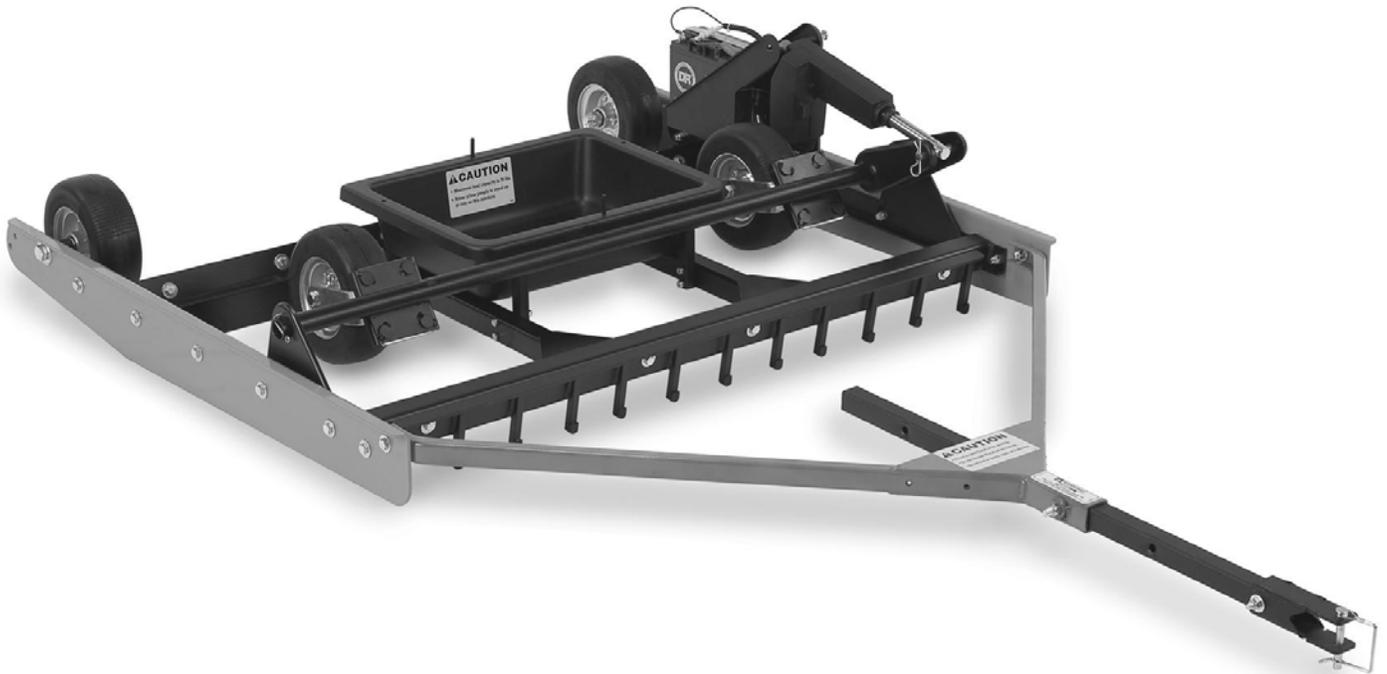


# DR<sup>®</sup> POWER GRADER

## 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](http://www.DRpower.com)

### **⚠ WARNING**

Read and understand this manual and all instructions before operating the DR POWER GRADER.

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### *Conventions used in this manual*

---

#### **WARNING**

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

---

---

#### **CAUTION**

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

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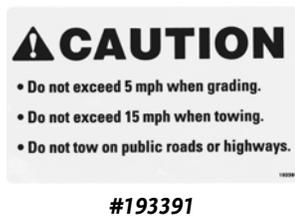
### **WARNING**

Read this safety & operating Instructions manual before you use the DR POWER GRADER. 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](http://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 POWER GRADER carries prominent labels as reminders for its proper and safe use. Shown below are copies of all 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 Grader as you set up and before you operate the unit. Replace damaged or missing safety and information labels immediately.



### **Protecting Yourself and Those Around You**

---

#### **WARNING**

Always take the following precautions when operating this grader:

- Always wear protective goggles or safety glasses with side shields while grading to protect your eyes from possible thrown bits of dirt or gravel.
  - Wear shoes with non-slip treads when using your DR Power Grader. If you have safety shoes, we recommend wearing them. Do not use the grader while barefoot or wearing open sandals.
  - Wear a helmet when operating an ATV.
- 

### **Operating the DR POWER GRADER Safely**

---

#### **WARNING**

You must operate the Power Grader safely. Unsafe operation can create a number of hazards for you. Always take the following precautions when using this Grader:

- Read, understand, and follow all instructions in this manual. Be thoroughly familiar with the controls and the proper use of your Grader before using.
  - Thoroughly inspect the area where your Grader will be used, and remove all stones, sticks, wire, pet supplies, or lawn toys, and any other foreign objects that you could run over. Also, note the location of stumps, and other possible hazards that you should avoid during operation.
  - Watch for traffic when operating in or near roadways. Pay extra attention when operating near public roadways.
  - When operating in a roadway, we suggest that you put out obstructions (marker cones or pails) to divert any traffic away from your work area.
  - Be aware of your surroundings when operating the DR Power Grader, e.g. ditches, culverts, drop-offs, and hills.
  - Never allow people who are unfamiliar with these instructions to use the DR Power Grader.
-

---

## WARNING

- To be safe, do not operate the grader near small children or pets, and never allow children to operate the Power Grader. Stop the grading action when another person or pet approaches.
  - Do not allow people to ride on the Grader.
  - If you have to stop to remove any debris from the Grader, always shut off the tow vehicle's engine and set the parking brake.
  - Do not, under any conditions, remove, bend, cut, fit, weld, or otherwise alter standard parts on the DR Power Grader. Modifications to your machine could cause personal injuries and will void your warranty.
  - While using the DR Power Grader, don't hurry or take things for granted.
  - Do not operate the Grader when under the influence of alcohol or medication.
  - Use the DR Power Grader only in daylight or good artificial light.
- 

## CAUTION

The DR Power Grader must be operated safely to prevent or minimize the risk of minor or moderate injury. Unsafe operation can create a number of hazards for you. Always take the following precautions when operating this Power Grader:

- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people, their property, and themselves.
  - Do not use the DR Power Grader to drag, tow, or carry items.
  - Never operate the DR Power Grader with a truck (2wd or 4wd); doing so will void the DR Power Grader warranty.
  - Never leave the DR Power Grader unattended. If you leave the area, shut off the tow vehicle, and remove the key.
  - Always check the alignment of moving parts and for damaged or worn parts.
  - Keep all nuts and bolts tight and keep the equipment and attachments in good operating condition.
  - Use only manufacturer-recommended replacement parts.
  - See manufacturer's instructions for proper operation and installation of accessories. Only use accessories approved by manufacturer.
  - Do not use the DR Power Grader in a manner not in accordance with these instructions.
- 

### *Safety for Children and Pets*

---

## WARNING

Tragic accidents can occur if the operator is not alert to the presence of children and pets. Children and pets are often attracted to the grading activity. **Never** assume that children or pets will remain where you last saw them.

- Keep children out of the grading area and under the watchful care of a responsible adult.
  - Be alert, stop and turn the tow vehicle off if children or pets enter the work area.
  - Never allow children to operate the DR Power Grader.
  - Never allow children or pets to ride on the tow vehicle or the DR Power Grader.
- 

### *Safety with Electric-Powered Machines*

---

## WARNING

Never overlook the hazards of electricity. Always follow these precautions:

- Never attempt to open the motor assembly. Never attempt any electrical repairs yourself. If in doubt, consult a qualified electrician or contact us at [www.DRpower.com](http://www.DRpower.com) or call 1-800-dr-owner (376-9637) for help or information.
  - Never operate your Grader in the rain or in wet conditions. Remember, this is an electric Grader.
  - Never tamper with safety devices. Check their proper operation regularly.
-

## ***Handling the Battery Safely***

---

### **! WARNING**

- Use only the 12-volt, lead-acid, rechargeable battery, and the 12-volt battery charger that shipped with your grader, or their DR Power Equipment replacement. Using the wrong type of battery or a charger, other than the DR Power Equipment charger, could cause a fire or explosion resulting in serious injury.
  - Never lift or carry the battery by the wires or connectors. This can damage the battery and possibly cause a fire resulting in serious injury. Lift and carry the battery by the case only.
  - Only adults should handle the battery. The battery is heavy and contains sulfuric acid (electrolyte). Dropping the battery could result in serious injury. Get a firm grip and use caution when removing or changing the battery.
  - Batteries contain sulfuric acid. To prevent burns, avoid contact with skin, eyes, and clothing. To prevent fire or explosion keep sparks and open flames away from the battery.
  - Exercise care in handling the battery in order not to short-circuit it with conducting materials such as rings, bracelets, and keys. When short-circuited, the battery or conductor may overheat and cause burns.
  - Please dispose of used batteries responsibly, according to your local hazardous materials regulations. Never throw away used batteries in your household trash. Bring them to a recycling center or household hazardous waste depot for proper disposal. Please refer to “recycling a used battery”, on page 17, for more information.
- 

## ***Safely Charging the Battery***

---

### **! WARNING**

- Examine the charger and the connectors for excessive wear or damage each time you charge the battery. If you determine there is a problem, do not use the charger or the battery until you have replaced the worn or damaged part.
  - Never allow children to charge the battery. The electricity involved in charging the battery could injure a child.
  - Never charge the battery in the rain or in wet locations.
- 

### **NOTICE**

- Never allow the battery to completely discharge; charge the battery before this happens.
  - Charge the battery before storing your DR Power Grader. Do not leave the battery discharged, as this can ruin it.
- 

## ***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 POWER GRADER in a safe manner. Contact us at [www.DRpower.com](http://www.DRpower.com) or call 1-800-DR-OWNER (376-9637) for assistance.

