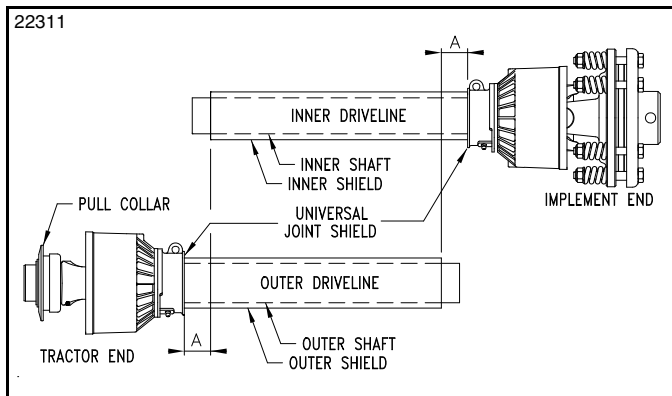
IMPORTANT: An additional driveline may be required if implement is attached to more than one tractor or if a quick hitch is used.

IMPORTANT: The power take-off shaft and gearbox input shaft must be aligned and level with each other when checking driveline minimum length. A driveline that is too long can damage tractor and implement.

IMPORTANT: The drivelines must be lubricated before putting them into service. Refer to **“Lubrication Points”** on page 29.

The driveline (#1) fastens to the tractor power take-off shaft with a push-pin coupler or pull collar (#9).

1. If driveline collapsible length has not been checked, go to **“Check Driveline Collapsible Length”** on page 16. Otherwise, continue with step 2 below.
2. Park tractor and implement on a level surface.
3. Shut tractor down before dismounting. Refer to **“Tractor Shutdown Procedure”** on page 13.
4. If tractor drawbar interferes with the driveline during hook-up, disconnect driveline and move drawbar forward, to the side, or remove.
5. Collapse driveline by pushing tractor end of driveline toward the tiller gearbox.
6. Attach driveline (#1) to the tractor’s power take-off shaft as follows:
7. Pull back on driveline pull collar (#9) and push yoke onto the tractor power take-off shaft.
8. Release pull collar and continue to push driveline yoke forward until pull collar pops out and locks in place.
9. Pull on driveline yoke at the tractor to make sure it is secured to the tractor power take-off shaft.
10. Continue with **“Check Driveline Interference”** on page 17.



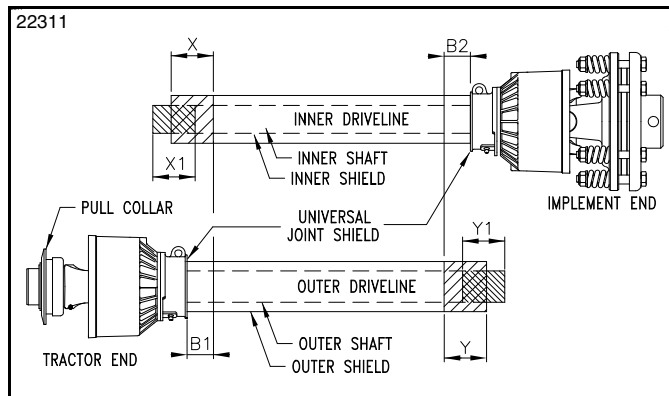
Check Driveline Minimum Length
Figure 1-6

Check Driveline Collapsible Length

Refer to Figure 1-6:

IMPORTANT: A driveline that is too long can bottom out causing structural damage to the tractor and implement. Always check driveline minimum length during initial setup, and when connecting to a different tractor. More than one driveline may be required to fit all applications.

1. Park tractor and implement on a level surface.
2. Raise implement until gearbox input shaft is level with tractor power take-off shaft. Securely block implement at this height to keep unit from lowering.
3. Shut tractor down without removing support blocks. Refer to “**Tractor Shutdown Procedure**” on page 13.
4. Disconnect driveline from the tractor’s power take-off shaft.
5. Remove outer driveline (tractor end) from inner driveline to separate the two profiles.
6. Attach outer driveline to the tractor’s power take-off shaft. Refer to steps 5-9 under “**Driveline Hook-Up**” on page 15.
7. Hold inner and outer drivelines parallel to each other. If dimension “A” is greater than or equal to 1" (2.5 cm), then skip to “**Check Driveline Maximum Length**” on page 17. Otherwise continue with step 8.

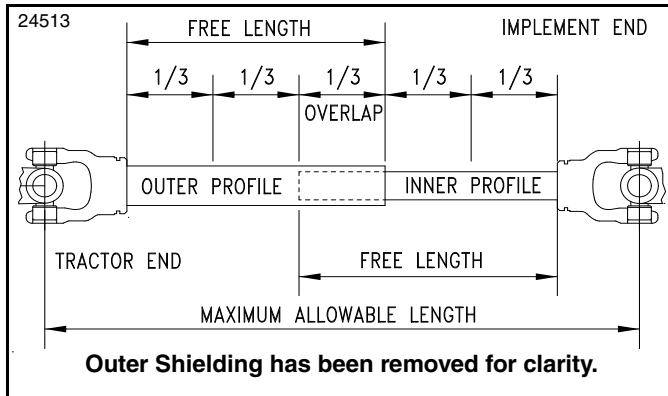


Driveline Shortening
Figure 1-7

Refer to Figure 1-7:

8. If dimension “A” was less than 1" (2.5 cm), shorten driveline as follows:
 - a. Measure 1" (2.5 cm) (“**B1**” dimension) back from outer driveline shield and make a mark at this location on the inner driveline shield.
 - b. Measure 1" (2.5 cm) (“**B2**” dimension) back from the inner driveline shield and make a mark at this location on the outer driveline shield.
9. Remove outer driveline from the tractor power take-off shaft and inner driveline from the implement’s gearbox shaft.
10. Cut off non-yoke end of inner driveline as follows:
 - a. Measure from end of inner shield to scribed mark (“**X**” dimension) and record.
 - b. Cut off inner shield at the mark. Cut same amount off the inner shaft (“**X1**” dimension).
11. Cut off non-yoke end of outer driveline as follows:
 - a. Measure from end of outer shield to scribed mark (“**Y**” dimension) and record.
 - b. Cut off outer shield at the mark. Cut same amount off the outer shaft (“**Y1**” dimension).
12. Remove all burrs and cuttings.
13. Continue with “**Check Driveline Maximum Length**” on page 17.

Section 1: Assembly & Set-Up



Driveline Maximum Length
Figure 1-8

Check Driveline Maximum Length

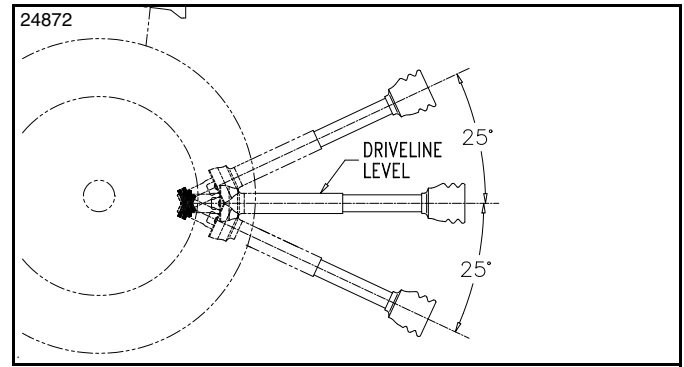
Refer to Figure 1-8:

Driveline maximum length must, when fully extended, have 1/3 overlap of the profile tubes with both inner and outer profile tubes being of equal length as shown in Figure 1-8. Check driveline maximum allowable length as follows:

1. Make sure “**Check Driveline Collapsible Length**” on page 16 has been completed before continuing with instructions below.
2. Unhook driveline profiles from the tractor and implement.
3. If profiles are assembled together, pull outer and inner drivelines profiles apart.
4. Measure and record “Free Length” of inner and outer profiles as shown in Figure 1-8.

IMPORTANT: The driveline must be lubricated before putting it into service. Refer to “**Lubrication Points**” on page 29.

