

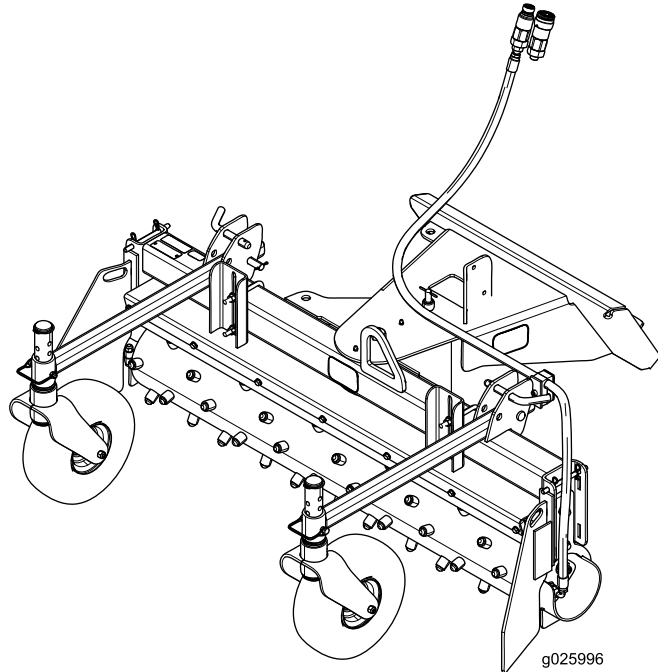


Count on it.

Operator's Manual

Direct Drive Power Box Rake Compact Utility Loaders

Model No. 22426—Serial No. 314000001 and Up



g025996



⚠ WARNING

**CALIFORNIA
Proposition 65 Warning**

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

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 illustrates the location of the model and serial numbers on the product. Write the numbers in the space provided.

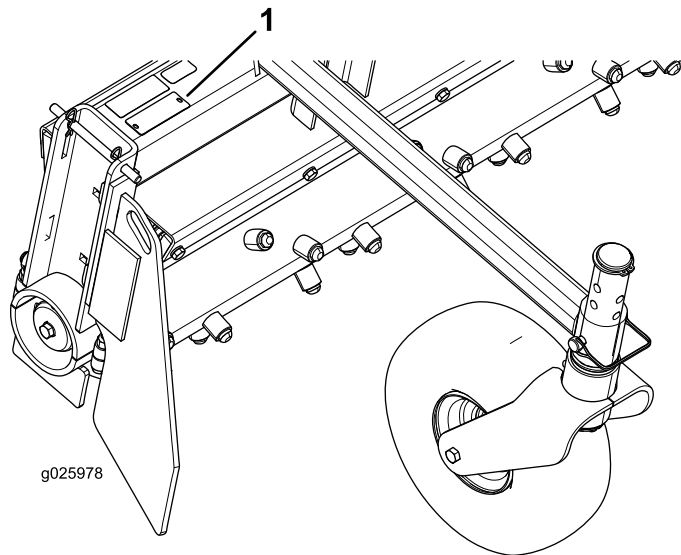


Figure 1

- 1. Model and serial number location

Model No. _____
Serial No. _____

This manual 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 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.

Safe Operating Practices

This product is capable of crushing or amputating hands and feet. Always follow all safety instructions to avoid serious injury or death.

▲ WARNING

Engine exhaust contains carbon monoxide, and odorless, deadly poison that can kill you

Do not run the engine indoors or in an enclosed area.

Training

- Read the *Operator's Manual* and other training material. If the operator(s) or mechanic(s) cannot read English, it is the owner's responsibility to explain this material to them.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- All operators and mechanics should be trained. The owner is responsible for training the users.
- Never let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.
- The owner/user can prevent and is responsible for accidents or injuries occurring to himself or herself, other people or property.

Preparation

- Check for all buried utility lines before operation.

▲ WARNING

If there are buried power, gas, or telephone lines in the work area, you may contact them, causing a shock or an explosion.

Have the property or work area marked for buried lines and do not operate the power rake in marked areas.

- Evaluate the terrain to determine the proper and safe actions to perform the job. Only use accessories and attachments approved by the manufacturer.

