



Spiker Kit

Greensmaster® 3000 Series

Model No. 04495—Serial No. 31500001 and Up

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

Removing the Single-Point Pull Frames

(if equipped)

1. Park the machine on a level surface, lower the lift arms, stop the engine, and set the parking brake.
2. Remove the pull frame and attaching ball joint; refer to [Figure 1](#).

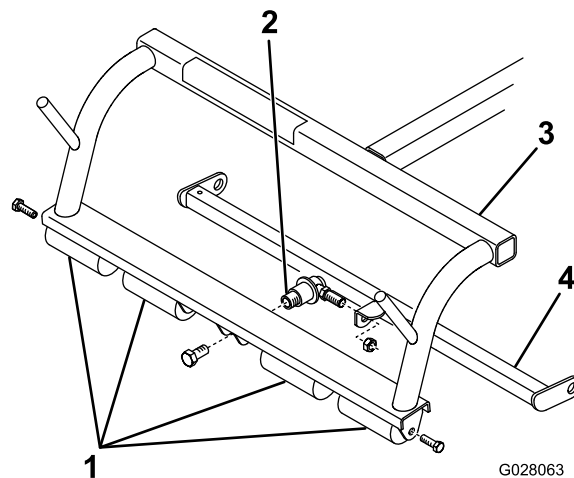


Figure 1

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



Mounting the Pull-Arm Bumpers

(Greensmaster 3050, 3100, 3120, 3150, 3200, and 3250)

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

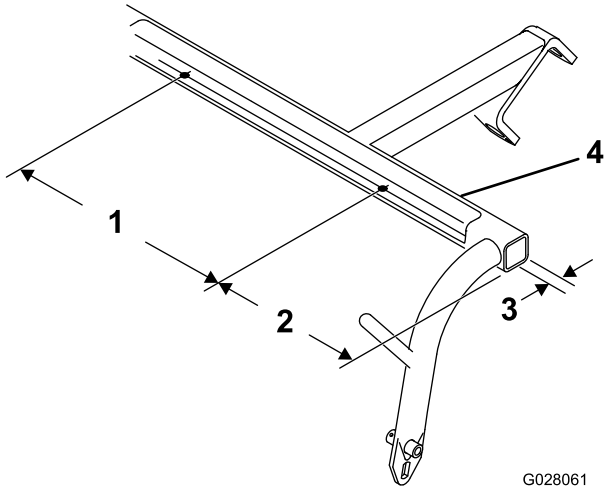


Figure 2

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- | | |
|--------------------------|------------------------|
| 1. 49.3 cm (19.4 inches) | 3. 1.9 cm (3/4 inches) |
| 2. 9 cm (3.5 inches) | 4. Pull-arm cross tube |

- Mount the 2 recessed bumpers to the underside of each pull-arm cross tube with 2 washer-head self-tapping screws ([Figure 3](#)).

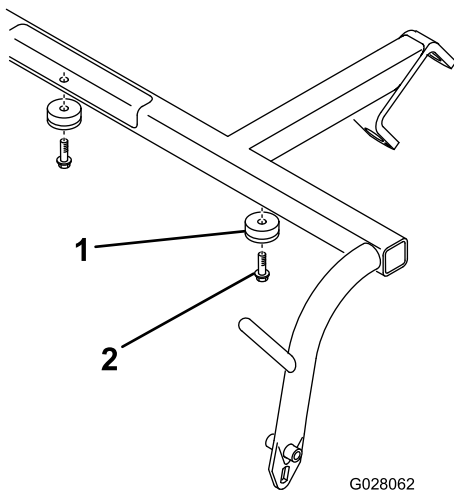


Figure 3

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

Adjusting the Rear Roller Scrapers

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

- Loosen the locknuts securing the scraper to the frame.
- 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.
- Tighten the locknuts securing the scraper.

Mounting the Spikers

- Install a ball stud and lock washer to each end of the spiker ([Figure 5](#) or [Figure 6](#)).
- Slide the spiker unit under the pull-arm frame until the lift-pivot plates are positioned on either side of the lift arm ([Figure 4](#)).

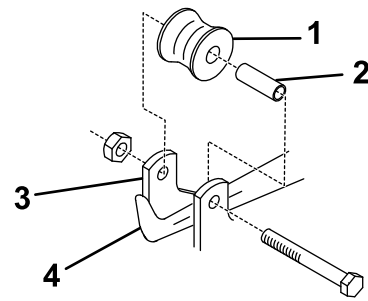


Figure 4

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- | | |
|----------------|---------------------|
| 1. Lift roller | 3. Lift-pivot plate |
| 2. Spacer | 4. Lift arm |

- While pressing down on the lift arm, roll the spiker unit back until the lift roller is over the left arm ([Figure 4](#)).
- Mount the pull link assemblies to the **Greensmaster 3200 and 3250** pull arms as follows:
 - Remove the screws, or nuts if equipped, 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](#).
 - Assemble a jam nut and ball joint receiver onto each pull link assembly as shown in [Figure 5](#) or [Figure 6](#).

