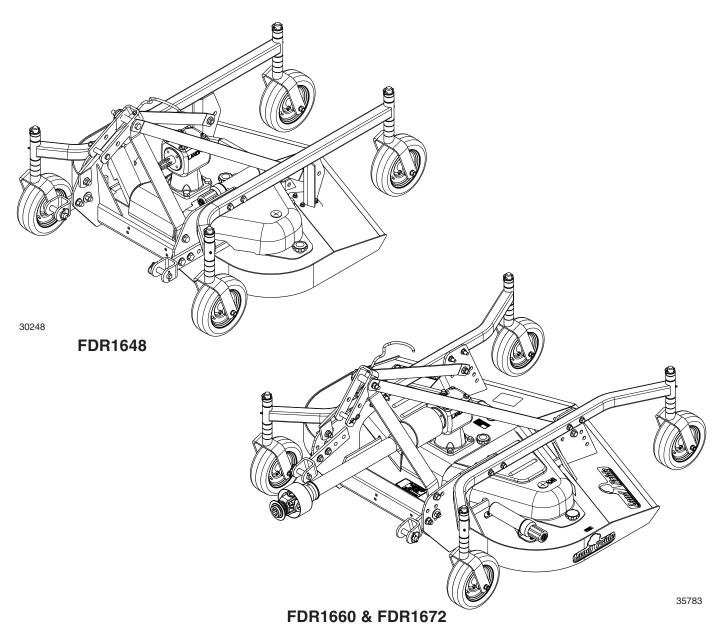
Rear Discharge Grooming Mowers

FDR1648, FDR1660 & FDR1672

PATRIOT® Model



310-366M 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

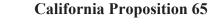
Record your machine details in the log below. If you replace this manual, be sure to transfer this information to the new manual.

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: | |
| | |





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



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Printed in the United States of America.

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See previous page for Table of contents.



Parts Manual QR Locator

The QR (Quick Reference) code on the cover and to the left will take you to the Parts Manual for this equipment.

Download the appropriate App on your smart phone, open the App, point your phone on the QR code and take a picture.



Dealer QR Locator

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



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

Safety at All Times

Careful operation is your best assurance against an accident.

All operators, no matter how much experience they may have, should carefully read this manual and other related manuals, or have the manuals read to them, 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 the 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 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 tractor and implement while backing up to implement.
- ▲ Keep hands, feet, and clothing away from power-driven parts.
- While transporting and operating equipment, watch out for objects overhead and along side 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 an area where children normally do not play. When needed, secure attachment against falling with support blocks.





Look for the Safety Alert Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, 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. The signal words are:

A DANGER

Indicates a hazardous situation that, if not avoided, will result in death or serious injury.

A WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

ACAUTION

Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

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 switch 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.
- ▲ Detach and store implement in an area where children normally do not play. Secure implement using blocks and supports.



11/6/18



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

Tire Safety

- ▲ Tire changing can be dangerous and must be performed by trained personnel using the correct tools and equipment.
- ▲ 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.



Transport 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 tie downs and chains.
- ▲ Sudden braking can cause a towed trailer to swerve and upset. Reduce speed if towed trailer is not equipped with brakes.
- Avoid contact with any overhead utility lines or electrically charged conductors.
- ▲ Always drive with load on end of loader arms low to the ground.
- ▲ Always drive straight up and down steep inclines with heavy end of a tractor with loader attachment on the "uphill" side.



- ▲ Engage park brake when stopped on an incline.
- ▲ Maximum transport speed for an attached equipment is 20 mph. 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.
- ▲ As a guideline, use the following maximum speed weight ratios for attached equipment:
 - 20 mph when weight of attached equipment is less than or equal to the weight of machine towing the equipment.
 - **10 mph** when weight of attached equipment exceeds weight of machine towing equipment but not more than double the weight.
- ▲ IMPORTANT: Do not tow a load that is more than double the weight of the vehicle towing the load.





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 tow the implement.



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 hydraulic supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- ▲ Use properly grounded electrical outlets and tools.
- ▲ Use correct tools and equipment for the job that are in good condition.
- ▲ Allow equipment to cool before working on it.





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





11/6/18



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 phone.







Use Safety Lights and Devices

- ▲ Slow moving tractors, skid steers, self-propelled machines, and towed equipment can create a hazard when driven on public roads. They are difficult to see, especially at night. Use the Slow Moving Vehicle sign (SMV) when on public roads.
- Flashing warning lights and turn signals are recommended whenever driving on public roads.



Avoid Underground Utilities

- ▲ Dig Safe, Call 811 (USA).

 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.



Wear Personal Protective Equipment (PPE)

- ▲ Wear protective clothing and equipment appropriate for the job such as safety shoes, safety glasses, hard hat, 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 equipment safely requires the operator's full attention. Avoid wearing headphones while operating equipment.



Avoid High Pressure Fluids Hazard

- ▲ Escaping fluid under pressure can penetrate the skin causing serious injury.
- ▲ Before disconnecting hydraulic lines or performing work on the hydraulic system, be sure to release all residual pressure.
- ▲ Make sure all hydraulic fluid connections are tight 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, see a doctor familiar with this type of injury immediately. Any fluid injected into the skin or eyes must be treated within a few hours or gangrene may result.

Use Seat Belt and ROPS

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



Keep Riders Off Machinery

- ▲ Never carry riders on 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 tractor or implement to lift or transport riders.



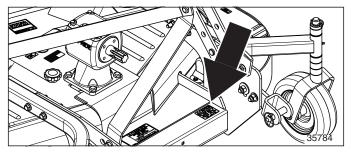
11/6/18



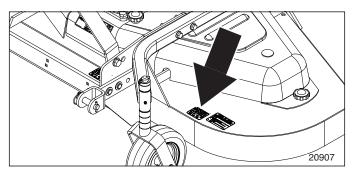
Safety Labels

Your Grooming Mower 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.
- 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.

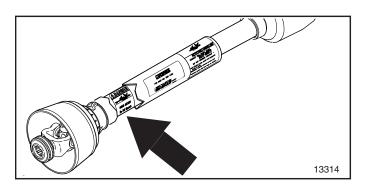


FDR1660 & FDR1672



FDR1648

35785



- 3. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by Land Pride. When ordering new components make sure the correct safety labels are included in the request.
- 4. Refer to this section for proper label placement. To install new labels:
 - a. Clean surface area where label is to be placed.
 - b. Spray soapy water onto the cleaned area.
 - c. Peel backing from label and press label firmly onto the surface.
 - d. Squeeze out air bubbles with edge of a credit card or with a similar type of straight edge.



818-130C

Caution



858-095C

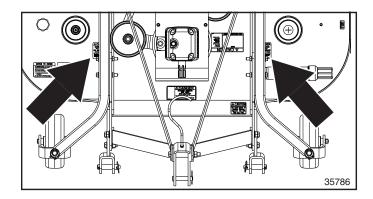
Red Reflector (Both Sides)



818-540C

Danger: Guard Missing

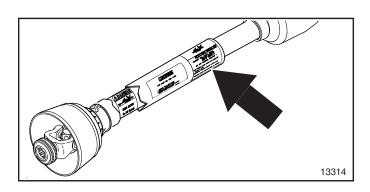






818-543C

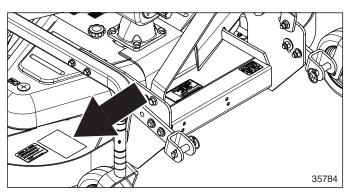
Danger: Guard Missing



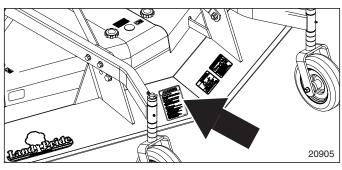


818-552C

Danger: Rotating Driveline



FDR1660 & FDR1672



FDR1648

▲ WARNING

To prevent serious injury or death:

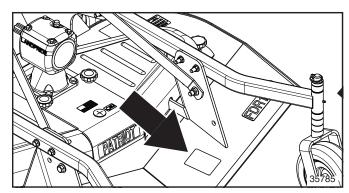
- Read and understand Operator's manual before using.
- Do not permit riders on the tractor or mower. Never carry child on tractor seat.
- Operate with guards installed and in good condition.
- Operate only with tractor equipped with ROPS and seatbelts.
- Keep away from moving parts.
- Stop engine, set brake and wait for all moving parts to stop before dismounting.
- Be sure lights and reflectors required by law are clean and in good working order before transporting.
- Do not allow children to operate mower.
- Travel with SMV and lights that follow local codes.
- Clean debris from mowing area.
- Do not operate in the raised position.
- Support securely before working beneath unit.
- Review safety instructions annually.

318 558C

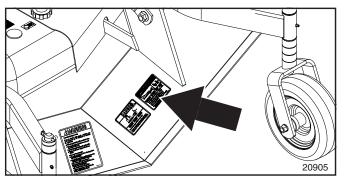
818-558C

Warning: General





FDR1660 & FDR1672



FDR1648



ROTATING BLADES-KEEP AWAY

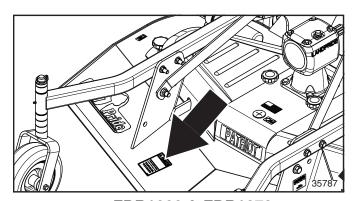
To prevent serious injury or death from rotating blade contact:

- Never allow riders, especially children, on tractor.
- Do not operate with bystanders in mowing area.
- Do not operate with deflectors/guards removed.
- Do not place hands or feet under deck when operating or when engine is running.

