DR® 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

⚠ WARNING

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

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Conventions used in this manual

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 (***Figure 1***). 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

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.

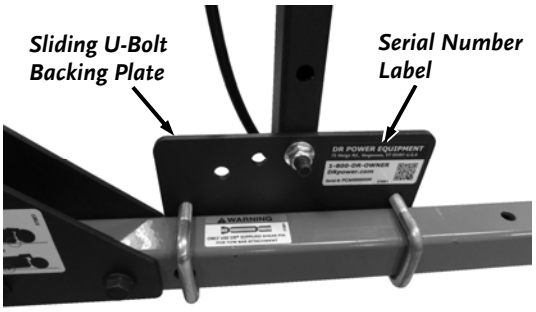


Figure 1

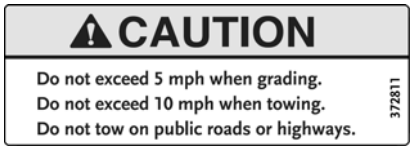
DR Power Equipment reserves the right to discontinue, change, and improve its products at any time without notice or obligation to the purchaser. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations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

⚠ WARNING

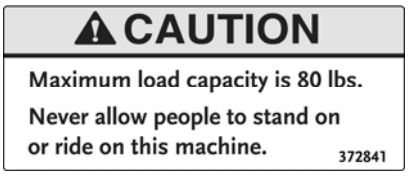
Read this safety & operating Instructions manual before you use the DR POWER GRADER. Become familiar with the operation and service recommendations to ensure the best performance from your machine. If you have any questions or need assistance, please contact us at www.DRpower.com or call toll-free 1-800-DR-OWNER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

Labels

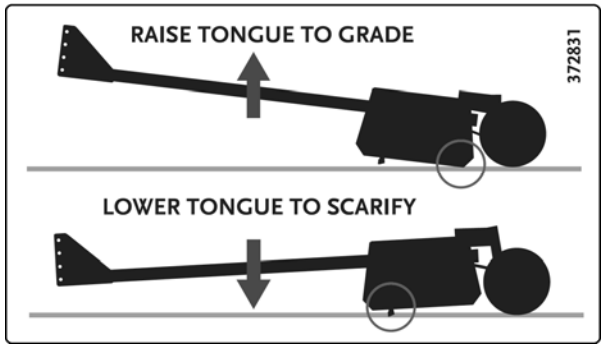
Your DR POWER GRADER carries prominent labels as reminders for its proper and safe use. Shown below are copies of all the Safety and Information labels that appear on the equipment. Take a moment to study them and make a note of their location on your POWER GRADER as you set up and before you operate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



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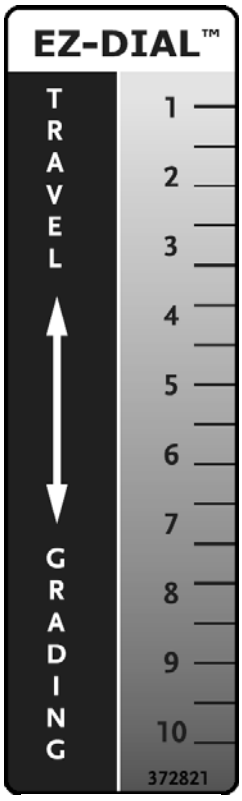
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Protecting Yourself and Those Around You

⚠ 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.
- 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.
- Keep all nuts and bolts tight and keep the equipment and attachments in good operating condition.
- Use only manufacturer-recommended replacement parts.
- 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.

California Proposition 65

⚠ WARNING

California Proposition 65:

- This product contains or emits chemicals known to the State of California to cause cancer, birth defects, and other reproductive harm.

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 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.

DR POWER GRADER Controls and Features

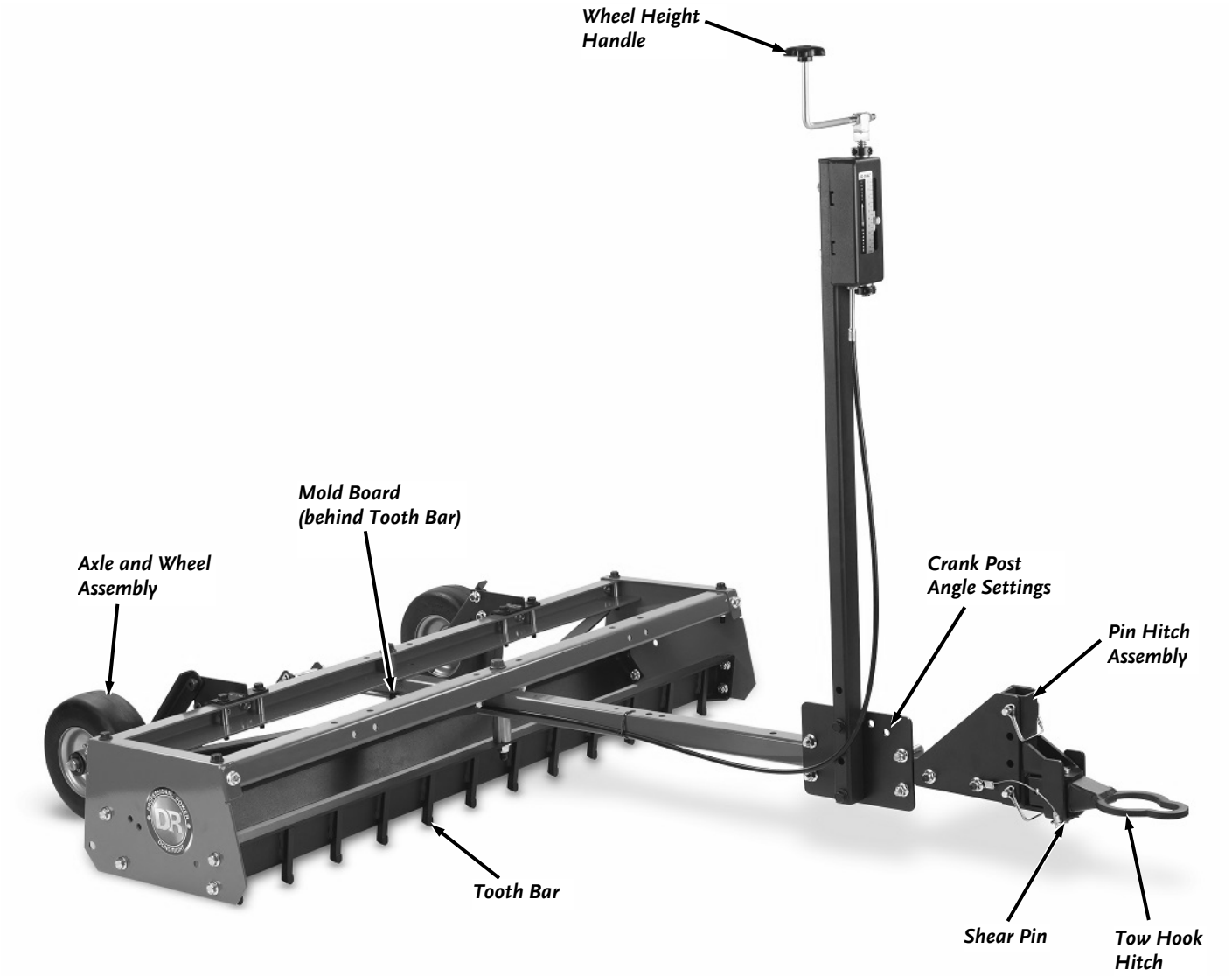


Figure 2

Specifications

Teeth	12-Tungsten Carbide-Tipped 4142 Hardened Alloy Steel
Mold Board	Cold Rolled 1018 Steel 3-Gauge (.2391")
Wheels	Flat free- Solid Rubber, 8"X3.00"-4"/2.25"
Hitch Height Range	3.63" to 13.922"
Tooth length below frame rails	.8"
Number of revolutions to raise teeth 1" in	8
Weight capacity (blocks)	80lbs (2 standard 16"x8"x8" cinder blocks)
Control Box Heights	36.862"to 38.862" from tow bar
Control Box post Angle	90degrees,75degrees and 60 degrees
Control Box adjustable location	Sliding control box post for different tow vehicles
1/2" Shear Pin	Protects against tow vehicle damage
Reversible Scraping Blade (Mold Board)	Grading or grooming blade types
Adjustable Angle Scraping Blade (Mold Board)	50degrees,90degrees,105degrees (50 for aggressive cutting,90 for light
Drag Screen	Optional drag screen
Minimum Tow Vehicle HP	14 hp or 400 lb. lawn tractor or garden tractor
Hitch Type	Pin or Ball
Dim's (assembled)	68"X49"X44"
Weight (Grader without weights)	126LBS

Main Parts (Figure 3 and Table below)

Description	Qty
1 ..... Tow Bar	1
2 ..... Wheels	2
3 ..... Crank Post	1
4 ..... Axle Assembly	1
5 ..... Height Adjust Control Box Assembly	1

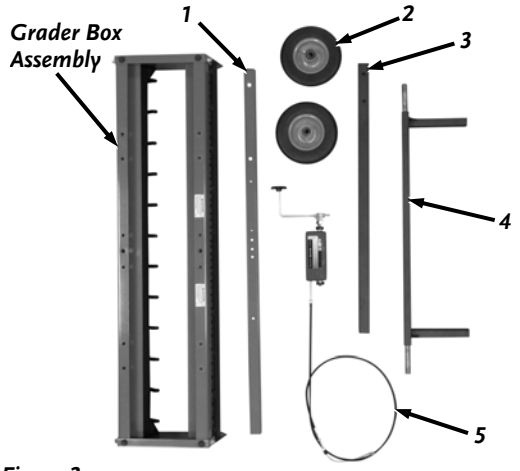


Figure 3

Parts Box (Figure 4 and Table below)