5. Lubricate driveline u-joints, bearings, and profiles. Refer to “**Lubrication Points**” on page 29.
6. Assemble driveline halves together until profile tubes have exactly 1/3 profile overlap as shown.
7. Measure driveline “Maximum Allowable Length” and record that length here _____.
8. Start tractor, raise implement slightly, and drive forward enough to clear support blocks.
9. Lower implement to ground and shut tractor down before dismounting. Refer to “**Tractor Shutdown Procedure**” on page 13.
10. Continue with “**Driveline Hook-Up**” on page 15.



Maximum Driveline Movement During Operation
Figure 1-9

Check Driveline Interference

Refer to Figure 1-9:



WARNING

To avoid serious injury or death:

- Do not raise center of lower 3-point hitch pins more than 35" (89 cm) above ground with power take-off engaged. Do not engage power take-off if hitch pins are more than 35" (89 cm) above ground. The driveline can break and send projectiles.
 - A rotating driveline must not exceed an angle of 25 degrees up or down, and never engage a driveline while at an angle exceeding 25 degrees up or down. The driveline can break and send flying projectiles.
1. Start tractor, raise implement fully up, and back implement over the support blocks used to “**Check Driveline Collapsible Length**” on page 16,
 2. Without changing 3-point lift height, shut tractor down before dismounting. Refer to “**Tractor Shutdown Procedure**” on page 13.
 3. Check to make sure driveline does not exceed any of the limits listed below:
 - Driveline does not exceed maximum allowable length recorded in step 7 under “**Check Driveline Maximum Length**” on this page.
 - Center of lower 3-point hitch pins do not exceed 35" (89 cm) above ground level.
 - Driveline angle does not exceed 25° above horizontal or 25° below horizontal.
 4. If any limit was exceeded, adjust tractor 3-point lift limiter to the height that will keep the driveline within the recommended limit listed above.
 5. If needed, repeat steps 1-4 until all limits mentioned in step 3 are maintained.
 6. Start tractor, raise implement slightly, and drive forward enough to clear support blocks.
 7. Lower implement to ground and shut tractor down before dismounting. Refer to “**Tractor Shutdown Procedure**” on page 13.



Section 2: Operating

Operating Checklist

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training involved in the operation, transport, storage, and maintenance of the Rotary Tiller. Therefore, it is absolutely essential that no one operates the Rotary Tiller without first having read, fully understood, and become 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: Operating**, page 18
- **Section 3: Adjustments**, page 22
- **Section 3: Adjustments**, page 23

Inspections

Perform the following inspections before using your Rotary tiller with tiller attached to a tractor, power take-off disengaged and completely stopped.

Operating Checklist

✓	Check	Ref.
	Inspect tractor safety equipment to make sure it is in good working condition.	Tractor Manual
	Check all guards and shields to make certain they are in good working condition, in place, and secured.	
	Carefully raise and lower implement to ensure drawbar, tires, etc. do not contact tiller frame or driveline.	
	Check driveline. Make sure it is secured at both ends. Refer to "Driveline Hook-Up".	Page 15
	Check drive chain tension. Refer to "Drive Chain".	Page 22
	Check tiller depth setting. Refer to "Skid Shoe".	Page 22
	Check driveline slip clutch to make sure disks will slip. Refer to "Driveline Maintenance"	Page 24
	Check for worn, bent, broken, loose, and/or missing tines. Refer to "Tine Replacement"	Page 23
	Grease driveline shaft and all other grease fittings. Refer to "Lubrication Points".	Page 29
	Check oil level in gearbox. Make sure all plugs have been replaced when completed. Refer to "Gearbox Lubrication".	Page 30
	Check oil level in chaincase. Make sure all plugs have been replaced when completed. Refer to "Chaincase Lubrication".	Page 30
	Check tiller initially and periodically for loose bolts and pins. Refer to "Torque Values Chart".	Page 34

Safety Information



To avoid serious injury or death:

- Do not engage power take-off while connecting or disconnecting the driveline, or while someone is standing near the driveline. A person's body and/or clothing can become entangled in the driveline.
- Keep away from rotating hex drive shaft located between gearbox and drive end of tiller. A person can become entangled in the shaft.
- Keep yourself and all others away from rotating tines and drive train. Always disengage power take-off and lockout power source before making adjustments or servicing the tiller. A person's body, hair, or clothing can become entangled in rotating components.
- Make all 3-point hydraulic adjustments from the tractor seat. Never make hydraulic adjustments while standing behind the tractor.
- All guards and shields must be installed and in good working condition while operating the implement.
- Tractor power take-off shaft shield, driveline shields, and gearbox shaft shields must be installed and in good working condition to avoid driveline entanglement and projectiles flying off of the driveline.
- Make certain driveline yokes are securely fastened at each end. A loose yoke can work free allowing the driveline to rotate uncontrollably.
- Tine impact on objects can throw projectiles resulting in bodily injury or death. Do not point discharge toward people, animals, or buildings and keep people and animals away from tiller during operation.
- Keep front rubber dirt deflector on reverse tine tillers in place while operating the unit. Objects in a reverse tine tiller can be thrown forward toward the operator.
- Do not use a power take-off adapter. The adapter will increase strain on the tractor's power take-off shaft causing possible damage to shaft and driveline. It will also defeat the purpose of the tractor's power take-off shield.
- 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.

Section 2: Operating

 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.
- Always follow “Tractor Shutdown Procedure” provided in this manual before dismounting the tractor.
- 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.
- Make certain driveline yokes are securely fastened at each end. A loose yoke can work free allowing the driveline to rotate uncontrollably.
- Some tractors are equipped with two power take-off speeds. Be certain your tractor’s power take-off shaft is set-up to operate at 540 rpm. Do not exceed 540 rpm power take-off speed. Excessive speed can damage drive/driven components and increase the risk of a thrown object hazard.
- Always disengage power take-off immediately after lifting tiller above ground level. Never operate tiller in the raised position. The tiller can discharge objects at high speeds resulting in injury or death.
- Check driveline when lowering tiller into the ground to make sure it does not interfere with the tractor drawbar at maximum depth. If needed, shut tractor off and move or remove drawbar to prevent damage to the driveline.
- A rotating driveline must not exceed an angle of 25 degrees up or down, and never engage a driveline while at an angle exceeding 25 degrees up or down. The driveline can break and send flying projectiles.
- Do not operate a broken or bent driveline. Such a driveline will break apart while rotating at high speeds. Always remove the implement from use until the damaged driveline can be repaired or replaced.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the implement back into service.
- Do not till across steep inclines that are subject to rollover. The action of the tines being forced down into the ground can cause the tractor to roll-over resulting in serious injury or death. Consult your tractor’s manual for acceptable inclines the tractor is capable of traveling across.
- Be careful when working areas where obstructions can be hidden. Always mark potential hazards with a visible flag. Travel slowly through high risk areas and be prepared to stop immediately should implement make contact with a solid object.
- Do not use implement for a purpose other than the work it is designed to do as defined in this manual.
- Do not use implement as a man lift, work platform, or as a wagon to carry objects. It is not properly designed or guarded for this use.
- Do not 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.
- 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.
- Avoid exposure to dust containing crystalline silica particles. This dust can cause serious injury to the lungs (silicosis). 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.

IMPORTANT: Make sure all safety labels are in their proper location and in good condition before operation. Follow all directions on the safety labels.

IMPORTANT: To prevent damaging the park stand, always store the stand in its transport position before moving the tiller.

Section 2: Operating

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.
 - Always disengage power take-off and wait for the driveline to stop rotating before raising the implement to the transport position.
 - 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.
 - Do not use implement for a purpose other than the work it is designed to do as defined in this manual.
1. Raise tiller slightly off the ground. Without changing the tiller height, shut tractor down according to “**Tractor Shutdown Procedure**” on page 13.
 2. Remove wire retaining pin from park stand and raise park stand up to the bottom hole. Reinsert wire retaining pin. Make certain wire retainer is caught over end of pin.
 3. When raising the tiller for transport, make sure the driveline does not make contact with the tractor or tiller. Adjust tractor’s 3-point lift height limiter to set the maximum lift height of the lower hitch pins at 35" (89 cm) above ground. If the lift mechanism does not have a lift height limiter, make a mark with tape or other means to indicate maximum lift height.
 4. Be sure to reduce tractor ground speed when turning. Leave enough clearance so that the tiller does not come in contact other obstacles such as buildings, trees, or fences.
 5. Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.
 6. When traveling over rough or hilly terrain, shift tractor to a lower gear.

