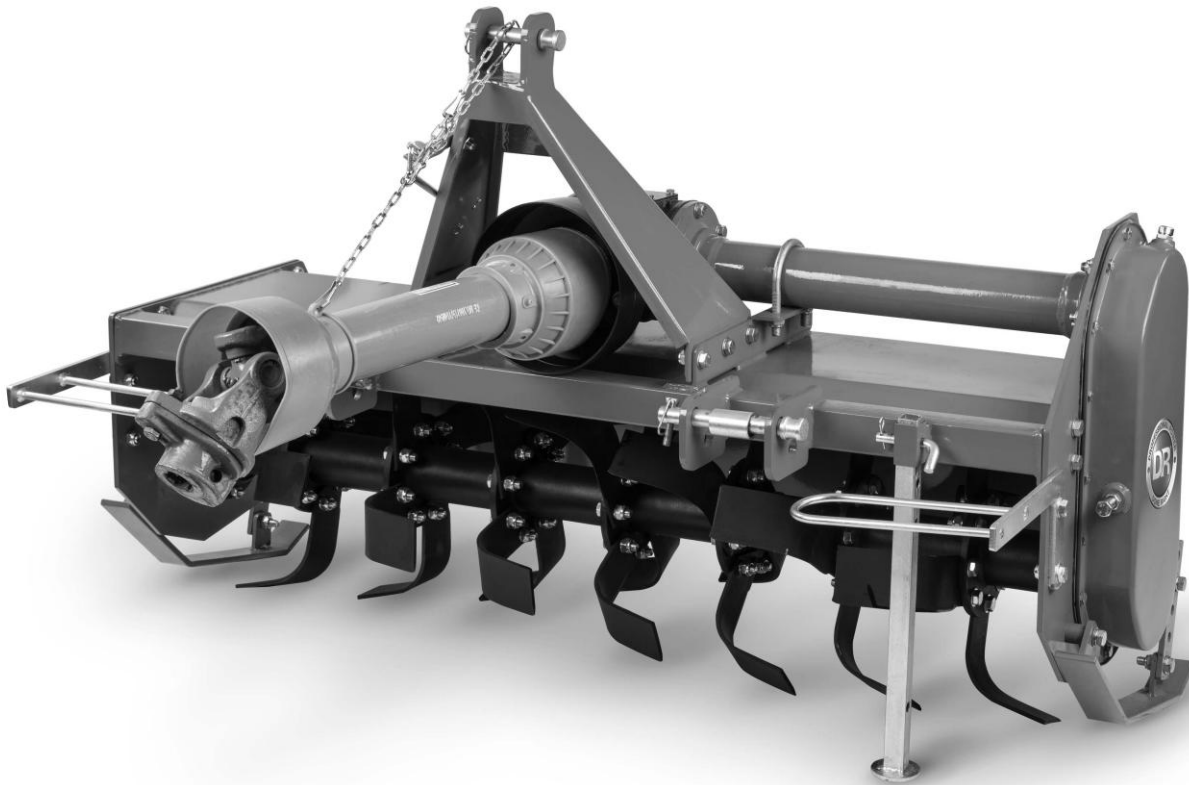


DR[®] 52" 3-POINT HITCH ROTOTILLER

SAFETY & OPERATING INSTRUCTIONS



Serial No. _____

Order No. _____

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 52" 3-POINT HITCH ROTOTILLER.

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Conventions used in this manual

! DANGER

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

! 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.

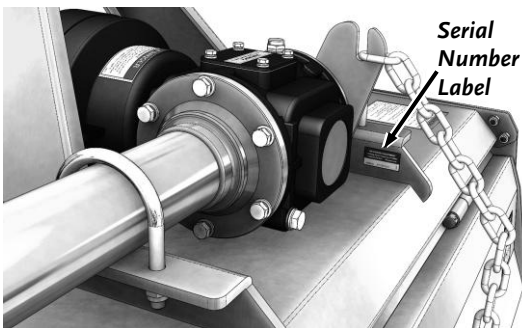


Figure 1

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

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.

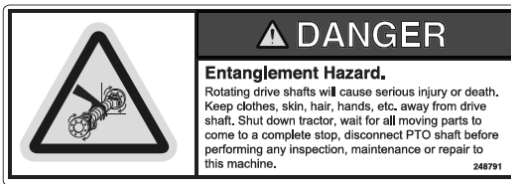
Chapter 1: General Safety Rules

! WARNING

Read this Safety & Operating Instructions manual before you use the DR 52" 3-POINT HITCH ROTOTILLER. 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 52" 3-POINT HITCH ROTOTILLER carries prominent labels as reminders for its proper and safe use. Shown below are copies of the Safety and Information labels that appear on the equipment. Take a moment to study them and make a note of their location on your DR 52" 3-POINT HITCH ROTOTILLER as you set up and before you operate the unit. Replace damaged or missing safety and information labels immediately.



#24879



#40915



#39477



#40914



#39480

Tractor Safety Information

! DANGER

YOUR DR 52" 3-POINT HITCH ROTOTILLER is driven by a PTO shaft that transfers power from your Tractor. The Tractor and PTO shaft are extremely dangerous and can cause serious injury or death if not used properly. Read and understand all of the Warnings and operating instructions that came with your Tractor and the PTO shaft to protect yourself from severe injury or death.

Safety for Children and Pets

! WARNING

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

- Keep children and pets out of the working area and under the watchful care of a responsible adult.
- Be alert and turn the machine off if children or pets enter the work area.
- Never allow children to operate the DR 52" 3-POINT HITCH ROTOTILLER.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure your vision.

Protecting yourself and those around you

WARNING

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

- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people, their property, and themselves.
- Always wear protective goggles or safety glasses with side shields while tilling to protect your eyes from possible thrown debris.
- Avoid wearing loose clothing or jewelry, which can catch on the machine's moving parts.
- We recommend wearing gloves while using this machine. Be sure your gloves fit properly and do not have loose cuffs or drawstrings.
- Wear shoes with non-slip treads when using your DR 52" 3-POINT HITCH ROTOTILLER. If you have safety shoes, we recommend wearing them. Do not use the machine while barefoot or wearing sandals with exposed toes or heels.
- Wear long pants while operating the DR 52" 3-POINT HITCH ROTOTILLER.
- Use ear protectors or ear plugs rated for at least 20 dba to protect your hearing.
- Keep bystanders at least 100 feet away from your work area at all times. The blades on the DR 52" 3-POINT HITCH ROTOTILLER can throw sticks, small stones, gravel, and bits of debris over long distances at great velocity. Disengage the PTO Shaft to stop the spinning blades and shut off the Tractor engine when another person or pet approaches.
- Never tamper with safety devices. Check their proper operation regularly.
- Never operate the machine when under the influence of alcohol, drugs, or medication.

Operating the Rototiller Safely

WARNING

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

- Know how to stop the Tiller quickly by disengaging the PTO Shaft and shutting down the tractor.
- Never allow people who are unfamiliar with these instructions to use the DR 52" 3-POINT HITCH ROTOTILLER. Allow only responsible individuals who are familiar with these rules of safe operation to use your machine.
- Do not exceed 5 mph when transporting to prevent damage to the machine.
- Never place your hands, feet, or any part of your body on or under the tiller in the path of the spinning blade or near the discharge opening while the tractor is running. Keep area of discharge clear of people, animals, buildings, glass, or anything else that will obstruct clear discharge, cause injury, or damage.
- Your DR 52" 3-POINT HITCH ROTOTILLER is a powerful tool, not a plaything. Exercise extreme caution at all times. The design of your machine is for tilling soil as specified in this manual. Do not use it for any other purpose.
- Whenever you leave the operating position to make adjustments, maintain blades, or if you have to remove grass or debris from the underside of the tiller, always disengage the PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, disconnect the PTO shaft from the Tractor, then wait five minutes before performing any maintenance procedure or inspection on the Tiller.
- This machine is designed to operate at 540 rpm PTO Shaft speed only! Never operate at a faster speed; doing so can cause serious injury to the operator or bystanders and could cause damage to the machine that is not covered under warranty.

Operating the Tiller Safely (continued)

WARNING

- Do not transport people, animals, or objects on the Tiller.
 - Be mindful of roll over hazards, changes in terrain, slopes, or wet conditions. Use care when backing up.
 - Stop the blades when crossing gravel drives, walks, or roads.
 - Never, under any conditions, remove, bend, cut, fit, weld, or otherwise alter standard parts on the DR 52" 3-POINT HITCH ROTOTILLER. This includes all shields and guards. Modifications to your machine could cause personal injuries and property damage and will void your warranty.
 - If the blades strike a foreign object or if your machine should start making an unusual noise or vibration, disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, disconnect the PTO shaft from the Tractor, then wait five minutes before inspection. Vibration is generally a warning of trouble. Clean, repair, and/or replace damaged parts.
 - While using the DR 52" 3-POINT HITCH ROTOTILLER, do not hurry or take things for granted. When in doubt about the equipment or your surroundings, stop the machine and take the time to look things over. Make sure that you have 100% control of the Tiller at all times.
 - Watch for traffic when tilling near roadways.
 - Use the machine only in daylight.
 - Be cautious when using your DR 52" 3-POINT HITCH ROTOTILLER around fencing, rocks, wires, ropes, and hoses. It is possible that these and other debris can hit or become wound around the Blades of the machine, potentially damaging the machine or injuring you.
 - Do not operate the DR 52" 3-POINT HITCH ROTOTILLER on slopes greater than is recommended in your Tractor manual.
 - Keep all nuts and bolts tight and keep the equipment in good operating condition.
-

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 52" 3-POINT HITCH ROTOTILLER 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 52" 3-POINT HITCH ROTOTILLER

It may be helpful to familiarize yourself with the controls and features of your DR 52" 3-POINT HITCH ROTOTILLER as shown in *Figure 2* before beginning these procedures. If you have any questions at all, please feel free to contact us at www.DRpower.com.

