Form No. 3328–535 Rev B

TORO®

Aerator 686/687

Model No. 44850—Serial No. 230000001 and Up
Model No. 44860—Serial No. 230000001 and Up

Operator’s Manual

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Introduction

Read this manual carefully to learn how to operate and maintain your product properly. The information in this manual can help you and others avoid injury and product damage. Although Toro designs and produces safe products, you are responsible for operating the product properly and safely.

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. The two numbers are stamped on a plate which is riveted to the main arm.

Write the product model and serial numbers in the space below:

Model No. _____

Serial No. _____

This manual identifies potential hazards and has special safety messages that help you and others avoid personal injury and even death. ***Danger***, ***Warning***, and ***Caution*** are signal words used to identify the level of hazard. However, regardless of the hazard, be extremely careful.

Danger signals an extreme hazard that *will* cause serious injury or death if you do not follow the recommended precautions.

Warning signals a hazard that *may* cause serious injury or death if you do not follow the recommended precautions.

Caution signals a hazard that may cause minor or moderate injury if you do not follow the recommended precautions.

This manual uses two 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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Bloomington, MN 55420-1196

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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.

Before Operating

- Read and understand the contents of this Operator's Manual before operating the machine. Become familiar with all of the controls and know how to stop quickly. A free replacement manual is available by sending the complete Model and Serial Number to The Toro Company, 8111 Lyndale Avenue South, Bloomington, Minnesota 55420-1196.
- Never allow children to operate the machine. Do not allow adults to operate machine without proper instruction. Only trained operators who have read this manual should operate this machine.
- Never operate the machine when under the influence of drugs or alcohol.
- Keep all bystanders away from the operating area.
- 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 that the machine is in safe operating condition.
- Do not operate the machine 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.

While Operating

- Using the machine demands attention. To prevent loss of control:
  - Operate only in daylight or when there is good artificial light.
  - Drive slowly and watch for holes or other hidden hazards.
  - Do not drive close to a sand trap, ditch, creek, or other hazard.
  - Reduce your speed when making sharp turns and when turning on hillsides.
  - Avoid sudden starts and stops.
  - Before backing up, look to the rear and ensure that no one is behind the machine.
  - This product is not designed for or intended to be operated on roadways.
  - Watch out for traffic when near or crossing roads. Always yield the right-of-way.
- **Do not take an injury risk!** When a person or pet appears unexpectedly in or near the operating area, **stop operation**. Careless operation, combined with terrain angles, ricochets, or improperly positioned guards can lead to thrown object injuries. Do not resume operation until the area is cleared.
- Operator must be skilled and trained in how to drive on hillsides. Failure to use caution on slopes or hills may cause loss of control possibly resulting in personal injury or death.
- If tractor or towing vehicle engine stalls or machine loses headway and cannot make it to the top of a slope, do not turn machine around. Always back slowly straight down the slope.
- Do not carry passengers on the machine or tractor and keep everyone away from the areas of operation.
- Before getting off the tractor or towing vehicle seat:
  - Place the tractor or towing vehicle in neutral position and put the engine in idle position.
  - Set the parking brake and disengage the PTO.
  - Shut the engine off and remove key from ignition switch. Wait for all movement to stop before getting off seat.
- ALWAYS follow all safety precautions in the tractor's or towing vehicles operator manual pertaining to attachments.

Maintenance

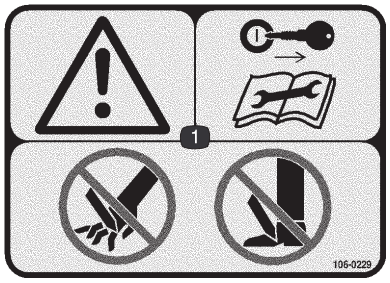
- Remove the key from the tractor's ignition switch to prevent accidental starting of the engine when servicing, adjusting or storing the machine.
- Be sure that the machine is in safe operating condition by keeping nuts, bolts, and screws tight.
- Make sure that all hydraulic line connectors are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- Keep your body and hands away from pin hole leaks in hydraulic lines that eject high pressure hydraulic fluid. Use cardboard or paper to find hydraulic leaks. Hydraulic fluid escaping under pressure can penetrate skin and cause injury. Fluid accidentally injected into

the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

- Before disconnecting or performing any work on the hydraulic system, all pressure in the system must be relieved by stopping the engine and lowering the blower to the ground.
- 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 machine all Toro. **Never use "will-fit" replacement parts and accessories made by other manufacturers.** Look for the Toro logo to ensure genuineness. Using unapproved replacement parts and accessories could void the warranty.

