



Debris Blower

Groundsmaster® 300 Series Attachment

Model No. 30855—Serial No. 200000001 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 located on the housing.

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.

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.
- Check the interlock switches daily for proper operation; refer to the section in the traction unit Operator's Manual on Checking the Interlock Switches. Do not rely entirely on safety switches—shut off the engine before getting off of the seat. If a switch fails, replace it before operating the machine. The interlock system is for your protection, so do not bypass it. Replace all interlock switches every two years. Interlock switches should be adjusted so that:
 - The engine cannot be started unless the traction pedal is released (neutral position) and the PTO switch is Disengaged (off position).
 - The engine stops if the operator gets off of the seat when the traction pedal is depressed.
 - The engine stops if the operator gets off of the seat when the PTO lever is Engaged (on position).
- Fill the fuel tank before starting the engine. Avoid spilling any fuel. Since fuel is flammable, handle it carefully.
 - Use an approved fuel container.
 - Do not fill the tank while the engine is hot or running.
 - Do not smoke while handling gasoline.
 - Fill the fuel tank outdoors and up to about 1 inch (25 mm) from the top of the tank, not the filler neck.
 - Wipe up any spilled gasoline.
- This product may exceed noise levels of 85 dB(A) at the operator position. Ear protectors are recommended for prolonged exposure to reduce the potential of permanent hearing damage.
- Before starting the engine:
 - A. Engage the parking brake.
 - B. Ensure that the traction pedal is in neutral and the PTO is in the OFF, disengaged position.
 - C. After the engine is started, release the parking brake and keep your foot off of the traction pedal. The machine must not move. If movement is evident, the neutral return mechanism is adjusted incorrectly; therefore, shut the engine off and adjust it until the machine does not move when the traction pedal is released.
- 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.
 - Watch out for traffic when near or crossing roads. Always yield the right-of-way.
- Stay away from the discharge opening when the machine is operating. Keep all bystanders away from the discharge opening and don't direct discharge toward bystanders.
- If the engine stalls or the machine loses headway and cannot make it to the top of a slope, do not turn the machine around. Always back slowly straight down the slope.
- **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.
- Do not touch the engine or muffler while the engine is running or soon after it is stopped. These areas could be hot enough to cause a burn.

While Operating

- Do not run the engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could possibly be deadly.
- The maximum seating capacity is one person. Never carry passengers.
- Sit on the seat when starting the engine and operating the machine.

- Before getting off of the seat:
 - D. Move the traction pedal to the neutral position and remove your foot from the pedal.
 - E. Set the parking brake and disengage the PTO.
 - F. Shut the engine off and remove the key from the ignition switch. Wait for all movement to stop before getting off of the seat.
 - G. Lower the blower to the ground and remove the key from the ignition switch whenever the machine is left unattended.

Maintenance

- Remove the key from the ignition switch to prevent accidental starting of the engine when servicing, adjusting, or storing the machine.
- 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 reduce a potential fire hazard, keep the engine free of excessive grease, grass, leaves, and accumulations of dirt. Never wash a warm engine or any electrical parts with water.
- Be sure that the machine is in safe operating condition by keeping nuts, bolts, and screws tight. Check the rotor bearing mounting bolts and nuts frequently to be sure that they are tightened to specification.
- 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.
- If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing, and other parts of the body away from the fan and other moving parts.
- Do not overspeed the engine by changing the governor settings. To be sure of safety and accuracy, have an Authorized Toro Distributor check the maximum engine speed with a tachometer.
- The engine must be shut off before checking the oil or adding oil to the crankcase.

- At the time of manufacture, the blower conformed to safety standards in effect for riding mowers; therefore, 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.

Sound Pressure Level

A Groundsmaster 300 series traction unit with the debris blower attachment has an equivalent continuous A-weighted sound pressure at the operator ear of 99 dB(A) based on measurements of identical machines per SAE J1174—Mar 85 procedures.