Unhook Rotary Tiller

WARNING

To avoid serious injury or death:

An unsupported parked tiller can tip over easily. Always use its park stand and when needed, non-concrete support blocks to keep the tiller from tipping onto a person.

The following steps should be taken when preparing to store the tiller or unhitch it from the tractor.

1. Park tiller on a level, solid area.
2. Shut off tractor engine and engage park brake.
3. Set park stand to desired height for re-hook-up and install pin to lock stand in place.
4. Unhitch tiller from tractor.
5. Check tiller for stability by physically applying pressure at the hitch plates to see if it will tip forward or backward. If the tiller moves in either direction, then block under the tiller as needed to prevent that movement.
6. See “**Long-Term Storage**” on page 28 for additional information on long term storage of your tiller.



Section 2: Operating

General Operating Notes

Before beginning to till the following inspection should be performed:

1. Check oil level in gearbox and chaincase. Refer to “**Lubrication Points**” on page 29.
2. Check that all plugs have been replaced properly in the gearbox and chaincase.
3. Be sure all tiller tines, bolts, and nuts are tight.
4. Be certain all guards, shields, and dirt deflectors are in place and secure.
5. Grease driveline shaft and all other grease fittings. Refer to “**Lubrication Points**” on page 29.
6. Clear area to be tilled of rocks, branches, and other foreign objects.
7. Tall grass and weeds should be mowed before tilling.
8. Do not engage power take-off at full throttle. Once engaged, increase throttle to 540 power take-off speed. Tiller tines will cut better at 540 power take-off speed than at reduced throttle.
9. Tilling should not be done in wet conditions as soil will stick to tines.
10. At first begin tilling at a slow forward speed and shift up as ground conditions warrant.
11. Operated tiller with deck level to the ground.
12. Tiller should be operated with the tiller deck level to the ground.
13. Tiller tines will cut better when operating the tractor at full 540 rpm power take-off speed than at reduced throttle.
14. After tilling the first 50 ft (15 m), stop and check to see that the tiller is adjusted properly.
15. Do not make turns or attempt to back up while tiller is in the ground. See important note below.

IMPORTANT: Turning or backing up with rotary tines in the ground will damage the tiller.

16. Do not engage power take-off with machine in the fully raised or lowered position.
17. Periodically check for foreign objects wrapped around the rotor shaft and remove them after disengaging power take-off, turning off tractor engine, and removing ignition key.

General Operating Instructions

Before using your Land Pride RTA20 Series Rotary Tiller, you should have completely read the Operator's Manual, properly attached the Tiller to the tractor, cut the Drive-line to proper length, Run-in the clutch, and gone through the Operating Checklist. If you have missed any of these steps, please complete them before proceeding.

Now that you have properly prepared yourself and your tiller, it's time to do some tilling. Carefully drive tractor to the site where you intend to till. You should have already cleaned this site of any large limbs, rocks, trash, metal, or extraneous debris. Best results will be achieved if you have mounted your tiller offset to the left far enough to cover the tread of your left tractor wheel. Line the tractor up just to the right of center on your tillage plot. You will be working from the center out and always turning to the left to line up for your next pass. Lower tiller half way to the ground and reduce your tractor engine speed to about one quarter throttle. Engage power take-off and gradually increase engine speed until you reach full power take-off speed of 540 rpm. Lower Tiller to the ground and simultaneously commence forward travel of approximately 2 mph. Do not make turns or attempt to back up while tiller is in the ground. See important note below.

IMPORTANT: Turning or backing up with rotary tines in the ground will damage the tiller.

Travel about 50ft. and then stop to check your results. When stopping, remember to lift the tiller out of the ground, stop the tractor, reduce engine speed, disengage the power take-off, set the park brake, shut off the tractor, and remove the keys. If you are tilling too shallow or too deep, adjust the skid shoes accordingly. If the soil texture is too coarse, lower the leveling door and reduce your ground speed. If the soil texture is too fine, you will need to raise your leveling door and increase your ground speed. For any other problem conditions that may arise, you will want to refer to the Troubleshooting section of this Operator's Manual.

When you are done tilling for the day, make sure you use proper tractor shutdown procedures before you get off of the tractor. If you are detaching your tiller, make sure you park it on a dry and level surface leaving it clean and ready for the next use. When you put your tiller up for the season, make sure you refer to the Storage Directions in this Operator's Manual.

With a little practice and a few adjustments, you will soon be achieving the results you want with your Land Pride Rotary Tiller.

See “**Specifications & Capacities**” on page 31 and “**Features & Benefits**” on page 32 for additional information and performance enhancing options.

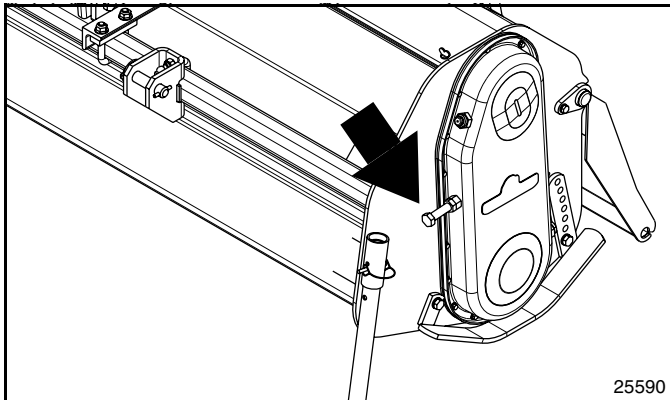
Section 3: Adjustments

Drive Chain

Refer to Figure 3-1:

The tension on the drive chain can be easily adjusted by using the chain tightener stud.

Should excessive backlash occur, unscrew the locknut, turn the bolt, Figure 3-1, clockwise as indicated by the arrow, until idler arm is firm against chain, then back the bolt off counterclockwise 1/4 turn. Re-lock the locknut while holding the head of the bolt in place. Refer to the *Torque Values Chart* in the "Appendix" section on page 34.



Chain Tightener
Figure 3-1

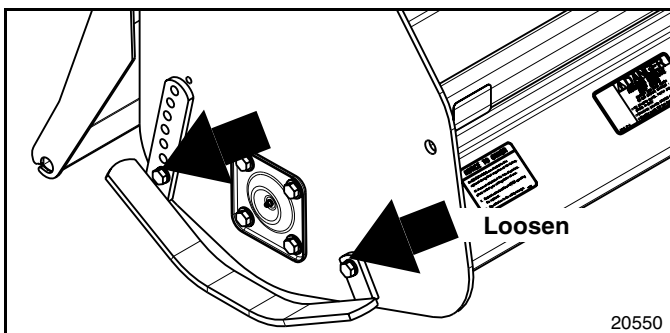
Skid Shoe

Refer to Figure 3-2:

The skid shoes can be raised or lowered for the desired tilling depth by:

NOTE: Tilling depth is the vertical distance from bottom of skid shoes to bottom of lowest tine. Be certain both skid shoes are adjusted the same.

1. Raise tiller off the ground and properly support.
2. Loosen pivot bolt on front of shoe.
3. Remove adjusting bolt on rear of shoe.
4. Adjust skid shoe to desired location.
5. Install adjusting bolt, and tighten both the adjusting bolt and the pivot bolt.

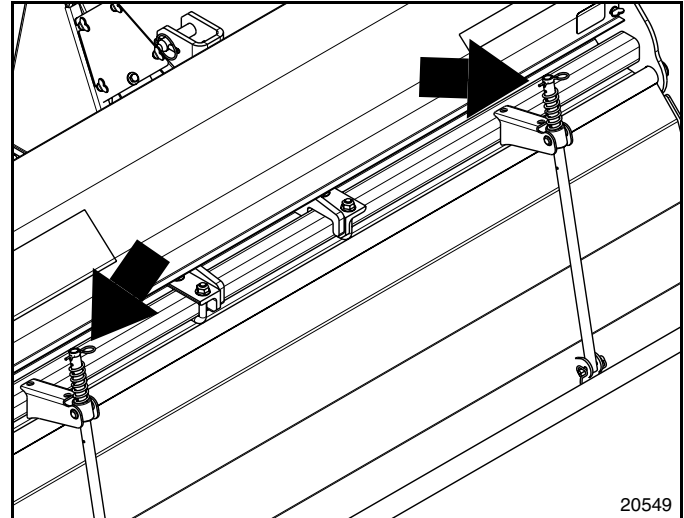


Skid Shoe Adjustment
Figure 3-2

Rear Deflector & Down Pressure Kit

Refer to Figure 3-3:

The rear deflector can be adjusted closer to the ground to produce a fine soil texture or can be raised to produce a coarse soil texture by adjusting the spring rods. Adjust rear deflector to the desired height and install cotter pins in one of the top six holes on the spring rods above the cushion springs.



