



# Tri-Roller

## Greensmaster® 3000 Series

Model No. 04495—Serial No. 315000001 and Up

Form No. 3390-887 Rev B

### Operator's Manual

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

#### **⚠ WARNING**

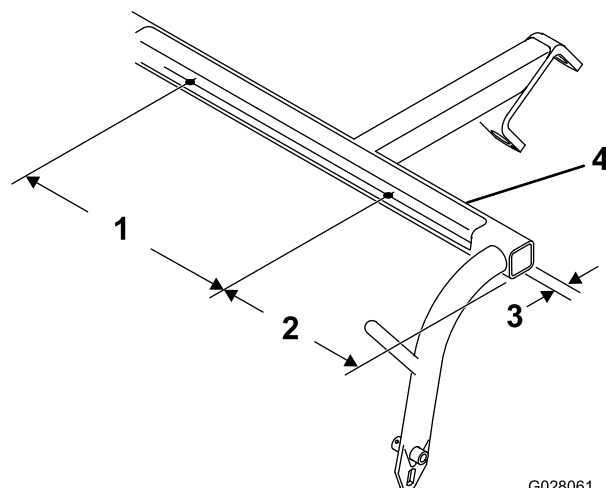
##### **CALIFORNIA Proposition 65 Warning**

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

## Setup

### Mounting the Pull Arm Bumpers (Greensmaster 3050, 3100, 3150, and 3200)

1. Using the dimensions shown in [Figure 1](#), drill 2 holes with a diameter of 5.6 mm (0.221 inch) on the underside of each pull frame cross tube.

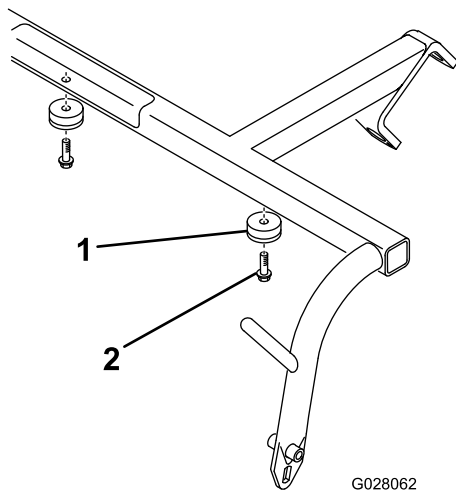


**Figure 1**

- |                          |                          |
|--------------------------|--------------------------|
| 1. 49.3 cm (19.4 inches) | 3. 1.9 cm (3/4 inches)   |
| 2. 9.0 cm (3.5 inches)   | 4. Pull frame cross tube |

2. Mount the 2 recessed bumpers to the underside of each pull frame cross tube with 2 washer-head self-tapping screws ([Figure 2](#)).

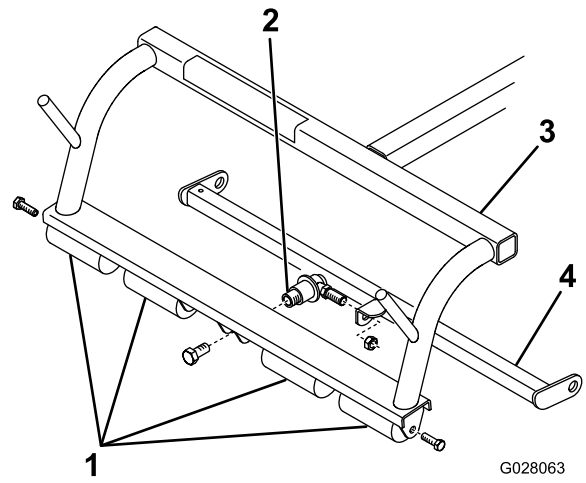




**Figure 2**

G028062

1. Recessed bumper
2. Washer-head self-tapping screw



**Figure 3**

G028063

1. Roller sets
2. Ball socket
3. Carrier frame
4. Pull frame

## Adjusting the Rear Roller Scrapers

The rear roller scraper is adjusted at the factory, but can be adjusted to meet turf conditions.

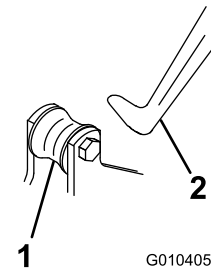
1. Loosen the locknuts securing the scraper to the frame.
2. Adjust the scraper until there is 0.75 to 1.5 mm (0.03 to 0.06 inch) clearance between the edge of the scraper and the roller.
3. Tighten the locknuts securing the scraper.

## Mounting the Tri-Rollers

1. Park the machine on a level surface, lower the lift arms, stop the engine, and set the parking brake.

**Note:** If the carrier frames come equipped with single-point pull frames, remove the pull frame and attaching ball joint (Figure 3).

