Form No. 3364-924 Rev A

TORO®

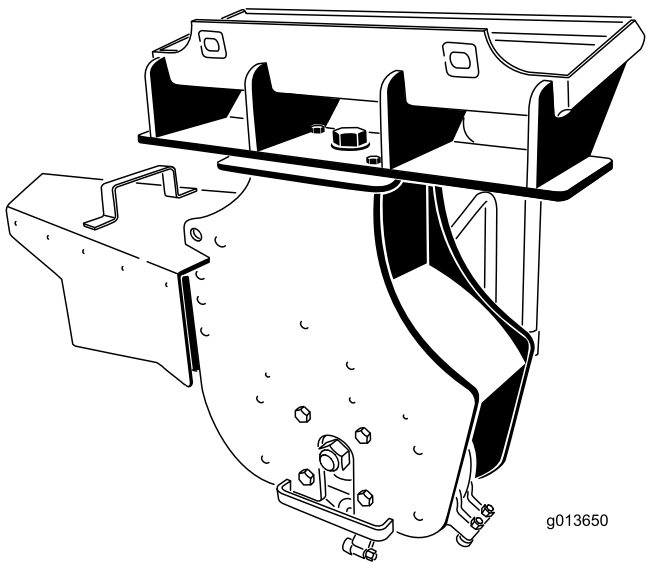
Count on it.

Operator's Manual

Stump Grinder

Compact Utility Loaders

Model No. 22429—Serial No. 310000001 and Up



CE

To register your product or download an *Operator's Manual* or *Parts Catalog* at no charge, go to www.Toro.com.

Original Instructions (EN)

This product complies with all relevant European directives, for details please see the separate product specific Declaration of Conformity (DOC) sheet.

⚠ DANGER

There may be buried power, gas, and/or telephone lines in the work area. Shock or explosion may occur if you dig into them.

Have the property or work area marked for buried lines and do not dig in marked areas. Contact your local marking service or utility company to have the property marked (for example, in the United States, call 811 for the nationwide marking service).

Introduction

This machine is designed for use on Toro compact utility loaders to grind and remove tree stumps and surface roots. It is not intended to cut rock or any other material other than wood and the soil around a stump.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

You may contact Toro directly at www.Toro.com for product and accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

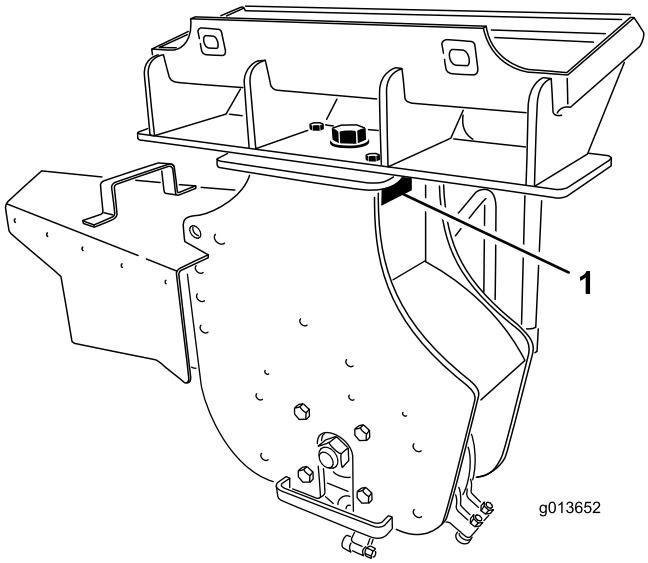


Figure 1

1. Model and serial number location

Model No. _____

Serial No. _____

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 2), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



Figure 2

1. Safety alert symbol

This manual also uses 2 words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

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Safety

Improper use or maintenance by the operator or owner can result in injury. To reduce the potential for injury, comply with these safety instructions and those in the traction unit *Operator's Manual*. Always pay attention to the safety alert symbol, which means *Caution*, *Warning*, or *Danger*—personal safety instruction. Failure to comply with the instruction may result in personal injury or death.

⚠ DANGER

There may be buried power, gas, and/or telephone lines in the work area. Shock or explosion may occur if you dig into them.

Have the property or work area marked for buried lines and do not dig in marked areas. Contact your local marking service or utility company to have the property marked (for example, in the United States, call 811 for the nationwide marking service).

⚠ DANGER

The stump grinder is solely designed and tested for use grinding stumps less than 36 in. (91 cm) tall. Any other uses may cause a hazardous situation resulting in injury or death to you or bystanders.

