

SAFETY & OPERATING INSTRUCTIONS





Serial No.

Order No.

Original Language

DR Power Equipment *Toll-free phone:* 1-800-DR-OWNER (376-9637) *Fax:* 1-802-877-1213 *Website:* www.DRpower.com

A WARNING

Read and understand this manual and all instructions before operating the DR 3-POINT HITCH TRIMMER/MOWER.

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Conventions used in this manual

This indicates a hazardous situation, which, if not followed, *will* result in death or serious injury.

This indicates a hazardous situation, which, if not avoided, *could* result in death or serious injury.

This indicates a hazardous situation, which, if not avoided, *could* result in minor or moderate injury.

NOTICE

This information is important in the proper use of your machine. Failure to follow this instruction could result in damage to your machine or property.

Serial Number and Order Number

A Serial Number is used to identify your machine and is located on the Serial Number Label on your machine. An Order Number is used to check and maintain your order history and is located on the upper left portion of your packing slip. For your convenience and ready reference, enter the Serial Number and Order Number in the space provided on the front cover of this manual.

Additional Information and Potential Changes

DR Power Equipment reserves the right to discontinue, change, and improve its products at any time without notice or obligation to the purchaser. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your machine.

Chapter 1: General Safety Rules

Read this Safety & Operating Instructions manual before you use the DR 3-POINT HITCH TRIMMER/MOWER. Become familiar with the operation and service recommendations to ensure the best performance from your machine. If you have any questions or need assistance, please contact us at www.DRpower.com or call toll-free 1-800-DR-OWNER (376-9637) and one of our Technical Support Representatives will be happy to help you.

Labels

Your DR 3-POINT HITCH TRIMMER/MOWER carries prominent labels as reminders for its proper and safe use. Shown below are copies of the Safety and Information labels that appear on the equipment. Take a moment to study them and make a note of their location on your DR 3-POINT HITCH TRIMMER/MOWER as you set up and before you operate the unit. Replace damaged or missing safety and information labels immediately.



Tractor Safety Information

YOUR DR 3-POINT HITCH TRIMMER/MOWER is driven by a PTO shaft that transfers power from your Tractor. The Tractor and PTO shaft are extremely dangerous and can cause serious injury or death if not used properly. Read and understand all of the Warnings and operating instructions that came with your Tractor and the PTO shaft to protect yourself from severe injury or death.

Safety for Children and Pets

Tragic accidents can occur if the operator is not alert to the presence of children and pets. Children are often attracted to the machine and the trimming activity. *Never* assume that children will remain where you last saw them. Always follow these precautions:

- Keep children and pets out of the working area and under the watchful care of a responsible adult.
- Be alert and turn the machine off if children or pets enter the work area.
- Never allow children to operate the DR 3-POINT HITCH TRIMMER/MOWER.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure your vision.

This is a high-powered machine, with moving parts operating with high energy at high speeds. You must operate the machine safely. Unsafe operation can create a number of hazards for you, as well as anyone else in the nearby area. Always take the following precautions when using this machine:

- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people, their property, and themselves.
- Always wear protective goggles or safety glasses with side shields while trimming to protect your eyes from possible thrown debris.
- Avoid wearing loose clothing or jewelry, which can catch on the machine's moving parts.
- We recommend wearing gloves while using this machine. Be sure your gloves fit properly and do not have loose cuffs or drawstrings.
- Wear shoes with non-slip treads when using your DR 3-POINT HITCH TRIMMER/MOWER. If you have safety shoes, we recommend wearing them. Do not use the machine while barefoot or wearing sandals with exposed toes or heels.
- Wear long pants while operating the DR 3-POINT HITCH TRIMMER/MOWER.
- Use ear protectors or ear plugs rated for at least 20 dba to protect your hearing.
- Keep bystanders at least 100 feet away from your work area at all times. The tips of the cutting cords on the DR 3-POINT HITCH TRIMMER/MOWER can throw sticks, small stones, gravel, and bits of debris over long distances at great velocity. Do not travel over loose materials such as gravel or mulch with the trimmer head spinning. Doing so could cause personal injury or property damage from thrown objects. Disengage the PTO Shaft to stop the spinning cords and shut off the Tractor engine when another person or pet approaches.
- Never tamper with safety devices. Check their proper operation regularly.
- Never operate the machine when under the influence of alcohol, drugs, or medication.

Operating the Trimmer/Mower Safely

This is a high-powered machine, with moving parts operating with high energy at high speeds. You must operate the machine safely. Unsafe operation can create a number of hazards for you, as well as anyone else in the nearby area. Always take the following precautions when using this machine:

- Do not have the Trimmer engaged or resting on the ground when backing up. The machine is designed to trim and roll on the Wheel in the forward direction only. Trimming or rolling on the Wheel in the reverse direction could damage the machine and is not covered by the Warranty.
- Know how to stop the Trimmer quickly by disengaging the PTO Shaft and shutting down the tractor.
- Never allow people who are unfamiliar with these instructions to use the DR 3-POINT HITCH TRIMMER/MOWER. Allow only responsible individuals who are familiar with these rules of safe operation to use your machine.
- Do not exceed 2 mph when trimming to allow proper cutting and discharge of material.
- Do not exceed 7 mph when transporting to prevent damage to the machine.
- Operating your 3point trimmer with the head misaligned with the ground can result in poor cut quality, pivoting problems, scalping during cutting, wear on your equipment, and damage to the cutting cord
- Never place your hands, feet, or any part of your body on or under the mower deck in the path of the spinning cords, belt, pulleys, or near the discharge opening while the tractor is running. Keep area of discharge clear of people, animals, buildings, glass, or anything else that will obstruct clear discharge, cause injury, or damage.
- Your DR 3-POINT HITCH TRIMMER/MOWER is a powerful tool, not a plaything. Exercise extreme caution at all times. The design of your machine is for trimming and mowing grass, weeds, and other growth as specified in this manual. Do not use it for any other purpose.
- Whenever you leave the operating position to make adjustments, change cords or if you have to remove grass or debris from the underside of the deck, always disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, disconnect the PTO shaft from the Tractor, then wait five minutes before performing any maintenance procedure or inspection on the Trimmer.