Description	Qty
1 ..... Bracket, Hitch Adjustment	2
2 ..... Bracket, Axle	2
3 ..... Hitch Assembly, Pin	1
4 ..... Bracket, Spring, Cable	1
5 ..... Plate, Backing, U-bolt, Sliding	1
6 ..... Bracket, Anti-Rotation, Hook, Tow	1
7 ..... Hitch, Tow Hook	1
8 ..... Crank Handle	1

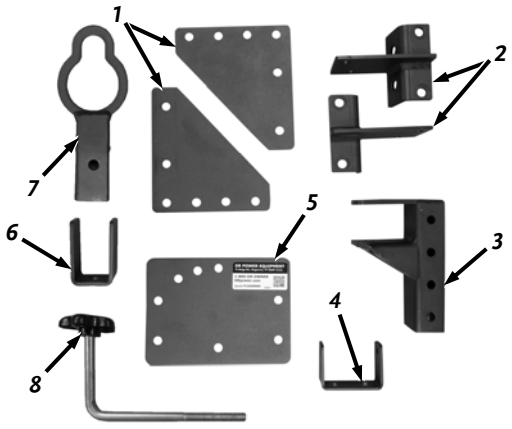


Figure 4

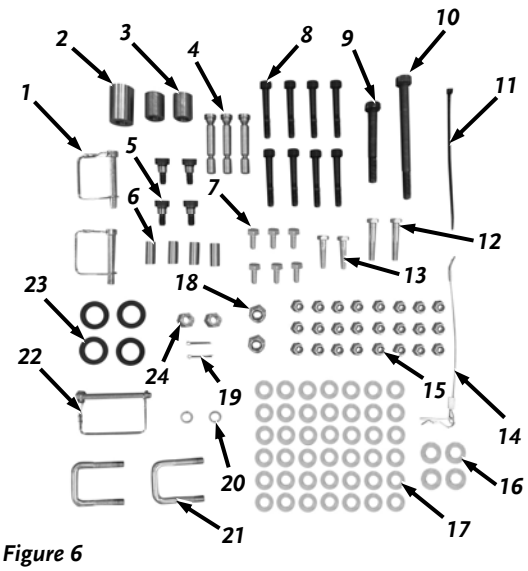


Figure 6

Hardware Bags (Figure 6 and Table below)

Index#	Part#	Description	Qty
1	21155	Pin, Snap Safety, 3/8" X 2.75"	2
2	36706	Spacer, Tooth Bar	1
3	37186	Spacer, Rail, Center	2
4	37237	Pin, Shear, 1/2"	3*
5	36737	Bolt Shoulder, 1/2 X 3/8l, 3/8-16	4
6	36702	Spacer, Rail	4
7	37239	Bolt, HHCS, 3/8-16 X .75", GR5, ZP	6
8	16484	Bolt, HCS, 3/8-16 X 2.5", GR5, ZP	8
9	37243	Bolt, HHCS, 1/2-13 X 3-3/4", GR8	1
10	37242	Bolt, HHCS, 1/2-13 X 6", GR8, ZP	1
11	12797	Cable Tie, 17", Nylon Black	1
12	12686	Bolt, HCS, 3/8-16 X 2", GR5 ZP	2
13	11985	Bolt, HCS, 3/8-16 X 1-1/2", GR5, ZP	2
14	37236	Lanyard, Hair Pin	1
15	16413	Nut, Nylon Lock, 3/8-16, Low Profile	24
16	23499	Washer, SAE Flat, 1/2", ZP	4
17	12170	Washer, Flat 3/8", ZP, ANSI Narrow	42
18	11072	Nut, Nylon Lock, 1/2-13, GR5, ZP	2
19	37190	Pin, Cotter, 3/32" x 1", ZP	2
20	18081	Washer, Lock, Medium Split, 3/8"	2
21	36680	U-bolt, Post	2
22	37191	Pin, Snap Safety, 5/16" x 3"	1
23	18064	Washer, .8" ID, 1.5" OD X .11"	4
24	12683	Nut, 3/8-16, GR5,ZP	2

* Two Shear Pins are spares

Assembly

Tools Needed

- Two 9/16" Wrenches
- Two 3/4" Wrenches
- Two 1/2" Wrenches
- 1/4" Allen Wrench
- Ratchet, Extension and 9/16" Socket
- Pliers

Note: *When installing Flat Washers with Bolts and Locknuts, place one Washer under the Bolt Head and one under The Locknut. The only Bolts that don't use a Flat Washer under the head is the Shoulder Bolts.*

1. Locate a clean flat surface to assemble the Power Grader.
2. Position the Frame Assembly with the front facing up to gain access to the Tooth Bar area (***Figure 7***).

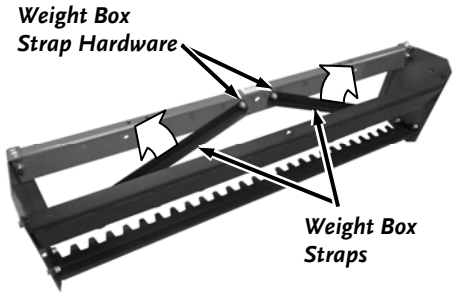


Figure 7

Note: *The Weight Box Straps are secured at the ends but not at the center of the machine. You may need to loosen the hardware before performing the next step.*

3. Rotate the Weight Box Straps to align with the mounting holes in the forward Frame Crossmember and secure with 3/8-16 x .75" Bolts, Flat Washers and Locknuts using two 9/16" Wrenches. Tighten hardware on the other end of the Weight Box Straps also.
4. Support the Tooth Bar as you remove the four Bolts, Flat Washers and Locknuts that are securing the Tooth Bar using two 9/16" Wrenches (***Figure 8***).

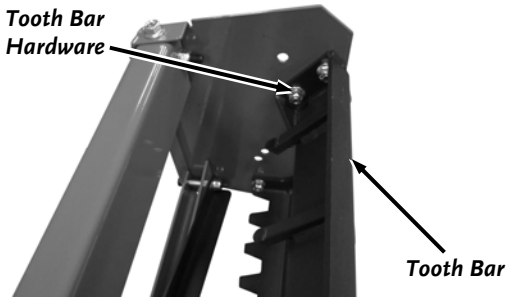


Figure 8

5. Turn the Tooth Bar around so the teeth are facing forward (***Figure 9***). Secure the Tooth bar with the four Bolts, eight Flat Washers and Locknuts but only hand tight for now.
6. Flip the Frame Assembly over so the front of the Frame Assembly is facing forward and both Crossmembers are on top (***Figure 10***).
7. Remove the top Bolts, Flat Washers and Locknuts that are securing the Mold Board using two 9/16" Wrenches (***Figure 11***).
8. Loosen the bottom Bolt and Locknut that is securing the Mold Board using two 9/16" Wrenches and rotate the Mold Board down to make room for the Tow Bar installation in the next step.
9. Position the Tow Bar under the Crossmembers with the Shear Pin Label on top and toward the front (***Figure 10***).
10. Secure the front of the Tow Bar with a 1/2-13 x 6" Bolt (with Washer), Rail Center Spacer (inserted into Crossmember), Tooth Bar Spacer (between Tow Bar and Tooth Bar) and 1/2" Locknut (with Washer) only hand tight for now (***Figure 12***).
11. Secure the rear of the Tow Bar with a 1/2-13 x 3-3/4" Bolt (with Washer), Rail Center Spacer (inserted into Crossmember) and 1/2" Locknut (with Washer). Tighten with two 3/4" Wrenches.
12. Tighten the Hardware you installed in step 10 with Two 3/4" Wrenches.

Note: *The 1/2" Bolt and Locknut that you tightened in step 11 and 12 should be very tight so the parts are compressed together for strength.*

13. Tighten the Hardware you installed in step 5 with Two 9/16" Wrenches.
14. Return the Mold Board to its original position and install the Bolts, Flat Washers and Locknuts that you removed. Tighten the Mold Board hardware using two 9/16" Wrenches.
15. Install the two Hitch Adjustment Brackets with a 3/8-16 x 2-1/2" Bolt, Locknut and Hair Pin Lanyard at the forward location using two 9/16" Wrenches (***Figure 13***). Secure the rear location with a 3/8-16 x 2-1/2" Bolt and Locknut using two 9/16" Wrenches.