Only use the stump grinder for grinding stumps less than 36 inches (91 cm) tall.

⚠ DANGER

The moving teeth will severely cut hands, feet, or other body parts.

- **Keep hands, feet, and any other part of your body or clothing away from the moving teeth.**
- **Before adjusting, cleaning, repairing, or inspecting the machine, lower it to the ground, stop the engine, wait for all moving parts to stop, and remove the key.**

⚠ WARNING

When the engine is off, attachments in the raised position can gradually lower. Someone nearby may be pinned or injured by the attachment as it lowers.

Always lower the attachment lift each time you shut off the traction unit.

⚠ WARNING

During operation, debris will fly in all directions and can cause injury to eyes and other exposed body parts.

- **Never operate the stump grinder without the shield installed on the traction unit and the chip guard on the grinder.**
- **Wear personal protective gear during operation.**
- **Keep all bystanders at least 30 feet (9 m) away from the work area.**

⚠ WARNING

When going up or down hill, the machine could overturn if the heavy end is toward the downhill side. Someone may be pinned or seriously injured by the machine if it overturns.

Operate up and down slopes with the heavy end of the machine uphill. This attachment will make the front end heavy.

⚠ WARNING

If you do not fully seat the attachment locking pins in the attachment mount plate holes, the attachment could fall off of the traction unit severely injuring the operator or bystanders.

- **Ensure that you fully seat the attachment locking pins through the holes in the attachment mount plate before lifting the attachment.**
- **Ensure that the attachment mount plate is free of any dirt or debris that may hinder the connection of the traction unit to the attachment.**
- **Refer to your traction unit *Operator's Manual* for detailed information on safely connecting an attachment to your traction unit.**

⚠ WARNING

Lightning can cause severe injury or death. If lightning is seen or thunder is heard in the area, do not operate the machine; seek shelter.

⚠ CAUTION

Hydraulic fluid escaping under pressure can penetrate skin and cause injury. Fluid injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

- **Keep your body and hands away from pin hole leaks or nozzles that eject high pressure hydraulic fluid.**
- **Use cardboard or paper to find hydraulic leaks, never use your hands.**

⚠ CAUTION

Hydraulic couplers, hydraulic lines/valves, and hydraulic fluid may be hot and can burn you if you touch them.

- **Wear gloves when operating the hydraulic couplers.**
- **Allow the traction unit to cool before touching hydraulic components.**
- **Do not touch hydraulic fluid spills.**

Stability Ratings

To determine the degree of slope you can traverse with the stump grinder installed on a traction unit, find the stability rating for the hill position you want to travel in the appropriate table below, then find the degree of slope for the same rating and hill position in the Stability Data section of the traction unit *Operator's Manual*.

⚠ WARNING

Exceeding the maximum recommended slope can cause the traction unit to tip, crushing you or bystanders.

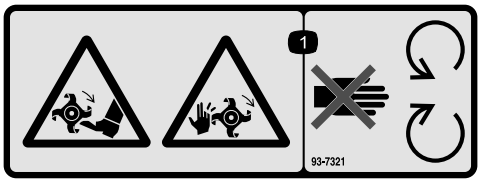
Do not drive the traction unit on a slope steeper than the maximum recommended slope, as determined in the following tables and the traction unit *Operator's Manual*.

Important: If you have a traction unit other than a TX compact utility loader, do not use the counterweight on the traction unit when using the stump grinder. If you use the counterweight, the traction unit will be less stable in the front and side uphill positions.

Orientation	Stability Rating
Front Uphill 	**D**
Rear Uphill 	**C**
Side Uphill 	**C**

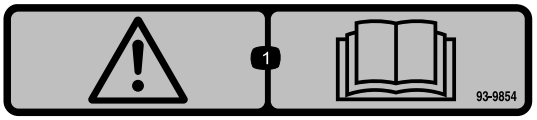
Safety and Instructional Decals

Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



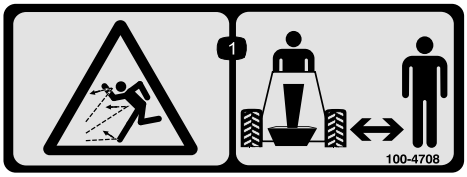
93-7321

1. Cutting/dismemberment hazard of hands and feet, rotating knives—stay away from moving parts.



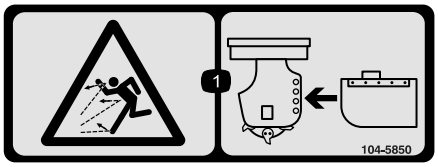
93-9854

1. Warning—read the *Operator's Manual*.



100-4708

1. Thrown object hazard—keep bystanders a safe distance from the traction unit.



104-5850

1. Thrown object hazard—do not operate without the chip guard properly installed.

Setup

1

Assembling the Operator Shield

Parts needed for this procedure:

