



**Count on it.**

# Operator's Manual

## Verticutter

### Reelmaster® 5010-H Series Cutting Unit with 5-inch or 7-inch Reel

Model No. 03618—Serial No. 315000001 and Up

Model No. 03619—Serial No. 315000001 and Up





## **⚠ 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 product complies with all relevant European directives. For details, please see the Declaration of Incorporation (DOI) at the back of this publication.

This manual uses 2 words to highlight information.

**Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

# Introduction

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

The verticutter kits are mounted on a ride-on machine and are intended to be used by professional, hired operators in commercial applications. It is primarily designed for verticutting grass on well-maintained lawns in parks, sports fields, and on commercial grounds.

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](http://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. Write the numbers in the space provided.

**Model No.** \_\_\_\_\_

**Serial No.** \_\_\_\_\_

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 1), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



**Figure 1**

1. Safety alert symbol



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# Safety

This machine has been designed in accordance with EN ISO 5395:2013.

**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 operators manual before operating the verticutters.
- Read, understand, and follow all instructions in this operators manual before operating the verticutters.
- Never allow children to operate the traction unit or verticutters. Do not allow adults to operate traction unit or verticutters without proper instruction. Only trained operators who have read this manual should operate the verticutters.
- Never operate the verticutters 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 verticutter is in safe operating condition.
- Do not operate verticutters 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, slip-resistant 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 verticutter 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 verticutter for damaged parts. Repair any damage before restarting and operating the verticutter.
- Lower the verticutters to the ground and remove key from ignition switch whenever machine is left unattended.
- Be sure verticutters are in safe operating condition by keeping nuts, bolts and screws tight.
- Remove key from ignition switch to prevent accidental starting of the engine when servicing, adjusting or storing the machine.



- Perform only those maintenance procedures described in this manual. If major repairs are ever needed or assistance is desired, contact an Authorized Toro Distributor.
- To best protect your investment and maintain optimal performance of your Toro equipment, count on Toro

genuine parts. When it comes to reliability, Toro delivers replacement parts designed to the exact engineering specifications of our equipment. For peace of mind, insist on Toro genuine parts.

## 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.



93-6688

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



# Installation

## Loose Parts

Use the chart below to verify that all parts have been shipped.

Procedure	Description	Qty.	Use
<b>1</b>	Verticutter	1	Inspect the verticutter.
<b>2</b>	Transport roller assembly Cotter pin	2 2	Install the transport rollers.
<b>3</b>	O-ring Straight grease fitting	1 1	Install the O-ring and the grease fitting.
<b>4</b>	Shoulder bolt	5	Install the shoulder bolt (RM5010–Hybrid only)
<b>5</b>	End-weight kit (sold separately)	1	Install the end-weight kit (Model 03618 only).
<b>6</b>	No parts required	–	Adjust the blade depth.
<b>7</b>	No parts required	–	Adjust the rear grass shield.
<b>8</b>	No parts required	–	Adjust the roller scrapers.
<b>9</b>	No parts required	–	Adjust the transport rollers.
<b>10</b>	No parts required	–	Mount the verticutter reel.

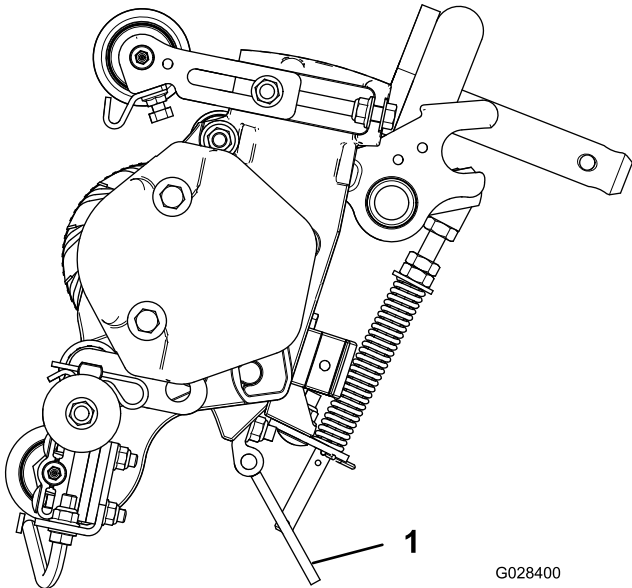
## Media and Additional Parts

Description	Qty.	Use
Parts Catalog	1	Review the material and save it in an appropriate place.
Operator's Manual	1	



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

**Note:** Whenever the verticutter has to be tipped to expose the verticutter blades, use the kickstand (supplied with traction unit); refer to [Figure 2](#).



**Figure 2**

1. Kickstand

# 1

## Inspecting the Verticutter

**Parts needed for this procedure:**

1	Verticutter
---	-------------

### Procedure

After the verticutter is removed from the box, inspect the following:

1. Check each end of the reel for grease. Grease should be visibly evident in the internal splines of the reel shaft.
2. Ensure that all nuts and bolts are securely tightened.
3. Make sure that the carrier frame suspension operates freely and does not bind when moved back and forth.

