Form No. 3367-393 Rev A

TORO®

Count on it.

Operator's Manual

11 and 14 Blade Cutting Units

Greensmaster® Flex 18 and Flex 21 Traction Units

Model No. 04202—Serial No. 311000001 and Up

Model No. 04206—Serial No. 311000001 and Up

Model No. 04207—Serial No. 311000001 and Up

Model No. 04208—Serial No. 311000001 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.

Introduction

This reel-blade lawnmower is mounted to a walk behind machine and is intended to be used by professional, hired operators in commercial applications. It is primarily designed for cutting grass on well-maintained lawns in parks, golf courses, sports fields, and on commercial grounds. It is not designed for cutting brush, mowing grass and other growth alongside highways, or for agricultural uses.

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.

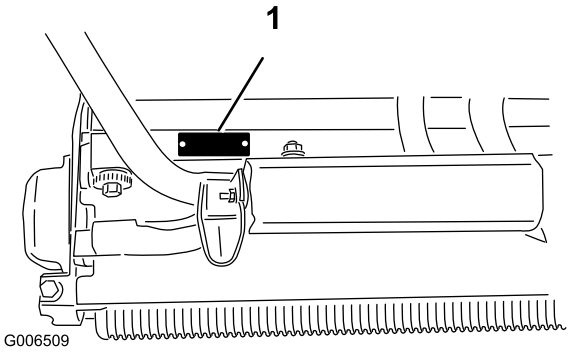


Figure 1

1. Location of the model and serial numbers

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

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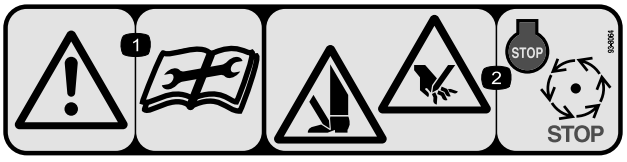
Safety

Hazard control and accident prevention are dependent upon the awareness, concern, and proper training of the personnel involved in the operation, transport, maintenance, and storage of the machine. Improper use or maintenance of the machine can result in injury or death. To reduce the potential for injury or death, comply with the following safety instructions.

- Read, understand, and follow all instructions in the traction unit and cutting unit operators manual's before operating the cutting unit.
- Never allow children to operate the traction unit or cutting units. Do not allow adults to operate traction unit or cutting units without proper instruction. Only trained operators who have read this manual should operate the traction unit or cutting units.
- Never operate the cutting units when under the influence of drugs or alcohol.
- 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.
- Keep all shields and safety devices in place. If a shield, safety device or decal is illegible or damaged, repair or replace it before operation is commenced. Also tighten any loose nuts, bolts, and screws to ensure cutting unit is in safe operating condition.
- Always wear substantial shoes. Do not operate cutting units while wearing sandals, tennis shoes, sneakers or shorts. Also, do not wear loose fitting clothing which could get caught in moving parts. Always wear long pants and substantial shoes. Wearing safety glasses, safety shoes and a helmet is advisable and required by some local ordinances and insurance regulations.
- Remove all debris or other objects that might be picked up and thrown by the cutting unit reel blades. Keep all bystanders away from the working area.
- If the cutting blades strike a solid object or the unit vibrates abnormally, stop and shut the engine off. Check cutting unit for damaged parts. Repair any damage before restarting and operating the cutting unit.
- Be sure cutting units are in safe operating condition by keeping nuts, bolts and screws tight.
- Perform only those maintenance instructions described in this manual. If major repairs are ever needed or assistance is desired, contact an Authorized Toro Distributor.
- To ensure optimum performance and safety, always purchase genuine Toro replacement parts and accessories to keep the Toro all TORO. **Never use "will-fit" replacement parts and accessories made by other manufacturers**. Look for the Toro logo to assure genuineness. Using unapproved replacement parts and accessories could void the warranty of The Toro Company.

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.



93-8064

1. Warning—read the instructions before servicing or performing maintenance.
2. Cutting hazard of foot or hand—stop the engine and wait for moving parts to stop.