## Chapter 2: Setting Up The DR POWER GRADER

It may be helpful to familiarize yourself with the controls and features of your DR POWER GRADER 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](http://www.DRpower.com).

### DR POWER GRADER Controls and Features

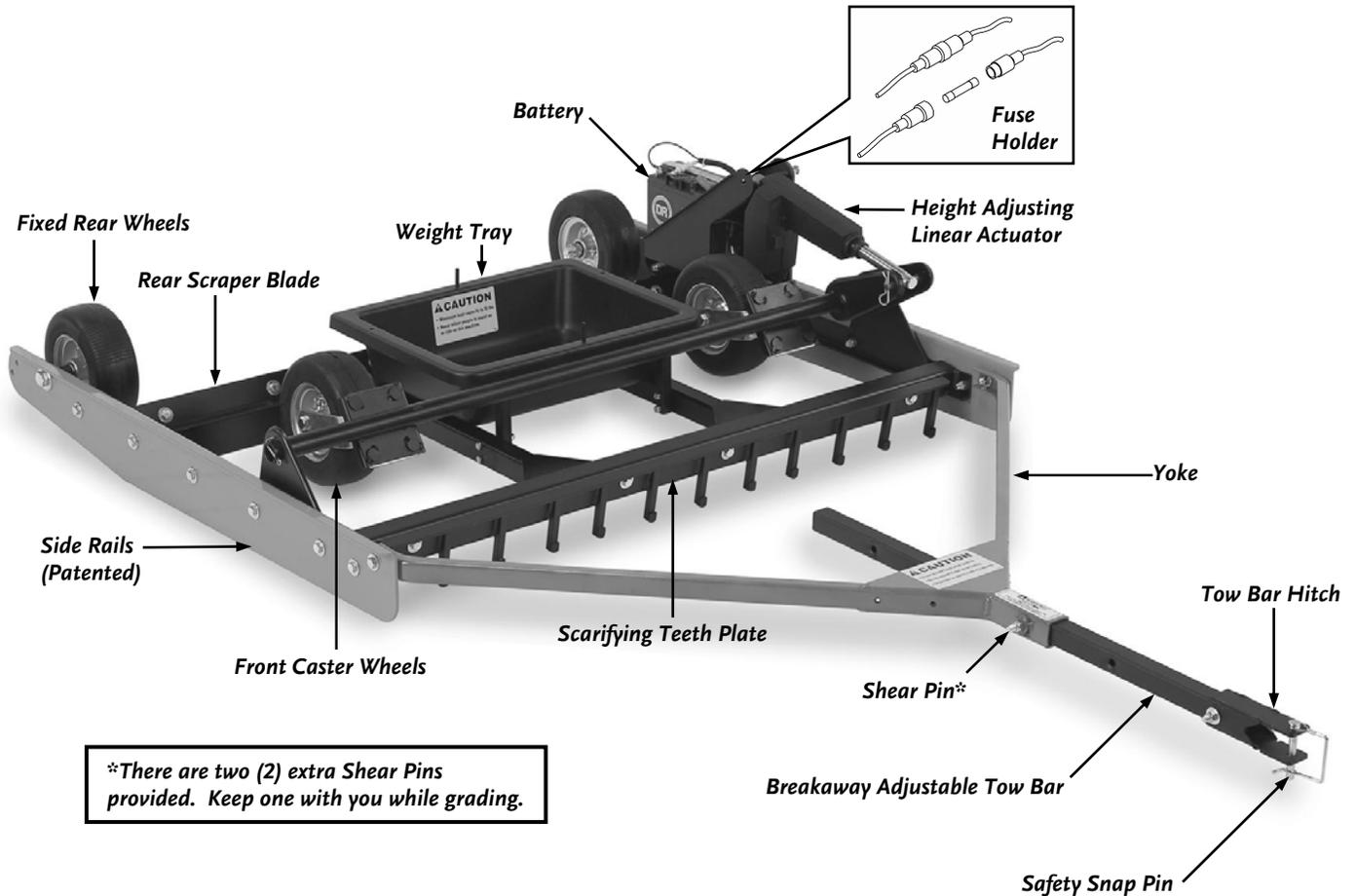


Figure 1

### Unpacking the DR POWER GRADER

#### Tools Needed:

- Large Flat Screwdriver
- Knife
- Eye Protection
- Two 9/16" Wrenches
- Claw Hammer

## **CAUTION**

Wear eye protection when removing the staples. The ends of the staples are sharp and may pop out towards you.

1. Place the carton near a flat surface large enough to hold the uncrated DR POWER GRADER.
2. Stand to one side as you pry the staples loose that hold the Shipping Carton Top to the Pallet with a Flat Screwdriver.

3. Remove the top of the Shipping Carton.
4. Remove the Tri-wall Box Inserts from around the Power Grader.
5. Cut the ties on the Yoke Assembly and remove the Yoke with the Tow Bar (**Figure 2**).
6. Remove the Wrapping from the Tow Bar.
7. Remove the Tow Bar from the Yoke by removing the Shear Bolt with two 9/16" Wrenches and pull the Tow Bar from the Yoke Assembly.
8. Remove the Battery/Clevis Assembly from the Weight Tray.
9. Remove the parts box and Drag Screen Box (if you ordered the optional Drag Screen).
10. Using the Claw Hammer, remove the two Pallet Blocks in front of the Blade Assembly.
11. Cut the ties holding the DR POWER GRADER frame to the pallet.

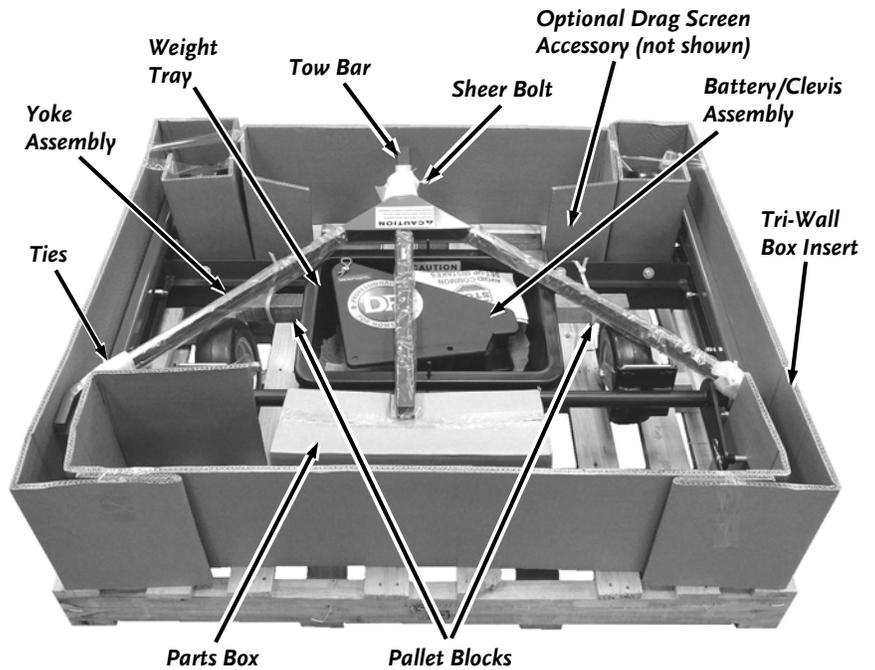


Figure 2

**NOTE:** Do not discard the packaging material until you are fully satisfied with your new machine.

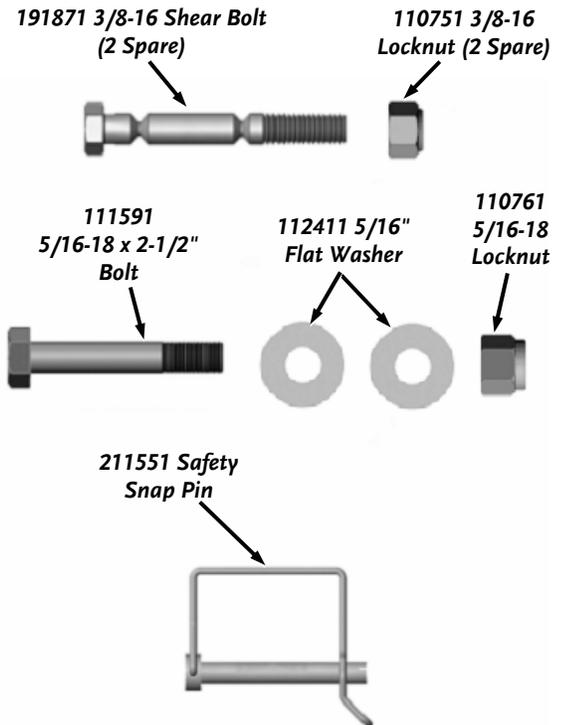
### Parts Checklist

The following list includes all of the parts shipped with your DR Power Grader. Check the list to the parts you received in the package. If you have any questions, please contact us at [www.DRpower.com](http://www.DRpower.com) or call 1-800-DR-OWNER (376-9637) for assistance.