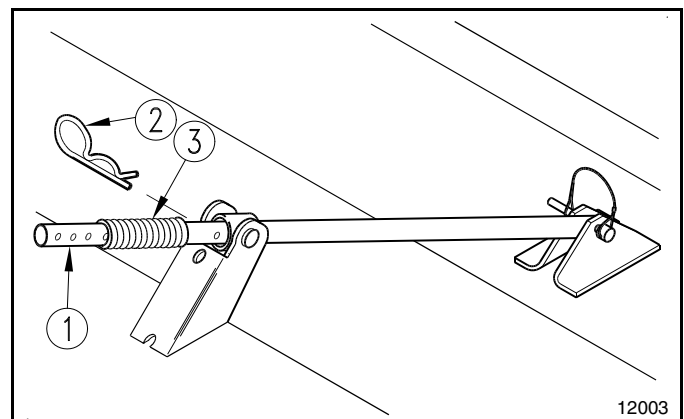
Rear Deflector
Figure 3-3

Refer to Figure 3-4:

The rear deflector can be secured in the raised position for replacing spring tines. Remove hairpin cotters (#2) and raise deflector enough to reinstall hairpin cotters in 7th hole located below the cushion springs.

An optional spring kit, part no. 311-162A, is offered to allow you to apply down pressure on the rear deflector for leveling. Adjust locking collars up to compress springs to desired pressure.

NOTE: Too much pressure will cause premature wear on the rear deflector.



Raised Position
Figure 3-4

Section 4: Maintenance & Lubrication

Maintenance

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 hardware after several hours of operation and regularly thereafter to ensure they are tight and secured. Replace worn, damaged, or illegible safety labels by obtaining new labels from your Land Pride dealer.

DANGER

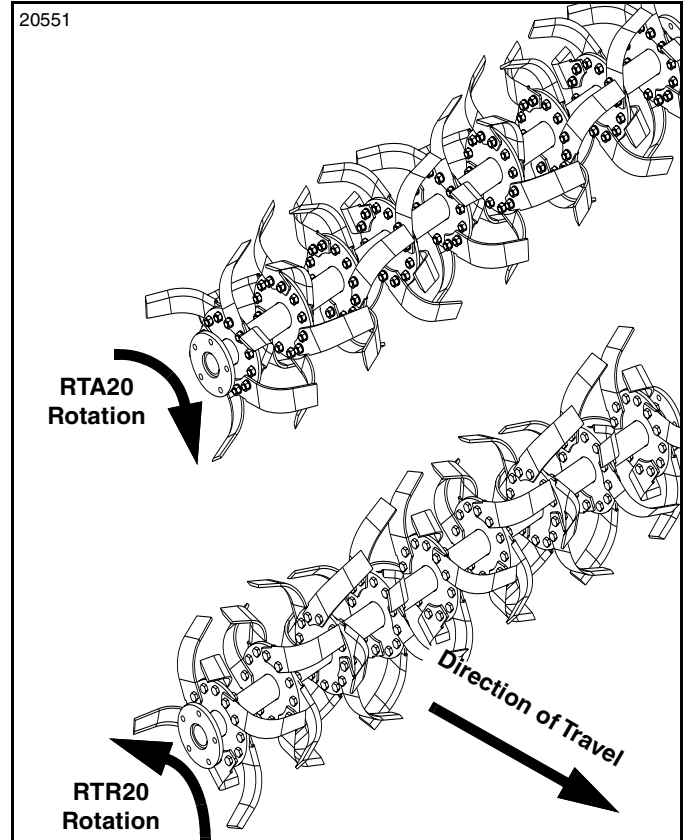
To avoid serious injury or death:

- Always disconnect driveline from the tractor before servicing the drivetrain and components powered by the drivetrain. A person can become entangled in the drivetrain if the tractor is started and the power take-off is engaged.
- 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:

- Make sure controls are all in the neutral position or park before starting the power machine.
- Allow only persons to perform maintenance on this implement who have been properly trained in its safe operation.
- Always follow “Tractor Shutdown Procedure” provided in this manual before dismounting the tractor.
- An unsupported parked tiller can tip over easily. Always use tiller park stand and when needed, non-concrete support blocks to prevent the tiller from tipping onto a person when disconnected from the tractor.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the implement back into service.
- Do not alter implement or replace parts on the implement with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the implement. Replace parts only with genuine OEM parts.



Tine Replacement
Figure 4-1

Tine Replacement

Refer to Figure 4-1:

WARNING

To avoid serious injury or death:

Used tines can be very sharp. Always wear gloves when handling tines to protect against cuts.

IMPORTANT: Remove and install one tine at a time to ensure they are oriented correctly when installed.

IMPORTANT: When ordering tines, be sure to order only genuine OEM tines and to order both right- and left-hand tines. Always install tines with cutting edge facing the direction of rotation.

1. Remove the two nuts, lock washers, and bolts from the tine to be replaced and then remove the tine.
2. Attach new tine to the mounting flange making sure its cutting edge crosses over the mounting flange and leads in rotation.
3. Reinstall removed hardware and tighten the two nuts to the correct torque for a 1/2"-13 GR5 bolt. Refer to “Torque Values Chart for Common Bolt Sizes” on page 34.
4. Repeat steps 1 to 3 until all tines have been replaced.



Driveline Maintenance

! DANGER

To prevent serious injury or death:

- Tractor power take-off shaft shield, driveline shields, and gearbox shaft shields must be installed and in good working condition to avoid driveline entanglement and projectiles flying off of the driveline.
- Always disconnect driveline from the tractor before servicing the drivetrain and components powered by the drivetrain. A person can become entangled in the drivetrain if the tractor is started and the power take-off is engaged.

! WARNING

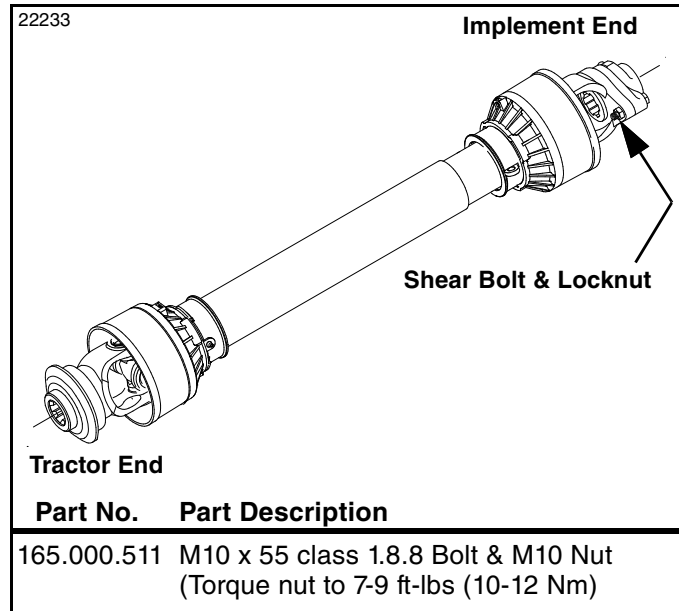
To prevent serious injury or death:

- A slip clutch that has been in use or has slipped for as little as only two or three seconds during run-in may be too hot to touch. Allow a hot clutch to cool before working on it.
- Do not operate a broken or bent driveline. Such a driveline will break apart while rotating at high speeds. Always remove the implement from use until the damaged driveline can be repaired or replaced.

Before each use, check to make sure the driveline is securely fastened, not broken, in good working order, and the driveline shields are secured in place. Replace the driveline and shields as needed. Order only genuine Land Pride parts from your local Land Pride dealer.