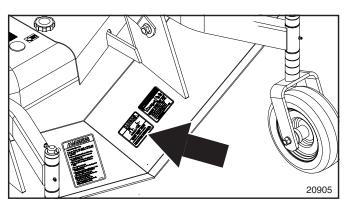
818-555C

818-555C

Danger: Rotating Blade



FDR1660 & FDR1672



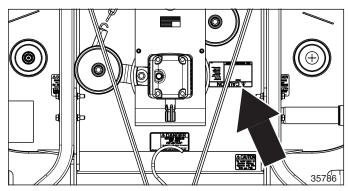
FDR1648



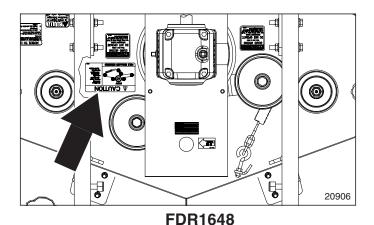
818-556C

Danger: Thrown Object





FDR1660 & FDR1672

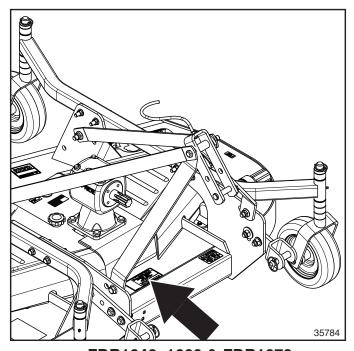


FRONT
To Avoid Injury or Machine Danage.
Be aware - drive belt under spring tension
When servicing machine use proper tools and equipment.
Refer to Owner's Manual for instructions

838-270C

Caution: V-Belt Installation

FDR1648, FDR1660 & FDR1672



FDR1648, 1660 & FDR1672



818-142C

Caution: Rotating Drive Line FDR1648, FDR1660 & FDR1672



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

Application

The Land Pride FDR16 Rear Discharge Grooming mowers are designed and built to provide high productivity and excellent cutting quality on well maintained lawn and turf surfaces. These mowers are adapted for category 1 attachment and operation on 15-40 hp compact utility tractors. They are offered with 48", 60", and 72" rear discharge cutting decks, which makes them well suited to meet the mowing needs of home and estate owners alike. These rear discharge cutting decks will provide a superb quality of cut and superior clipping distribution when grass is cut on a frequent basis and ground conditions are not wet.

See "Specifications & Capacities" on page 27 and "Features & Benefits" on page 28 for additional information and performance enhancing options.

Using This Manual

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

Terminology

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

Definitions

IMPORTANT: A special point of information related to the following topic. Land Pride's intention is this information must be read & noted before continuing.

NOTE: A special point of information that the operator should be aware of before continuing.

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

Serial Number

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

Further Assistance

Your dealer wants you to be satisfied with your new Grooming Mower. 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.
- If you are still not satisfied, seek out the owner or general manager of the dealership, explain the problem, and request assistance.
- 3. For further assistance write to:

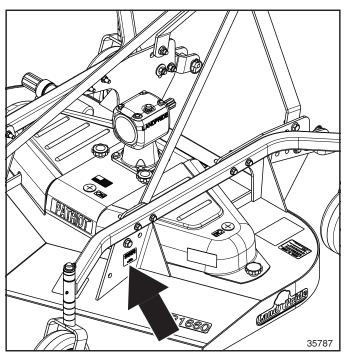
Land Pride Service Department 1525 East North Street

P.O. Box 5060 Salina, Ks. 67402-5060

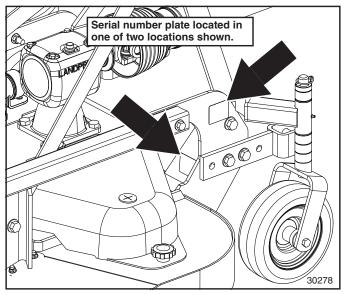
E-mail address lpservicedept@landpride.com

FDR16 Series mowers are covered under Patent Numbers: US D445,432 S and US D424,071 S





FDR1660 & FDR 1672 Serial Number Plate Location Figure 1A



FDR1648 Serial Number Plate Location Figure 1B



Tractor Requirements

Tractor horsepower should be within the range noted below. Tractors outside the horsepower range must not be used. The lower 3-Point arms must be stabilized to prevent side-to-side movement. Most tractors have sway blocks or adjustable chains for this purpose.

| Required Horsepower Range 15 to 40 horsep | ower |
|---|--------|
| Power Take-Off Requirement 540 | Rpm |
| Spline Requirement | 8" - 6 |
| Hitch Type 3 - Point C | Cat. 1 |

NOTE: The tractor may need additional ballast to maintain steering control. See tractor's Operator's Manual to determine if additional ballast is required.

The tractor **MUST** be equipped with protective equipment designed to shield the operator from thrown objects and from tractor roll over. An enclosed tractor cab with a Roll Over Protective Structure (ROPS) may qualify. See tractor's manual for type of protection your tractor has.

Torque Requirements

Refer to "Torque Values Chart" on page 30 to determine correct torque values for common bolts.

Dealer Preparations

This Grooming Mower has been partially assembled at the factory. Some assembly and preparation are still required before the mower is ready for operation and can be attached to the customer tractor.

Make sure that the intended tractor conforms to the Tractor Requirements stated above. Also, read and understand the Operator's Manual for the Grooming Mower. An understanding of how it works will aid in its' assembly and setup.

Go through the **Pre-Assembly Checklist** before assembling the mower. To speed up your assembly task and make the job safer, have all needed parts and equipment readily at hand.

Vented Dipstick Installation

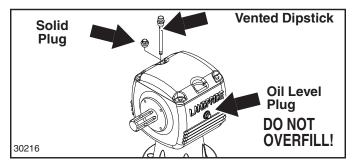
Refer to Figure 1-1:

IMPORTANT: Gearboxes are shipped with solid plugs in them to prevent oil loss during shipping and handling. The solid plug on top of the gearbox must be replaced with a vented dipstick before operating the implement.

A vented dipstick for the gearbox is included in a bag with the manual. See your nearest Land Pride dealer if dipstick is missing. Remove temporary red plug from top of splitter gearbox and replace with supplied dipstick.

Pre-Assembly Checklist

| Check | Reference | | | | | | | |
|---|--|--|--|--|--|--|--|--|
| Make sure miscellaneous assembly tools are on hand: Hammer, tape measure, hacksaw, assortment of wrenches & sockets, 3/8" drill, drill bits and spirit level. | | | | | | | | |
| Have a forklift or hoist with properly sized chains and safety stands on hand capable of lifting 2500 lbs. | | | | | | | | |
| Have a minimum of two people available during as | sembly. | | | | | | | |
| Check to see if auxiliary tractor weights are neede See Specifications on page 27 for mower weights. | d. | | | | | | | |
| Make sure all major components and loose parts are shipped with the implement. | Operator's Manual | | | | | | | |
| Double check to make sure all fasteners & pins are installed in the correct location. Refer to the Parts Manual if unsure. | Operator's Manual & Parts Manual | | | | | | | |
| NOTE: All assembled hardware from the factory has been installed in the correct location. Remember location of a part or fastener if removed. Keep parts separated. | | | | | | | | |
| Make sure working parts move freely, bolts are tight & cotter pins are spread. | Operator's Manual | | | | | | | |
| Make sure all grease fittings are in place and lubricated. | Section 5 Page 24 | | | | | | | |
| Make sure all safety labels are correctly located and legible. Replace if damaged. | Important Safety Information | | | | | | | |
| Make sure all red reflectors are correctly located and visible when implement is in transport position. | Page 4 | | | | | | | |



Installation of Vented Dipstick
Figure 1-1

Upper 3-Point Hitch Assembly

Refer to Figure 1-2 on page 11:

- 1. Remove angle shipping brackets (not shown) with gauge wheel assemblies (#4) from mower frame.
- 2. Remove rear hitch braces (#1), A-Frame hitch braces (#2), and clevis hitches (#3) from shipping crate.
- 3. Attach rear hitch braces (#1) to hole "A1" inside of rear hitch mounting plates (#5) with 5/8" bolts and flanged locknuts (#6) provided in rear hitch plates. Do not tighten nuts.
- 4. Attach A-Frame hitch braces (#2) to holes "A2" inside front hitch mounting plates (#7) with 5/8" bolts (#8) and hex flanged locknuts (#8) shipped holding rear hitch braces (#1) together. Do not tighten nuts.
- 5. Remove 5/8" x 5 1/2" lg. bolt, lock washer, and nut (#11) from upper pivoting hitch (#9). Don't let spacer tube (#10) fall from upper pivoting hitch.



- Swing A-frame hitch braces (#2) up to a vertical position. Raise rear hitch braces (#1) up and outside of A-Frame hitch braces as shown.
- 7. Position upper pivoting hitch (#9) with hook (#20) hanging down as shown. Assemble upper pivoting hitch (#9) and spacer tube (#10) in-between A-frame hitch braces (#2) with existing bolt, lock washer, and hex nut (#11).
- 8. Tighten 5/8"-18 GR5 bolt (#11) to the correct torque.
- 9. Tighten 5/8"-11 GR8 bolts (#6 & #8) to the correct torque.