1	Right shield bracket
1	Left shield bracket
4	Self-tapping screw (5/16 x 3/4 inch)
2	Shield support
1	Shield
6	Bolt (1/4 x 1-1/2 inch)
6	Washer
6	Locknut (1/4 inch)
1	TX bracket mounting template

Installing the Shield Bracket on a 200 or 300 Series Traction Unit

1. Insert the tab on the shield bracket into the lift point hole on the traction unit, with the hole in the bracket aligning with the small hole in the traction unit frame (Figure 3).

   Note: There is a right and left bracket. Ensure that you install the correct bracket on each side. The tab should be in the lift point hole and the bracket should be on the outside of the frame (Figure 3).

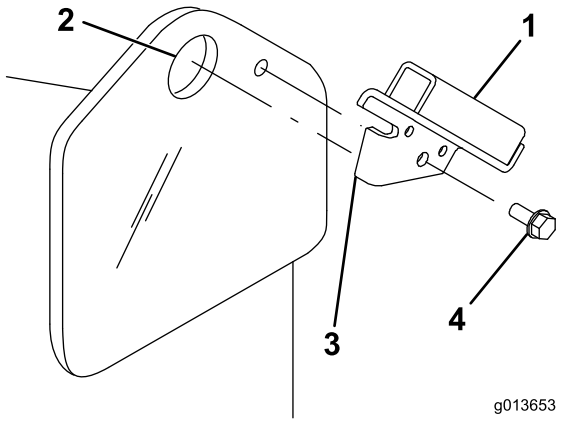


Figure 3

1. Shield bracket
2. Lift point hole
3. Tab
4. Self tapping screw

2. Secure the bracket to the frame with a self-tapping screw (Figure 3).
3. Repeat steps 1 and 2 for the other side of the traction unit.

Installing the Shield Bracket on a TX Traction Unit

1. Measure in from the edges of the frame as illustrated in Figure 4 and mark the locations of the holes for mounting the shield bracket.

   Note: If the holes exist, skip to step 3.

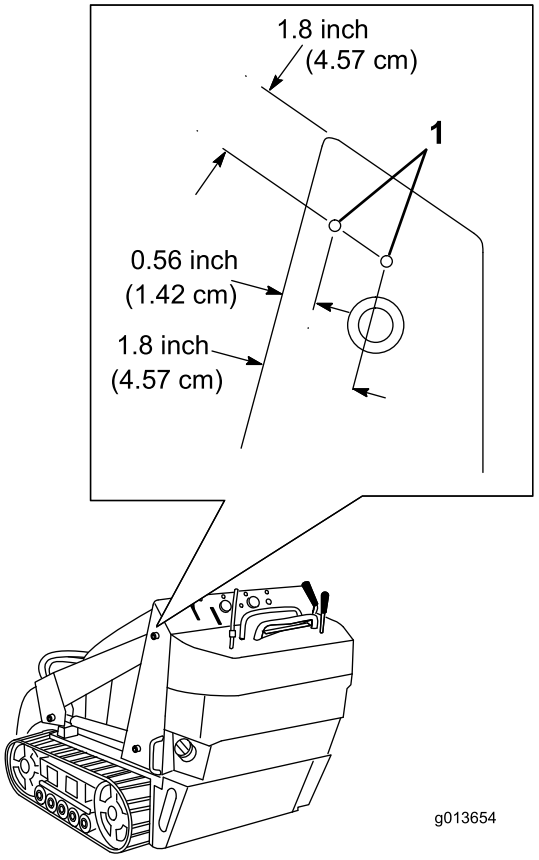


Figure 4

1. Mounting holes

2. Drill a hole (5/16 inch diameter) through the frame at each marked location.
3. Align the tab on the shield bracket with the front edge of the frame with the bracket inside of the loader arm pocket (Figure 5).

   Note: There is a right and left bracket. Ensure that you install the correct bracket on each side. The tab should be over the frame edge and the bracket should be inside the loader arm pocket with the 2 smaller holes in the bracket lined up with the holes you drilled in the frame (Figure 5).