#### Parts in Shipping Carton:

- DR POWER GRADER Frame Assembly
- Yoke Assembly
- Tow Bar
- Battery/Clevis Base Assembly, Clevis Pin, Spacers, Hitch Clip and Remote Control Transmitter w/Lanyard
- Parts Box containing:
  - Linear Actuator
  - Battery Charger
  - Keyhole Hitch
  - Tow Hitch
  - Product Pack containing:
    - Safety & Operating Instructions Manuals
    - Small Parts Bag containing:
      - Bolt, 5/16-18 x 2-1/2"
      - Flat Washer, 5/16"
      - Locknut, 5/16-18
      - Two Shear Bolts, 3/8-16
      - Two Nylon Locknuts, 3/8-16
      - Safety Snap Pin
      - Wire Tie (not shown)

#### Assembly Hardware Included in Small Parts Bag



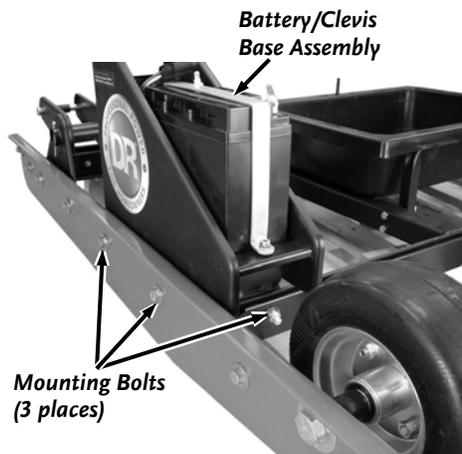


Figure 3

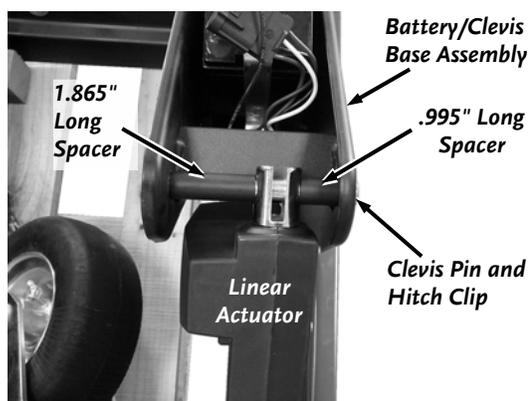


Figure 4

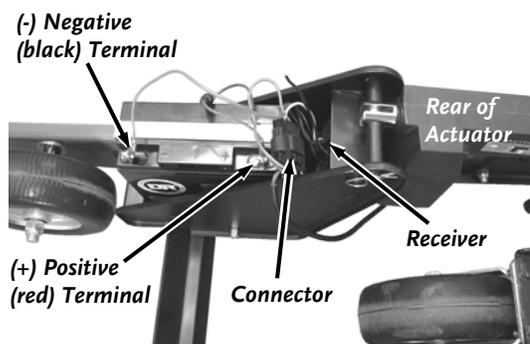


Figure 5

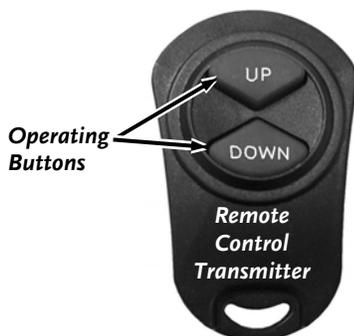


Figure 6

## Assembling the DR POWER GRADER

### Tools Needed:

- Two 9/16" Wrenches
- Cutting Pliers or Knife

### Installing the Battery/Clevis Base Assembly and Linear Actuator

1. Move the Power Grader over so the left side hangs off the Pallet to allow you to reach the rear Mounting Bolt area (**Figure 3**).
2. Take note of the orientation as you remove the three loose Mounting Bolts, Washers and Lock Nuts from the Left Rear Side Frame Using two 9/16" Wrenches (**Figure 3**).
3. Place the Clevis Base/Battery Assembly on the Left Side Rail and align the Assembly's Mounting Holes with Holes on the Frame.
4. Install the two 3/8"-16 x 1-1/2" Bolts, One 3/8"-16 x 5-1/4" Bolt, 3/8" Flat Washers (Bolt side) and 3/8" Nylon Lock Nuts hand tight. Use two 9/16" Wrenches to secure the Battery/Clevis Base Assembly to the Left Side Rail.
5. Take note of the orientation as you remove the Hitch Clip, Clevis Pin, and the two Spacers assembled in the Battery/Clevis Base Assembly (**Figure 4**).
6. Remove the Linear Actuator from the Parts Box.
7. Position the Linear Actuator, and with the Motor facing down (see Label on Actuator), insert the rear of the Actuator into the Battery/Clevis Base Assembly and reinsert the Spacers, Clevis Pin, and Hitch Clip in the order you removed them.

### NOTICE

One Spacer goes on each side of the Actuator and the lengths and side they go on is very important. Make sure that you install them in the same order as you took them off (shown in the photo).

8. Connect the Linear Actuator and the Receiver connectors together (**Figure 5**).
9. Connect the Positive Battery Terminal (red wire) to the Positive Spade on the Battery.
10. Install the Negative Battery Terminal (green wire) to the Negative Spade on the Battery.
11. Press the Remote Control Transmitter Operating Buttons (**Figure 6**) to see if the Transmitter operates the Actuator properly. "UP" should retract the Actuator Arm and "DOWN" should extend the Actuator Arm.
12. Extend the Actuator Arm and disconnect the Negative Battery Terminal Wire (**Figure 5**), keeping it away from the Terminal.

**NOTE:** If the Transmitter does not operate the Actuator, contact us at [www.DRpower.com](http://www.DRpower.com) or call 1-800-DR-OWNER (376-9637) for assistance.

13. Rotate the Linear Actuator up and to the rear, leaving it in this position (**Figure 7**).
14. Press down on the Clevis to raise the Casters. Rotate both Casters sideways and release the Clevis. The Clevis will then rise above the Frame for easier attachment of the Linear Actuator Arm.
15. Take note of the orientation as you remove the Hitch Clip, Clevis Pin, and the two Spacers assembled in the Clevis.
16. Rotate the Actuator Arm forward and rest it on the Clevis Pin in the Axle Clevis.
17. Using the Transmitter, adjust the Actuator Arm length to align the Hole in the Actuator Arm with the Clevis Pin in the Axle Clevis.
18. Remove the Hitch Clip, Clevis Pin, and the two Spacers from the Axle Clevis. Align the Actuator Arm and re-insert the Clevis Pin with the Spacers (one on each side of the Actuator Arm). Secure the Clevis Pin in place with the Hitch Clip (**Figure 8**).

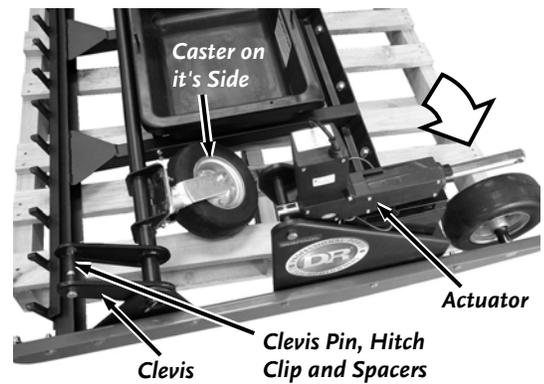


Figure 7

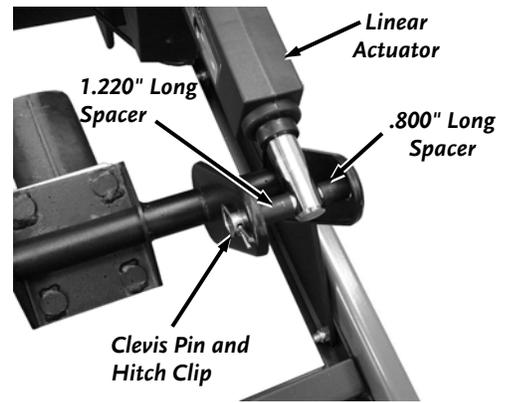


Figure 8

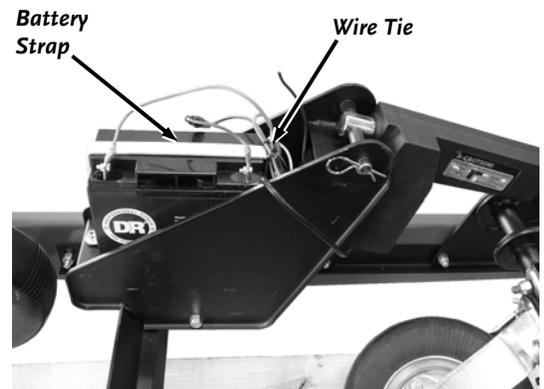


Figure 9

## NOTICE

One Spacer goes on each side of the Actuator and the lengths and side they go on is very important. Make sure that you install them in the same order as you took them off (shown in the photo).

19. Center the machine on the Pallet.
20. Secure the wires to the Battery Strap (**Figures 9**) using the Wire Tie included in the Parts Package.
21. Using the Transmitter, press "UP" to raise the DR POWER GRADER, which lowers the wheels.
22. With the help of another person, you can now roll the DR POWER GRADER off the shipping pallet.