Gauge Wheel Assembly

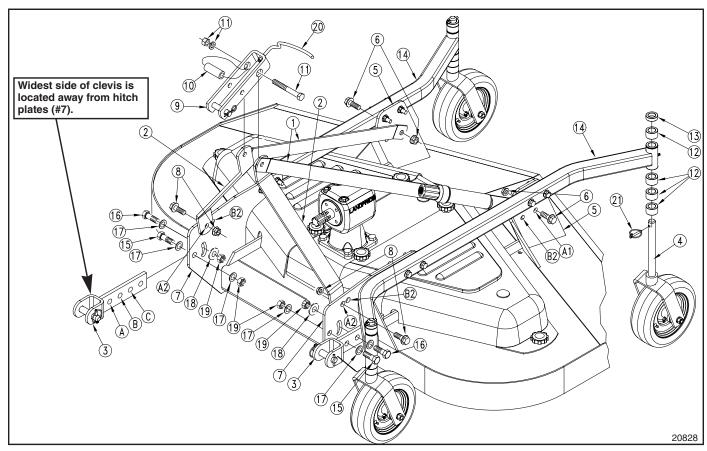
Refer to Figure 1-2:

- 1. Remove factory bolts from top of gauge wheel spindles (#4).
- Remove gauge wheels (#4) from angle shipping brackets. Keep spacers (#12 & #13) with their respective gauge wheels. Discard shipping brackets.
- 3. Insert gauge wheel yoke spindles (#4) into gauge wheel arms (#14) with three 1" spacers (#12) below each arm. Install remaining spacers (#12 & #13) above each arm.
- 4. Remove linchpins (#21) from clevis hitch pin (#1). Secure gauge wheels (#4) to gauge wheel arms (#14) with linchpins (#21).

Lower 3-Point Clevis Hitch Assembly *Refer to Figure 1-2:*

- Attach lower right-hand clevis hitch (#3) outside of right-hand mounting plate (#7) as follows:
 - a. Insert 5/8" x 1 3/4" bolt (#15), through SAE standard washer (#17), clevis hitch hole "A", hitch plate (#7), and SAE standard washer (#17).
 - b. Secure bolt (#15) with hex top locknut (#19). Draw hex top locknut (#19) up snug and then back off 1/2 turn to allow clevis hitch (#3) to pivot.
 - c. Insert 5/8" x 1 3/4" bolts (#16) through SAE standard washers (#17), clevis hitch hole "B", slot in hitch plate (#7), and USS large washer (#18).
 - d. Secure bolt (#16) with hex top locknut (#19). Draw hex top locknut (#19) up snug and then back off 1/ 2 turn to allow clevis hitch (#3) to pivot.
- 2. Repeat step 1 for the lower left-hand clevis hitch (#3).

NOTE: The 3-Point hitch system is designed for front to back flotation when mowing on uneven terrain. Additional field flotation and/or tractor clearance can be obtained by mounting clevis hitches (#3) in hole "B" or "C". Rear brace bars (#1) may need to be moved to holes "B2".



Hitch And Gauge Wheel Assemblies Figure 1-2



Tractor 3-Point Hook-up



DANGER

To prevent serious injury or death:

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



WARNING

To prevent serious injury or death:

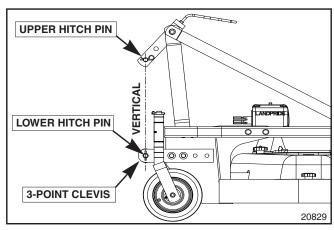
Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before allowing anyone including the operator to hook-up and unhook implement.

NOTE: Land Pride's Quick Hitch can be attached to the tractor to provide quick and easy 3-point hookup and detachment to the FDR1660 & FDR1672 models only. See your nearest Land Pride dealer to purchase a Quick-Hitch.

Refer to Figure 1-3:

- 1. Ensure lower arms are stabilized to prevent excessive side movement. Most tractors have sway blocks or adjustable chains for this purpose.
- Be certain tractor draw bar will not interfere. Move draw bar ahead or remove if required. Draw bar should also be checked for clearance when unit is being raised for the first time with driveline installed.
- 3. Slowly back tractor up to the Grooming Mower while using 3-Point hydraulic control to align hitch holes in 3-Point lower lift arms with holes in hitch clevis (#2).
- Engage tractor park brake, shut engine off, and remove key before dismounting from tractor.

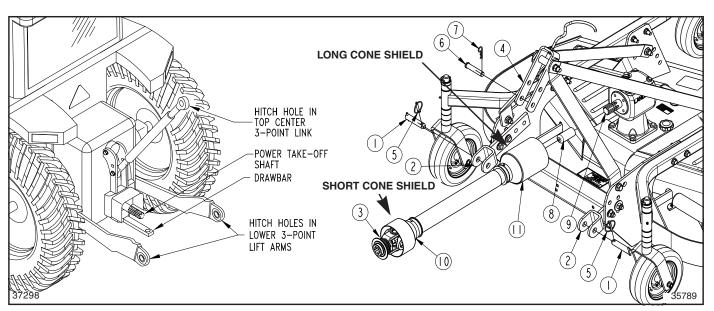
- 5. Insert lower hitch pins (#1) through hitch clevis holes and lower lift arm holes. Secure hitch pins with linchpins (#5).
- 6. Attach the tractor's top center link to the mower's upper floating hitch (#4) with hitch pin (#6). Secure hitch pin with hairpin cotter (#7).



Tractor Hook-up Figure 1-4

Top Center Link Adjustment *Refer to Figure 1-4:*

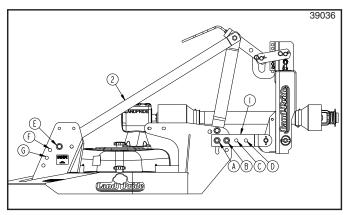
- Adjust lower clevises in or out when additional flotation is needed or when tractor interferes with mower frame. See "Lower 3-Point Clevis Hitch Assembly" on page 11 for adjustment instructions.
- Start tractor and raise mower until gauge wheels are
 off the ground. Slowly lower mower until gauge
 wheels start to touch the ground. Continue to lower
 mower until 3-Point clevises are level with the
 ground. Set tractor 3-Point stop at this height to hold
 the clevises level.



Tractor 3-Point Hitch Figure 1-3



- 3. Lower lift arms should be an equal distance off the ground. If they are not, adjust one of the arms until they are both an equal distance off the ground and 3-Point clevis are both level with the ground.
- 4. To allow for mower flotation, adjust tractor top center link in or out until upper hitch pin is vertically above lower hitch pins as shown in Figure 1-4.
- Mower top link has 2 holes in it to adjust to tractor's lift capabilities. Choose the hole that enables the tractor to raise the mower to your desired height during transport.



Quick Hitch Hook-Up Figure 1-5

Quick Hitch Hook-up

Refer to Figure 1-5:

 Attach lower 3-Point hitch clevis (#1) to the two upper holes "A" and "B" above floating slots. The position of the lower 3-Point hitch clevis depends on the tractor and tractor tires.

NOTE: This will lock the lower 3-Point arms into position. Use 3-Point tractor float instead.

- 2. Attach the rear braces (#2) as follows:
 - a. If lower hitch clevis (#1) holes "A" and "B" are attached to the deck, attach rear braces (#2) to hole "E".
 - b. If lower hitch clevis (#1) holes "B" and "C" are attached to the deck, attach rear braces (#2) to hole "F".
 - c. If lower hitch clevis (#1) holes "C" and "D" are attached to the deck, attach rear braces (#2) to hole "G"
- 3. See Quick Hitch manual in order to attach Quick Hitch to lower 3-Point arms and top link.

Driveline Hook-up to Gearbox

Refer to Figure 1-3 on page 12:

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.

- 1. Check to make certain power take-off is disengaged.
- Park tractor and mower on a level solid surface and place gear selector in park or in neutral and set park brake.
- Slowly engage 3-Point lift lever to raise mower until gearbox shaft is in line (level) with tractor power takeoff shaft.
- Support mower deck at this height with support jacks or blocks to keep mower from drifting down.
- 5. Shut tractor engine off and remove switch key.
- 6. Remove and discard gearbox shaft protector (#9).
- Before installing driveline, apply a liberal amount of all purpose grease to both the tractor power take-off shaft and gearbox shaft (#9) to ease removal at a later time.
- 8. Slide universal joint of inner driveline with long cone shield (#11) over mower gearbox shaft (#9). Secure driveline with yoke locking device.



Driveline Hook-up to Tractor



DANGER

To prevent serious injury or death:

- Do not engage power take-off while hooking-up or unhooking 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 prevent serious injury or death:

- Select a safe ground speed when transporting. Never travel at a speed which does not allow adequate control of steering and stopping, and never exceed 20 mph (32.2 km/h) with attached equipment. Rough terrain requires a slower speed.
- Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before dismounting tractor.

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

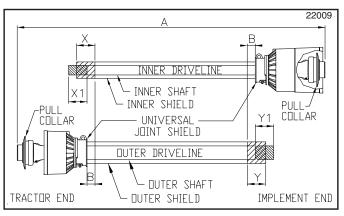
IMPORTANT: The driveline must be lubricated before putting it into service. Refer to "**Ordering Replacement Parts**" on page 24.

Refer to Figure 1-3 on page 12:

- 1. Pull outer driveline (#10) and inner driveline (#11) apart. Apply multi-purpose grease to inside of outer profile and reassemble the two profiles.
- Pull back on pull collar (#3) and hold while starting to slide the universal joint onto the tractor's power takeoff shaft.

NOTE: See "**Shorten Driveline**" if driveline is too long and will not go onto the tractor's power take-off

- Once driveline starts onto the power take-off shaft, release pull collar and continue to slide universal joint on until pull collar releases and locks universal joint to the tractor's power take-off shaft.
- 4. Push and pull on yokes at both ends of driveline to make certain they are securely fastened to tractor power take-off shaft and mower gearbox shaft.



Check Collapsible 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, when connecting to a different tractor, and when alternating between using a quick hitch and a standard 3-point hitch. More than one driveline may be required to fit all applications.