Sound Power Level

A Groundsmaster 300 series traction unit with the debris blower attachment has a sound power level of 111 dB(A)/I pW, based on measurements of identical machines per procedures outlined in Directive 79/113/EEC and amendments.

Vibration Level

Hand-Arm

A Groundsmaster 300 series traction unit with the debris blower attachment does not exceed a vibration level of 2.5 m/s² at the hands based on measurements of identical machines per ISO 5349 procedures.

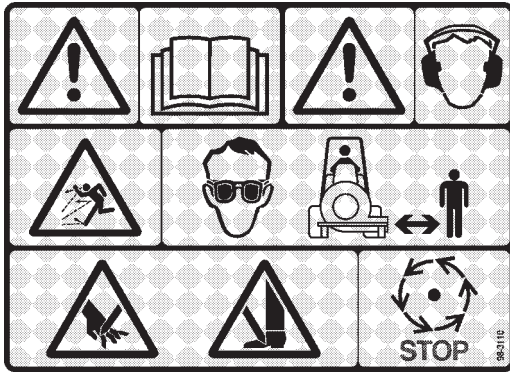
Whole-Body

A Groundsmaster 300 series traction unit with the debris blower attachment does not exceed a vibration level of 0.5 m/s² at the posterior, based on measurements of identical machines per ISO 2631 procedures.

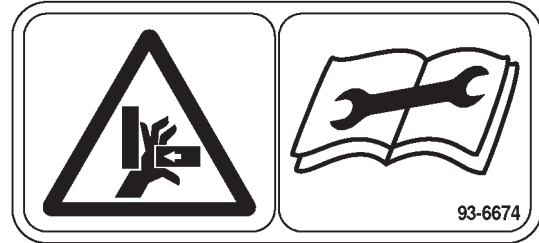
Safety and Instruction Decals



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.



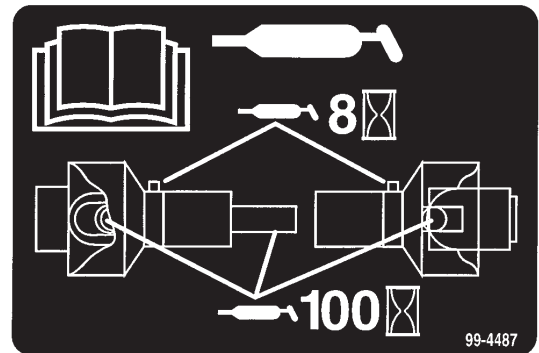
On Fan Housing
(Part No. 98-3110)



On Fan Housing
(Part No. 93-6674)



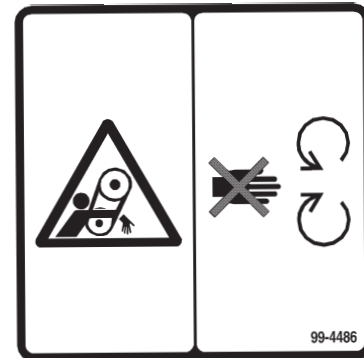
On Belt Guard
(Part No. 98-3113)



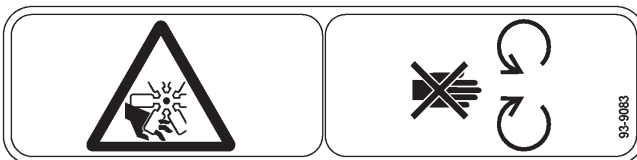
On Belt Guard
(Part No. 99-4487)



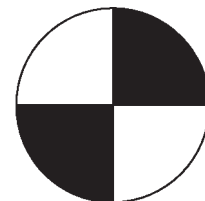
On Drive Shaft
(Part No. 93-7283)



On Bearing Mount
(Part No. 99-4486)



On Front Bearing Bracket
(Part No. 93-9083)



On Fan Shaft
(Part No. 98-3111)

Specifications

Note: Specifications and design subject to change without notice.