**NOTE:** You must now fully charge the Battery before using your new DR POWER GRADER. See page 10.

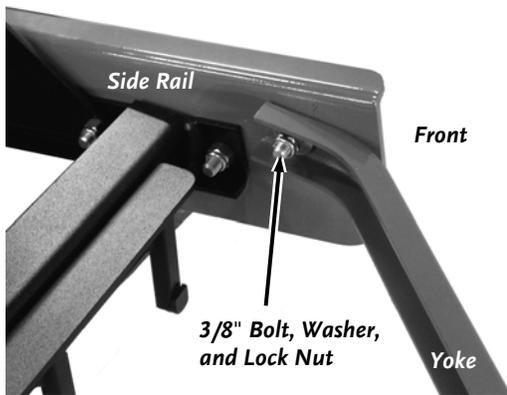


Figure 10

## Attaching the Yoke

### Tool Needed:

- Two 9/16" Wrenches

1. Position the Yoke in front of the DR POWER GRADER and inside of the Side Rails (**Figure 10**).
2. Align the Holes in the end of the Yoke with the Holes in the Side Rails and attach each side of the Yoke to the Side Rails using a 3/8"-16 x 1-1/2" Bolt, 3/8" Flat Washer and 3/8" Lock Nut (**Figure 10**). Do not tighten at this time

**NOTE:** To allow the Yoke to pivot up and down, DO NOT fully tighten the Lock Nut against the hardware. Back the Lock Nut off 1/4 to 1/2 turn after contact with the hardware.

## About the Battery

The DR POWER GRADER comes with a 12-Volt, maintenance-free, rechargeable, sealed lead acid Battery. A fully charged Battery runs about 20 hours or 800 up/down cycles. Properly maintained and charged, the battery provides years of dependable service.

### **!** WARNING

- Never modify your GRADER'S electrical system. Modifications could ruin the electrical system as well as cause a fire, resulting in serious injury.
- Using electrical components other than those supplied with your GRADER could cause the electrical system to overheat, explode, or start a fire.
- Only adults should handle the battery, it contains sulfuric acid (an electrolyte). The battery is heavy; dropping it could result in serious injury.
- Never lift or carry the battery by the cables or terminals. This can damage the battery and possibly start a fire, resulting in serious injury. Lift and carry the battery only by its case.
- Do not short circuit the battery.
- Read the safety instructions on the battery.

## Charging the Battery

### **!** WARNING

- Using the wrong type of battery or charger could cause a fire or explosion, resulting in serious injury.
- Never allow children to charge the battery. THE ELECTRICITY INVOLVED IN CHARGING THE BATTERY COULD INJURE A CHILD.
- Examine the charger, its connectors, and the battery for excessive wear or damage each time you charge the battery. If you see any excessive wear or damage, do not use the charger or the battery, Replace them.
- Use only the 12-volt charger supplied with your grader to charge the battery.
- Use the charger only in dry locations. Avoid contact with water.

Charging the Battery is a simple process. Leave the Battery in your DR POWER GRADER when you charge it.

1. Disconnect the Positive (red) and Negative (black) Terminals from the Battery.
2. Attach the Black (-) Terminal wire from the Charger Adapter to the (-) Spade of the Battery, then attach the Red (+) Terminal wire to the (+) Battery Spade.
3. Plug the Charger into a standard wall outlet.

- Every time you finish using your DR POWER GRADER, recharge the Battery. The time it takes to recharge the Battery depends on how drained it is when you start. Charging the Battery typically takes 6 to 8 hours if charged after each use. However, charging may take 24 to 48 hours if you allow the Battery to run down before it is charged. The Battery does not have a “memory” so don’t worry about overcharging the Battery or charging it too often.
- You can charge the Battery hundreds of times. The Battery lasts longer if you charge it before it is fully drained. Keep it fully charged and at room temperature when not using your DR POWER GRADER.
- Once the Battery is charged, pull the plug from the wall outlet and then remove the Charger from your Battery. However, you can leave your Battery plugged in and charging for an extended period. Re-connect the Positive and Negative Terminals to the Battery for use.
- Store the Charger in its self-locking plastic shipping bag. Keep the charger in a dry location.
- If the Battery does not hold its charge for very long under normal conditions or it simply won’t hold a charge, then replace it. You can purchase a replacement Battery directly from us. To install your new Battery, remove the Battery Clamp, detach the cables and remove the dead Battery, next install the new Battery and attach the cables, then replace the Battery Clamp.

## NOTICE

When the Battery gets old and no longer accepts a charge, remove it from your Grader. Never leave a dead Battery in your Grader. dispose of an old Battery per local hazardous materials regulations

- The Remote Control system of your Power Grader has a signal receiver that is always drawing a charge from the Battery, even when the Power Grader is not in use. This will eventually deplete the Battery of its power and the Battery will need recharging. To prolong the Battery life, you need to disconnect the Positive Battery Terminal when not using the Power Grader for extended periods.

### Replacing the Transmitter Battery

1. To replace the Transmitter Battery, remove the Screws in the Case to remove the back plate (**Figure 11**), and replace the Battery with a CR2032, 3V, Coin Cell Battery. Reinstall the back plate.

### Installing the Scarifying Teeth Plate

The Scarifying Teeth Plate was placed upside down for shipping. The following procedure is for installing the Scarifying Teeth Plate.

#### Tools Needed:

- Two 9/16" Wrenches
1. Use the Remote to raise the front of the DR POWER GRADER to the highest position.



Figure 11

## CAUTION

Prior to performing the next steps, disconnect the positive (red) battery terminal (figure 5 on page 8) to prevent accidental activation of the scarifying teeth plates.

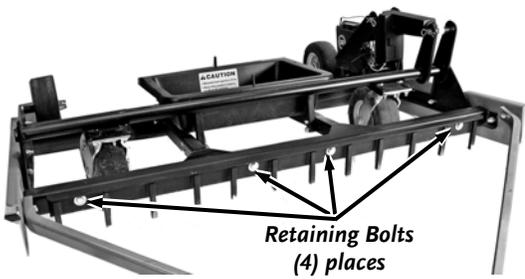


Figure 12

- Using two 9/16" Wrenches, loosen and remove the Retaining Bolts on the Scarifying Teeth Plate (**Figure 12**).
- Turn the Scarifying Teeth Plate over and reinstall with the mounting hardware.
- Tighten all of the Retaining Bolts on the Scarifying Teeth Plate and reconnect the Fuse Holder.

### Connecting the DR POWER GRADER to your Tow Vehicle

The following procedure is for connecting the DR POWER GRADER to your tow Tractor or Ball Hitch configuration (ATV).

#### Tools Needed:

- Two 1/2" Wrenches
- Two 9/16" Wrenches

- Select the appropriate hitch configuration and using two 1/2" Wrenches, attach the Hitch to the Adjustable Tow Bar with two 5/16"-18 x 2-1/2" Bolts, 5/16" Flat Washers, and 5/16"-18 Lock Nuts (**Figure 13**).

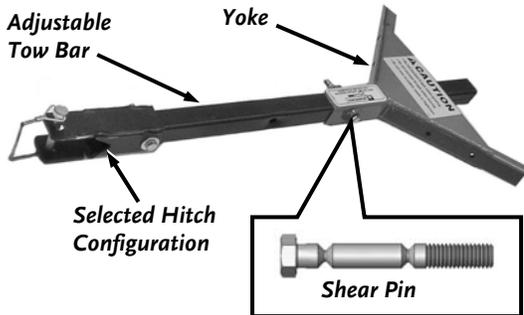


Figure 13

#### NOTICE

- Do not over tighten the shear pin.
- Use only the shear pin provided; use of any other bolt may cause damage to your DR Power Grader. See figure 13.
- There are two extra shear pins provided. Store them with your operators manual or in a safe location. Keep one with you when grading.

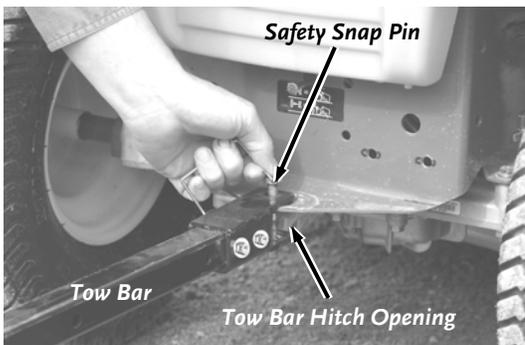


Figure 14

- Insert the Adjustable Tow Bar into the front of the Yoke and align the holes between the Yoke and Tow Bar to suit the correct towing distance from your vehicle. Using two 9/16" Wrenches, bolt the Tow Bar in place using the 3/8"-16 Shear Pin and 3/8" Lock Nut supplied.

#### Lawn Tractor:

- Set the Parking Brake on your Lawn Tractor, lift the Tow Bar, and position the Tow Bar Hitch so that the Hitch Plate on your Lawn Tractor is in the opening in the Tow Bar Hitch (**Figure 14**).
- Align the hole in the center of the Hitch Plate on your Lawn Tractor with the holes in the Tow Bar Hitch. Insert and secure the Safety Snap Pin.

#### ATV:

- Stop the engine and put the transmission in 1st gear. Set the Parking Brake on your ATV (if you have one), lift the Tow Bar on the DR POWER GRADER and slip the Keyhole Hitch over the Hitch Ball on the ATV (**Figure 15**). Pull back on the Tow Bar so the slot in the Keyhole Hitch fits around the Hitch Ball Shaft.