Operation

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

Adjusting the Rear Roller

1. Adjust the rear roller brackets to the low or high position depending on desired height of cut range (Figure 3 and Figure 4).
   - Position the spacer above the side plate mounting flange (factory setting) when height of cut settings range from 1/16 to 1/4 inch (1.5 to 6.3 mm) (Figure 3).

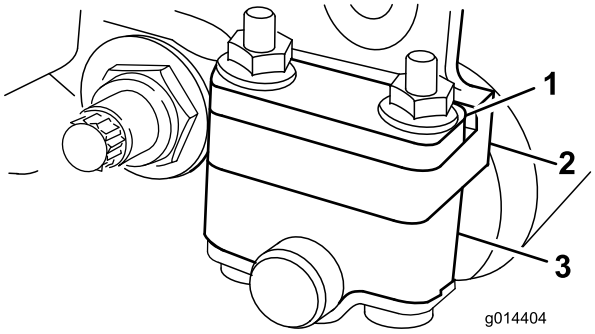


Figure 3

1. Spacer
2. Side plate mounting flange
3. Roller bracket

   - Position the spacer below the sideplate mounting flange when height of cut settings range from 1/8" to 1" (Figure 4).

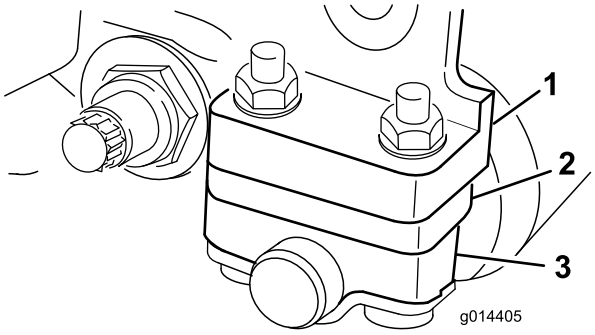


Figure 4

1. Sideplate mounting flange
2. Spacer
3. Roller bracket

2. To adjust rear roller proceed as follows:
   - Raise rear of cutting unit and place a block under bedknife.
   - Remove (2) nuts securing each roller bracket and spacer to each sideplate mounting flange.
   - Lower roller and screws from sideplate mounting flanges and spacers.
   - Place spacers onto screws on roller brackets.
   - Re-secure roller bracket and spacers to underside of sideplate mounting flanges with nuts previously removed.
3. Verify that the bedknife to reel contact is correct. Tip mower to expose front and rear rollers and bedknife.

   Note: The position of the rear roller to the reel is controlled by the machining tolerances of the assembled components and paralleling is not required. A limited amount of adjustment is possible by setting the cutting unit on a surface plate and loosening the sideplate mounting bolts (Figure 5). Adjust and re-tighten bolts.

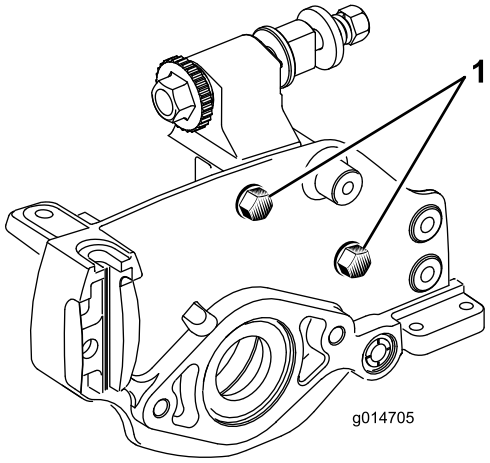


Figure 5

1. Sideplate mounting bolts

Important: Whenever the cutting unit has to be tipped to expose bedknife/reel, prop up rear of cutting unit to make sure nuts on back end of bedbar adjusting screws are not resting on work surface.

Adjusting the Bedknife to the Reel

Bedknife to reel adjustment is accomplished by loosening or tightening bedbar adjusting screws, located on top of mower.

1. Position machine on a flat, level work surface.
2. Make sure reel contact is removed by turning bedbar adjusting screws counterclockwise (Figure 6).