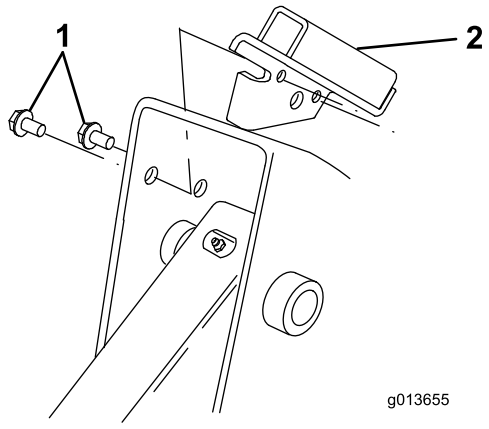


Figure 5

1. Self-tapping screw
2. Shield bracket

4. Secure the bracket to the frame with 2 self-tapping screws as illustrated in Figure 5.
5. Repeat steps 1 through 4 for the other side of the traction unit.

Assembling the Shield

1. Slide the shield supports into the pockets in the shield brackets on the traction unit (Figure 6).

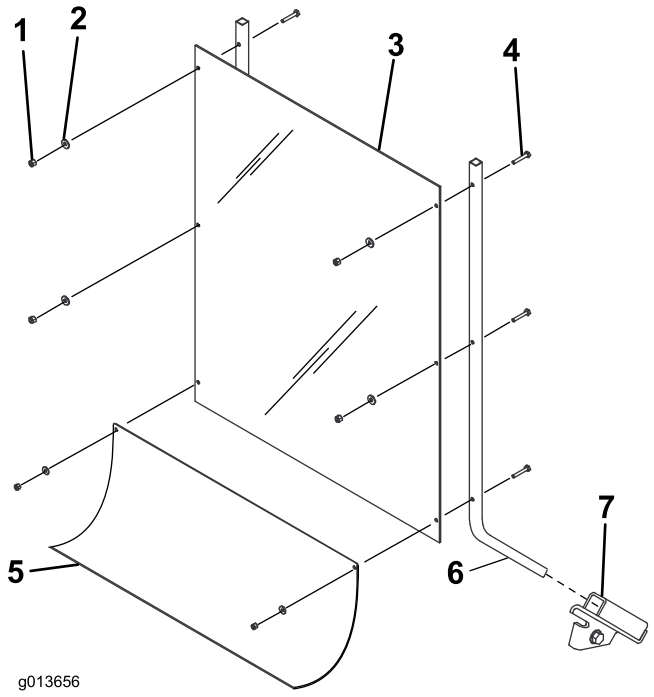


Figure 6

1. Locknut
2. Washer
3. Shield
4. Bolt
5. Skirt
6. Shield support
7. Shield bracket

2. Assemble the shield and flexible skirt to the shield supports as illustrated in Figure 6, using 6 bolts (1/4 x 1-1/2 inch), washers, and locknuts (1/4 inch).

Note: The skirt should drape over the engine or hood.

2

Installing the Chip Guard

Parts needed for this procedure:

1	Chip guard
1	Guard pin
1	Hairpin cotter

Procedure

The stump grinder has 4 sets of mounting holes for positioning the chip guard (Figure 7). Move the guard up (upper holes) when you are grinding close to the ground and down (lower holes) when you are chipping tall stumps. Install the chip guard as follows:

1. Position the mounting tube on the guard between two holes on the grinder (Figure 7).

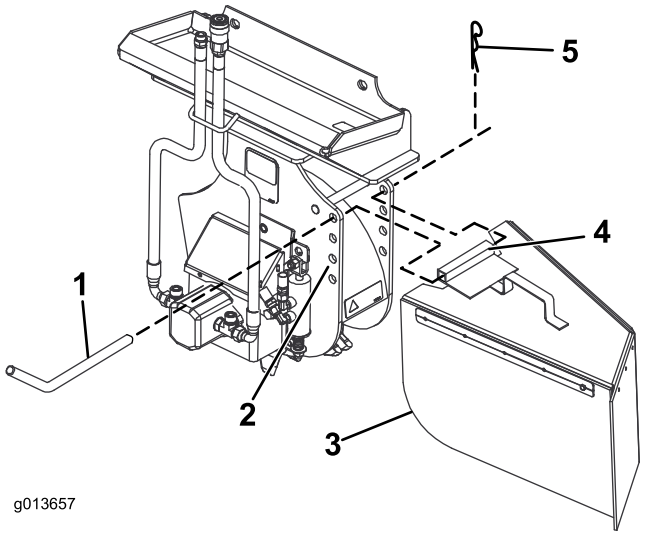


Figure 7

1. Guard pin
2. Mounting holes
3. Chip guard
4. Mounting tube
5. Hairpin cotter

2. Slide the guard pin through the holes in the grinder and the mounting tube (Figure 7).
3. Secure the pin with a hairpin cotter (Figure 7).