General Specifications

Fan	Backward curved, cast aluminum fan. 12 blades per side, 21 in. (53 cm) outside diameter, 6-3/8 in. (16 cm) width, 34 lb. (16 kg)
Fan housing	10 gauge steel face plates welded to 10 gauge wrapper. Increasing scroll from cutoff.
Fan drive	PTO driven A 3VX banded belt drive to fan. Final drive ratio of 1.5:1 with a over running clutch in belt drive pulley. Fan shaft rotates on greaseable ball bearing.
Fan speed	2700 RPM
Fan output	3700 ± 200 CFM, 140 ± 20 MPH (225 km/h)
Outlet	Outlet opening is 47 in ²
Weight	335 lb. (152 kg)

Optional Equipment

Discharge Chute Kit	Model No. 08860
Debris Blower Quick Attach Adapter Kit	Model No. 30717
Traction Unit Quick Attach Adapter Kit	Model No. 30711

Setup

Note: Use this chart as a checklist to ensure that all parts have been received. Without these parts, total setup cannot be completed.

Description	Qty.	Use
Capscrew	4	Mounting the blower to the traction unit
Washer	8	
Nut	4	
Lift arm bracket	1	
Pin	1	
Drive shaft	1	Mounting the drive shaft to the blower and traction unit
Capscrew	4	
Nut	4	
Roll pin	2	
Operator's Manual	1	Read before operating the machine.
Parts Catalog	1	
Registration card	1	Fill out and return to Toro.

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

Installing the Castor Wheel Assemblies

The castor wheel assemblies are installed upside down on the debris blower for shipping.

1. Remove the tensioning caps from the spindle shafts and slide off the castor wheel, spacers, and thrust washers (Fig. 1).
2. Slide the spacers onto the castor spindle to get the desired height. Slide a thrust washer onto the spindle and push the castor spindle through the frame. Install another thrust washer and the remaining spacers onto the spindle and install the tensioning cap to secure the assembly (Fig. 1).

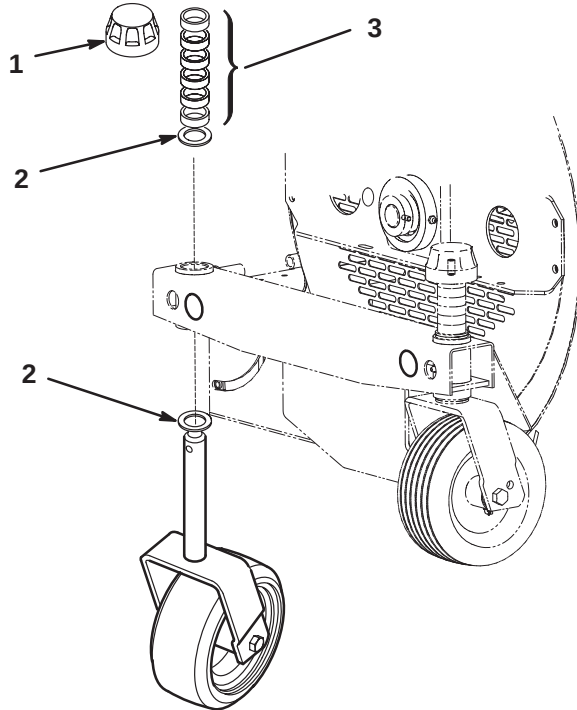


Figure 1

- | | |
|-------------------|-------------------------|
| 1. Tensioning cap | 3. Spacers |
| 2. Thrust washers | 4. Front castor spindle |

Important The thrust washers—not the spacers—must contact the top and bottom of the blower frame.

