

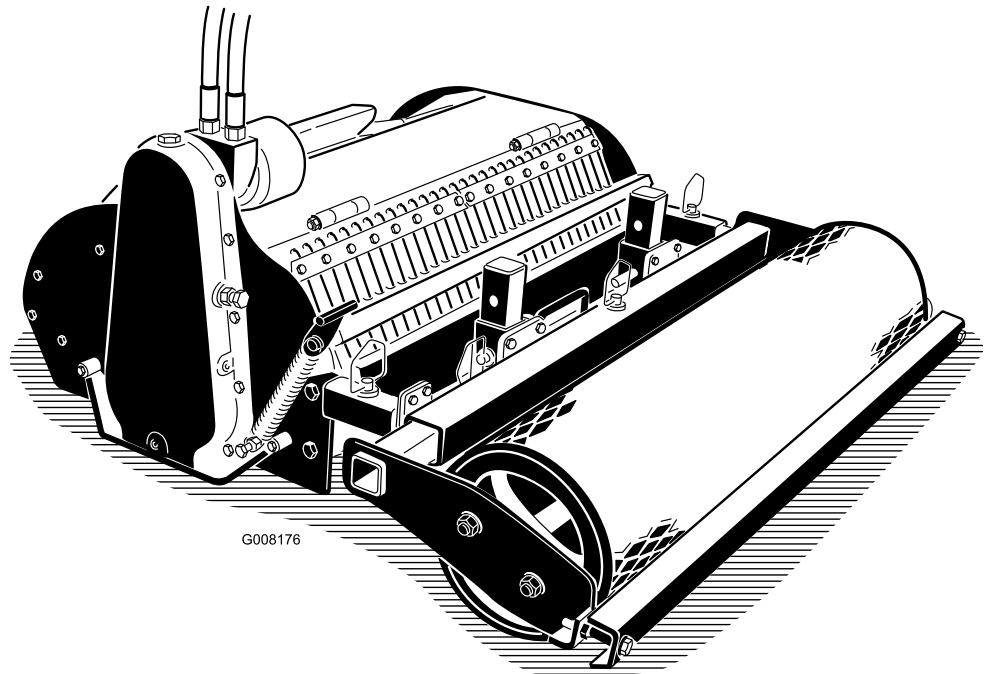


Count on it.

Operator's Manual

**Soil Cultivator
for Compact Utility Loaders**

Model No. 23102—Serial No. 28000001 and Up



G008176



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).

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

Introduction

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.

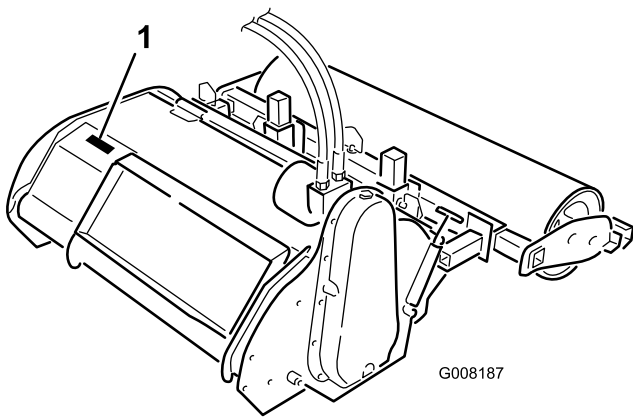


Figure 1

1. Model and serial number location

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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Model No. _____
Serial No. _____

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.



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).



The rotating tines will severely cut hands, feet, or other body parts.

- Keep away from the rotating tines while operating the cultivator.
- Keep hands, feet, and any other part of your body or clothing away from moving parts.
- Before adjusting, cleaning, repairing, or inspecting the trencher, lower the trencher to the ground, stop the engine, wait for all moving parts to stop, and remove the key.



Tines can throw dirt, debris, and small rocks injuring the operator or bystanders.

- Keep all bystanders away from the work area.
- Wear eye protection and a hard hat while operating the cultivator.



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.



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. An attached trencher will make the front end heavy.



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.



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.



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

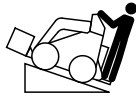

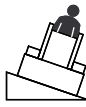
To determine the degree of slope you can traverse with the cultivator installed on a traction unit, find the stability rating for the hill position you want to travel in the appropriate table below, then find the degree of slope for the same rating and hill position in the Stability Data section of the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



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*.