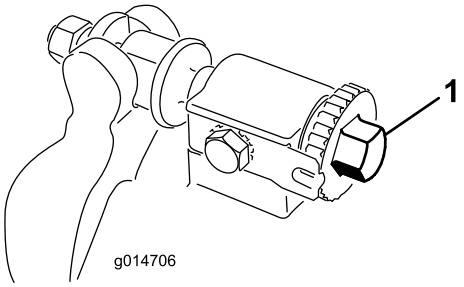


Figure 6

1. Bedbar adjusting screw

3. Tilt mower on back to expose bedknife and reel.

   Note: When tilting the cutting unit back, make sure the center of the cutting unit is blocked up so the bedbar adjuster screws are not supporting the cutting unit. Resting the cutting unit on the bedbar adjusting screws will give a false reel-to-bedknife contact when the cutting unit is lowered back to level.

4. At one end of reel, insert a long strip of newspaper between reel and bedknife (Figure 7). While slowly rotating reel forward, turn bedbar adjusting screw clockwise (on same end of reel) (Figure 6), one click at a time, until paper is pinched lightly, when inserted from the front, parallel to the bedknife. A slight drag will be noted as the paper is pulled.

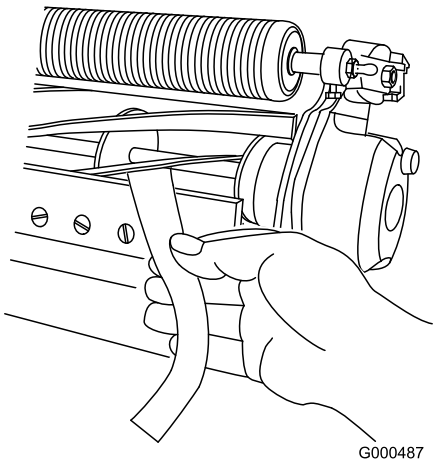


Figure 7

   Note: Each time adjusting screw is rotated one click clockwise, the bedknife moves .0007 inch (.017 mm) closer to reel. Do not overtighten the adjusting screws.

5. Check for light contact at other end of reel using paper and adjust as required.

6. After adjustment is accomplished, check to see if reel can pinch paper when inserted from the front and cut paper when inserted at a right angle to the bedknife (Figure 7). It should be possible to cut paper with minimum contact between the bedknife and the reel blades. Should excessive reel drag be evident it will be either necessary to backlap or regrind the cutting unit to achieve the sharp edges needed for precision cutting (see Toro reel sharpening manual).

Adjusting the Height of Cut

For heights of cut greater than .500 inch (12.7 mm), the high height of cut kit must be installed.

1. Loosen locknuts securing height-of-cut arms to cutting unit side plates (Figure 8).

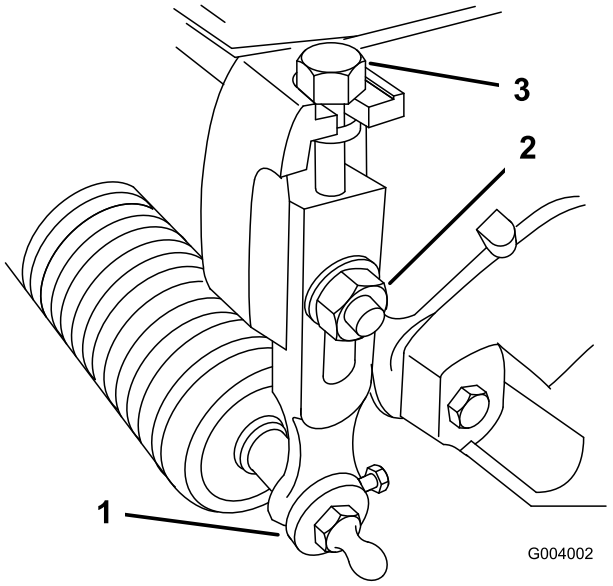


Figure 8

1. Rear roller bracket
2. Height-of-cut arm
3. Locknut
4. Adjusting screw

2. Loosen nut on gauge bar (Figure 9) and set adjusting screw to desired height-of-cut. Distance between bottom of screw head and face of bar is height-of-cut.