Product Overview

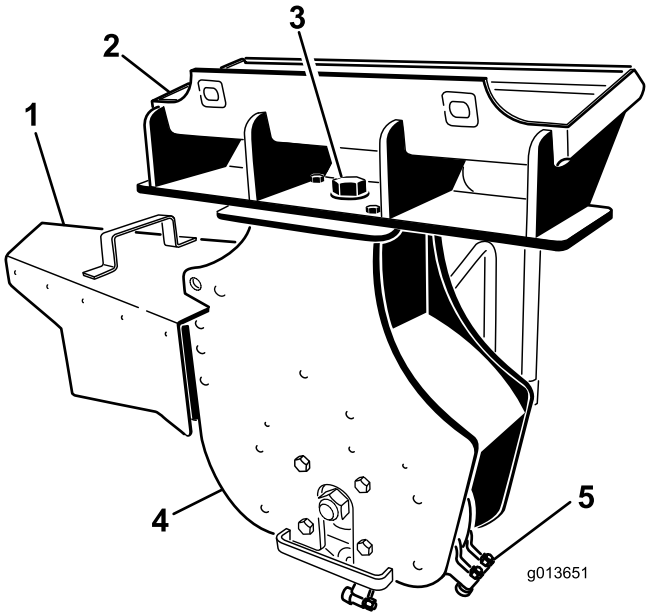


Figure 8

1. Chip guard
2. Mounting plate
3. Pivot bolt
4. Stump grinding head
5. Teeth

Specifications

Note: Specifications and design are subject to change without notice.

Width, with chip guard	44 inches (112 cm)
Width, without chip guard	26 inches (66 cm)
Length	20 inches (51 cm)
Height	31 inches (79 cm)
Weight	265 lb (120 Kg)

Attachments/Accessories

A selection of Toro approved attachments and accessories are available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or Distributor or go to www.Toro.com for a list of all approved attachments and accessories.

Operation

⚠ WARNING

During operation, debris will fly in all directions and can cause injury to eyes and other exposed body parts.

- **Never operate the stump grinder without the shield installed on the traction unit and the chip guard on the grinder.**
- **Wear personal protective gear during operation.**
- **Keep all bystanders at least 30 feet (9 m) away from the work area.**

Refer to your traction unit *Operator's Manual* for more information on installing and removing attachments on your traction unit.

Important: Always use the traction unit to lift and move the attachment.

Grinding Stumps

1. If your traction unit has a speed selector, set it to the slow (turtle position).
2. Start the engine.
3. Pull the auxiliary hydraulics lever to the operator grip to engage the stump grinder.
4. Position the grinder on the left side and behind the stump (Figure 9).

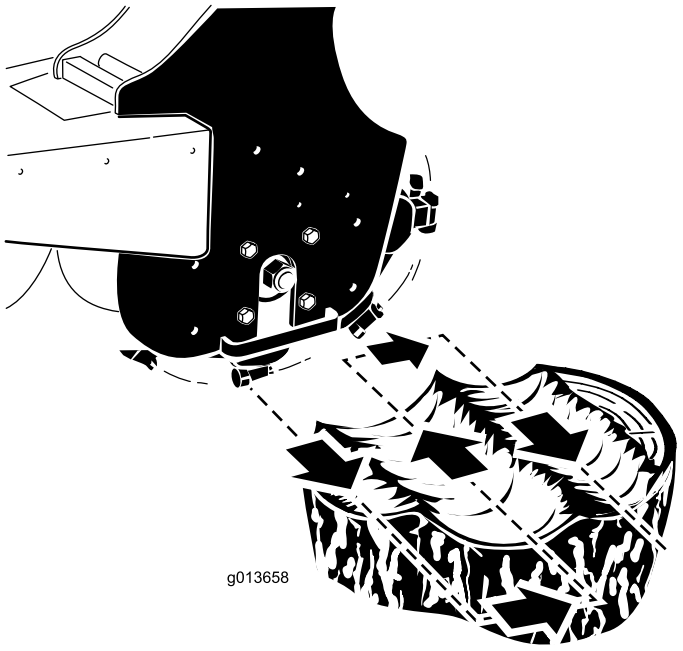


Figure 9

5. Swing the grinder toward you using the attachment tilt lever, grinding at a depth of 1/4 to 2 inches (0.5 to 5 cm), depending on the hardness of the wood (Figure 9).

