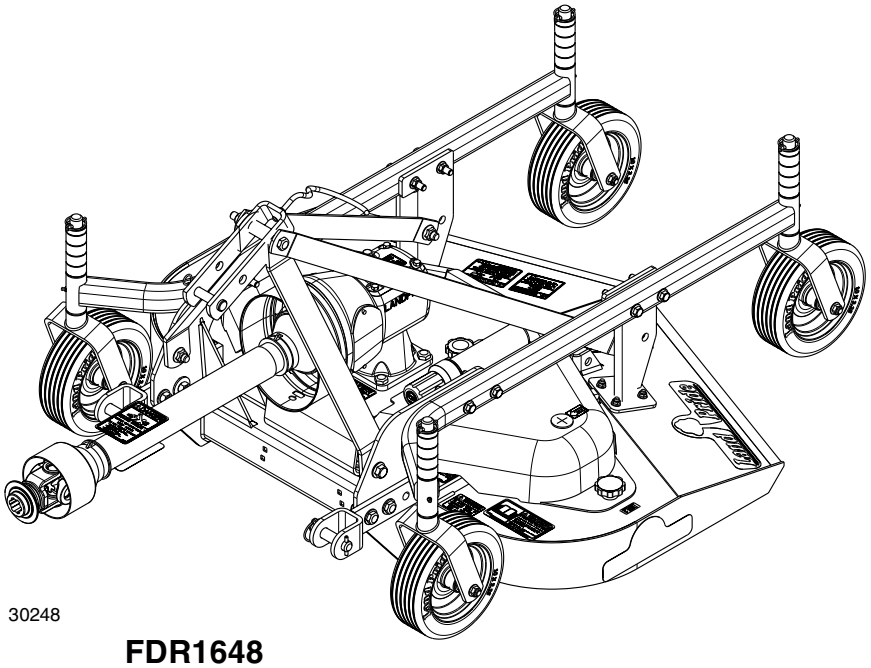
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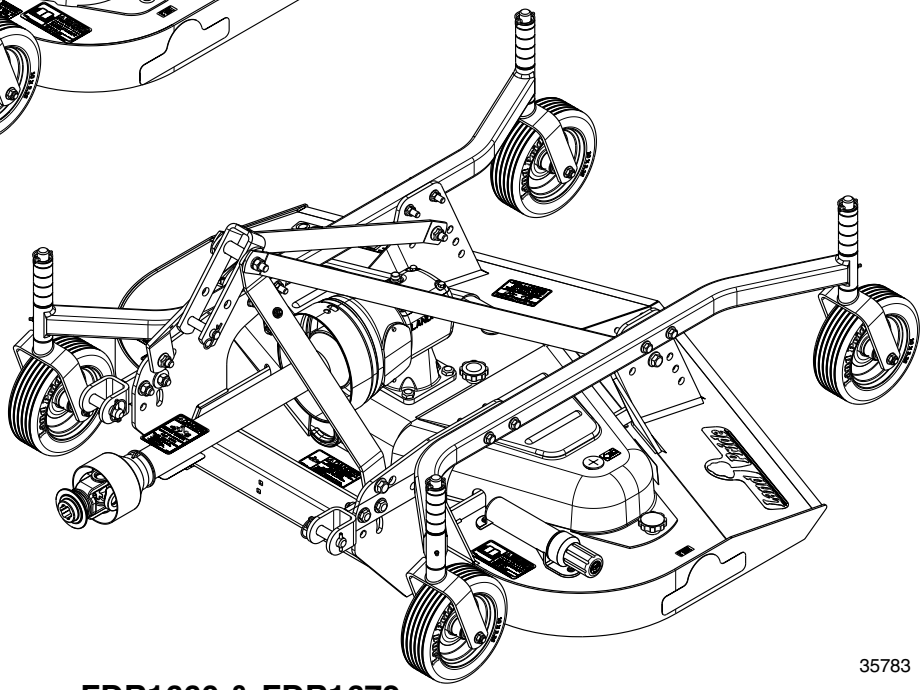
Rear Discharge Grooming Mowers

FDR1648, FDR1660 & FDR1672



30248

FDR1648



35783

FDR1660 & FDR1672

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.

Printed 3/6/23

Machine Identification

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

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

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

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

California Proposition 65

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

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Printed in the United States of America.

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

Dealer QR Locator

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

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

Safety at All Times

Careful operation is your best assurance against an accident.

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

- ▲ Thoroughly read and understand the "Safety Label" section. Read all instructions noted on them.
- ▲ Do not operate the equipment while under the influence of drugs or alcohol as they impair 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 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 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 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.

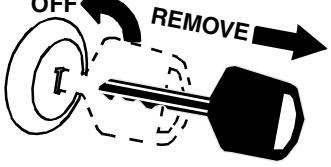
Safety Precautions for Children

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

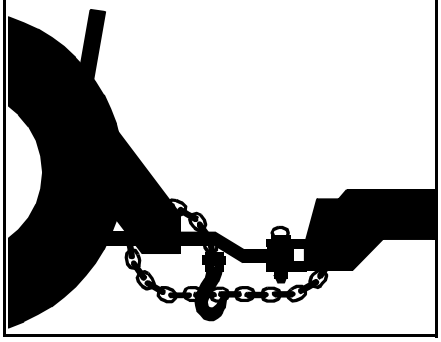
- ▲ If engaged, disengage power take-off.
- ▲ Park on solid, level ground and lower implement to ground or onto support blocks.
- ▲ Put tractor in park or set park brake.
- ▲ Turn off engine and remove ignition key to prevent unauthorized starting.
- ▲ Relieve all hydraulic pressure to auxiliary hydraulic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

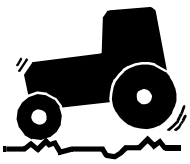


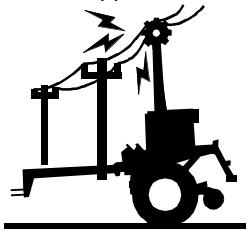
Transport Safely

- ▲ 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 unexpectedly. 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 skid steer on the “uphill” side.
- ▲ Engage park brake when stopped on an incline.
- ▲ Maximum transport speed for an attached equipment 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.
- ▲ As a guideline, use the following maximum speed weight ratios for attached equipment:

  20 mph (32 km/h) when weight of attached equipment is less than or equal to the weight of machine towing the equipment.

  10 mph (16 km/h) 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.









Tire Safety



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

Practice Safe Maintenance

- ▲ Understand procedure before doing work. Refer to the Operator’s Manual for additional information.
- ▲ Work on a level surface in a clean dry area that is well-lit.
- ▲ Lower implement to the ground and follow all shutdown procedures before leaving the operator’s seat to perform maintenance.
- ▲ Do not work under any hydraulically supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- ▲ Use properly grounded electrical outlets and tools.
- ▲ Use correct tools and equipment for the job that are in good condition.
- ▲ Allow equipment to cool before working on it.
- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement.
- ▲ Inspect all parts. Make certain parts are in good condition & installed properly.
- ▲ Replace parts on this implement with genuine Land Pride parts only. Do not alter this implement in a way which will adversely affect its performance.
- ▲ Do not grease or oil implement while it is in operation.
- ▲ Remove buildup of grease, oil, or debris.
- ▲ Always make sure any material and waste products from the repair and maintenance of the implement are properly collected and disposed.
- ▲ Remove all tools and unused parts from equipment before operation.
- ▲ Do not weld or torch on galvanized metal as it will release toxic fumes.





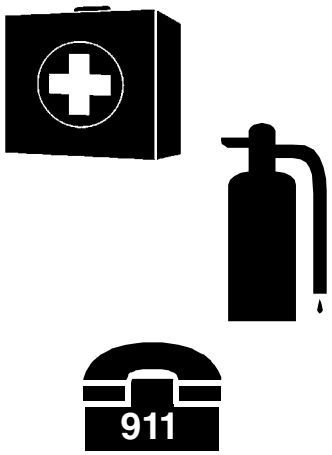




Listed below are common practices that may or may not be applicable to the products described in this manual.

Prepare for Emergencies

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



Wear Personal Protective Equipment (PPE)

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



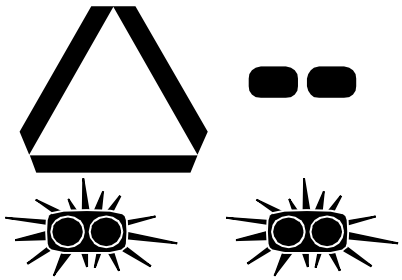
Avoid High Pressure Fluids



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

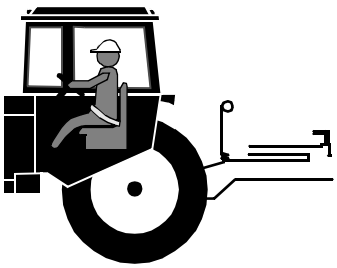
Use Safety Lights and Devices

- ▲ A Slow moving power machine can create a hazard when driven on public roads. They are difficult to see, especially at night. Use the Slow Moving Vehicle (SMV) sign when on public roads.
- ▲ Flashing warning lights and turn signals are recommended whenever driving on public roads.



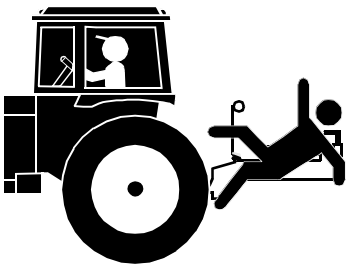
Use Seat Belt and ROPS

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



Keep Riders Off Machinery

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

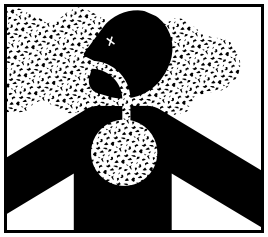


Listed below are common practices that may or may not be applicable to the products described in this manual.

Avoid crystalline Silica (quartz) Dust

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

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



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

Handle Chemicals Properly

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



Dig Safe - Avoid Underground Utilities

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

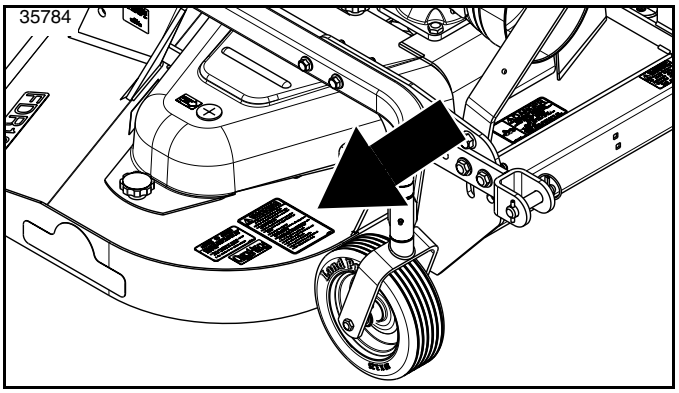


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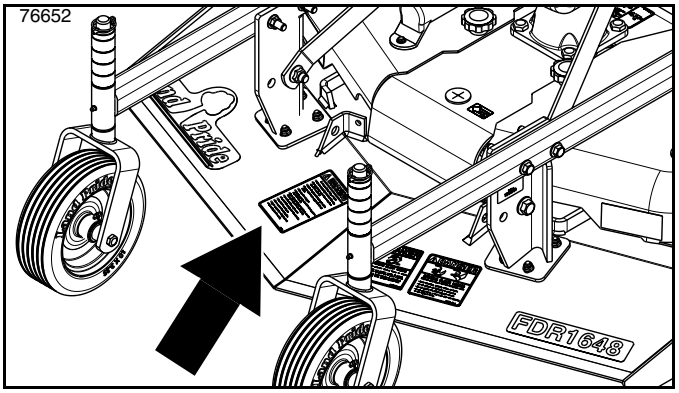
Safety Labels

Your 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.

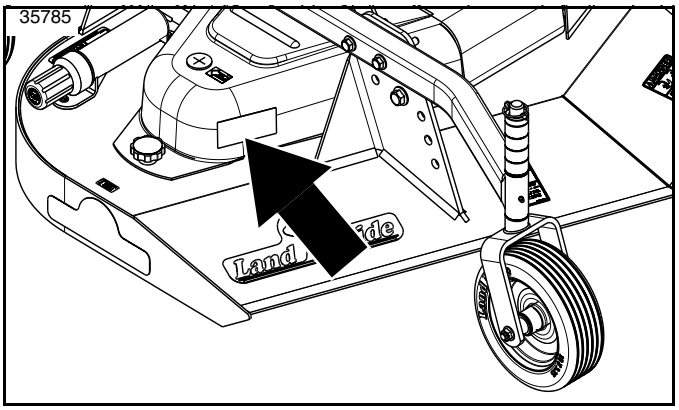
1. *Keep all safety labels clean and legible.*
2. *Refer to this section for proper label placement. Replace all damaged or missing labels. Order new labels from your nearest Land Pride dealer. To find your nearest dealer, visit our dealer locator at www.landpride.com.*
3. *Some new equipment installed 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.*
   a. *Spray soapy water onto the cleaned area.*
   b. *Peel backing from label and press label firmly onto the surface.*
   c. *Squeeze out air bubbles with edge of a credit card or with a similar type of straight edge.*



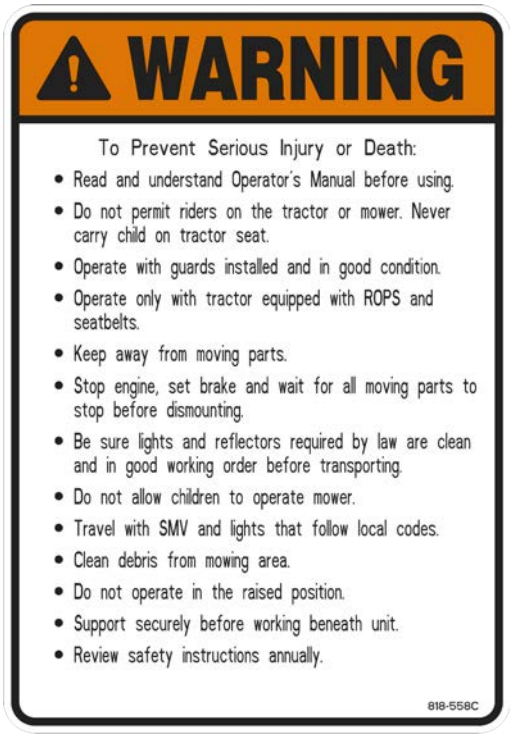
FDR1660 & FDR1672



FDR1648



70269

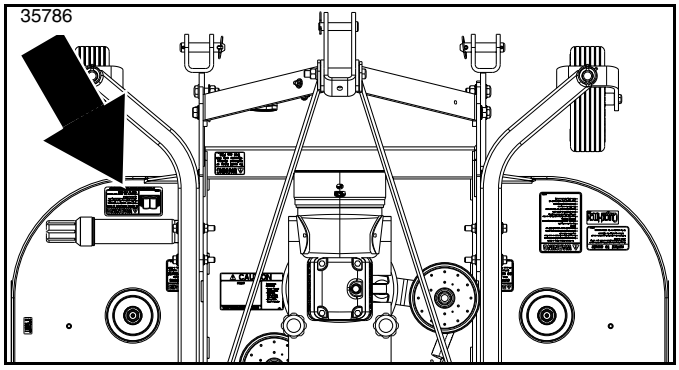


818-558C
Warning: General Mower Hazard
1 Place: On top of the deck as shown

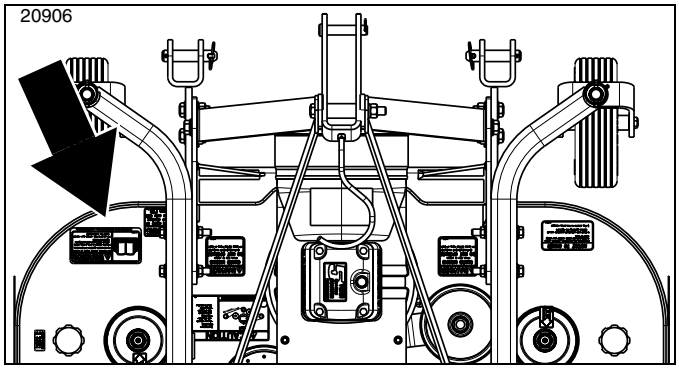
70486



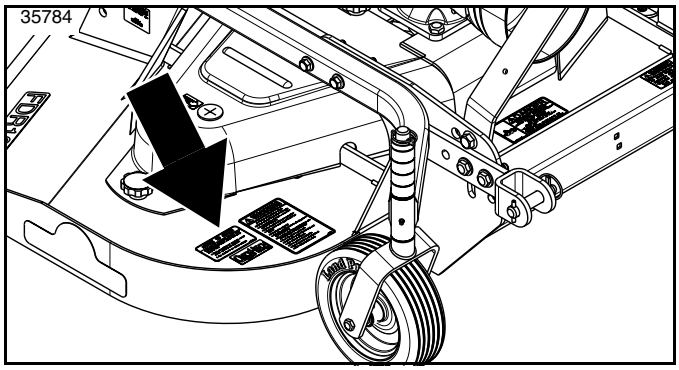
858-095C
Red Reflector: 2" x 4 1/2"
2 Places: On the back side of both belt guards