# 2

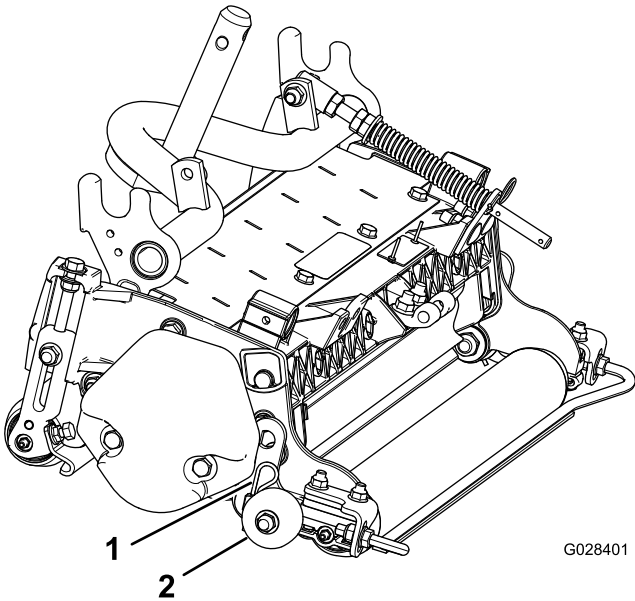
## Installing the Transport Rollers

**Parts needed for this procedure:**

2	Transport roller assembly
2	Cotter pin

### Procedure

Secure a transport roller bracket to each side plate pin with a cotter pin ([Figure 3](#)).



**Figure 3**

1. Cotter pin                      2. Transport roller assembly

**Note:** The roller should be positioned to the rear of the verticutter.



# 3

## Installing the O-ring and the Grease Fitting

### Parts needed for this procedure:

1	O-ring
1	Straight grease fitting

### Procedure

The grease fitting must be installed on the reel motor side of the verticutter. Use the following diagram to determine the position of each reel motor (Figure 4).

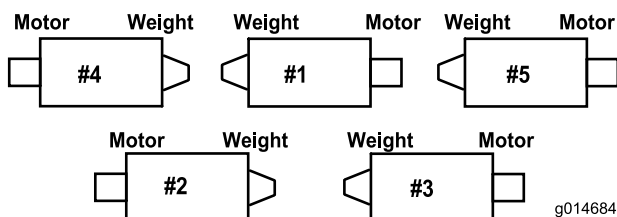


Figure 4

1. Remove and discard the set screw on the reel-motor side-plate (Figure 5).

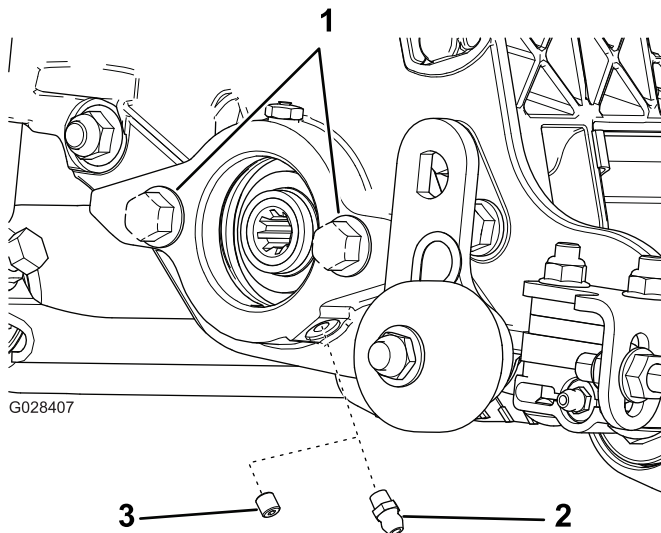


Figure 5

1. Capscrews
2. Straight grease fitting (install)
3. Set screw (remove and discard)

2. Install the straight grease fitting (Figure 5).
3. If there are no bolts on the reel-motor side-plate, install them (Figure 5).

4. Install the O-ring on the reel motor (Figure 6).

**Note:** The electric motor is shown; this step also applies to the hydraulic motor.

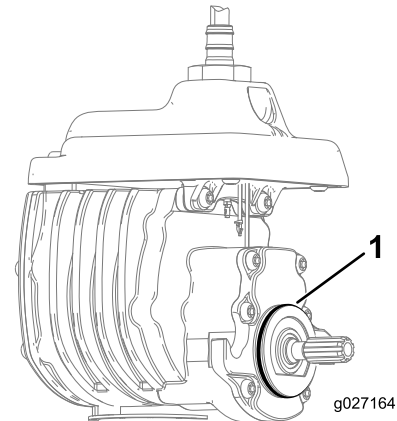


Figure 6

1. O-ring

# 4

## Installing the Shoulder Bolt (RM5010-Hybrid only)

### Parts needed for this procedure:

5	Shoulder bolt
---	---------------

### Procedure

For verticutters being mounted on a Reelmaster 5010-H, located on the reel-motor side-plate (Figure 7), must be replaced with the new shoulder bolt or the electric reel will contact the existing bolt.