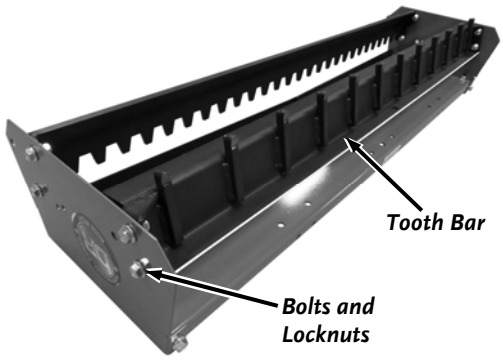


Figure 9

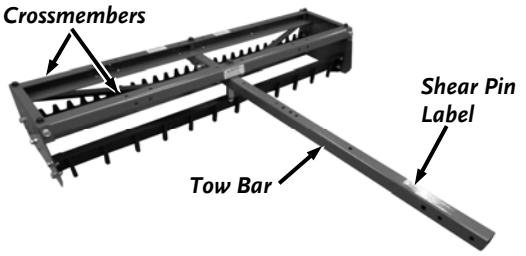


Figure 10

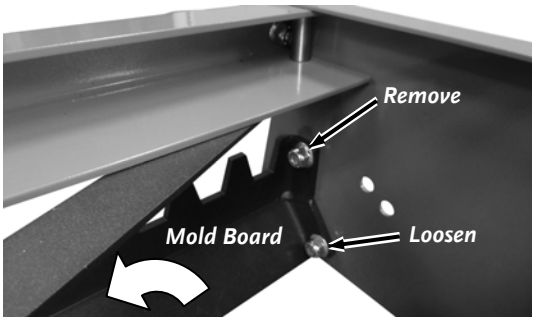


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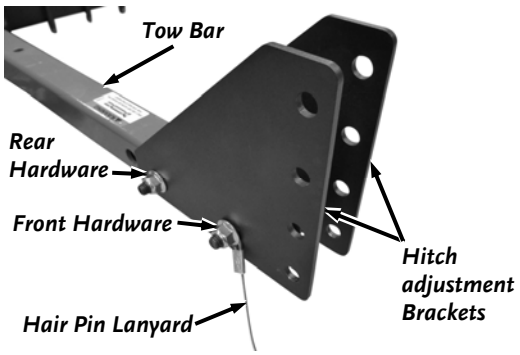


Figure 13

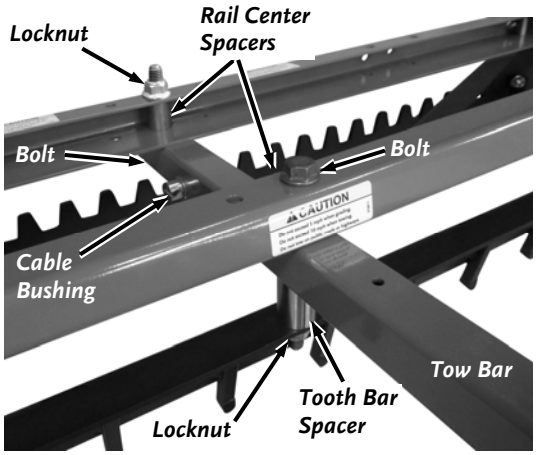


Figure 12

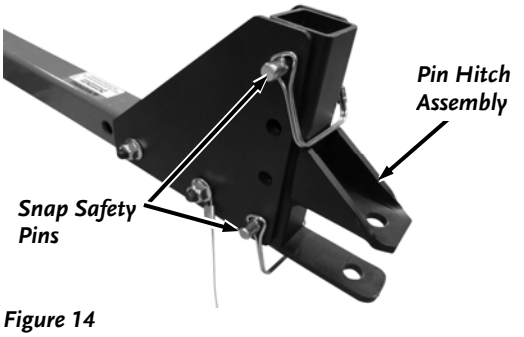


Figure 14

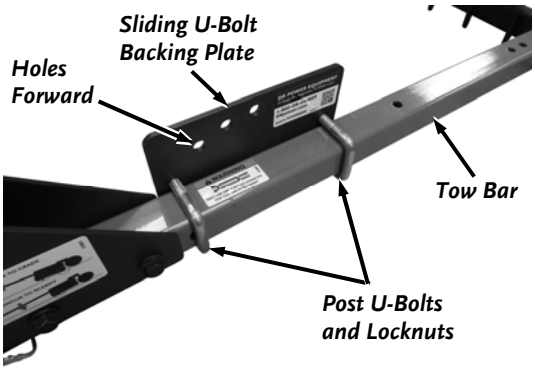


Figure 15

16. Position the Pin Hitch Assembly between the Hitch Adjustment Brackets and secure with two Snap Safety Pins (***Figure 14***).
17. Secure the Sliding U-Bolt Backing Plate to the right side of the Tow Bar (three holes facing forward) with two Post U-Bolts and four 3/8" Locknuts using a 9/16" Wrench. Do not over tighten (***Figure 15***).
18. Install the Crank Post onto the Sliding U-Bolt Backing Plate with two 3/8-16 x 2-1/2" Bolts and Locknuts using two 9/16" Wrenches (***Figure 16***).

Note: *The other two holes at bottom of the Crank Post can be used for height adjustment as described in the "Crank Post Adjustment" section at the end of this Chapter.*

19. Attach the Height Adjust Control Box to the Crank Post with two 3/8-16 x 1-1/2" Bolts, Lock Washers and Flat Washers using a 9/16" Wrench (***Figure 17***).
20. Insert a 3/8-16 Nut onto the threaded portion of the Crank Handle (about 3/4 of the way). Insert the Crank Handle into the hole at the top of the Height Adjuster Control box and secure with another a 3/8-16 Nut using a 9/16" Wrench.

Note: *Hold the Handle upright as you tighten the Nut against the Control Box hex.*

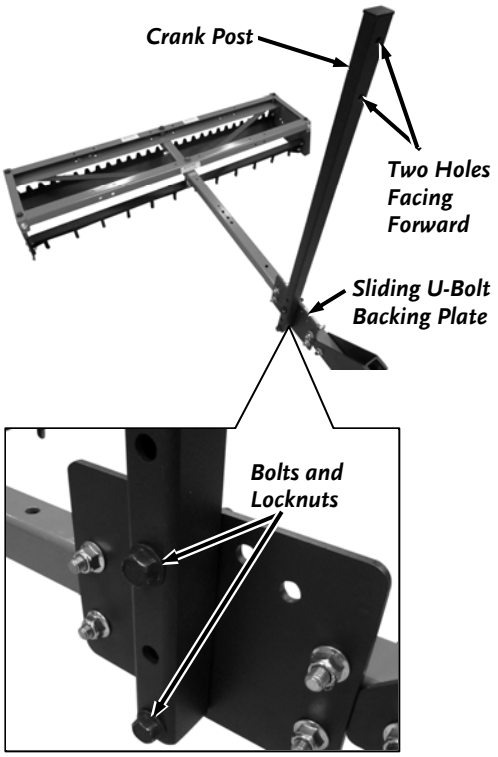


Figure 16

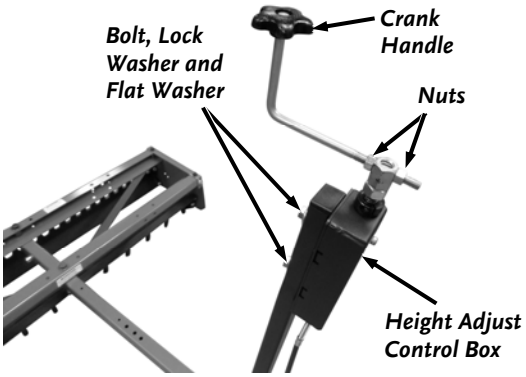


Figure 17

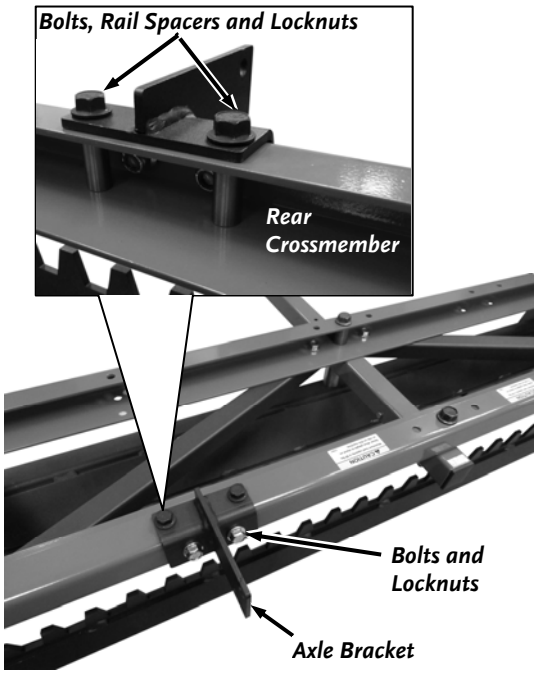


Figure 18

21. Secure the back side of the two Axle Brackets to the rear Crossmember with two 3/8-16X 3/4" Bolts (with Washers) and Locknuts (with Washers) using a Ratchet, Extension and 9/16" Socket on the inside and a 9/16" Wrench on the inside (***Figure 18***).
22. Secure the top of the Axle Brackets with two 3/8-16 X 2-1/2" Bolts (with Washers), Rail Spacers (inserted into crossmember) and Locknuts (with Washer) using two 9/16" Wrenches.
23. Install a 1/2" X 3/8"L, 3/8-16 Shoulder Bolt (head facing left, towards outside of machine) and Locknut to the left side Axle Bracket using a 1/4" Allen Wrench and 9/16" Wrench (***Figure 19***).
24. Repeat step 23 for the right side Axle Bracket with the Shoulder Bolt facing right, towards outside of the machine.
25. Position the Axle Assembly on the outside of the Axle Brackets (***Figure 20***). Align the top holes of the Axle Brackets to the holes in the Axle Assembly and secure with 1/2" X 3/8"L, 3/8-16 Shoulder Bolts (head facing out) and Locknuts using a 1/4" Allen Wrench and 9/16" Wrench.
26. Place a .8" ID, 1.5" OD x .11" Washer onto both ends of the Axle Assembly.
27. Install a Wheel and .8" ID, 1.5" OD x .11" Washer on each end of the Axle and secure with a Cotter Pin using Pliers to bend the ends (***Figure 21***).