The drive components are protected from shock loads with a shear bolt clutch shown in Figure 4-2 on page 24 or with a slip clutch shown in Figure 4-3 on page 25.

- For shear bolt instructions, refer to “**Shear Bolt Protected Driveline**” on this page.
- For slip clutch instructions, refer to “**Slip Clutch Protected Driveline**” on page 25.



RTA20 & RTR20 Series Shear Bolt and Locknut
Figure 4-2

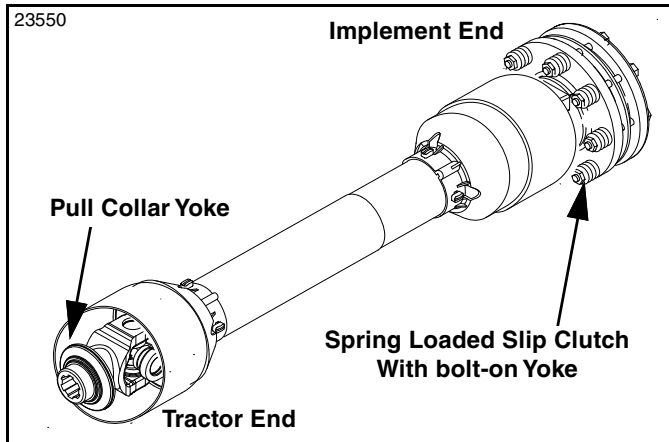
Shear Bolt Protected Driveline

Refer to Figure 4-2:

Avoid shear bolt breakage by making sure tiller is out of the ground before engaging power take-off. Engage power take-off slowly at low engine rpm. Increase engine speed to 540 rpm only after tines are rotating.

IMPORTANT: Replace shear bolts with genuine OEM shear bolts.

See table in Figure 4-2 for correct shear bolt and nut. Torque shear bolt nuts to 7-9 ft-lbs (10-12 Nm).



Driveline with Slip Clutch and Bolt-on Yoke
Figure 4-3

Slip Clutch Protected Driveline

Refer to Figure 4-4:

The slip clutch protects the drivetrain from shock loads. Disks inside the clutch must be capable of slippage during operation. To verify this, the clutch must go through a “Clutch Run-in” operation.

Slip Clutch Run-in Intervals



WARNING

To avoid serious injury or death:

- A slip clutch that has been in use or has slipped for as little as only two or three seconds during run-in may be too hot to touch. Allow a hot clutch to cool before working on it.

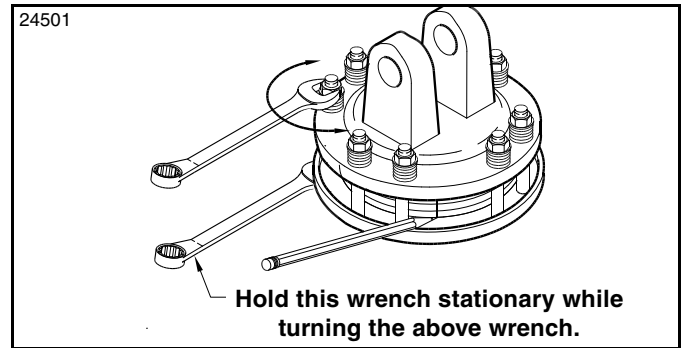
IMPORTANT: Moisture on the slip clutch allows friction disks to slip easily and overtime, can cause oxidation on the friction disks and adjacent plates. Oxidation can prevent the disks from slipping causing damage to the driveline and drivetrain. Damage due to the friction disks seizing is NOT covered under the warranty.

The purpose of the slip clutch is to protect the drive train from shock loads and damage during field operations. To ensure slip clutches functions properly, they should go through a run-in procedure to remove any oxidation that may have accumulated on the friction surfaces. Perform slip clutch run-in procedures:

- Prior to initial operation.
- After 30 days of inactivity.
- At the beginning of each season.
- When oxidation forms on the friction plates.

Visually inspect slip clutches for moisture, oxidation, loose components, broken components, friction disk wear, etc:

- During the first hour of operation.
- Periodically each week.



Slip Clutch Run-In
Figure 4-4

Slip Clutch Run-in Procedure

Refer to Figure 4-4:

Friction clutches should be “run-in” to prevent driveline and gearbox damage. Refer to “**Slip Clutch Run-in Intervals**” on this page for recommended intervals.

1. Using a pencil or other marker, scribe a line across the exposed edges of the clutch plates and friction discs.
2. Carefully loosen each of the 8 spring retainer nuts by exactly 2 revolutions. It will be necessary to hold hex end of retainer bolt in order to count the exact number of revolutions.
3. Make sure the area is clear of all bystanders and implement is safe to operate.
4. Start tractor and engage power take-off for 2-3 seconds to permit slippage of the disk surfaces. Disengage power take-off, then re-engage a second time for 2-3 seconds. Disengage power take-off, shut off tractor, and remove ignition key. Wait for all components to stop before dismounting from the tractor.
5. Inspect clutch to ensure all scribed markings on the clutch plates have changed position. Slippage has not occurred if any two marks are still aligned. Skip to step 7 if all friction desks have slipped.
6. The clutch must be disassembled to separate the friction discs if any two marks are still aligned. Refer to “**Disassemble, Inspect & Reassemble**” on page 26.
7. Allow clutch to cool to ambient temperature and then tighten each of the eight spring retainer nuts back two revolutions to restore the clutch to its original setting. To verify spring setting height, refer to “**Adjust Compression Spring Height**” on page 27.
8. The clutch is now ready for use.



Disassemble, Inspect & Reassemble

Refer to Figure 4-5:

If clutch run-in procedure indicated that one or more of the friction disks did not slip, then the clutch must be disassembled to separate the friction discs.

Disassemble

IMPORTANT: Keep track of order and orientation of your clutch components during disassembly.

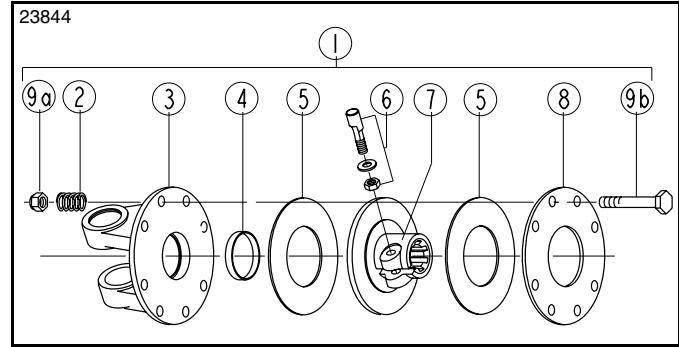
1. Allow clutch to cool to ambient temperature before working on the clutch.
2. Remove spring retainer nuts (#9a), springs (#2), and bolts (#9b) from the assembly.
3. Each friction disk (#5) must then be separated from the metal surface adjacent to it.

Inspect

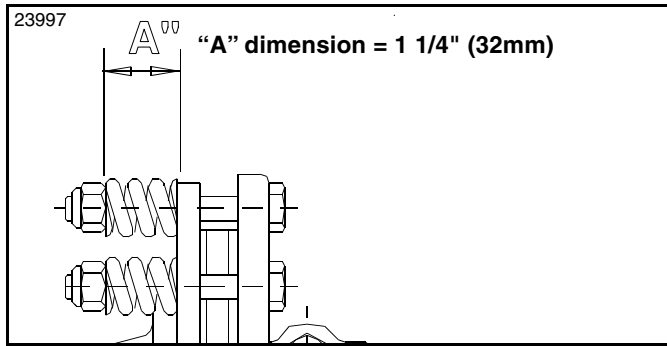
1. Inspect all parts for excessive wear and condition. Clean all parts that do not require replacement. The original disk thickness is 1/8" (3.2mm) and should be replaced if thickness falls below 3/64" (1.1mm).
2. If the clutch has slipped to the point of "smoking", the friction disks may be damaged and should be replaced. Heat build-up may also affect the yoke joints.

Reassemble

1. Reassemble each friction disk (#5) next to the metal plate it was separated from.
2. Install bushing (#4) in the same position it was when removed.
3. Install bolts (#9b) through the side plates and intermediate plates as shown.
4. Place compression springs (#2) over the bolts (#9b) and secure with nuts (#9a).
5. Continue with "**Adjust Compression Spring Height**" on page 27.