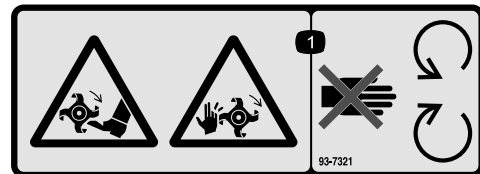
Important: If you have a traction unit other than a TX compact utility loader, use the counterweight on the traction unit when using the cultivator. Failure to use the counterweight will cause the traction unit to become unstable.

Orientation	Stability Rating
Front Uphill 	B
Rear Uphill 	D
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.



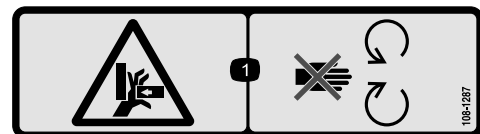
93-7321

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



100-4708

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



108-1287

1. Crushing hazard, hand—stay away from moving parts.

Setup

Installing the Roller

1. Remove the roller from the shipping stand.
2. Install the cultivator on the traction unit and remove it from the shipping stand; refer to your traction unit *Operator's Manual* for more information on installing attachments on your traction unit.
3. Lower the cultivator to the ground.
4. Remove the pins from the arms of the cultivator (Figure 3).

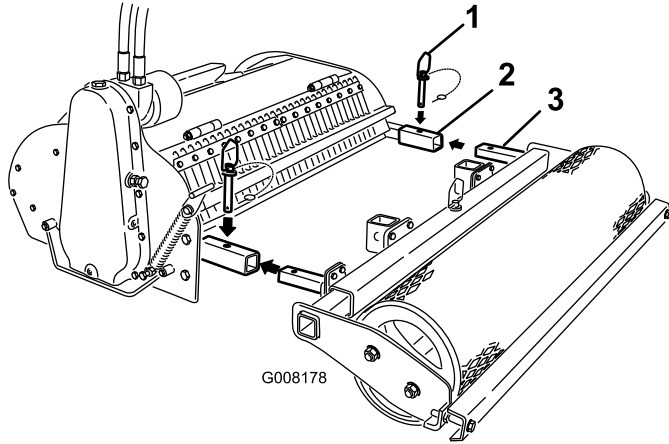


Figure 3

1. Pin
2. Cultivator arm
3. Roller arm

5. Slide the arms on the roller into the arms on the cultivator and secure them with the pins (Figure 3).
6. Secure the pins with the attached snap-ring clevis pins.

Product Overview

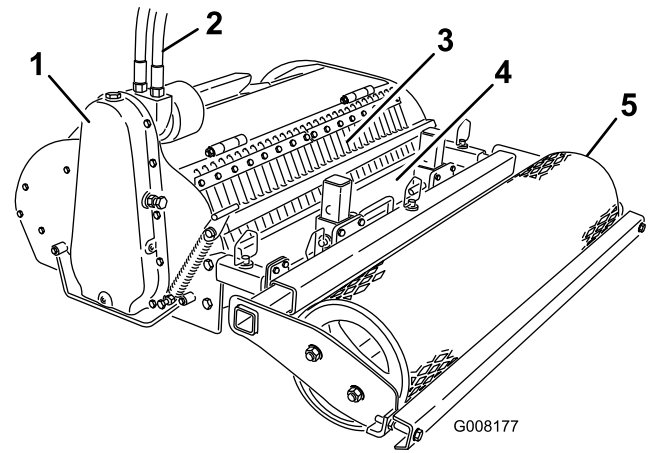


Figure 4

1. Drive chain housing
2. Hydraulic hoses
3. Digging tines and tine guard
4. Grader blade
5. Roller

Specifications

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

Width	51 inches (130 cm)
Length	51 inches (130 cm)
Height	21 inches (53 cm)
Weight	550 lb (250 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

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.

Note: Determine the left and right sides of the machine from the normal operating position.

Removing the Roller

If you want to use the cultivator as a tiller without the grader or roller, or to perform various adjustments and maintenance procedures, you can remove the roller and grader as follows:

1. Tilt the attachment to raise the roller off of the ground.
2. Remove the pins from the arms of the cultivator (Figure 5).