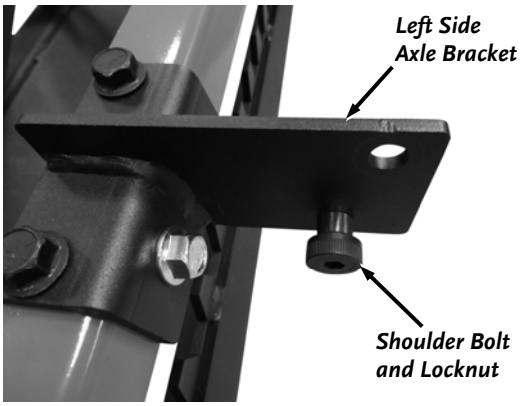


Figure 19

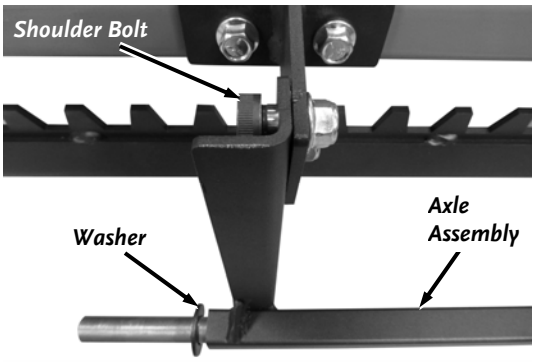


Figure 20

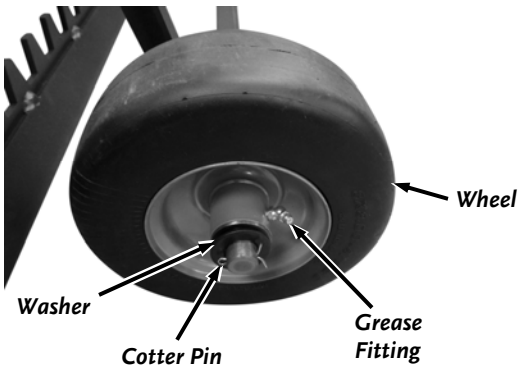


Figure 21

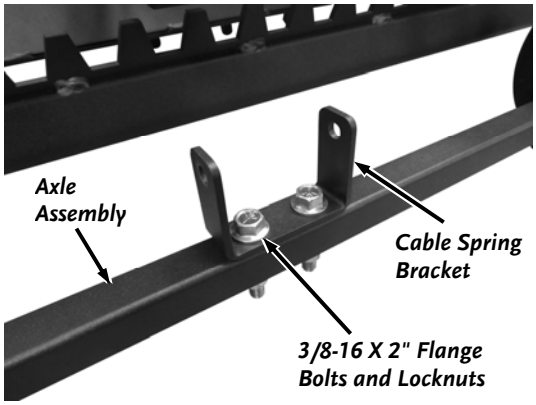


Figure 22

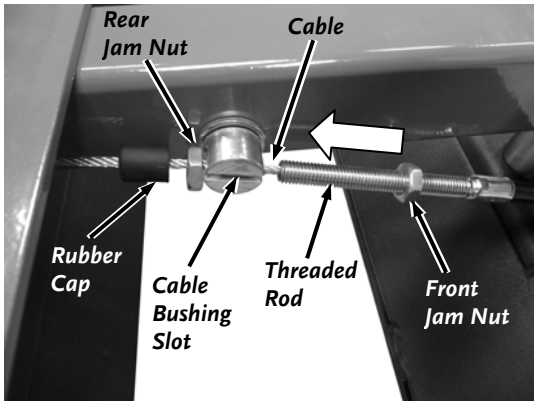


Figure 23

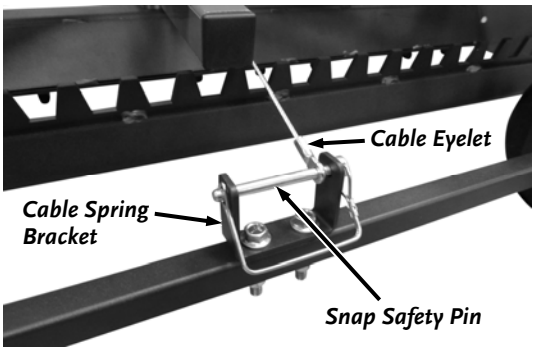


Figure 24

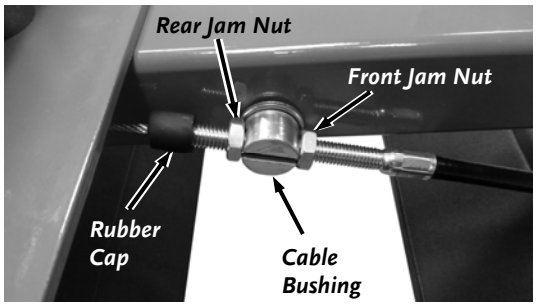


Figure 25

28. Install the Cable Spring Bracket onto the Axle Assembly with two 3/8-16 X 2" Bolts, Washers and Locknuts using two 9/16" Wrenches (***Figure 22***).
29. Insert the Height Adjust Cable under the front Crossmembers a position it near the Cable Bushing (***Figure 23***).
30. Pull the Rubber Cap from the threaded Rod of the Cable Assembly and unscrew the rear Jam Nut to remove it from the Threaded Rod.
31. Position the Cable into the Bushing slot and push the Threaded Rod into the Bushing hole.
32. Adjust the front Jam Nut that is still on the Threaded Rod until the Eyelet at the eyelet end of the Cable can be secured to the Cable Spring Bracket with the 5/16" X 3" Snap Safety Pin (***Figure 24***).
33. Reinstall the Jam Nut and secure the Cable to the Bushing by tightening the two Jam Nuts against the Bushing using two 1/2" Wrenches (***Figure 25***).
34. Reposition the Rubber Cap onto the end of the Threaded Rod.
35. Secure the Cable to the Tow Bar using the Cable Tie (***Figure 26***).

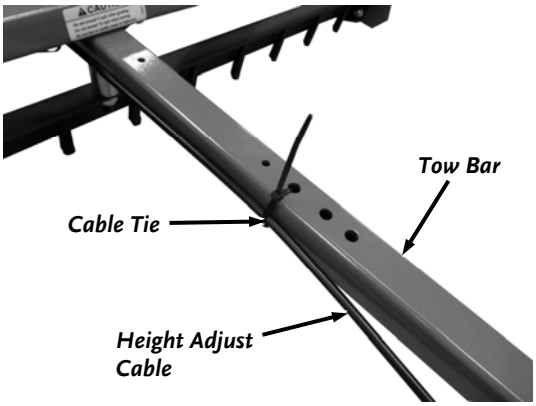


Figure 26

Installing the Tow Hook Hitch (Ball Hitch Towing)

1. Insert the square portion of the Tow Hook Hitch into the opening of the Tow Bar Hitch (***Figure 27***).
2. Insert the Shear Pin down through the Tow Bar Hitch and Tow Hook Hitch.
3. Place the Tow Hook Anti Rotation Bracket under the Tow Bar Hitch with the hole over the bottom of the Shear Pin (***Figure 28***).
4. Insert the Hair Pin that is attached to the Lanyard, into the Shear Pin hole to secure.

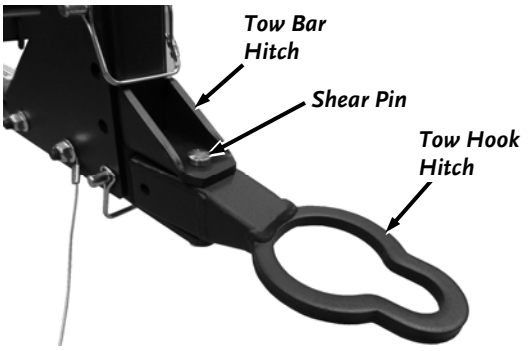


Figure 27

Connecting the DR POWER GRADER to your Tow Vehicle

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

NOTICE

- Use only the shear pin provided; use of any other Shear Pin or bolt may cause damage to your DR Power Grader.
- There are two extra shear pins provided. Store one with your Operators manual in a safe location and keep one with you when grading.

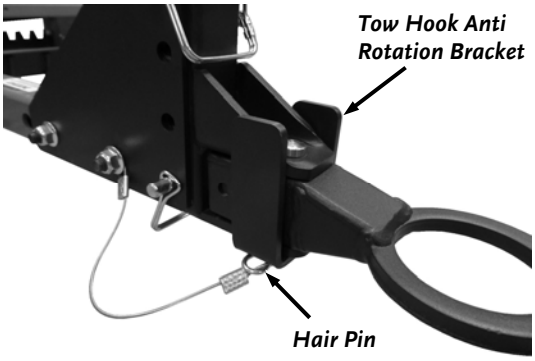


Figure 28

Lawn Tractor: (Tow Bar Hitch)

1. Stop the Lawn Tractor Engine and set the Parking Brake on your Lawn Tractor.
2. Lift the Tow Bar and position the Tow Bar Hitch opening onto the Lawn Tractor Hitch Plate (***Figure 29***).
3. Align the hole in the center of the Hitch Plate on your Lawn Tractor with the holes in the Tow Bar Hitch. Insert the Shear Pin and secure it with the Hair Pin Lanyard.