- Make sure driveline is installed properly to the mower gearbox input shaft and tractor power take-off shaft before checking driveline collapsed length. Refer to "Driveline Hook-up to Gearbox" and "Driveline Hook-up to Tractor" on page 14.
- With driveline level, measure 1" ("B" dimension) back from universal joint shield to end of outer driveline shield as shown in Figure 1-6.
 - a. If measurement is less than 1", shorten driveline.
 - a. If measurement is 1" or more, skip to "Check Maximum Allowable Length" on page 15.

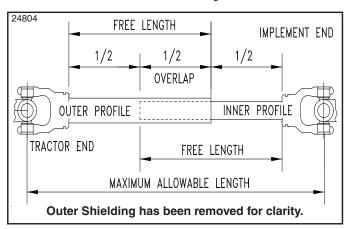
Shorten Driveline

Refer to Figure 1-6:

- Unhook driveline from tractor power take-off shaft and gearbox shaft.
- Raise 3-Point arms until mower gearbox shaft and tractor power take-off shaft are approximately level with each other.
- 3. Support mower deck at this height with support jacks or support blocks to keep power take-off and gearbox shafts level while shorting the driveline.
- 4. Place gear selector in park, set park brake, shut tractor off and remove switch key.
- 5. Pull driveline apart as shown in Figure 1-6.
- Attach outer driveline universal joint to tractor power take-off shaft and inner driveline universal joint to mower gearbox shaft. Pull on each driveline section to be sure universal joints are properly secured.



- Hold driveline sections parallel to each other. The inner and outer shields on each section should end approximately 1" short of reaching universal joint shield on the adjacent section (see "B" dimensions).
- 8. If driveline sections are too long, measure 1"
 ("B" dimension) back from universal joint shield and make a mark at this location on the inner and outer driveline shields.
- Cut-off inner driveline shield at measured mark ("X" dimension). Cut same amount off inner driveline profile ("X1" dimension).
- 10. Repeat cut-off procedure ("Y" & "Y1" dimensions) on the outer driveline section.
 - b. Remove all burrs and cuttings.



Check Maximum Allowable Length Figure 1-7

Check Maximum Allowable Length Refer to Figure 1-7:

Make sure driveline collapsible length is checked first. See "Check Driveline Collapsible Length" on page 14.

Driveline maximum allowable length, when fully extended, must have a minimum overlap of profile tubes by not less than 1/2 the free length with both inner and outer profile tubes being of equal length. Determine the maximum allowable length as follows:

- Unhook driveline from tractor and Grooming Mower.
 Pull outer and inner drivelines apart.
- 2. Measure and record "Free Length" of inner and outer profiles as shown in Figure 1-7.
- Move driveline halves together until profile tubes overlap by 1/2 the "Free Length". For future reference, measure and record "Maximum Allowable Length" as shown in Figure 1-7.

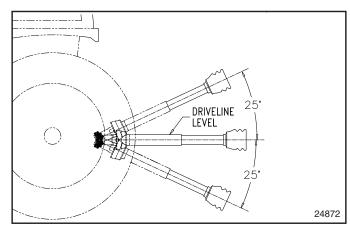
Record Maximum Allowable Length here:

- 4. Reattach inner driveline yoke to gearbox shaft and outer driveline yoke to tractor's power take-off shaft.
- 5. The driveline should now be moved back and forth to ensure that both ends are secured. Reattach any end that is loose.



To prevent serious injury or death:

Make certain driveline yokes are securely fastened at each end. A loose yoke can work free allowing the driveline to rotate uncontrollably causing implement damage and bodily injury or death to anyone nearby.



Maximum Driveline Movement During Operation Figure 1-8

Check Driveline Interference



WARNING

To prevent serious injury or death:

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 projectiles.

Refer to Figure 1-8:

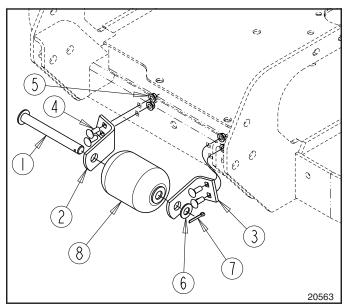
- 1. Start tractor and raise Grooming Mower just enough to remove support blocks.
- Return to the tractor and slowly engage tractor hydraulic 3-Point control lever to raise and lower mower while checking for sufficient drawbar clearance. Move drawbar ahead, aside, or remove if required.
- 3. Raise and lower implement to find maximum extended driveline length. Check to make certain driveline overall length does not exceed maximum recorded length in step 3 under "Check Maximum Allowable Length" on page 15.
- 4. If needed, set tractor 3-Point lift height to keep driveline from exceeding maximum allowable length.



Front Roller Assembly (FDR1648, FDR1660, and FDR1672)

Refer to Figure 2-1:

- Assemble brackets (#2) and (#3) to deck with carriage bolts (#4) and flange nuts (#5).
- Insert roller (#8) between brackets and install pin (#1) through brackets and roller. Secure with washer (#6) and cotter pin (#7).



Front Roller Assembly Figure 2-1

Cutting Blades

There are four blade choices to select from based upon soil condition, density of grass, and tractor horsepower. The appearance of the finish cut may vary between low lift and high lift blades. See your Land Pride dealer for blade availability.

Low Lift Blades

Land Pride's low lift blades are designed for mowing over sandy soil terrain where high suction lift is not crucial. Sand sucked into the blades accelerates blade wear more than normal. Low lift blades are recommended because they produce a lower suction keeping sand uplift and blade wear to a minimum.

Medium Lift Blades (Factory Standard)

Land Pride's medium lift blades are great when horsepower is a concern. They produce a medium suction to lift grass and require less horsepower than high lift blades.

High Lift Blades

Land Pride's high lift blades develop the greatest suction for lifting grass for that fresh clean cut look. However, they may require more horsepower especially when cutting tall dense grass. They are not recommended for sandy soil conditions.

Mulching Blades

Land Pride's mulching blades are designed to chop leaves and/or grass into smaller parts leaving your lawn looking fresher and cleaner than ever before.

Accessory Part Numbers

Land Pride Part Numbers & Descriptions

Part No. Part Description

Front Roller Assembly

315-516S FDR1648, FDR1660 & FDR1672

Low Lift Blade (3 blades required per mower)

890-323C FDR1648 890-204C FDR1660 890-200C FDR1672

Medium Lift Blade (3 blades required per mower)

890-325C FDR1648 890-375C FDR1660 890-318C FDR1672

High Lift Blade (3 blades required per mower)

890-219C FDR1648 890-171C FDR1660 890-172C FDR1672

Mulching Blade (3 blades required per mower)

890-700C FDR1648 890-702C FDR1660 890-698C FDR1672

See your Land Pride dealer for blade availability.



Operating Check

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 Grooming Mower. Therefore, it is absolutely essential that no one operates the mower unless they are age 16 or older and have read, fully understood, and are totally familiar with the Operator's Manual. Make sure the operator has paid particular attention to:

Important Safety Information, page 1

- Section 1: Assembly & Set-Up, page 10
- Section 2: Accessories & Set-up, page 16
- Section 4: Adjustments, page 21
- Section 3: Operating Instructions, page 17
- Section 5: Maintenance & Lubrication, page 22

Perform the following inspections before using your Grooming Mower.

Operating Checklist

| ~ | Check | Page | | | | |
|---|--|------|--|--|--|--|
| | Read and follow all safety information carefully. Refer to "Important Safety Information". | 1 | | | | |
| | Read and follow hook-up & preparation instructions. Refer to "Assembly & Set-up". | 10 | | | | |
| | Make sure all guards and shields are in place and in good working condition. | | | | | |
| | Make all necessary adjustments. Refer to section on "Adjustments". | 21 | | | | |
| | Read and follow all maintenance instructions. Refer to "Maintenance & Lubrication". | 22 | | | | |
| | Lubricate mower as required. Refer to "Ordering Replacement Parts". | 24. | | | | |
| | Check oil level in gearbox. Make certain all oil plugs are properly replaced. Refer to "Gearbox". | 26 | | | | |
| | Check mower initially and periodically for loose bolts and pins. Be sure all nuts and bolts are tight. Especially make sure mower blade bolts are tight. Refer to "Torque Values Chart for Common Bolt Sizes". | 30 | | | | |

Tractor Shut Down Procedure

It is essential that the tractor be shut down as noted below before making any inspections, maintenance and/or repairs to the tractor and/or mower.

- Park tractor on a level surface. Don't work under or around an implement parked on a steep incline.
- Disengage power take-off if operating.
- 3. Place tractor in park and set park brake, shut tractor off and remove switch key. Wait for power take-off to come to a complete stop before dismounting tractor.
- 4. Wear safety glasses to make inspections and perform maintenance.

Inspection Procedures



DANGER

To prevent serious injury or death:

- Do not engage power take-off while hooking-up or unhooking 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.



WARNING

To prevent serious injury or death:

- Select a safe ground speed when transporting. Never travel at a speed which does not allow adequate control of steering and stopping, and never exceed 20 mph (32.2 km/h) with attached equipment. Rough terrain requires a slower speed.
- Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before dismounting tractor
- 1. Park tractor and mower on a level surface.
- 2. Make sure tractor power take-off is disengaged and mower blades have come to a complete stop.
- 3. Inspect tractor safety equipment to make sure it is in good working condition.
- Carefully raise and lower implement to ensure drawbar, tires, and other equipment on the tractor do not contact the mower or driveline.
- With power take-off disengaged and driveline completely stopped, check mower blades for sharpness. See "Service Mowing Blades" on page 22.

The remaining inspections are made by engaging the power take-off to check for normal operation.