**Type A Slip Clutch Assembly
Figure 4-5**



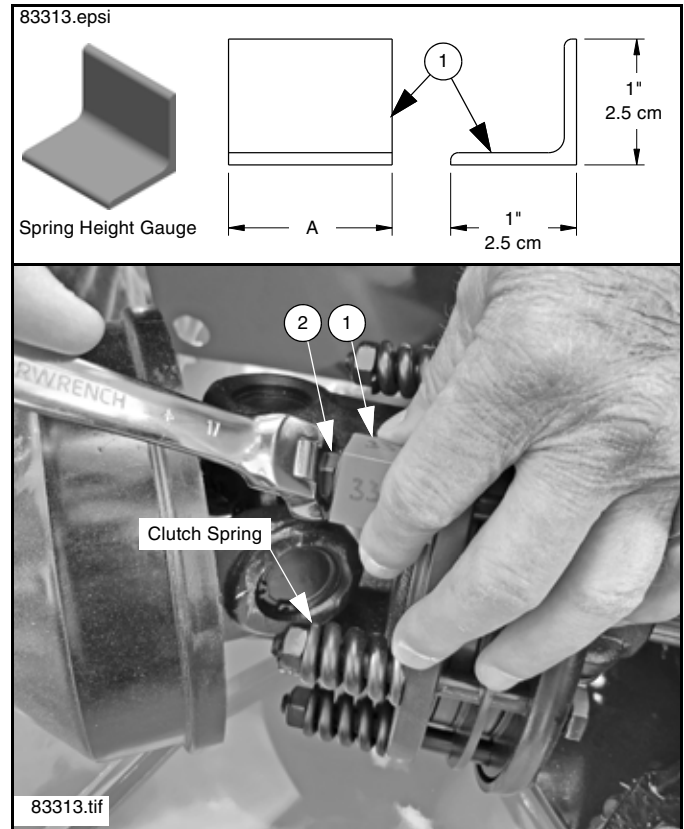
Type A Slip Clutch Adjustment
Figure 4-6

Adjust Compression Spring Height

Refer to Figure 4-6:

Progressively tighten each spring retainer bolt until correct spring height “A” is reached.

If preferred, a spring height gauge can be made to assist adjusting the height of each spring. For detailed instructions, refer to “**Compression Spring Height Gauge**” on this page.



Compression Spring Height Gauge
Figure 4-7

Compression Spring Height Gauge

Refer to Figure 4-7:

A spring gauge can be made to measure the spring height. This gauge will save time tightening the springs and can be reused each time the spring nuts are loosened and re-tightened.

1. Cut a 1" x 1" angle iron (#1) to length “A” provided in Figure 4-6. (Angle iron supplied by customer.)
2. Place fabricated gauge (#1) over a spring and its end against the clutch plate.
3. Tighten spring nut (#2) until the bottom of the nut is flush with the top of the angle gauge.
4. Repeat steps 2-3 on each clutch spring.

IMPORTANT: Always lubricate the gearbox input shaft before reattaching the driveline to the gearbox. Refer to “**Gearbox Input Shaft**” on page 30.

5. Reattach driveline to the tiller. Refer to “**Driveline Installation**” on page 12.
6. If needed, hook-up driveline to the tractor. Refer to “**Driveline Hook-Up**” on page 15.



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.

DANGER

To avoid serious injury or death:

Always disconnect driveline from the tractor and secure the implement in the up position with solid, non-concrete supports before servicing the underside. A person can become entangled in the drivetrain if the tractor is started and power take-off is engaged or crushed by an unsupported implement.

WARNING

To avoid serious injury or death:

Always shut tractor down according to “Tractor Shutdown Procedure” provided in this manual before allowing anyone including the operator to connect or disconnect the implement.

1. Clean off any dirt and grease that may have accumulated on the Rotary Tiller. Scrape off compacted dirt and then wash surfaces thoroughly with a garden hose.
2. Inspect the tiller for loose, damaged, or worn parts and adjust or replace if needed.

Repaint parts where paint is worn or scratched to prevent rust. Ask your Land Pride dealer for Aerosol touch-up paint. They are 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

3. A coating of oil may be applied to worn surfaces in lieu of painting to minimize oxidation.
4. Replace all damaged or missing decals.
5. Lubricate as noted in “**Lubrication Points**” on page 29.
6. Drain and refill gearbox and chaincase oil. Be sure to replace all oil plugs.
 - Drain oil in gearbox by removing the bottom drain plug or right-hand cap.
 - Drain oil in chaincase by removing the bottom plug and tipping tiller backwards.
7. Store tiller on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer tiller life.
8. Follow all parking instructions on page 20 when disconnecting tractor from tiller.

Ordering Replacement Parts

Land Pride offers equipment in factory standard Beige with black highlights. This implement is also available in Orange.

When ordering an optional color, the suffix number corresponding to the color must be added at the end of the part number. Parts ordered without the suffix number will be supplied in factory standard colors.

82 Orange

85 Black

For example, if you are ordering a replacement part with part number 555-555C and the existing part is orange, then add the suffix 82 to the end of the number to make the part number read 555-555C82.

Lubrication Points

Lubrication Legend



Multi-purpose
spray lube



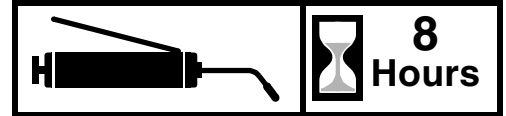
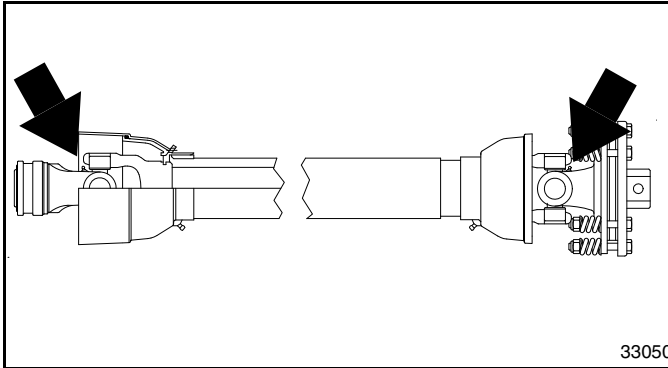
Multi-purpose
grease lube



Multi-purpose
oil lube



Intervals in hours at which
lubrication is required

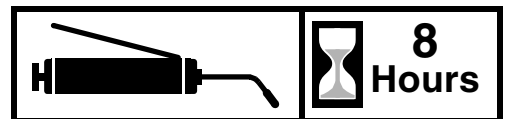
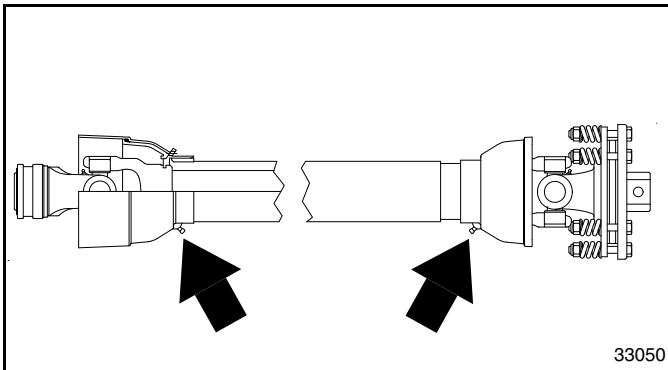


Driveline U-Joints

Add grease to the driveline u-joint every 8 hours of operation.