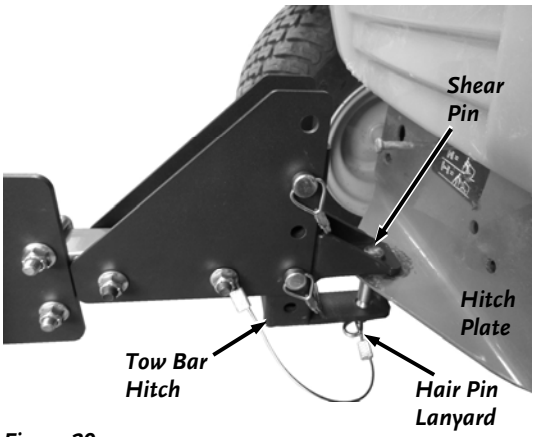


Figure 29

ATV: (Tow Hook Hitch)

1. Stop the ATV engine, put the transmission in 1st gear and set the Parking Brake on your ATV
2. Lift the Tow Bar and position the Tow Hook Hitch over the Hitch Ball on the ATV (***Figure 30***). Pull back on the Power Grader so the slot in the Keyhole Hitch fits around the Hitch Ball Shaft.

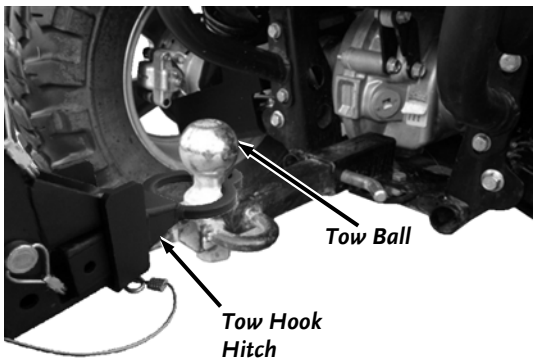


Figure 30

Crank Post Adjustment

The Crank Post can be adjusted to fit the Lawn Tractor or All Terrain Vehicle you will be using to tow the Power Grader. The Post can be moved forward or back on the Tow Bar as needed so the operator has easy access and no part of the Tow Vehicle will contact the Grader while turning. The angle/height of the Crank post can be adjusted for better operator access.

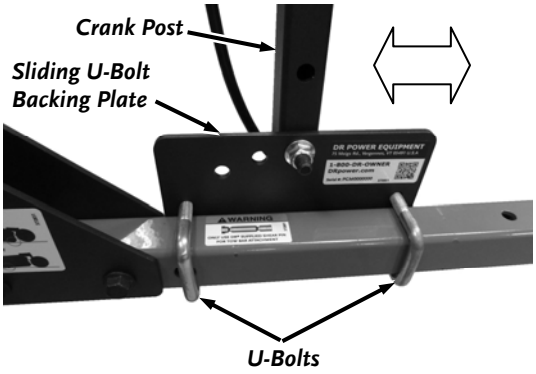


Figure 31

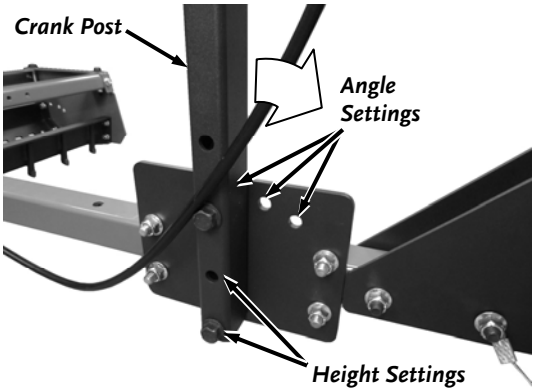


Figure 32

SETTING CRANK POST DISTANCE FROM TOW HITCH

Tools Needed:

- 9/16" Wrench

1. Loosen the Locknuts that secure the U-Bolts using a 9/16" Wrench (***Figure 31***).
2. Move the Sliding U-Bolt Backing Plate to a position where it will not contact any part of the Tow Vehicle while turning.
3. Retighten The U-Bolt Locknuts.

SETTING CRANK POST ANGLE/HEIGHT

Tools Needed:

- Two 9/16" Wrenches

Angle:

1. Remove the upper hardware that secures the Crank Post to the Backing Plate and loosen the lower hardware using two 9/16" Wrenches (***Figure 32***).
2. Align the holes at the desired angle position and reinstall the upper hardware and tighten the lower hardware.

Height:

1. Remove the hardware that secures the Crank Post to the Backing Plate and using two 9/16" Wrenches (***Figure 32***).
2. Align the holes at the other height position and reinstall the hardware.

Chapter 3: Operating The DR POWER GRADER

It may be helpful to better familiarize yourself with the features of your Grader by reviewing ***Figure 2*** 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.

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.
  - 5° slopes 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.
- **Not for use with 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

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 80 pounds) by placing two Cinder Blocks between the Crossmembers when grading hard pack to begin scarification.
- Remove any added weight such as Cinder Blocks when the surface material loosens or when experiencing traction difficulties.
- To create a smoother surface in soft materials, the Axle assembly can be positioned on top of the Grader to prevent tire tracks.
- Remove the weights when grading in muddy conditions or sandy soil.
- Expect to make several 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 Tooth Bar 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 10 MPH.

NOTICE

Frequently check the tightness of the bolts that fasten the Tooth Bar to the frame.

FAQs

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

Answer: No, but you can maintain a crown in the road by grading each side separately.

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

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

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 Hitch 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.

Adjusting the Power Grader for Grading and Scarifying

1. Rotate the Crank Knob counterclockwise until the Slider is at the bottom of the scale to lower the machine and take all of the weight off the Wheels (***Figure 33***).

Note: *The Wheels must be set fully up off the ground when Grading or Scarifying.*

2. Remove the Snap Safety Pins (***Figure 34***) and adjust the Pin Hitch Assembly as described below:
   - Position the Tow Bar to the highest position for most aggressive grading (***Figure 34***).
   - Position the Tow Bar to the lowest position for most aggressive scarifying (***Figure 35***). See "Adjusting the Mold Board" for other Mold Board settings.
   - Use the remaining Tow Bar Hitch mounting positions for varying degrees of Grading and Scarifying.

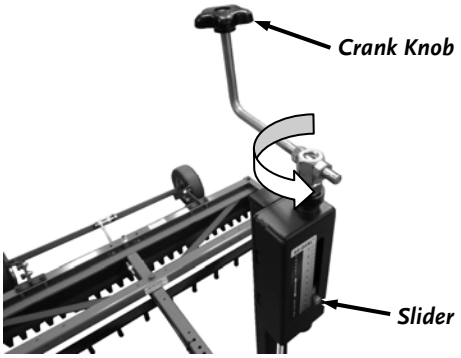


Figure 33

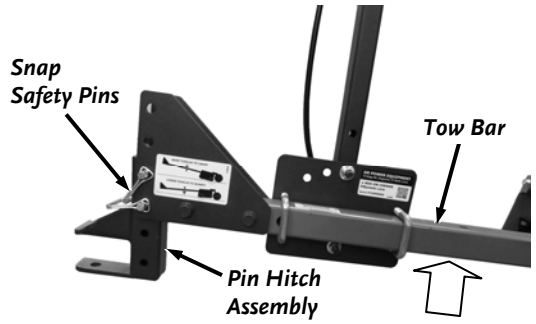


Figure 34

Using the Mold Board

ADJUSTING THE ANGLE:

The Mold Board angle can be set at three different angles to determine how aggressively it moves and molds the material.

Tools Needed:

- Two 9/16" Wrenches

1. Remove the top Bolt and Locknut on both ends of the Mold Board using two 9/16" Wrenches (***Figure 36***).
2. Loosen the Bottom Bolt and Locknut using two 9/16" Wrenches so the Mold Board can be rotated.
3. Rotate the Mold Board to align with the holes at the desired setting.
4. Reinstall the top Bolts and locknuts and tighten all hardware.

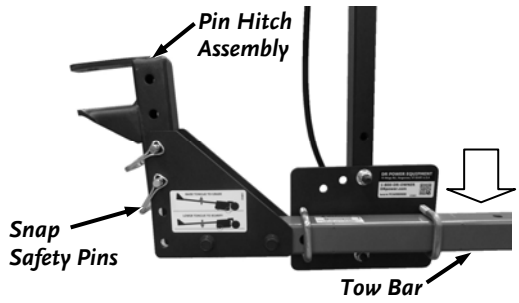


Figure 35

CONVERTING TO SMOOTH OR GROOVED EDGE:

The Mold Board can be mounted with the straight edge down for basic grading or for creating smoother surfaces in finer materials. It can also be mounted with the grooved edge down for more aggressive grading or for creating grooved surfaces in finer materials.

Tools Needed:

- Two 9/16" Wrenches

1. Fully raise the Wheels (***Figure 33***) and remove the Snap Safety Pin from the Cable Spring Bracket to rotate the Axle Assembly out of the way (***Figure 37***).