3. Ensure that both castor wheels are set at the same height.

Installing the Stand

1. Remove the snapper pin securing the stand to the tube on the blower frame (Fig. 2).

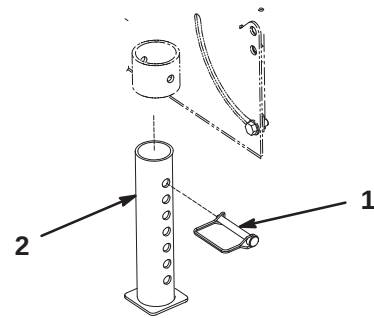


Figure 2

- | | |
|----------------|---------------|
| 1. Snapper pin | 2. Stand tube |
|----------------|---------------|

2. Lower the stand. Install the pin through the upper set of holes in the stand and tube (Fig. 2). Secure the pin.
3. Remove the snapper pin securing the stand to the tube on the blower frame.
4. Raise the stand. Install the pin through the lower set of holes in the stand and tube. Secure the pin.
5. Stand the blower up on the castor wheels and stand (storage position).

Installing the Traction Unit to the Blower

1. Remove the cutting unit or other attachment from the traction unit. Do not remove the ball joint mounts from the lift arms. The lift arms must be equipped with Toro ball joint mounts, Part No. 21-3050 and 21-3020.

Note: Retain the fasteners for future installation of cutting unit or attachment.

2. The right and left ball joints are properly adjusted when the distance from the end of the lift arm nut to the center of the ball joint grease fitting is 1-5/8 in. (41 mm) (Fig. 3 & 4).

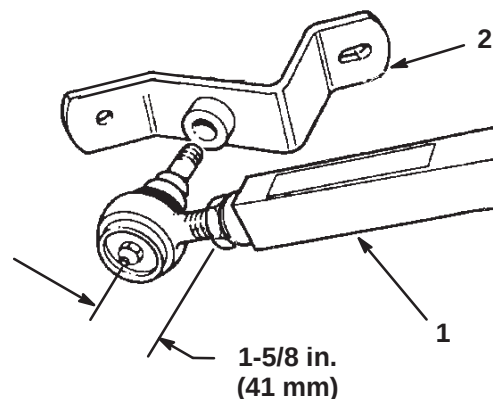


Figure 3

- | | |
|-------------|-------------------------------|
| 1. Lift arm | 2. Ball joint mount (21-3050) |
|-------------|-------------------------------|

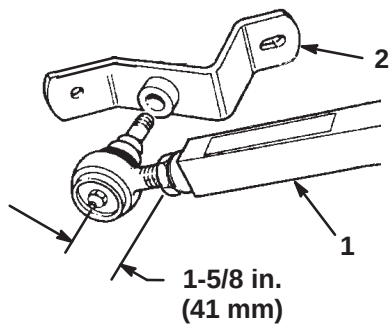


Figure 4

1. Lift arm 2. Ball joint mount (21-3020)

3. Position the traction unit in line with the rear of the Debris Blower.



Warning



Since the right-hand push arm is spring loaded to about 100 pounds and the left-hand push arm is spring loaded to about 150 pounds, sudden release of the push arm could cause injury.

Use a helper to push the arm down.

4. Have a helper carefully push down on the right push arm until the holes in the ball joint mount line up with the holes in the blower mounting bracket (Fig. 5).

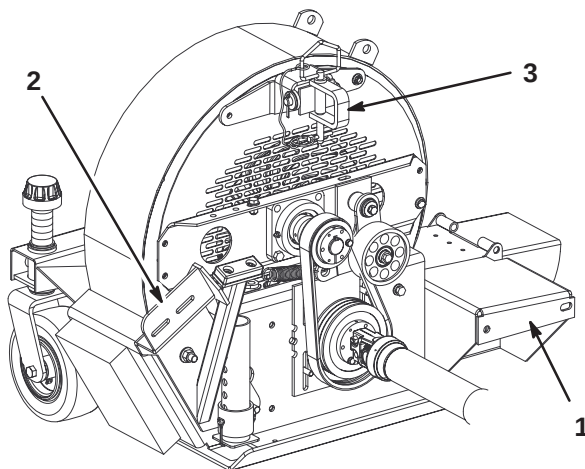


Figure 5

1. Right mounting bracket 3. Lift arm bracket
2. Left mounting bracket

5. Secure the ball joint mount to the right blower bracket with the cutting unit mounting fasteners.

6. Have a helper carefully push down on the left push arm until the holes in the ball joint mount line up with the holes in the castor arm. Immediately slide a 4 x 4 in. block of wood between the top of the push arm and underside of the chassis.