DR 52" 3-POINT HITCH ROTOTILLER Controls and Features

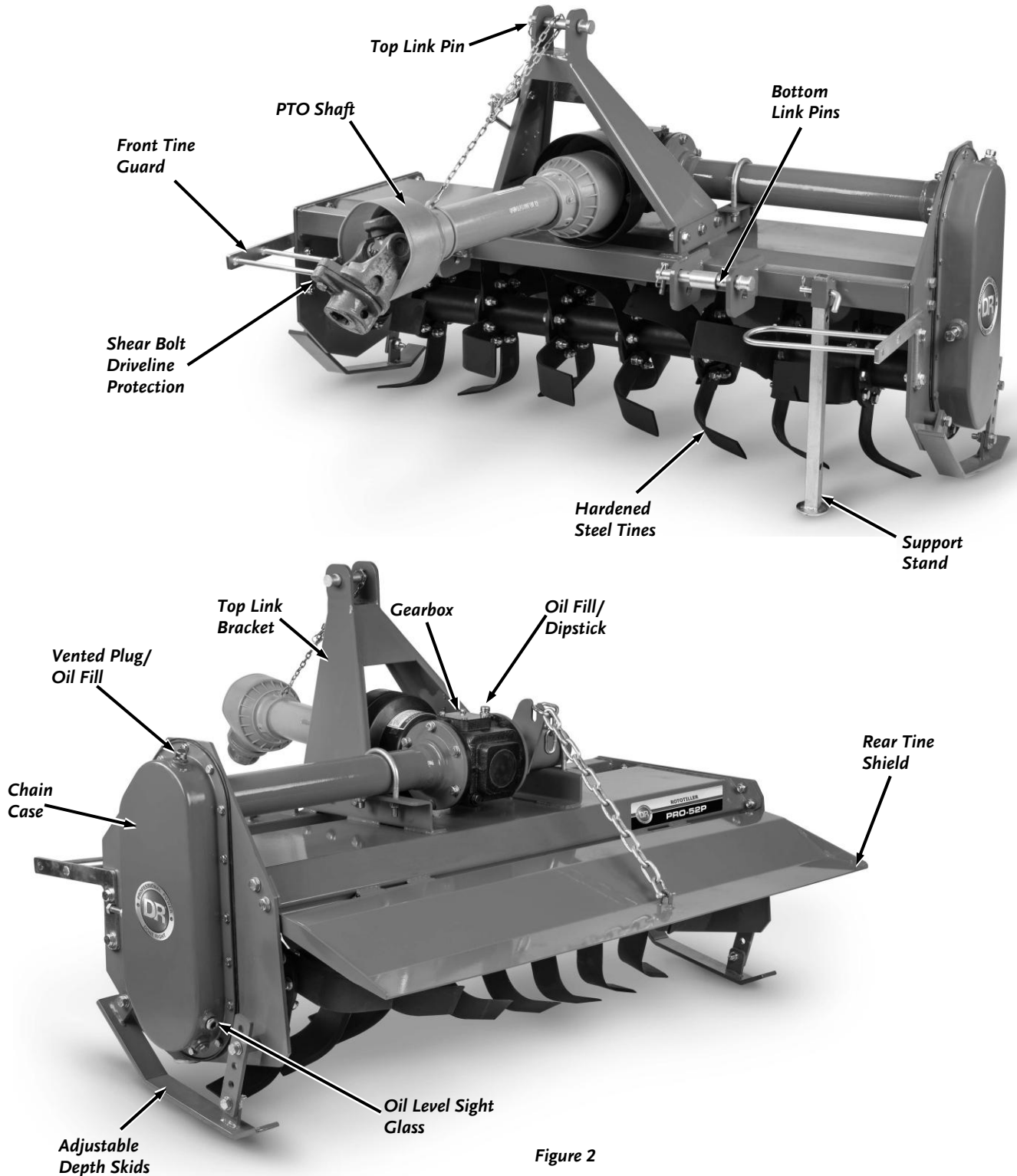


Figure 2

Specifications

| | |
|--------------------------------|--|
| Tractor Requirements | 3-Point Hitch, Category 1, 25 to 45 HP Recommended |
| PTO Speed | 540 RPM |
| PTO Shaft Interface | 6 Spline Quick Release Tractor Yoke |
| Power Input | Tractor PTO |
| Number of Tine Flanges | 7 |
| Number of Tines | 28 |
| Tine Rotor Speed | 1140 RPM |
| Max Towing Speed | 5 mph |
| Working Width | 52" |
| Max Tilling Depth (adjustable) | 7.5" |
| Gearbox Ratio | 1:1.46 |
| Gearbox Oil | I.E. S.A.E. 80w/90 |
| Frame Material | 8 Gauge Powder-Coated Steel |
| Machine Dimensions | 56" L x 28" W x 33" H |
| Machine Weight | 500 Lbs |

Assembling the DR 52" 3-POINT HITCH ROTOTILLER

Parts Supplied - (Figure 3 and list below):

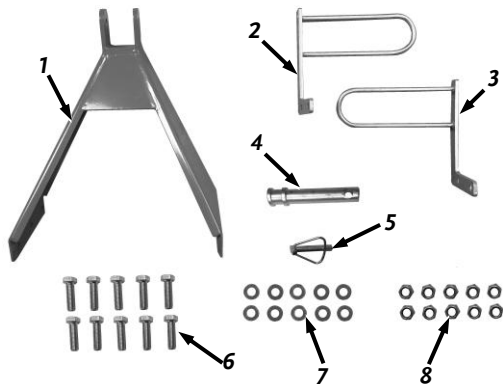


Figure 3

| Item # | Part # | Description | Qty |
|--------|--------|----------------------------|-----|
| 1 | 39787 | Top Link, Bracket | 1 |
| 2 | 39798 | Tine Guard, Right | 1 |
| 3 | 39799 | Tine Guard, Left | 1 |
| 4 | 39788 | Pin, Top Link | 1 |
| 5 | 39789 | Pin, Hitch, Clip, Top Link | 1 |
| 6 | 39784 | Bolt, M12 x 40 | 10 |
| 7 | 39780 | Washer, Flat, M12 | 10 |
| 8 | 39785 | Locknut, M12 | 10 |

Compare the contents of the Product Package with the "Parts Supplied" list above. If you have any questions please contact us at www.DRpower.com or call 1-800-DR-OWNER (376-9637) for assistance.

Tool and Supplies Needed:

- 18mm Wrench
- 19mm Wrench
- General Purpose Grease

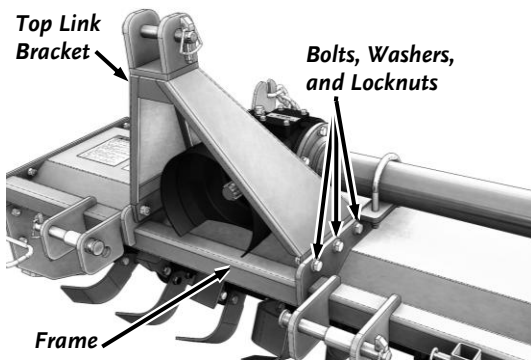


Figure 4

1. Position the Top Link Bracket onto the Frame and secure using six M12 x 40 Bolts, six M12 Flat Washers, and six M12 Locknuts (**Figure 4**). Tighten the Hardware using an 18mm Wrench for the Bolts and a 19mm Wrench for the Locknuts.
2. Position the Left Tine Guard on the **outside** of the Left Side Plate and secure using two M12 x 40 Bolts, two M12 Flat Washers, and two M12 Locknuts (**Figure 5**). Tighten the Hardware using an 18mm Wrench for the Bolts and a 19mm Wrench for the Locknuts.
3. Repeat step 2 for the Right Tine Guard.

Greasing the Tine Axle Bearing

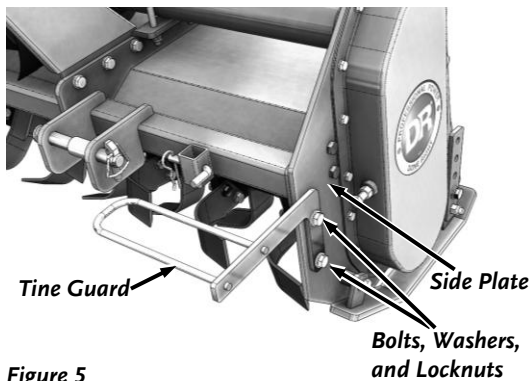


Figure 5

1. Wipe all dirt, etc., from the Grease Fitting on the Bearing Cover with a clean cloth (**Figure 6**).
2. Apply quality general-purpose lithium grease with a hand-pumped grease gun to the Grease Fitting as needed.