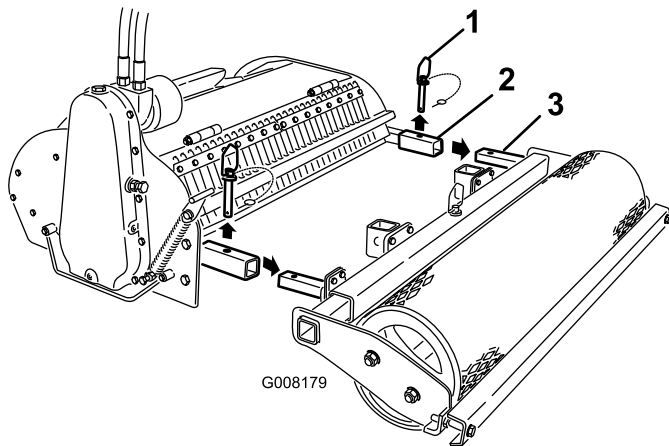


Figure 5

1. Pin
2. Cultivator arm
3. Roller arm

3. Pull the roller off the cultivator (Figure 5).
4. Store the pins in the arms of the roller for future use.

To install the roller, refer to Installing the Roller in Setup.

Setting the Digging Depth

You can set the cultivator to dig up to 5.5 in. (13.9 cm) into the ground. Ideally, you should set the depth to the maximum possible for the work you are performing. The depth of cut is determined by the position of

the roller. The roller can be moved up and down by changing the mounting location of the arms on the cultivator, as follows:

1. Remove the roller from the cultivator.
2. Remove the bolts securing the arms to the cultivator (Figure 6).
3. Move the arms to the set of holes corresponding to the desired depth (Figure 6). Moving the arms up sets the digging depth deeper; moving them down sets it shallower.

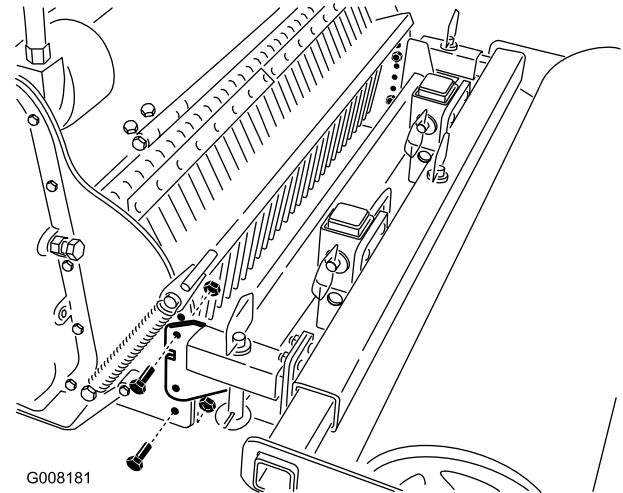


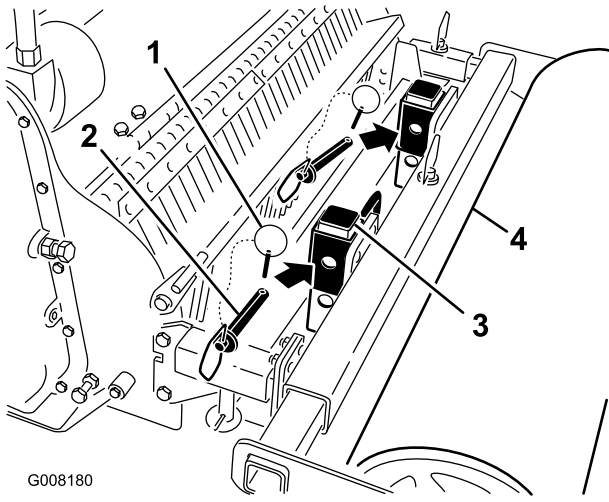
Figure 6

4. Secure the arms using the bolts and nuts removed previously.
5. Install the roller.

Adjusting the Grader Blade

You can adjust the grader blade that sits just behind the roller to give the desired finish. Typically, you should adjust it so that the edge of the blade is just slightly higher than the bottom of the roller.

1. Tilt the attachment to raise the roller off of the ground.
2. Remove the 2 pins from the grader blade mounting posts (Figure 7).



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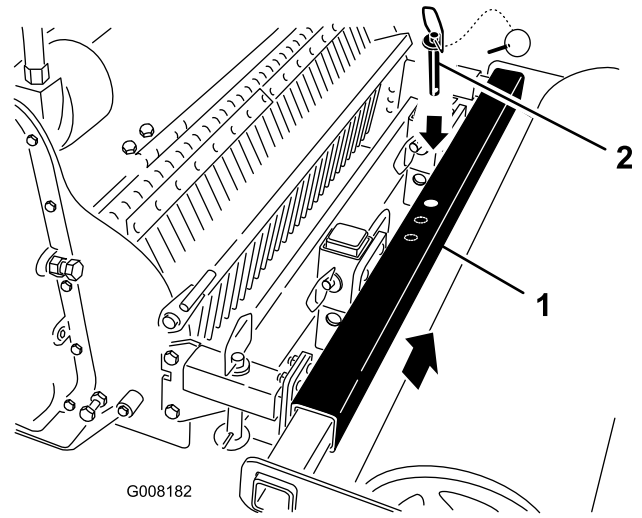
Figure 7