- Be mindful of roll over hazards, changes in terrain, slopes, or wet conditions. Use care when backing up.
- Stop the cutting cords when crossing gravel drives, walks, or roads.
- Never, under any conditions, remove, bend, cut, fit, weld, or otherwise alter standard parts on the DR 3-POINT HITCH TRIMMER/MOWER. This includes all shields and guards. Modifications to your machine could cause personal injuries and property damage and will void your warranty.
- If the cutting cords strike a foreign object or if your machine should start making an unusual noise or vibration, disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, disconnect the PTO shaft from the Tractor, then wait five minutes before inspection. Vibration is generally a warning of trouble. Clean and repair and/or replace damaged parts.
- While using the DR 3-POINT HITCH TRIMMER/MOWER, do not hurry or take things for granted. When in doubt about the equipment or your surroundings, stop the machine and take the time to look things over. Make sure that you have 100% control of the Trimmer at all times.
- Watch for traffic when mowing near roadways.
- Use the machine only in daylight.
- Be cautious when using your DR 3-POINT HITCH TRIMMER/MOWER around fencing, wires, ropes, and hoses. It is possible that these and other debris can become wound around the Cord Head of the machine, potentially damaging the bearings or injuring you.
- Do not operate the DR 3-POINT HITCH TRIMMER/MOWER on slopes greater than is recommended in your Tractor manual.
- Keep all nuts and bolts tight and keep the equipment in good operating condition.

A Note to All Users

No list of warnings and cautions can be all-inclusive. If situations occur that are not covered by this manual, the operator must apply common sense and operate this DR 3-POINT HITCH TRIMMER/MOWER in a safe manner. Contact us at www.DRpower.com or call 1-800-DR-OWNER (376-9637) for assistance.

Chapter 2: Setting Up The DR 3-POINT HITCH TRIMMER/MOWER

It may be helpful to familiarize yourself with the controls and features of your DR 3-POINT HITCH TRIMMER/MOWER as shown in *Figure 1* before beginning these procedures. If you have any questions at all, please feel free to contact us at www.DRpower.com.



DR 3-POINT HITCH TRIMMER/MOWER Controls and Features

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Specifications

Tractor Requirements	Category 1, 25 to 45 HP Max.
Drive	Tractor PTO
PTO Speed	540 RPM
Number of Trimmer Cords	2
Belt	A102, Hi-Power belt. Length 104"
Belt Adjustment	Spring Loaded Idler Pulley
Max. Wheel Base (distance from outside to outside of rear wheels)	80"
Cutting Height	5 Heights, 1.5" to 3.5"
Cutting Width	22"
Machine Weight	220 Lbs

Attaching the 3-Point Bracket to the Tractor

Before performing the following procedure, be sure your tractor engine is off, brake is set, and the key removed for safety.

- Position the 3-Point Bracket at the rear of the Tractor with the Back Plate facing away from the back of the Tractor (*Figure 2*). The opposite side of the 3-Point Bracket facing the Upper Draft Arm is open.
- 2. Remove the Linch Pin from the top Hitch Pin and remove the Pin from the 3-Point Bracket.
- 3. Position the Upper Draft Arm inside the top portion of the 3-Point Bracket and align the Holes.
- 4. Insert the Top Hitch Pin into the aligned holes and secure with the Linch Pin.
- 5. Remove the Hitch Pins from the two lower side mounting Pins of the 3-Point Bracket. Slide the Lower Draft Arms onto the lower Bracket Pins and secure with the Hitch Pins.
- Adjust the Lower Draft Arms as needed to center the 3-Point Bracket and then lock the Lower Draft Arms to keep them from swinging side to side. See your Tractor Operator manual for specific instructions to set Draft Arm position.

Attaching the Trimmer/Mower to the 3-Point Bracket

- 1. Remove the Hitch Pin with Clip from the Locking Ring and remove the Ring (*Figure 3*).
- **Note:** Leave the Pivot Washer on the Pivot Pin. The bevel should be facing the Trimmer/Mower.
- 2. Slide the Pivot Pin into the Mounting Hole of the 3-Point Bracket as far as it will go (*Figure 4*).









Figure 5



Figure 6



Figure 7



Figure 8

DR® 3-POINT HITCH TRIMMER/MOWER

3. Secure the Pivot pin to the 3-Point Bracket with the Locking Ring and Hitch Pin with Clip (Figure 5).

Installing the Wheel Assembly

- 1. Remove the Hitch Pin and Spacers from the Wheel Shaft (Figure 6).
- 2. Insert the Wheel Shaft into the Wheel Support from underneath, install the Spacers on top and secure with the Hitch Pin.

Note: The Wheel height can be adjusted as needed. This procedure will be discussed later in Chapter 3 "Operating the DR 3-Point Hitch Trimmer/Mower"

Calculating length of PTO Shaft needed

The PTO Shaft provided with your Trimmer is 32" overall compressed length and will work "as is" for most applications. Before you install the PTO Shaft it is good practice to run through the following dimension checks to calculate optimum PTO Shaft length to determine if modifications are needed.

Without the PTO Shaft installed, use the table below to record the dimensions as outlined in the following steps.

WARNING

The minimum recommended overlap of the tubes at the center of the PTO Shaft should be 6". Using a PTO Shaft with less than 6" overlap may fail and cause machine damage or personal injury.

Tools Needed:

• Two 11/16" Wrenches

TRACTOR SPLINE SHAFT TO GEARBOX SHAFT MEASUREMENTS						
ON GROUND	Inches					
SHAFTS LEVEL	Inches					
FULLY RAISED	Inches					

Note: Install the Locking Bolt as described in the paragraph "INSTALLING THE LOCKING BOLT FOR PARALLEL TRIMMING/MOWING" in the "Preparing the Trimmer/Mower for Trimming" section in Chapter 3.