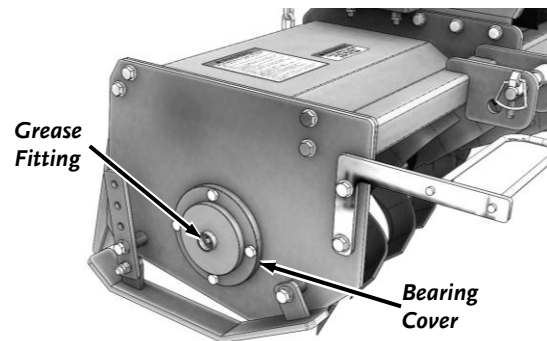


Figure 6

Adding Oil to the Gearbox

Tool and Supplies Needed:

- S.A.E. 80W/90 Multi-purpose Gear Oil
- 19mm Wrench
- Clean Rags

Note: For an accurate reading, ensure that the Rototiller is level.

1. Remove the Vented Plug w/Dipstick from the top of the Gearbox using a 19mm Wrench (**Figure 7**).
2. While periodically checking the dipstick, slowly add oil to the top of the Gearbox until it reaches the full mark on the dipstick (**Figure 8**). Allow a few seconds for the oil to settle and screw the dipstick all the way in to get an accurate reading.
3. Re-install the Vented Plug w/Dipstick into the top of the Gearbox and tighten using a 19mm Wrench.

Adding Oil to the Chain Case

Tool and Supplies Needed:

- S.A.E. 80W/90 Multi-purpose Gear Oil
- 19mm Wrench
- Clean Rags

Note: For an accurate reading, ensure that the Rototiller is level.

1. Remove the Vented Plug from the top of the Chain Case using a 19mm Wrench (**Figure 9**).
2. Slowly add oil to the top of the Chain Case until it reaches the Sight Glass on the back of the Chain Case (**Figure 9**). Allow a few seconds for the oil to settle to get an accurate reading before adding more.
3. Re-install the Vented Plug into the top of the Chain Case and tighten using a 19mm Wrench.

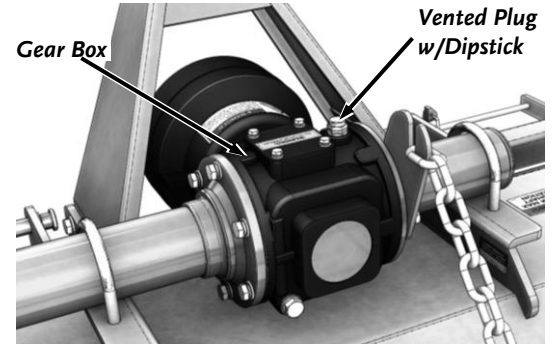


Figure 7



Figure 8

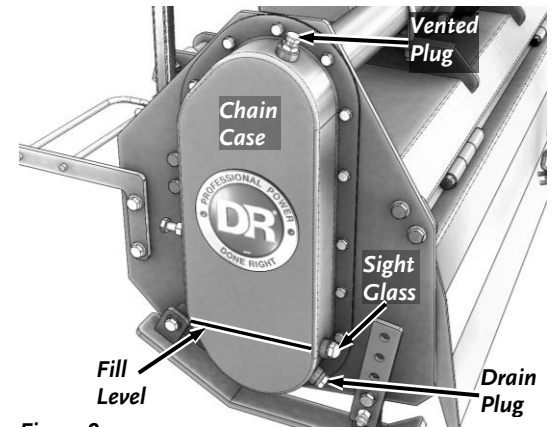


Figure 9

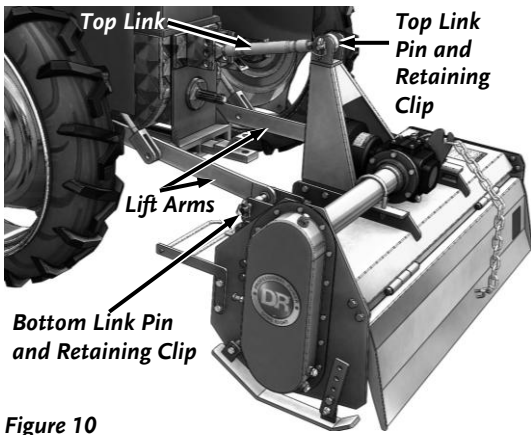


Figure 10

Attaching the Rototiller to the Tractor

The Rototiller must be attached to the 3-Point Hitch of your Tractor before continuing with the final setup of the machine.

1. Position the Lift Arms of the Tractor to the Bottom Link Yokes of the Rototiller and secure them using the Bottom Link Pins and Retaining Clips (**Figure 10**).
2. Position the Tractors Top Link to the Top Link Yoke and secure using the Top Link Pin and Retaining Clip. Adjust the Top Link length until the Rototiller is Level.
3. Refer to your Tractor Owner's Manual to adjust your Lift Arm Side Supports to prevent the Tiller from swaying side to side.

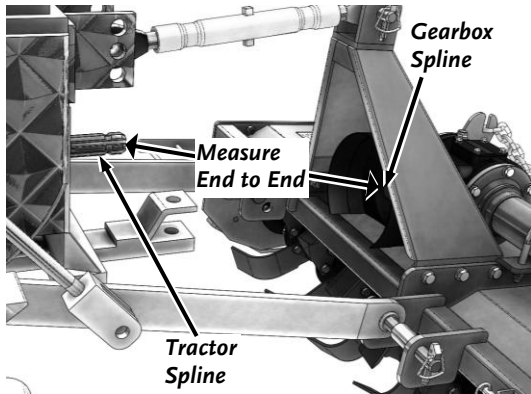


Figure 11: Ground Position

Calculating length of PTO Shaft needed

The PTO Shaft provided with your Tiller is 32" overall compressed length and may needed to be shortened in order to fit with your tractor. Before you install the PTO Shaft it is good practice to run through the following dimension checks to calculate optimum PTO Shaft length to determine if modifications are needed.

! WARNING

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

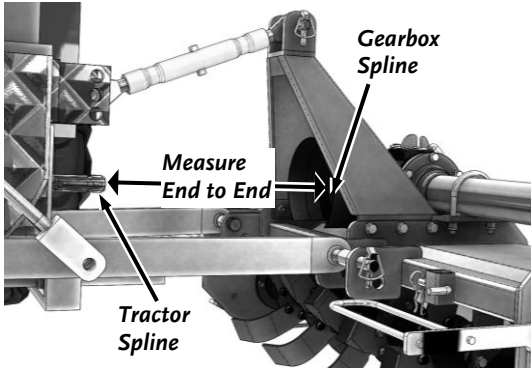


Figure 12: Level Position

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

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

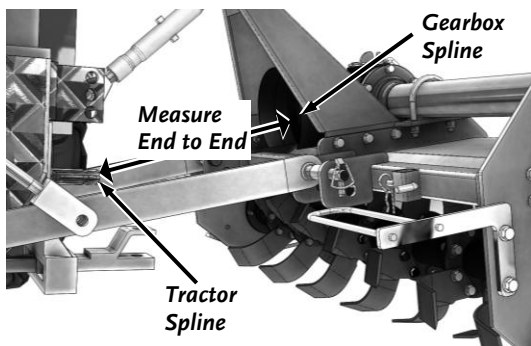


Figure 13: Raised Position

1. Lower the Tiller all the way to the ground in the operating position (**Figure 11**). Measure from the end of the Tractor Spline Shaft to the end of the Tiller Gearbox Shaft and record this dimension in the "ON GROUND" row of the table above.
2. Raise the Tiller up until the Tractor PTO Spline and Tiller Gearbox Shaft are level with each other (**Figure 12**). Measure from the end of the Tractor Spline Shaft to the end of the Tiller Gearbox Shaft and record this dimension in the "SHAFTS LEVEL" row of the table above.
3. Raise the Tiller up as far as it will go (**Figure 13**). Measure from the end of the Tractor Spline Shaft to the end of the Tiller Gearbox Shaft and record this dimension in the "FULLY RAISED" row of the table above.
4. Take the shortest recorded measurement you wrote in the table and add 2".
5. Take that number and subtract it from 32" (overall compressed length of the supplied PTO Shaft).

6. This final number is the length that you will need to cut off of the PTO Shaft for it to fit properly to your Tractor. Follow the instructions on the next page for modifying your PTO Shaft.

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

- $27" + 2" = 29"$ (step 4 above)
- $32" - 29" = 3"$ (step 5 above)
- You would be required to cut 3" off both halves of the PTO Shaft and 3" off the Guard.