- Wear appropriate clothing including hard hat, safety glasses, long pants, safety shoes, and hearing protection. Long hair, loose clothing or jewelry may get tangled in moving parts.
- Inspect the area where the equipment is to be used and remove all objects such as tools, building materials, and personal items which can be damaged by the machine.
- Ensure that the shields are attached and functioning properly.

Operation

- Keep the compact utility loader arms and the attachment as low as possible.
- Slow down and use caution when making turns and when changing directions on slopes.
- Do not travel or turn with the loader lift arms and the attachment in the raised position.

▲ WARNING

When the engine is off, an attachment in the raised position can gradually lower, possibly pinning or injuring someone.

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

- Go up and down slopes, not across them.
- Keep the heavy part of the machine facing uphill.
- Do not overload the machine.
- Never use the attachment to carry loads.

▲ WARNING

Do not exceed the load capacity of the machine, as the machine could tip or roll over, causing serious injury or death.

- Do not disconnect any hydraulic lines until the whole system pressure has been relieved.

▲ WARNING

Hydraulic system leak down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly, and cause severe injury or death.

⚠ WARNING

Hydraulic fluid escaping under pressure can penetrate the 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.
- Never directly discharge toward people, animals, or property.
 - Do not operate the machine while under the influence of drugs or alcohol.
 - Operate only in the daylight.

Maintenance and Storage

- Park the machine on a level surface, set the throttle to slow, and stop the engine. Wait for all movement to stop before adjusting, cleaning, or repairing.
- Clean debris from the drives, mufflers, and engine to help prevent fires. Clean up fuel and oil spillage.
- Let the engine cool before storing and do not store near a flame.
- Do not store fuel near flames or drain indoors.
- Park the machine on level ground. Never allow untrained personnel to service the machine.
- Carefully release pressure from components with stored energy.
- Keep hands and feet away from moving parts. If possible, do not make adjustments with the engine running.

⚠ DANGER

Contact with rotating teeth can cause entanglement, severe wounds, and/or death.

- Keep away from the rotating teeth while operating the power rake.
 - Keep your hands, feet, other parts of your body, and clothing away from rotating parts.
 - Before adjusting, cleaning, repairing, and inspecting the power rake, lower the power rake and loader arms to the ground, shut off the engine, and remove the key.
- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
 - Use extra care when handling fuels. They are flammable and vapors are explosive.
 - Use only an approved container.

- Never remove the fuel cap or add fuel when the engine is running. Allow the engine to cool before refueling. Do not smoke.
 - Never refuel the machine indoors.
 - Never store the machine or fuel container inside where there is an open flame, such as near a water heater or furnace.
 - Never fill a fuel container while it is inside a vehicle, trunk, pick-up bed, or any surface other than the ground.
 - Keep container nozzle in contact with the tank during filling.
- Use only genuine Toro replacement parts to ensure that original standards are maintained.

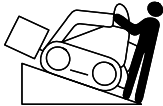

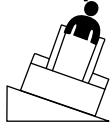
Stability Ratings

⚠ WARNING

If you exceed the maximum slope, the machine could tip, possibly crushing you or bystanders.

Do not drive the machine on a slope steeper than the maximum recommended slope.

To determine the degree of slope that you can traverse with the power rake installed on a traction unit, find the stability rating (Figure 3) for the hill position that you want to travel in the 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*.

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

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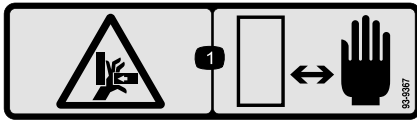
Figure 3

Important: If you have a traction unit other than the TX, use the counterweight on the traction unit when using the power rake, or the traction unit may become unstable.