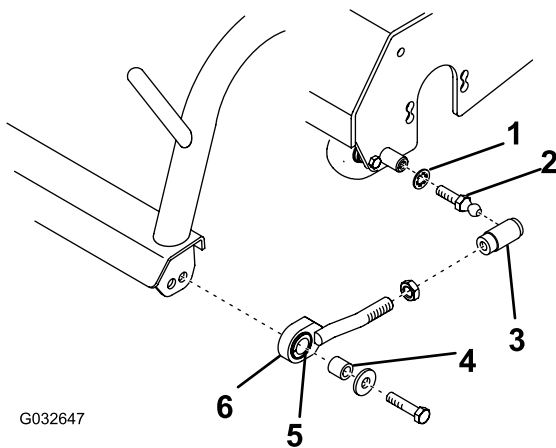


Figure 5
Greensmaster 3200 Shown

- | | |
|-------------------------------|-----------------------|
| 1. Lock washer | 4. Spacer |
| 2. Ball stud (large diameter) | 5. Nylon bushing |
| 3. Ball-joint receiver | 6. Pull-link assembly |

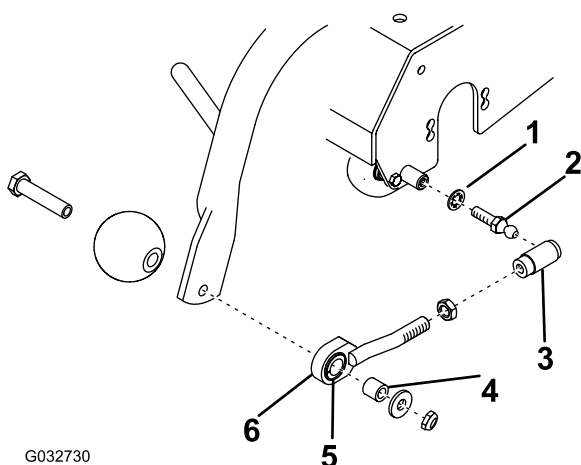


Figure 6
Greensmaster 3250 Shown

- | | |
|-------------------------------|-----------------------|
| 1. Lock washer | 4. Spacer |
| 2. Ball stud (large diameter) | 5. Nylon bushing |
| 3. Ball-joint receiver | 6. Pull-link assembly |

- 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 assembly.

- D. Adjust the ball-joint receiver all the way forward, align the sockets in the ball joint receiver so that the open side of the socket is centered toward the ball stud, and tighten the jam nut to secure the socket in position.

- E. Slide the sleeve back on each ball joint receiver and hook them onto the ball studs (Figure 5 or Figure 6).

5. Mount the pull link assemblies to the **Greensmaster 3050, 3100, 3120, and 3150** pull arms as follows:

- A. Remove the fasteners securing the roller shaft and pull links to each end of the carrier frame (Figure 7).

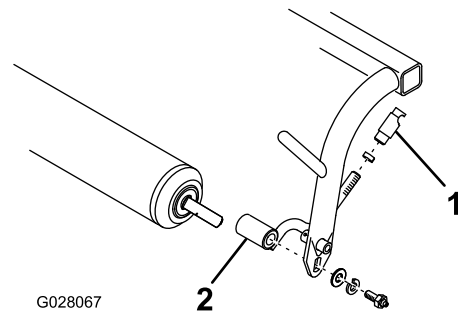


Figure 7

- | | |
|------------------------|-----------------------|
| 1. Ball-joint receiver | 2. Pull-link assembly |
|------------------------|-----------------------|

- B. Install the roller and new pull-link assemblies to the carrier frame with the previously removed fasteners (Figure 7). Position the pull links so that they bend outward.

- C. Assemble a jam nut and ball joint receiver onto each pull link assembly as shown in Figure 7.

- D. Adjust the ball-joint receiver all the way forward, align the sockets in the ball joint receiver so that the open side of the socket is centered toward the ball stud, and tighten the jam nut to secure the socket in position.

- E. Slide the sleeve back on each ball joint receiver and hook them onto the ball studs (Figure 5 or Figure 6).

Note: When mounting the Spiker Kit in the right front position on the Greensmaster 3200 and 3250 traction units, remove the counter weight from the left end of the unit and mount it on the right end. Connect the motor to the left end.

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

6. Mount the front reel motors to the spiker units as follows:

- A. Loosen the mounting screws for the reel motor to each spiker. Leave approximately 13 mm (1/2 inch) of threads exposed on each mounting screw (Figure 8).