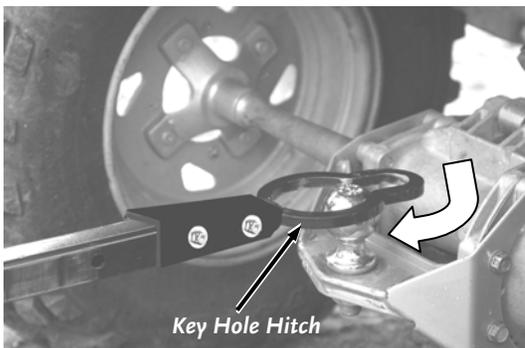


Figure 15

## Chapter 3: Operating The DR POWER GRADER

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It may be helpful to better familiarize yourself with the features of your Grader by reviewing **Figure 1** in Chapter 2 before beginning the steps outlined in this chapter.

### Operating Safety

#### **WARNING**

- Never allow anyone to operate the DR Power Grader without first reading and understanding all instructions in this manual. Be thoroughly familiar with the controls and the proper use of your Grader before using.
  - Never let people ride on the Grader.
  - **Always check for objects in the Grader's path before moving.**
  - When operating in a roadway, we suggest that you put out obstructions (marker cones or pails) to divert any traffic away from your work area. Always be aware of potential traffic hazards.
- 

### Understanding the Height Adjustment Remote Control Transmitter

The Height Adjustment Remote Control Transmitter contains two Control Buttons. The “UP” Button raises the Scarifying Teeth. The “Down” Button lowers the Scarifying Teeth (**Figure 6** on page 8). For ease of operation and safekeeping, wear the Remote Control Transmitter Lanyard around your neck.

This Device complies with the FCC Part 15. The following conditions apply to the Transmitter:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

#### Section 15.105 Information to the user:

**NOTE:** *This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Consult the dealer or an experienced radio/TV technician for help.*

### Operating Parameters

There are four different types of tow vehicles recommended for the DR POWER GRADER. Each vehicle type has specific strengths, weaknesses, and operating parameters when used with the DR POWER GRADER.

- **Garden Tractor/Lawn Tractor**
  - 14 HP and/or 400-pound tractor minimum for the 48" Model.
  - 19 HP and/or 500-pound tractor minimum for the 60" Model.
  - 5° slope or less.
  - Material loosened during grading increases traction difficulties.
  - Very good speed control and turning radius.
  - Frequent Scarifying Teeth adjustment may be necessary to maintain traction
  - Forward motion of the DR POWER GRADER may need to be initiated before ground contact.

- **ATV**
  - Traction issues are less evident.
  - More difficult to maintain a consistent speed of less than 5 MPH.
  - Turning radius is large (best used for large, straight drives).
- **UTV**
  - Traction issues are less evident.
  - More difficult to maintain a consistent speed of less than 5 MPH.
  - Turning radius is large (best used for large, straight drives).
  - The tailgate should be lowered for best visibility.
- **Utility Tractor**
  - Traction is excellent.
  - Visibility is very good.
  - With the increased power, the chance of accidentally damaging the DR POWER GRADER's frame is increased. The towing speed **MUST** be kept less than 5 MPH.
  - Extend the Tow Bar to the longest setting when using the DR POWER GRADER with a Utility Tractor.
- **Truck or Car**
  - Do not use these types of vehicles; the DR POWER GRADER is difficult to see.
  - **NEVER** operate the DR POWER GRADER with a Truck (2WD or 4WD). Use of a Truck will void the DR POWER GRADER Warranty.

## Operating Tips

### **CAUTION**

- Clean out the bottom of the battery holder completely before re-installing the battery.
  - Lower the grader frame completely to the ground surface when transporting on a trailer, parking on a hill, or servicing the grader.
- 
- Use additional weight (up to 70 pounds) in the Weight Tray when grading hard pack to begin scarification.
  - Remove weight when the surface material loosens or when experiencing traction difficulties.
  - Remove the weight and Weight Tray when grading in muddy conditions or sandy soil.
  - Extend the Tow Bar to the longest setting when used with a Utility Tractor.
  - Expect to make 4 to 10 passes with the DR POWER GRADER to repair a roadway, depending on the condition.
  - Avoid filling Pot Holes filled with water, wait until the holes are dry.
  - Use the DR POWER GRADER to work the edges of Pot Holes that are more than 4 feet wide to loosen the sides before you begin filling them.
  - Avoid large rocks, embedded ledge, cattle guards, or similar obstructions.
  - Remove rocks pulled to the surface during grading to provide a better final graded surface.
    - They can catch under the lawn deck (for lawn tractors).
  - Once you have adequately scarified the road surface, raise the Scarifying Teeth Plate to allow the Rear Scraper Blade to create a smooth surface.
    - Raise the Scarifying Teeth Plate out of the ground before turning around or leaving the work area.
  - When using a lawn tractor as the tow vehicle, put the lawn mowing deck in the highest setting or just remove the deck to obtain the highest ground clearance.
    - For ease, do your spring grading before re-installing your lawn deck for the summer mowing activity.
  - When using the DR POWER GRADER to prepare a seed bed, remove all large debris before grading.
    - Use the Optional Drag Screen to create the best finish in sand or to incorporate seed.
  - Use Low Gear when using an ATV as the tow vehicle – Do not exceed 5 MPH while grading.
    - The maximum speed when not grading is 15 MPH.

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## NOTICE

- Bring the remote control transmitter inside when finished grading.
  - Frequently check the tightness of the bolts that fasten the scarifying teeth plate to the frame.
- 

## FAQs

*Question: Can the DR POWER GRADER create a crown in the road?*

Answer: No.

*Question: Can the DR POWER GRADER maintain the crown in the road?*

Answer: Yes, you can grade each side separately.

*Question: Can the DR POWER GRADER ruin the crown in the road?*

Answer: Yes, only if you grade down the centerline of the road.

*Question: How long will the battery last?*

Answer: Approximately 20 hours or 800 up/down cycles.

*Question: Can I use my Lawn Tractor in sandy soils?*

Answer: Lawn Tractors do not perform as well as an ATV or Utility Tractor in sandy soils.

*Question: Why does the Yoke have a Shear Pin?*

Answer: The Shear Pin will absorb the shock by breaking if you hit a large rock, ledge, or other obstruction offering some protection to your DR POWER GRADER and Tow Vehicle.

## Optional Drag Screen

An optional Drag Screen is available for your 48" or 60" DR POWER GRADER. This heavy-duty, flexible-steel screen attaches easily behind the DR POWER GRADER to break up and smooth any clumps that form as you grade the material.

The Drag Screen is also designed to produce a more highly finished surface when using fine dry materials such as sand and to remove the small lines or ridges sometimes left by the Scarifying Teeth or Grader Wheels during the initial grading process. The Drag Screen is ideal for areas that have high sand or soil content such as new lawns, riding rinks, ball fields, or sandy driveways.

The Drag Screen is also very helpful in seeding large areas. By lifting the Scarifying Teeth and Scraper Bar of the DR POWER GRADER above the working surface so that only the wheels make contact, the Drag Screen simply and effectively distributes the topsoil uniformly over the seed.

For more information and to order the Optional Drag Screen for your new DR POWER GRADER, contact us at [www.DRpower.com](http://www.DRpower.com) or call Toll-Free 1-800-DR-OWNER (376-9637).

## Chapter 4: Maintaining The DR POWER GRADER

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

### **WARNING**

When performing any maintenance, you must first shut off the tow vehicle, set the parking brake and disconnect power from the battery of the DR Power Grader by disconnecting the positive battery terminal (figure 5 on page 8). Read the "General Safety Rules" (Chapter 1) of this manual before performing any repairs or maintenance.

### *Regular Maintenance Checklist*

| PROCEDURE  | BEFORE EACH USE | EVERY 25 HOURS | EVERY 50 HOURS |
|--|-----------------|----------------|----------------|
| Check general equipment condition e.g., Nuts, Bolts, welds, etc. | ▲               |                |                |
| Check Actuator operation/Battery Power                           | ▲               |                |                |
| Hose down the DR POWER GRADER                                    | ▲               |                |                |
| Check condition of Shear Pin                                     | ▲               |                |                |
| Lubricate Rear Fixed Wheel, Caster Wheel and Bearings as needed  |                 | ▲              |                |
| Clean between the Scarifying Teeth Plate and Frame               |                 |                | ▲              |

### *Cleaning the Power Grader*

#### **NOTICE**

- Use care not to hose down the Battery and electrical components.
- Do not use a Power Washer; this may force water through the Seals on the Height Adjusting Actuator.

1. Use a Hose (not a Pressure Washer) to clean the DR POWER GRADER to keep the Scarifying Teeth Plate, Wheels etc. clean and clear of debris.

### *Checking the Shear Pin*

1. Check the Shear Pin for wear by grabbing the end and trying to wiggle it. Replace the Shear Pin if worn or loose. Do not over tighten..

### *Caring for the Battery*

Proper care can lengthen the life of a Battery. Follow these recommendations to ensure your Battery's best performance and long life:

- Do not continue to operate your DR POWER GRADER with a low Battery.
- Try to keep your Battery at full charge to maximize its life. If the machine is not used, charge the Battery monthly. See "Charging the Battery" on page 10.
- Before charging the Battery, observe its external appearance and keep it clean and dry. Never charge or use a Battery that shows cracks, changes shape, leaks, or otherwise obviously damaged.
- Recharge a Battery before fully discharged. **NEVER allow the Battery to run down completely before charging. Leaving the Battery discharged damages the Battery.** Charge the Battery at least once per month, even if you have not used your DR POWER GRADER.
- If the Battery begins to leak, avoid contact with the leaking acid. Place the damaged Battery in a plastic bag, then dispose of it properly.

## **! WARNING**

If Battery Acid does contact your skin or eyes, flush with cool water for at least 15 minutes and call a physician. If Acid is ingested, call a physician immediately.