Safety and Instructional Decals

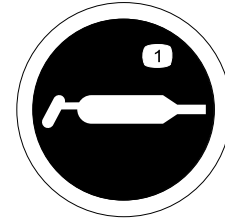


Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



93-9367

1. Crushing hazard of hand—keep hands away.



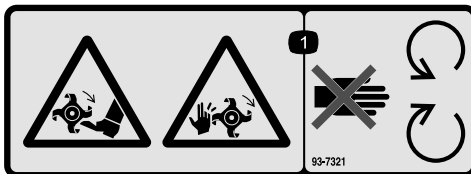
115-2903

1. Grease



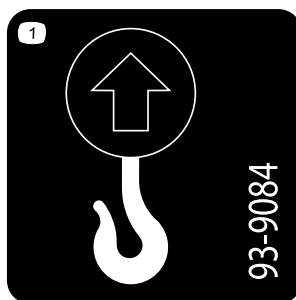
100-4708

1. Thrown object hazard—keep bystanders away from the machine.



93-7321

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



93-9084

1. Lift point

Product Overview

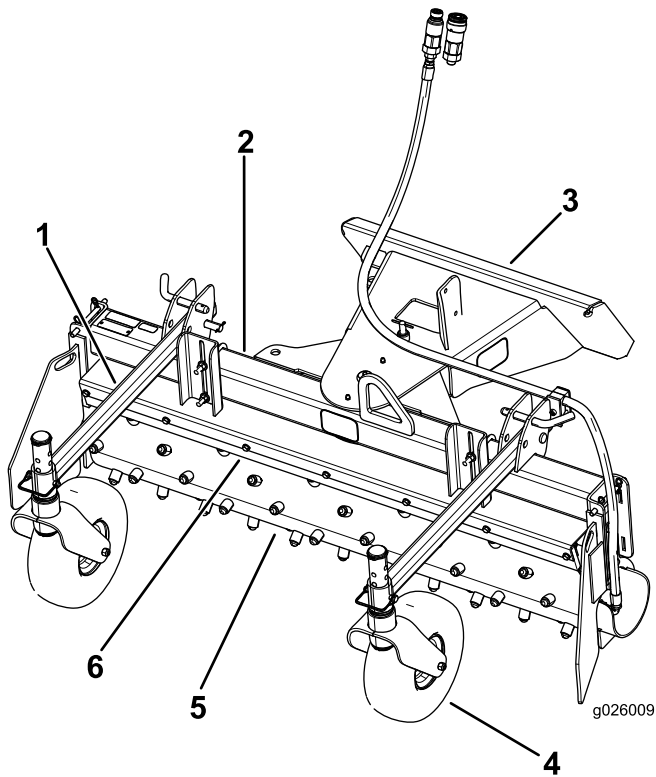


Figure 4

- | | |
|------------------------|-----------------|
| 1. Caster-arm assembly | 4. Tire |
| 2. Rake frame | 5. Tooth roller |
| 3. Attachment mount | 6. Rake barrier |

Specifications

Height	53.1 cm (20.9 inches)
Weight	166 kg (365 lb)
Raking width	122 cm (48 inches)
Roller type	Carbide toothed roller 22.4 cm (8.8 inches) diameter
Roller angle	20°
Gap (tube to barrier)	3.2 cm (1-1/4 inches)
Maximum pressure	20,684 kPa (3,000 psi)

Operation

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

Note: Refer to your traction unit *Operator's Manual* before installing, operating, and removing the power rake.

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

Extending the Caster Wheels

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

1. Extend the caster arms so that the caster wheel are in the operating position.
2. Secure the caster arms in place with the hitch pins (5/8 x 3 inches), clevis pins (5/8 x 3.5 inches), and the hairpin cotters (0.094 x 1 inch) as shown in Figure 5.