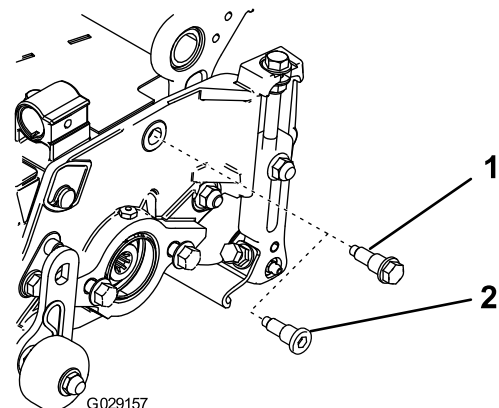


Figure 7

1. Old bolt
2. New shoulder bolt



# 5

## Installing the End-Weight Kit (Model 03618 only)

### Parts needed for this procedure:

1	End-weight kit (sold separately)
---	----------------------------------

### Procedure

Buy and install the end weight kit appropriate for the configuration of your machine (Figure 8).

- Weight Kit Model 03411 for **electric** reel motors
- Weight Kit Model 03412 for **hydraulic** reel motors

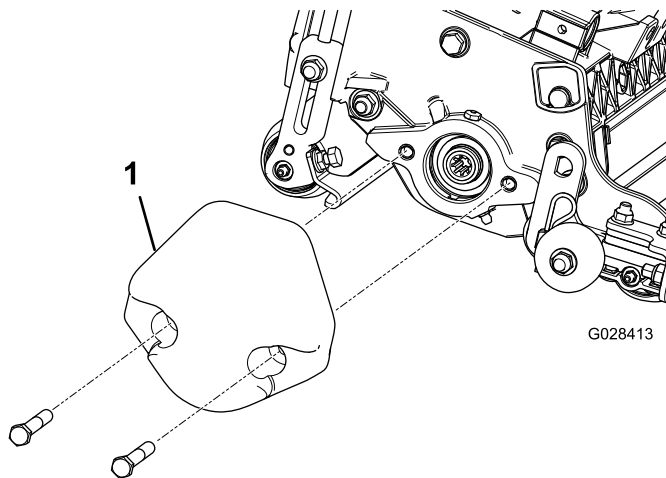


Figure 8

1. End weight (large weight shown)

The verticutters can be installed at any of the 5 locations on the traction unit. Figure 4 shows the orientation of the drive motor for each of the locations. For any of the locations requiring the motor to be mounted on the right end of the verticutter, install a counterweight on the left end of the verticutter. For the locations requiring the motor to be mounted on the left end, install a counterweight on the right end of the verticutter.

**Note:** For Model 03619, counterweights are shipped installed to the right end of the verticutters. The bolts on the left end are to be used for securing the motor.

# 6

## Adjusting the Blade Depth

### No Parts Required

### Procedure

**Note:** The maximum recommended blade penetration depths are as follows:

- Model 03618 is 3 mm (1/8 inch).
  - Model 03619 is 6 mm (1/4 inch).
1. Place the verticutter reel on a level surface.
  2. Place 2 gauge bars, which have the desired depth of blade penetration below the ground, under the front and rear rollers of the verticutter reel on each end of the reel (Figure 9).

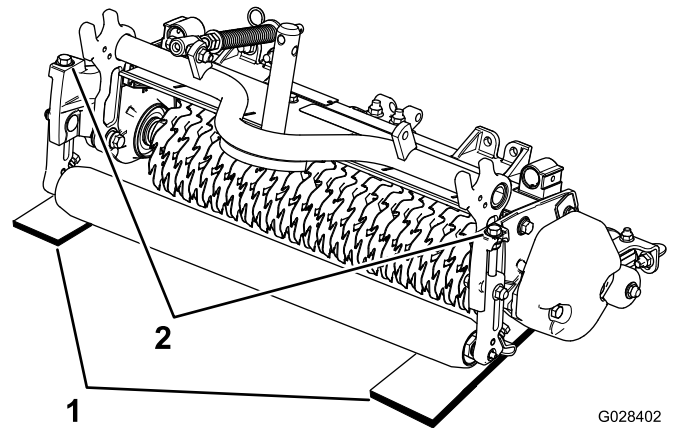


Figure 9

1. Gauge bars
2. Adjusting bolts

**Note:** The verticutter blades must not touch the gauge bars.

3. Turn the adjusting bolt on each height-of-cut bracket (Figure 9) so that the reel blades come in contact with the level surface on both ends.

**Note:** As the verticutter blades wear, the diameter of the reel will decrease and the depth setting will change. Check the depth setting periodically to ensure that the desired setting is achieved.



# 7

## Adjusting the Rear Grass Shield

### No Parts Required

#### Procedure

**Note:** When operating in turf conditions where much debris or unusually heavy thatch is encountered, open the rear discharge shield to help allow the debris to discharge from the reel.