Note: *If you end up with 0" or a negative number, then no changes are needed.*

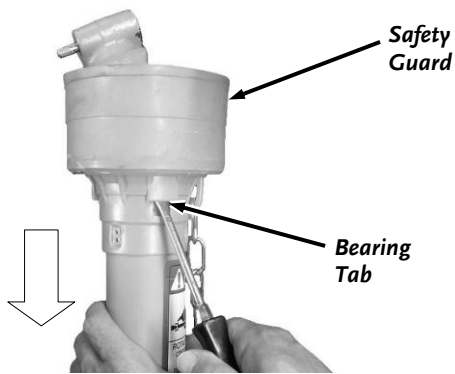


Figure 14

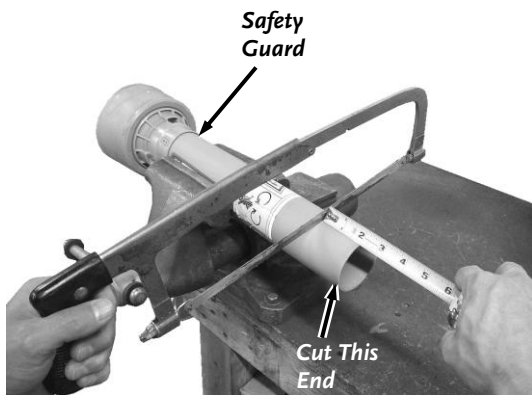


Figure 15

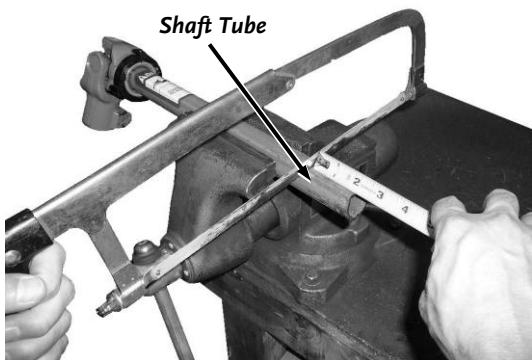


Figure 16

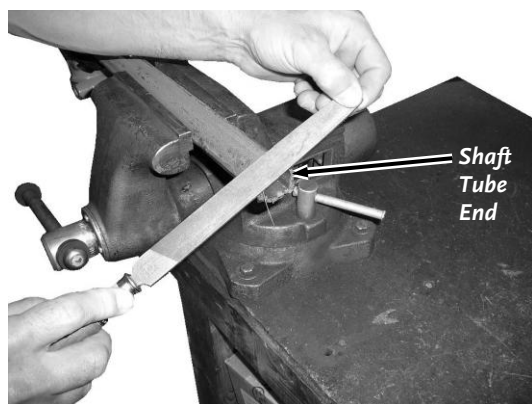


Figure 17

Modifying the PTO Shaft-if required

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

Tools and Supplies Needed:

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

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

1. Separate the PTO Shaft Halves by pulling them apart.
2. Separate the Guards from the PTO Shaft Halves by inserting a flat tip screwdriver into the Bearing Tab Slots as you pull down on the Safety Guard to release the Safety Guard from the Shaft (**Figure 14**).
3. Measure and cut the ends of both Guards the required amount (**Figure 15**).

Note: If you put the Guards in a vise to hold them, be careful not to clamp it too tight because it could crack the plastic.

4. Measure and cut each Shaft Tubes to the required length using the hacksaw (**Figure 16**).
5. File or sand any burrs from the Shaft ends (**Figure 17**).
6. Grease both Shaft Tubes and under the Bearing Rings of each Shaft (**Figure 18**).

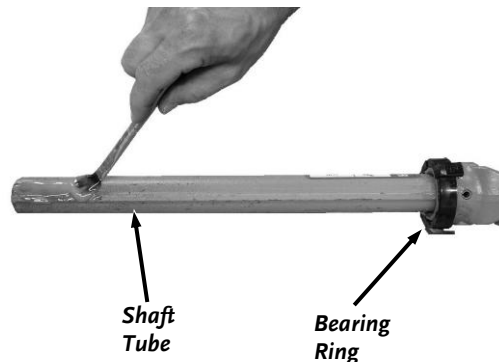


Figure 18

7. Insert the Shaft Halves into the Guards making sure that the Bearing Ring Slot lines up with the Tab on the inside of the Guards for proper installation (**Figure 19**).

8. Slide the two PTO Shaft Halves together.

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

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

Attaching the PTO Shaft to the Tractor and Tiller

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

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

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

1. Push in the Spring Pin at the Shear Bolt end of the PTO Shaft and slide it onto the Tractor Spline (**Figure 20**). When the PTO Shaft is started on the Tractor Spline Shaft, release the Pin and continue to push the PTO Shaft until the Spring Pin locks into the Groove of the Tractor Spline.
2. Push in the Spring Pin at the other end of the PTO Shaft and slide it onto the Tiller Gearbox Spline. When the PTO Shaft is started on the Gearbox Spline Shaft, release the Pin and continue to push the PTO Shaft until the Spring Pin locks into the Groove of the Gearbox Spline.
3. Attach the PTO Shaft Safety Chains around a solid area of the 3-Point Link Rods with the Chain ends attached to both ends of the PTO Shaft Guard. Make sure the Chain has enough slack in the full range of the Tractor 3-Point Arm travel.

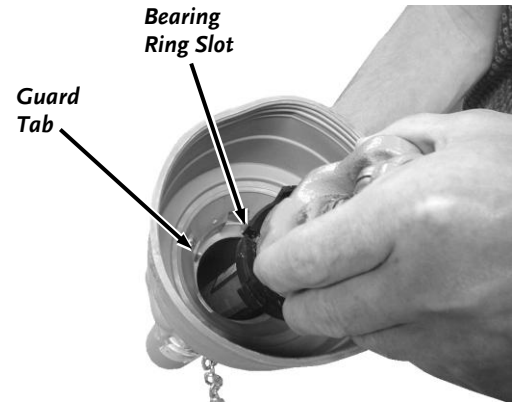


Figure 19

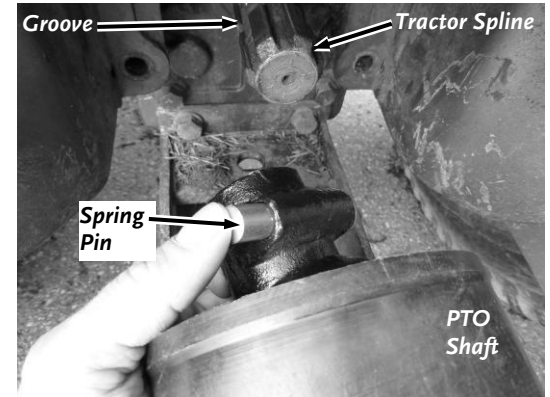


Figure 20

Chapter 3: Operating The DR 52" 3-POINT HITCH ROTOTILLER

WARNING

- This machine is designed to operate at 540 rpm PTO Shaft speed only! Never operate at a faster speed; doing so can cause serious injury to the operator or bystanders and could cause damage to the machine that is not covered under warranty.
- Read and understand your Tractor user's manual and all Tractor safety Warnings for operating your Tractor safely before operating this DR 52" 3-POINT HITCH ROTOTILLER.

Operation Notes

- See the Owner's Manual that came with your Tractor for all safety warnings and detailed information for operating your Tractor properly.
- Always operate the Tractor PTO at 540 RPM when Tilling.
- Always operate the machine (tilling) with the Lift Arm fully lowered in the float position so the skids are on the ground.
- Always disengage the PTO, lock the Parking Brake and shut off the Tractor when leaving the Tractor Seat.
- Never transport the Tiller while the PTO is turning
- Never make sharp turns while Tilling.
- Remove any debris buildup from the machine and tine axle before every use of the Tiller.

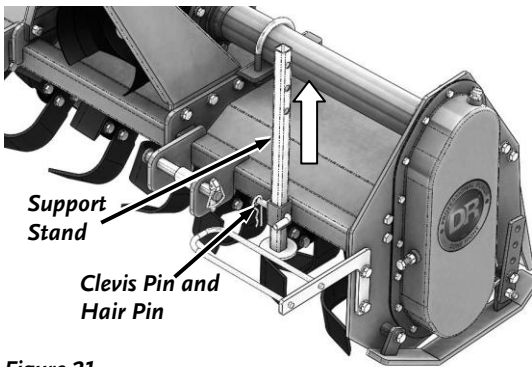


Figure 21

Raising the Support Stand

- The Support Stand is used to support the Tiller in the upright position when it is not attached to the tractor. During Operation, the support stand must be raised to the Operating Position or removed from the Machine.
1. Remove the Clevis Pin and Hair Pin that secures the Support Stand in place. (**Figure 21**).
 2. Raise the Support Stand into the Operating Position then re-secure with the Clevis Pin and Hair Pin

Adjusting the Tilling Depth

Tools Needed:

- 18mm Wrench

- The Tilling depth can be set up to 7-1/2".
- Always match the Skid height setup on both sides of the tiller for consistent and even operation.
- The Tiller must be lifted off the ground or jacked up to adjust the Skid Height.

1. Loosen the Bolt at the front of the Skid using an 18mm Wrench (**Figure 22**).
2. Remove the Bolt, Lock Washer, and Flat Washer from the Height Adjust Link using an 18mm Wrench.
3. Rotate the Skid to the desired height and reinstall the Bolt, Lock Washer, and Flat Washer. Tighten the Hardware using an 18mm Wrench.
4. Repeat these steps for the opposite side.