Warning



Sudden release of the push arm could cause injury. Make sure that the wooden block does not slip out accidentally.

7. Secure the ball joint mount to left blower bracket with the cutting unit mounting fasteners.
8. Carefully remove the wood block holding the push arm down.
9. Pivot the blower rearward and secure the lift bracket to the T-bar on the traction unit with the lift arm bracket and pin.

Installing the Drive Shaft



Danger



The PTO shaft rotates with enough force to cause serious injury.

Do not start the engine and engage the PTO lever when the PTO shaft is not connected to the blower gear box.

1. Remove the 5 capscrews, 6 washers, and nut securing the belt guard to the blower frame (Fig. 6).
2. Slide the drive shaft onto the traction unit PTO shaft (Fig. 6). Align the mounting holes in each shaft and slide them together.
3. Secure them with a roll pin and 2 capscrews and nuts (Fig. 6).

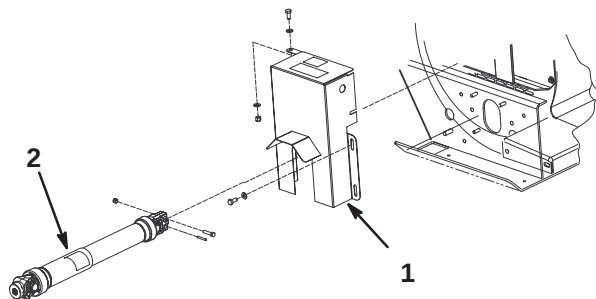


Figure 6

1. Belt guard 2. PTO shaft

- Slide the shafts together.
- Slide drive shaft onto the blower shaft. Align the mounting holes in each shaft and slide them together.
- Secure them with a roll pin and 2 capscrews and nuts.
- Install the belt shaft guard with the fasteners previously removed (Fig. 6).

Note: To ensure proper blower operation, check/adjust the blower belt tension after the first 20 hours of operation; refer to Adjusting the Blower Belt, page 10.

Rear Ballast

The Groundsmaster 300 series 2WD traction unit complies with the ANSI B71.4-1990 Standard when (5) 35 lb. weights (Part No. 24-5790) are installed. Order two Weight Kits, Part No. 24-5780 and one Weight Kit, Part No. 24-5790 from your Toro Distributor.

Greasing the Blower

Before the blower is operated, the PTO shaft must be greased to ensure proper lubricating characteristics; refer to Greasing the Blower in the Maintenance section; page 9. Failure to properly grease the unit will result in premature failure of critical parts.

Operation

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

Operating Tips



Warning



Discharged air has considerable force and could cause injury or loss of footing.

- Stay away from the discharge opening when the machine is operating.
- Keep bystanders away from the discharge opening when the machine is running.

- Start the traction unit and run it at a low RPM.
- Lower the blower using the traction unit lift mechanism.
- Engage the PTO while the engine is at idle speed.
- Increase the PTO speed to 1800 RPM.

- Practice blowing material. It is advisable to blow the same direction the wind is blowing to prevent material from blowing back into the cleared area.

Transporting the Blower

- Reduce the engine speed to idle position.
- Disengage the PTO and wait for the PTO to stop.
- Raise the blower to the transport position.

Adjusting the Discharge Opening

The discharge opening is adjustable to increase or decrease air output velocity and volume. Decreasing the discharge opening size will increase the velocity.