1. Remove the front Bolt, Washers and Locknut from the Gearbox Guard with two 11/16" Wrenches (Figure 7).

2. Slightly loosen the rear Bolt, Washers and Locknut of the Gearbox Guard with two 11/16" Wrenches.

3. Rotate the Gearbox Guard up away from the Gearbox Shaft.

4. Lower the Trimmer all the way to the ground in the operating position (Figure 8). Measure from the end of the Tractor Spline Shaft to the end of the Trimmer Gearbox Shaft and record this dimension in the "ON GROUND" row of the table above.

- 5. Raise the Trimmer up until the Tractor PTO Spline and Trimmer Gearbox Shaft are parallel with each other. Measure from the end of the Tractor Spline Shaft to the end of the Trimmer Gearbox Shaft and record this dimension in the "SHAFTS LEVEL" row of the table above.
- 6. Raise the Trimmer up as far as it will go. Measure from the end of the Tractor Spline Shaft to the end of the Trimmer Gearbox Shaft and record this dimension in the "FULLY RAISED" row of the table above.
- **Note:** If your longest measurement exceeds 37" you will require a longer PTO Shaft. Do not proceed with installation until you have a longer PTO Shaft. If you have any questions, please visit us at **www.DRpower.com** or call **1-800-DR-OWNER (376-9637).**
- 7. Take the shortest recorded measurement you wrote in the table and add 2".
- 8. Take that number and subtract it from 32" (overall compressed length of the supplied PTO Shaft).
- 9. This final number is the length that you will need to cut off of the PTO Shaft for it to fit properly to your Tractor.

EXAMPLE: Let's assume the shortest center-to-center measurement in the table is 27".

- 27 + 2 = 29 (step 4 above)
- 32 29 = 3 (step 5 above)
- You would be required to cut 3" off both halves of the PTO Shaft and 3" off the Guard.
- **Note:** If you end up with 0" or a negative number, then no changes are needed until you reach a maximum long measurement of 37" as indicated on previous page.

Modifying the PTO Shaft-if required

If you have determined in the previous steps that the PTO Shaft is too long for your set up, shorten the Shaft as follows:

Tools and Supplies Needed:

- Hacksaw
- Bench Vise
- Tape Measure
- File
- General purpose Lithium Grease

Note: Your actual PTO Shaft may look different than the one shown in these steps **Figure 9** but the procedures are the same.

- 1. Separate the PTO Shaft Halves by pulling them apart.
- 2. Separate the Guards from the PTO Shaft Halves by inserting a flat tip screwdriver into the Bearing Tab Slots as you pull down on the Safety Guard to release the Safety Guard from the Shaft (*Figure 9*).
- 3. Measure and cut the ends of both Guards the required amount (*Figure 10*).
- **Note:** If you put the Guards in a vise to hold them, be careful not to clamp it too tight because it could crack the plastic.





Figure 10



Figure 11



Figure 12



Figure 13



Figure 14

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4. Measure and cut each Shaft Tubes to the required length using the hacksaw (*Figure 11*).

5. File or sand any burrs from the Shaft ends (Figure 12).

6. Grease both Shaft Tubes and under the Bearing Rings of each Shaft (*Figure 13*).

7. Insert the Shaft Halves into the Guards making sure that the Bearing Ring Slot lines up with the Tab on the inside of the Guards for proper installation (*Figure 14*).

8. Slide the two PTO Shaft Halves together.

Note: When inserting one half of the PTO Shaft to the other you must line up the splines correctly (two pointed splines and one flat spline).

Continue to the following section to attach the PTO Shaft to the Tractor and Trimmer.

Attaching the PTO Shaft to the Tractor and Trimmer

Note: The PTO Driveshaft provided with your new machine is sized to fit a standard category 1 PTO (1-3/8" DIA. x 6" Spline).

The PTO Spline Shaft on the tractor that is to use this machine must rotate clockwise when viewing the PTO from the rear of the tractor. If the PTO rotates counterclockwise, you must have your tractor modified by installing a gearbox to reverse the direction of rotation.

The length of the PTO Driveshaft that is included with your new machine will work in most instances but may need to be modified. See "Calculating Length of PTO Shaft needed" for checking the PTO Shaft length desired and then "Modifying the PTO Shaft if required" instructions if the PTO Shaft is too long.

NOTICE

You must install the Key supplied in the Product Package where the PTO shaft attaches to the Trimmer Gearbox. Failure to install the Key will result in damage to the machine and is not covered under warranty.

Tools Needed:

- 4mm Allen Wrench
- 1. Open the Gearbox Guard as described on page 8.
- 2. Insert the Key into the Trimmer Gearbox Shaft (Figure 15).



Figure 15

- 3. Align the Key Slot of the PTO Shaft with the Key in the Shaft and slide it onto the Shaft (*Figure 16*).
- **Note:** Do not allow the PTO Shaft to contact the Gearbox. The Gearbox Shaft end should be flush with the inside of the U-Joint.
- 4. Secure the PTO Shaft by tightening the Set Screw with a 4mm Allen Wrench.
- **Note:** If you plan to leave the Trimmer attached to the Tractor for extended periods, apply thread lock to the Set Screw to help secure it in place.
- 5. Push in the Spring Pin at the end of the PTO Shaft and slide it onto the Tractor Spline (*Figure 17*). When the PTO Shaft is started on the Tractor Spline Shaft, release the Pin and continue to push the PTO Shaft until the Spring Pin locks into the Groove of the Tractor Spline.
- Attach the Safety Chain of the PTO Shaft around a solid area of the 3-Point Bracket with the Chain ends attached to both ends of the PTO Shaft Guard (*Figure 18*). Make sure the Chain has enough slack in the full range of the Tractor 3-Point Arm travel.
- 7. Lower the Gearbox Guard and install the front Bolt, Washers and Locknut with two 11/16" Wrenches (*Figure 19*).
- 8. Tighten the rear Gearbox Guard hardware with two 11/16" Wrenches.