Type of grease = Multi-Purpose

Quantity = Coat Generously

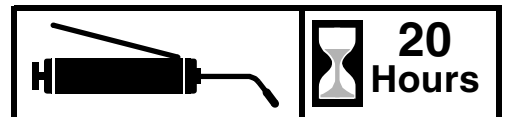
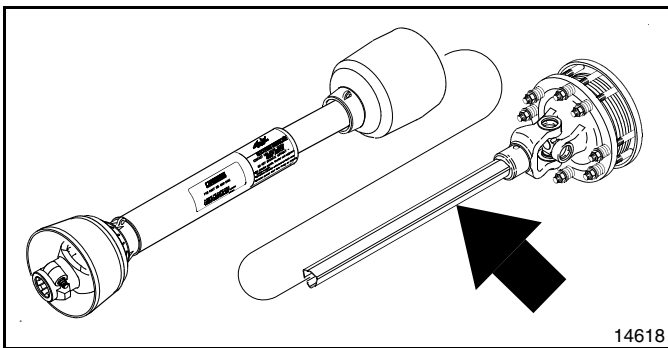


Driveline Shield Bearings

Add grease to the driveline shields every 8 hours of operation.

Type of Lubrication: Multi-Purpose

Quantity = 6 pumps

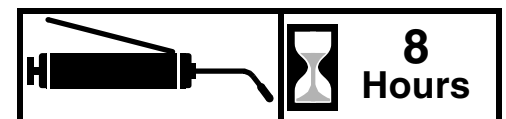
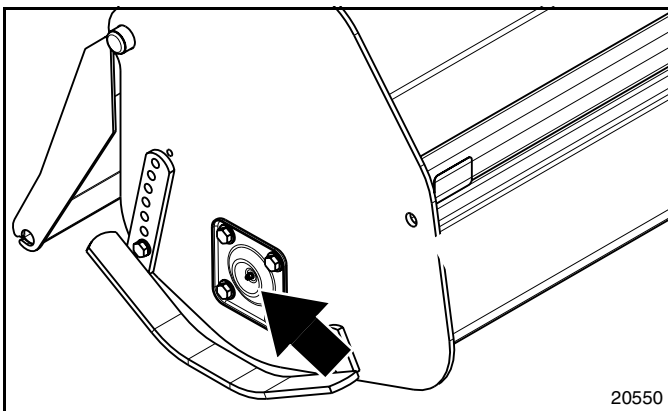


Driveline Profiles

Disconnect driveline from the tractor and slide apart. Clean and coat the inner tube of the driveline with a light film of grease and then reassemble.

Type of grease = Multi-Purpose

Quantity = Coat Generously

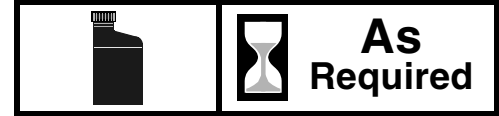
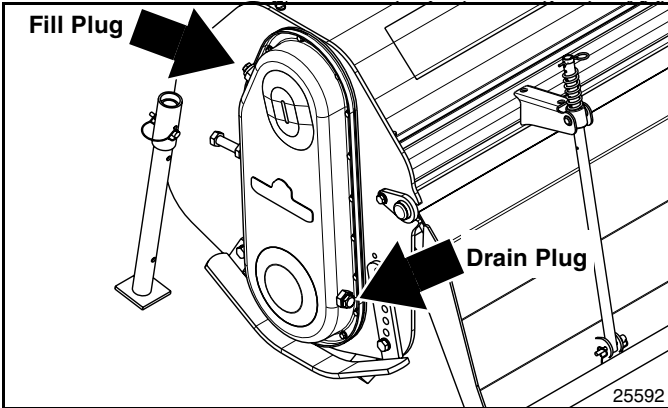


Bearing on Right End of Rotor Shaft

Grease bearing on right end of rotor shaft until grease starts to purge from the relief hole in the bearing mount casting on the inside of the tiller end plate.

Type of grease = Multi-Purpose

Quantity = Coat Generously



Chaincase

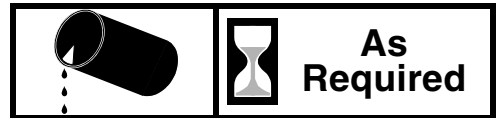
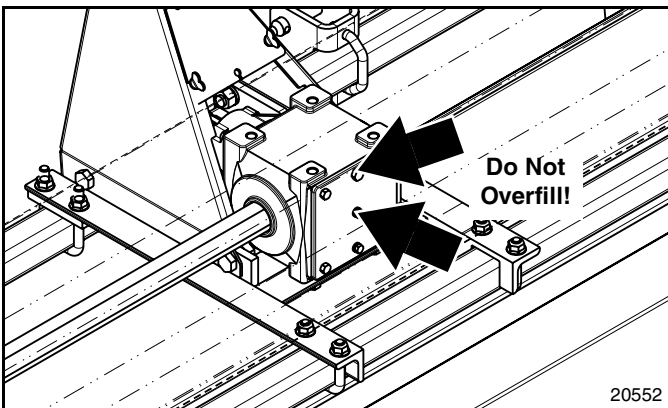
IMPORTANT: Check lubricant level in the chaincase after the machine has run long enough to heat the lubricant to a fluid state. Level the machine and remove lower level plug. Heated lubricant should reach the bottom of the plug hole. If needed, add recommended lubricant through the level hole or fill hole. Tighten all removed plugs when done.

Type of Lubrication:

Shell Gadus S2 V220 00 flowable grease or equivalent
Land Pride #821-086C, 32oz. (.95 L) bottle

Quantity when empty: 32 oz (0,95L)

Quantity when low: Flowable grease should reach bottom of level plug hole when in the liquid state.



Gearbox

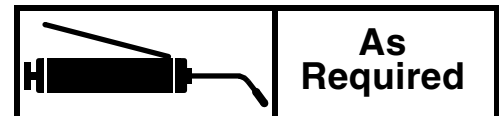
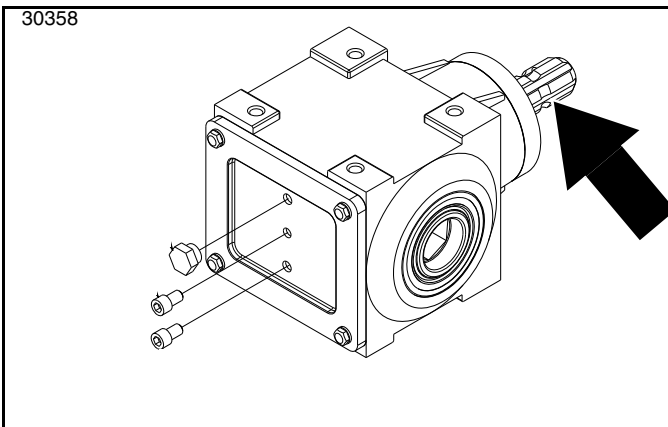
Check the oil level in the gearbox by removing the plug located in the center of rear cover. Fill if necessary with SAE 90 oil and retighten both plugs.

IMPORTANT: Take your gearbox to your dealer should it require repair work. Check oil level in gearbox at least every 50 hours of operation.

Type of lubrication = SAE 80-90W EP Oil

Quantity = As required

NOTE: Use a suction or siphon pump to drain gearbox of oil when there is not an oil drain plug.



Gearbox Input Shaft

Always lubricate all surfaces of the gearbox input shaft before installing the driveline and before reattaching a removed driveline.