WARNING

To prevent serious injury or death:

Stop power take-off immediately if vibration occurs during start-up or thereafter. Follow all tractor shut down procedures before dismounting from tractor. Investigate cause. Make necessary repairs and adjustments before continuing.

- Start tractor, set throttle to an idle or slightly above idle and slowly engage power take-off. Initial start-up vibration is normal and should stop after a few revolutions. Stop power take-off rotation immediately if vibration continues.
- Once mower is running smoothly, increase tractor power take-off speed to the appropriate rpm. Stop power take-off rotation immediately if vibration occurs.
- 8. Investigate the cause of vibration. Make necessary corrections before continuing.



Transporting



WARNING

To prevent serious injury or death:

- When traveling on roadways, travel in such a way that other vehicles may pass you safely. Use LED 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.
- Select a safe ground speed when transporting. Never travel at a speed which does not allow adequate control of steering and stopping, and never exceed 20 mph (32.2 km/h) with attached equipment. Rough terrain requires a slower speed.

NOTE: Always disengage power take-off before raising mower to transport position.

- When raising mower to transport position, be sure driveline does not contact tractor or mower. Adjust and set tractor's 3-Point hitch lift height so that the power take-off shaft does not contact mower deck in the fully raised position.
- Be sure to reduce tractor ground speed when turning and leave enough clearance so the mower does not contact obstacles such as buildings, trees, or fences.
- Select a safe ground speed when transporting from one area to another.
- 4. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely. A slow moving vehicle sign should always be properly displayed when traveling on public roads or right-ofways.
- 5. Shift tractor to a lower gear when traveling over rough or hilly terrain.

Safety Information



DANGER

To prevent serious injury or death:

- Never place hands or feet under the deck or attempt to make adjustments to the mower with PTO engaged. Mower blades rotating at high speeds cannot be seen and are located close to the deck housing. Body extremities will be cut instantly.
- Clear area to be cut of debris and unforeseen removable objects before mowing. Mark any potential hazards that cannot be removed such as dirt mounds, tree stumps, posts, large rocks, holes, and drop-offs with a visible flag.
- Do not use mower blades for a fan. Mower blades are not properly designed or guarded for this use. Using mower blades as a fan can result in serious injury and/or death.
- Do not allow anyone near the tractor or implement while operating. Stop operation if bystanders are too close. They can be hit by flying projectiles, become entangled in the equipment, or ran over.
- Always disengage power take-off before lifting implement up, and never operate implement in the raised position.
 Objects can be thrown at high speeds toward people or animals
- 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.
- Do not engage power take-off while hooking-up or unhooking the driveline, or while someone is standing near the driveline. A person's body and/or clothing can become entangled in the driveline.
- Always disconnect driveline from the tractor and secure 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.
- All V-belt guards must be in good working condition and installed before power take-off is engaged. Never allow fingers, hands, or other body extremities to come near a moving V-belt or pulley. Doing so can result in server bodily injury or death.
- Make certain driveline yokes are securely fastened at each end. A loose yoke can work free allowing the driveline to rotate uncontrollably causing implement damage and bodily injury or death to anyone nearby.
- 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.



A

WARNING

To prevent serious injury or death:

- Never carry riders on the implement or tractor. Riders can
 obstruct the operator's view, interfere with control of the
 equipment, be pinched by moving components, become
 entangled in rotating components, be struck by objects, be
 thrown or fall from the equipment, etc.
- Allow only persons to operate this implement who have fully read and comprehended this manual, who have been properly trained in the safe operation of this implement, and who are age 16 or older. Serious injury or death can result from the inability to read, understand, and follow instructions provided in this manual.
- Do not operate and/or travel across inclines where tractor and/or implement can roll over. Consult your tractor's manual for acceptable inclines the tractor is capable of traveling across.
- Do not use implement as a man lift or work platform. 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.
- Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before dismounting tractor.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting implement back into service. Serious breakdowns can result in injury or death.
- Select a safe ground speed when transporting. Never travel at a speed which does not allow adequate control of steering and stopping, and never exceed 20 mph (32.2 km/h) with attached equipment. Rough terrain requires a slower speed.
- Stop power take-off immediately if vibration occurs during start-up or thereafter. Follow all tractor shut down procedures before dismounting from tractor. Investigate cause. Make necessary repairs and adjustments before continuing.
- Do not operate a broken or bent driveline. Such a driveline will break apart while rotating at high speeds and can cause serious injury or death. Always remove the implement from use until the damaged driveline can be repaired or replaced.

- Clear the area to be mowed of rocks, branches, and other foreign objects that might be picked up and thrown by the mower blades. Mark any potential hazards that can't be cleared.
- 2. Lower mower to ground. Set tractor throttle at idle. Engage power take-off to start blades rotating.
- 3. At first, begin mowing in a low gear and shift up until the desired speed is achieved always maintain 540 power take-off rpm regardless of gear selection. Mower blades will cut better at a faster blade speed than at reduced throttle.
- 4. After mowing the first 50 feet, stop and check to see that the mower is adjusted properly.
- 5. **Do not** make sharp turns or attempt to back up while mower is on the ground.
- Do not engage power take-off with mower in the fully raised position. Do not engage or disengage power take-off at full throttle.
- Grass is best cut when it is dry. Mowing wet grass can cause plugging resulting in grass clumps behind the mower.
- Grass should be moved frequently as shorter clippings deteriorate faster.
- If mowing extremely tall grass, it is best to raise cutting height and mow the area, then lower cutting height and mow a second time at the desired height.
- Periodically check for foreign objects wrapped around the mower blades. Remove foreign objects only after following "Tractor Shut Down Procedure" on page 17.
- 11. Frequently inspect the mower for loose bolts and nuts. Tighten all loose bolts and nuts as indicated in the "Torque Values Chart" page 30.



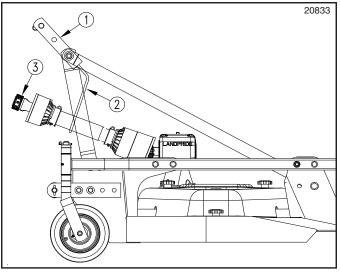
Unhooking the Mower

The following steps should be done when unhooking the Grooming Mower from the tractor.

- Park on a level solid surface.
- 2. Shut tractor engine off and engage parking brake.
- 3. Lower mower to the ground and chock front and back side of wheels to keep mower from moving.
- Follow all tractor shut down procedures outlined on page 17 before dismounting from tractor.

Refer to Figure 3-1:

- At the tractor's power take-off shaft, pull back on driveline pull collar (#3) and hold while removing driveline yoke from tractor power take-off shaft.
- 6. Unhook 3-Point hitch from tractor. Reinstall hitch pins, linchpins, and hairpin cotters in cutter hitch.
- 7. Rotate upper hitch (#1) up and store driveline (#3) in driveline hanger (#2) to keep dirt out of its u-joints.
- 8. See "Long-Term Storage" on page 24 if mower is not going to be used for a long time.



Driveline Storage Figure 3-1

General Operating Instructions

By now you should have thoroughly read your Grooming Mower Operator's Manual, properly attached your Land Pride FDR16 to your tractor, and reviewed the operating checklist. You should have also inspected the area where you intend to mow and cleared it of safety hazards and foreign objects. If you have not yet completed all of these functions, it is an absolute must that you do so now before proceeding.

Now that you are properly briefed and prepared, its time to start the tractor and move to your starting point. When transporting to your mowing site, select a safe ground transport speed. When traveling on roadways, transport in such a manner that faster moving vehicles can easily see you and pass you safely. When travelling over rough and hilly terrain, reduce your speed and avoid quick or sharp steering corrections. Take extra care to ensure that the mower doesn't come into contact with obstacles such as trees, buildings, or fences.

When you have arrived at the mowing site, start the tractor, raise the deck to make sure that everything is properly attached and that the driveline is not in a bind or in contact with the mounting frame. Also make sure the tractor tires aren't in contact with the deck. With the deck still in the raised position, proceed to your starting point and lower your deck to the ground in mowing position. Reduce your tractor engine rpm to idle and engage power take-off. Gradually raise tractor engine rpm to achieve the

540-rpm power take-off speed. Now begin mowing at a ground speed of approximately 4-5 mph.

The proper mowing speed will ultimately be determined by ground conditions, desired finish, common sense, and good safe mowing practices by the operator. Grass is best cut when it is dry. Mowing in wet grass can cause plugging resulting in grass clumps behind the mower. Grass should be mowed frequently as shorter clippings deteriorate faster. When mowing in tall grass it is best to raise the cutting height, mow the area, then lower the cutting height, and mow a second time.

After mowing approximately 50 ft., stop the tractor, disengage the power take-off, set the brake, turn off the engine, remove the key, and dismount the tractor to see if the mower is adjusted properly. If you need to dismount the tractor on a hill or incline to inspect, adjust, or park the mower for any reason, place wheel chocks under the rear tires for added safety. Once you have made necessary adjustments, you may continue mowing. Do not engage the power take-off at high engine rpm and avoid making sharp turns if at all possible. If some one approaches while you are mowing, disengage the power take-off and stop the tractor.

With a little practice and experience you will become very good at operating your Land Pride FDR16 Rear Discharge Grooming Mower. Always remember that there is no substitute for proper maintenance and good safe operating practices. See "Features and Benefits" section page 28 or "Product Specifications" on page 27 for additional information and performance enhancing options.

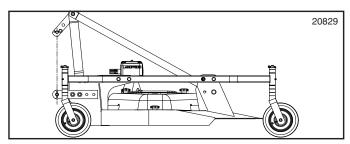


Leveling the Mower

Refer to Figure 4-1:

NOTE: Tractor & mower should be on level ground.