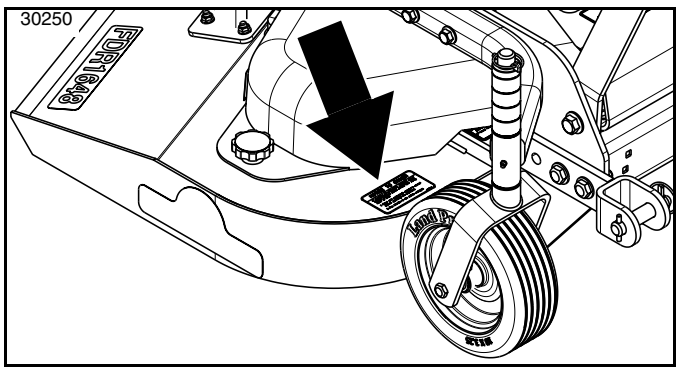
FDR1660 & FDR1672



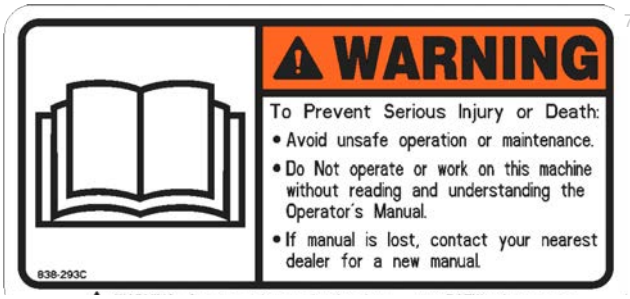
FDR1648



FDR1660 & FDR1672



FDR1648



838-293C

Warning: Read Operator's Manual - General Warning

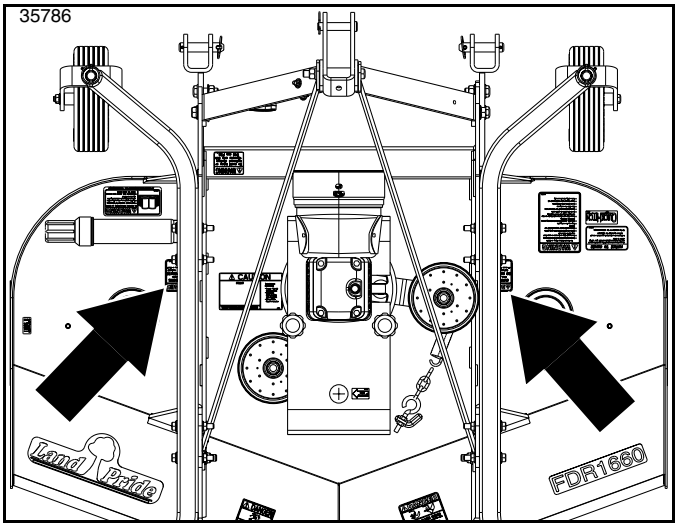
1 Place: On the front left corner of the deck as shown



818-560C

Notice: Read Operator's Manual and Safety Messages

1 Place: On the front right corner of the deck as shown



70358

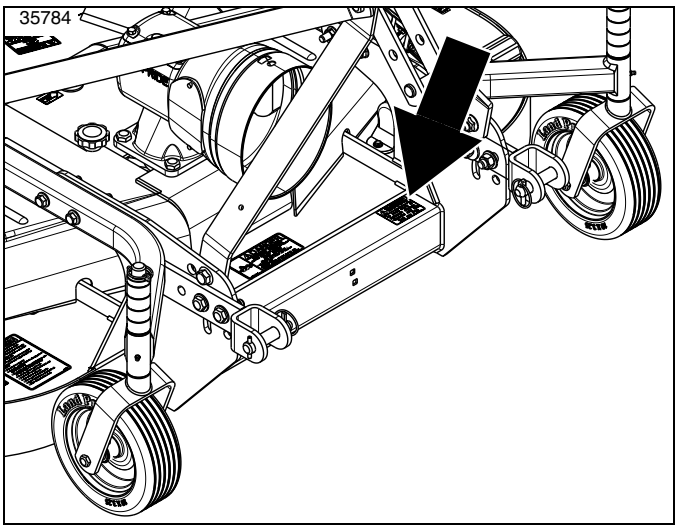


818-543C

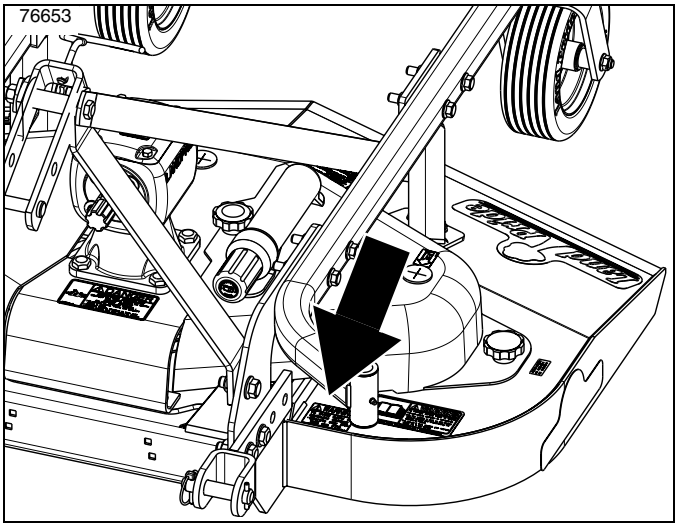
Danger: Guard Missing Hazard - Do not Operate

For: FDR1648, FDR1660 & FDR1672

2 Places: Beneath the belt guards as shown



DR1660 & FDR1672



FDR1648

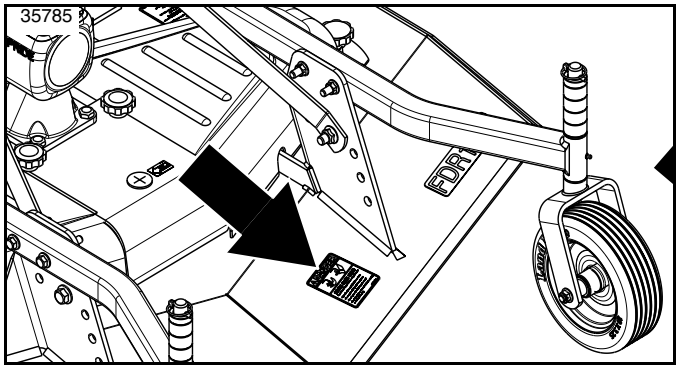
70382



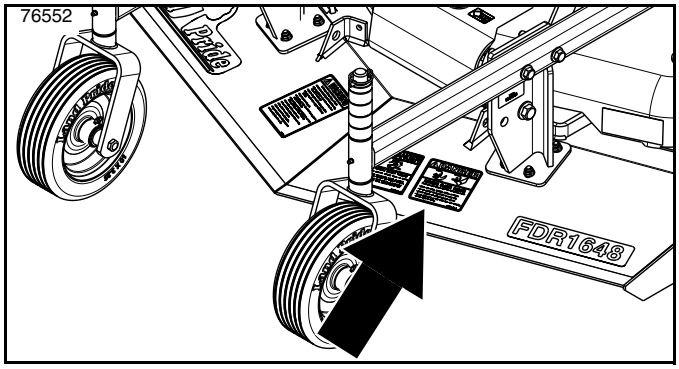
818-130C

Warning: Operate with 540 rpm Power Take-off Speed

1 Place: At the front of the deck as shown



FDR1660 & FDR1672



FDR1648

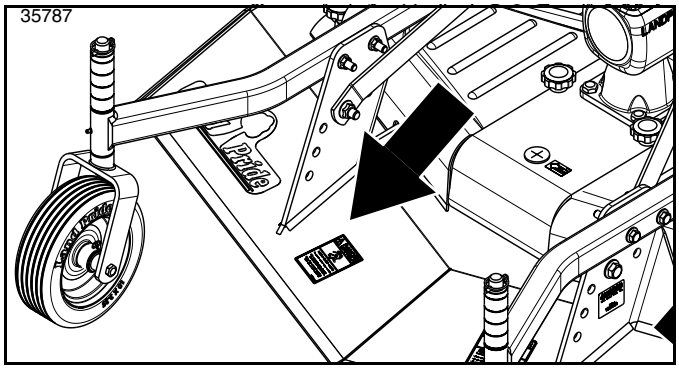
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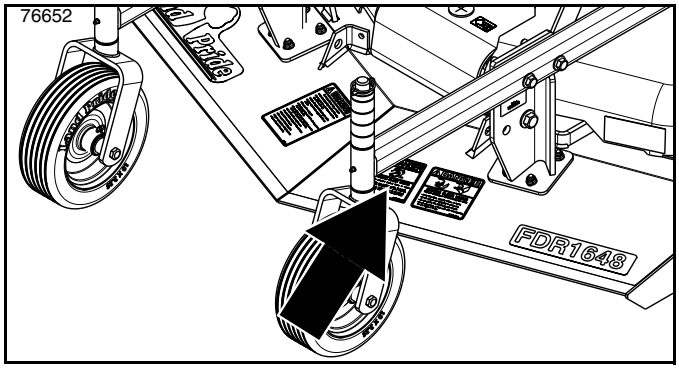
818-555C

Danger: Rotating Blade Hazard

1 Place: On the back right side of the deck as shown



FDR1660 & FDR1672



FDR1648

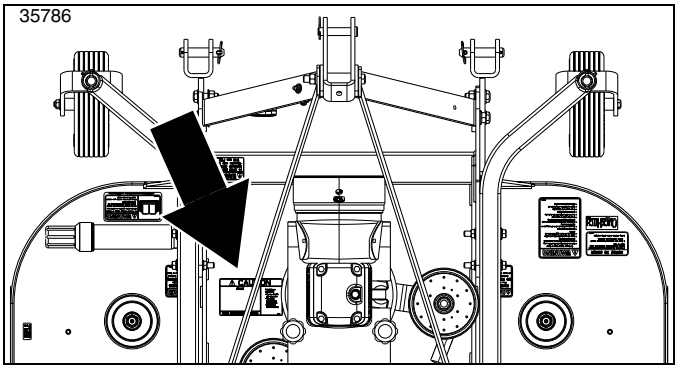
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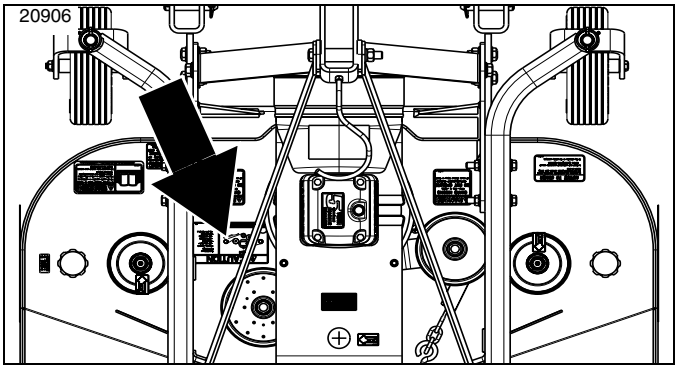
818-556C

Danger: Thrown Object Hazard

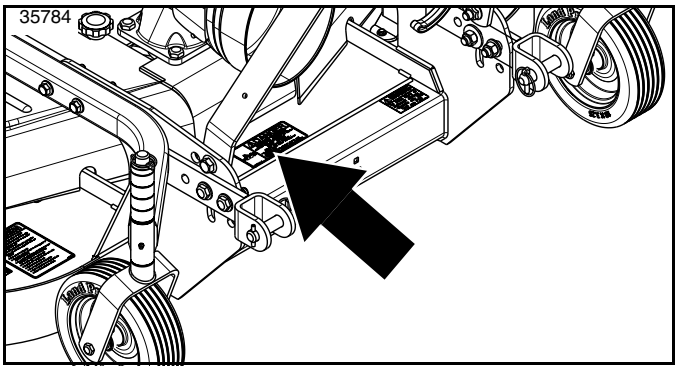
1 Place: On the back side of the deck as shown



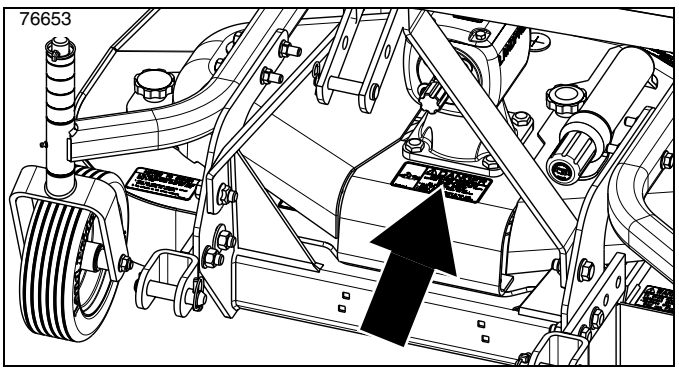
FDR1660 & FDR1672



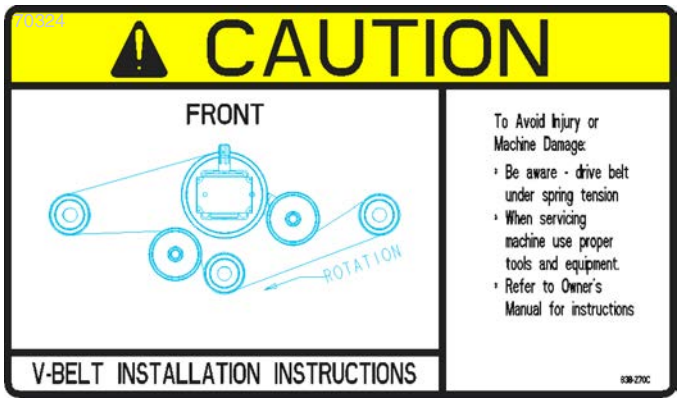
FDR1648



FDR1648, 1660 & FDR1672



FDR1648



838-270C

Caution: V-Belt Installation - Tension Hazard

1 Place: Under the left belt guard as shown

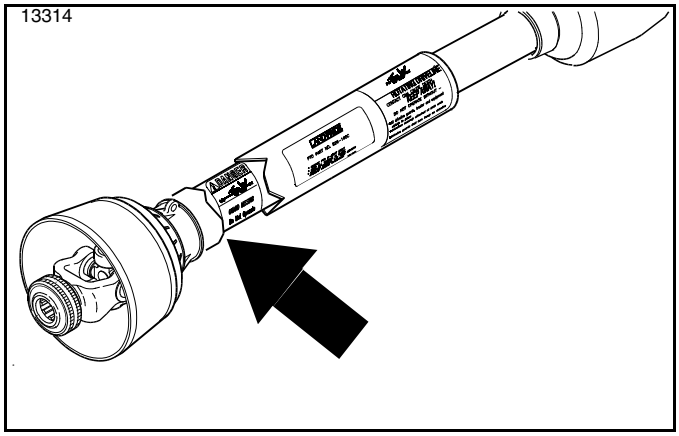


818-142C

Danger: Rotating Driveline Entanglement Hazard

1 Place: On top and to the front of the deck as shown

NOTE: Bell removed for clarity.