### **Recycling a Used Battery**

#### **NOTICE**

Please dispose of used batteries responsibly, according to your local hazardous materials regulations. Never throw away used batteries in your household trash.

Please dispose of your used Batteries responsibly by recycling them. Call your local Solid Waste Management District or your local waste handler to locate the collection site nearest you. Some collection sites recycle Batteries year-round; others collect them periodically.

You can also visit the Website of Earth 911 for more information ([www.earth911.org](http://www.earth911.org)). Once there, click the Municipal HHW link under Hazardous Household Waste, and enter your zip code. The site lists recycling centers located near you.

For a fee, you can recycle your Batteries with the International Metals Reclamation Company. Visit them at [www.inmetco.com](http://www.inmetco.com) and click Services, then click Battery Recycling; or contact them at: INMETCO, PO Box 720, 245 Portersville Road, Ellwood City, PA 16117, (724) 758-2800; fax (724) 758-2845.

To learn more about hazardous waste recycling, visit the Website for Battery Council International ([www.batterycouncil.org](http://www.batterycouncil.org)) or for the Environmental Protection Agency ([www.epa.gov](http://www.epa.gov)).

### **Replacing the Scarifying Teeth Plate**

#### **Tools Needed:**

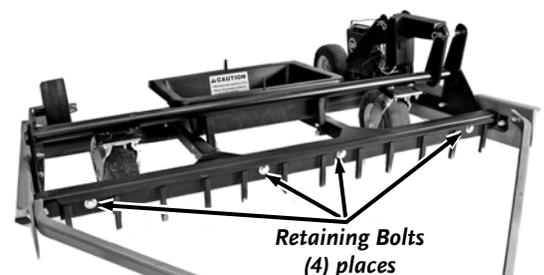
- Two 9/16" Wrenches

1. Use the Linear Actuator to raise the front of the DR POWER GRADER to the maximum position.

## **! CAUTION**

Prior to performing the next steps, disconnect the power from the Battery of the DR Power Grader by disconnecting the Positive Battery Terminal (figure 5 on page 8) to prevent accidental activation of the Scarifying Teeth Plate.

2. Using two 9/16" Wrenches, loosen and remove the Retaining Bolts, Washers and Locknuts on the Scarifying Teeth Plate (**Figure 16**).
3. Remove the old Scarifying Teeth Plate, clean the Frame, and position the new Plate.
4. Install and tighten the Retaining Bolts, Washers and Locknuts on the Scarifying Teeth Plate and then Positive Battery Terminal.



**Figure 16**

## Lubrication

### WARNING

When performing any maintenance, you must first shut off the tow vehicle, set the parking brake and disconnect power from the battery of the DR Power Grader by disconnecting the positive battery terminal (figure 5 on page 8).

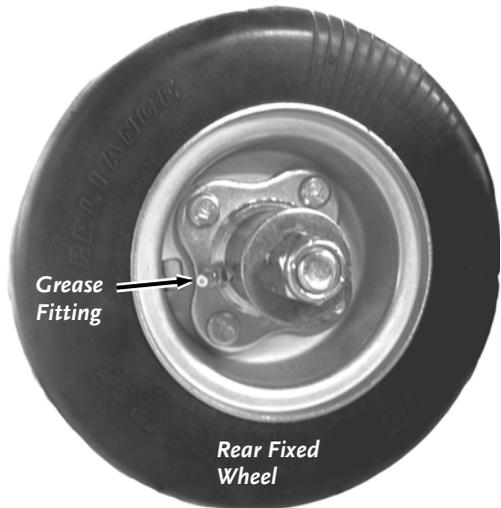


Figure 17

#### Tools and Supplies Needed:

- Flexible hose grease gun
- Lithium grease

**NOTE:** Pump the grease gun only until you feel slight resistance (2 - 3 pumps).

1. Lubricate the Rear Fixed Wheel (**Figure 17**), the Front Caster Wheel and Caster Bracket Bearings (**Figure 18**) at the grease fittings every 25 hours of operation.

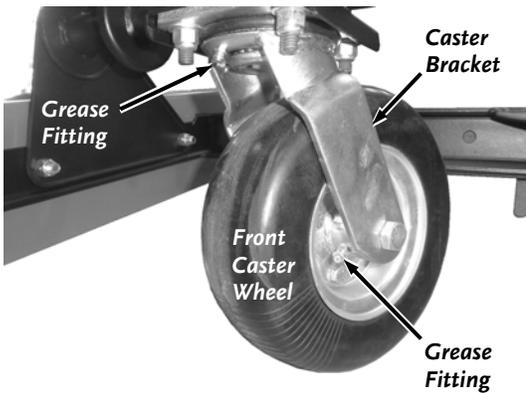


Figure 18

## Chapter 5: Troubleshooting

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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](http://www.DRpower.com) or call toll-free 1-800-DR-OWNER (376-9637) for support.

### **WARNING**

When performing any maintenance, you must first shut off the tow vehicle, set the parking brake and disconnect power from the battery of the DR Power Grader by disconnecting the positive battery terminal (figure 5 on page 8).

---

### **Troubleshooting Table**

| <b>SYMPTOM</b>   | <b>POSSIBLE CAUSE</b>  |
|--|--|
| <i>The wheels on the tow vehicle spin during the grading operation.</i>          | <ul style="list-style-type: none"><li>⇒ The Scarifying Teeth are set too low, causing too large a section of surface to be removed. Raise the height of the Scarifying Teeth Plate to improve traction.</li><li>⇒ There is too much weight in the Weight Tray. Remove some of the weight.</li><li>⇒ The Tow Vehicle is not adequate for your application.</li></ul>  |
| <i>The Scarifying Teeth Plate will not move up or down with the Transmitter.</i> | <ul style="list-style-type: none"><li>⇒ The Battery charge is low; charge the Battery.</li><li>⇒ Check the Fuse and replace it if necessary. See Figure 1 on page 6.</li><li>⇒ Loose wire connection. Check the Actuator/Battery Cable connection and the Battery Terminal connections.</li><li>⇒ The Battery in the Transmitter may be dead; replace it. See page 11.</li><li>⇒ If the problem persists, call 1-800-DR-OWNER (376-9637) for assistance.</li></ul> |

## Chapter 6: Parts Lists, Schematic Diagrams And Warranty

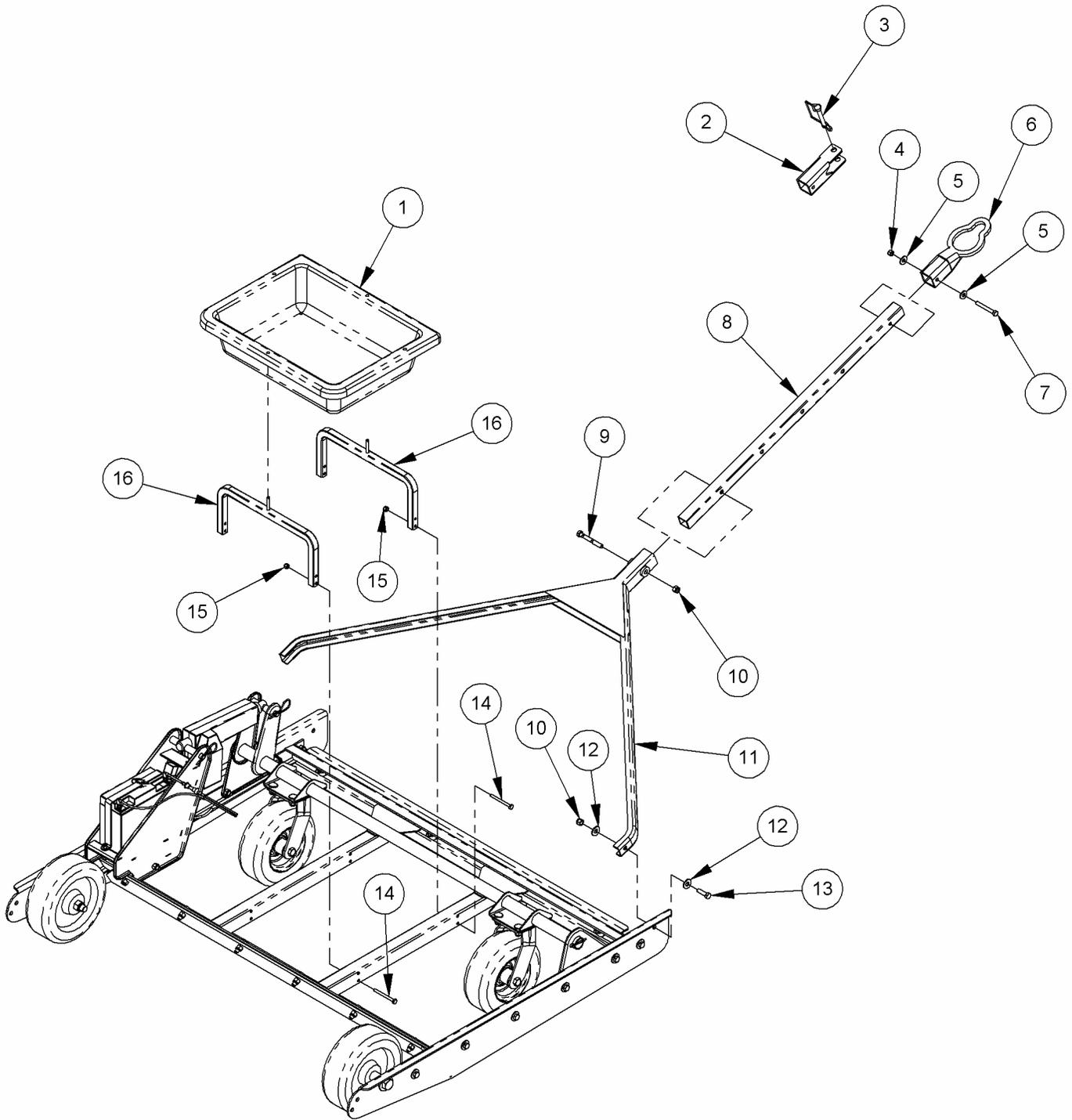
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### **Parts List - DR POWER GRADER Yoke Assembly**