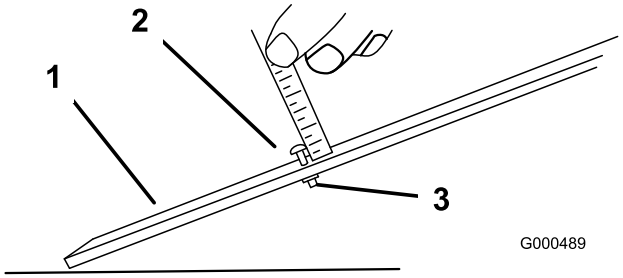


Figure 9

1. Gauge bar
2. Height adjusting screw
3. Nut

3. Hook screw head on cutting edge of bedknife and rest rear end of bar on rear roller (Figure 10).
4. Rotate adjusting screw until roller contacts front of gauge bar. Adjust both ends of roller until entire roller is parallel to the bedknife.

   Important: When set properly, the rear and front rollers will contact the gauge bar and the screw will be snug against the bedknife. This ensures that the height-of-cut is identical at both ends of the bedknife.

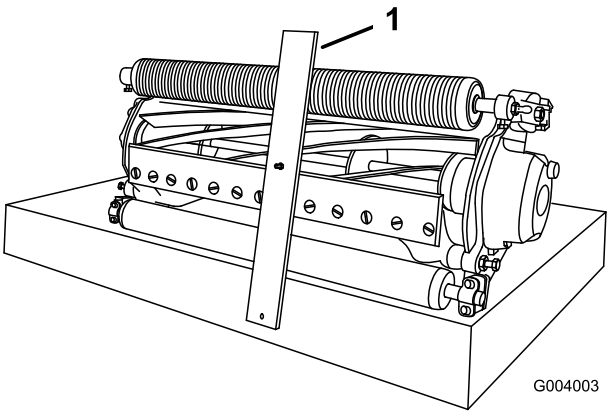


Figure 10

1. Gauge bar

5. Tighten nuts to secure adjustment. Do not overtighten nut. Tighten enough to remove play from washer.

   Note: Use the following chart to determine which bedknife is best suited for the desired height of cut.

Adjusting the Cut-Off Bar

Adjust cut-off bar to assure clippings are cleanly discharged from the reel area:

1. Loosen screws securing top bar (Figure 11) to cutting unit.

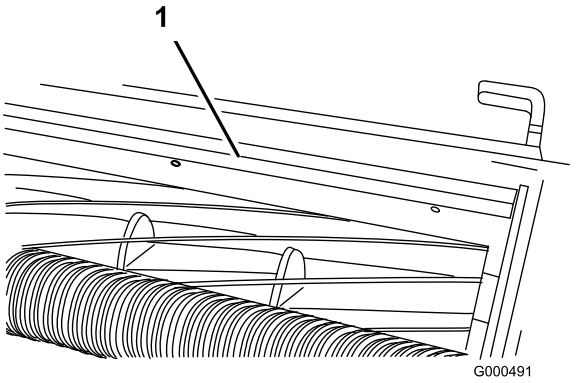


Figure 11

1. Cut-off bar

2. Insert .060 inch (1.5 mm) feeler gauge between top of reel and bar and tighten screws. Ensure bar and reel are equal distance apart across complete reel.

   Note: The bar is adjustable to compensate for changes in turf conditions. The bar should be adjusted closer to reel when turf is extremely dry. By contrast, adjust bar further away from reel when turf conditions are wet. The bar should be parallel to reel to ensure optimum performance and should be adjusted whenever reel is sharpened on a reel grinder.

Setting the Machine to Match Turf Conditions

Use the following table to set the machine to match turf conditions.