- Loosen the discharge opening deflector mounting screws (Fig. 7).

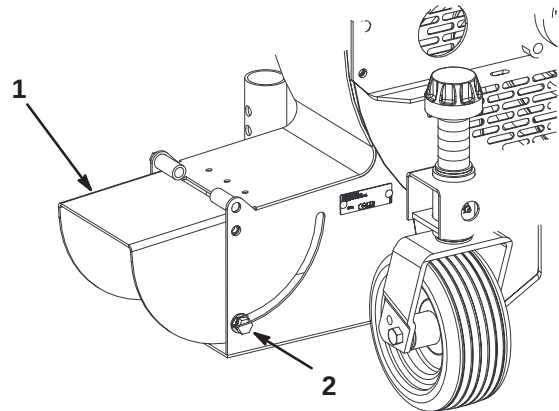


Figure 7

- Deflector
- Mounting screw

- Pivot the deflector to the desired opening.
- Tighten the mounting screws.

Maintenance

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

Greasing the Blower

Idler Arm Bearing

The idler arm bearing (Fig. 8) must be lubricated after every 8 hours of operation with a No. 2 Lithium-based grease.

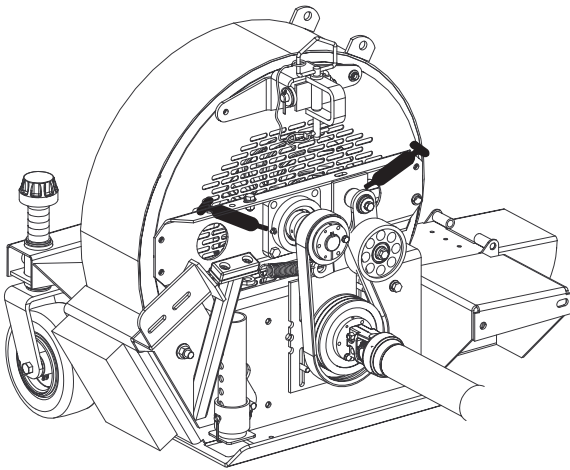


Figure 8

Fan Shaft Bearing

The 2 fan shaft bearings (Fig. 8 and 9) must be lubricated after every 8 hours of operation with a No. 2 Lithium-based grease.

Castor Wheels

Under normal conditions, grease the 2 wheels and 2 wheel pivot tubes (Fig. 9) after every 50 hours of use. Use a No. 2 Lithium-based grease.

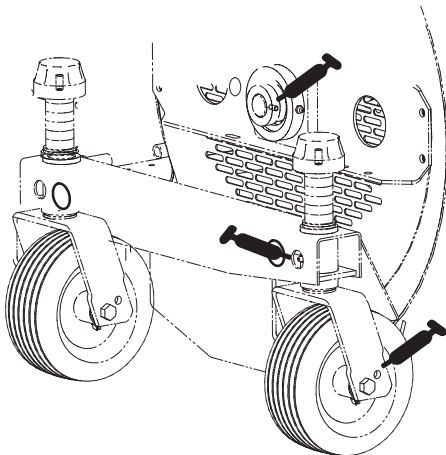


Figure 9

Drive Shaft and Guards

Under normal conditions, grease the 2 drive shaft fittings after every 100 hours of use and the guards after every 8 hours of operation (Fig. 10). Use a No. 2 Lithium-based grease.

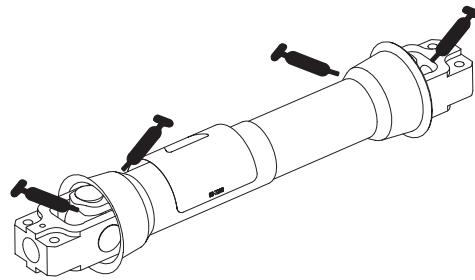


Figure 10

Adjusting the Blower Belt

Make sure belt is properly tensioned to ensure proper operation of the machine and unnecessary wear. Check belt frequently.