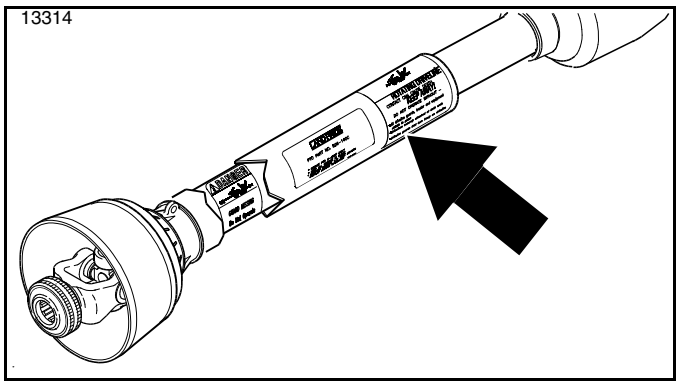
70374



818-540C

Danger: Guard Missing - DO NOT Operate

1 Place: On the driveline inner profile



70375



818-552C

Danger: Rotating Driveline - Keep Away

1 Place: On the driveline outer shield

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"(102 cm), 60" (152 cm), and 72" (183 cm) rear discharge cutting decks, which makes them well suited to meet your mowing needs. 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 43 and "**Features & Benefits**" on page 43 for additional information and performance enhancing options.

Patented

This FDR16 Series mowers are protected by or more of the following paten numbers:

- US D445,432 S
- US D424,071 S

Using This Manual

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

Terminology

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

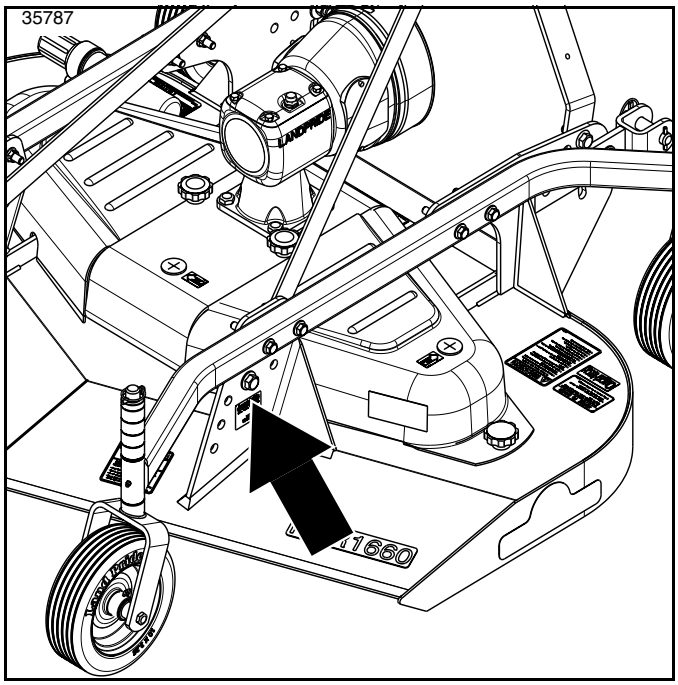
Owner Assistance

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

The parts on your 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 Figure 1.



Serial Number Plate Location
Figure 1

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.
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
lpservicedept@landpride.com

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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 . . .15-40 hp (11- 30 kW)
Power Take-Off Requirement . . . . . 540 rpm
Spline Requirement . . . . . .1 3/8" - 6
Hitch Type. . . . . 3 - Point Cat. 1

⚠ WARNING

To prevent 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.

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 41 to determine correct torque values for common bolts.

Dealer Preparations

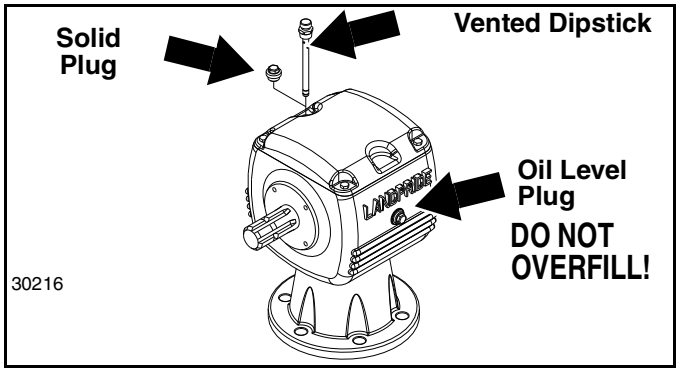
This Grooming Mower has been partially assembled at the factory. Some assembly and preparation are still required before the mower is ready for operation and can be attached to the customer tractor.

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.

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 assembly.	
☐	Check to see if auxiliary tractor weights are needed. See Specifications on page 43 for mower weights.	
☐	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. **NOTE:** All assembled hardware from the factory has been installed in the correct location. Remember location of a part or fastener if removed. Keep parts separated.	Operator's Manual & Parts Manual
☐	Make sure working parts move freely, bolts are tight & cotter pins are spread.	Operator's Manual
☐	Make sure all grease fittings are in place and lubricated.	Section 5 Page 35
☐	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 6



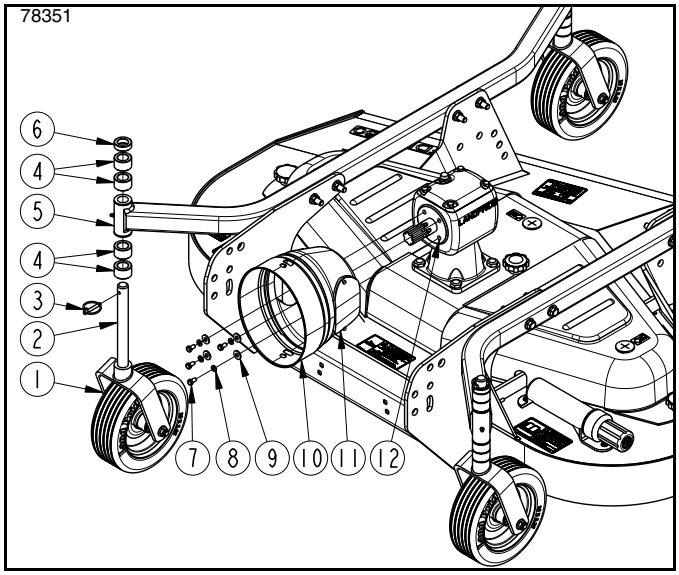
Installation of Vented Dipstick
Figure 1-1

Vented Dipstick Installation

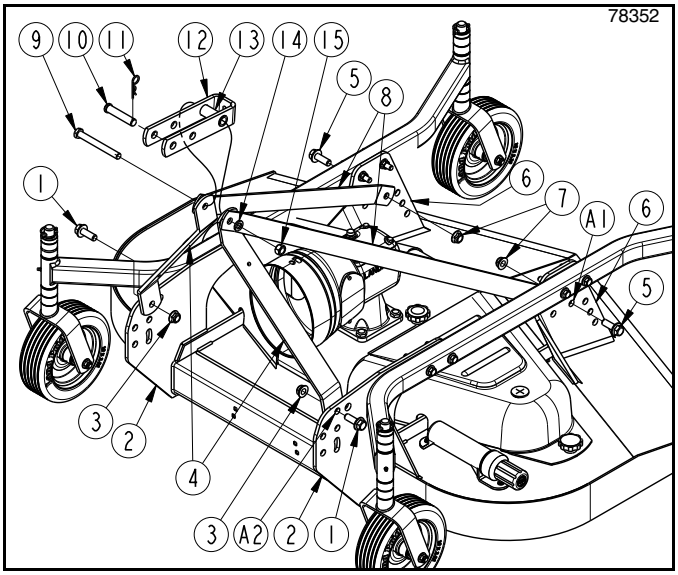
Refer to Figure 1-1:

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 the dipstick is missing. Remove temporary solid plug from the top of the splitter gearbox and replace it with the supplied vented dipstick.



Gauge Wheel & Cone Shield Assembly
Figure 1-2



Hitch Assembly
Figure 1-3

Cone Shield Assembly

Refer to Figure 1-2:

The cone shield (#10) is used only with the Three-Point Hitch Option. If using the K-Hitch Interface Option, skip to **"Gauge Wheel Assembly"** instructions below. If using the Three-Point Hitch Option, continue with step 1 below.

1. Rotate cone shield (#10) until access doors (#11) are on the sides of the cone as shown.
2. Attach cone shield (#10) to gearbox (#12) with M8 x 1.25 x 16 GR 8.8 bolts (#7), lock washers (#8), and flat washers (#9).
3. Tighten bolts (#7) to the correct torque.

Gauge Wheel Assembly

Refer to Figure 1-2:

1. Remove angle shipping brackets (not shown) with gauge wheel assemblies (#1) from the mower frame.
2. Remove factory bolts (not shown) from the linchpin holes in gauge wheel spindles (#2). Factory bolts can be discarded.
3. Remove gauge wheels (#1) from angle shipping brackets. Keep 1" and 1/2" spacers (#4 & #6) with their respective gauge wheels. Discard angle shipping brackets.
4. Insert gauge wheel yoke spindles (#2) into gauge wheel arms (#5) with two 1" spacers (#4) below each arm. Install remaining spacers (#4 & #6) above each arm.
5. Remove linchpins (#3) from clevis hitch pin (#10 in Figure 1-3). Secure gauge wheels (#1) to gauge wheel arms (#5) with linchpins (#3).

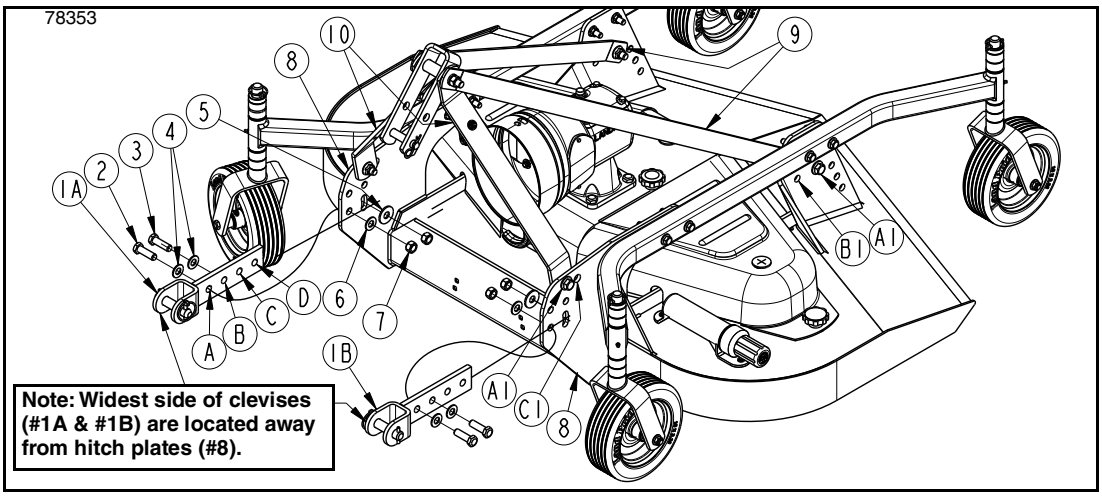
Three-Point Hitch Option

The instructions below are for connecting mower to the tractor's 3-point hitch system. If connecting the mower to the KH15 K-Hitch system, skip to **"K-Hitch Interface Option"** on page 22.

Hitch Assembly

Refer to Figure 1-3:

1. Remove rear braces (#8) and front hitch braces (#4) from the shipping crate. Remove and keep for reuse all hardware securing the braces together.
2. Provided in mounting plates (#6) are two unused 5/8" x 1 3/4" bolts (#5) with flanged lock nuts (#8). Using holes (A1), attach rear braces (#8) to the inside of mounting plates (#6) with existing bolts (#5) and flange locknuts (#7). Do not tighten locknuts at this time.
3. Using holes (A2), attach front braces (#4) to the inside of mounting plates (#2) with removed 5/8" bolts (#1) and flanged locknuts (#3) in step 1 above. Do not tighten locknuts at this time.
4. Remove 5/8" bolt (#9), lock washer (#14), and nut (#15) from upper pivoting hitch (#12). Don't let spacer tube (#13) fall from upper pivoting hitch.
5. Rotate front braces (#4) and rear braces (#8) up.
6. With braces (#8) located outside of braces (#4), attach pivot hitch (#9) with spacer (#13) between braces (#4 & #8) with 5/8" x 5 1/2" bolt (#10), lock washer (#14), and nut (#15).
7. Tighten 5/8"-18 GR5 bolt (#10) to the correct torque.
8. Tighten 5/8"-11 GR8 bolts (#1 & #5) to the correct torque.



3-Point Clevis Setup
Figure 1-4

Clevis Assembly For 3-Point Hitch System

The instructions below are for connecting a 3-point hitch system. If connecting to a quick hitch system, skip to **"Clevis Setup For Quick Hitch System"** on this page.

Refer to Figure 1-4:

1. Remove clevises (#1A & #1B) from the shipping crate.

NOTE: The widest side of clevises (#1A & #1B) are located away from hitch mounting plates (#8).

2. On the right-hand side, attach clevis (#1A) to the outside of mounting plate (#8) as follows:
   a. Insert 5/8" x 1 3/4" bolt (#2), through SAE standard washer (#4), clevis hole "A", lower hole in hitch plate (#8), and SAE standard washer (#6).
   b. Secure bolt (#2) with top locknut (#7). Draw top locknut up snug and then back off 1/2 turn.
   c. Insert 5/8" x 1 3/4" bolt (#3) through SAE standard washer (#4), clevis hole "B", lower slot in hitch plate (#8), and USS large washer (#5).
   d. Secure bolt (#3) with top locknut (#7). Draw top locknut (#7) up snug and then back off 1/2 turn
3. Repeat step 2 on the left-hand side to attach clevis (#1B) to mounting plate (#8).