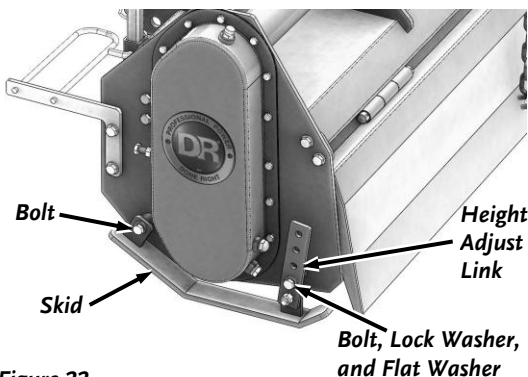


Figure 22

Engaging the Tines

WARNING

- Be certain the tractor is in the neutral or park position before starting engine.
- The Rototiller operating power is supplied from the tractors PTO. Refer to your tractor manual for PTO engagement and disengagement instructions. Always operate the PTO in the 540 rpm range. Know how to stop the tractor and tiller quickly in case of an emergency.
- Always make sure that no one is near before engaging the PTO.
- Never Engage the PTO in the fully raised Position. Lower the Tiller to within 3"-4" off the ground before Engaging.
- Always stop the tractor, set brake, shut off the tractor engine, remove the ignition key, and lower implement to the ground before dismounting tractor. Never leave equipment unattended with the tractor running.

Note: The Tiller should be lifted approximately 4" off the ground before engaging the PTO. Always ensure that no one is near when. When engaging PTO.

1. Ensure that the Tiller is lifted approximately 4" off the ground, no bystanders are near, and all Guards are in place and properly secured.
2. Set Tractor throttle at IDLE and engage the PTO.
3. Increase Tractor throttle to the rpm's required to obtain 540 PTO speed.
4. Lower the Tiller all the way to begin tilling.

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

Stopping the Tines

WARNING

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

1. Disengaging PTO to stop the Tiller.

Preparing the Tiller for Transport

1. Lift the Tiller off the ground with the Tractor 3-Point Hitch before transporting.
2. If your Tractor is equipped with a Lift Arm Lock, it should be used during transport.

Obstacles

- Always check your work area before tilling and remove any debris that might tangle or damage the machine.
- If you do run into debris and the Tiller becomes tangled, disengage PTO, shut down the Tractor Engine, remove the Key, wait for all moving parts to come to a complete stop, then wait five minutes for parts to cool before attempting to untangle the machine.

Sod Busting and Heavy Growth

- Take your time when breaking new ground or in tough conditions.
- When busting sod, ALWAYS mow the grass to less than 3" before Tilling.
- Periodically check for entanglement around the Tine Shaft and remove as needed.
- If the machine cannot do it all in one pass, more than one pass may be required.
- Ease the DR 52" 3-POINT HITCH ROTOTILLER into denser soil.

Slopes

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

Chapter 4: Maintaining The DR 52" 3-POINT HITCH ROTOTILLER

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

WARNING

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

Regular Maintenance Checklist

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

| PROCEDURE | BEFORE EACH USE | EVERY 8-10 HOURS | EVERY 18-20 HOURS | EVERY 50 HOURS |
|--|-----------------|------------------|-------------------|----------------|
| Check General Equipment Condition, e.g. Nuts, Bolts, Welds, etc. | ▲ | | | |
| Clean all Debris from the machine. | ▲ | | | |
| Check the Tines for damage or wear. | ▲ | | | |
| Replace broken or damaged Tines. | ▲ | | | |
| Check and Adjust the Chain Tension | | | ▲ | |
| Lubricate Tine Axle Bearing | | | ▲ | |
| Lubricate PTO Shaft Spline ends and center overlap | | | ▲ | |
| Replace Gearbox Oil | | | | ▲ |
| Replace Chain Case Oil | | | | ▲ |

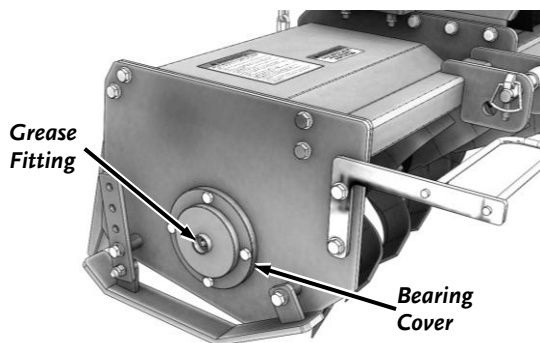


Figure 23

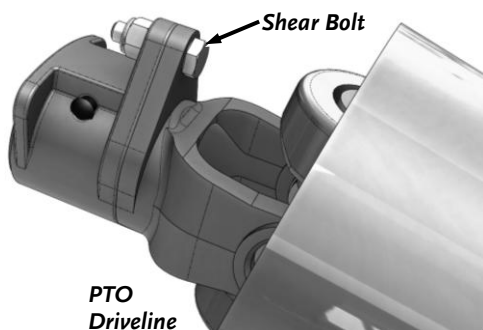


Figure 24

Greasing the Tine Axle Bearing

- Grease Gun (general purpose grease)
- Rags

1. Wipe all dirt, etc., from the Grease Fitting on the Bearing Cover with a clean cloth (**Figure 23**).
2. Apply quality general-purpose lithium grease with a hand-pumped grease gun to the Grease Fitting as needed.

Replacing the Shear Bolt

The Tiller is protected from Shock Loads by the Shear Bolt Driveline. The Driveline is equipped from the factory with a M8 x 55mm Shear Bolt (**Figure 24**). If the Bolt Shears during operation, replace it with a Grade 8.8 M8 x 55mm Bolt. If the M8 Bolt is not readily available, you may use a Grade 5, 5/16"-18 Bolt Torque the bolt to 7-9 ft.-lbs.

Checking and Adjusting the Chain Tension

Tools and Supplies needed:

- 18mm Wrench

1. Loosen the Jam Nut on the Tension Bolt using an 18 Wrench (**Figure 25**).
2. Screw in the Chain Tension Bolt as tight as you can by Hand then unscrew the Bolt 2 turns.
3. Rotate the Tine axle several times by hand to ensure that it rotates freely and without resistance. If the Tine Axle becomes jammed or encounters resistance, unscrew the bolt 1/2 turn at a time until the resistance is gone.
4. Tighten the Jam Nut to lock the Chain Tension Bolt in position.

Greasing the PTO U-Joints

Your PTO Shaft was greased at the Factory so it will not need grease until the scheduled maintenance as listed at the beginning of this Chapter.

Tools and Supplies needed:

- Flexible hose grease gun
- Lithium grease
- Clean cloth

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

1. Wipe all dirt, etc., from the PTO Shaft grease fittings with a clean cloth.
2. Apply no more than three pumps of quality general-purpose lithium grease with a hand-pumped grease gun to each of the two U-Joint Grease Fittings (**Figure 26**).

Replacing the Gearbox Oil

Tool and Supplies Needed:

- S.A.E. 80W/90 Multi-purpose Gear Oil
- 19mm Wrench
- 17mm Wrench
- Clean Rags

1. Remove the Vented Plug w/Dipstick from the top of the Gearbox using a 19mm Wrench and position a suitable oil drain container under the Drain Plug at the rear of the Gearbox (**Figure 27**).
2. Remove the Drain Plug and Brass Washer using a 17mm Wrench and allow the Oil to drain into the container.
3. When the Oil is completely drained, reinstall the Drain Plug and Brass Washer.
4. Replace the Oil by following the instructions “Adding Oil to the Gearbox” in Chapter 2.

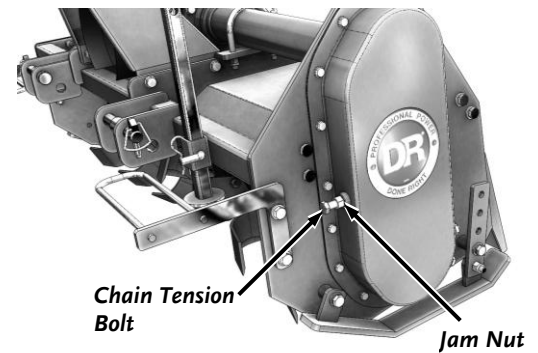


Figure 25

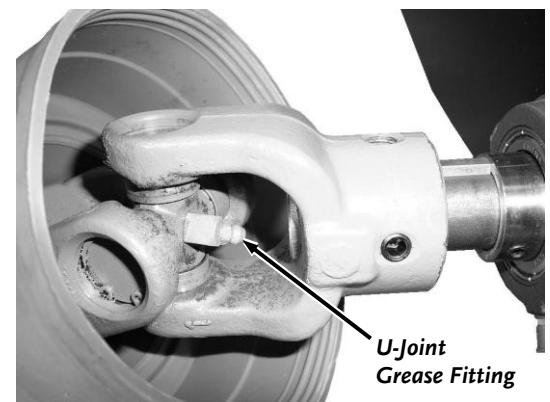


Figure 26

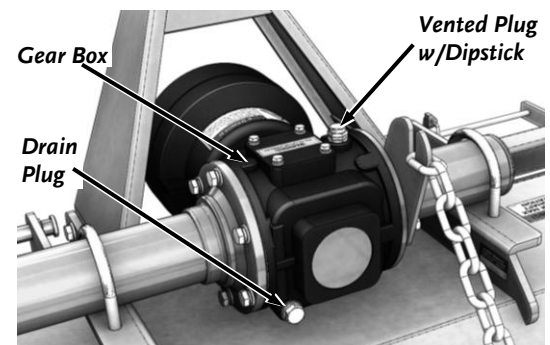


Figure 27

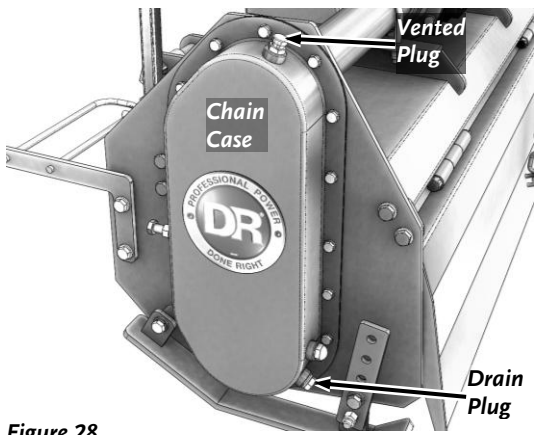


Figure 28

Replacing the Chain Case Oil

Tool and Supplies Needed:

- S.A.E. 80W/90 Multi-purpose Gear Oil
- 19mm Wrench
- 17mm Wrench
- Clean Rags

1. Remove the Vented Plug from the top of the Chain Case using a 19mm Wrench and position a suitable oil drain container under the Drain Plug at the rear of the Chain Case (**Figure 28**).
2. Remove the Drain Plug and Brass Washer using a 17mm Wrench and allow the Oil to drain into the container.

Note: You may need to tip the tiller back to allow all of the oil to drain.

3. When the Oil is completely drained, reinstall the Drain Plug and Brass Washer.
4. Replace the Oil by following the instructions “Adding Oil to the Chain Case” in Chapter 2.

Replacing the Tines

Tools and Supplies Needed:

- 19mm Wrench
- 18mm Wrench
- Torque Wrench
- Safety Glasses
- Gloves

1. Rotate the Rear Tine Guard up and secure the Chain to the Chain Hook to hold it in place (**Figure 29**).

Note: Your DR 52” Rototiller has a total of 28 Tines. 14 of them are Left Tines and 14 are Right Tines. When installed correctly, the Left Tine will point towards the Left of the Tiller and the Right Tine will point towards the right of the Tiller (**Figure 30**). The Tines are installed correctly when the Cutting Edge is facing towards the rear when at the bottom of its rotation.

2. Remove the Bolts, Washers, and Locknuts from the Worn or Damaged Tine using an 18mm Wrench for the Bolt and a 19mm Wrench for the Locknut (**Figure 30**).
3. Replace the Worn Tine with one of the same type. When installed correctly, the Left Tine will point towards the left of the tiller and the Right Tine will point towards the right of the tiller. The Tines are installed correctly when the Cutting Edge is facing towards the rear when at the bottom of its rotation.
4. Reinstall the Bolts, Washers, and Locknuts.
5. Repeat Steps 2-4 for all worn or damaged Tines.

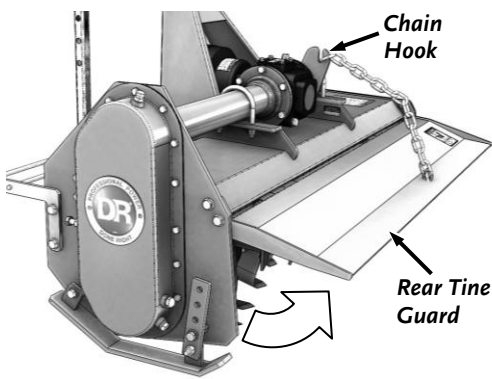


Figure 29

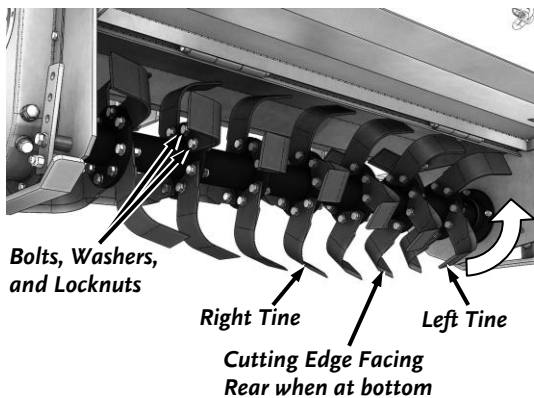


Figure 30

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

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

Troubleshooting Table

| SYMPTOM | POSSIBLE CAUSE |
|---|--|
| <i>Gearbox Overheating</i> | ⇒ Low or Improper Lubricant ⇒ PTO not turning at 540 rpm. |
| <i>Soil Texture is too Course</i> | ⇒ Ground Speed is too Fast ⇒ Soil is too Dense ⇒ PTO speed is too slow |
| <i>Chain Case very Noisy</i> | ⇒ Low or Improper Lubricant ⇒ Chain Tension is not adjusted properly ⇒ Some noise is normal |
| <i>Tilling Depth is insufficient/Tiller is not performing</i> | ⇒ Skids need to be adjusted ⇒ Tractor Arms are not fully lowered ⇒ Tines are worn or damaged ⇒ Tines are installed backwards ⇒ Insufficient Power ⇒ Ground is too hard ⇒ Ground Speed is too fast ⇒ PTO not turning at 540 rpm. ⇒ If none of the above helps, visit our web site at www.DRPower.com or call 1-800-DR-OWNER (376-9637) for assistance. |

DR[®] 52" 3-POINT HITCH ROTOTILLER



2-Year Limited Warranty

Terms and Conditions

The DR[®] 52" 3-POINT HITCH ROTOTILLER 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[®] 52" 3-POINT HITCH ROTOTILLER 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[®] 52" 3-POINT HITCH ROTOTILLER 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 Tines, Skids, Shear Bolts, and PTO shaft. 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[®] 52" 3-POINT HITCH ROTOTILLER.

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.

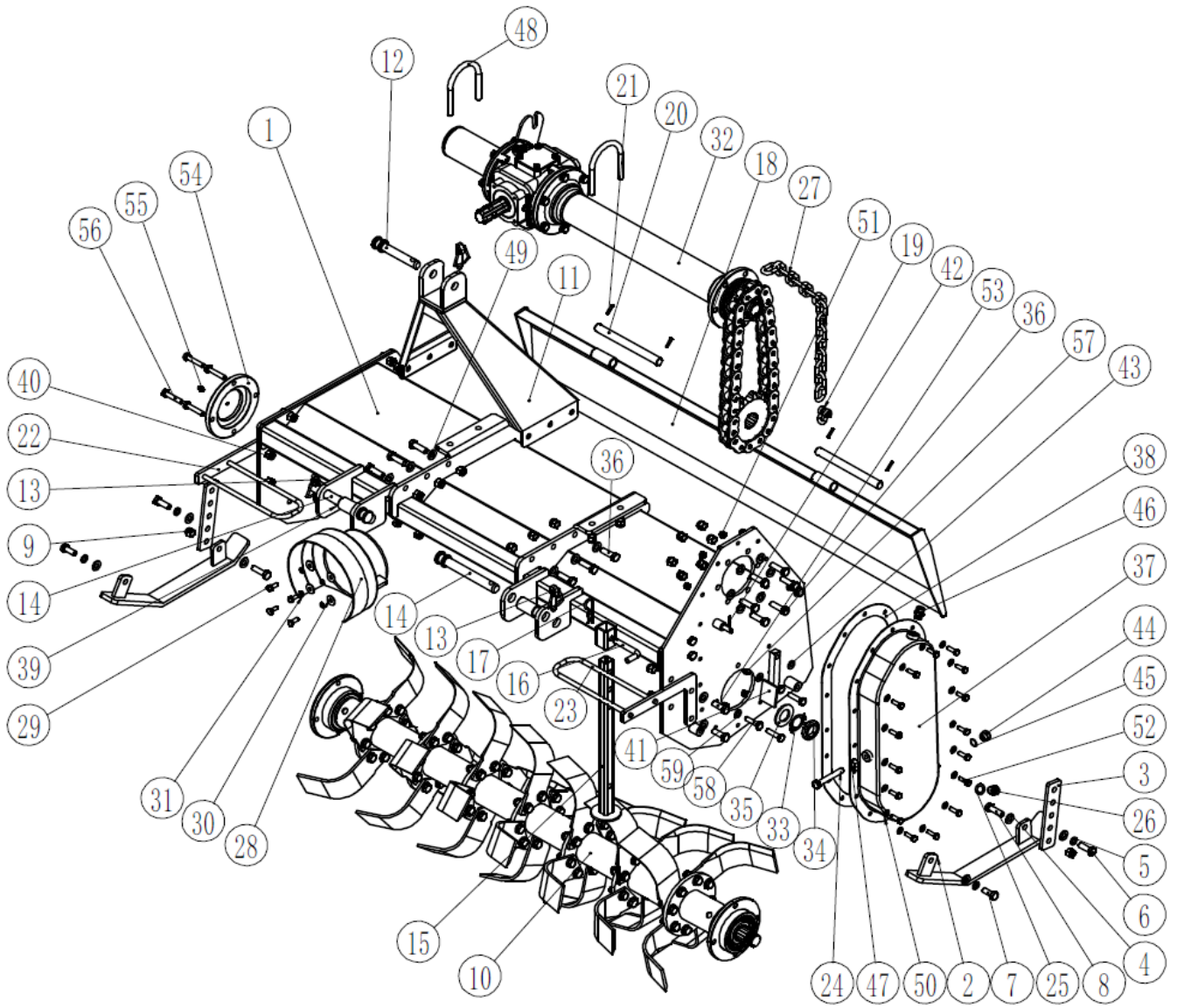
Chapter 6: Parts Lists and Schematic Diagrams