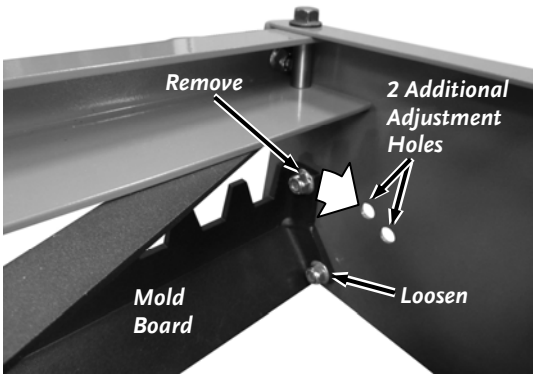


Figure 36

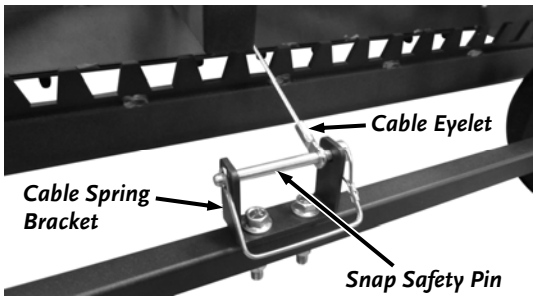


Figure 37

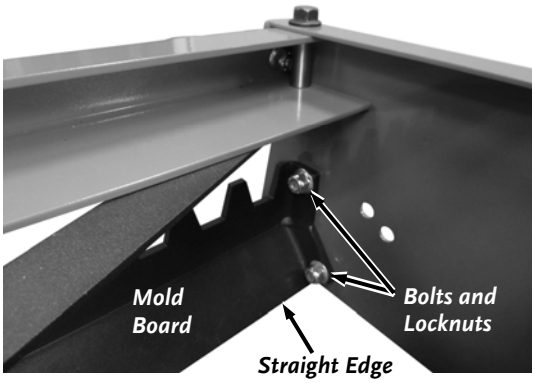


Figure 38

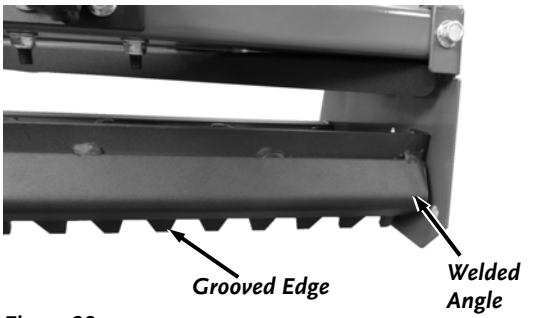


Figure 39

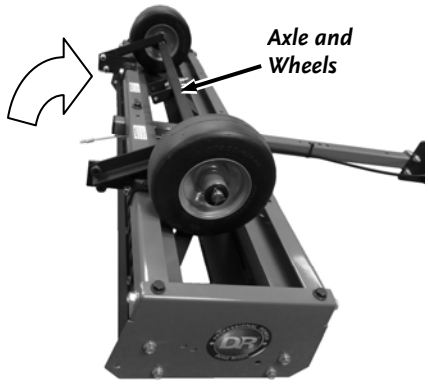


Figure 40

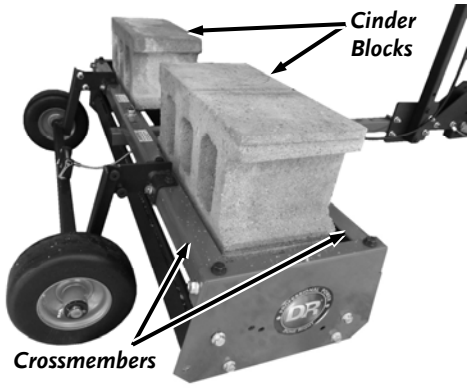


Figure 41

2. Remove the Bolts and Locknuts securing both ends of the Mold Board to the Power Grader Frame using two 9/16" Wrenches (***Figure 38***).

Note: *The Mold Board must always be positioned with the welded angle facing toward the rear (**Figure 39**).*

3. Remove the Mold Board and position it with the desired edge down and the welded Angle facing the rear of the machine.
4. Reinstall the Mold Board and secure with the Bolts and Locknuts.
5. You can reinstall the Snap Safety Pin (***Figure 37***) so you can raise the Grader when needed or you can rotate the Axle so it is resting on top of the Grader (***Figure 40***) to prevent the Wheels from leaving marks in finer materials.

Note: *If you want the place the Axle on top of the Grader, you must strap it to the Grader to keep it in place.*

Adding Weight to the Weight Tray

NOTICE

Do not add more than 80 pounds of weight to the Grader. More than 80 pounds could cause damage to the Grader and void the Warranty.

Two Cinder Blocks can be placed between the Crosmembers to add more weight for harder surfaces (***Figure 41***).

Any weights added to the top of the Grader must be strapped to the Crossmembers to prevent them from being bounced off the machine.

Lowering the Wheels for transporting

1. Rotate the Handle clockwise to raise the Slider to the top of the scale (***Figure 42***). This will lower the Wheels and lift the Power Grader off the ground for transporting.

Optional Drag Screen

An optional Drag Screen is available for your 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 Mold Board 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 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

Before performing any maintenance, you must first shut off the tow vehicle, remove the key and set the parking brake.

Regular Maintenance Checklist

PROCEDURE	BEFORE EACH USE	EVERY 25 HOURS
Check general equipment condition e.g., Nuts, Bolts, welds, etc.	▲	
Hose down the DR POWER GRADER	▲	
Check condition of Shear Pin	▲	
Lubricate Wheels as needed		▲

Cleaning the Power Grader

1. Use a Hose or 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 signs of wear or damage. Replace the Shear Pin if worn or damaged.

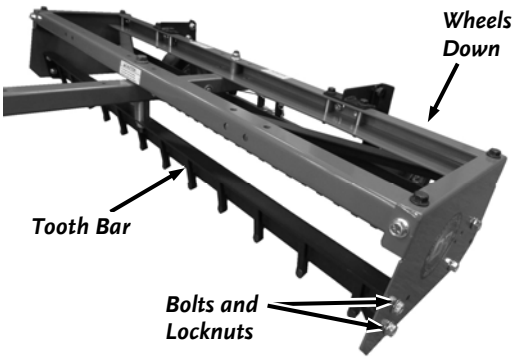


Figure 43

Replacing the Tooth Bar

Tools Needed:

- Two 9/16" Wrenches

1. Use the Height Adjust to lower the Wheels to raise the front of the DR POWER GRADER off the ground.
2. Remove the Bolts and Locknuts on both ends of the Tooth Bar using two 9/16" Wrenches (***Figure 43***).
3. Remove the old Tooth Bar and clean the mounting area of the Frame.
4. Position the new Tooth Bar and secure with the Bolts and Locknuts.



Figure 44

Lubrication

Tools and Supplies Needed:

- Flexible hose grease gun
- Lithium grease
- Clean Rags

1. Clean the Grease Fitting with a clean Rag (***Figure 44***).
2. Lubricate the Wheels at the grease fitting every 25 hours of operation.

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

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.

⚠ WARNING

Before performing any maintenance, you must first shut off the tow vehicle, remove the key and set the parking brake.

Troubleshooting Table

SYMPTOM	POSSIBLE CAUSE
The wheels on the tow vehicle spin during the grading operation.	⇒ The Scarifying Teeth are set too low, causing too large a section of surface to be removed. Raise the height of the Scarifying Tooth Bar to improve traction. ⇒ There is too much weight in the Weight Tray. Remove some of the weight. ⇒ The Tow Vehicle is not adequate for your application.
The Scarifying Teeth are not digging properly	⇒ The angle of the Tow Bar is not set correctly. Adjust the Tow Bar up for better grading or adjust the Tow Bar down for better scarifying. ⇒ There is not enough weight for the hardness of the surface material. Add weight (no more than 80 pounds) to the Power Grader to improve performance ⇒ The Wheels are adjusted not lifted all the way up. Raise the Wheels completely when grading or scarifying.
The Mold Board cannot be rotated to alternate angle settings	⇒ The rear Tow Bar 1/2" Bolt is installed wrong. The Bolt head must be under the Crossmember to allow room to rotate the Mold Board. ⇒ The lower hardware is too tight. Loosen the lower Bolt and Locknut to allow the Mold Board to rotate during adjustment. Tighten all hardware when angle adjustment is done.