**NOTE:** Part numbers listed are available through DR Power Equipment.

| <u>Ref#</u> | <u>Part#</u> | <u>Description</u>                    | <u>Safety and Information Labels</u> |                               |
|-------------|--------------|---------------------------------------|--------------------------------------|-------------------------------|
| 01          | 112261       | Tray, Tool 15" x 18" x 4.5"           | 193391                               | Label, Warning MPH            |
| 02          | 191771       | Hitch, Tow, Tractor                   | 214191                               | Label, Shear Pin Warning      |
| 03          | 211551       | Pin, Snap, Safety, 3/8" x 2.25"       | 193481                               | Label, Caution, Load Capacity |
| 04          | 110761       | Nut, Nylon Lock, 5/16"-18             | 193401                               | Label Serial Number           |
| 05          | 112411       | Washer, Flat, 5/16" USS               |                                      |                               |
| 06          | 193731       | Hitch, Tow Hook                       |                                      |                               |
| 07          | 111591       | Bolt, 5/16"-18 x 2-1/2" HCS           |                                      |                               |
| 08          | 211521       | Bar, Tow                              |                                      |                               |
| 09          | 191871       | Pin, Shear                            |                                      |                               |
| 10          | 110751       | Nut, Nylon Lock, 3/8"-16              |                                      |                               |
| 11          | 191491       | Yoke (48" model)                      |                                      |                               |
|             | 221881       | Yoke (60" model)                      |                                      |                               |
| 12          | 112391       | Washer, Flat, 3/8" USS                |                                      |                               |
| 13          | 150431       | Bolt, 3/8"-16 x 1-1/4", GR.5, ZP, HCS |                                      |                               |
| 14          | 180851       | Bolt, 1/4"-20 x 2- 3/4", HCS          |                                      |                               |
| 15          | 110731       | Nut, Nylon Lock, 1/4"-20              |                                      |                               |
| 16          | 191821       | Bracket, Tray Support 48"             |                                      |                               |
|             | 221901       | Bracket, Tray Support 60"             |                                      |                               |

**Schematic – DR POWER GRADER Yoke Assembly**



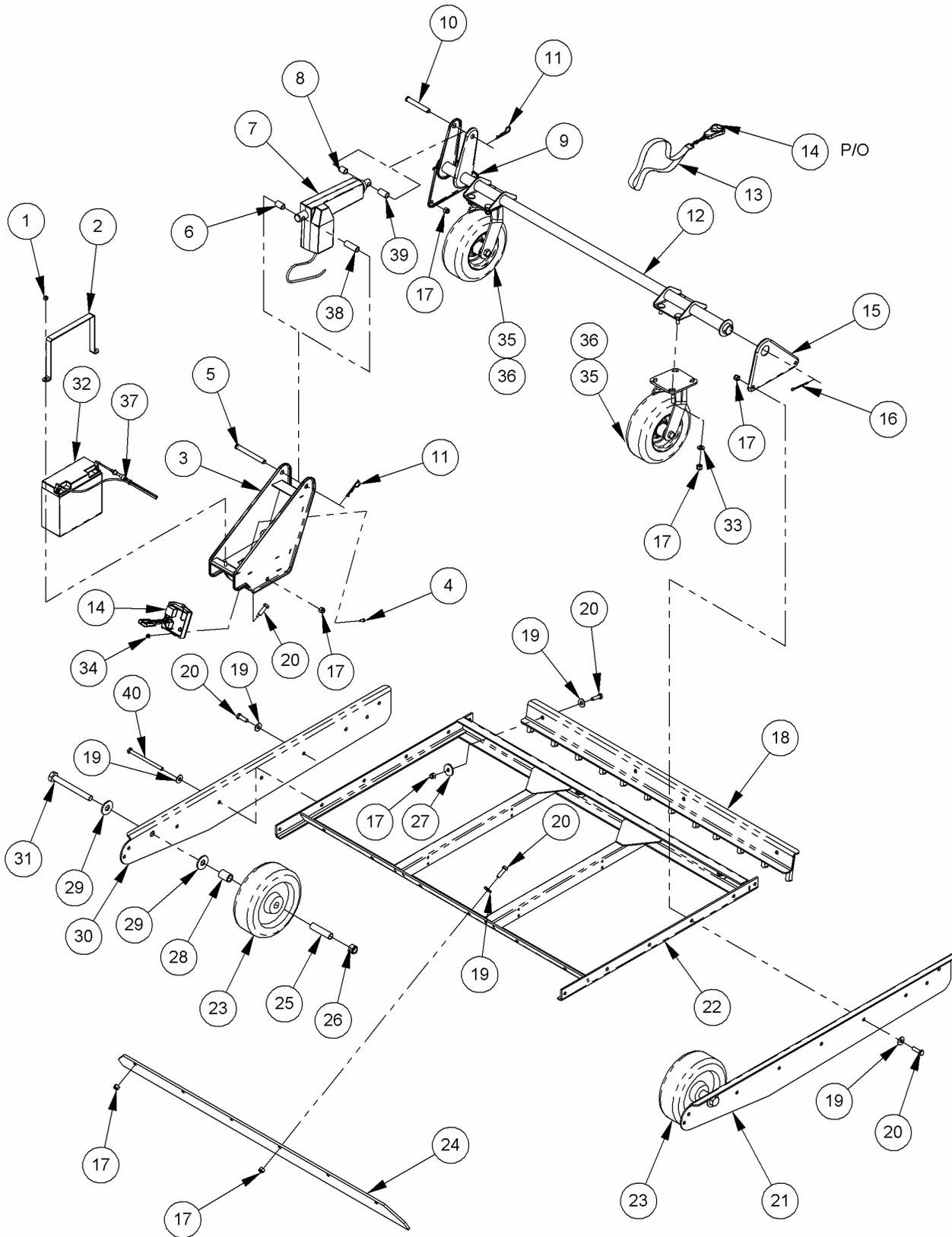
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## Parts List – DR POWER GRADER Frame Assembly

**NOTE:** Part numbers listed are available through DR Power Equipment.

| Ref# | Part#  | Description   | Ref#                                 | Part#                                | Description   |
|------|--------|---|--------------------------------------|--------------------------------------|---|
| 01   | 110731 | Nut, Nylon Lock, 1/4"- 20                             | 32                                   | 104831                               | Battery, 12 VDC, 17 Amp-Hour                          |
| 02   | 285521 | Clamp, Battery, 7-1/8" W x 5-5/4" H                   | 33                                   | 121701                               | Washer, Flat, 3/8" SAE                                |
| 03   | 265971 | Bracket, Battery Mount                                | 34                                   | 118731                               | Nut, Nylon lock, 10-24                                |
| 04   | 114781 | Screw, Pan Head, 10-24 x 5/8"                         | 35                                   | 191481                               | Wheel, Castor, 8.75" Diameter                         |
| 05   | 187371 | Pin, Clevis, 1/2" x 4.5"L                             | 36                                   | 147281                               | O-Ring, Swivel Wheel                                  |
| 06   | 271411 | Spacer, Actuator, Short, .512" ID, .669" OD, .995" L  | 37                                   | 228761                               | Wire Harness, Battery                                 |
| 07   | 283881 | Actuator, Linear Bar w/Battery Harness                | 38                                   | 271421                               | Spacer, Actuator, Long, .512" ID, .669" OD, 1.865" L  |
| 08   | 271431 | Spacer, Axle Yoke, Short, .512" ID, .669" OD, .800" L | 39                                   | 278941                               | Spacer, Axle Yoke, Long, .512" ID, .669" OD, 1.220" L |
| 09   | 228681 | Bracket, Caster, Left                                 | 40                                   | 279171                               | Bolt, 3/8-16 x 5-1/4", GR.5, ZP, HCS                  |
| 10   | 211541 | Pin, Clevis, 1/2" x 3.5"L                             | <b>Items Not Illustrated</b>         |                                      |   |
| 11   | 160031 | Pin, Hitch Clip, 1/2" to 9/16"                        | 113011                               | Charger, Battery                     |   |
| 12   | 233941 | Axle Assembly (48" model)                             | 113041                               | Adapter, Battery Charger             |   |
|      | 233951 | Axle Assembly (60" model)                             | 142201                               | Fuse, 20 amp                         |   |
| 13   | 228781 | Lanyard   | 138071                               | Literature, Battery Maintenance      |   |
| 14   | 240431 | Remote, Receiver and Transmitter                      | <b>Safety and Information Labels</b> |                                      |   |
| 15   | 228671 | Bracket, Caster, Right                                | 192391                               | Label, 5-3/4" DR Logo, Silver        |   |
| 16   | 186551 | Pin, Cotter, 3/16" x 2.0", ZP                         | 234371                               | Label, Warning, Orient Actuator Down |   |
| 17   | 110751 | Nut, Nylon Lock, 3/8"-16                              | 235451                               | Label, Address                       |   |
| 18   | 229241 | Plate, Scarifying Teeth, 48"                          |                                      |                                      |   |
|      | 229251 | Plate, Scarifying Tooth, 60"                          |                                      |                                      |   |
| 19   | 112391 | Washer, Flat, 3/8" USS                                |                                      |                                      |   |
| 20   | 150431 | Bolt, 3/8"-16 x 1-1/4", GR.5, ZP, HCS                 |                                      |                                      |   |
| 21   | 228691 | Rail, Side, Right                                     |                                      |                                      |   |
| 22   | 191401 | Frame, 48" Subassembly                                |                                      |                                      |   |
|      | 221861 | Frame, 60" Subassembly                                |                                      |                                      |   |
| 23   | 191471 | Wheel, 8.0" Diameter                                  |                                      |                                      |   |
| 24   | 191441 | Blade, Scraper (48" model)                            |                                      |                                      |   |
|      | 221911 | Blade, Scraper (60" model)                            |                                      |                                      |   |
| 25   | 214111 | Spacer, .63" ID, .75" OD, 3.075" L                    |                                      |                                      |   |
| 26   | 160071 | Nut, Nylon Lock, 5/8"- 18                             |                                      |                                      |   |
| 27   | 165141 | Washer, .385" ID, 1.390" OD                           |                                      |                                      |   |
| 28   | 191531 | Spacer, .688" ID, 1.0" OD, 1.38" L                    |                                      |                                      |   |
| 29   | 157451 | Washer, Flat, 5/8" USS                                |                                      |                                      |   |
| 30   | 228701 | Rail, Side, Left                                      |                                      |                                      |   |
| 31   | 191741 | Bolt, 5/8"-18 x 1-1/4, HCS                            |                                      |                                      |   |