Safety and Instruction 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.



106-0229

1. Warning—remove the ignition key and read the instructions before servicing or performing maintenance to avoid cutting your hands or feet.



58-6520

1. Grease



01–506–0340

Specifications

Note: Specifications and design subject to change without notice.

General Specifications

Frame	Welded tubular steel; divided into 3 sections, each section moves horizontally and diagonally to follow contour, spring loaded.
Aerating Wheels	(12) 70 lb. castings (4 per section) with permanent roll pin every other hole.
Shaft	1–1/4", machined to 1"
Tines	(96), 8 per wheel, secured with 1 bolt, roll pin in wheel secures second hole in tine; 1/2 or 3/4" open or closed, 4" slicing blades are available.
Bearings	Self sealed, self aligned
Transport Tires (Aerator 686 only)	4.80 x 8 – 2 ply
Hitch	Drop pin (Aerator 686) 3 Point–Category 1 Tractor Type (Aerator 687)
Lift Mechanism (Aerator 686 only)	Hand hydraulic pump to (1) 10" stroke cylinder.
Springs	Six to assist down pressure on tines.
Aerating Swath	78"
Pattern	6" on center
Operating Speed	1–10 MPH, depending on conditions
Overall Width	90" (Aerator 686) 82" (Aerator 687)
Weight	Approx. 1350 lbs. w/o weights (Aerator 686) Approx. 1120 lbs. w/o weights (Aerator 687)

Required Equipment

(one of the following)

Slicing Blade, 4 in. (96 per unit)	Part No. 01–283–0030
Closed Tine (.5) (96 per unit)	Part No. 01–283–0050
Closed Tine (.75) (96 per unit)	Part No. 01–283–0060
Open Tine (.5) (96 per unit)	Part No. 01–283–0070
Open Tine (.75) (96 per unit)	Part No. 01–283–0080

Optional Equipment

Discharge Chute Kit	Model No. 08860
Weight Kit (3 per set)	Model No. 44866
CE Guard Kit	Part No. 95–3350
Tongue Jack Kit (Aerator 686 only)	Part No. 106–9660
Traction Remote Kit (Aerator 686 only)	Part No. 68–608–3521

Before Operating

Check Tire Pressure
(Model 686 only)

1. Check tire pressure before each use. Maintain tire pressure at 60 PSI.

Before Attaching Aerator

1. Before getting off the tractor or towing vehicle seat:

- Place the tractor or towing vehicle in neutral position and put the engine in idle position.
- Set the parking brake and disengage the PTO.
- Shut the engine off and remove key from ignition switch. Wait for all movement to stop before getting off seat.

2. Dismount from the tractor or tow vehicle.

Attach Aerator 686 To Towing Vehicle

1. Attach the hitch of the aerator to the tongue of the towing vehicle using the towing vehicle's hardware.
2. **Do Not Lift Tongue By Hand.** Use the tongue jack or powered lift to align the hitch to the tow tractor.

Attach Aerator 687 To Tractor

1. Lower the three point hitch arms of the tractor.
2. Position the aerator so that the three point hitch arms of the tractor line up with the lift arms of the aerator.
3. Attach the arms of the tractor to the hitch pins on the aerator lift arms.
4. Attach the tractors stabilizer bar to the 3/4" x 4" bolt on the top of the lift arms.

Installing Tines

Important **AFTER attaching the aerator to the tractor or towing vehicle the tines may be installed.**

1. Follow the instructions referring to attaching the aerator to the tractor or towing vehicle.
2. Start at the outside casting and install the tines as shown. Install all 8 tines on the casting making sure the roll pin is in the front position (Fig. 1). Use 1/2" x 1–3/4" bolts for the second hole and secure tightly.