1. Snap-ring clevis pin
 2. Pin
 3. Grader blade mounting post
 4. Roller
3. Slide the grader blade up or down to the desired hole position.
 4. Secure the grader blade using the 2 pins you removed previously.
 5. Secure the pins with the attached snap-ring clevis pins, swinging the snap-rings down over the ends of the pin to secure them once installed.
 6. Lower the roller to the ground.

Changing the Horizontal Position of the Roller

The roller has 3 horizontal positions. One position aligns the edges of the roller with the edges of the cultivator. Use this position for cultivating along the edge of the work area. The other 2 position offset the roller to either side so that about 6 inches of the roller overlaps the last cultivating pass. This allows you to seamlessly cultivate an area with no messy edges between cultivation passes.

1. Remove the pin located in the center of the roller support bar (Figure 8).



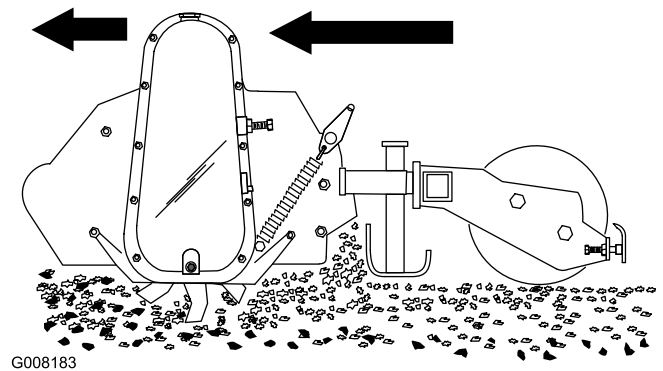
G008182

Figure 8

1. Pin
2. Slide the roller to the desired position (Figure 8).
 3. Insert the pin through the bar and secure it to secure the roller.

Operating the Cultivator

1. Lower the cultivator to the ground, ensuring that the chain case is perpendicular to the ground (Figure 9).



G008183

Figure 9

2. Pull the auxiliary hydraulics lever to the operator grip to start the cultivator.
3. Slowly lower the cultivator until the blades dig into the soil and the roller touches the ground.
4. Slowly move rearward.
5. When the pass is finished, stop the hydraulics and raise the cultivator.

Operating Tips

- Clean the area of trash, branches, and rocks before cultivating to prevent equipment damage.
- Always begin cultivating with the slowest ground speed possible. Increase speed if conditions permit.
- Always use full throttle (maximum engine speed).
- Cultivate in long, straight passes. Do not make turns while the cultivator is in the ground, as equipment damage may result.
- If a rock or other obstruction gets into the tines, stop the hydraulics and drive the traction unit forward until the obstruction is dislodged.
- If you are using a traction unit with a flow divider (some wheeled units have flow dividers; refer to your traction unit *Operator's Manual*), you can use the flow divider to achieve the optimal rotor and ground speed for your soil conditions, as follows:
 1. Set the flow divider to the 9:00 position and the speed selector to the turtle position.
 2. Pull the auxiliary hydraulics lever to the operator grip to start the cultivator.
 3. Move the flow divider lever while moving the traction unit rearward until the cultivation results are ideal.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 5 hours	<ul style="list-style-type: none">• Adjust the drive chain tension.
Every 25 hours	<ul style="list-style-type: none">• Grease the cultivator.• Adjust the drive chain tension.
Every 200 hours	<ul style="list-style-type: none">• Change the drive chain oil.
Before storage	<ul style="list-style-type: none">• Grease the cultivator.• Paint chipped surfaces.



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

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

Greasing the Cultivator

Service Interval: Every 25 hours

Before storage

Grease the 2 fittings on the ends of the roller and 1 fitting on the 4-bolt flange on the left side of the main housing.

Grease Type: General-purpose grease

Important: Grease immediately after every washing

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.

Changing the Drive Chain Oil

Service Interval: Every 200 hours

Check the gear lubrication oil level in the gear case every 25 operating hours and change it every 200 operating hours or once a year, whichever occurs first.