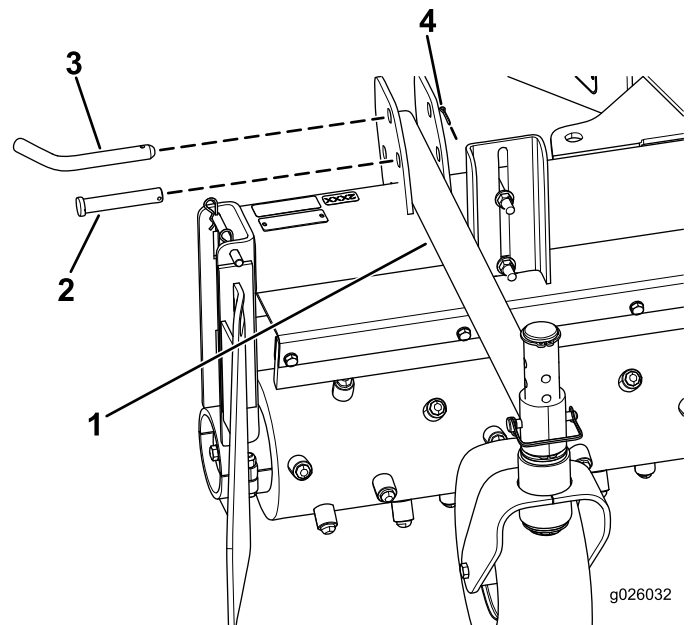


Figure 5

- | | |
|----------------------------------|------------------------------------|
| 1. Caster arm | 3. Hitch pin (5/8 x 3 inches) |
| 2. Clevis pin (5/8 x 3.5 inches) | 4. Hairpin cotter (0.094 x 1 inch) |

Starting the Power Rake

1. Start the traction unit engine.
2. Slowly lower the power rake to the ground.
3. Engage the hydraulic-control lever for auxiliary implements.
4. Move the traction unit forward or backward as desired.

Note: For the roller to operate effectively, rotate it in the opposite direction of the traction-unit track. The direction of the roller rotation is controlled by the traction unit hydraulic controls; refer to Figure 6 below.





Roller Rotation	Travel Direction
	
	

Figure 6

Setting the Barrier Gap

The normal gap between the roller and the barrier for average conditions is approximately 3.2 cm (1-1/4 inches).

The barrier gap should be the same all the way across.

Set the barrier gap as follows:

- To widen the barrier gap, loosen the 2 U-bolts (3/8 inch) that hold the barrier mount (Figure 7).

Note: A wider opening will allow more dirt and rock to pass through.

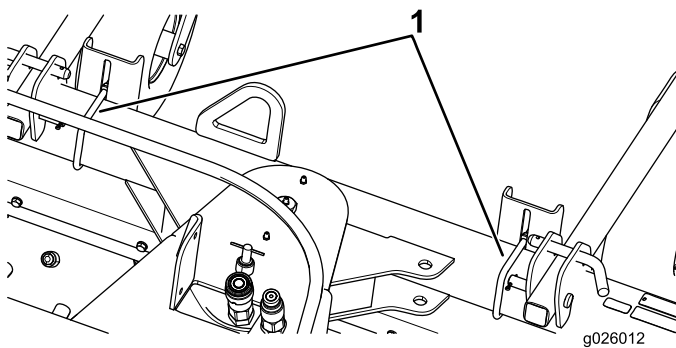


Figure 7

1. U bolts (3/8 inch)

- To narrow the barrier gap, tighten the 2 U-bolts (3/8 inch) that hold the barrier mount (Figure 7).

Important: Ensure that the roller does not hit the barrier, as the parts could be damaged.

Using the End Plates

The end plates contain the material in front of the roller, while the clean material passes between the roller and the barrier. With the end plates mounted in the working position and the rake straight (parallel with the traction unit track), the material can be moved, filling in the low spots.

You can mount the end plates to either the front or the back of the power rake, depending on the raking direction. When you move the end plates from front to back, you must move the left one to the right side and the right one to the left side.

To move the end plate, perform the following:

1. Remove the 2 hairpin cotters from the end-plate pin (Figure 8).

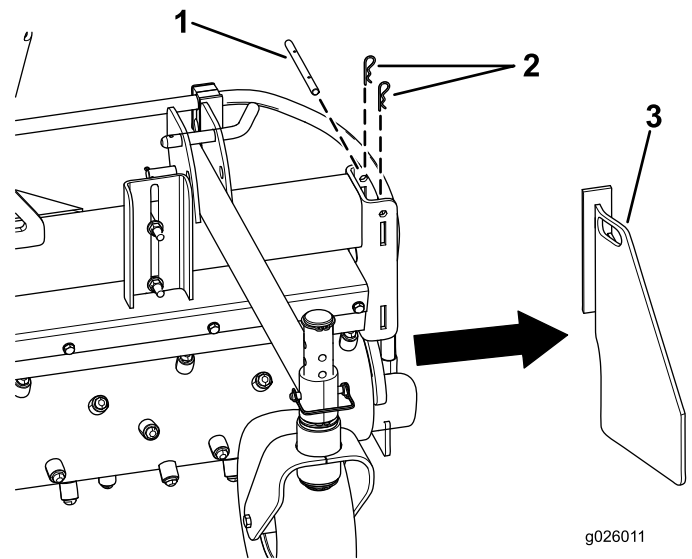


Figure 8

1. End-plate pin
2. Hairpin cotter
3. End plate

2. Remove the end-plate pin from the end plate (Figure 8).
3. Remove the end plate (Figure 8).

Angling the Roller

You can angle the roller 20° in either direction.