Parts List – Rototiller Assembly

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

| Ref # | Part # | Description | Ref # | Part # | Description |
|-------|-------------|------------------------------|------------------|--------|-------------------------------|
| 1 | See Page 24 | Main Frame assembly | 41 | 398181 | Chain Tension Plate |
| 2 | 397781 | SKID | 42 | 398191 | Open pin 2.5×22 |
| 3 | 397791 | Height Adjust Link | 43 | 398201 | Plain washer 10 |
| 4 | 397801 | Plain washer 12 | 44 | 398211 | Oil Check Plug |
| 5 | 397811 | Spring washer 12 | 45 | 398221 | O-rings 16×1.8 |
| 6 | 397821 | Bolts M12×35 | 46 | 398231 | Ventilation Plug |
| 7 | 397831 | Bolts M12×30 | 47 | 398241 | Nuts M12 |
| 8 | 397841 | Bolts M12×40 | 48 | 398251 | U-bolts 76 |
| 9 | 397851 | Locknuts M12 | 49 | 397801 | Plain washer 12 |
| 10 | See Page 26 | Tine Axle Assembly | 50 | 398271 | Plain washer 8 |
| 11 | 397871 | Top Link Bracket | 51 | 398281 | Locknuts M8 |
| 12 | 397881 | Top Link Pin | 52 | 398291 | Bolts M8×25 |
| 13 | 397891 | Hitch Pin Clip | 53 | 397821 | Bolts M12×35 |
| 14 | 397901 | Bottom Link Pin | 54 | 398311 | Bearing Cover |
| 15 | 397911 | Stay bar | 55 | 398321 | Grease Zerk M8 |
| 16 | 397921 | Stay bar pin | 56 | 398331 | Bolts M10×50 |
| 17 | 397931 | Hair pin | 57 | 398341 | Locknuts M10 |
| 18 | 397941 | Rear Tine Guard | 58 | 398351 | Bolts M10×40 |
| 19 | 397951 | Shackle | 59 | 398201 | Plain washer 10 |
| 20 | 397961 | Rear Guard Shaft | Not Shown | | |
| 21 | 397971 | Elastic cylindrical pin 4×24 | 394801 | | PTO Shaft Assembly |
| 22 | 397981 | Right Tine Guard | 394771 | | Label, Warning, PTO Tiller |
| 23 | 397991 | Left Tine Guard | 248791 | | Label, Entanglement Hazard |
| 24 | 398001 | Bolts M12×80 | 409141 | | Label, Warning, 540 Max RPM |
| 25 | 398011 | Seal washer | 409151 | | Label, Warning, Add Oil |
| 26 | 398021 | Plug screw M16 | 415001 | | Label, Branding, DR, Pro 52 |
| 27 | 398031 | Load Chain | 415021 | | Label, Branding, DR, 5" Round |
| 28 | 398041 | Protective cover | | | |
| 29 | 398051 | Bolts M8×20 | | | |
| 30 | 398271 | Plain washer 8 | | | |
| 31 | 398071 | Spring washer 8 | | | |
| 32 | See Page 25 | Transmission Assembly | | | |
| 33 | 398091 | Lock washer 30 | | | |
| 34 | 398101 | Circular nut M30 | | | |
| 35 | 398111 | Plain washer 30 | | | |
| 36 | 397841 | Bolts M12×40 | | | |
| 37 | 398141 | Sprocket cover | | | |
| 38 | 398151 | Paper gasket | | | |
| 39 | 398161 | Spacer ring | | | |
| 40 | 397851 | Locknuts M12 | | | |

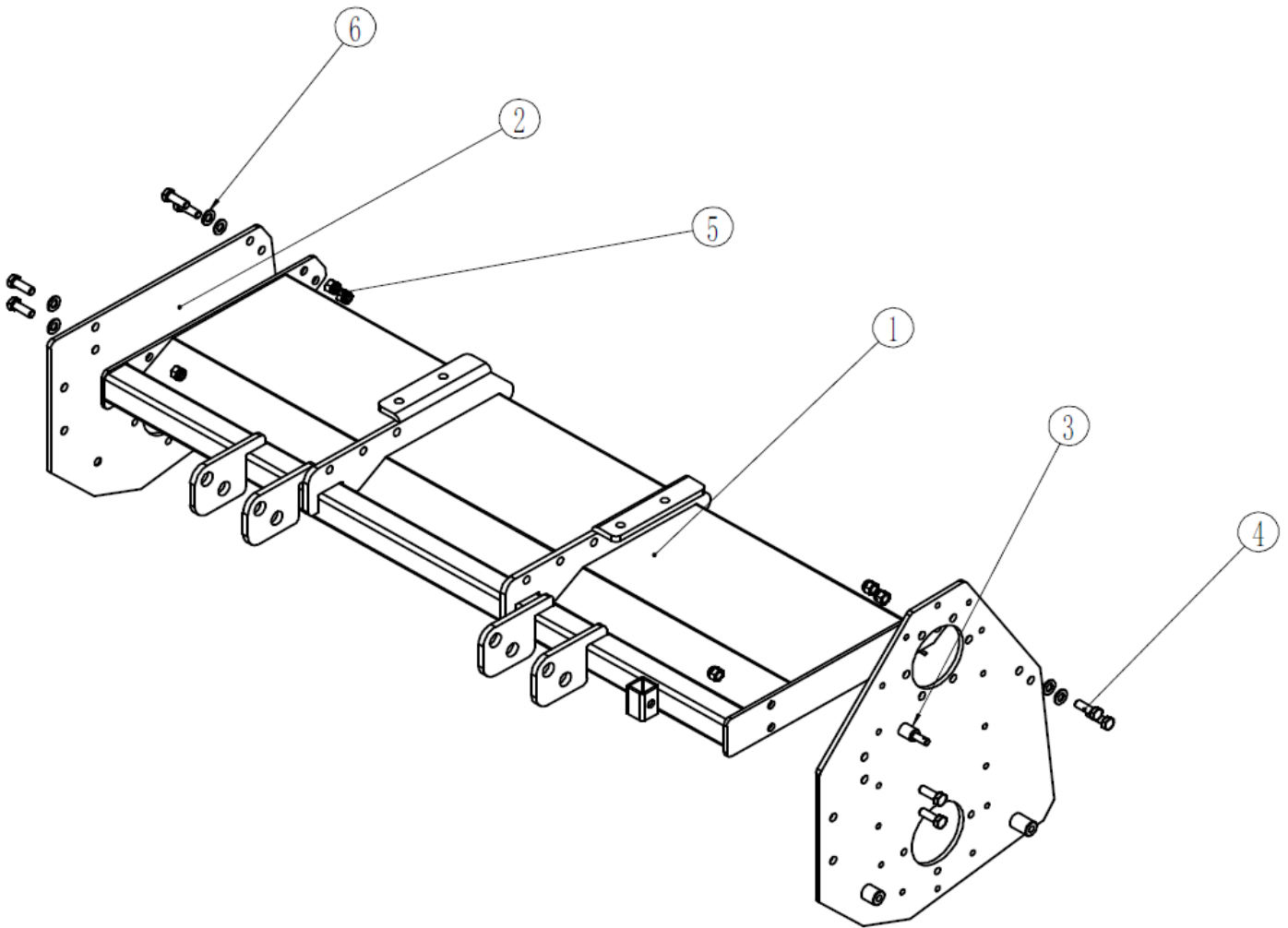
Schematic – Rototiller Assembly



Parts List – Main Frame Assembly

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

| Ref# | Part# | Description |
|------|-------|--------------------|
| 1 | 39841 | Main Frame |
| 2 | 39842 | Right Side Plate |
| 3 | 39843 | Left Side Plate |
| 4 | 39782 | Bolt, M12 X 35 |
| 5 | 39785 | Locknut, M12 |
| 6 | 39780 | Washer, Plain, M12 |