1. Loosen the bolts on the pivot of the grass shield (Figure 10).

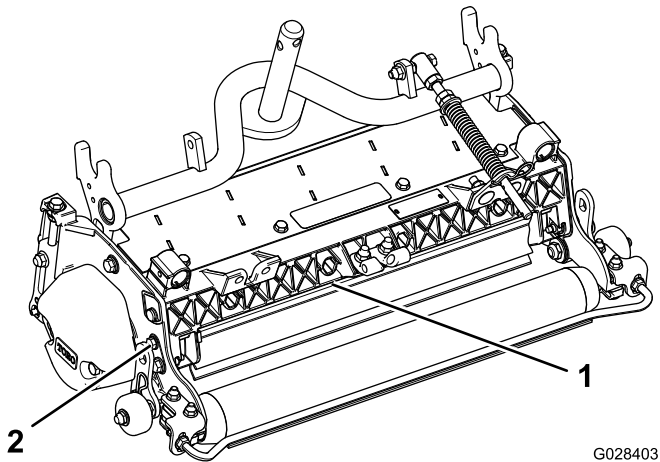


Figure 10

1. Rear grass shield
2. Pivot bolt

2. Rotate the grass shield to the desired setting, and tighten the bolts (Figure 10).

#### CAUTION

Do not open the rear shield so that it is higher than level to ground.

Thrown debris could cause personal injury.

# 8

## Adjusting the Roller Scrapers

### No Parts Required

#### Procedure

1. Loosen the flange nuts that secure the roller scrapers (Figure 11).

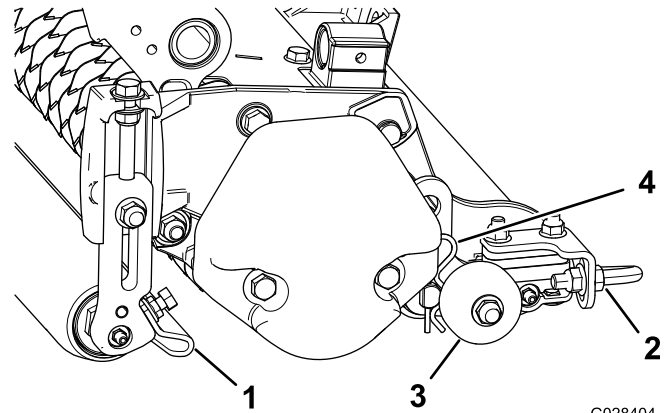


Figure 11

1. Front roller scraper
2. Rear roller scraper
3. Transport roller
4. Cotter pin

2. Move the scraper rods in or out to attain 0.0 to 0.75 mm (0.0 to 0.03 inch) clearance between the scraper and roller.
3. Ensure that the scraper rod is parallel to the roller and to the level surface.
4. Tighten the flange nuts to lock the adjustment.

# 9

## Adjusting the Transport Rollers

### No Parts Required

#### Procedure

Before the verticutters are lowered to the shop floor or removed from the traction unit, lower the transport rollers (Figure 11) to protect the blades from hard surface contact.

1. Remove the cotter pin that secures the transport roller bracket to the side plate pin.
2. Position the transport roller as follows:



- Lower the roller bracket before the verticutter is lowered to the shop floor.
  - Raise the roller bracket after the verticutter is raised to the operating position.
3. Secure the transport roller bracket to the side plate pin with the cotter pin.
  4. Repeat the procedure on the opposite end of the verticutter.

# 10

## Mounting the Verticutter Reel

### No Parts Required

### Procedure

Verticutter reels are mounted to traction unit the same way cutting units are. Refer to *Traction Unit Operator's Manual* for mounting instructions.

Install the reel motor and grease the side plate until excess grease oozes out of the relief valve ([Figure 12](#)).

## Product Overview

### Specifications

Model	Net weight
03618	With no end weight: 49.4 kg (109 lb)
	With small end weight (hydraulic motor): 52.6 kg (116 lb)
	With large end weight (electric motor): 55.8 kg (123 lb)
03619	59.9 kg (132 lb)



# Operation

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

## Training Period

Before operating the verticutter reels, evaluate the performance of the reel at the desired setting. Operate in a clear, unused area to determine if the desired results will be achieved. Adjust as desired.

## Operating Tips

1. Operate the traction unit at full throttle, full reel speed (setting 9) and at the desired traction speed.
2. The maximum recommended blade penetration depths are as follows:
  - Model 03618 is 3 mm (1/8 inch).
  - Model 03619 is 6 mm (1/4 inch).
3. Power requirements to operate the verticutter reels will vary with turf and soil conditions. Travel speed may need to be reduced in some conditions.
4. When operating in turf conditions where much debris is encountered, or unusually heavy thatch, open the front and rear discharge shields to help allow the debris to discharge from the reel.

### **CAUTION**

**Thrown debris could cause personal injury.**

**Do not open the rear shield so that it is higher than level to the ground.**



# Maintenance

## Lubricating the Verticutter

Each verticutter has 5 grease fittings (Figure 12) that must be lubricated weekly with #2 general-purpose, lithium-based grease.

The lubrication points are the front roller (2), the rear roller (2), and the reel motor splines (1).

**Important:** Lubricating the cutting units immediately after washing helps purge water out of the bearings and increases bearing life.

1. Wipe each grease fitting with a clean rag.
2. Apply grease until you see clean grease coming out of the roller seals and the bearing relief valve (Figure 12).