2. Slide the tri-roller under the traction unit pull frame while hooking the lift roller onto the lift arm (Figure 4).

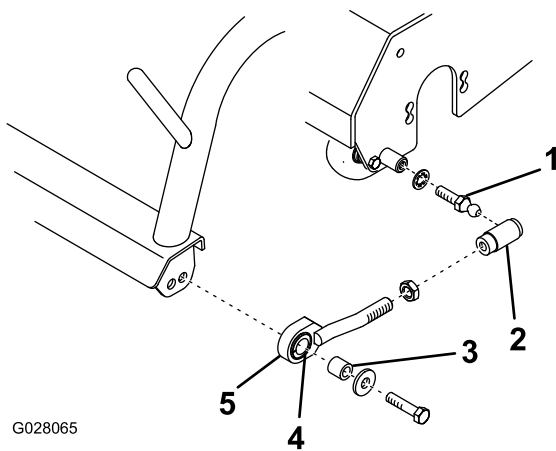


**Figure 4**

G010405

1. Lift roller
2. Lift arm

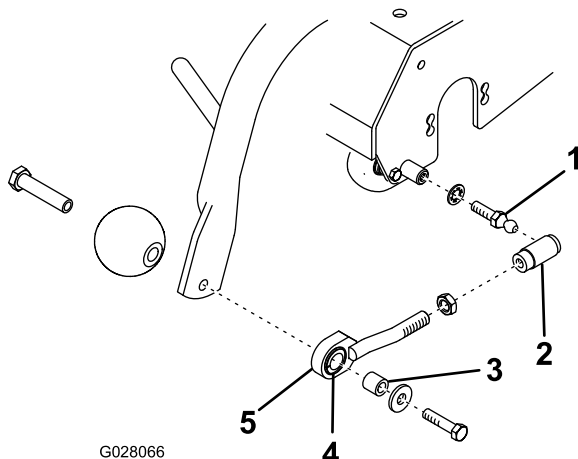
3. Mount the new pull link assemblies to the **Greensmaster 3200 and 3250** pull arms as follows:
  - A. Remove the screws securing the outside ends of each anti-scalp roller shaft to each end of the carrier frame (outside end of shafts only); refer to Figure 3.
  - B. Assemble a jam nut and ball joint receiver onto each pull link assembly as shown in Figure 5 or Figure 6.



**Figure 5**

Greensmaster 3200 Machine shown

- |                               |                       |
|-------------------------------|-----------------------|
| 1. Ball stud (large diameter) | 4. Nylon bushing      |
| 2. Ball-joint receiver        | 5. Pull-link assembly |
| 3. Spacer                     |                       |



**Figure 6**

Greensmaster 3250 Machine shown

- |                               |                       |
|-------------------------------|-----------------------|
| 1. Ball stud (large diameter) | 4. Nylon bushing      |
| 2. Ball-joint receiver        | 5. Pull-link assembly |
| 3. Spacer                     |                       |

- C. Mount a pull-link assembly to each end of the carrier frame with a spacer, washer, and screw (Figure 5 or Figure 6).

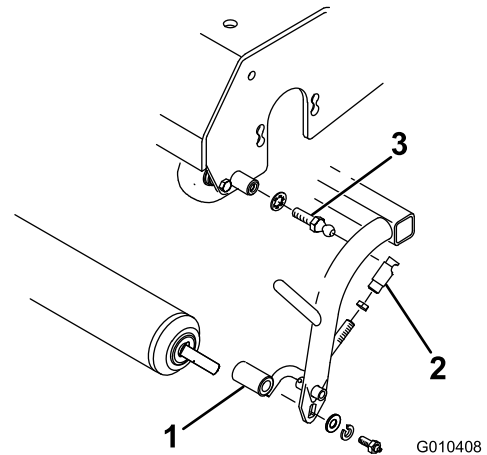
**Note:** Make sure that the nylon bushing is in the pull link.

- D. Install a ball stud and lock washer to each end of the tri-roller (Figure 5 or Figure 6).
- E. Adjust the pull links all the way forward and tighten the jam nut.
- F. Slide the sleeve back on each ball joint receiver and hook them onto the ball studs (Figure 5 or Figure 6).

4. When mounting the Tri-Roller Kit to the **Greensmaster 3050, 3100 or 3150** traction unit, use the small diameter ball stud and washer on each end of the tri-roller (Figure 7). Adjust the links so that they are forward as far as they will go.

**Note:** To avoid tri-roller interference with the traction pedal linkage, it may be necessary to lower the tri-rollers when the reels are in the transport position; refer to Adjusting the Lift Cylinders in the traction unit *Operator's Manual*.