Type of Lubrication: Multi-Purpose

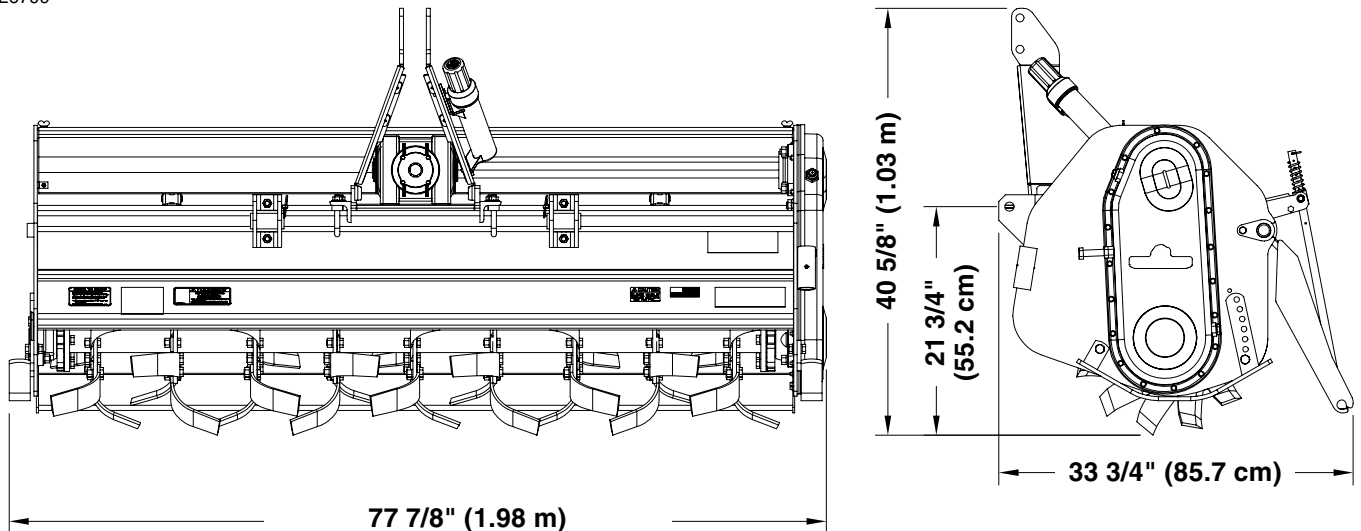
Quantity = Thin Coat



RTA20 & RTR20 Series

Specifications and Capacities		
Model Numbers	RTA2072	RTR2072
Weight	734 lbs (333 kgs)	795 lbs (361 kgs)
Recommended power take-off horsepower	23-75 hp (17-56 kW)	
Tilling width	72" (1.83 m)	
Overall width	77 7/8" (1.98 m)	
3-Point hitchType	Category I, Adjustable Lower Hitch Clevis with Plated Pins Fits Lnd Pride Quick Hitch	
Sideshift capabilities	18" (45.7 cm) Note: Limited sideshift capabilities with Land Pride Quick Hitch	
Number of flanges	9	
Number of tines per flange	6	
Tine construction	Alloy steel heat treated "C" shaped blades	
Skid shoes	Adjustable	
Storage stands	Adjustable	
Rear deflector	Adjustable profile stamped rear deflector	
Driveline	ASAE Category III Heavy Duty Off-Center Shear bolt - standard Slip Clutch - optional	
Gearbox	75 hp (56 kW) Input at 540 rpm 1.46:1 Ratio Cast Iron Housing, Straight Bevel Gears	
Gearbox Lubrication type Lubrication capacity	SAE80-90W EP oil 2.2 Pints (1.04 L)	
Drive Chain	#80 Roller chain - Fully enclosed in oil bath with drain & fill plugs	
Chaincase Lubrication type Lubrication capacity	Shell Gadus S2 V2200 00 flowable grease or equivalent 32 oz (0,95 L)	
Sprockets	Splined Bores	
Rotary bearing mounts	Machined Cast Iron	
Rotor swing diameter	17" (43.2cm)	
Rotor shaft speed	220 rpm at 540 rpm power take-off speed	

26799





RTA20 & RTR20 Series

Features	Benefits
American made	Many tillers are imported. American made means better parts availability.
20 Series	Fills the gap between our 15 and 25 Series Tillers, both in size and price.
RTR Reverse rotation model or RTA forward rotation model	Land Pride has the market on reverse rotation. This brings in a quality tiller at a more affordable price for landscapers. We offer forward rotation for contractors who want it.
Reverse tilling action	Reverse action “sucks” tiller into ground, does not walk on top of hard ground like forward rotation tillers can.
Tractor hp	23-75 hp (17-56 kW)
Gearbox warranty	5 Years Parts and Labor. Shows our confidence in the product.
Working widths	64" (1.63 m) & 72" (1.83 m) Meets a wide range of customer needs.
Integral hitch	Upper hitch, gearbox, and gearbox mount brought together to form a stronger overall hitch frame.
Clevis style lower hitch	Allows easier hook-up of lower 3-point arms.
Hitch sideshift capability	Sideshifts by loosening 6 U-bolts and sliding hitch points and gearbox over. Allows covering right tire track.
Cat. 1 hitch fits Land Pride Quick Hitch	Allows for quick and easy one-person hook-up.
Adjustable park stand	Allows for easy hook-up and storage
Adjustable skid shoes	Control depth from various settings.
Material separator behind tilling action (RTR only)	3/8" (10 mm) Rods sift the material letting bigger items fall first. Sifted soil falls last burying the bigger items. Attachment is one all welded piece for easy assembly.
Formed rear deflector with springs	Formed steel gives the rear deflector additional strength. Springs allow deflector to bounce as it hits obstructions.
Six tines standard on RTR20	Six tines cut through the ground smoother.
“C” Tines	C Tines take less horsepower to move through the ground.
Rotor swing diameter 17" (43.2 cm)	For deep tilling action.
Double lip seal on rotor bearing	Double lip seal keeps the dirt out and the grease in.
Cat. 3 heavy-duty fully shielded shear pin or slip-clutch driveline	Protects gearbox and rotor shaft upon hitting obstructions. Slip-clutch saves having to replace shear-pins.
#80 Drive chain enclosed in oil bath	Heavy-duty drive chain reduces stretching. Oil keeps constant lubrication and holds wear to a minimum.
Easy to adjust chain tightener	Cast iron chain tightener is a simple bolt adjustment to keep constant tension on the chain.
Stamped chain cover	Stamped forming adds additional strength.
Formed deck	Handles material more efficiently, sheds water.



Trouble Shooting Chart

Problem	Cause	Solution
Machine makes intermittent clicking noise	Tines are loose. Gearbox has tooth damaged. Roller chain is damaged.	Tighten tines. Replace damaged gearbox. Replace damaged chain link.
Driveline vibrates	Universal joint is worn. Excessive trash is wrapped on rotor. Machine is lifted too high.	Replace universal joint. Remove trash. Lower machine and readjust tractor lift stop.
Gearbox noise is noticeable and constant	May be normal on new machine. Low oil level. Worn gears.	Allow time for break-in. Add oil to the gearbox. Replace gears in the gearbox.
Oil leaking from gearbox	Seals and/or gaskets are damaged. Gearbox is overfilled.	Replace seals or gaskets in the gearbox. Drain oil to proper level.
Rotor will not turn	Power take-off is not engaged. Drive chain is broken. Driveline shear bolt is sheared. Friction clutch is slipping.	Engage power take-off. Repair drive chain. Replace shear bolt. Reduce load to tiller.
Tillage depth insufficient	Tiller is carried by tractor. Tractor has insufficient power. Skid Shoes need adjusting. Tines are worn or bent. Tines are incorrectly installed. Obstacles are entangled in tines and/or rotor. Lower hitch clevises are in the wrong position.	Lower tractor 3-point arms. Increase tractor rpm. Adjust skid shoes. Replace tines. Check tine placement. Clear rotor and/or tines of obstacles. Relocate lower hitch clevises.
Soil texture too coarse	Leveling door is too high. Power take-off speed is too slow. Ground speed is too fast.	Lower leveling door. Increase power take-off speed. Decrease ground speed.
Soil texture too fine	Leveling door is too low. Ground speed is too slow.	Raise leveling door. Increase Ground Speed.
Machine skips or leaves crop residue	Tines are badly worn. Friction clutch is slipping. Ground speed is too fast for conditions.	Replace worn tines. Reduce load. Reduce ground speed.
Tines operating behind tractor tires show increased wear	Tractor tires can compact soil causing tines that operate in the compacted soil to have increased wear.	Considered as normal wear. Replace worn tines.
Tines balling up with soil	Tines are worn or bent. Tines are incorrectly installed. Rear deflector is too low. Tractor speed is too fast. Soil is too wet.	Replace tines. Install tines correctly. Raise rear deflector. Decrease tractor speed. Wait until soil dries.
Tiller bumping on ground	Obstacles are entangled in tines and/or rotor. Tines are not installed correctly.	Clear rotor and/or tines. Install tines correctly.



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		
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	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																	
Lower flange bearing on drive end of rotor, 1/2" nuts							45-50 ft-lbs (61-68 Nm)										



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 and Driveline: One year Parts and Labor

Gearbox: 5 years Parts and Labor

Tines and Driveline Friction Discs: Considered wear items

This Warranty is limited to the repair 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 such as blades, belts, tines, etc. 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 original purchase. Registration is done by your dealer.

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** _____



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