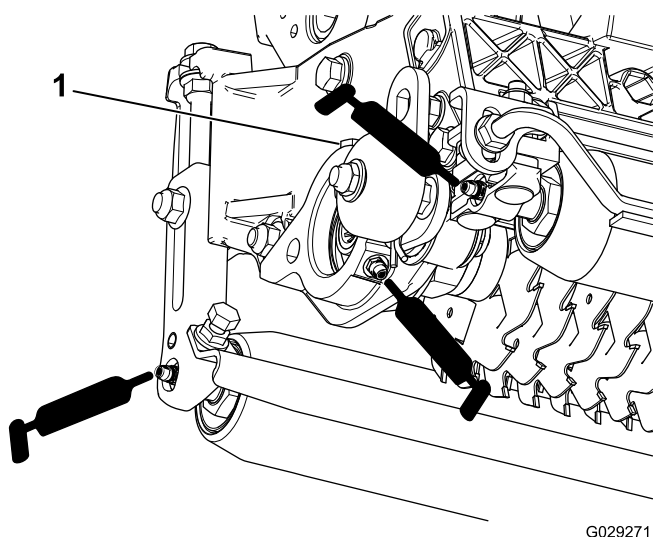


Figure 12

1. Relief valve

3. Wipe any excess grease away.

## Removing the Verticutter Blades from the Shaft

1. Secure the end of the verticutter shaft, which has only one washer and nut, in a vise.
2. On other end of shaft, rotate the nut counter-clockwise and remove the nut.

### ⚠ CAUTION

The blades are extremely sharp and may have burrs that will cut your hands.

Use caution when removing the blades from the shaft.

3. Remove the small spacer, the washer, the blades, and the large spacers. Clean and lubricate the square shaft with a light coating of grease to simplify the assembly (Figure 13).

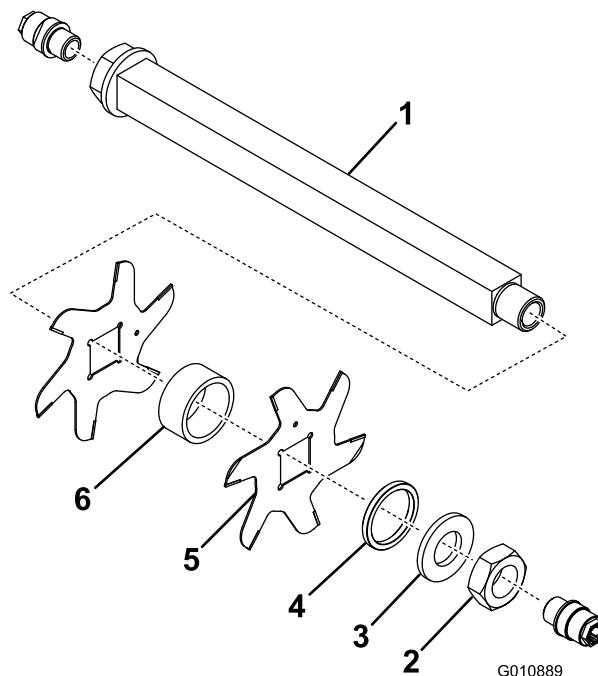


Figure 13

- |           |  |
|-----------|--|
| 1. Shaft  | 4. Small spacer  |
| 2. Nut    | 5. Blade (25 for model 03618; 16 for model 03619)        |
| 3. Washer | 6. Large spacer (24 for model 03618; 15 for model 03619) |

**Important:** Do not invert the verticutter reel blades. The order of disassembly is extremely important. Do not invert the verticutter reel blades when disassembling or reverse the order when assembling them. Note the index hole in each verticutter blade. The index hole is provided for assembly in order to obtain the proper helix for the verticutter reel.

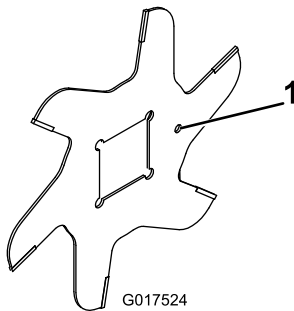


# Installing the Verticutter Blades

1. Assemble a blade (Figure 14).
2. Assemble a large spacer.
3. Do not invert the reel blades when assembling them on the reel shaft.

**Note:** If the blades are inverted, the blades that are in use, (rounded) will be mixed with the sharp ends of the blades which were not in use. This will cause unsatisfactory performance in the verticutter reel unit. Attention should always be taken when disassembling the verticutter blades from reel.

4. Install the next blade clockwise so that the index reference hole (Figure 14) is not aligned with the first blade hole by one flat of the shaft.