**Note:** When mounting the Tri-Roller Kit in the right front position on the **Greensmaster 3200 or 3250** traction unit, remove the counterweight from the left end of the unit and mount it on the right end. Connect the motor to the left end.

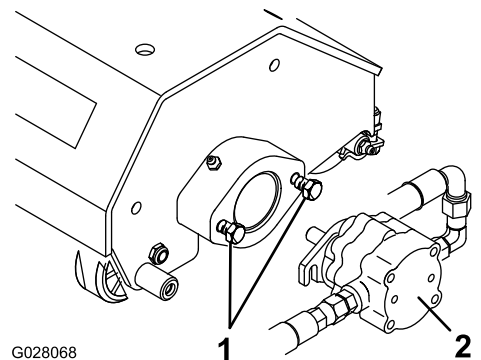


**Figure 7**

- |                        |                               |
|------------------------|-------------------------------|
| 1. Pull link assembly  | 3. Ball stud (small diameter) |
| 2. Ball joint receiver |                               |

5. Mount the front reel motors into the storage positions as follows:

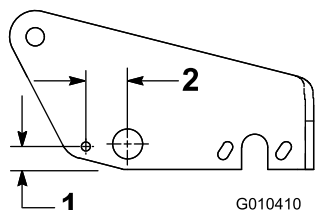
- A. Loosen the mounting screws and washers for the reel motor to each tri-roller. Leave approximately 1 cm (1/2 inch) of threads exposed on each mounting screw (Figure 8).



**Figure 8**

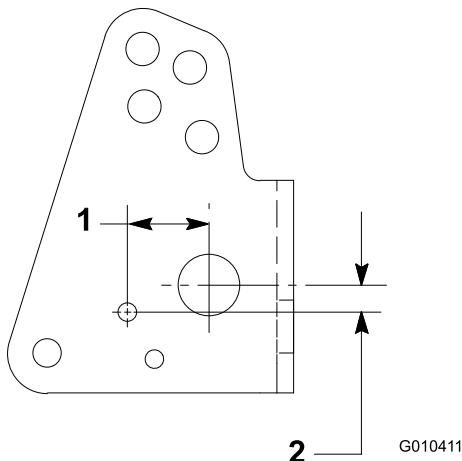
- |                    |               |
|--------------------|---------------|
| 1. Mounting screws | 2. Reel motor |
|--------------------|---------------|

- B. Install the motor by rotating it clockwise so that the motor flanges clear the screws. Rotate the motor counterclockwise until the flanges encircle the screws. Tighten the screws.
6. Store the rear reel motor on the **Greensmaster 3150, 3200, and 3250** the same as the front reel motors.
7. Store the rear reel motor on the **Greensmaster 3100 and 3050** as follows:
- A. Use the dimensions shown in [Figure 9](#) for the **Greensmaster 3100** and [Figure 10](#) for the **Greensmaster 3050**, to mark the frame.



**Figure 9**

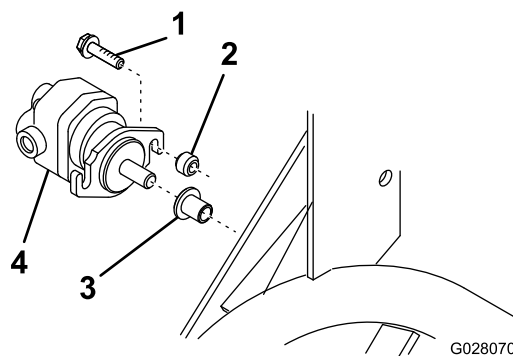
1. 2.2 cm (0.90 inches)      2. 4.1 cm (1.6 inches)



**Figure 10**

1. 3.9 cm (1.5 inches)      2. 1.2 cm (0.51 inches)

- B. Insert the splined shaft of the reel motor into the storage tube on the frame ([Figure 11](#)).



**Figure 11**

- |                       |                 |
|-----------------------|-----------------|
| 1. Self-tapping screw | 3. Storage tube |
| 2. Spacer             | 4. Reel motor   |

- C. Using the reel motor flange as a template, position it as shown in [Figure 11](#), drill an 8.75 mm (0.34 inch) diameter hole on the line drawn in step A.
- D. Position the spacer between the reel motor flange and the frame while aligning the holes. Secure the reel motor and spacer to the frame with a self tapping screw.
8. Mount the counter weight to the right side of the rear tri-roller with 2 capscrews and washers.

## Installing the Rear Weight

This unit complies with the ANSI B71.4-2012 and EN ISO 5395:2013 when 19.5 kg (43 lb) of calcium chloride ballast is added to the rear wheel, and it is equipped with a rear weight kit. Contact your Authorized Toro Distributor for more information.

**Important:** If a puncture occurs in a tire with calcium chloride, remove the unit from the turf area as quickly as possible. To prevent possible damage to the turf, immediately soak the affected area with water.