Flex Greensmower Cutting Unit Set-up Matrix				
Bedbars: Standard and Optional				
Part Number	**Description**	**Mower**	**Aggressiveness**	**Comments**
106-2468-01	Standard	Flex 21	Less	Standard
99-3794-03	Aggressive	Flex 21	More	
110-2282-01	Standard	Flex 18	Less	Standard
110-2281-03	Aggressive	Flex 18	More	
Bedknives: Standard and Optional				
Part Number	**Description**	**Mower**	**Height of Cut Range**	**Comments**
93-4262	Microcut	Flex 21	0.062 - 0.125 inches (1.57-3.1 mm)	Standard (11 Blade)
115–1880	EdgeMax Microcut	Flex 21	0.062 - 0.125 inches (1.57-3.1 mm)	Standard (14 Blade)
93-4263	Tournament	Flex 21	0.125 -0.250 inches (3.1-6 mm)	
115–1881	EdgeMax Tournament	Flex 21	0.125 -0.250 inches (3.1-6 mm)	Longer Wearing
93-4264	Low Cut	Flex 21	0.250 inches (6 mm) and up	
108-4303	Extended Microcut	Flex 21	0.062 - 0.125 inches (1.57-3.1 mm)	Less Aggressive
98-7261	Microcut	Flex 18	0.062 - 0.125 inches (1.57-3.1 mm)	Standard (11 Blade)
117–1530‘	EdgeMax Microcut	Flex 18	0.062 - 0.125 inches (1.57-3.1 mm)	Standard (14 Blade)
98-7260	Tournament	Flex 18	0.125 -0.250 inches (3.1-6 mm)	
117–1532‘	EdgeMax Tournament	Flex 18	0.125 -0.250 inches (3.1-6 mm)	Longer Wearing
110-2300	Extended Microcut	Flex 18	0.062 - 0.125 inches (1.57-3.1 mm)	Less Aggressive
110-2301	Low Cut	Flex 18	0.250 inches (6 mm) and up	
Rollers: Standard and Optional				
Part Number	**Description**	**Mower**	**Diameter/Material**	**Comments**
107-9037	Narrow Wiehle	Flex 21	2.5 inches (63.5 mm) Aluminum	Standard Front
107-9038	Wide Wiehle	Flex 21	2.5 inches (63.5 mm) Aluminum	More Penetration
107-9039	Full Roller	Flex 21	2.5 inches (63.5 mm) Steel	Least Penetration
107-9036	Rear Roller	Flex 21	2.0 inches (50.8 mm) Aluminum	Standard Rear
106-6945	Rear Roller	Flex 21	2.0 inches (50.8 mm) Steel	Steel Rear
93–9045	Anti Scalp Wiehle	Flex 21	2.5 inches (63.5 mm) Aluminum 1–7/8 inches (47.4 mm) longer	More edge support

110-2304	Narrow Wiehle	Flex 18	2.5 inches (63.5 mm) Aluminum	Standard Front
110-2305	Wide Wiehle	Flex 18	2.5 inches (63.5 mm) Aluminum	More Penetration
110-2306	Full Roller	Flex 18	2.5 (63.5 mm) inches Steel	Least Penetration
110-2303	Rear Roller	Flex 18	2.0 inches (50.8 mm) Aluminum	Standard Rear

Use the following table and Figure 12 to set the rate of clip.

Clip (Refer to Figure 12 for pulley locations.)				
Drive pulley number of teeth	**Driven pulley number of teeth**	**14 Blade Clip inch (mm)**	**11 Blade Clip inch (mm)**	**8 Blade Clip inch (mm)**
27 (standard)	22 (standard)	0.112 (2.9)	0.143 (3.6)	0.197 (5.0)
22	22	0.138 (3.5)	0.176 (4.5)	0.241 (6.1)
22	27	0.172 (4.4)	0.219 (5.6)	0.301 (7.7)

The reel is shipped with one 27 tooth and one 22 tooth pulley. To get a .16 inch (4 mm) clip, you must purchase a 22 tooth pulley. The clip can only be changed on the reel drive (Figure 12). Do not change the drive ratio on the gearbox pulleys.