Installing Trimmer Cords

Note: Cutting height adjustments can be made as you learn the trimming characteristics of the machine in the "Operating the DR 3-Point Hitch Trimmer/Mower" in the next Chapter.

Always make sure to install all four Trimmer Cords and ensure they are the same length. Not having all four Cords installed and/or at the same length will cause excessive vibration and could damage the machine.

- Insert the end of a Trimmer Cord into the inlet hole (larger slotted cutout) push it in until the end protrudes out the other side approximately 1/2" (*Figure 20*).
- 2. Turn the Cord Head 90 degrees and repeat the installation until all Cords are installed.
- **Note:** The Cord can only move through the Cord Head in one direction. To remove it you must pull it from the other side of the Holder (where the 1/2" end is).

NOTICE

Running the trimmer without all four cords installed or cords of unequal length can cause excessive vibration and may damage the machine.



Figure 20



Figure 16



Figure 17



Figure 18







Figure 22



Cord Head Height Adjustment

Note: The Cord Head can be located above or below the Molded Spacer giving you a 1-1/2" range in trimming height. The following steps show moving the Cord Head from below the Molded Spacer to on top of the Molded Spacer.

Tools and Supplies Needed:

- Phillips head Screwdriver with at least a 6" shank
- Gloves

1. Align the hole in the Anti Wrap Canister with the hole in the internal housing at the location shown (Figure 21).

2. Insert a Philips Head Screwdriver into the hole in the Anti Wrap Canister and the hole in the internal Housing.

3. Rotate the Mow-Ball[®] Assembly until the Screw Driver slides into a hole in the shaft, locking it into place.

4. Looking down at the top of the Frame, turn the Mow-Ball[®] clockwise until it unscrews completely from the Bearing Housing.

Note: If the Mow-Ball[®] continues to turn, but does not come off, check that you locked the Screwdriver into the shaft. If the Mow-Ball will not turn by hand a 9/16" Socket can be used on the Bolt (inside the bottom of the Mow-Ball) to loosen it. You may need to clean grass or debris out of the recess first.

5. Slide the Cord Head, Adapter and Molded Spacer off the Shaft (Figure 22).

6. The Anti-Wrap Can and Spacer should remain on the Shaft with the Screwdriver.

7. Make sure the Adapter is inserted into the top of the Cord Head as you install the Cord Head onto the Shaft.

8. Install the Molded Spacer onto the Shaft.

9. Place the head of the Mow-Ball® Bolt so it is sitting inside the hex cavity at the bottom of the Mow-Ball[®].

10. Looking down at the top of the Frame, hold the Bolt Head in place with your finger and turn the Mow-Ball[®] counterclockwise to start the Bolt into the Shaft. 11. Tighten the assembly securely by turning the Mow-Ball[®] counterclockwise when looking down on the top of the Frame (Figure 23).

12. Remove the Screwdriver.

WARNING

Always make sure you remove the screwdriver from the head assembly when finished. Failure to remove the screwdriver could cause injury when the head assembly is engaged.

Greasing the Wheel Support

Tools needed:

- Flexible hose grease gun
- Lithium grease
- Clean cloth
- 1. Apply a quality general-purpose lithium grease with a hand-pumped grease gun to each of the Support Grease Fitting (*Figure 24*).

The Assembly and installation of your DR Trimmer/Mower is now complete. Proceed to the next Chapter "Operating the DR 3-POINT HITCH TRIMMER/MOWER" for operating instructions.



Figure 24

🛕 WARNING

- This machine is designed to operate at 540 rpm PTO Shaft speed only! Never operate at a faster speed; doing so can cause serious injury to the operator or bystanders and could cause damage to the machine that is not covered under warranty.
- Read and understand your Tractor users manual and all Tractor safety Warnings for operating your Tractor safely before operating this DR 3-Point Hitch Trimmer/Mower.

Operation Notes

- See the Owner's Manual that came with your Tractor for all safety warnings and detailed information for operating your Tractor properly.
- Always operate the Tractor PTO at 540 RPM when trimming.
- Always disengage the PTO, lock the Parking Brake and shut off the Tractor when leaving the Tractor Seat.
- Never transport the Trimmer while the PTO is turning.
- Do not have the Trimmer engaged or resting on the ground when backing up. The machine is designed to trim and roll on the Wheel in the forward direction only. Trimming or rolling on the Wheel in the reverse direction could damage the machine and is not covered by the Warranty.
- Remove any debris buildup from the machine before every use of the Trimmer.
- Always install the Locking Bolt and Wing Nut into the transport holes of the 3-Point Bracket and Trimmer when transporting the Trimmer. See "Preparing the Trimmer/Mower for Transport" in this Chapter.



Figure 25



Figure 26

Preparing the Trimmer/Mower for Trimming

The characteristics of cutting height and quality is controlled by the position of the Trimmer Cords, location of Locking Bolt, Wheel Spacer arrangement and height of Tractor PTO lift Arms. It takes time and practice to learn what the best combinations of settings for different conditions are.

INSTALLING THE LOCKING BOLT FOR PARALLEL TRIMMING/MOWING (terrain that is level with Tractor Wheels)

1. Install the Bolt into the right side "holes" location through the 3-Point Bracket and Trimmer Bracket (*Figure 25*).

2. Secure the Bolt with the Wing Nut.

INSTALLING THE PIVOT BOLT FOR PIVOT TRIMMING/MOWING (terrain that is higher or lower than Tractor Wheels such as ditches)

1. Install the Bolt into the left side "slots" location through the 3-Point Bracket and Trimmer Bracket (*Figure 26*).

2. Secure the Bolt with the Wing Nut.

Checking 3-Point Bracket to PTO Shaft clearance

Observe the Trimmer as it is lifted to ensure that the 3-Point Bracket does not contact the PTO Shaft. If they do touch, the Tractor may have a setting to limit the distance it is lifted off the ground to prevent contact. See your Tractor user manual for details of Tractor settings.