Important Repeat on the second casting and continue until all 96 tines are installed.

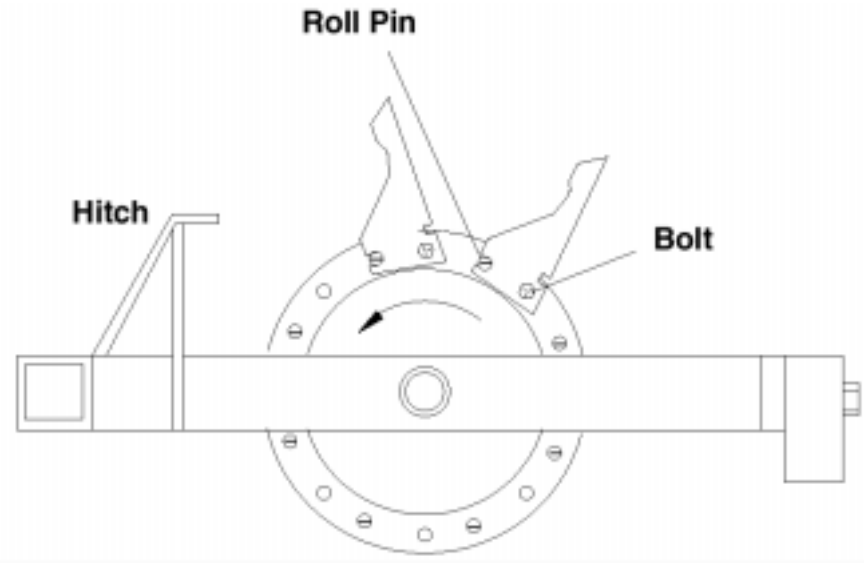


Figure 1

Operation

Aerating Procedure For 686 Tow Hitch Aerator

1. Move the lock pin to the rear (aerating) position (Fig. 2).
2. Open the hydraulic hand pump bleed valve on base of pump to release pressure and lower the aerator to the ground.
3. Return to the operator's seat and follow the vehicle instructions and procedures for towing an implement.
4. At the end of desired aerating region, stop the tractor and set the parking brake, turn off engine, before getting out of operator's seat.
5. Close the hydraulic hand pump bleed valve and stroke pump handle to raise the aerator to the transport position.
6. When transporting the Aerator 686, place the lock pin in the front hole. This prevents the aerator from dropping in case of accidental release of oil in the lift cylinder (Fig. 2).

Aerating Procedure For 687 3 Point Hitch Aerator

Become familiar with the controls for 3 Point or Remote Hydraulics operation of the Tow Tractor or vehicle before operating Aerator 687.

1. Start tractor engine and run at a low RPM.
2. With 3 Point or Remote Hydraulics Control of tractor, slowly lower the aerator while the tractor or towing vehicle is moving slowly forward.
3. As aerating begins increase speed of the tractor or towing vehicle.
4. Raise the aerator at the end of the pass before turning.