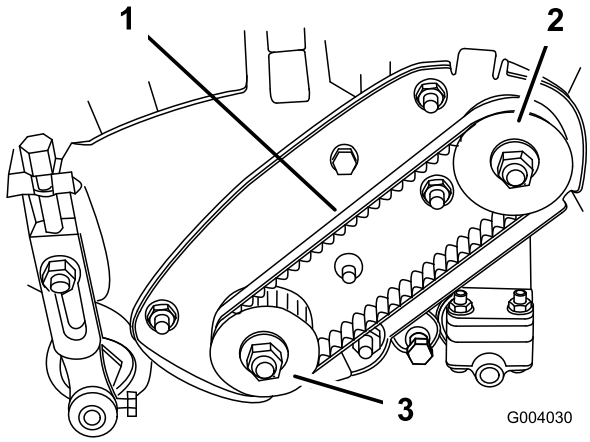


Figure 12

1. Reel drive belt
2. Drive pulley
3. Driven pulley

Maintenance

Separating the Cutting Unit from the Traction Unit

1. Place the mower on its drums on a level surface.
2. Lower kick stand. Insert a 1/4 inch (6 mm) diameter pin or equivalent into frame hole above kick stand mounting bolt (Figure 13).

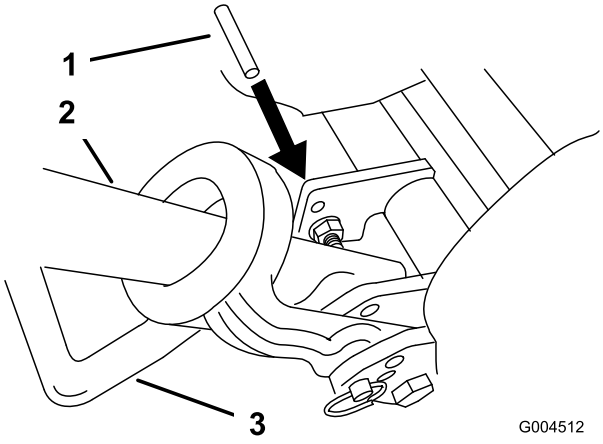


Figure 13

1. 1/4" Pin
2. Handle
3. Kick stand

3. Remove grass basket.
4. Remove (2) bolts securing cutting unit pivot arms to traction unit frame tube (Figure 14).

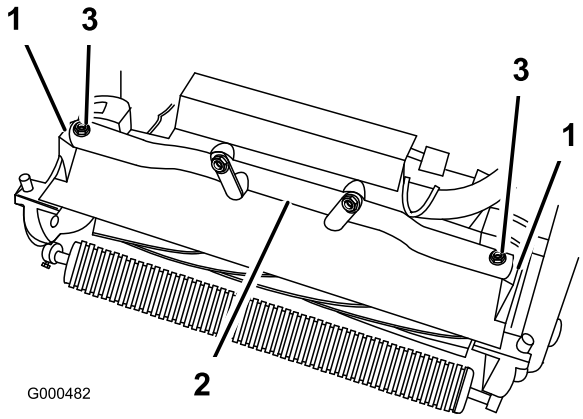


Figure 14

1. Cutting unit pivot arms
2. Traction unit frame tube
3. Bolts

5. Rotate pivot arms forward (Figure 14) and rest traction unit on restrained kickstand.
6. Pull cutting unit forward about 2 inch (51 mm) and then to the right to disengage the transmission coupling (Figure 15).

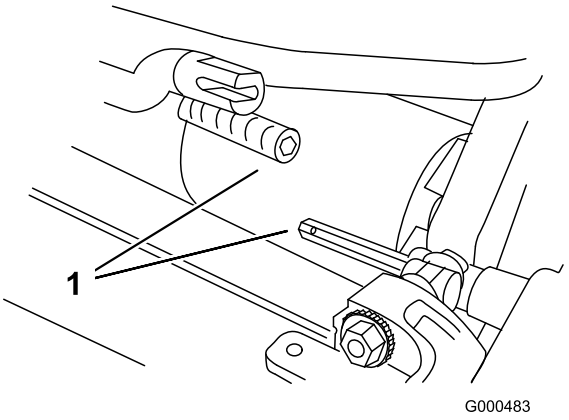


Figure 15

1. Transmission coupling

7. Reverse procedure to install cutting unit.

   Note: When tightening the pivot arm mounting fasteners, use an adjustable end wrench to hold the pivot arm parallel to the side plate (Figure 16).