Oil type: 85 W 140

1. Park the cultivator on a flat surface and ensure that the drive chain cover is perpendicular to the ground.

2. Raise the attachment high enough to get a pan under the drive chain case and support it with jack stands.



Mechanical or hydraulic jacks or the lift arms may fail to support the cultivator and cause a serious injury.

- Use jack stands to support the cultivator.
- Do not use the lift arms alone or hydraulic jacks.

3. Stop the engine and remove the key.
4. Open the oil fill hole on top of the drive chain case (Figure 10).

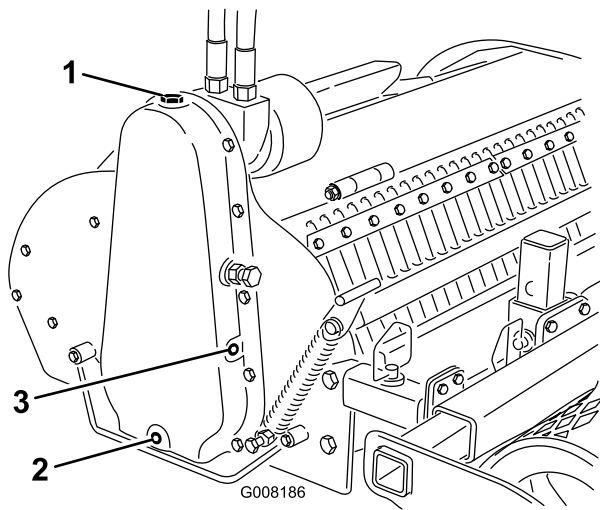


Figure 10

- 1. Oil fill hole
- 2. Drain plug
- 3. Side plug

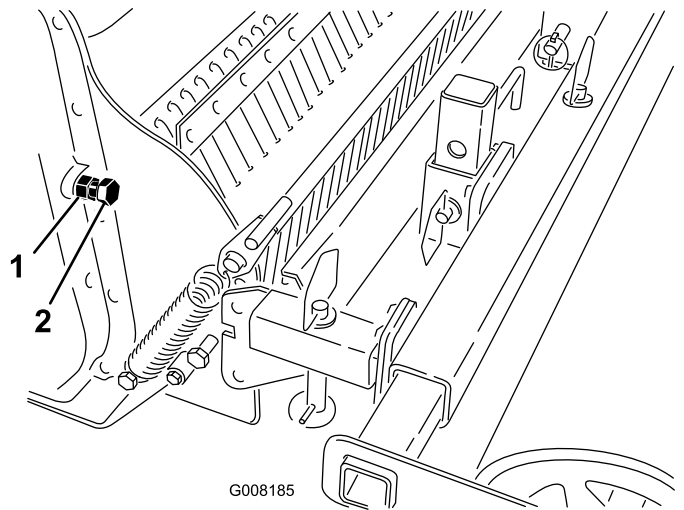


Figure 11

- 1. Jam nut
- 2. Chain adjusting screw

5. Place a large drip pan under the drive chain case.
6. Remove the drain plug (Figure 10).
7. When all of the oil has drained from the case, replace and tighten the drain plug.
8. Remove the side plug (Figure 10).
9. Pour oil into the fill hole slowly until oil runs out of the side plug hole.
10. Replace the side and fill hole plugs and tighten them.
11. Wipe up any spilled oil.

3. Turn the screw in by hand until you feel resistance (Figure 11).
4. Mark the screw with a pencil and then turn it one turn out.
5. Tighten the jam nut.

Adjusting the Drive Chain Tension

Service Interval: After the first 5 hours

Every 25 hours

1. Lower the loader arms and stop the engine. Remove the key.
2. Loosen the jam nut on the chain adjusting screw (Figure 11).

Replacing Tines

Check and replace tines when they become worn or dull. Worn or dull tines will degrade the performance of the cultivator.

1. Lower the loader arms and stop the engine. Remove the key.
2. Remove the roller assembly from the cultivator.
3. Lift up and release the spring catch on the side of the cultivator (Figure 12).