SETTING WHEEL HEIGHT

- 1. Remove the Hitch Clip and remove the Wheel Assembly with Spacers (*Figure 27*).
- 2. Adjust the Spacers as desired with some under and some above the Support on the Shaft.
- 3. Reinstall Wheel Assembly, Spacers and Hitch Clip.
- **Note:** More Spacers under the Support will lower the Wheel and set the Trimmer Head Higher. More Spacers on top of the Support will raise the Wheel and set the Trimmer Head Lower.

Engaging the Trimmer Head

- 1. Ensure that the Trimmer is lowered to the ground and all Guards are in place and properly secured before using.
- 2. Set Tractor throttle at IDLE and engage the PTO.
- 3. Increase Tractor throttle to the RPM's required to obtain 540 PTO speed.

Note: See your Tractor manual for detailed information on Tractor operation.

Stopping the Cords from Spinning

- 1. Reduce Tractor throttle to IDLE.
- 2. Disengaging PTO to stop the Trimmer.

Cord Tips

We ship two (2) thicknesses of Cutting Cord with your DR 3-POINT HITCH TRIMMER/MOWER.

The Cords are Blue (175-mil) and Green (155-mil). Because conditions and vegetation vary so much, you should experiment with Cord weights (diameters) to discover what works best for your particular mowing and trimming situations. Here are a few things to keep in mind:

- If you buy Cutting Cord in rolls, cut it in 13" lengths. Cut them at an angle so they will be easier to install.
- Soak your Cutting Cord in a bucket of room temperature water for a few days before use to make it more pliable. Storing the Cord in a plastic bag with a damp sponge or cloth will help keep it pliable
- Cord life depends on trimming conditions. Replace Cords when they become broken or frayed.
- The smallest diameter Cord capable of cutting the material at hand usually provides the best grass trimming performance. When you need more strength for thicker growth such as berry canes, brambles, thistles, or ragweed, you may want to use the 175-mil Cord.
- Ease the ends of the Cord into heavy growth and move slowly through thick growth. If there are woody weeds in the material you are cutting, the cutting Cords may wrap around the stalks they cannot cut, and pull away from the Trimmer Head.
- If the Cord breaks off flush at the Cord Head, use needle nose pliers to pull out the old Cord.
- UV light can degrade cord, store out of direct sunlight.







Figure 28



Figure 29

Preparing the Trimmer/Mower for Transport

WARNING

Always disengage the PTO Shaft before lifting the Trimmer off the ground or transporting the Trimmer to prevent injury or damage to the machine.

1. On the right hand side of the machine (trimmer head side), align the holes of the Trimmer with the holes in the 3-Point Hitch Bracket. Insert the Locking Bolt through the holes (*Figure 28*).

2. Secure the Bolt with the Wing Nut.

Note: Observe the Trimmer as it is lifted to ensure that the 3-Point Bracket does not contact the PTO Shaft. If they do touch, the Tractor may have a setting to limit the distance it is lifted off the ground to prevent contact. See your Tractor user manual for details of Tractor settings.

3. Lift the Trimmer off the ground with the Tractor 3-Point Hitch before transporting to prevent hitting any obstacles.

Obstacles

Dealing with obstacles in the terrain is easy with your new DR 3-POINT HITCH TRIMMER/MOWER. The following section explains how to approach most common obstacles.

- Always check your work area before trimming and remove any debris that might tangle or damage the machine.
- Approach obstacles (fence posts etc) so the impact zone will be within the area of the Optimum Impact Zone Label (*Figure 29*). This will ensure the best spring action and trimming coverage around the obstacle.
- If you do run into debris and the Trimmer becomes tangled, disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, then wait five minutes for parts to cool before attempting to untangle the machine.
- Never Trim or let the Wheel rest on the ground with the Tractor in reverse.

Heavy Growth

- Take your time in heavy growth.
- If the machine cannot do it all in one pass, overlap half of the cutting swath.
- Ease the DR 3-POINT HITCH TRIMMER/MOWER into denser growth. If the material is too tough or woody to cut, the Cutting Cords will wrap around it, wear down, or even break off.

Tip: Use the "two pass", one half overlap method, whenever possible.

Wet Conditions

Because there is no housing to restrict the flow of cut material, you can also use your DR 3-POINT HITCH TRIMMER/MOWER to mow wet or heavy growth. You can use the Trimmer in damp conditions, after a rain, or in the early morning dew without clogging or stalling. You can also mow wet areas such as ditches and around ponds.

Slopes

Refer to your Tractor Users Manual for slope safety information and operation guidelines.

Windrows

The DR 3-POINT HITCH TRIMMER/MOWER Cutting Cords cut even tall grass in just one pass, so you can collect clippings and leaves for mulch without raking. The machine ejects cut material to its right side, so you can use it like a lawn broom to make windrows for easy clean-up.

Firebreaks

Use your Trimmer as a labor saving tool to cut material when creating firebreaks.

Chapter 4: Maintaining The DR 3-POINT HITCH TRIMMER/MOWER

Regular maintenance is the way to ensure the best performance and long life of your machine. Please refer to this manual for maintenance procedures.

Disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, disconnect the PTO shaft from the Tractor, then wait five minutes before performing any maintenance procedure or inspection on the Trimmer.

Regular Maintenance Checklist

Note: Consider that the service intervals shown are the maximum under normal operating conditions. Increase frequencies under extremely dirty or dusty conditions. See the Owners Manual that came with the Tractor and with the PTO Shaft for Specific Tractor and PTO Shaft maintenance.