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 bolt (#2) in clevis hitches (#1) in hole "B" or "C". Brace bars (#9) may need to be moved to holes "B1". braces bars (#10) may also need to be moved to holes "C1".

4. Continue with **"Driveline Hanger Assembly"** on page 17.

Clevis Setup For Quick Hitch System

The instructions below are for a quick hitch system. If connecting to the tractor's 3-point hitch system, refer to **"Clevis Assembly For 3-Point Hitch System"** on this page.

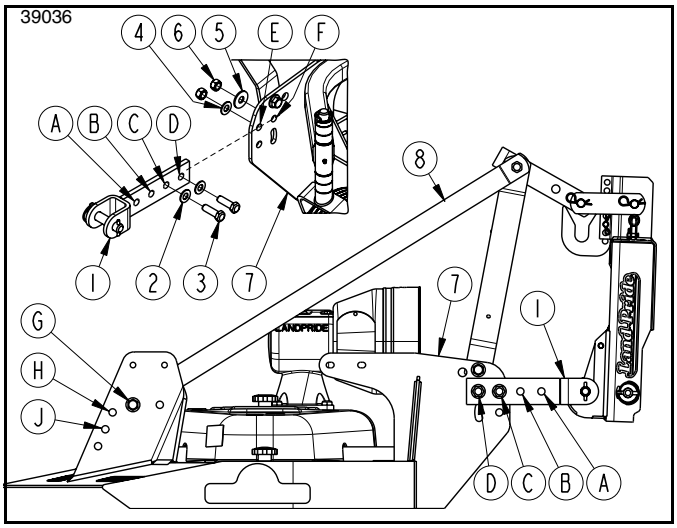
Refer to Figure 1-4 & Figure 1-5 on page 17:

NOTE: This will lock the lower clevis into position. Use 3-point tractor float to allow for deck float.

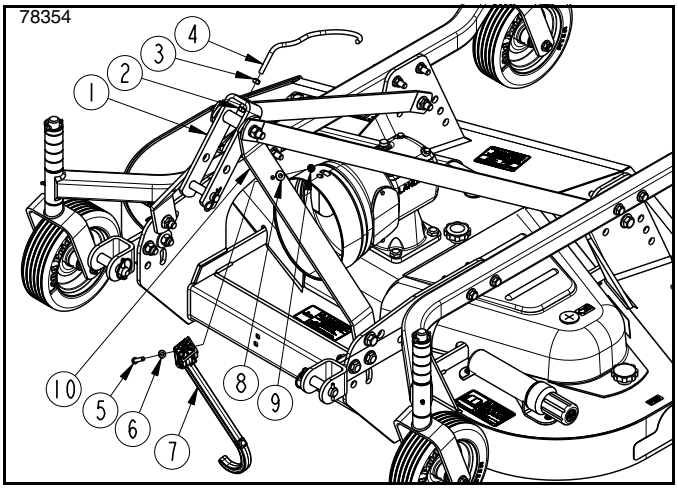
NOTE: The widest side of clevises (#1) are located away from hitch mounting plates (#7).

NOTE: Using clevis holes "A", "B", "C", and/or "D" depends on the tractor and its rear tires.

1. Remove clevises (#1) from the shipping crate.
2. Attach clevises (#1) to the outside of mounting plates (#7) based on using holes "C & D":
   a. Insert 5/8" x 1 3/4" bolts (#3), through SAE standard washers (#2), clevis holes "C & D", and holes "E" & "F" in mounting plate (#7).
   b. Secure front bolt (#3) in front hole "E" with SAE standard washer (#4) and top locknut (#6).
   c. Secure rear bolt (#3) in rear hole "F" with USS large washer (#5) and top locknut (#6).
   d. Tighten locknuts (#6) to the correct torque.
3. Adjust rear braces (#8) as follows:
   - If clevis holes "C" and "D" are attached to holes "E" & "F", attach rear braces (#8) to hole "G".
   - If clevis holes "B" and "C" are attached to holes "E" & "F", attach rear braces (#8) to hole "H".
   - If clevis holes "A" and "B" are attached to holes "E" & "F", attach rear braces (#8) to hole "J".
4. Refer to the Quick Hitch Operator's Manual for connection and center link adjustment instructions.
5. Continue with **"Driveline Hanger Assembly"** on page 17.



Quick Hitch Clevis Setup
Figure 1-5



Driveline Hanger Assembly
Figure 1-6

Driveline Hanger Assembly

Refer to Figure 1-6:

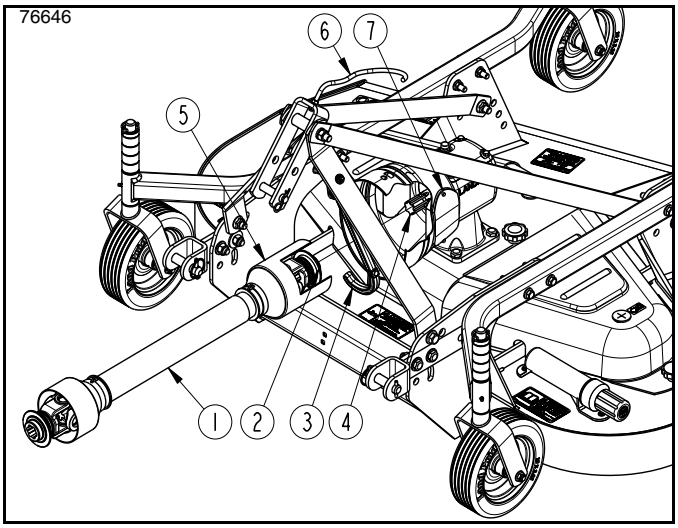
On the 48" model, driveline hanger (#4) is mounted on the end of pivoting hitch (#1). On the 60" and 70" models, driveline hanger (#7) is mounted on front brace (#10).

FDR1648 Driveline Hanger

1. Screw nut (#3) 1" (25 mm) onto hanger (#4).
2. Insert hanger (#4) into the end hole on pivot hitch (#1) and secure hanger with second nut (#2).
3. Rotate hook (#4) as shown and tighten nut #2 to the correct torque.

FDR1660/72 Driveline Hanger

1. Attach driveline hanger (#7) to brace (#10) with 5/16"-18 x 1 1/2" GR5 bolt (#5), flat washer (#6), flat washer (#8), and locknut (#9).
2. Tighten lock nut (#9) to the correct torque.



Driveline Assembly
Figure 1-7

Driveline Assembly

IMPORTANT: The driveline must be lubricated before putting it into service. Refer to **"Lubrication Points"** on page 36.

Refer to Figure 1-7:

1. Remove shield access door (#7).
2. To ease driveline removal, apply a liberal amount of all purpose grease to gearbox shaft (#4) before attaching the driveline.
3. Pull back on driveline pull collar (#2) and push the yoke end with the long cone shield (#5) onto gearbox shaft (#4). Release pull collar and continue to push the driveline yoke forward until the pull collar pops out and locks in place.
4. Support driveline (#1) as follows:

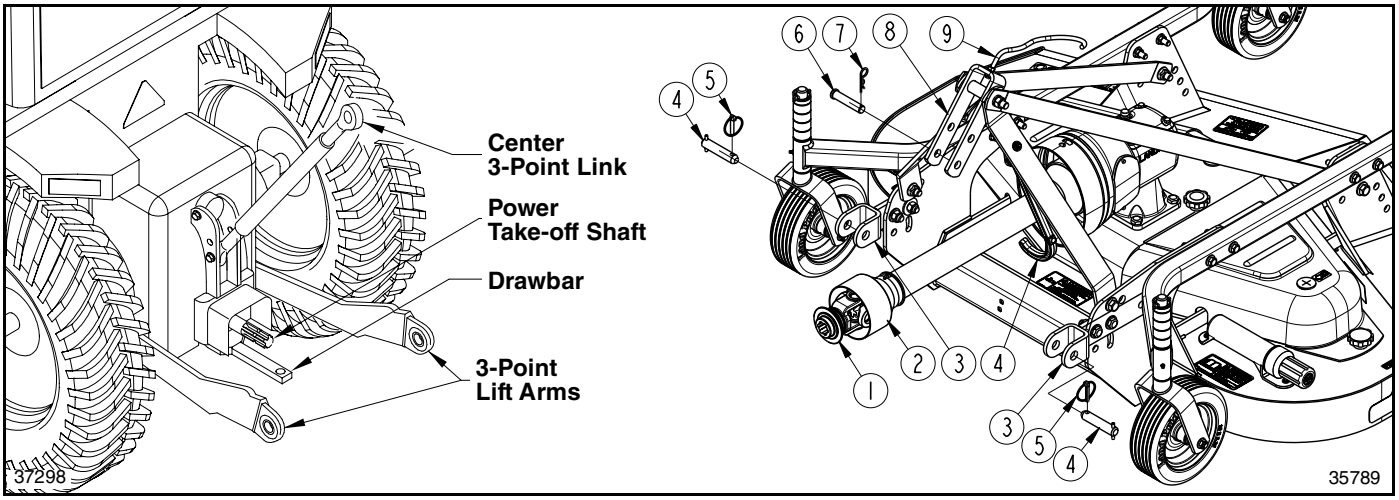
   FDR1648

   NOTE: While rotating driveline support (#6), it may be necessary to manually deflect the cone shield to allow pivot hitch clearance.

   Rotate driveline support (#6) over the top and to the front. Place driveline (#1) in support hook (#6).

   FDR1660 & FDR1672

   Rotate driveline support (#3) down and place driveline (#1) in the support.
5. Replace shield access door (#7).
6. Continue with **"Connect Three-Point Hitch System"** on page 18.



3-Point Hitch Connection
Figure 1-8

Connect Three-Point Hitch System

The following instructions are instructions for connecting the mower to a tractor's 3-point hitch system. If connecting the mower to a K-Hitch, refer to **"Connect the KH15 K-Hitch"** on page 23.

Three-Point Hitch Connection

Refer to Figure 1-8:

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:

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

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

A 3-point Category I hitch is required. 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.

1. 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.
2. Slowly back tractor up to the Grooming Mower while using 3-point hydraulic control to align hitch holes in lower 3-point lift arms with holes in hitch clevis (#3).
3. Shut tractor down according to **"Tractor Shut Down Procedure"** on page 27 before dismounting tractor.
4. Attach lower lift arms to clevises (#3) with hitch pins (#4) and secure with linchpins (#5).
5. Skip to step 6 if connecting the FDR1660 or FDR1672 mower. If connecting the FDR1648 mower, remove driveline (#2) from driveline support (#9).
6. Connect the tractor's center 3-point link to upper floating hitch (#8) with clevis pin (#6) and hairpin cotter (#7).

Driveline Connection

Refer to Figure 1-8:

DANGER

To avoid 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.*
- *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.*
- *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.*
- *Make certain driveline yokes are securely fastened at each end. A loose yoke can work free allowing the driveline to rotate uncontrollably.*

WARNING

To avoid serious injury or death:

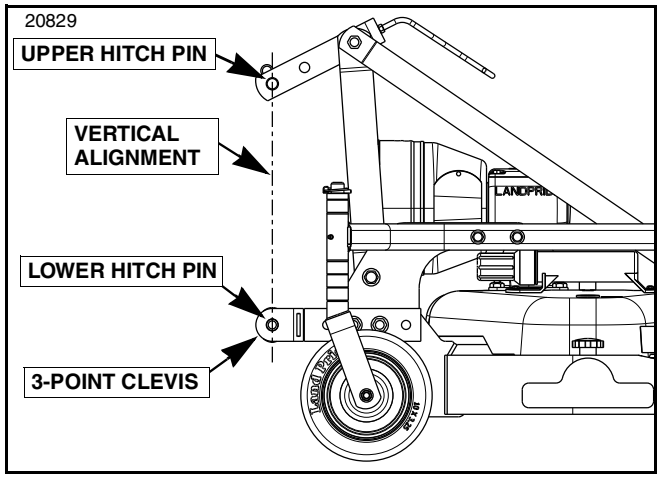
- *Always follow "Tractor Shutdown Procedure" provided in this manual before dismounting the tractor.*
- *Check driveline when lowering implement to make sure it does not interfere with the tractor drawbar at maximum depth. If needed, shut tractor off and move or remove drawbar to prevent driveline damage.*

IMPORTANT: Check driveline minimum collapsible length before completing **"Driveline Connection"**. Structural damage to the tractor and implement can occur if this check is not made. Refer to **"Check Driveline Collapsible Length"** on page 20.

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

Refer to Figure 1-8 on page 18:

1. If driveline collapsible length has not been checked, go to **"Check Driveline Collapsible Length"** on page 20. Otherwise, continue with step 2 below.
2. Park tractor and implement on a level surface.
3. Shut tractor down before dismounting. Refer to **"Tractor Shut Down Procedure"** on page 27.
4. If tractor drawbar interferes with the driveline, disconnect driveline and move drawbar forward, to the side, or remove.
5. If connecting the FDR1660 or FDR1672, remove driveline (#2) from driveline support (#4). Driveline support is spring loaded and will rotate up against the hitch frame.
6. Collapse driveline by pushing the end closest to the tractor toward the implement.
7. Pull back on driveline pull collar (#1) and push yoke onto the tractor power take-off shaft. Release pull collar and continue to push driveline yoke forward until pull collar pops out and locks in place.
8. Pull on both ends of the driveline to make sure it is secured to the tractor and implement.



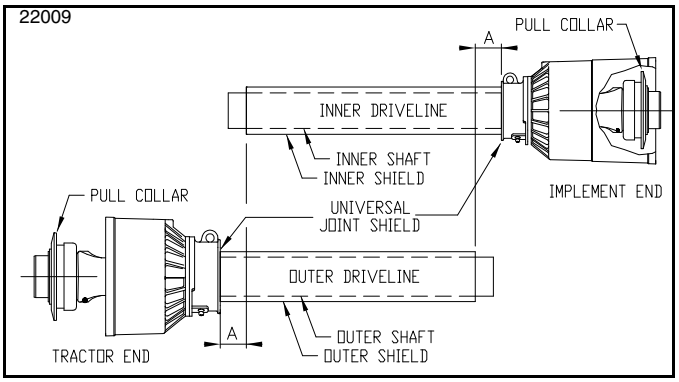
Center 3-Point Line Adjustment
Figure 1-9

Three-point Center Link Adjustment

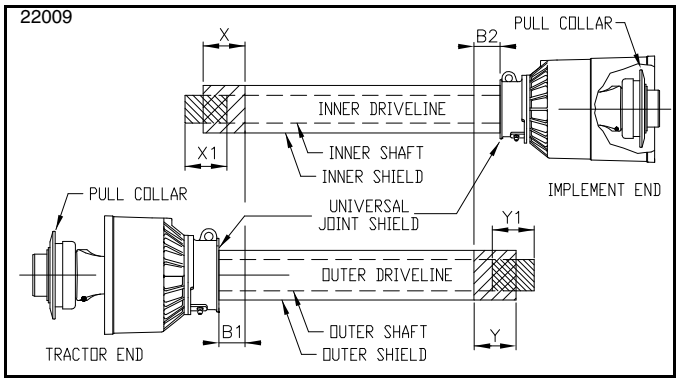
Refer to Figure 1-9:

If connecting to the mower with a quick hitch, refer to the Quick Hitch Manual for detailed instructions, otherwise continue with step 1 below.