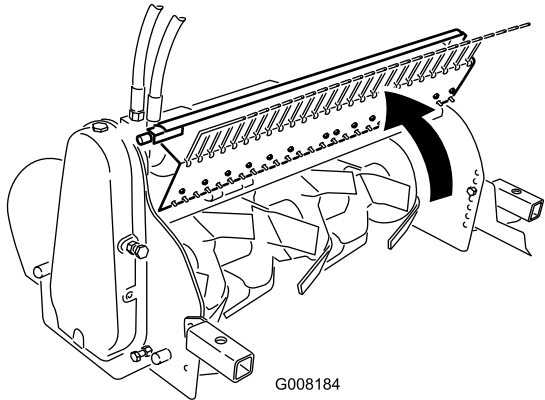
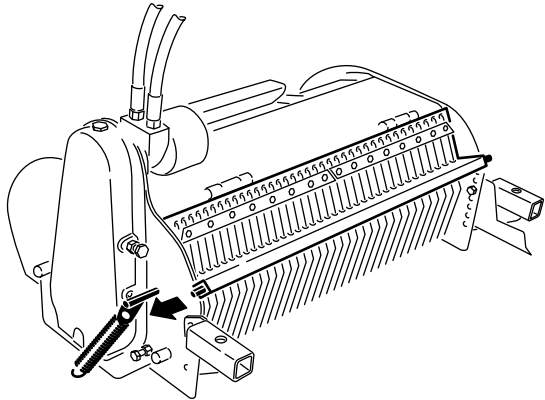


Figure 12

4. Open the tine cover (Figure 12).
5. Remove old tines one at a time and install the new tines (Figure 13).

Each center hub has four tines, two right hand and two left hand. The left and right hand tines are alternated on the hub. Ensure that you replace each tine with the same type of tine that was installed previously.

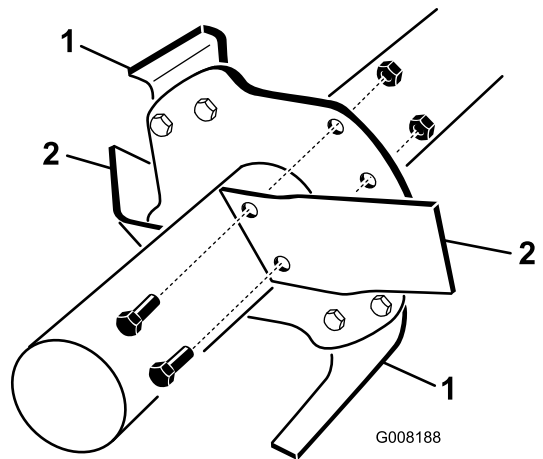


Figure 13

1. Left-hand tine
2. Right-hand tine

6. Torque the tine mounting bolts to 63 to 77 ft-lb (86 to 104 N-m).
7. Close the tine cover and secure it with the spring latch.
8. Install the roller assembly.

Storage

1. Before long term storage, wash the attachment with mild detergent and water to remove dirt and grime.
2. Grease all fittings.
3. Check and adjust the tension of the drive chain.
4. Check and tighten all bolts, nuts, and screws. Repair or replace any damaged or worn part.
5. Ensure that all hydraulic couplers are connected together to prevent contamination of the hydraulic system.
6. Paint all scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
7. 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
The cultivator does not operate.	<ol style="list-style-type: none"> 1. The hydraulic coupler is not completely connected 2. A hydraulic hose is kinked. 3. There is an obstruction in the cultivator (e.g., rock or root) 4. A hydraulic coupler is damaged. 5. There is an obstruction in a hydraulic hose. 6. The auxiliary valve on the traction unit is not opening. 7. The drive chain is loose. 8. The drive chain is broken. 9. A hydraulic valve or the drive motor is damaged. 	<ol style="list-style-type: none"> 1. Check and tighten all couplers. 2. Replace the kinked hose 3. Find and remove the obstruction. 4. Check the couplers and replace any that are damaged. 5. Find and remove the obstruction. 6. Repair the valve. 7. Adjust the chain tension. 8. Repair or replace the chain. 9. Contact your Authorized Service Dealer.

Notes:

Notes:



Compact Utility Loader
(CUL) Products

The Toro Compact Utility Loader Warranty

A One-Year Limited Warranty

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 Loader (CUL) ("Product") to be free from defects in materials or workmanship. The following time periods apply from the date the Product is delivered to the original retail purchaser:

The following time periods apply from the date of purchase:

Products	Warranty Period
All CUL units and attachments	1 year or 1000 operational 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 CUL 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 888-577-7466 (U.S. customers) or 877-484-9255 (Canadian customers).
2. Bring the product and your proof of purchase (sales receipt) to the Service Dealer.

If for any reason you are dissatisfied with the Service Dealer's analysis or with the assistance provided, contact us at:

LCB Customer Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196
Toll Free: 888-577-7466 (U.S. customers)
Toll Free: 877-484-9255 (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, digging teeth, tines, 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 CUL 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 printed in your operator's manual 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.