- 1. Set lower hitches and upper floating hitch, as shown.
- Start tractor and raise mower while watching tractor draw bar (if not removed) to make sure it does not interfere with driveline and mower.
- 3. Slowly lower mower until gauge wheels touch the ground and the lower mower 3-Point hitch bars are parallel to the ground in floating position. Set tractor 3-Point stop.
- 4. Set park brake, turn off tractor, and remove key.
- 5. Rotate blades parallel to direction of travel.
- 6. Measure clearance from the blade cutting edge to the ground at the front and rear of the mower. These two measurements should be equal or the blade at the front should not be more than 1/2" lower than the blade at the rear. The rear blade should not be lower than the front blade.



3-Point Hitch Figure 4-1

Cutting Height Adjustment



WARNING

To prevent serious injury or death:

- Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before allowing anyone including the operator to hook-up and unhook implement.
- Wear a pair of gloves when checking cutting height. Avoid direct contact with cutting edge of blade.
- Using the tractor, raise mower off the ground, and support under it with secure blocking to keep the mower from drifting down during maintenance.
- 2. Holding wheel and yoke assembly up, remove quicklock pin from top of gauge wheel spindle.
- Position full length spacers and half spacer as required. All spacers on top of spindle tube allows for approximately 3/4" cutting height. Adjustments range from 3/4" to a maximum of 5-1/4" in 1/2" increments. Refer to "Leveling the Mower" on this page.

3-Point Hitch Adjustments

Refer to Figure 4-1:

The 3-Point hitch system on this mower has been designed for front to back flotation when mowing on uneven terrain. Adjust the tractor's top link to place the upper hitch pin vertically above the lower hitch pins as shown in.

Belt Tension



WARNING

To prevent serious injury or death:

Excessive belt tension can lead to premature damage/ breakage of belt and drive component and is a safety hazard to operator and bystanders.



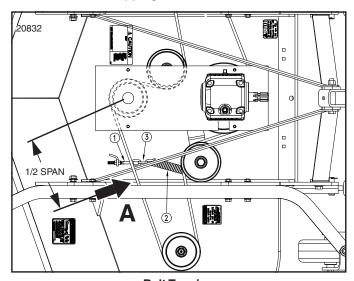
CAUTION

To prevent serious injury:

The Belt drive system is under spring tension. Use care when servicing the spring tensioned system to avoid bodily harm.

Refer to Figure 4-2:

- To check tension apply force at arrow A with a tension tester and deflect the belt 1/4". The force required to get this deflection should range from 7 to 10 lbs.
- 2. To adjust belt tension, adjust eyebolt (#1), as necessary. This adjustment will increase or decrease the tension on spring (#2). If more tension is needed than the eyebolt can adjust take the tension spring (#2) to next link in the tension chain (#3).
- 3. Excessive tension on the belt may lead to premature failure of belt and drive components. Excessive tension on the belt may also lead to a safety hazard to the operator or bystanders. Not enough tension on the belt may lead to premature failure of the belt due to excessive slipping.



Belt Tension Figure 4-2



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 bolts and pins after using unit for several hours and on a regular basis thereafter to ensure they are tight and secured. Lubricate components on schedule. Replace worn, damaged or illegible safety labels by obtaining new labels from your Land Pride Dealer.



DANGER

To prevent serious injury or death:

- Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to hydraulics is off.
- All V-belt guards must be in good working condition and installed before power take-off is engaged. Never allow fingers, hands, or other body extremities to come near a moving V-belt or pulley. Doing so can result in server bodily injury or death.



WARNING

To prevent serious injury or death:

- Allow only persons to perform maintenance on this implement who have been properly trained in its safe operation.
- Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before servicing, adjusting, cleaning, or maintaining this implement.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting implement back into service. Serious breakdowns can result in injury or death.

• Do not alter implement or replace parts on the implement with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the implement. Replace parts only with genuine OEM parts.

Service Mowing Blades Blade Inspection

Refer to Figure 5-1:



DANGER

To prevent serious injury or death:

Bent, Deformed or Split Blades should be removed from unit and discarded. Never weld a broken or cracked blade. DO NOT attempt to straighten or reuse such blades. ALWAYS replace with a new OEM blade to assure safety.

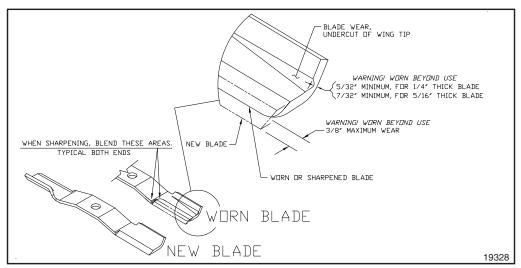


WARNING

To prevent serious injury or death:

Do not attempt to modify a blade, such as straightening, hard surfacing, heat or cold treating, or by any other method. Never weld a broken or cracked blade. ALWAYS replace blades with new OEM blades to assure safety.

- 1. Check blades for wear. Blade performance will be reduced as blades wear and are resharpened.
- Check blades to see if they are bent, deformed, or split. **DO NOT** attempt to straighten or weld blades for reuse. They should be removed and discarded.



Inspection of Blades & Sharpening Figure 5-1



Blade Sharpening or Replacement



WARNING

To prevent serious injury or death:

Always wear eye protection and gloves while inspecting, removing, sharpening, and replacing mower blades.

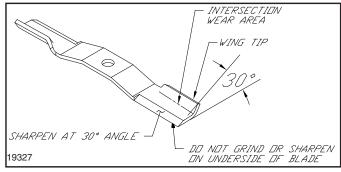
IMPORTANT: Replace mower blades in pairs with genuine Land Pride blades only. Not replacing both blades will result in an out-of-balance condition.

 If the blade cutting edge is dull or nicked, it should be replaced or sharpened. Remove blades by grasping the end of blade using a rag or a thick, padded glove, while loosening and removing the blade mounting bolt/bolts.

Refer to Figure 5-2:

NOTE: Care should be taken in order not to remove any more material than necessary to sharpen blade.

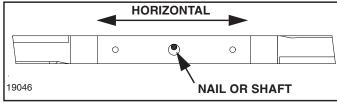
 Clean blade, blade washer, and mounting surface of all debris before replacing or sharpening. Grind cutting edge at the same bevel as the original. Sharpen only the top of the cutting edge to maintain sharpness.



Blade Sharpening Figure 5-2

Refer to Figure 5-3:

3. Check blade balance by positioning the blade horizontally on a nail or shaft through the center hole. If either end of the blade rotates downward, grind (remove) metal on that end until the blade will balance. The blade is properly balanced when neither end drops. Balance of a blade is generally maintained by removing an equal amount of material from each end of the blade when sharpening.



Blade Balancing Figure 5-3

IMPORTANT: Always install blade with cutting edge facing direction of rotation and wing tips pointing up.

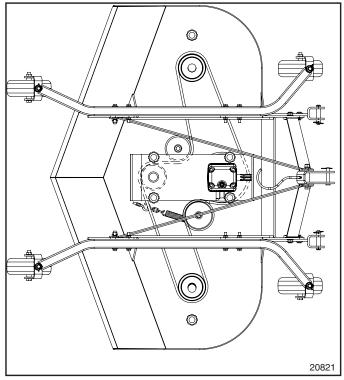
 Mount the blade with the wing tips pointing up towards bottom of deck. Reinstall blade, blade washer, and bolt. Care should be taken when installing blade bolt not to get it cross threaded. Torque bolt to 75 ft-lbs.

V-Belt Installation

Refer to Figure 5-4:

These illustrations are also on the labels located on the top of the mower decks.

- 1. Remove the right-hand and the left-hand belt covers.
- 2. Disengage belt tension by loosening the eyebolt (#1) and removing the spring (#2) from the tension-chain link (#3).
- 3. With tension relieved from belt remove old belt from pulleys.
- 4. To install a new belt be sure the belt is positioned in all the pulley grooves. Engage belt tension by assembling the tension spring back on the eyebolt and tightening the eyebolt to apply tension to new belt. Check the belt tension, refer to "Belt Tension" on page 21.
- Reinstall all belt covers and secure in place with hardware.



V-Belt Installation Figure 5-4



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.



WARNING

To prevent serious injury or death:

Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before servicing, adjusting, cleaning, or maintaining this implement.

- Clean off any dirt or grease that may have accumulated on the deck and moving parts. Scrape off compacted dirt from the bottom of the deck and then wash the surface thoroughly with a garden hose. A coating of oil may also be applied to the lower deck area to minimize oxidation.
- Check blades and blade bolts for wear and replace if necessary. See "Service Mowing Blades" on page 22.
- Inspect mower for loose, damaged, or worn parts and adjust or replace as needed.
- 4. Repaint parts where paint is worn or scratched to prevent rust. Ask your Land Pride dealer for aerosol touch-up paint. Paint is also available in touch-up bottles with brush, quarts, and gallon sizes by adding TU, QT, or GL to the end of the Aerosol part number.

| 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 | | | | | |

- Replace all damaged or missing decals.
- 6. Lubricate as noted in the "Ordering Replacement Parts" portion of this section starting on page 24.
- Store mower on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer mower life.
- 8. Follow all unhooking instructions on page 20 when disconnecting tractor from mower.

Ordering Replacement Parts

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

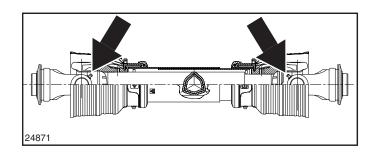
When ordering an optional color, the suffix number corresponding to the color must be added at the end of the part number. Parts ordered without the suffix number will be supplied in factory standard colors.