Parts List and Schematic– Transmission Assembly

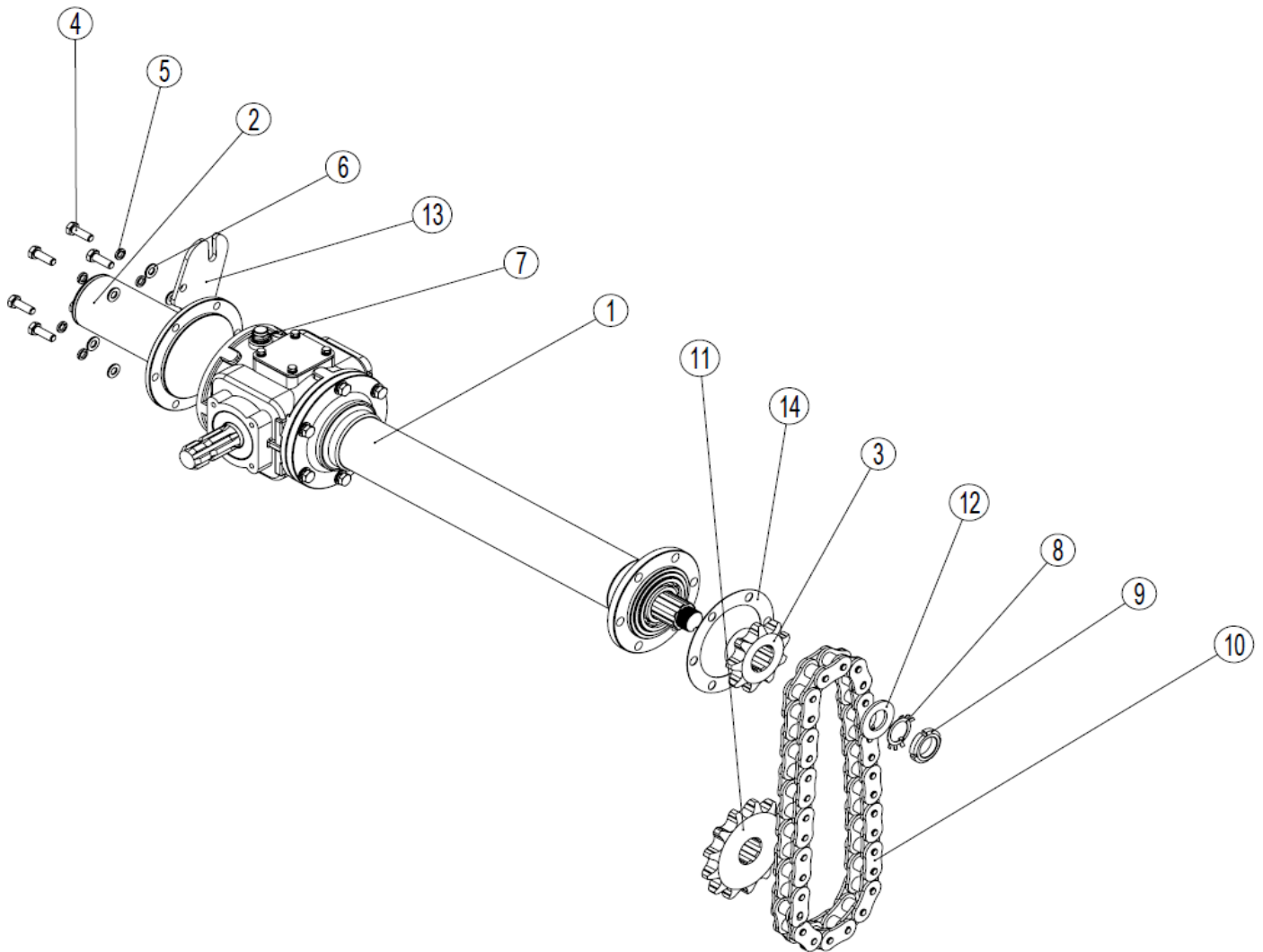
Note: Part numbers listed are available through DR Power Equipment.

| Ref # | Part # | Description |
|-------|--------|-------------|
|-------|--------|-------------|

| | | |
|---|--------|--------------------|
| 1 | 398471 | Gearbox Assembly |
| 2 | 398481 | Left sleeve |
| 3 | 398491 | Drive chain wheel |
| 4 | 398501 | Bolts M10×30 |
| 5 | 398511 | Spring washer 10 |
| 6 | 398201 | Plain washer 10 |
| 7 | 398531 | Dipstick Vent Plug |

| Ref # | Part # | Description |
|-------|--------|-------------|
|-------|--------|-------------|

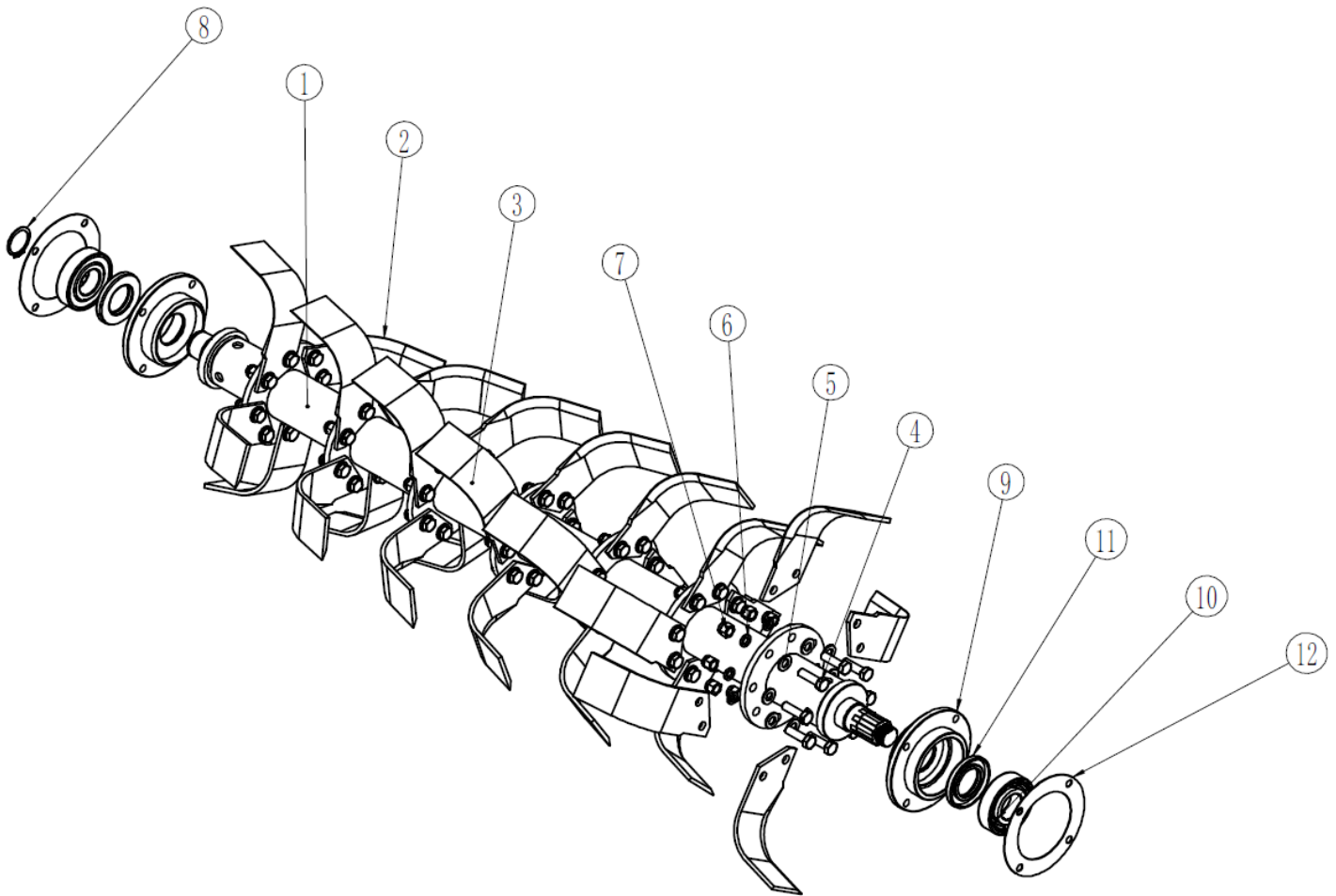
| | | |
|----|--------|--------------------|
| 8 | 398091 | Lock washer 30 |
| 9 | 398101 | Circular nut M30 |
| 10 | 398561 | Chain 20A-1-32 |
| 11 | 398571 | Driven chain wheel |
| 12 | 398111 | Plain washer 30 |
| 13 | 398591 | Chain Hook |
| 14 | 398601 | Paper gasket |



Parts List and Schematic– Tine Axle Assembly

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

| Ref# | Part# | Description | Ref# | Part# | Description |
|------|--------|------------------|------|--------|-------------------|
| 1 | 398901 | Tine Axle | 7 | 397851 | Locknuts M12 |
| 2 | 398911 | Left Tine | 8 | 398731 | Circlip 40 |
| 3 | 398921 | Right Tine | 9 | 398981 | Bearing seat |
| 4 | 397841 | Bolts M12x40 | 10 | 398991 | Bearing 6308-RZ |
| 5 | 398201 | Plain washer 10 | 11 | 399001 | Oil seat 45 80 10 |
| 6 | 398511 | Spring washer 10 | 12 | 399011 | Paper gasket |



Daily Checklist for the DR 52" 3-POINT HITCH ROTOTILLER

To help maintain your DR 52" 3-POINT HITCH ROTOTILLER for optimum performance, we recommend you follow this checklist each time you use your machine.

! WARNING

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

[] TINES Replace damaged or overly worn Tines

[] GENERAL CONDITION: Check the general condition of the machine, e.g.; nuts, bolts, welds etc.

End of Season and Storage

! WARNING

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

- Lubricate PTO Shaft Grease Fittings.
- Check the general condition of the machine, e.g.; nuts, bolts, welds, etc. Replace parts or tighten Hardware as needed.
- Store in a dry covered area to protect from moisture.
- Remove any wrapped grass or weeds from the Tine Axle. Clean grass and debris from the machine.



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