Procedure	Before Each Use	EVERY 8-10 HOURS	Every 18- 20 Hours	EVERY 50 HOURS	EVERY 100 HOURS
Check General Equipment Condition, e.g. Nuts, Bolts, Welds, etc.					
Replace broken or frayed Cutting Cords.					
Check the Mow-Ball [®] and Cord Head for excessive wear.					
Lubricate PTO Shaft and Wheel Support Grease Fittings					
Check Belt tension and condition					
Lubricate PTO Shaft Spline ends and center overlap					
Replace the Belt					
Grease pivot bearings and gearbox					

Maintenance position

Many maintenance procedures can be performed easier by positioning the Trimmer in an upright "maintenance" position. This position is for maintenance purposes only. Do not transport or operate the Trimmer in the upright position.

🛕 WARNING

- Two people are required when setting the Trimmer Body to the maintenance position. One person must steady the Trimmer as the other installs the Bolt. Do not allow the Trimmer Body to go beyond vertical and fall in the opposite direction without the Bolt in place as this could cause injury to you or damage the Trimmer.
- Never transport the Trimmer in the "Maintenance" position. This could damage the machine and is not covered by the Warranty.
- 1. Remove the Bolt and Wing Nut that is holding the Trimmer in the trimming operating positions.
- 2. Lift the Trimmer Body up to a vertical position. With the head of the Bolt facing the Tractor, install the Bolt all the way into the transport hole of the 3-Point Bracket (*Figure 30*).
- 3. Let the Trimmer Mounting Bracket rest against the Bolt to hold it in the vertical (maintenance) position.



Figure 30





Figure 33

Replacing the Mow-Ball[®] or Cord Head Tools and Supplies Needed:

- Phillips head Screwdriver with at least a 6" shank
- Gloves

4. Align the hole in the Anti Wrap Canister with the hole in the internal housing at the location shown (Figure 31).

5. Insert a Philips Head Screwdriver into the hole in the Anti Wrap Canister and the hole in the internal Housing.

6. Rotate the Mow-Ball® Assembly until the Screw Driver slides into a hole in the shaft, locking it into place.

7. Looking down at the top of the Frame, turn the Mow-Ball[®] clockwise until it unscrews completely from the Bearing Housing.

Note: If the Mow-Ball[®] continues to turn, but does not come off, check to be sure that you locked the Screwdriver into the shaft.

If the Mow-Ball will not turn by hand a 9/16" Socket can be used on the Bolt (inside the bottom of the Mow-Ball) to loosen it. You may need to clean grass or debris out of the recess first.

8. Slide the Cord Head, Adapter and Molded Spacer off the Shaft (Figure 32).

9. The Anti-Wrap Can and Spacer should remain on the Shaft with the Screwdriver.

10. Replace parts as needed and install them onto the shaft in the order shown.

11. Place the head of the Mow-Ball[®] Bolt so it is sitting in the hex cavity at the bottom of the Mow-Ball[®].

12. Looking down at the top of the Frame, hold the Bolt Head in place with your finger and turn the Mow-Ball[®] counterclockwise to start the Bolt into the Shaft.

13. Tighten the assembly securely by turning the Mow-Ball[®] counterclockwise when looking down on the top of the Frame.

14. Remove the Screwdriver.

WARNING

Always make sure you remove the screwdriver from the head assembly when finished. Failure to remove the screwdriver could cause injury when the head assembly is engaged.

Cleaning the Cord Head

Tools Needed:

- 3mm Allen Wrench
- Clean Rags
- Nylon Brush

15. Remove the Cord Head as described in the "Replacing the Mow-Ball® or Cord Head" section.

16. Remove the four Screws using a 3mm Allen Wrench (Figure 33).

- 17. Remove the Springs and Locking Cams from the Middle and Bottom Plates and clean any grass or debris from the Springs and Cams.
- 18. Clean all Plates using a Nylon Brush and clean Rag to remove all grass and dirt.
- 19. Inspect the Springs and Cams for damage. If any parts are damaged please call DR Power to order a replacement assembly.
- 20. Reinstall the Springs and Locking Cams into the middle and bottom Plates (*Figure 34*).
- **Note:** The Bottom Plate has threaded holes and the middle Plate has clearance holes. The Plates must be in the correct order for proper assembly.
- 21. Assemble the Plates ensuring that they are aligned properly and the Springs and Cams are seated fully into the Plate grooves. The four Screw holes must be aligned and the two halves of the side cutouts should align from Plate to Plate (*Figure 35*).
- 22. Secure the Cord Head assembly with the four Screws using a 3mm Allen Wrench.
- 23. Reinstall the Cord Head as described in the "Replacing the Mow-Ball $^{\mbox{\scriptsize B}}$ or Cord Head" section.

WARNING

Always make sure you remove the screwdriver from the head assembly when finished. Failure to remove the screwdriver could cause injury when the head assembly is engaged.

Replacing the Drive Belt

NOTICE

Use only DR belts on your machine. Do not use hardware store variety belts.

Tools needed:

- 7/16" Wrench
- 1. Remove the four Bolts, Lock Washers and Flat Washers from the Belt Guard using a 7/16" Wrench (*Figure 36*).
- 2. Lift the Belt Guard from the machine.
- 3. Pull the Belt Tension Idler Pulley away from the Belt and slide the Belt off the Idler Pulley (*Figure 37*).
- 4. Remove the Belt from the Trimmer Head Pulley and the main Drive Pulley.
- 5. Install the new DR Drive Belt around the main Drive Pulley and the Trimmer Head Pulley.
- 6. Pull the Belt Tension Idler Pulley away from the Belt and slide the Belt onto the Idler Pulley
- Position the Belt Guard and secure the Guard with the four Bolts, Lock Washers and Flat Washers using a 7/16" Wrench (*Figure 36*).