**Figure 14**

1. Index reference hole
- 

5. Continue to install spacers and blades in this manner until the full complement of blades have been installed.

**Note:** When properly assembled, the blades will be staggered in such a manner as to appear like a helix.

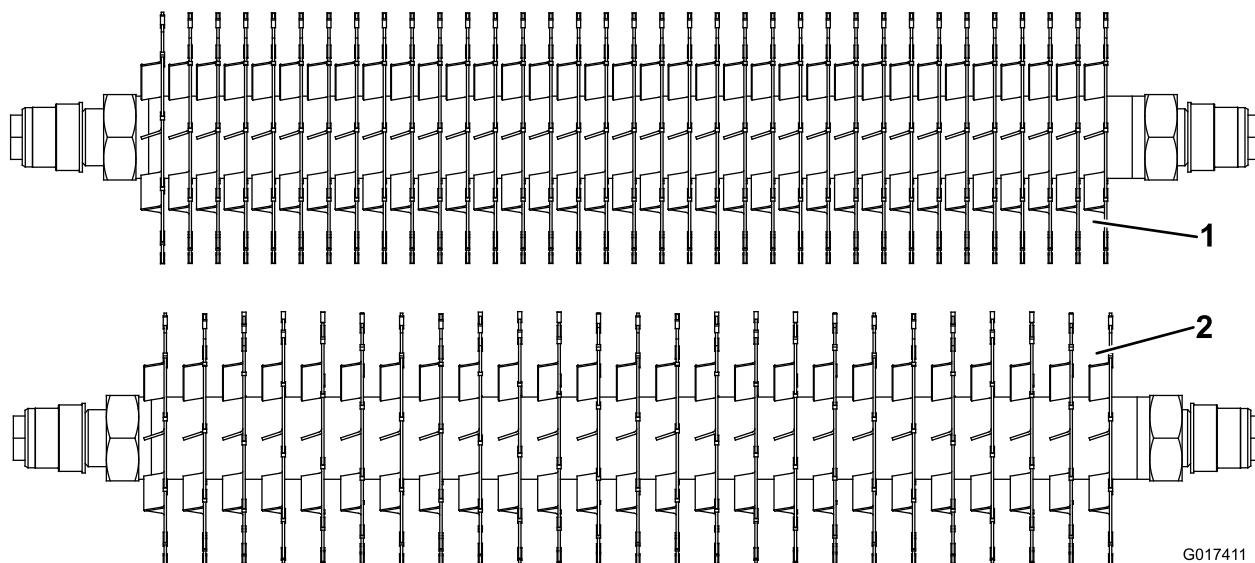
6. Install the small spacer to the shaft.
7. Apply Blue Loctite 242 to the nut. Install the nut onto the shaft (machined side of the nut toward the spacer), and tighten it to 109 to 135 N-m (80 to 100 ft-lb).



# Optional Blade Spacing

## 0.50-Inch Blade Spacing for Model 03618

To change the configuration of the verticutter from the standard 0.75-inch spacing to the 0.50-inch spacing requires an additional 34 spacers, part no. 17-1580 and an additional 10 carbide blades, part no. 106-6355, or an additional 10 regular blades and part no. 17-1590 ([Figure 15](#)).



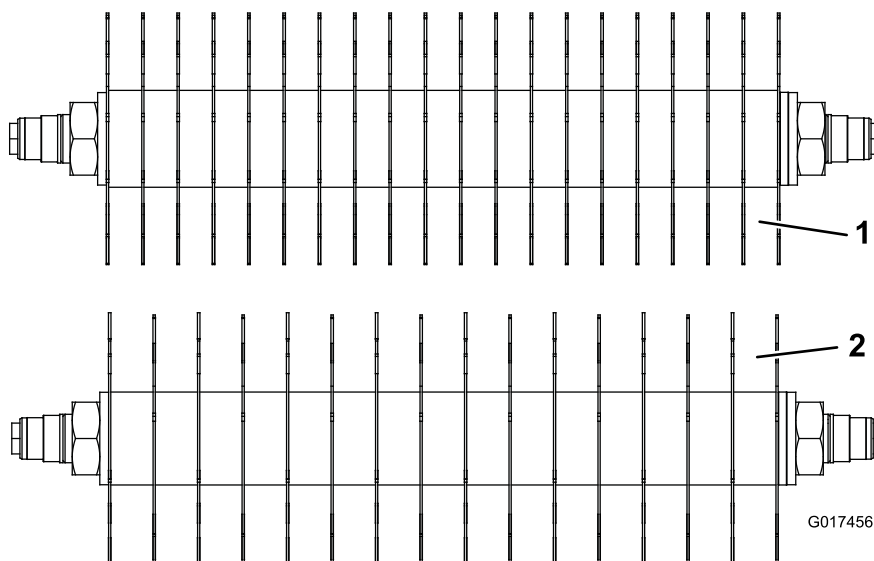
**Figure 15**

1. 0.50-inch spacing

2. 0.75-inch spacing

## 1.00-Inch Blade Spacing for Model 03619

To change the configuration of the verticutter from the standard 1.25-inch spacing to the 1.00-inch spacing requires 19 new spacers, part no. 93-3092 and an additional 4 carbide blades, part no. 106-8625, or an additional 4 regular blades and part no. 93-3038-03 ([Figure 16](#)).