   Note: If you take too deep of a cut, the grinder will stall. If it stalls, raise it slightly and try again.

6. Swing the grinder back out (Figure 9), lower it 1/4 to 2 inches (0.5 to 5 cm) and repeat steps 4 through 6 until you have ground down a few inches.
7. Raise the loader arms to the original height.
8. Move the grinder to the right (Figure 9).
9. Repeat steps 4 through 8 until you reach the right side of the stump.
10. Return the grinder to the left side of the stump, lower it, and repeat steps 3 through 10 until you have ground the stump into the ground.

    Note: To contain the chips, you may need to stop the grinder and move the chip guard up as you move the grinder down.

11. When finished, stop the grinder by moving the auxiliary hydraulics lever into neutral.

Grinding Roots

1. Stop the grinder and hang it vertically from the loader arms a few inches off of the ground.
2. Stop the engine and remove the key.
3. Loosen the large bolt on the top of the grinder (Figure 10).

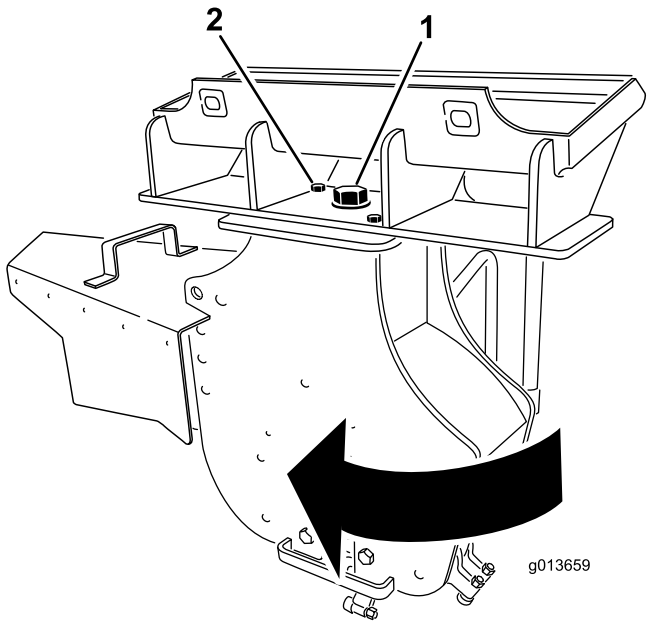


Figure 10

1. Large bolt—loosen
2. Front bolt—remove

4. Remove the front bolt and nut securing the grinder (Figure 10).
5. Swing the grinder 30 degrees clockwise (Figure 10).
6. Torque the large bolt on top of the grinder to 300 ft-lb (406 N-m) (Figure 10)
7. Install the bolt and nut in the front hole and torque them to 75 ft-lb (101 N-m) (Figure 10).
8. Start the traction unit and start the grinder.
9. Lower the grinder into the root.

10. Move the grinder along the length of the root by moving the traction unit over the root.
11. When finished, stop the grinder by moving the auxiliary hydraulics lever into neutral.
12. Loosen the large bolt on the top of the grinder (Figure 10).
13. Remove the front bolt and nut securing the grinder (Figure 10).
14. Swing the grinder 30 degrees counter-clockwise (Figure 10).
15. Torque the large bolt on top of the grinder to 300 ft-lb (406 N-m) (Figure 10).
16. Install the bolt and nut in the front hole and torque them to 75 ft-lb (101 N-m) (Figure 10).

Transporting the Stump Grinder on a Trailer

Place the attachment on a trailer or truck capable of carrying it. Securely tie it to the trailer or truck using tie straps appropriate for the weight of the attachment and for highway use.

Important: Remove the operator's shield before transporting the tractionunit to avoid damage to the shield of traction uit.

Operating Tips

- Always use full throttle (maximum engine speed).
- Never transport the attachment with the loader arms raised. Keep the arms lowered and the attachment tilted up.
- If your traction unit has a speed selector (present on some wheeled traction units), set it to the slow (turtle position).
- If your traction unit has a flow divider (present on some wheeled traction units), adjust it to approximately the 10 o'clock position.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
Before each use or daily	• Grease the machine. • Check the condition of the teeth and rotate or replace any that are worn or damaged.
Before storage	• Grease the machine. • Paint chipped surfaces.