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



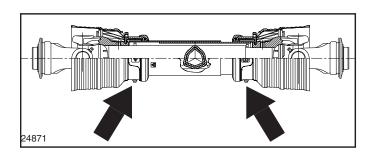




Driveline Shaft U-Joints

Type of Lubrication: Multi-purpose Grease

Quantity - 4 to 8 Pumps

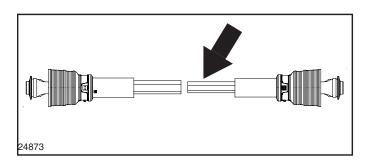




Inner Tube Bearings

Type of Lubrication: Multi-purpose Grease

Quantity - As Required



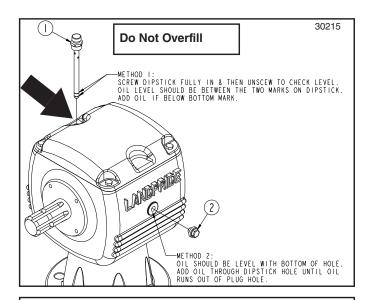


Driveline Profiles

Type of Lubrication: Multi-purpose Grease

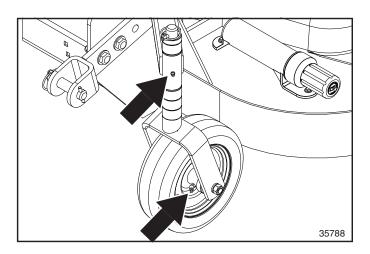
Quantity - Clean & coat inner profile tube of driveline with a light film of grease and then reassemble.

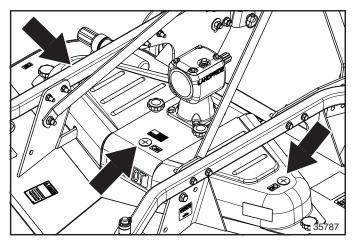




IMPORTANT: This implement is shipped with a vented dipstick packaged in the Operator's Manual bag and should have been installed in the gearbox by your dealer. Please consult your dealer if vented dipstick was not included.

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







Gearbox

IMPORTANT: Do not overfill gearbox with oil. Oil will expand when hot. Make sure implement is level and oil is cool before checking oil level.

Method 1: With a wrench, unscrew top vented dipstick (#1). Wipe oil from dipstick and screw dipstick in without tightening. Unscrew dipstick and check oil on dipstick. If below bottom level mark, add recommended gear lube through dipstick hole until oil reaches top mark on dipstick. Reinstall vented dipstick and tighten.

Method 2: Remove side oil plug (#2). If oil is below bottom of plug hole, add recommended gear lube through top dipstick hole until oil flows out of side plug hole. Reinstall and tighten side oil plug (#2) and vented dipstick (#1).

Type of Lubrication: 80-90W EP Gear Lube

Quantity = Fill until oil reaches top mark on dipstick or begins to flow out side plug hole in gearbox.



Wheel Support Busings & Wheel Bearings

Type of Lubrication: Multi-purpose Grease



Bearing in Blade Spindle Hubs

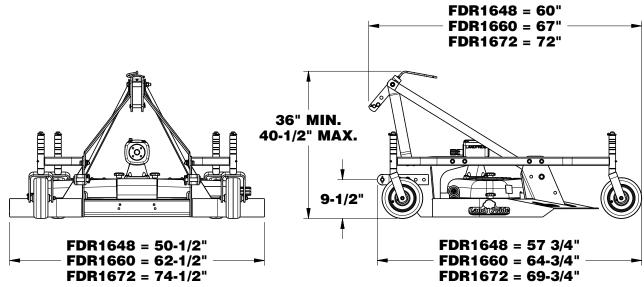
Type of Lubrication: Multi-purpose Grease

11/6/18



FDR16 Series Flat Deck Grooming Mowers

| List | Specifications & Capacities | | | | | | |
|----------------------------------|---|---|---|--|--|--|--|
| Model Numbers | FDR1648 | FDR1660 | FDR1672 | | | | |
| Maximum Horsepower - Engine | | 40 horsepower | | | | | |
| Cutting Width | 48" | 60" | 72" | | | | |
| Overall Width | 50 1/2" | 62 1/2" | 74 1/2" | | | | |
| Height | 36" | 36" | 36" | | | | |
| Length | 60" | 67" | 72" | | | | |
| Weight | 486# | 577# | 619# | | | | |
| Cutting Height (1/2" increments) | | 3/4" - 5 1/4" | | | | | |
| Deck Material Thickness | | 3/16" | | | | | |
| Blade Tip Speed | 16,203 FPM | 18,195 FPM | 18,130 FPM | | | | |
| Blade Construction -3 ea. | 1/4" x 2 1/2" x 16 7/8" Heat Treated Alloy Steel | 1/4" x 2 1/2" x 21" Heat Treated Alloy Steel | 1/4" x 2 1/2" x 25" Heat Treated Alloy Steel | | | | |
| Blade Options | Standard Blades: Medium Lift Optional Blades: Low Lift, High Lift & Mulching | | | | | | |
| Blade Overlap | | 1 1/4" | | | | | |
| Blade Spindles | 1 3/8 | dia., Cast Iron Greasable | Hubs | | | | |
| Discharge | | Rear | | | | | |
| Hitch | | Category I | | | | | |
| Lower Hitch | Flo | pating Clevis with Plated Pi | ins | | | | |
| Top Link | | Floating Clevis | | | | | |
| Castered Gauge Wheels | | 3 1/4" x 10" Solid Rubber | | | | | |
| Caster Wheel Spindle | 1" | Diameter with Nylon Bushi | ing | | | | |
| Drive Train | 540 rpm power take-off Cast Iron Housing Gearbox With Beveled Gears, 1:2.83 Ratio Spring Loaded Single V-Belt | | | | | | |
| Gearbox Oil Capacity & Type | 2.5 Pints of 80-90W EP Gear Lube | | | | | | |
| Driveline | Heavy-Duty w/quick coupler, ASAE Cat 2 | | | | | | |
| Front Roller | Optional | | | | | | |
| Quick Hitch Compatible | No | Yes | Yes Yes | | | | |



2696



FDR16 Series Grooming Mowers

| Features | Benefits |
|--|---|
| 3 Cutting widths | 48", 60", 72" Able to adapt to various size needs. |
| Gearbox Horsepower rating | 15 - 40 horsepower to cover a wide array of tractors. |
| Rear discharge | The wide, even dispersal of grass leaves a fine thin layer directly behind the mower, vs. a possible windrow to the side. Keeps grass from blowing in unwanted areas. Easier to mow around objects. |
| Deflectors | Built-in to throw material down, as well as forcing thrown objects down. |
| Clevis type lower hitch points | Allows for easy hook-up by being able to remove pins and back into clevises. |
| Floating 3-Point | Top and bottom hitch points float up and down which allows the mower to float over uneven terrain. |
| Roll formed front on deck. | 3/16" roll formed front deck edging for greater strength and impact resistance. |
| Frame-over-deck design | Frames takes stress out of deck by supporting it. |
| 3/16" Deck thickness | Heavy deck material to aid in overall strength and longevity. Reinforced spindle mounts. |
| Lower hitch points adjust in and out | Accommodates many tractor configurations by adjusting in and out. |
| Hard rubber tires | Hard rubber tires are sandwiched between the rim halves, bolted in and can't go flat. Roller bearings allow for a long life. |
| Heavy-duty Gauge wheel arms | 1/4" Gauge wheel arms increases strength. |
| Non-aligned gauge wheels | Rear wheels don't track behind the front wheels to reduce laying grass over. |
| High Blade Tip Speed | 48" = 16,203 fpm 60" = 18,195 fpm For cleaner cutting and better dispersion of clippings. 72" = 18,130 fpm |
| Choices of Blades | Low, medium, high-lift, or mulching blades are available to match customer needs and specific applications. |
| Blade overlap | 1" blade overlap assures no skipping in tight turns. |
| Heavy-duty roller bearings & 1 3/8" machined spindles | Roller bearings for smooth running and quiet operation, 1 3/8" machined spindles for durability, balanced performance, and accuracy. Cast iron housings for added protection and durability. |
| Top greasing spindles | Assures top bearing gets grease. No shields to remove. |
| Single B-section Kevlar belt | Simple one belt design. Kevlar material adds additional strength. |
| Vacuum formed ABS belt guards | No scratching, no rattling. |
| Spring loaded adjustable idler | Allows for constant and proper tension on belt. Better than adjusting gearbox for belt tension. |
| Top Hitch | Top hitch has two hook-up points which allows greater lifting leverage for smaller tractors. |
| 5 Year Limited Gearbox warranty | Shows our confidence in the gearbox integrity. 5 year Parts & Labor with S/N 329841+. |
| Driveline hanger | For ease in hookup and storage of driveline. Keeps driveline off ground. |
| Quick Hitch Compatible | Compatible with Land Pride Quick Hitch for easy attachment and removal increases productivity. (Except 48") |