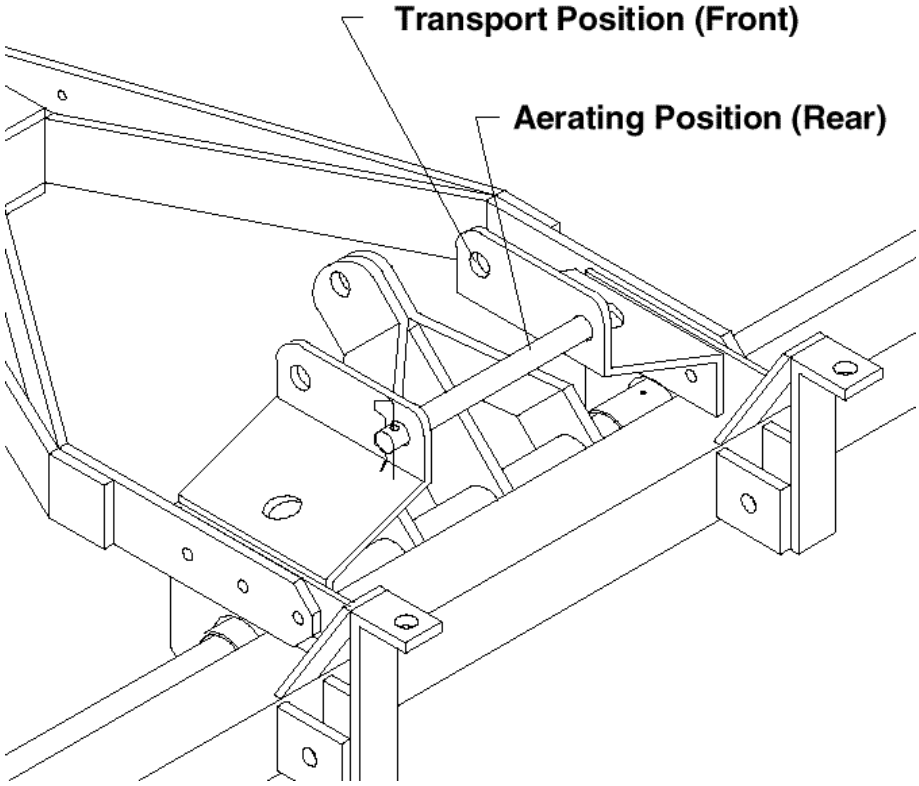


Figure 2

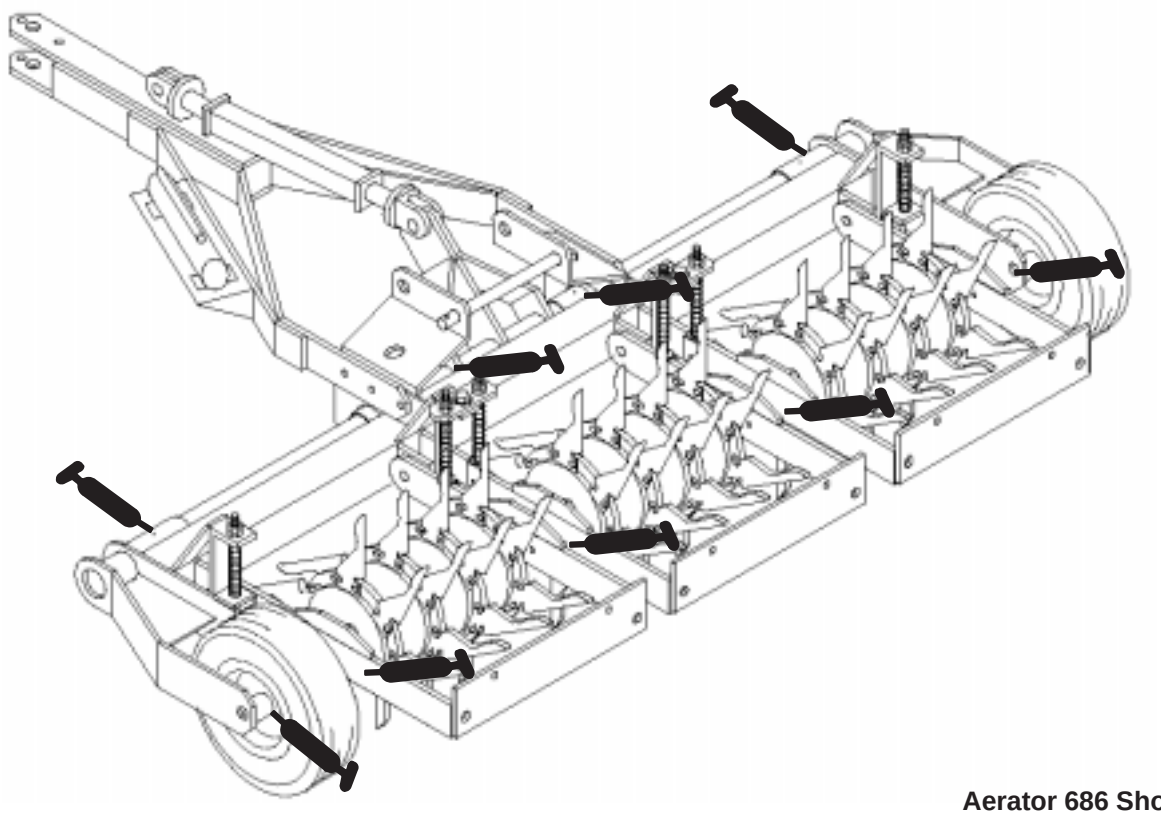
Lubrication

Bearings

The aerator has six self sealing bearings that must be lubricated with a No. 2 Lithium based grease.