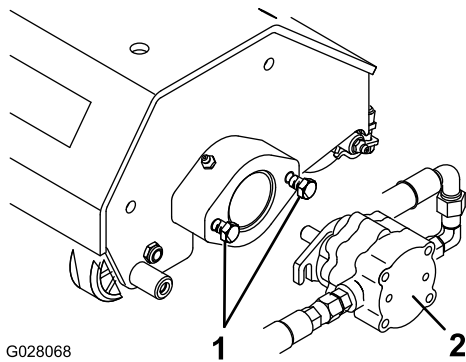


Figure 8

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, then tighten the screws.

Note: The motors do not drive the moving parts on the spiker.

7. Store the rear reel motor on the **Greensmaster 3150, 3200, and 3250** the same as the front reel motors.
8. Store the rear reel motor on the **Greensmaster 3100 and 3050** as follows:
- A. Use the dimensions shown in [Figure 9](#) to mark the frame.

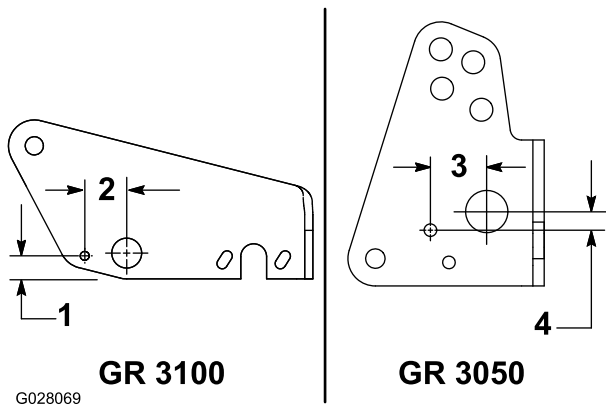


Figure 9

1. 2.2 cm (0.90 inches) 3. 3.9 cm (1.5 inches)
 2. 4.1 cm (1.6 inches) 4. 1.2 cm (0.51 inches)

B. Insert the splined shaft of the reel motor into the storage tube on the frame ([Figure 10](#)).

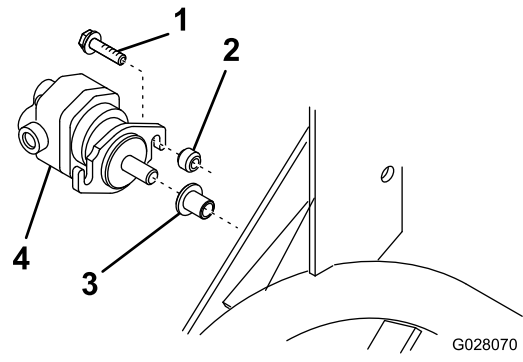


Figure 10

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 10](#), 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.

9. Mount the counter weight to the right side of the rear spiker with 2 bolts 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 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 spiking greens with the spiker attachments, find a clear area and practice starting, stopping, raising, lowering, and spiking with the spiker reels. This training period will be beneficial to the operator in gaining confidence in the performance of the spiker reels.

Operating Tips

Survey the green to determine if there are any obstacles that will be damaged or will result in damage to the spiker reels such as sprinkler heads and protruding objects.

Maintain a straight line when spiking. Do not turn when the spiking units are in the ground to prevent machine damage.

When the edge of the green is reached, raise the spiker reels before turning or stopping. The spiker reels must be raised completely before making turns. Never use the grass catcher with the spiking reels.

Maintenance

Lubricating the Spiker Units

There are 4 grease fittings on each spiker unit that you must lubricate after every 15 hours of operation. Lubricate using No. 2 lithium grease. For best results, use a hand-operated grease gun.

1. Wipe each grease fitting with a clean rag.
2. Apply grease to the spiker shaft bearings and rear roller bearings (Figure 11) until you feel pressure.

Important: Do not apply too much pressure; otherwise, the grease seals will be permanently damaged.

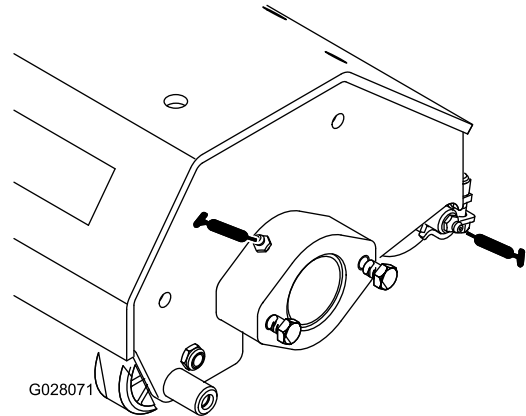


Figure 11

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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
04494	315000001 and Up	Spiker, Greensmaster 3000 Series	GR3XXX SPIKER KIT	Spiker	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
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October 7, 2015

EU Technical Contact:

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B-2260 Oevel-Westerloo
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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
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.

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.

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.

- 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