# Operation

## Training Period

Before rolling greens with the tri-roller attachments, find a clear area and practice starting, stopping, raising, lowering, and rolling with the tri-roller. This training period will help you gain confidence in operating the tri-roller.

## Operating Tips

Maintain a straight line when rolling. Do not turn when the tri-rollers are on the ground.

When the edge of the green is reached, raise the tri-rollers before turning or stopping. The tri-rollers must be raised completely before making turns. Survey the green to determine if there are any obstacles that will be damaged or will result in damage to the tri-rollers such as sprinkler heads and protruding objects.

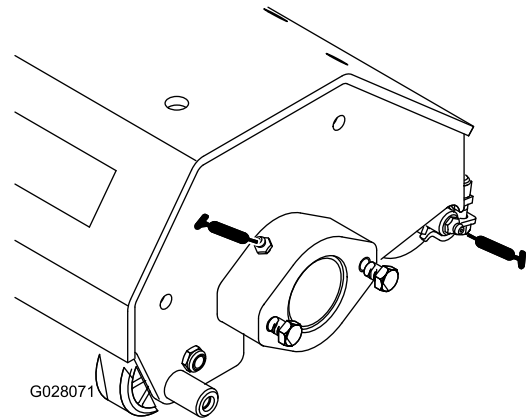
# Maintenance

## Lubricating the Tri-Roller

There are 4 grease fittings on each tri-roller which must be lubricated after every 15 hours of operation. Lubricate using a lithium-based grease. For best results, use a hand-operated grease gun.

1. Wipe each grease fitting with a clean rag.
2. Apply grease to the tri-roller shaft bearings and rear roller bearings (Figure 12) until pressure is felt.

**Important:** Do not apply too much pressure or grease seals will be permanently damaged.



**Figure 12**

- 
3. Wipe excess grease away.

# 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  |
|-----------|------------------|-----------------------------------------|-----------------------|---------------------|------------|
| 04495     | 315000001 and Up | Tri-Roller, Greensmaster<br>3000 Series | GR3XXX TRI-ROLLER KIT | Tri-roller          | 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 2, 2015

EU Technical Contact:

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Fax 0032 14 581911

## International Distributor List

| <b>Distributor:</b>                | <b>Country:</b>      | <b>Phone Number:</b> | <b>Distributor:</b>          | <b>Country:</b> | <b>Phone Number:</b> |
|------------------------------------|----------------------|----------------------|------------------------------|-----------------|----------------------|
| Agrolanc Kft                       | Hungary              | 36 27 539 640        | Maquiver S.A.                | Colombia        | 57 1 236 4079        |
| Asian American Industrial (AAI)    | Hong Kong            | 852 2497 7804        | 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      |
| Brisa Goods LLC                    | Mexico               | 1 210 495 2417       | Mountfield a.s.              | Slovakia        | 420 255 704 220      |
| Casco Sales Company                | Puerto Rico          | 787 788 8383         | Munditol S.A.                | Argentina       | 54 11 4 821 9999     |
| Ceres S.A.                         | Costa Rica           | 506 239 1138         | Norma Garden                 | Russia          | 7 495 411 61 20      |
| CSSC Turf Equipment (pvt) Ltd.     | Sri Lanka            | 94 11 2746100        | Oslinger Turf Equipment SA   | Ecuador         | 593 4 239 6970       |
| Cyril Johnston & Co.               | Northern Ireland     | 44 2890 813 121      | Oy Hako Ground and Garden Ab | Finland         | 358 987 00733        |
| Cyril Johnston & Co.               | Republic of Ireland  | 44 2890 813 121      | Parkland Products Ltd.       | New Zealand     | 64 3 34 93760        |
| Fat Dragon                         | China                | 886 10 80841322      | Perfetto                     | Poland          | 48 61 8 208 416      |
| Femco S.A.                         | Guatemala            | 502 442 3277         | Pratoverde SRL.              | Italy           | 39 049 9128 128      |
| FIVEMANS New-Tech Co., Ltd         | China                | 86-10-6381 6136      | Prochaska & Cie              | Austria         | 43 1 278 5100        |
| ForGarder OU                       | Estonia              | 372 384 6060         | RT Cohen 2004 Ltd.           | Israel          | 972 986 17979        |
| G.Y.K. Company Ltd.                | Japan                | 81 726 325 861       | Riversa                      | Spain           | 34 9 52 83 7500      |
| Geomechaniki of Athens             | Greece               | 30 10 935 0054       | Lely Turfcare                | Denmark         | 45 66 109 200        |
| Golf international Turizm          | Turkey               | 90 216 336 5993      | Lely (U.K.) Limited          | United Kingdom  | 44 1480 226 800      |
| 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.



## The Toro 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.