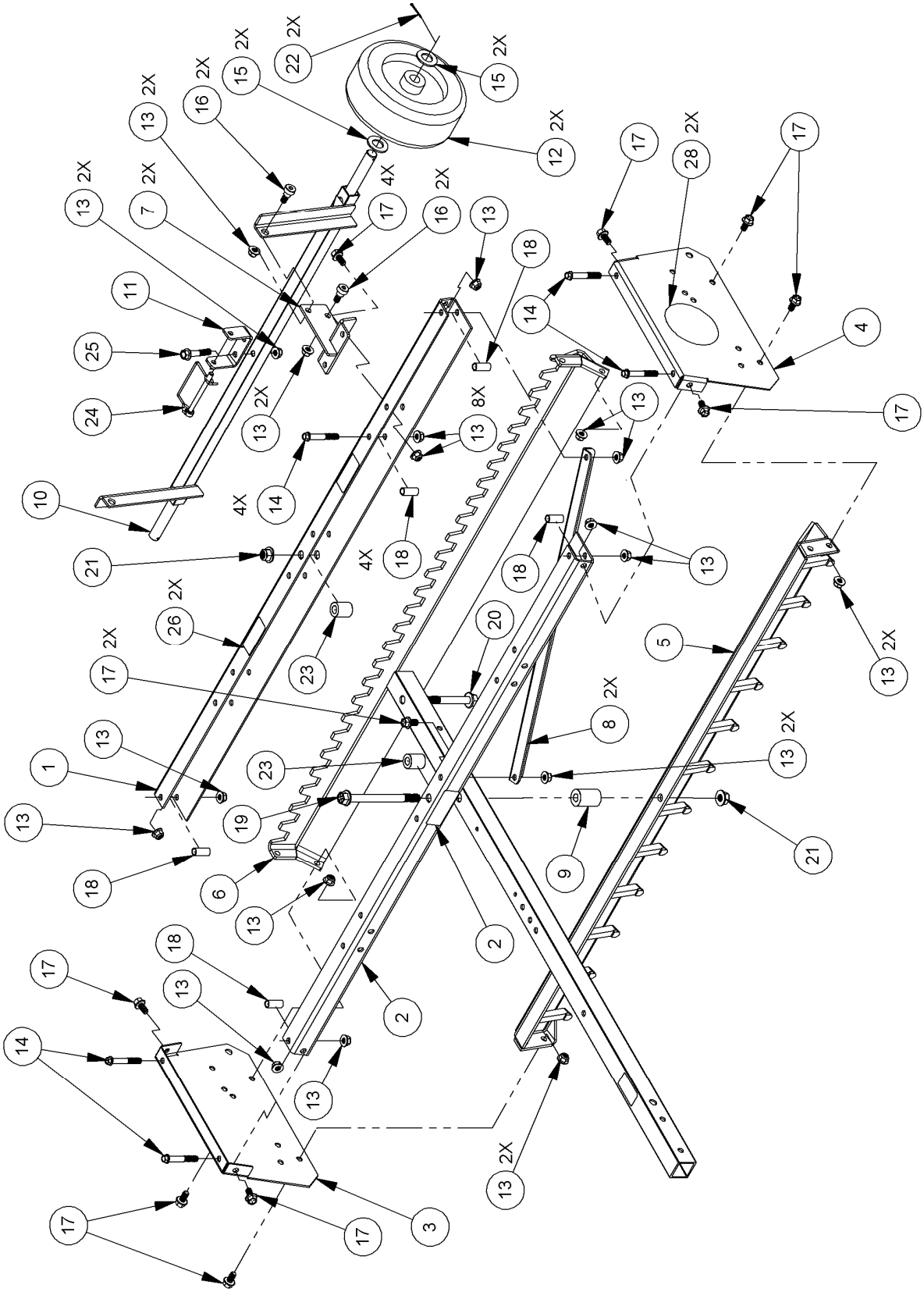
When your machine was assembled at the factory, we used Bolts, Flat Washers and Nuts in many areas. When you order replacement Hardware, we will send Flanged Bolts and Locknuts (Flat Washers not required) as shown in the following illustrations.

Parts List – GRADER BOX ASSEMBLY

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

Ref#	Part#	Description
1	37574	Crossmember, Frame, 48" W/ Weight Limit Label
2	37573	Crossmember, Frame, 48" W/ Speed Limit Label
3	37572	Rail, Frame, Right, W/ Label
4	37571	Rail, Frame, Left, W/ Label
5	36713	Tooth Bar, 48"
6	36711	Board, Mold, 48"
7	36683	Bracket, Axle
8	36710	Strap, Weight Box, 48"
9	36706	Spacer, Tooth Bar
10	36677	Assembly, Axle,48"
11	36689	Bracket, Spring, Cable
12	19147	Wheel, 8", Semi Pneumatic
13	33333	Nut, Nylon Lock, Flanged, 3/8-16
14	37184	Bolt,HHCS,Flanged, 3/8-16 x 2-1/2", Gr8
15	18064	Washer, .8" ID, 1.5" OD X .11"
16	36737	Bolt, Shoulder, 1/2 X 3/8l, 3/8-16
17	36739	Bolt, HHCS, Flanged, 3/8-16 x 3/4", Gr5, ZP
18	36702	Spacer, Rail
19	37185	Bolt, HHCS, Flanged, 1/2-13 x 6", Gr8
20	37187	Bolt, HHCS, Flanged, 1/2-13 x 3-3/4", Gr8
21	33335	Nut, Nylon Lock, Flanged, 1/2-13
22	37190	Pin, Cotter, 3/32" X 1", ZP
23	37186	Spacer, Rail, Center
24	37191	Pin, Snap Safety, 5/16" X 3"
25	33350	Bolt, Hex, Flange, 3/8-16 X 2"
26	37284	Label, Limit, Weight
27	37281	Label, Limit, Speed
28	34139	Label, DR Logo, 4" Black

Schematic – GRADER BOX ASSEMBLY

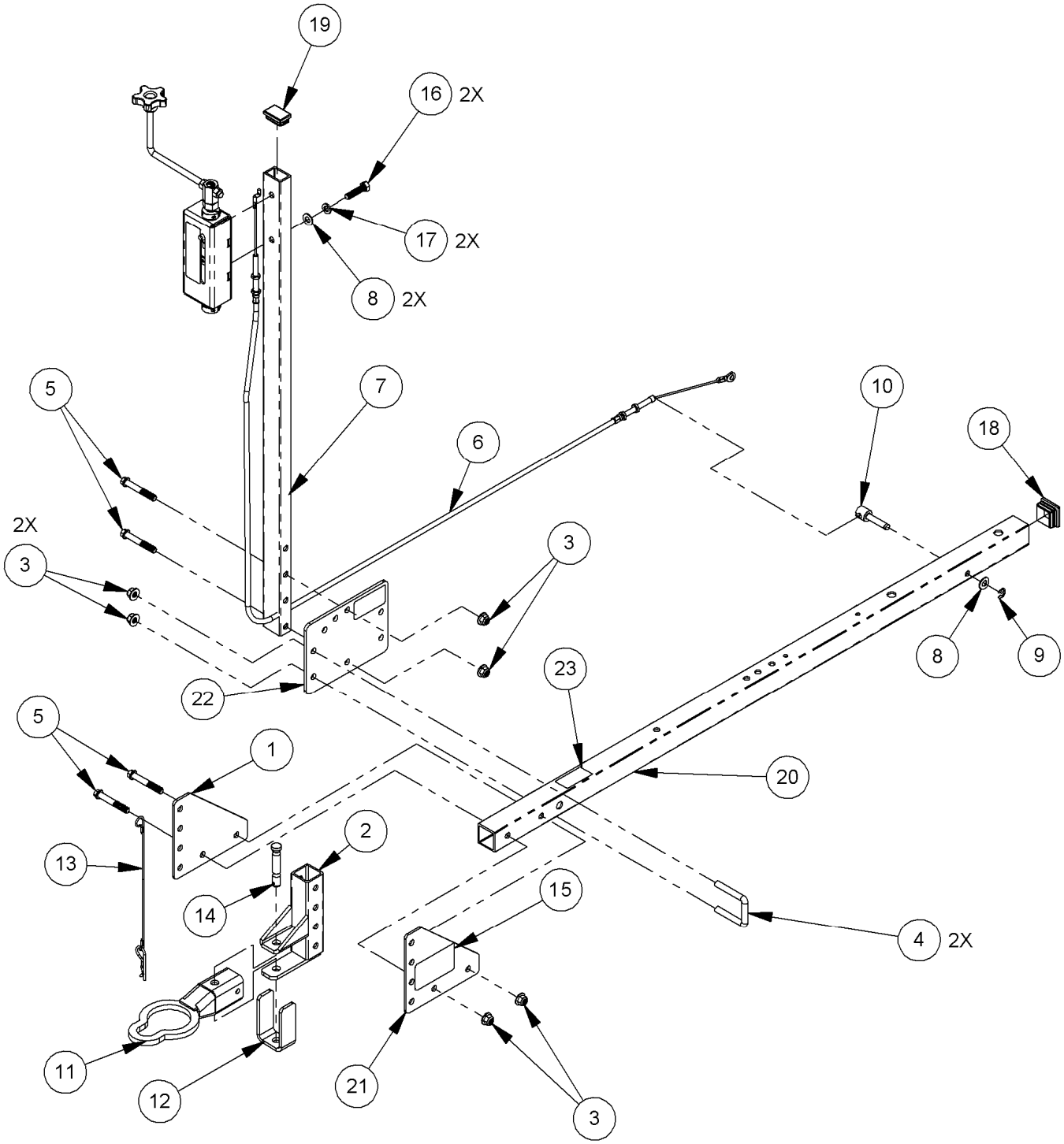


Parts List – TOW BAR ASSEMBLY

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

Ref#	Part#	Description
1	37235	Bracket, Hitch Adjustment
2	36676	Assembly, Hitch, Pin
3	33333	Nut, Nylon Lock, Flanged, 3/8-16
4	36680	U-bolt, Post
5	37184	Bolt, HHCS, Flanged, 3/8-16 x 2-1/2", Gr8
6	36704	Cable, Adjust, Height, Manual
7	36685	Post, Crank
8	12170	Washer, Flat 3/8, ZP, ANSI Narrow
9	36715	Ring, Retaining, External, 3/8"
10	36678	Bushing, Cable
11	36703	Hitch, Tow Hook
12	37234	Bracket, Anti-Rotation, Hook, Tow
13	37236	Lanyard, Hair Pin
14	37237	Pin, Shear, 1/2"
15	37283	Label, Adjust, Hitch
16	11985	Bolt, HCS, 3/8-16 X 1-1/2", Gr5, ZP
17	18081	Washer, Medium Split Lock, 3/8"
18	18759	Plug, Square, 1.5" x 1.5"
19	37505	Plug, Rectangular, 1.5" X 1"
20	37570	Bar, Tow, PGR W/Label
21	37567	Bracket, Hitch Adjustment, W/Labels
22	37569	Plate, Backing, U-bolt, Sliding W/Label
23	37280	Label, Pin, Shear