⚠ CAUTION

If you leave the key in the ignition switch, someone could start the engine. Accidental starting of the engine could seriously injure you or bystanders.

Remove the key from the ignition switch before you do any maintenance.

Greasing the Machine

Service Interval: Before each use or daily
Before storage

Grease 2 fittings, as shown in Figure 11, every day and immediately after every washing.

Grease Type: General-purpose grease

1. Stop the engine and remove the key.
2. Clean the grease fittings with a rag.
3. Connect a grease gun to each fitting.
4. Pump grease into the fittings until grease begins to ooze out of the bearings.
5. Wipe up any excess grease.

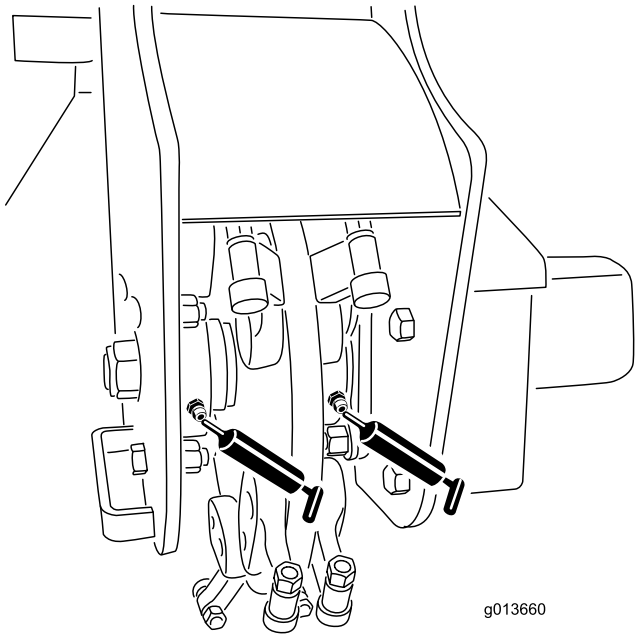


Figure 11

Replacing the Teeth

Service Interval: Before each use or daily—Check the condition of the teeth and rotate or replace any that are worn or damaged.

Due to the high amount of wear placed on the teeth, you will need to rotate and replace them periodically.

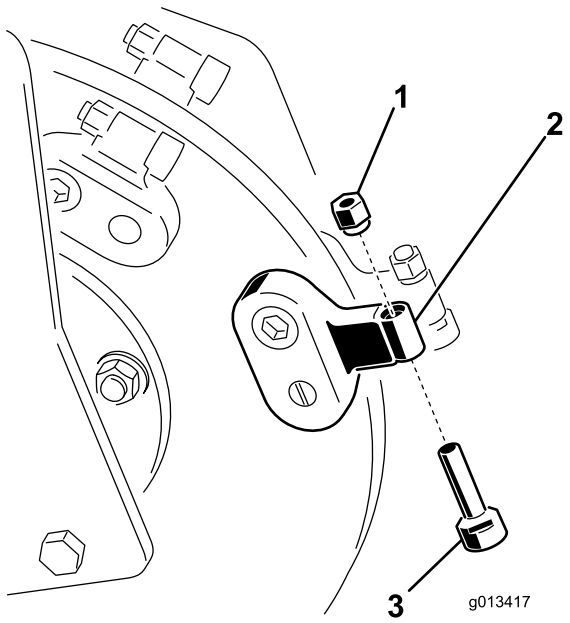


Figure 12

(Your grinder's appearance may vary from that shown in the illustration)

1. Nut
2. Tooth holder
3. Tooth

Each tooth is indexed with three positions so you can rotate it twice, exposing a new sharp edge before replacing the tooth. To rotate a tooth, loosen the nut securing the tooth (Figure 12). Push the tooth forward

and rotate it one third of a turn, bringing an unused edge to the outside. Torque the nut securing the toothth to 27 to 33 ft-lb (37 to 45 N-m).

To replace a tooth, remove the nut securing the tooth to remove it, then install a new tooth and nut in the same position (Figure 12). Torque the nut securing the tooth to 27 to 33 ft-lb (37 to 45 N-m).