1. Adjust lower clevises (#3) forward or backward when additional flotation is needed or when the tractor interferes with the mower frame. See **"Clevis Assembly For 3-Point Hitch System"** on page 16 for adjustment instructions.
2. 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.
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 1-9.
5. 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.
6. Continue with **"Check 3-Point Driveline Interference"** on page 21.



Check Driveline Minimum Length
Figure 1-10



Driveline Shortening
Figure 1-11

Check Driveline Collapsible Length

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.

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.

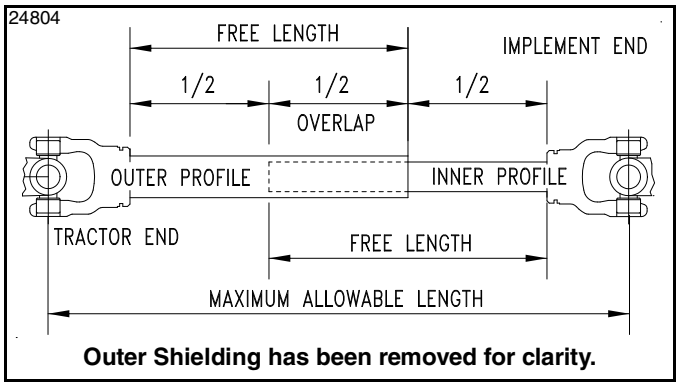
1. With driveline attached only to the implement, remove outer driveline (tractor end) from inner driveline to separate the two profiles.
2. Park tractor and implement on a level surface.
3. Raise implement until the gearbox input shaft is level and in-line with the tractor power take-off shaft.
4. Securely block implement at this height to keep unit from lowering.
5. With implement resting on the support blocks, Shut tractor down according to **"Tractor Shut Down Procedure"** on page 27.

Refer to Figure 1-10:

6. Attach outer driveline to the tractor's power take-off shaft. Refer to steps 5-8 under **"Driveline Connection"** on page 19.
7. Hold inner and outer drivelines parallel to each other as shown and measure distance "A".
   - If "A" is less than 1" (2.5 cm), continue with step 8.
   - If "A" is greater than or equal to 1" (2.5 cm), skip to **"Check Driveline Maximum Allowable Length"** on page 21.

Refer to Figure 1-11:

8. 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 Allowable Length"** on page 21.



Driveline Maximum Extended Length
Figure 1-12

Check Driveline Maximum Allowable Length

Refer to Figure 1-12:

The driveline maximum allowable length must, when fully extended, 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.

1. Apply multi-purpose grease to the inside of the outer shaft and reassemble the driveline.
2. Assemble the two driveline profiles together with just 1/2 overlapping of the profile tubes as shown. Once assembled, measure and record maximum allowable length here. _____
3. Attach driveline to the implement. Refer to **"Driveline Assembly"** on page 17.
4. Without removing the support blocks, continue with **"Driveline Connection"** on page 19.

Check 3-Point Driveline Interference

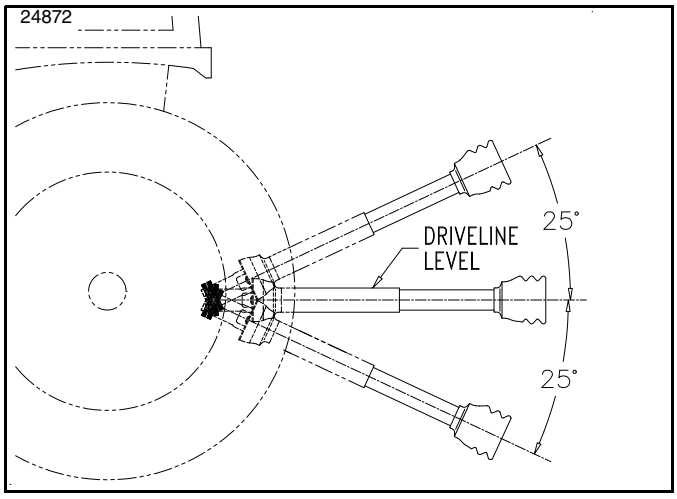
Refer to Figure 1-13:

WARNING

To avoid serious injury or death:

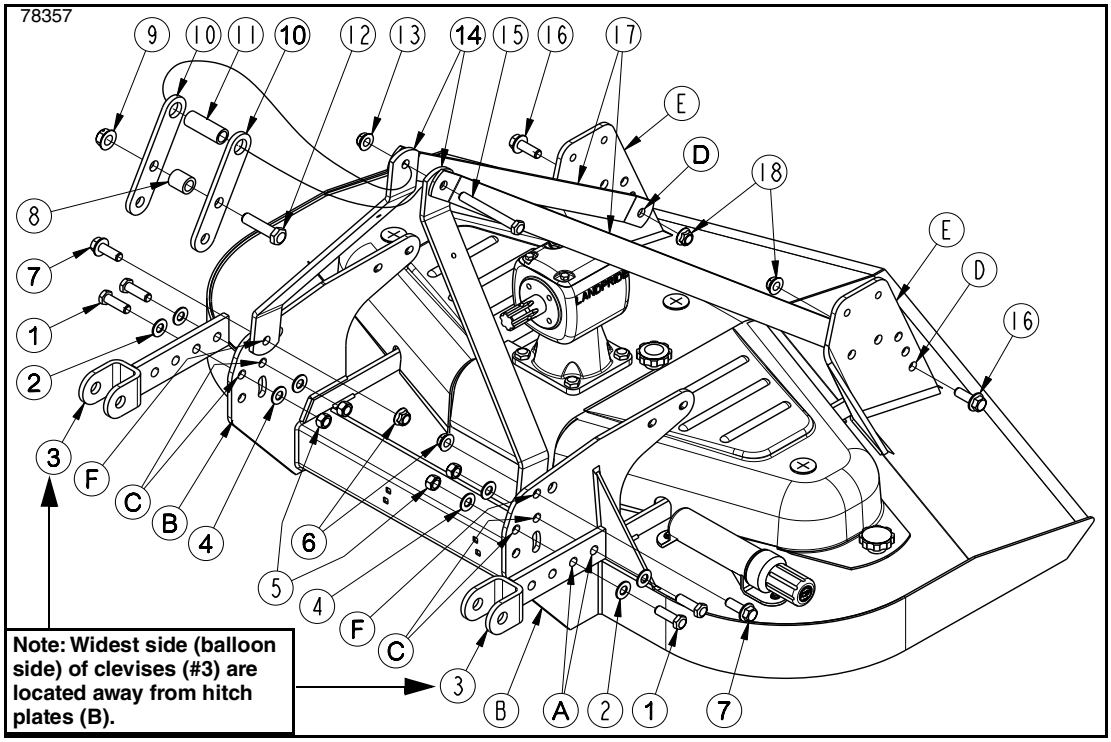
A rotating driveline must not exceed an angle of 25 degrees up or down, and never engage a driveline while at an angle exceeding 25 degrees up or down. The driveline can break and send flying projectiles.

1. Start tractor and raise implement slightly off the support blocks used to **"Check Driveline Collapsible Length"** on page 20. Drive forward until the implement is clear of the support blocks.
2. Slowly and carefully lower and raise the implement to ensure drawbar, tires, and other equipment on the tractor do not contact the implement's frame. If there is an interference:
   a. Back implement over the support blocks and lower it onto the blocks.
   b. Shut tractor down before dismounting. Refer to **"Tractor Shut Down Procedure"** on page 27.



Maximum Allowable Driveline Movement
Figure 1-13

   c. Move or remove drawbar if it interferes with the implement.
   d. Make any other necessary corrections.
   e. Repeat steps 1-2 to verify the implement does not interfere with the tractor.
3. Start tractor, raise implement fully up. Back implement over the support blocks. Do not lower implement onto the support blocks.
4. Without changing the 3-point lift height, shut tractor down using **"Tractor Shut Down Procedure"** on page 27.
5. Check to make sure driveline does not exceed any of the limits listed below:
   - Driveline does not exceed maximum length recorded in step 2 under **"Check Driveline Maximum Allowable Length"** on this page.
   - Driveline angle does not exceed 25° above horizontal.
6. If driveline exceeds maximum allowable length or 25 degrees up:
   a. Adjust tractor 3-point lift limiter to a height that will keep the driveline within the recommended limits.
   b. If the 3-point left lever does not have a lift height limiter, make a mark with tape or other means to indicate maximum lift height.
7. Start tractor, raise implement slightly higher than the support blocks, and drive forward enough to clear the support blocks.
8. Lower implement to the ground and shut tractor down using **"Tractor Shut Down Procedure"** on page 27.
9. Continue with **"Section 2: Accessories & Set-up"** on page 24.



Clevis & Brace Assembles (Gauge wheels are omitted for clarity)
Figure 1-14

K-Hitch Interface Option

The instructions below are for the K-Hitch Interface option. If not using this Option, refer to the **"Three-Point Hitch Option"** on page 15.

K-Hitch Clevis Assembly

Refer to Figure 1-14:

> **NOTE:** This will lock the lower clevises (#3) into position. Use 3-point tractor float to allow for deck float.
>
> **NOTE:** Widest side of clevises (#3) are located away from hitch plates (B).

1. Remove clevises (#3) from the shipping crate.
2. Attach clevises (#3) to the outside of mounting plates (#B) with the widest side of the clevises located away from the mounting plates as follows:
   a. Insert 5/8"-11 x 2" GR5 bolts (#1) through SAE flat washers (#2), clevis holes (A), mounting holes (C), and SAE flat washers (#4).
   b. Secure bolts (#1) with locknuts (#5). Tighten locknuts to the correct torque.

K-Hitch Brace Assembly

Refer to Figure 1-14:

1. Remove front and rear braces (#14 & 17) from the shipping crate. Keep braces and removed hardware for reuse.
2. Provided in rear mounting plates (E) are two unused bolts (#16) with flanged locknuts (#18). Remove this hardware for reuse.
3. Using holes (D), attach rear braces (#17) to the inside of plates (E) with removed hardware. Draw locknuts up snug, do not tighten them at this time.
4. Using front holes (F), attach front braces (#14) to the inside of mounting plates (B) with 5/8" x 1 3/4" flange bolts (#7), and flanged locknuts (#6). Draw locknuts up snug, do not tighten them at this time.
5. Bolt side bars (#10) together using a 3/4" x 3" bolt (#12), 1 3/8" spacer (#8), and flange locknut (#9). Draw locknut up snug, do not tighten at this time.
6. Insert 3 1/8" spacer (#11) through side bars (#10) as shown.
7. Rotate rear braces (#17) and front braces (#14) up as shown.
8. Align rear braces (#17) outside of front braces (#14) and attach side bars (#10) with spacer (#11) between the braces with 5/8"-11 x 5 1/4" GR5 bolt (#15) and flange locknut (#13). Tighten locknut to the correct torque.
9. Tighten flange locknuts (#6 & #18) to the correct torque for a 5/8"-11 GR8 bolt.

K-Hitch Interface Assembly, Part A

Refer to Figure 1-15:

1. Attach right-hand strap (#2) to left-hand strap (#5) with spacers (#7) and floating links (#10) in-between the straps as shown using 3/4" x 3" bolts (#6) and flange locknuts (#8). Draw locknuts up snug, do not tighten at this time.
2. Attach hitch plate (#4) to straps (#2 & #5) with 3/8" x 1" bolts (#1) and whiz nuts (#3). Draw whiz nuts up snug, do not tighten at this time.
3. Insert spacer (#9) in floating links (#10) as shown. Be careful to not let the spacer fall out.

K-Hitch Interface Assembly, Part B

Refer to Figure 1-16:

1. Attach K-Hitch Interface (#4) to hitch clevises (#3) with 5/8" x 4 1/4" long bolts (#1), 3-point bushings (#2), 5/8" USS flat washers (#5), and locknuts (#6). Tighten locknuts to the correct torque.
2. Rotate K-Hitch Interface (#4) with floating links (#9) up. Attach side bars (#8) to floating links (#9) with 3/4"-10 x 3" GR5 bolt (#7) and flange locknut (#10). Tighten locknut to the correct torque.
3. **Refer to Figure 1-14 on page 22:** Tighten flange locknut (#9) to the correct torque for a 3/4"-10 GR5 bolt.
4. **Refer to Figure 1-15:** Tighten flange locknuts (#8) to the correct torque for a 3/4"-10 GR5 bolt.
5. **Refer to Figure 1-15:** Tighten whiz nuts (#3) to the correct torque for a 3/8"-16 GR5 bolt.

K-Hitch Drive Assembly

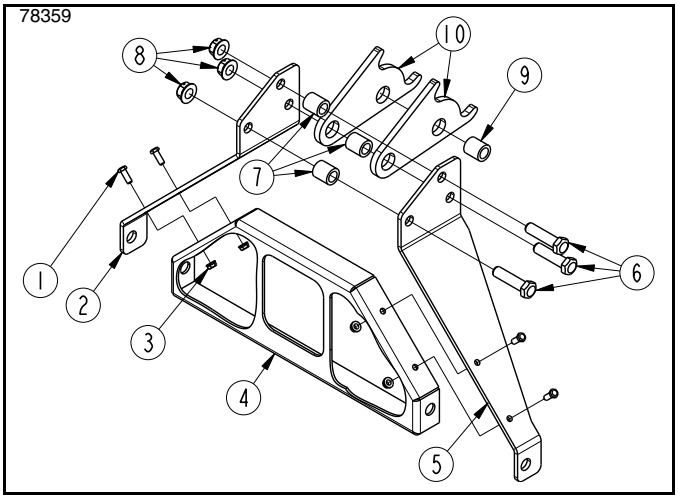
Refer to Figure 1-17:

> **IMPORTANT:** The driveline must be lubricated. Refer to **"Lubrication Points"** on page 36.

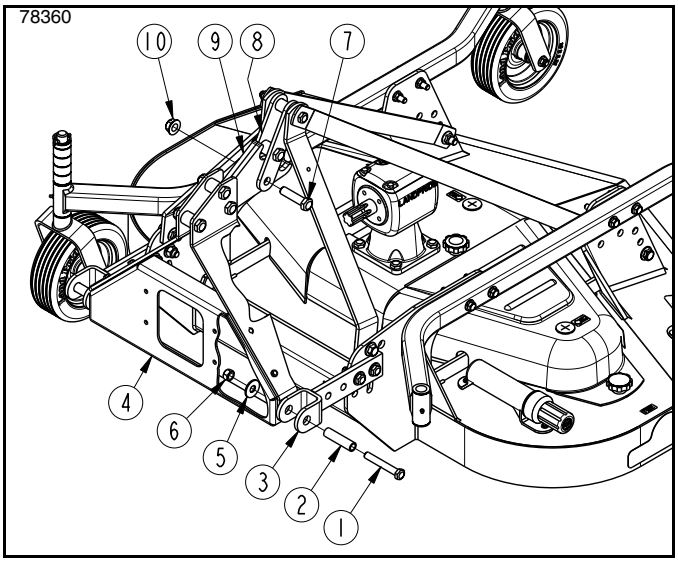
1. Remove from the driveline yoke, flanged locknut (#7) and bolt (#1).
2. Slide drive assembly (#3) onto the gearbox input shaft (#8) until the bolt hole in the yoke aligns with the gearbox input shaft groove. Secure driveline to the input shaft with removed bolt (#1) and locknut (#7). Tighten 1/2"-13 GR5 bolt to the correct torque.
3. Attach drive assembly (#3) to K-hitch Interface (#5) with 3/8"-16 GR5 carriage bolts (#4) and whiz nuts (#6). Tighten locknuts to the correct torque.
4. Remove rubber shaft cover (#2) and discard.