Schematic – TOW BAR ASSEMBLY

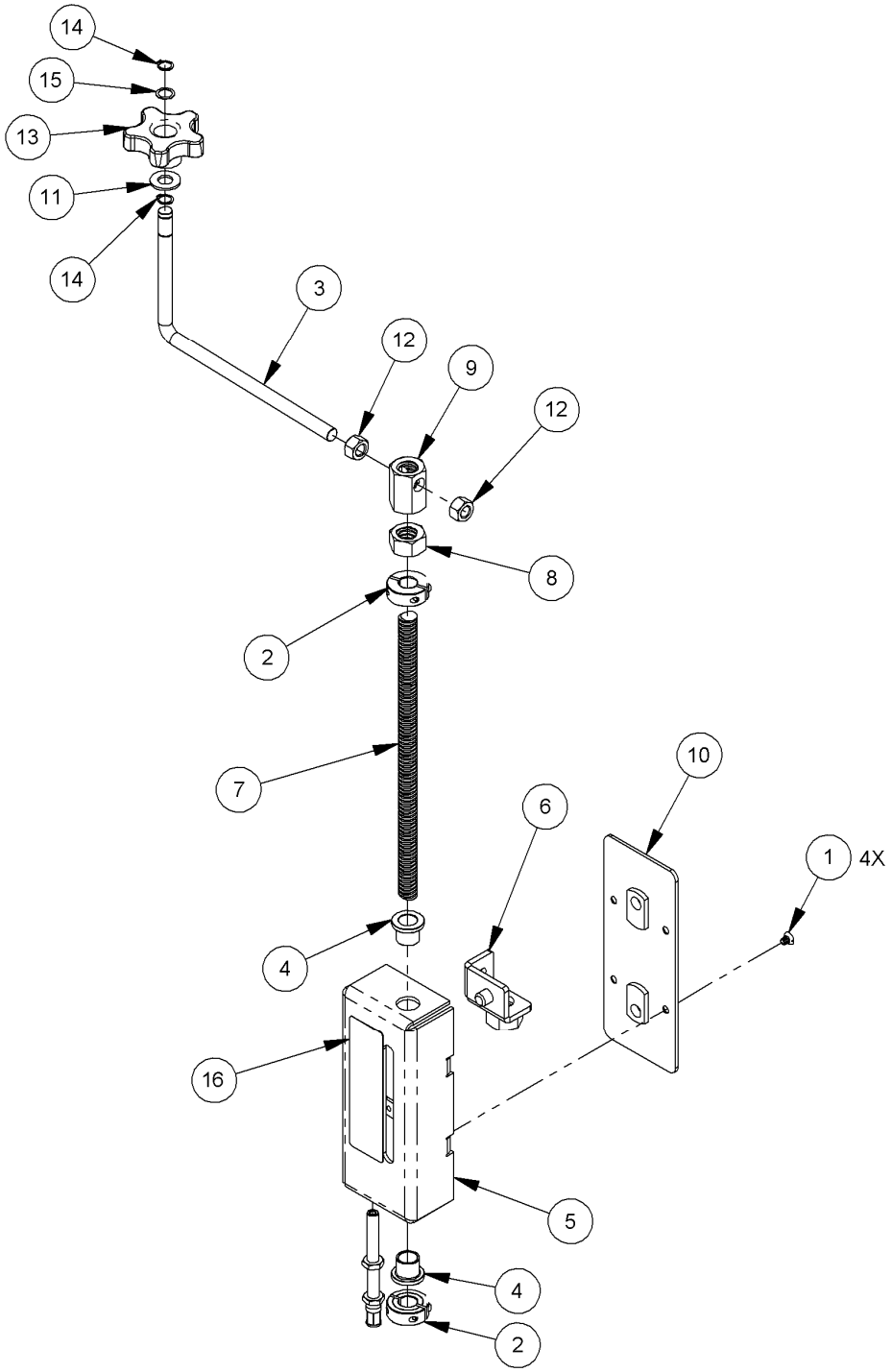


Parts List – CONTROL BOX ASSEMBLY

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

Ref#	Part#	Description
1	366561	10-24 X 1/4" Slotted Head, Steel
2	366931	Clamp, Collar, Shaft, 1/2"
3	366981	Handle, Crank, Slip Through
4	366871	Bushing, Adjust, Height
5	375681	Box, Control, Adjust, Height W/Labels
6	366941	Slider, Adjust, Height
7	366901	Rod, Acme, Adjust, Height
8	366951	1/2-8, Nut, Acme
9	366961	1/2-8, Nut, Coupling, Acme
10	366911	Cover, Box, Control, Adjust, Height
11	121701	Washer, Flat 3/8", ZP, Ansi Narrow
12	126831	Nut, 3/8-16, Gr5,ZP
13	367051	Knob, Crank
14	372401	Ring, Snap, Retaining, External, 3/8"
15	372411	Washer, Flat, .375" ID, .5" OD
16	37282	Label, EZ Dial

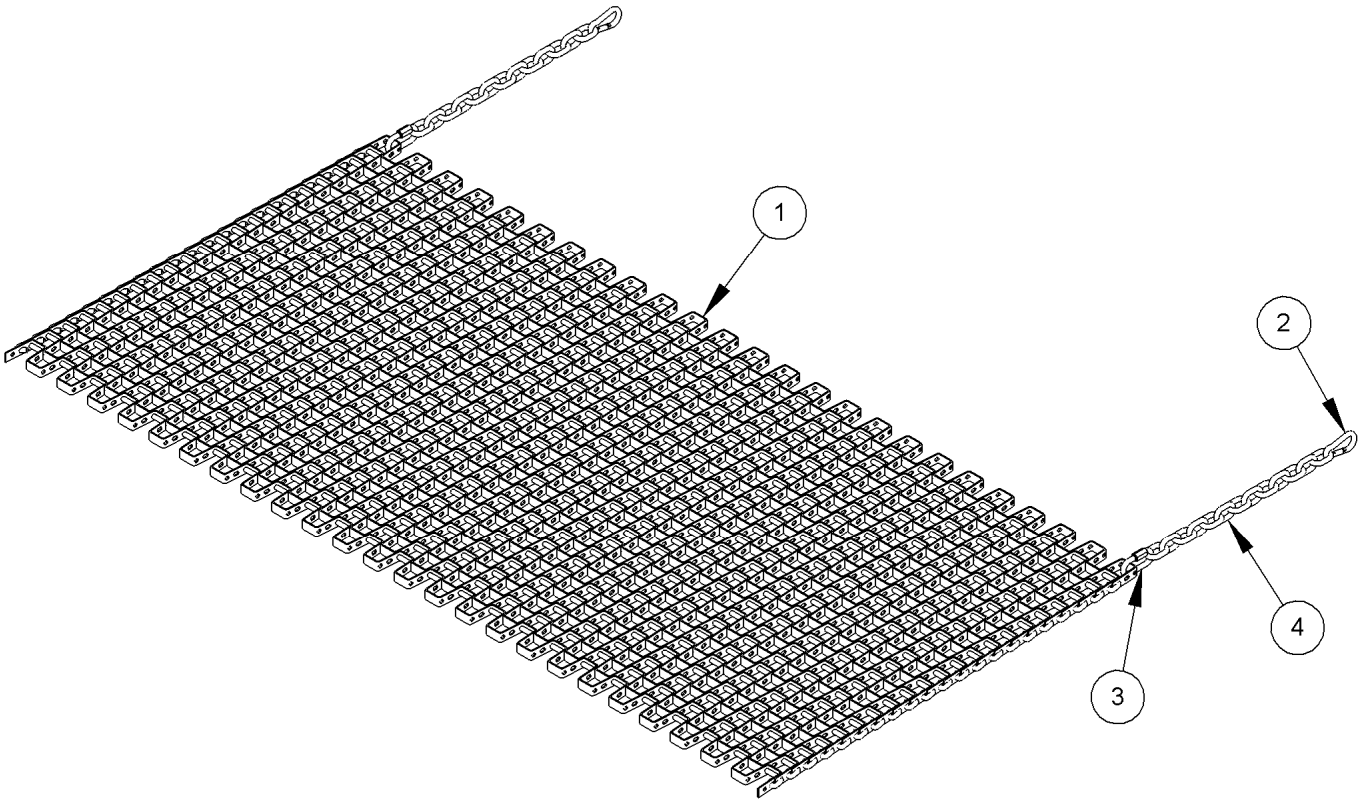
Parts Schematic – CONTROL BOX ASSEMBLY



Parts List and Schematic – 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
02	230991	Snap, Spring, 5/16"
03	211751	Connector, Threaded
04	211771	Chain, Tangle Resistant



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, Mold Board 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 POWER GRADER.

⚠ WARNING

Before performing any maintenance, you must first shut off the tow vehicle, remove the key and set the parking brake.

[ ] 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 Tooth Bar and the Frame are clean and free of debris.

End of Season and Storage

⚠ WARNING

Before performing any maintenance, you must first shut off the tow vehicle, remove the key and set the parking brake.

- Hose down the DR POWER GRADER. Remove the Tooth Bar to clean it of debris and then replace it after cleaning the mounting surfaces.
- Lubricate the Rear Wheels.
- Wipe down the DR POWER GRADER to remove any moisture and dirt that may have accumulated.
- 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.

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

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