Figure 38



Figure 39



Figure 40



Figure 41

Grease Fittings

Your PTO Shaft was greased at the Factory so it will not need grease until the scheduled maintenance as listed at the beginning of this Chapter. The Wheel Support should have been greased when the machine was assembled and also has a recommended grease maintenance listed.

Tools and Supplies needed:

- Flexible hose grease gun
- Lithium grease
- Clean cloth

Note: The U-Joint Grease Fitting is sometimes located on the inside of the Joint. The plastic Collar will need to be unclipped and pushed down to access the Fitting for this type.

1. Wipe all dirt, etc., from the PTO Shaft grease fittings with a clean cloth.

2. Apply no more than three pumps of quality general-purpose lithium grease with a hand-pumped grease gun to each of the two U-Joint Grease Fittings *(Figure 38)*.

3. Check the PTO Shaft Set Screw for tightness. If it is not tight then remove it, apply Thread Lock to the threads, then reinstall and tighten the Set Screw.

4. Wipe all dirt, etc., from the Wheel Support fitting with a clean cloth (*Figure 39*).

5. Apply quality general-purpose lithium grease with a hand-pumped grease gun to the Wheel Support Grease Fitting as needed.

Greasing the Gearbox

The Gearbox is greased at the factory but may require grease to be added after prolonged use..

Tools and Supplies needed:

- Two 11/16" Wrenches
- 17mm Wrench
- Grease gun
- Mobil, Multipurpose XHP Lithium Grease
- Clean cloth

Note: The Gearbox can hold 550ml. (18.6oz) of Mobil, Multipurpose XHP Lithium Grease. We recommend the Gearbox be completely filled with Grease.

1. Remove the front Bolt, Washers and Locknut from the Gearbox Guard with two 11/16" Wrenches (*Figure 40*).

2. Slightly loosen the rear Bolt, Washers and Locknut of the Gearbox Guard with two 11/16" Wrenches.

- 3. Rotate the Gearbox Guard up away from the Gearbox.
- 4. Remove the Access Bolt using a 17mm Wrench (*Figure 41*).
- 5. If the Gearbox is not completely full, add Grease as needed to fill.

Replacing the Caster Wheel

Tools Needed:

- Pliers
- 1. Remove the Hitch Clip with Pliers and remove the Wheel Assembly with Spacers (*Figure 42*).
- 2. Install the new Wheel Assembly and Spacers.
- 3. Secure with the Hitch Clip.

Check the Tire Pressure

Tools Needed:

- Tire Pressure Gauge
- Air Compressor
- 4. Remove the Valve Stem Protective Cap (*Figure 43*) and check the tire pressure with a Tire Pressure Gauge.
- 5. Check what the manufacturers recommended pressure is that is stamped on the side of the Tire.
- 6. If the pressure reading is too low, add air through the Valve Stem with an air hose.
- 7. Replace the Valve Stem Protective Cap when finished.

Do not over inflate the tires. Inflate to the manufacturers recommended pressure found on the tires.



Figure 42



Figure 43

Chapter 5: Troubleshooting

Most problems are easy to fix. Consult the Troubleshooting Table below for common problems and their solutions. If you continue to experience problems, contact us at www.DRpower.com or call toll-free 1-800-DR-OWNER (376-9637) for support.

Disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, disconnect the PTO shaft from the Tractor, then wait five minutes before performing any maintenance procedure or inspection on the Trimmer.

Troubleshooting Table

Symptom	POSSIBLE CAUSE
Poor cut quality	\Rightarrow Cord needs to be replaced.
	\Rightarrow Tractor speed too fast.
Scalping	\Rightarrow Arm or wheel adjustment is off. Check for frame level or height of hydraulic arms on tractor
Machine stops cutting	\Rightarrow Inspect cords
	\Rightarrow Check belt tension/wear
	\Rightarrow Check PTO rotation
The Trimmer Head won't spin or lacks	⇒ Check for proper alignment of the V-Belt. Check it against the "Replacing the Drive Belt" section on page 19.
power.	\Rightarrow The Belt may be worn or frayed; if so, replace it.
	⇒ If none of the above helps, visit our web site at www.DRPower.com or call 1-800-DR- OWNER (376-9637) for assistance.

Parts List – Head and Wheel Assembly

Note: Part numbers listed are available through DR Power Equipment.

Ref#	Part#	Description			Ref# Part# Description
1	32203	Cover, Belt	22	33331	Nut, Nylon Lock, Flanged, 1/4-20
2	34325	Bolt, Hex, Flange, 1/4-20 X 1"	23	34385	Spacer, Cord Head, 4-Line
3	11152	Bolt, HHCS, 3/8-16 X 1.00" Lg.	24	32200	Pulley, 3.5" Ed, A-Profile V-Belt, .67 Shaft
4	33333	Nut, Nylon Lock, Flanged, 3/8-16	25	31096	Spindle, Trimmer
5	22247	3/8-16 X 2.25", Gr5, ZP	26	11239	Washer, Flat, 3/8", USS
6	31117	Screw, HWH, 1/4-20 X 3/4", Taptite	27	34403	Adapter, Cord Plate
7	32206	Bushing, .386" X .623" X 1.53"	28	12697	Washer, Fender 1/4" ID X 1" OD
8	32232	Caster, 9 X 3.50 Wheel	29	32231	Wheel, 9 X 3.50-4
9	32207	Support, Wheel	30	10189	Grease Fitting 1/4-28 Straight
10	34383	Cord Pack, 13", 24 Pack	31	10851	Spacer .76" ID 1.50" OD .50"thk
11	25311	Pin, Cotter, 5/32" x 2"	32	32442	Label, Strike Zone
12	24538	Pin, Linch, 3/16" x 1 9/16"	33	32410	Cover, Belt, Small
13	32202	Guard, Deflector	34	32440	Label, Pictogram Warning
14	32198	Idler Arm	35	12376	Bushing .766" ID 1.0" OD
15	15127	Pulley, Flat Idler, 4"	36	32443	Label, DR Logo, Silver, 8"
16	13649	Label, Danger	37	10181	Washer, Lock, 1/4", Split, ZP
17	31098	Can, Anti-Wrap	38	32456	Belt, 6651BR
18	31101	Mow Ball, Hex Bolt	39	31099	Spacer, .680" X .984" X .310", ZP
19	31301	Bolt, 3/8-16 X 1", Gr5, ZP, High Hd	40	11914	Key, Sq, 3/16" X 1"
20	34387	Cord Head, 4-Line	41	33424	Spring, Idler
21	11075	Nut, Nylon Lock, 3/8-16, ZP	42	33432	Bracket, Mounting, Deflector Guard

Schematic – Head and Wheel Assembly



Parts List – Drive and Pivot Assembly

Note: Part numbers listed are available through DR Power Equipment.