Connect the KH15 K-Hitch

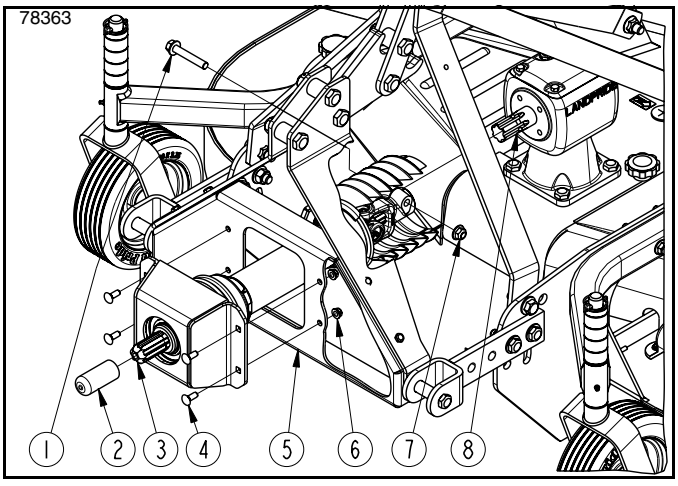
For detailed connect/disconnect instructions, refer to the KH15 K-Hitch Operator's Manual #320-135MK. If missing, one can be downloaded, free-of-charge, from our website at www.landpride.com. Continue with **"Section 2: Accessories & Set-up"** on page 24.



K-Hitch Interface Assembly, Part A
Figure 1-15



K-Hitch Interface Assembly, Part B
Figure 1-16



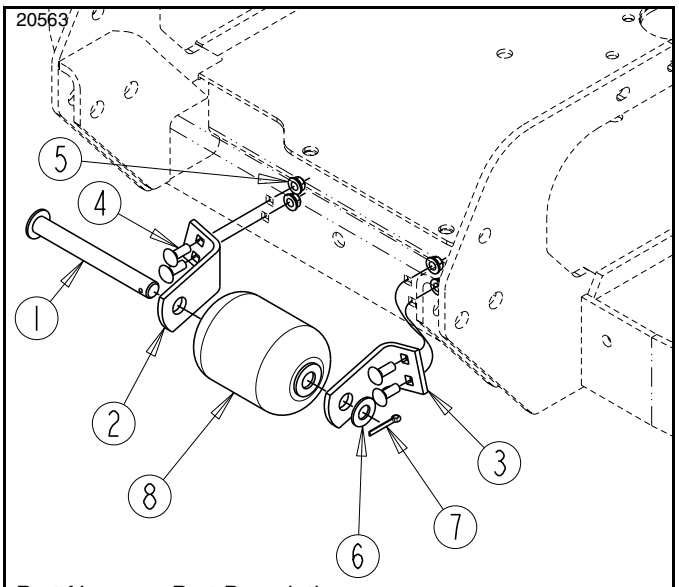
K-Hitch Drive Assembly
Figure 1-17

Front Roller Set-up

(FDR1648, FDR1660, and FDR1672)

Refer to Figure 2-1:

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



Part No.	Part Description
Front Roller Assembly	
315-516S	FDR1648, FDR1660 & FDR1672

Front Roller Assembly
Figure 2-1

Cutting Blade Types

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.

Cutting Blade Part Numbers

See your Land Pride dealer for blade availability.

Land Pride Part Numbers & Descriptions

Part No.	Part Description
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

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 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 14
- **Section 2: Accessories & Set-up**, page 24
- **Section 4: Adjustments**, page 30
- **Section 3: Operating Instructions**, page 25
- **Section 5: Maintenance & Lubrication**, page 33

Perform the following inspections before using your Grooming Mower.

Operating Checklist

✔	Check	Pg
	Read and follow all safety information carefully. Refer to "Important Safety Information".	1
	Read and follow connection & preparation instructions. Refer to "Assembly & Set-up".	14
	Make sure all guards and shields are in place and in good working condition.	
	Make all necessary adjustments. Refer to section on "Adjustments".	30
	Read and follow all maintenance instructions. Refer to "Maintenance & Lubrication".	33
	Lubricate mower as required. Refer to "Ordering Replacement Parts".	35.
	Check oil level in gearbox. Make certain all oil plugs are properly replaced. Refer to "Gearbox".	37
	Check mower initially and periodically for loose hardware. Especially check blade bolts. Tighten all loose hardware. Refer to "Torque Values Chart".	41

Safety Information

⚠ DANGER

To avoid serious injury or death:

- *Clear area to be cut of debris and other unforeseen removable objects before cutting. Mark non-removable hazards such as tree stumps, post stubs, protruding objects, rocks, drop-offs, holes, etc. with a visible flag.*
- *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.*
- *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.*
- *Do not allow anyone near the tractor or implement while they are operating. Stop operation if bystanders are too close. They can be hit by flying projectiles, become entangled in the equipment, or ran over.*
- *Keep all persons away from the blades while they are rotating. Never place hands or feet under the deck with blades rotating or when tractor engine is running. Do not operate implement or tractor if bystanders are in the area.*
- *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.*
- *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 disengage power take-off before lifting the implement. Never operate implement in the raised position. Objects can be thrown at high speeds toward people or animals*
- *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.*
- *Make certain driveline yokes are securely fastened at each end. A loose yoke can work free allowing the driveline to rotate uncontrollably.*
- *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.*
- *Allow only persons to operate this implement who have fully read and comprehended this manual, and who have been properly trained in the safe operation of this implement. Serious injury or death can result from the inability to read, understand, and follow instructions provided in this manual.*
- *Operate only power machines equipped with a certified Roll-Over Protective Structure (ROPS) and seat belt. Keep folding ROPS in the "locked up" position when appropriate. 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.*
- *Never carry riders on the implement or tractor. 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.*

- *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.*
- *Slow down when traveling over rough or hilly terrain. Shift to a lower gear to maintain engine rpm while traveling slower.*
- *Do not operate and/or travel across inclines where the tractor and/or implement can rollover. Consult your tractor's manual for acceptable inclines the tractor is capable of traveling across.*
- *Do not engage power take-off with the deck in the raised position or with engine speed above idle. Doing so will damage the power train components.*
- *Always disengage tractor PTO before raising mower decks to transport position to avoid power train damage, injury from thrown objects, or blade contact.*
- *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.*
- *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 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.*
- *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.*
- *High wear may occur to mower blades when mowing in areas with sandy soil. Frequent inspection should be made and blades replaced if worn excessively or damaged.*
- *Buildup of debris around moving components and gearboxes is a fire hazard. Keep rotating parts and gearboxes free from debris.*
- *Improper oil level can cause bearing failure and be a fire hazard. Maintain proper gearbox oil level.*
- *Avoid catching hydraulic hoses on brush, posts, tree limbs, and other protrusions that could damage and/or break them.*
- *Use mower to cut only turf grasses. Cutting other materials can damage drive components, cutting blades, and deck.*
- *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.*

Inspection Procedures

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.*

WARNING

To avoid serious injury or death:

- *Always follow "Tractor Shutdown Procedure" provided in this manual before dismounting the tractor.*
- *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.*
- *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.*

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.
4. Carefully raise and lower implement to ensure drawbar, tires, and other equipment on the tractor do not contact the mower or driveline.
5. With power take-off disengaged and driveline completely stopped, check mower blades for sharpness. See **"Blade Maintenance"** on page 34.

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

6. 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.
7. 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.

Tractor Shut Down 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 until it is flat on the ground or on non-concrete support blocks.
4. Put tractor in park or set park brake, turn off engine, and remove ignition key to prevent unauthorized starting.
5. Relieve all hydraulic pressure to auxiliary hydraulic lines.
6. Wait for all components to come to a complete stop before leaving the operator's seat.
7. Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.

Transporting

WARNING

To prevent serious injury or death:

- *When traveling on roadways, travel in such a way that other vehicles may pass you safely. Always 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 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.*

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

1. 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.
2. 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.
3. 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-of-ways.
5. Shift tractor to a lower gear when traveling over rough or hilly terrain.

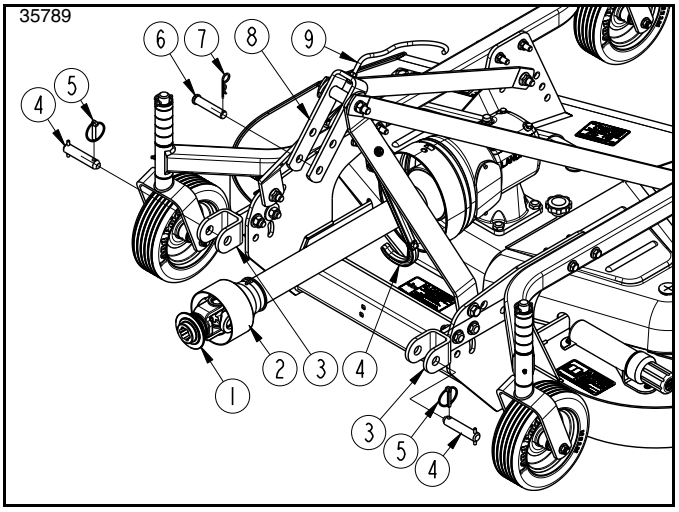
Field Operation

DANGER

To prevent serious injury or death:

Clear area to be cut of debris and other unforeseen removable objects before cutting. Mark non-removable hazards such as tree stumps, post stubs, protruding objects, rocks, drop-offs, holes, etc. with a visible flag.

1. 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 and set throttle at idle.
3. If using a quick hitch or K-Hitch, set 3-point lift lever in float position.
4. Engage power take-off to start blades rotating.
5. 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.
6. After mowing the first 50 feet, stop and check to see that the mower is adjusted properly.
7. **Do not** make sharp turns or attempt to back up while mower is on the ground.
8. **Do not** engage power take-off with mower in the fully raised position. **Do not** engage or disengage power take-off at full throttle.
9. Grass is best cut when it is dry. Mowing wet grass can cause plugging resulting in grass clumps behind the mower.
10. Grass should be mowed frequently as shorter clippings deteriorate faster.
11. 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.
12. Periodically check for foreign objects wrapped around the mower blades. Remove foreign objects only after following **"Tractor Shut Down Procedure"** on page 27.
13. Frequently inspect the mower for loose bolts and nuts. Tighten all loose bolts and nuts as indicated in the **"Torque Values Chart"** page 41.



Disconnect Mower
Figure 3-1

Disconnect Mower From Tractor

Refer to Figure 3-1:

1. Park on a level solid surface.
2. Shut tractor down according to **"Tractor Shut Down Procedure"** on page 27.
3. Chock front and back side of wheels to keep mower from moving.
4. Continue disconnecting the mower as follows:
   - **3-Point Hitch:** Continue with step 5 below.
   - **K-Hitch:** Refer to your K-Hitch Operator's Manual No. 320-135MK. If you cannot locate it, one can be downloaded, free-of-charge, from our website at ww.landpride.com.
5. At the tractor's power take-off shaft, pull back on driveline pull collar (#1) and hold while removing driveline yoke from tractor power take-off shaft.
6. Remove cotter pin (#7) and hitch pin (#6). Store center 3-point link in its storage hook. Reinsert the hitch pin (#6) in clevis (#8). Secure pin with removed cotter pin.
7. Remove linchpins (#5) and hitch pins (#4). Move lower 3-point arms out of the clevis and reinsert hitch pins (#4) in clevises (#3). Reinsert linchpins (#5).
8. Store driveline (#2) as follows:
   - FDR1648: Rotate upper hitch (#8) up and store driveline (#2) in hanger (#9).
   - FDR1660 & FDR1672: Rotate hanger (#4) down and store driveline (#2) in the hanger.
9. See **"Long-Term Storage"** on page 35 if mower is not going to be used for a long time.

General Operating Instructions

By now you should have thoroughly read your Grooming Mower Operator's Manual, properly attached your Land Pride FDR16 Series mower 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.

It is important that you inspect the area where you will be mowing and clear it of hazards and foreign objects before you start mowing. Never assume the area is clear. Mow only in areas you are familiar with and are free of foreign objects. In the event you do strike an object, stop mower and tractor immediately to inspect and make any necessary repairs to the mower before resuming operation. Remove or clearly mark the struck object to prevent hitting it again. It really pays to inspect a new area and to develop a safe plan before mowing.

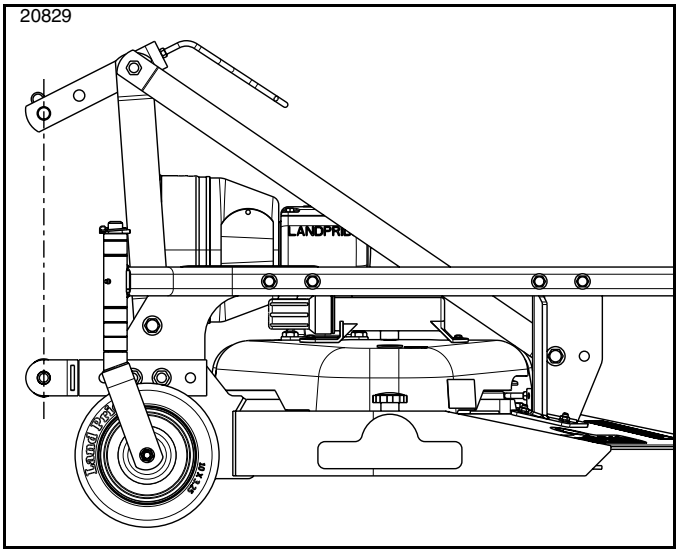
Now that you are properly briefed and prepared, its time to start the tractor and move to your starting point. When transporting to your mowing site, select a safe ground transport speed. When traveling on roadways, transport in such a manner that faster moving vehicles can easily see you and pass you safely. When traveling 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, shut the tractor down according to **"Tractor Shut Down Procedure"** on page 27 and inspect the mower. If you need to dismount the tractor on a hill or incline 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"** on page 43 or **"Product Specifications"** on page 43 for additional information and performance enhancing options.



3-Point Hitch
Figure 4-1

Mower Leveling Adjustment

K-Hitch System: Before connecting to the mower, level the K-Hitch using instructions provided in the KH15 K-Hitch Operator's Manual #320-135MK. No other leveling instructions are required when using the Model KH15 K- Hitch. Skip to **"Cutting Height Adjustment"** on this page.

3-Point Hitch System: Adjust tractor's 3-point hitch using the instructions provided below.

Refer to Figure 4-1:

> **NOTE:** Tractor and mower should be on level ground.

1. Set lower hitch clevises and upper floating hitch clevis, as shown in Figure 4-1. For detailed instructions, refer to **"Three-point Center Link Adjustment"** on page 19.
2. Start tractor and raise mower while watching tractor draw bar (if not removed) to make sure it does not interfere with the driveline and mower.
3. Slowly lower mower until gauge wheels touch the ground and the lower mower 3-point clevis bars are parallel to the ground in floating position. Set tractor 3-point stop at this position.
4. Set park brake, turn off tractor, and remove switch key.
5. Rotate blades parallel to the 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 blades at the front should not be more than 1/2" (13 mm) lower than the blade at the rear. The rear blade should not be lower than the front blade.