For windrowing, remove the angle-locking pin (Figure 9), slide the angle mount to a new set of holes, and insert the pin.

Important: Do not drop the power rake onto the ground with the roller turning. Sudden high-speed jolts multiply the stress to the drive line, and can cause damage.

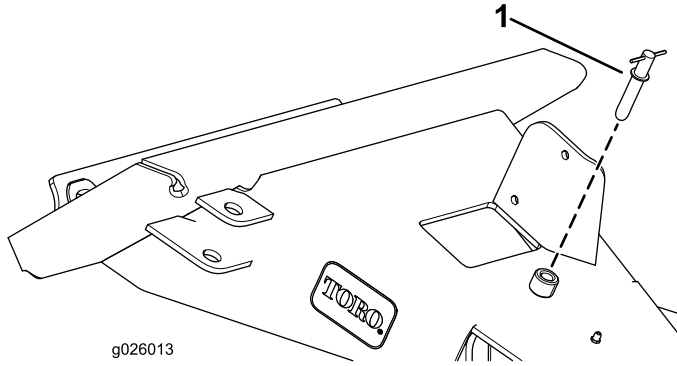


Figure 9

1. Angle-locking pin

Transporting the Power Rake

Transport the power rake by using the lift points shown in Figure 10.

Important: Lifting the power rake at other points can damage the machine.

Note: Lift the machine carefully with proper lifting accessories.

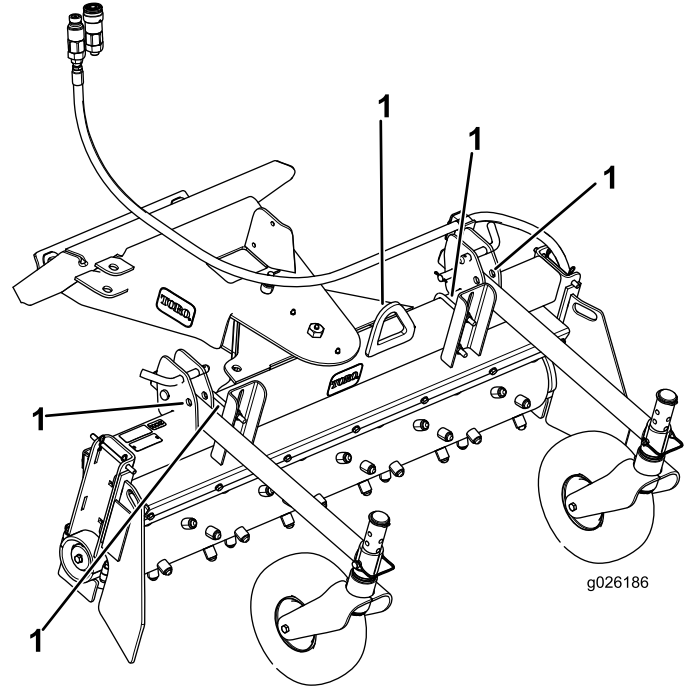


Figure 10

1. Lift point

Stopping the Power Rake

1. Stop the engine on the traction unit.
2. Lower the lift arms of the traction unit, and lower the power rake to the ground.
3. Turn off the engine, set the parking brake, and remove the key from the ignition of the traction unit.