Storage

1. Before long term storage, brush the dirt from the attachment.
2. Check the condition of the teeth. Turn or replace any worn or damaged teeth.
3. Check and tighten all bolts, nuts, and screws. Repair or replace any part that is damaged or worn.
4. Ensure that all hydraulic couplers are connected together to prevent contamination of the hydraulic system.
5. Paint all scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
6. Store the attachment in a clean, dry garage or storage area. Cover it to protect it and keep it clean.

Troubleshooting

Problem	Possible Cause	Corrective Action
Cutting disk stops during cutting.	1. Too deep of a cut 2. Teeth worn, damaged, or broken	1. Raise the loader arms 1/2 in. 2. Rotate or replace any worn, damaged, or broken teeth.
The cutting disk does not turn.	1. A hydraulic coupler is not completely connected. 2. A hydraulic coupler is damaged. 3. There is an obstruction in a hydraulic hose 4. An auxiliary valve on the traction unit is not opening. 5. Hydraulic motor or chain drive failure	1. Check and tighten all couplers. 2. Check/replace couplers 3. Find and remove the obstruction. 4. Repair the valve. 5. Contact your Authorized Service Dealer.
The grinder does not cut fast enough.	1. Worn teeth 2. Wrong setting on flow divider and speed lever (applicable wheeled units only) 3. There is a restriction in a quick coupler or hose. 4. The hydraulic system is too hot. 5. The relief valve is set below specifications.	1. Rotate or replace any worn teeth. 2. Set the flow divider to the 10:00 position and the speed lever to the turtle position. 3. Check the hoses and couplers and repair any problems found. 4. Shutdown and allow the system to cool. 5. Contact your Authorized Service Dealer.
The cutting disk turns in the wrong direction	1. The auxiliary valve lever is in the wrong position. 2. The hydraulic hoses are reversed.	1. Move the auxiliary valve lever to the rearward position. 2. Disconnect hoses and switch positions.

Notes:

Notes:

Toro Compact Utility Equipment Warranty

A One-Year Limited Warranty

CUE Products

Conditions and Products Covered

The Toro® Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Compact Utility Equipment ("Product") to be free from defects in materials or workmanship. The following time periods apply from the date of purchase:

Products	Warranty Period
Loaders, Trenchers, Stump Grinders, Chippers, Log Splitters and Attachments	1 year or 1000 operating hours, whichever occurs first
Kohler Engines	3 years
All other Engines	2 years

Where a warrantable condition exists, we will repair the Product at no cost to you including diagnosis, labor, and parts.

Instructions for Obtaining Warranty Service

If you think that your Toro Product contains a defect in materials or workmanship, follow this procedure:

1. Contact any Authorized Toro Compact Utility Equipment (CUE) Service Dealer to arrange service at their dealership. To locate a dealer convenient to you, access our website at www.Toro.com. You may also call our Toro Customer Care Department toll free at 888-865-5676 (U.S. customers) or 888-865-5691 (Canadian customers).
2. Bring the product and your proof of purchase (sales receipt) to the Service Dealer.
3. If for any reason you are dissatisfied with the Service Dealer's analysis or with the assistance provided, contact us at:

   LCB Customer Care Department
   Toro Warranty Company
   8111 Lyndale Avenue South
   Bloomington, MN 55420-1196
   Toll Free: 888-865-5676 (U.S. customers)
   Toll Free: 888-865-5691 (Canada customers)

Owner Responsibilities

You must maintain your Toro Product by following the maintenance procedures described in the *Operator's Manual*. Such routine maintenance, whether performed by a dealer or by you, is at your expense. Parts scheduled for replacement as required maintenance ("Maintenance Parts"), are warranted for the period of time up to the scheduled replacement time for that part. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This express warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, modified, or unapproved accessories
- Product failures which result from failure to perform required maintenance and/or adjustments
- Product failures which result from operating the Product in an abusive, negligent or reckless manner
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, teeth, tines, blades, spark plugs, tires, tracks, filters, chains, etc.
- Failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.
- Normal "wear and tear" items. Normal "wear and tear" includes, but is not limited to, worn painted surfaces, scratched decals or windows, etc.
- Any component covered by a separate manufacturer's warranty
- Pickup and delivery charges

General Conditions

Repair by an Authorized Toro Compact Utility Equipment (CUE) Service Dealer is your sole remedy under this warranty.

Neither The Toro® Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty. Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Except for the engine warranty coverage and the Emissions warranty referenced below, if applicable, there is no other express warranty. The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the California Emission Control Warranty Statement supplied with your Product or contained in the engine manufacturer's documentation for details.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.