Important **Lubricate the bearings as often as necessary to maintain a slight leakage on the seals. Too much grease can cause overheating.**

Grease fittings weekly or every 40 operating hours. Use a No. 2 Lithium based grease.



Aerator 686 Shown

Figure 3

Maintenance

Main Arms

The 6 main arms pivot freely horizontally and vertically to allow the unit to follow the contour of the ground. A bronze bushing is pressed inside the pivot holes between the main arm and mainframe. The bronze bushing is 1/8” longer than the thickness of both plates combined. The 5/8 x 2” bolt should be tightened against the bushings, not the arms, to allow it to pivot freely. The bronze bushings should be checked every 100 hours of operation for signs of wear. Replace any worn bushings.

Springs

The purpose of the springs is to distribute the weight evenly and reduce the shock load on the pivot points. The springs are adjusted evenly across to level the unit. Use the nuts on top of the spring rod (Item A) to adjust the springs.

Important **NEVER adjust the spring so the coils are completely compressed. Allow at least 1/16” between coils.**

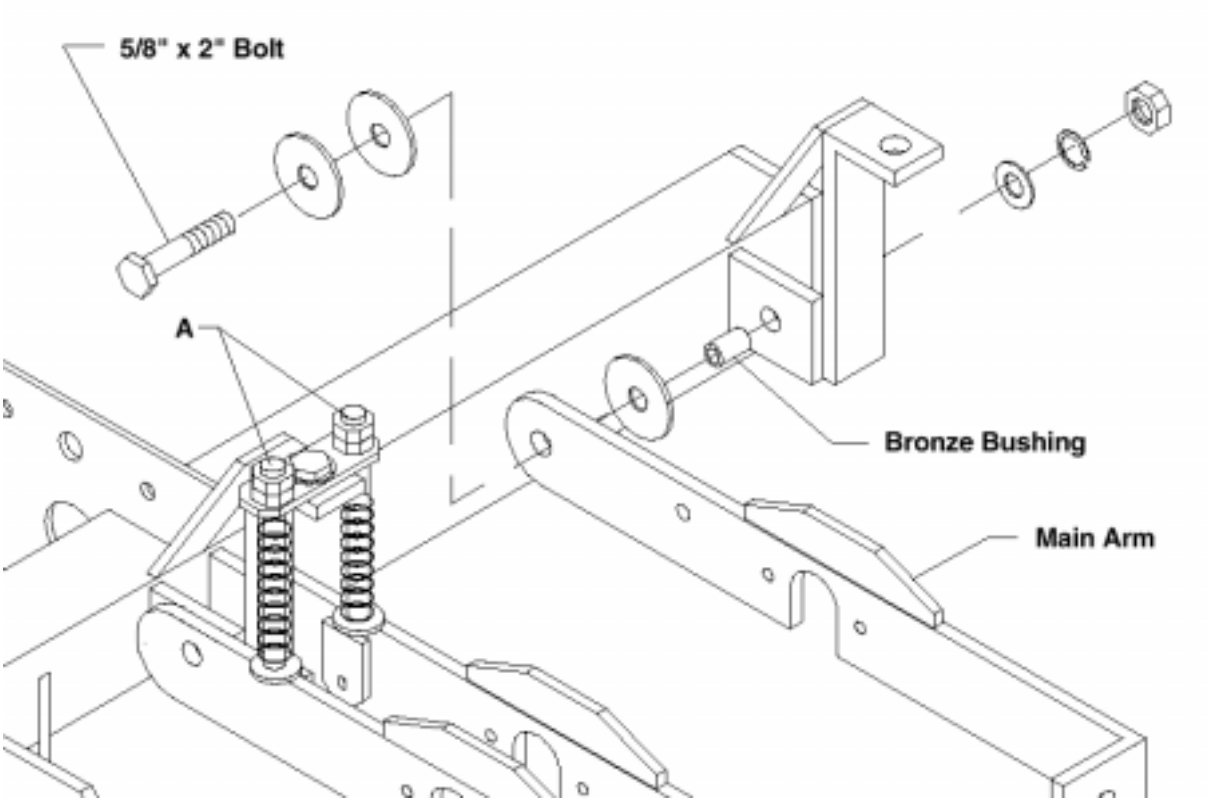


Figure 4

Tine Wear

To obtain maximum aerating performance always check the tines for wear before every use. Severely worn tines are easy to bend or break and will leave the cores in the ground. (Fig. 5) for examples of tine wear.

Always clean cores out of tines before storage. Cores left in tines for extended periods can cause pitting on the inside of the tine. The pits in the tine keep the core from ejecting.

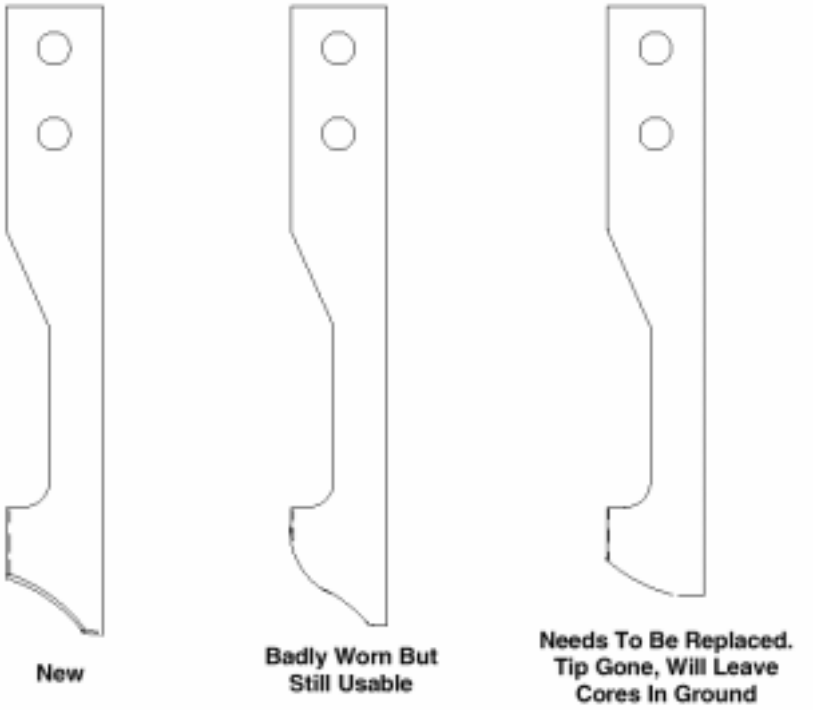


Figure 5

Storage

- Thoroughly clean the aerator.
- Inflate tires to 60 PSI.
- Check all fasteners. Tighten as necessary.
- Check the condition of the tines. Replace any broken or worn tines. Tighten all fasteners attaching the tines to the castings.
- Grease or oil all grease fittings and bearings. Wipe off excess lubricant.

The Toro General Commercial Products 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 1996 or newer Toro Commercial Product ("Product") purchased after January 1, 1997, to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. Where a warrantable condition exists, we will repair the Product at no cost to you including diagnosis, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

* Product equipped with 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 800-982-2740
E-mail: commercial.service@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 express warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, modified, or unapproved accessories
- Product failures which result from failure to perform required maintenance and/or adjustments
- Product failures which result from operating the Product in an abusive, negligent or reckless manner
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, blades, reels, bedknives, tines, spark plugs, castor wheels, tires, filters, belts, 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, or chemicals, etc.
- Normal "wear and tear" items. 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 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 factory remanufactured parts rather than new parts for some warranty repairs.

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.

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