Cutting Height Adjustment

⚠ WARNING

To prevent serious injury or death:

- *Always shut tractor down according to "Tractor Shutdown Procedure" provided in this manual before allowing anyone including the operator to hook up or unhook the implement.*
- *Wear a pair of gloves when checking cutting height. Avoid direct contact with cutting edge of blade.*

1. Using the tractor, raise mower off the ground, and support under it with secure non-concrete blocking to keep the mower from drifting down during adjustment.
2. Holding the wheel and yoke assembly up, remove quick-lock pin from top of gauge wheel spindle.

> **NOTE:** Cutting height adjustment ranges from 3/4" (19 mm) to a maximum of 5-1/4" (133 mm) in 1/2" (13 mm) increments.

3. All spacers placed on top of the spindle tube provides approximately 3/4" (19 mm) cutting height. Position full length and half length spacers above and below the spindle tube to get the desired cutting height.
4. If connecting to the K-Hitch, skip to **"Belt Tension Adjustment"** on page 31. Otherwise, continue with **"Center 3-Point Hitch Adjustment"** below.

Center 3-Point Hitch Adjustment

The 3-point hitch system on this mower has been designed for front to back flotation when mowing on uneven terrain. For optimum flotation, adjust tractor's center link to place the upper hitch pin vertically above the lower hitch pins as shown in Figure 4-1. For detailed instructions, refer to **"Three-point Center Link Adjustment"** on page 19.

Belt Tension Adjustment

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.

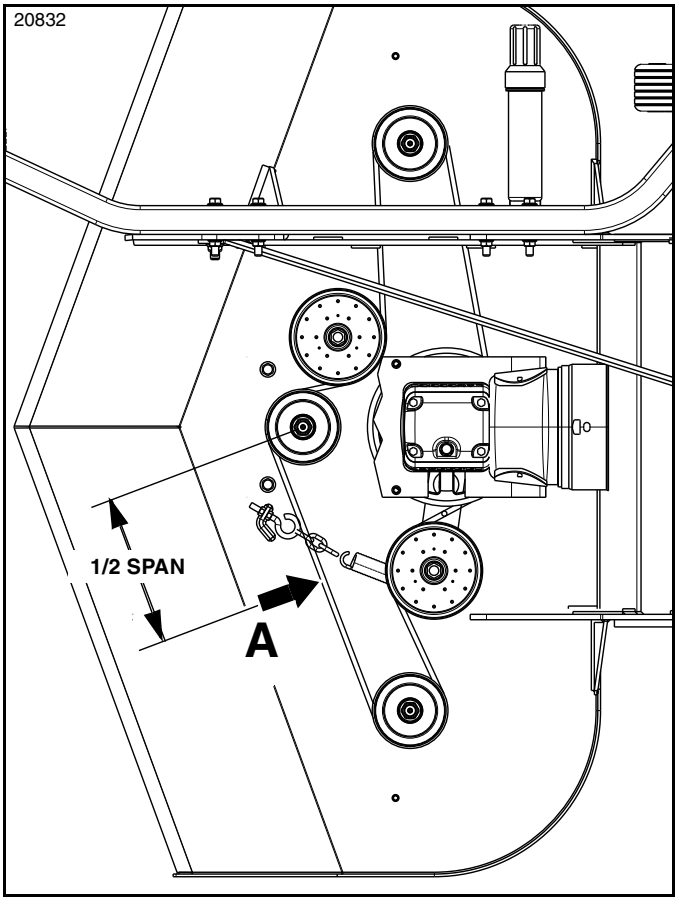
CAUTION

To prevent serious injury:

The belt drive system is under spring tension. Use care when servicing the system to avoid injury caused by forces built up in the spring.

Refer to Figure 4-2:

1. To check tension apply force at arrow **A** with a tension tester and deflect the belt 1/4" (6 mm). The force required to get this deflection should range from 7-10 lbs (3.2-4.5 kg).
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

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General Maintenance Information

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

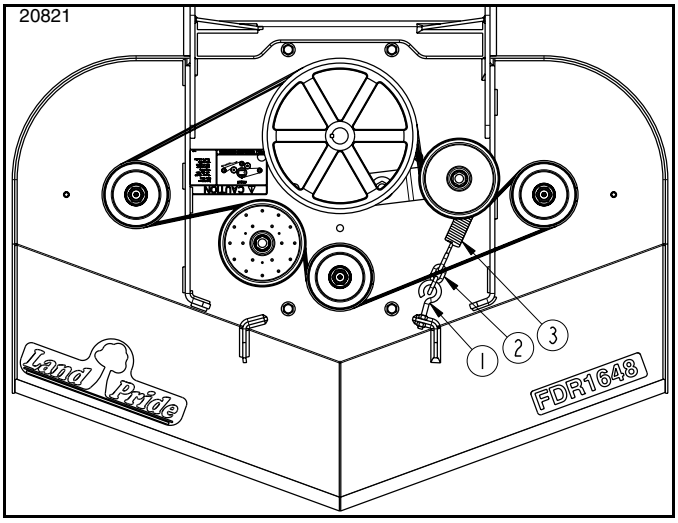
To prevent serious injury or death:

- *Always 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.*
- *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.*

WARNING

To prevent serious injury or death:

- *Make sure controls are all in the neutral position or park before starting the power machine.*
- *Always shut tractor down using "Tractor Shutdown Procedure" provided in this manual before servicing, adjusting, cleaning, or maintaining this implement.*
- *Allow only persons to perform maintenance on this implement who have been properly trained in its safe operation.*
- *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.*



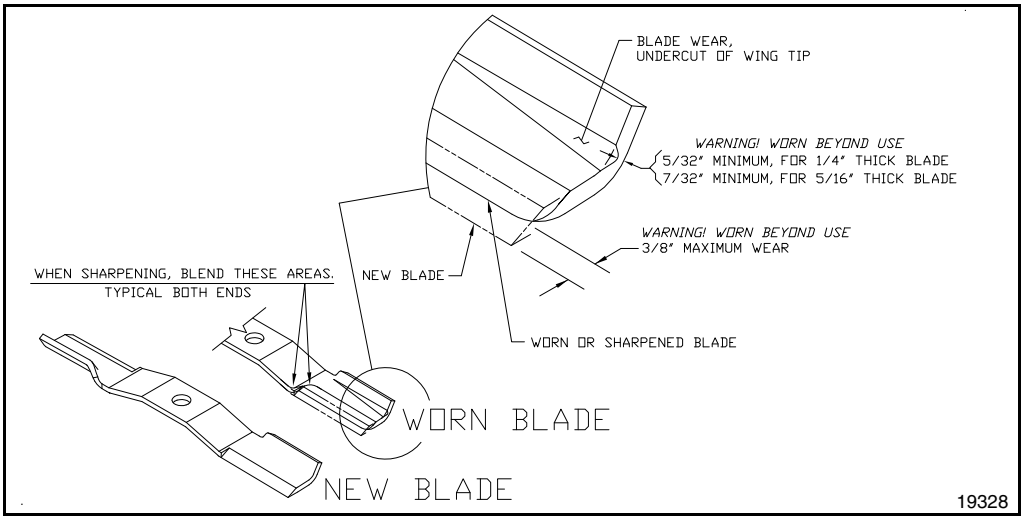
V-Belt Installation
Figure 5-1

V-Belt Installation

Refer to Figure 5-1:

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 eyebolt (#1) and removing the spring (#3) from tension-chain link (#2).
3. With tension relieved from the belt, remove old belt from pulleys.
4. Install new belt looping the belt over the pulleys as shown.
5. Make sure the belt is positioned in all the pulley grooves and then engage belt tension by assembling tension spring (#3) to tension-chain-link (#2) and chain-link to eyebolt (#1). Tightening eyebolt to apply tension to the new belt.
6. To check belt tension, refer to **"Belt Tension Adjustment"** on page 31.
7. Reinstall all belt covers and secure in place with hardware.



Blade Inspection & Sharpening
Figure 5-2

Blade Maintenance

Blade Inspection

Refer to Figure 5-2:

DANGER

To prevent serious injury or death:

Bent, deformed, or cracked 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.

Always inspect cutting blades before each use. Make certain they are properly installed and in good working condition. Replace any blade that is damaged, worn, bent, or excessively nicked. Never try to straighten a bent blade! Small nicks can be ground out.

1. Shut tractor down according to **"Tractor Shut Down Procedure"** on page 27.
2. Check blades for wear. Blade performance will be reduced as the blades wear and are resharpened.
3. 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.
4. If the blade cutting edge is dull or nicked, it should be sharpened or replaced if worn out.

Blade Removal

Remove cutting blades to sharpen or replace as follows:

1. Secure mower deck in the up position with solid, non-concrete supports before servicing the underside.
2. Shut tractor down according to **"Tractor Shut Down Procedure"** on page 27.
3. Disconnect driveline from the tractor.
4. Grasp mower blade with a rag or thick padded glove to loosen and remove the blade bolt and blade.

Blade Sharpening

WARNING

To prevent serious injury or death:

- *Always wear eye protection and gloves while inspecting, removing, sharpening, and replacing mower blades.*
- *Replace mower blades in pairs with genuine Land Pride blades only. Not replacing both blades will result in an out-of-balance condition.*

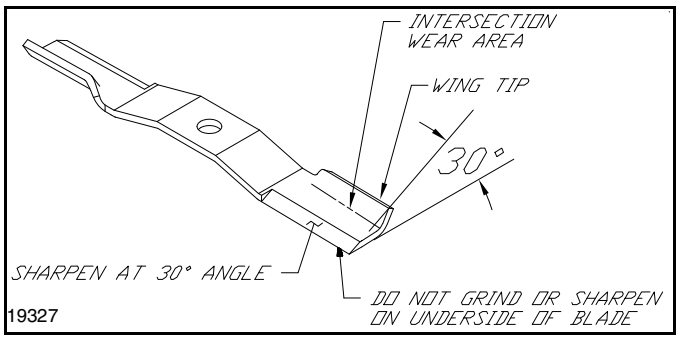
IMPORTANT: Out-of-balance blades will contribute to bearing damage and structural cracks in the mower housing.

1. If the blade cutting edge is dull or nicked, it should be replaced or sharpened. Remove a blade by grasping one end of the blade with a rag or thick, padded glove while loosening and removing the blade bolt.

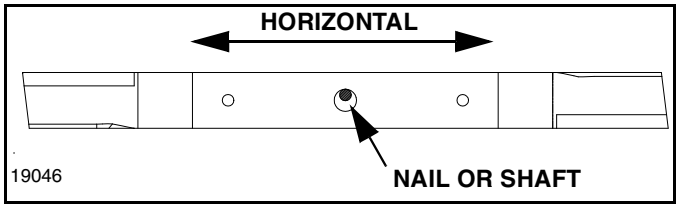
NOTE: Care should be taken in order not to remove any more material than necessary to sharpen blade.

2. Clean blades and mounting surfaces of all debris before sharpening or replacing the blades.
3. **Refer to Figure 5-3:**
   Grind cutting edge at the same bevel as the original. Sharpen only the top side of the cutting edge.

4. **Refer to Figure 5-4:**
   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.



Blade Sharpening
Figure 5-3



Blade Balancing
Figure 5-4

Blade Installation

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

1. Always grasp a mower blade with a rag or thick padded glove.
2. **Refer to Figure 5-3:**
   Mount mower blade to the blade spindle with its wing tips pointing up toward the deck. Use existing blade washer and bolt to secure the blade. Care should be taken while installing the blade bolt to make sure it does not get cross threaded.
3. Torque the blade bolt to the specified torque value. Refer to **"Additional Torque Values"** on page 41 for specified torque value.
4. If mower is attached to a tractor, reconnect driveline to the tractor's power take-off shaft. Refer to **"Driveline Connection"** on page 19.

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 connect to it.

1. Always shut tractor down according to **"Tractor Shut Down Procedure"** on page 27 before dismounting the tractor.
2. 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.
3. Check blades and blade bolts for wear and replace if necessary. See **"Blade Maintenance"** on page 34.
4. Inspect mower for loose, damaged, or worn parts and adjust or replace as needed.
5. 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

6. Replace all damaged or missing decals.
7. Lubricate as noted in the **"Ordering Replacement Parts"** portion of this section starting on page 35.
8. Store mower on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer mower life.
9. Follow all disconnecting instructions on page 28 when separating the tractor from the 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.