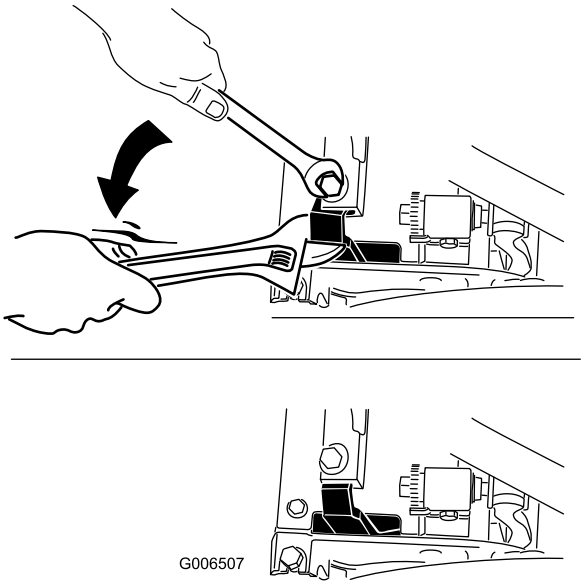


Figure 16

Servicing the Bedbar

Removing the Bedbar

1. Turn the bedbar adjuster screw, counterclockwise, to back the bedknife away from reel (Figure 17).

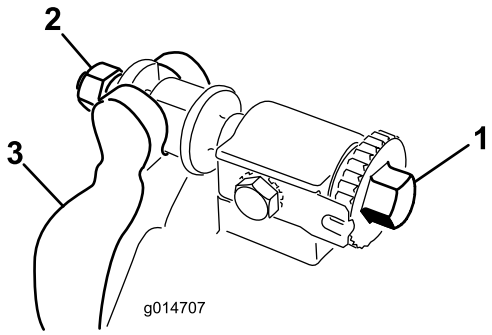


Figure 17

1. Bedbar adjusting screw
2. Spring tension nut
3. Bedbar
4. Jam nut
5. Bedbar bolt

2. Back out the spring tension nut, until the washer is no longer tensioned against the bedbar (Figure 18).
3. On each side of the machine, loosen the jam nut securing the bedbar bolt (Figure 18).

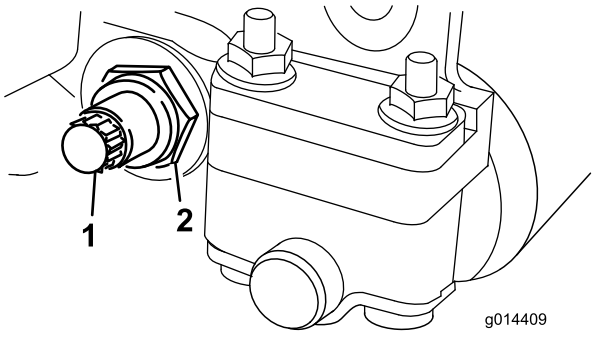


Figure 18

1. Bedbar bolt
2. Nut

4. Remove each bedbar bolt allowing bedbar to be pulled downward and removed from machine. Account for 2 nylon and 2 stamped steel washers on each end of bedbar (Figure 19).