Ref#	Part#	Description	Ref#	Part#	Description
1	32205	Bearing, Taper Roller, 25mm ID, 62mm	29	32204	Base, Pivot
		OD, 18.25mm Thk	30	32386	Bracket, Pivot Lock
2	32400	Bolt, M8 X 20mm, Gr8.8, ZP, W/ Locking	31	32409	Bracket, Articulating
2	22205	Patch	32	32208	Shaft, Pivot Support
3	32395	Bolt, M10 X 180mm, P1.5, Gr8.8, ZP	33	32401	PTO Shaft, T20, Ø1-3/8in Z6 & 25mm
4	11152	Bolt, HHCS, .375-16 X 1.00" Lg.			W/ 8mm Key Yokes
5	11985	Bolt, HCS, 3/8-16 X 1.5"	34	32201	Pulley, 9" Ed, A and B-Profile V-Belt,
6	32376	Bolt, 3/4-10 X 9.5", Gr8, YZP			25mm Shaft
7	15069	Bolt, HHCS, 3/8 -16 X 2.5" Lg.	35	32372	Rod End, Ball Joint, 1/2-20 Thread, Fem
8	15072	Bushing 1.385" ID X 1.629" OD X 1.50" L	36	32389	Spring, Limiter
9	25311	Pin, Cotter, 5/32" x 2"	37	32373	Spring, Strut
10	32194	Frame	38	32371	Rod, Connecting, 1/2-20 Male RH
11	32195	Gearbox, 1:2.78, Ø25mm Input &			Thread, 18" L
		Output Shafts	39	15138	Washer, 1.375" ID, 2.0" OD
12	32381	Guard, Gearbox	40	32388	Ring, Locking
13	32399	Key, Machine, 8 X 7 X 40mm, Din 6885 A	41	32374	Bracket, Three Point
14	32398	Key, Machine, 8 X 7 X 25mm, Din 6885 A	42	30250	Washer, M10
15	32438	Label, Danger, Gearbox Cover	43	10179	Washer, Flat, 1/2" USS
16	30249	Nut, Nylon Lock, M10-1.5	44	11239	Washer, Flat, 3/8", USS
17	33333	Nut, Nylon Lock, Flanged, 3/8-16	45	32379	Washer, Lock, 7/8", YZP
18	32391	Nut, Nylon Lock, 1/2-20, Gr5, ZP	46	32234	Spacer, .78" ID, 2" OD, .18" Thk
19	32390	Nut, Hex, 1/2-20, Gr5, ZP	47	32408	Bracket, Strut
20	32387	Nut, Wing, 3/4-10, ZP	48	32439	Label, Branding
21	32380	Nut, Hex, 7/8-9, YZP	49	10181	Washer, Lock, 1/4", Split, ZP
22	32233	Nut, Slotted, 3/4-10, ZP	50	33426	Gear Box, Mounting Bracket, Right
23	25453	Shim, 1.58" OD, 1.19" ID, .050" Thick	51	11144	Bolt, HHCS, 1/2-13 X 2", Gr5
24	32378	Pin, PTO Class 1 Draw	52	33335	Nut, Nylon Lock, Flanged, 1/2-13
25	24555	Pin, Hitch, 3/4" X 4-3/4"	53	23499	Washer, SAE Flat, 1/2", ZP
26	24538	Linch Pin, 3/16" X 1-9/16"	54	29373	Bolt, HCS, 3/8-16 X 5.5", Gr 5, ZP
27	32396	Pin, Linch, 7/16" X 1.5", YZP	55	26568	Shims, 1"ID & .38"ID, .16"T
28	32397	Pin, Hitch, 3/8" X 3", W/ Cotter Pin	56	33425	Gear Box Mounting Bracket, Left

Schematic – Drive and Pivot Assembly



CONTACT US AT www.DRpower.com 27

Daily Checklist for the DR 3-POINT HITCH TRIMMER/MOWER

To help maintain your DR 3-POINT HITCH TRIMMER/MOWER for optimum performance, we recommend you follow this checklist each time you use your machine.

🛕 WARNING

Disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, disconnect the PTO shaft from the Tractor, then wait five minutes before performing any maintenance procedure or inspection on the Trimmer.

- [] CUTTING CORDS: Replace broken or frayed Cords.
- [] MOW-BALL® and Cord Head: Check the Mow-Ball® and Cord Head for wear and replace as needed.
- [] GENERAL CONDITION: Check the general condition of the machine, e.g.; nuts, bolts, welds etc.

Disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, disconnect the PTO shaft from the Tractor, then wait five minutes before performing any maintenance procedure or inspection on the Trimmer.

End of Season and Storage

- Lubricate PTO Shaft Grease Fittings.
- Check the Drive Belt for wear. Replace as needed.
- Release Drive Belt from Tensioner to relieve Belt stress.
- Check the general condition of the machine, e.g.; nuts, bolts, welds, etc. Replace parts or tighten Hardware as needed.
- Store in a dry covered area to protect from moisture.
- Remove any wrapped weeds from the Mow-Ball® and Wheel Assembly. Clean grass and debris from the top and underneath the Trimmer Frame.



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