# Schematic – DR POWER GRADER Frame Assembly

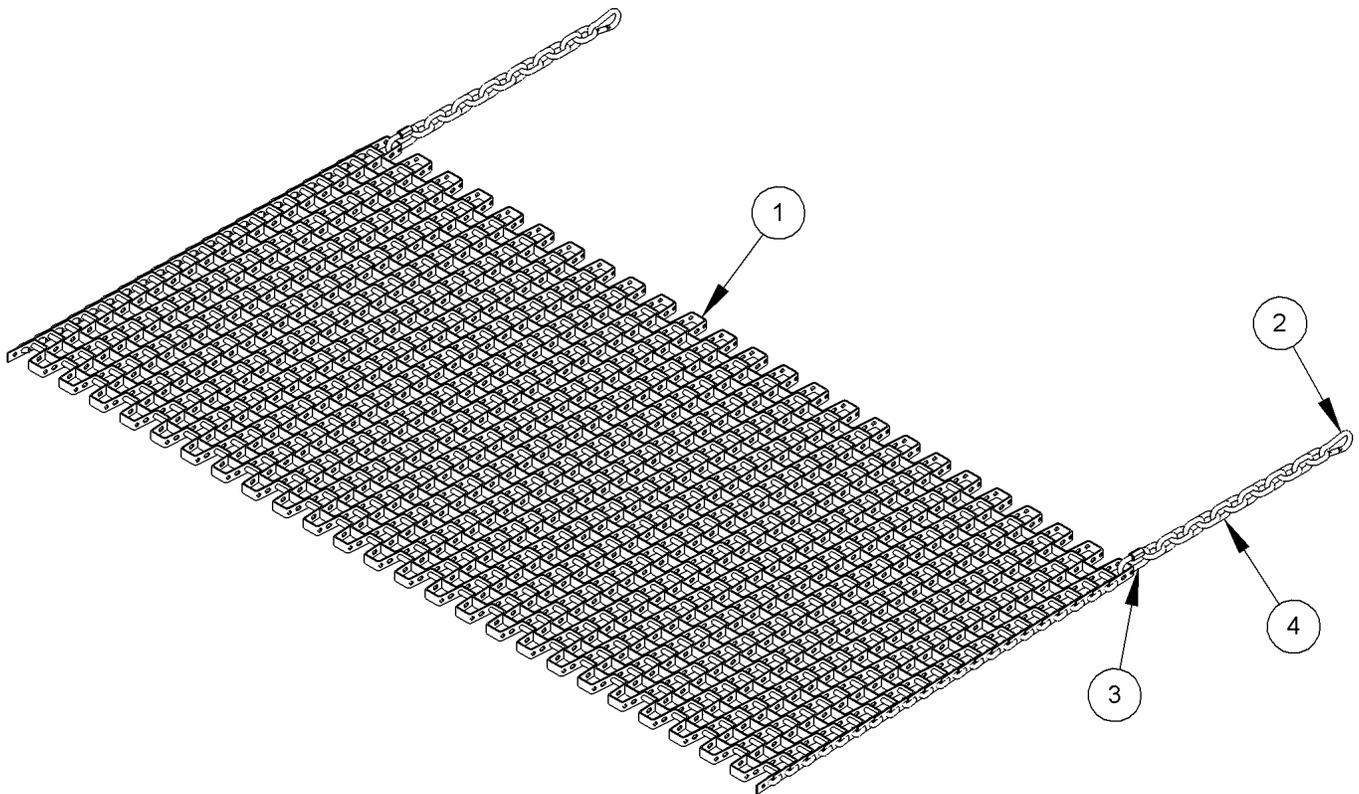


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## Parts List – DR POWER GRADER Optional Drag Screen (Kit No. 210861)

**NOTE:** Part numbers listed are available through DR Power Equipment.

| Ref# | Part#  | Description                         |
|------|--------|-------------------------------------|
| 01   | 210861 | Drag Screen, 48", w/Chain and Links |
|      | 226861 | Drag Screen, 60", w/Chain and Links |
| 02   | 230991 | Snap, Spring, 5/16"                 |
| 03   | 211751 | Connector, Threaded                 |
| 04   | 211771 | Chain, Tangle Resistant             |



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**Notes:**

**Notes:**

# DR® POWER GRADER



## 2-Year Limited Warranty

### Terms and Conditions

The DR® POWER GRADER is warranted for two (2) years against defects in materials or workmanship when put to ordinary and normal consumer use; ninety (90) days for any other use.

For the purposes of all the above warranties, "ordinary and normal consumer use" refers to non-commercial residential use and does not include misuse, accidents or damage due to inadequate maintenance.

DR Power Equipment certifies that the DR® POWER GRADER is fit for ordinary purposes for which a product of this type is used. DR Power Equipment however, limits the implied warranties of merchantability and fitness in duration to a period of two (2) years in consumer use, ninety (90) days for any other use.

The 2-Year Limited Warranty on the DR® POWER GRADER starts on the date the machine ships from our factory. The 2-Year Limited Warranty is applicable only to the original owner.

The warranty holder is responsible for the performance of the required maintenance as defined by the manufacturer's owner's manuals. The warranty holder is responsible for replacement of normally wearing parts such as the Scarifying Teeth, Scraper Blade, Batteries (Remote and Grader) and Shear Bolt. Accessories to the machine are not covered by this warranty.

During the warranty period, the warranty holder is responsible for the machine transportation charges, if required. During the warranty period, warranty parts will be shipped by standard method at no charge to the warranty holder. Expedited shipping of warranty parts is the responsibility of the warranty holder.

SOME STATES DO NOT ALLOW LIMITATIONS ON THE LENGTH OF IMPLIED WARRANTIES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

DR Power Equipment shall not be liable under any circumstances for any **incidental or consequential damages or expenses** of any kind, including, but not limited to, cost of equipment rentals, loss of profit, or cost of hiring services to perform tasks normally performed by the DR® POWER GRADER.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

## Daily Checklist for the DR POWER GRADER

To help maintain your DR POWER GRADER for optimum performance, we recommend you follow this checklist each time you use your machine.

---

### WARNING

When performing any maintenance, you must first shut off the tow vehicle, set the parking brake and disconnect power from the battery of the DR Power Grader by disconnecting the positive battery terminal (figure 5 on page 8).

---

- [ ] HARDWARE: Check all nuts and bolts to be sure that the components are secure.
- [ ] FRAME: Check all welds to be sure that the frame is intact and secure.
- [ ] CLEAN: Make sure the Scarifying Teeth Plate and the Frame are clean and free of debris.
- [ ] BATTERY: Make sure the Battery is fully charged.

## End of Season and Storage

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### WARNING

When performing any maintenance, you must first shut off the tow vehicle, set the parking brake and disconnect power from the battery of the DR Power Grader by disconnecting the positive battery terminal (figure 5 on page 8).

---

- Charge the Battery and bring it inside to store above freezing temperatures. See page 10.
- Hose down the DR POWER GRADER. Remove the Scarifying Teeth Plate to clean it of debris and then replace it after cleaning the mounting surfaces.

---

### NOTICE

- Use care not to hose down the Battery and electrical components.
  - Do not use a Power Washer; this may force water through the Seals on the Height Adjusting Actuator.
- 
- Lubricate the Rear Wheel bearings, Front Wheel bearings, and the Caster bearings.
  - Wipe down the DR POWER GRADER to remove any moisture and dirt that may have accumulated.
  - Store the Transmitter and the DR POWER GRADER in a dry area to prevent moisture from damaging the electrical components of the machine.

If possible, store the Power Grader in a dry, protected place. If it is necessary to store the Power Grader outside, cover it with a protective material (especially the Battery and Receiver).



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75 MEIGS ROAD, P.O. BOX 25, VERGENNES, VERMONT 05491