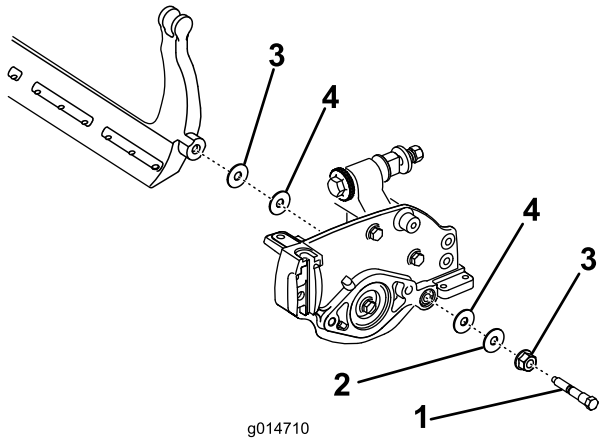


Figure 19

1. Bedbar bolt
2. Steel washer
3. Nut
4. Nylon washer

Assembling the Bedbar

1. Install bedbar, positioning mounting ears between washer and bedbar adjuster.
2. Secure bedbar to each side plate with bedbar bolts (jam nuts on bolts) and 8 washers. A nylon washer is to be positioned on each side of side plate boss. Place a steel washer outside each of the nylon washers. Torque bolts to 240-320 in.-lb (27-36 N-m).
3. Tighten the jam nut until the end play is removed from the outside thrust washers. Do not overtighten.

   Note: It is acceptable that the inside thrust washers on the cutting unit may remain loose.
4. Tighten spring tension nut until spring is collapsed, then back off 1/2 turn.
5. Adjust bedbar; refer to Adjusting the Bedknife to the Reel.

Backlapping the Reel

1. Remove plug from the reel drive cover on the left side of reel assembly (Figure 20)

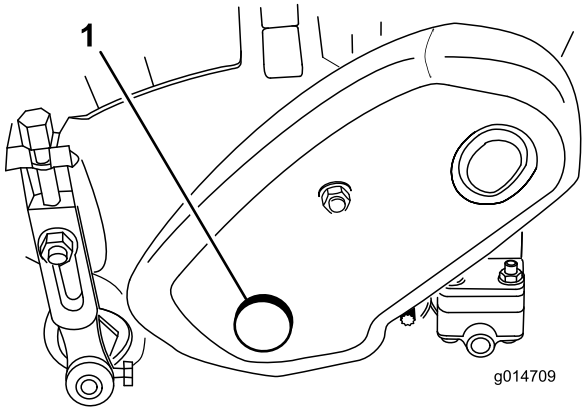


Figure 20

1. Reel drive cover plug

2. Insert a 18 mm socket onto hex flange nut on left end of reel shaft.
3. Backlap according to the procedure in the Toro Sharpening Reel and Rotary Mowers Manual, Form No. 80-300 PT.

⚠ DANGER

Contact with the reel or other moving parts can result in personal injury.

- **Stay away from the reel while backlapping.**
- **Never use a short handled paint brush for backlapping. Part No. 29-9100 Handle assembly complete or individual parts are available from your local Authorized Toro Distributor.**

Note: For a better cutting edge, run a file across the front face of the bedknife when the lapping operation is completed. This will remove any burrs or rough edges that may have built up on the cutting edge.

4. Reinstall plug when backlap operation is completed.

The Toro Total Coverage Guarantee

A 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 Commercial product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.
* Product equipped with an hour meter.

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your Operator's Manual. 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 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, or modified non-Toro branded accessories and products. A separate warranty may be provided by the manufacturer of these items.
- Product failures which result from failure to perform recommended maintenance and/or adjustments. Failure to properly maintain your Toro product per the Recommended Maintenance listed in the *Operator's Manual* can result in claims for warranty being denied.
- 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, brakes pads and linings, clutch linings, blades, reels, bed knives, tines, spark plugs, castor wheels, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, 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, fertilizers, water, or chemicals, etc.
- Normal noise, vibration, wear and tear, and deterioration.
- Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

Note Regarding Deep Cycle Battery Warranty:

Deep cycle batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Battery replacement may be required during the normal product warranty period at owner's expense.

Maintenance is at Owner's Expense

Engine tune-up, lubrication cleaning and polishing, replacement of Items and Conditions Not Covered filters, coolant, and completing Recommended Maintenance are some of the normal services Toro products require that are at the owner's expense.

General Conditions

Repair by an Authorized Toro Distributor or 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. Except for the Emissions warranty referenced below, if applicable, there is no other express 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.

Note regarding engine 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) and/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 Engine 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.