Operating Tips

Operating the Power Rake

- Always begin power raking at the slowest ground speed possible. Increase the ground speed if conditions permit.
- Always use full throttle (maximum engine speed).
- If a rock or other obstruction gets into the teeth, stop the hydraulics and drive the traction unit forward until the obstruction is dislodged.
- The roller should be level with the ground. The power rake should also be level with the ground from front to back. To accomplish this, raise or lower the gauge wheels and use the traction unit tilt cylinder.
- To allow the roller to penetrate deeper into the ground, loosen the handle and raise the gauge wheels. To raise the roller, lower the gauge wheels.
- You can achieve further depth control by tilting the rake forward on its gauge wheels to raise the roller, or tilt the rake back to raise the gauge wheels, and allow the roller to penetrate more deeply.
- Check the air pressure in each tire regularly to maintain an even and consistent grade.
- To break up compacted soil, roll back the attachment plate to take the guide wheels off the ground, so that only the toothed roller is in contact with the ground. Control the ground speed to avoid stalling the toothed roller. Remove the end plates to allow material to move out of the way if you are only trying to break up the soil.
- To remove loose debris, tilt the traction unit attachment plate until the guide wheels control the depth of the toothed roller. You can angle the rake at this time for windrowing debris or you can set the rake straight with both end plates installed to collect debris. You can increase the traction unit speed when you do this.
- For finish grading, tilt the rake forward until the teeth of the toothed roller are barely touching the soil. You can increase the traction unit speed to collect the material from the high spots and leave it in the lower areas.
- To thatch grassy areas, tilt the traction unit attachment plate forward to support the rake on the front gauge wheels and the toothed roller raised so that the teeth are just grazing the surface. The travel speed should be slow.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
Before each use or daily	<ul style="list-style-type: none">• Check the tire pressure.
Every 40 hours	<ul style="list-style-type: none">• Grease all of the lubrication points.

Checking the Tire Pressure

Service Interval: Before each use or daily

Maintain the air pressure in the tires, as uneven tire pressure can cause uneven raking.

Check the tires when they are cold to get the most accurate pressure reading.

If the tire pressure is low, inflate the tire(s) to 345 kPa (50 psi).

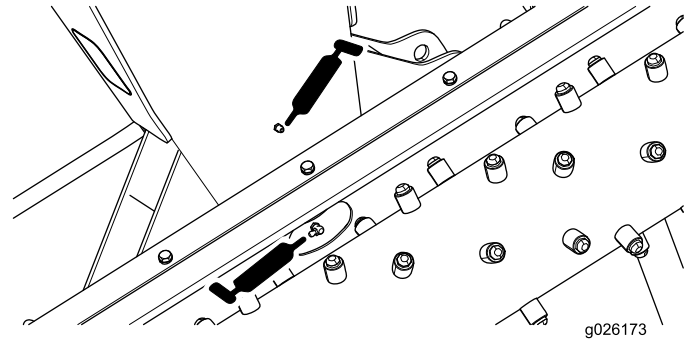


Figure 12

Greasing the Power Rake

Service Interval: Every 40 hours

Grease Type: No. 2 general purpose, lithium-base grease

1. Turn off the engine, set the parking brake, and remove the key from the ignition of the traction unit.
2. Place the power rake on a level surface.
3. Clean the grease fittings with a rag.

Note: Make sure to scrape any paint off the front of the fitting(s).