**Figure 16**

1. 1.00-inch spacing

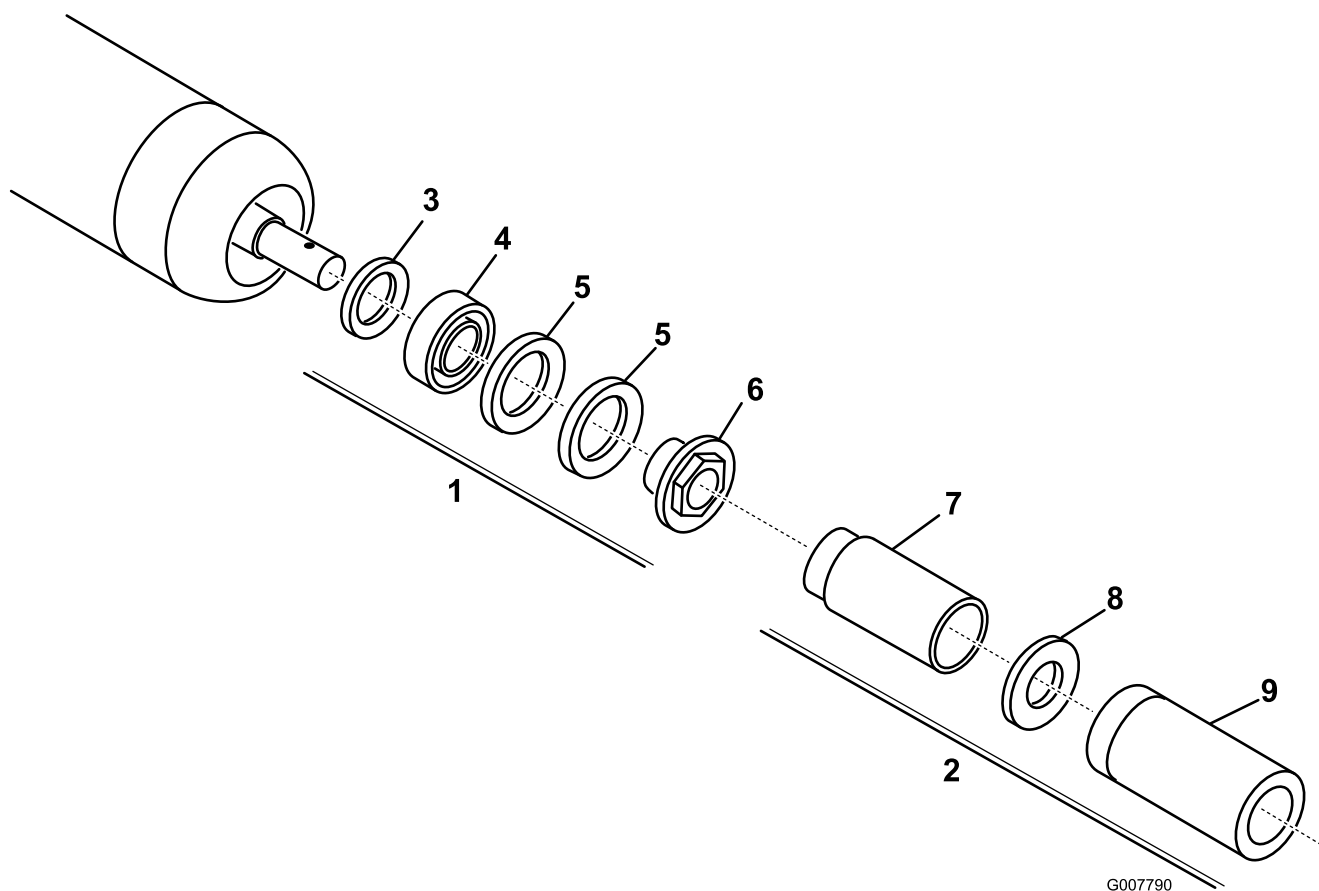
2. 1.25-inch spacing



# Servicing the Roller

A Roller Rebuild Kit, Part No. 114-5430 and a Roller Rebuild Tool Kit, Part No. 115-0803 (Figure 17) are available for servicing the roller. The Roller Rebuild Kit includes all the

bearings, bearing nuts, inner seals and outer seals to rebuild a roller. The Roller Rebuild Tool Kit includes all the tools and the installation instructions required to rebuild a roller with the roller rebuild kit. Refer to your parts catalog or contact your Authorized Toro Distributor for assistance.



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**Figure 17**

- |   |                            |
|---|----------------------------|
| 1. Rebuild kit (Part No. 114-5430)      | 6. Bearing nut             |
| 2. Rebuild tool kit (Part No. 115-0803) | 7. Inner seal tool         |
| 3. Inner seal                           | 8. Washer                  |
| 4. Bearing                              | 9. Bearing/outer seal tool |
| 5. Outer seal                           |                            |



**Notes:**



**Notes:**



# Declaration of Incorporation

Model No.	Serial No.	Product Description	Invoice Description	General Description	Directive
03618	315000001 and Up	Verticutter	22IN 5IN VERTICUTTER [5010 HYBRID]	Verticutter	2006/42/EC
03619	315000001 and Up	Verticutter	22IN 7IN VERTICUTTER [5010 HYBRID]	Verticutter	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:



David Klis  
Sr. Engineering Manager  
8111 Lyndale Ave. South  
Bloomington, MN 55420, USA  
December 11, 2014

EU Technical Contact:

Peter Tetteroo  
Toro Europe NV  
B-2260 Oevel-Westerloo  
Belgium

Tel. 0032 14 562960  
Fax 0032 14 581911



## International Distributor List

Distributor:	Country:	Phone Number:	Distributor:	Country:	Phone Number:
Agrolanc Kft	Hungary	36 27 539 640	Maquiver S.A.	Colombia	57 1 236 4079
Balama Prima Engineering Equip.	Hong Kong	852 2155 2163	Maruyama Mfg. Co. Inc.	Japan	81 3 3252 2285
B-Ray Corporation	Korea	82 32 551 2076	Mountfield a.s.	Czech Republic	420 255 704 220
Casco Sales Company	Puerto Rico	787 788 8383	Mountfield a.s.	Slovakia	420 255 704 220
Ceres S.A.	Costa Rica	506 239 1138	Munditol S.A.	Argentina	54 11 4 821 9999
CSSC Turf Equipment (pvt) Ltd.	Sri Lanka	94 11 2746100	Norma Garden	Russia	7 495 411 61 20
Cyril Johnston & Co.	Northern Ireland	44 2890 813 121	Oslinger Turf Equipment SA	Ecuador	593 4 239 6970
Cyril Johnston & Co.	Republic of Ireland	44 2890 813 121	Oy Hako Ground and Garden Ab	Finland	358 987 00733
Equiver	Mexico	52 55 539 95444	Parkland Products Ltd.	New Zealand	64 3 34 93760
Femco S.A.	Guatemala	502 442 3277	Perfetto	Poland	48 61 8 208 416
ForGarder OU	Estonia	372 384 6060	Pratoverde SRL.	Italy	39 049 9128 128
G.Y.K. Company Ltd.	Japan	81 726 325 861	Prochaska & Cie	Austria	43 1 278 5100
Geomechaniki of Athens	Greece	30 10 935 0054	RT Cohen 2004 Ltd.	Israel	972 986 17979
Golf international Turizm	Turkey	90 216 336 5993	Riversa	Spain	34 9 52 83 7500
Guandong Golden Star	China	86 20 876 51338	Lely Turfcare	Denmark	45 66 109 200
Hako Ground and Garden	Sweden	46 35 10 0000	Solvart S.A.S.	France	33 1 30 81 77 00
Hako Ground and Garden	Norway	47 22 90 7760	Spypros Stavrinides Limited	Cyprus	357 22 434131
Hayter Limited (U.K.)	United Kingdom	44 1279 723 444	Surge Systems India Limited	India	91 1 292299901
Hydroturf Int. Co Dubai	United Arab Emirates	97 14 347 9479	T-Markt Logistics Ltd.	Hungary	36 26 525 500
Hydroturf Egypt LLC	Egypt	202 519 4308	Toro Australia	Australia	61 3 9580 7355
Irrimac	Portugal	351 21 238 8260	Toro Europe NV	Belgium	32 14 562 960
Irrigation Products Int'l Pvt Ltd.	India	0091 44 2449 4387	Valtech	Morocco	212 5 3766 3636
Jean Heybroek b.v.	Netherlands	31 30 639 4611	Victus Emak	Poland	48 61 823 8369

### European Privacy Notice

#### The Information Toro Collects

Toro Warranty Company (Toro) respects your privacy. In order to process your warranty claim and contact you in the event of a product recall, we ask you to share certain personal information with us, either directly or through your local Toro company or dealer.

The Toro warranty system is hosted on servers located within the United States where privacy law may not provide the same protection as applies in your country.

BY SHARING YOUR PERSONAL INFORMATION WITH US, YOU ARE CONSENTING TO THE PROCESSING OF YOUR PERSONAL INFORMATION AS DESCRIBED IN THIS PRIVACY NOTICE.

#### The Way Toro Uses Information

Toro may use your personal information to process warranty claims, to contact you in the event of a product recall and for any other purpose which we tell you about. Toro may share your information with Toro's affiliates, dealers or other business partners in connection with any of these activities. We will not sell your personal information to any other company. We reserve the right to disclose personal information in order to comply with applicable laws and with requests by the appropriate authorities, to operate our systems properly or for our own protection or that of other users.

#### Retention of your Personal Information

We will keep your personal information as long as we need it for the purposes for which it was originally collected or for other legitimate purposes (such as regulatory compliance), or as required by applicable law.

#### Toro's Commitment to Security of Your Personal Information

We take reasonable precautions in order to protect the security of your personal information. We also take steps to maintain the accuracy and current status of personal information.

#### Access and Correction of your Personal Information

If you would like to review or correct your personal information, please contact us by email at [legal@toro.com](mailto:legal@toro.com).

### Australian Consumer Law

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





## Toro General Commercial Product Warranty

### A Two-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 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:

Toro Commercial Products Service Department  
Toro Warranty Company  
8111 Lyndale Avenue South  
Bloomington, MN 55420-1196  
  
952-888-8801 or 800-952-2740  
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, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Conditions considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals, etc.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.

- 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.

#### Deep Cycle and Lithium-Ion Battery Warranty:

Deep cycle and Lithium-Ion 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. Note: (Lithium-Ion battery only): A Lithium-Ion battery has a part only prorated warranty beginning year 3 through year 5 based on the time in service and kilowatt hours used. Refer to the *Operator's Manual* for additional information.

#### Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of 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 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.