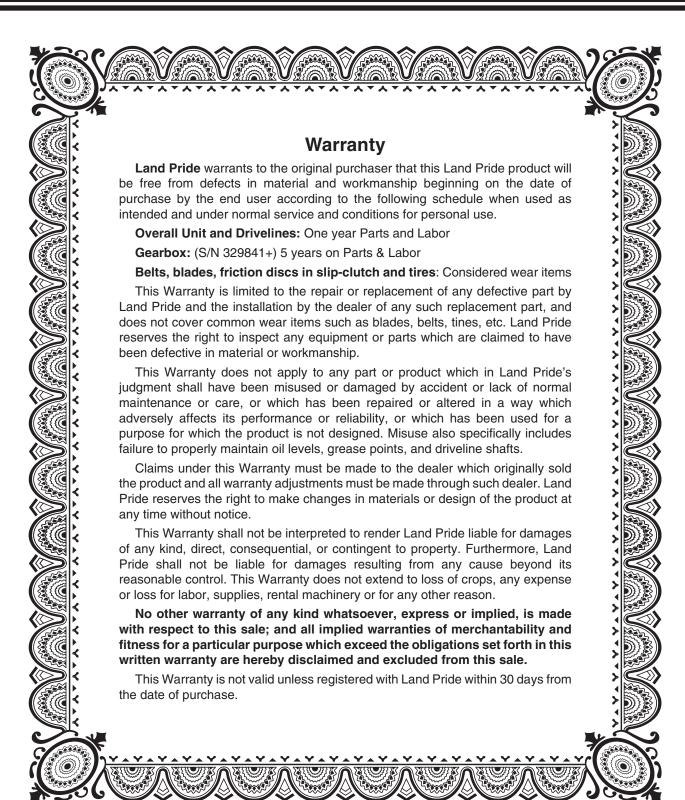
Troubleshooting Chart

| Problem | Solution | | | | | | |
|--|--|--|--|--|--|--|--|
| Rear discharge area plugged | Check installation of belt. | | | | | | |
| | Wait until grass dries. | | | | | | |
| | Raise cutting height of mower and cut grass twice. | | | | | | |
| | Mow at full throttle (540 power take-off rpm), check power take-off speed and tractor engine. | | | | | | |
| | Shift transmission to a lower gear. | | | | | | |
| A DANGER To prevent serious injury or death: | | | | | | | |
| Do not try to clean rear discharge area w | then mower is running. Bodily harm may occur! | | | | | | |
| Belt slipping | Unplug and clean mower deck. | | | | | | |
| | Remove belt guard shields and clean sheaves. | | | | | | |
| | Tighten spring take-up eyebolt. | | | | | | |
| | Replace belt. | | | | | | |
| Patches of uncut grass | Mow at full throttle (540 power take-off rpm), check power take-off speed, and tractor engine. | | | | | | |
| | Shift transmission to a lower gear. | | | | | | |
| | Tighten spring take-up eyebolt. | | | | | | |
| | Sharpen and balance or replace blade. | | | | | | |
| Excessive vibration | Replace blades. | | | | | | |
| | Replace drive belt. | | | | | | |
| | Replace pulleys or align. | | | | | | |
| | Remove belt guard shields & clean debris from belt area & sheaves. | | | | | | |
| Gearbox noisy | Check lubricant level. | | | | | | |
| Blades scalping grass | Raise cutting height by adjusting wheels. | | | | | | |
| | Change mowing pattern. | | | | | | |
| | Reduce speed turns. | | | | | | |
| Uneven cut | Shift to a lower gear. | | | | | | |
| | Level mower. | | | | | | |
| | Sharpen blades & balance or replace. | | | | | | |
| Tractor loaded down by mower | Mow at full throttle (540 power take-off rpm). | | | | | | |
| - | Shift to a lower gear. | | | | | | |
| | Clean mower. | | | | | | |
| | T = 2.0 | | | | | | |



| Torque Values Chart for Common Bolt Sizes | | | | | | | | | | | | | |
|---|---------|-------------------------------|------------|--------------|----------|----------|------------------------------|--------------------------|-----------|-----------|--|------------|--------|
| | | Bolt | Head Id | dentific | ation | | | Bolt Head Identification | | | | | |
| | | | | | ヘ | | \ | $\overline{}$ | | | \[\int_{1}^{\text{\tin}\text{\tin}\exitt{\text{\ti}}\titt{\texi}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}}\\ \text{\text{\text{\text{\text{\text{\text{\text{\tex{\tex | | |
| Bolt Size | | / | 7 | \checkmark | ∇ | フ | Bolt Size | \\^5 | .8 | \° | 8.8 | 10 |).9 |
| (inches) | Gra | de 2 | Gra | de 5 | | | (Metric) | Class 5.8 | | Class 8.8 | | Class 10.9 | |
| in-tpi ¹ | N·m² | ft-lb ³ | N⋅m | ft-lb | N · m | ft-lb | mm x pitch ⁴ | N⋅m | ft-lb | N⋅m | ft-lb | N · m | ft-lb |
| 1/4" - 20 | 7.4 | 5.6 | 11 | 8 | 16 | 12 | M 5 X 0.8 | 4 | 3 | 6 | 5 | 9 | 7 |
| 1/4" - 28 | 8.5 | 6 | 13 | 10 | 18 | 14 | M 6 X 1 | 7 | 5 | 11 | 8 | 15 | 11 |
| 5/16" - 18 | 15 | 11 | 24 | 17 | 33 | 25 | M 8 X 1.25 | 17 | 12 | 26 | 19 | 36 | 27 |
| 5/16" - 24 | 17 | 13 | 26 | 19 | 37 | 27 | M 8 X 1 | 18 | 13 | 28 | 21 | 39 | 29 |
| 3/8" - 16 | 27 | 20 | 42 | 31 | 59 | 44 | M10 X 1.5 | 33 | 24 | 52 | 39 | 72 | 53 |
| 3/8" - 24 | 31 | 22 | 47 | 35 | 67 | 49 | M10 X 0.75 | 39 | 29 | 61 | 45 | 85 | 62 |
| 7/16" - 14 | 43 | 32 | 67 | 49 | 95 | 70 | M12 X 1.75 | 58 | 42 | 91 | 67 | 125 | 93 |
| 7/16" - 20 | 49 | 36 | 75 | 55 | 105 | 78 | M12 X 1.5 | 60 | 44 | 95 | 70 | 130 | 97 |
| 1/2" - 13 | 66 | 49 | 105 | 76 | 145 | 105 | M12 X 1 | 90 | 66 | 105 | 77 | 145 | 105 |
| 1/2" - 20 | 75 | 55 | 115 | 85 | 165 | 120 | M14 X 2 | 92 | 68 | 145 | 105 | 200 | 150 |
| 9/16" - 12 | 95 | 70 | 150 | 110 | 210 | 155 | M14 X 1.5 | 99 | 73 | 155 | 115 | 215 | 160 |
| 9/16" - 18 | 105 | 79 | 165 | 120 | 235 | 170 | M16 X 2 | 145 | 105 | 225 | 165 | 315 | 230 |
| 5/8" - 11 | 130 | 97 | 205 | 150 | 285 | 210 | M16 X 1.5 | 155 | 115 | 240 | 180 | 335 | 245 |
| 5/8" - 18 | 150 | 110 | 230 | 170 | 325 | 240 | M18 X 2.5 | 195 | 145 | 310 | 230 | 405 | 300 |
| 3/4" - 10 | 235 | 170 | 360 | 265 | 510 | 375 | M18 X 1.5 | 220 | 165 | 350 | 260 | 485 | 355 |
| 3/4" - 16 | 260 | 190 | 405 | 295 | 570 | 420 | M20 X 2.5 | 280 | 205 | 440 | 325 | 610 | 450 |
| 7/8" - 9 | 225 | 165 | 585 | 430 | 820 | 605 | M20 X 1.5 | 310 | 230 | 650 | 480 | 900 | 665 |
| 7/8" - 14 | 250 | 185 | 640 | 475 | 905 | 670 | M24 X 3 | 480 | 355 | 760 | 560 | 1050 | 780 |
| 1" - 8 | 340 | 250 | 875 | 645 | 1230 | 910 | M24 X 2 | 525 | 390 | 830 | 610 | 1150 | 845 |
| 1" - 12 | 370 | 275 | 955 | 705 | 1350 | 995 | M30 X 3.5 | 960 | 705 | 1510 | 1120 | 2100 | 1550 |
| 1-1/8" - 7 | 480 | 355 | 1080 | 795 | 1750 | 1290 | M30 X 2 | 1060 | 785 | 1680 | 1240 | 2320 | 1710 |
| 1-1/8" - 12 | 540 | 395 | 1210 | 890 | 1960 | 1440 | M36 X 3.5 | 1730 | 1270 | 2650 | 1950 | 3660 | 2700 |
| 1-1/4" - 7 | 680 | 500 | 1520 | 1120 | 2460 | 1820 | M36 X 2 | 1880 | 1380 | 2960 | 2190 | 4100 | 3220 |
| 1-1/4" - 12 | 750 | 555 | 1680 | 1240 | 2730 | 2010 | ¹ in-tpi = nomir | nal threa | d diame | ter in in | ches-thr | eads pe | r inch |
| 1-3/8" - 6 | 890 | 655 | 1990 | 1470 | 3230 | 2380 | ² N⋅ m = newto | n-meters | 3 | | | | |
| 1-3/8" - 12 | 1010 | 745 | 2270 | 1670 | 3680 | 2710 | ³ ft-lb= foot por | unds | | | | | |
| 1-1/2" - 6 | 1180 | 870 | 2640 | 1950 | 4290 | 3160 | 4 mm x pitch = | nominal | thread | diamete | r in milli | meters x | thread |
| 1-1/2" - 12 | 1330 | 980 2970 2190 4820 3560 pitch | | | | | | | | | | | |
| Torque toleran | ce + 0% | , -15% c | of torquir | ng value | s. Unles | s otherw | ise specified use | torque | values li | sted abo | ove. | | |
| | | | | | Additi | onal T | orque Value | S | | | | | |
| Blade Bolt 1/2"-20 UNF Gr 8 Torque bolt to 75 ft-lbs. | | | | | | | | | | | | | |





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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