4. Apply the necessary amount of grease to the grease fittings (Figure 11 and Figure 12).

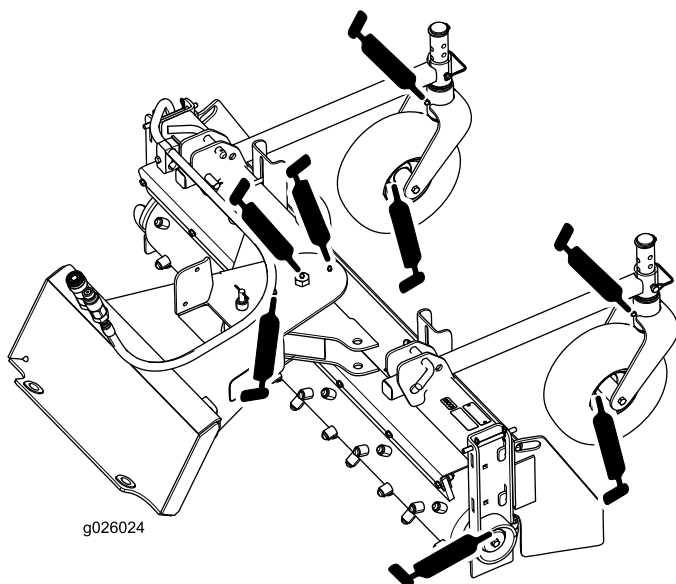


Figure 11

Storage

1. Turn off the engine, set the parking brake, and remove the key from the ignition.
2. Store the power rake on a hard, level surface.
3. Before long term storage, brush the dirt from the attachment.
4. Tighten any loose hydraulic connections, nuts, and capscrews.
5. Lubricate all of the grease fittings; refer to Greasing the Power Rake (page 10).
6. Seal the hydraulic system from any contaminants, and secure all of the hydraulic hoses off the ground to prevent damage.
7. Store the machine in a dry, protected place.
8. Paint any unpainted areas to avoid rust. Paint is available from your Authorized Toro Service Dealer.
9. Inflate the tires to the recommended tire pressure; refer to Checking the Tire Pressure (page 10).

Troubleshooting

Problem	Possible Cause	Corrective Action
The roller will not turn.	<ol style="list-style-type: none"> 1. The hydraulic valve on the loader is not engaged. 2. The relief-valve setting on the loader is not properly adjusted. 3. Worn or damaged hydraulic motor. 4. Insufficient oil in the system. 5. The hose ends are not completely engaged. 6. There is air in the hydraulic lines. 7. There is an obstruction in the hydraulic lines. 8. There is an obstruction between the roller and the barrier. 	<ol style="list-style-type: none"> 1. See the loader <i>Operator's Manual</i>. 2. Contact your Authorized Toro Service Dealer. 3. Repair or replace the hydraulic motor. 4. Service the loader hydraulic reservoir. 5. Check the hose couplings and engage properly. 6. Cycle the loader auxiliary system several time to remove air from the lines. 7. Replace the obstructed or damaged line. 8. Reverse the roller to clear the obstruction.
There are oil leaks.	<ol style="list-style-type: none"> 1. Worn or damaged seal. 2. Loose or damaged hoses. 3. Loose or damaged connections. 	<ol style="list-style-type: none"> 1. Replace the leaking seal. 2. Replace the damaged hoses and secure loose hoses. 3. Replace the damaged hose connections and tighten the loose fittings.

Notes:

Notes:

Declaration of Incorporation

The Toro Company, 8111 Lyndale Ave. South, Bloomington, MN, USA declares that the following unit(s) conform(s) to the directives listed, when installed in accordance with the accompanying instructions onto certain Toro models as indicated on the relevant Declarations of Conformity.

Model No.	Serial No.	Product Description	Invoice Description	General Description	Directive
22426	314000001 and Up	Direct Drive Power Box Rake	DIRECT DRIVE POWER BOX RAKE, CE	Power Box Rake	2006/42/EC

Relevant technical documentation has been compiled as required per Part B of Annex VII of 2006/42/EC.

We will undertake to transmit, in response to requests by national authorities, relevant information on this partly completed machinery. The method of transmission shall be electronic transmittal.

This machinery shall not be put into service until incorporated into approved Toro models as indicated on the associated Declaration of Conformity and in accordance with all instructions, whereby it can be declared in conformity with all relevant Directives.

Certified:



Joe Hager
Sr. Engineering Manager
8111 Lyndale Ave. South
Bloomington, MN 55420, USA
May 30, 2014

EU Technical Contact:

Peter Tetteroo
Toro Europe NV
B-2260 Oevel-Westerloo
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Tel. 0032 14 562960
Fax 0032 14 581911



Toro Compact Utility Equipment Warranty

A One-Year Limited Warranty

Compact Utility Equipment
(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
Pro Sneak Compact Utility Loaders, Trenchers, Stump Grinders, 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.

*Some engines used on Toro Products are warranted by the engine manufacturer.

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 the number below.
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:

SWS Customer Care Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196
Toll Free: 888-384-9940

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, belts, wipers, spark plugs, tires, filters, gaskets, wear plates, seals, O-rings, drive chains, clutches.
- 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, etc.
- Repairs necessary due to failure to follow recommended fuel procedure (consult *Operator's Manual* for more details)
 - Removing contaminants from the fuel system is not covered
 - Use of old fuel (more than one month old) or fuel which contains more than 10% ethanol or more than 15% MTBE
 - Failure to drain the fuel system prior to any period of non-use over one month
- 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 outside 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.

Australian Consumer Law: Australian customers will find details relating to the Australian Consumer Law either inside the box or at your local Toro Dealer.