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

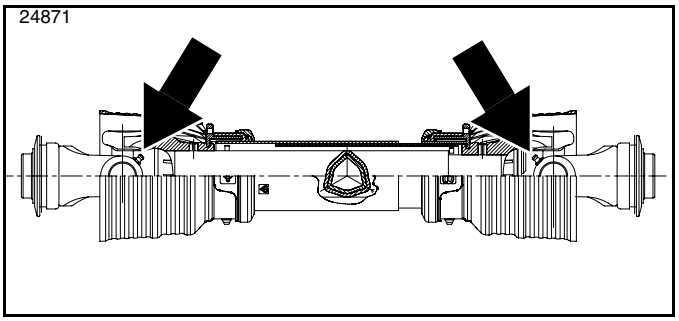
Lubrication Legend

Multi-purpose spray lube

Multi-purpose grease lube

Multi-purpose oil lube

50 Hrs — Intervals in hours at which lubrication is required

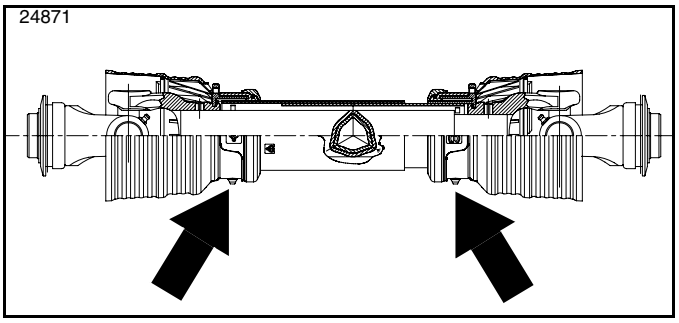


25 Hours

Driveline U-Joints

Type of Lubrication: Multi-purpose Grease

Quantity - 4 to 8 Pumps

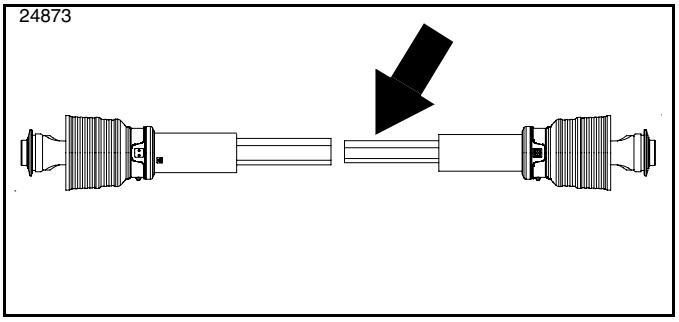


20 Hours

Driveline Shield Bearings

Type of Lubrication: Multi-purpose Grease

Quantity - As Required

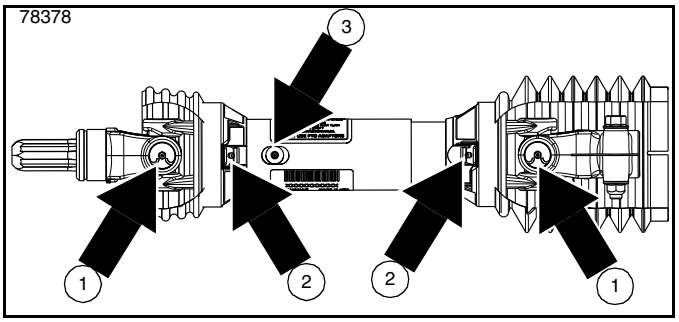


20 Hours

Driveline Profile Tubes

Type of Lubrication: Multi-purpose Grease

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

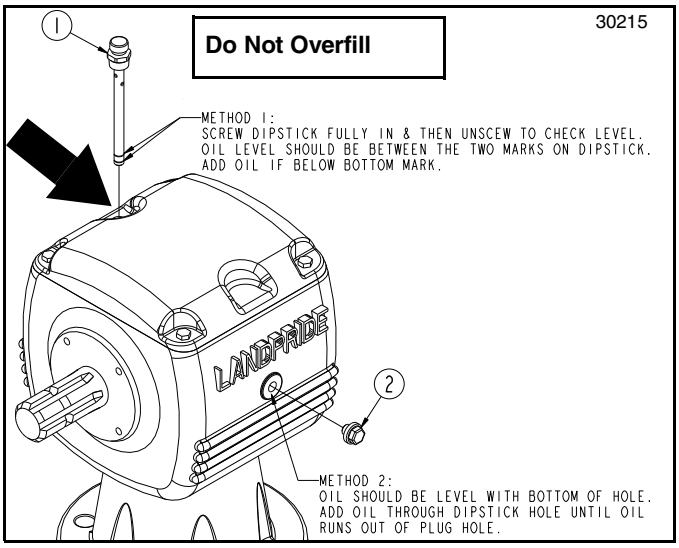


8 Hours

K-Hitch Driveline

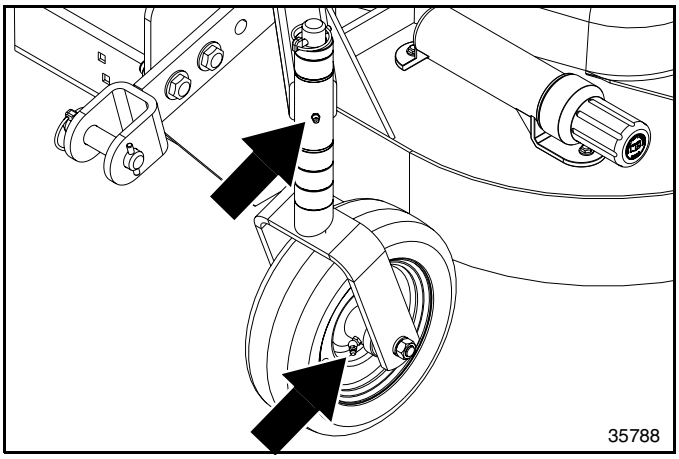
Type of Lubrication: Multi-purpose Grease

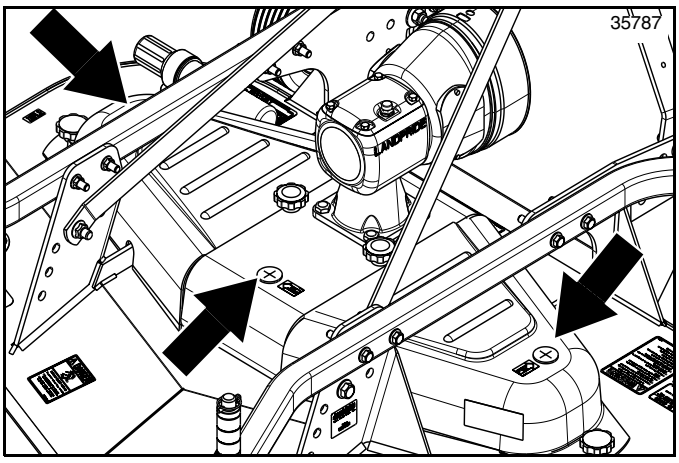
Quantity for U-joints (#1) = 5 pumps each zerk
Quantity for shields (#2) = 8-10 pumps each zerk
Quantity for profiles (#3) = 5 pumps

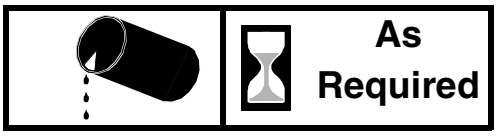


IMPORTANT: This implement is shipped with a vented dipstick packaged in the Operator's Manual bag and should have been installed in the gearbox by your dealer. Please consult your dealer if vented dipstick was not included.

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







Gearbox

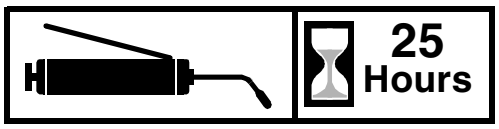
IMPORTANT: Do not overfill the gearbox with oil. Oil will expand when hot. Make sure the implement is level and oil is cool before checking oil level.

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).

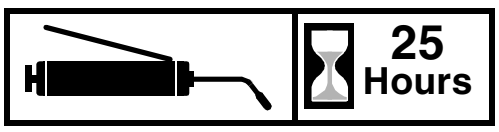
Type of Lubrication: 80-90W EP Gear Lube

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



Wheel Spindle Busings & Axle Bearings

Type of Lubrication: Multi-purpose Grease



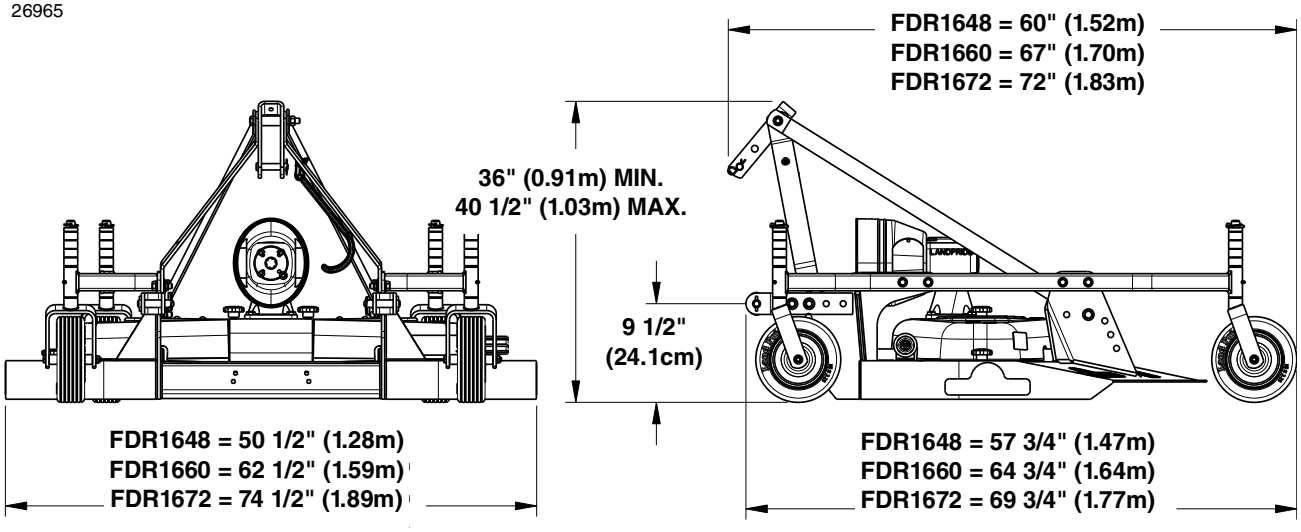
Blade Spindle Bearings

Type of Lubrication: Multi-purpose Grease

FDR16 Series Flat Deck Grooming Mowers

List	Specifications & Capacities		
Model Numbers	**FDR1648**	**FDR1660**	**FDR1672**
Maximum Horsepower - Engine	40 horsepower (29.8 kW)		
Cutting Width	48" (1.22m)	60" (1.52m)	72" (1.83m)
Overall Width	50 1/2" (1.28m)	62 1/2" (1.59m)	74 1/2" (1.89m)
Height	36" (.91m)	36" (.91m)	36" (.91m)
Length	60" (1.52m)	67" (1.70m)	72" (1.83m)
Weight	486 lbs (220.4kg)	577 lbs (261.7kg)	619 lbs (280.8kg)
Cutting Height [1/2" (13 mm) increments]	3/4" - 5 1/4" (19mm - 133mm)		
Deck Material Thickness	3/16" (5mm)		
Blade Tip Speed	16,203 fpm (82.3 mps)	18,195 fpm (92.4 mps)	18,130 fpm (92.1 mps)
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" (3.2cm)		
Blade Spindles	1 3/8" diameter, Cast Iron Greasable Hubs		
Discharge	Rear		
Hitch	Category I	Category I (Quick Hitch compatible)	
K-Hitch Interface option	Not Available	Available |(Must be used with the Model KH15 K-Hitch)	Not Available
Lower Hitch	Floating Clevis with Plated Pins		
Top Link	Floating Clevis		
Castered Gauge Wheels	3 1/4" x 10" Solid Rubber		
Caster Wheel Spindle	1" Diameter with Nylon Bushing		
Drivetrain	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 (1.18L) of 80-90W EP Gear Lube		
Driveline	Heavy-Duty w/quick coupler, ASAE Cat 2		
Front Roller	Optional		
Quick Hitch Compatible	No	Yes	Yes

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FDR16 Series Grooming Mowers

Features	Benefits
3 Cutting widths	48", 60", 72" (102 cm, 152 cm, 183 cm) Able to adapt to various size needs.
Gearbox Horsepower rating	15 - 40 horsepower (11.2 - 22.4 kW) 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 connection 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" (5 mm) 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" (5 mm) 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" (8 mm) 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	For cleaner cutting and better dispersion of clippings 48" (102 cm) = 16,203 fpm (82.3 mps) 60" (152 cm) = 18,195 fpm (92.4 mps) 72" (183 cm) = 18,130 fpm (92.1 mps)
Choices of Blades	Low, medium, high-lift, or mulching blades are available to match customer needs and specific applications.
Blade overlap	1 1/4" (32cm) 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 connection 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 of connecting and storing the driveline. Keeps driveline off the ground.
Quick Hitch Compatible	Compatible with Land Pride Quick Hitch for easy attachment and removal increases productivity. [Except 48" (1.22m)]
K-Hitch Interface Option	
Compatible with Land Pride's Model KH15 K-Hitch	Land Pride's KH15 K-Hitch can be used with any Land Pride equipment purchased with the K-Hitch Interface option.
Available on Model FDR1660	Available on our most popular Rear Discharge Grooming Mower Model.
Easy Hook-up	The operator can connect to the K-Hitch Interface from the tractor seat without assisted help when using the KH15 K-Hitch.

Troubleshooting Chart

Problem		Solution
Belt slipping	Plugged grooming mower	Unplug and clean mower deck.
	Debris in sheave	Remove belt guard shields and clean sheaves.
	Low belt spring tension	Tighten spring take-up bolt.
	Worn belt	Replace belt.
Patches of uncut grass	Tractor rpm too low	Mow at full throttle (540 power take-off rpm). Check power take-off speed and tractor engine.
	Ground speed too fast	Shift transmission to a lower gear.
	Blade damaged or dull	Sharpen and balance or replace blade.
	Incorrect belt tension	Re-tension belt. Refer to “Belt Tension Adjustment” on page 31.
	Blade rotation wrong	Install correct rotation blade.
Excessive vibration	Driveline bent	Replace bent drivelines.
	Blade broken or bent	Replace blade.
	Cross not centered with yoke	Disassemble and inspect for incorrectly located needles or damaged bearing cap.
	Debris in sheaves or on mower deck	Remove belt guard shield and clean debris from belt area and sheaves.
	Sheaves damaged or out of alignment	Replace sheaves or align.
	Drive belt damaged	Replace drive belt - check for belt contacting deck component.
	Inadequate clearance between belt guard shields and belt	Remove belt guard shields and clean debris from belt area and sheaves.
Gearbox noisy	Low lubricant level	Check lubricant level.
Blades scalping grass	Cutting too low	Raise cutting height by adjusting wheels.
	Ridges in terrain	Change mowing pattern.
	Fast turning speed	Reduce speed on turns.
Uneven cut	Ground speed too fast	Shift to a lower gear.
	Mower not level	Level mower.
	Incorrect belt tension	Re-tension belt. Refer to Belt Tension Adjustment on page 31.
	Dull blades	Sharpen blades and balance or replace.
Tractor loaded down by the mower	Tractor rpm too low	Mow at tractor’s rated power take-off rpm (540 power take-off rpm).
	Ground speed too fast	Shift to a lower gear.
	Grass too wet	Wait until grass dries.
	Grass too tall	Raise cutting height of mower and cut grass twice.
	Debris wrapped around mower spindles or blades	Clean mower.
	Tractor power take-off horsepower rating is too low	Raise cutting height of the mower and cut the grass twice. Shift to a lower gear. Use a tractor with more horsepower.
	Blades lift too high	Change to lower lift blades if they will cut the grass satisfactorily.
	Tractor rpm too low	Mow at tractor’s rated power take-off rpm (540 power take-off rpm).
	Ground speed too fast	Shift to a lower gear.

Torque Values Chart for Common Bolt Sizes

Bolt Size (inches)	Bolt Head Identification Grade 2		Grade 5		Grade 8	
in-tpi [1]	N · m [2]	ft-lb [3]	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12
1/4" - 28	8.5	6	13	10	18	14
5/16" - 18	15	11	24	17	33	25
5/16" - 24	17	13	26	19	37	27
3/8" - 16	27	20	42	31	59	44
3/8" - 24	31	22	47	35	67	49
7/16" - 14	43	32	67	49	95	70
7/16" - 20	49	36	75	55	105	78
1/2" - 13	66	49	105	76	145	105
1/2" - 20	75	55	115	85	165	120
9/16" - 12	95	70	150	110	210	155
9/16" - 18	105	79	165	120	235	170
5/8" - 11	130	97	205	150	285	210
5/8" - 18	150	110	230	170	325	240
3/4" - 10	235	170	360	265	510	375
3/4" - 16	260	190	405	295	570	420
7/8" - 9	225	165	585	430	820	605
7/8" - 14	250	185	640	475	905	670
1" - 8	340	250	875	645	1230	910
1" - 12	370	275	955	705	1350	995
1-1/8" - 7	480	355	1080	795	1750	1290
1-1/8" - 12	540	395	1210	890	1960	1440
1-1/4" - 7	680	500	1520	1120	2460	1820
1-1/4" - 12	750	555	1680	1240	2730	2010
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

Bolt Size (Metric)	Bolt Head Identification 5.8 Class 5.8		8.8 Class 8.8		10.9 Class 10.9	
mm x pitch [4]	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

[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

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

Blade Bolt 1/2"-20 UNF Gr 8	Torque bolt to 75 ft-lbs.

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 Drivelines: One year Parts and Labor

Gearbox: (S/N 329841+) 5 years on Parts & Labor

Belts, blades, friction discs in slip-clutch and tires: Considered wear items

This Warranty is limited to the repair or replacement of any defective part by Land Pride and the installation by the dealer of any such replacement part, and does not cover common wear items 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 must be made to the dealer which originally sold the product and all warranty adjustments must be made through such dealer. Land Pride reserves the right to make changes in materials or design of the product at any time without notice.

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

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

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

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

Model Number _____ **Serial Number** _____



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