Note: Check/adjust the blower belt tension after the first 20 hours of operation.

1. Remove the 3 capscrews, 6 washers, and 3 nuts securing the belt guard to the blower housing (Fig. 11). Remove the guard.

Note: The drive shaft does not have to be disconnected to adjust the belt.

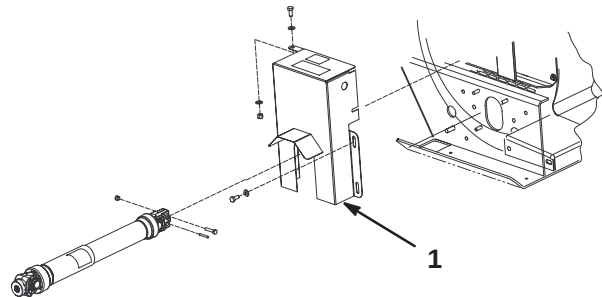


Figure 11

1. Belt guard

2. A new belt is properly tensioned when the idler spring body is extended to a length of 3-1/4 to 3-1/2 in. (83-89 mm) (Fig. 12).

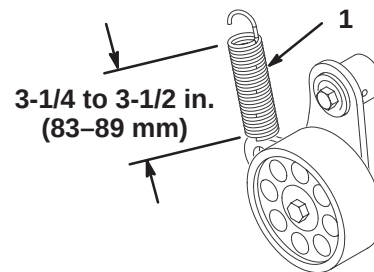


Figure 12

1. Idler spring

3. When the belt stretches, adjust it as follows:
 - A. Loosen the nuts securing the belt tensioner to the blower housing.
 - B. Move the belt tensioner (Fig. 13) down until the idler spring body is extended to a length of 3-1/4 to 3-1/2 in. (83–89 mm) (Fig. 12), then tighten the nuts.
4. Install the belt guard to the blower housing with the capscrews, washers, and nuts.

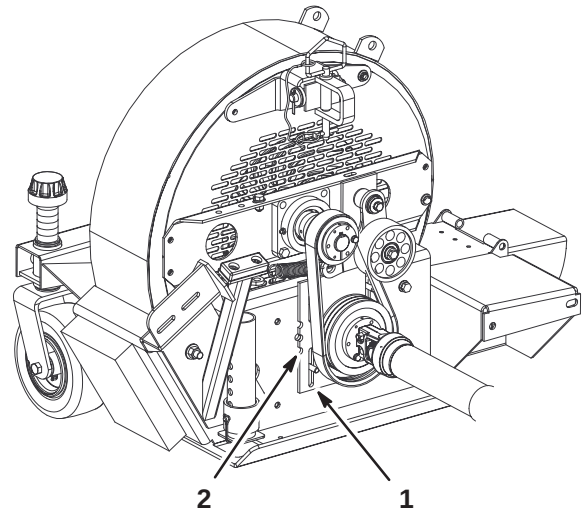


Figure 13

1. Belt tensioner

2. Belt tensioner notch

Troubleshooting

Problem	Possible Causes	Corrective Action
The fan quits turning.	1. The bolt on the PTO adapter may be sheared.	1. Replace the bolt.
There is excessive vibration.	1. The bearing on the fan shaft is damaged. 2. Material is built up on the fan blades. 3. The RPM of the PTO shaft is too fast.	1. Replace the bearings. 2. Clean out any build up on the inside of the housing. 3. Reduce the PTO speed to 540 RPM.
There is lack of adequate air flow.	1. The air slots are clogged with debris. 2. The RPM on the tractor is too slow. 3. The throttle on the tractor engine is too low.	1. Clean out any debris from the slots. 2. Increase the PTO speed to 540 RPM. 3. Make any necessary repairs to bring the tractor speed up to normal.

Storage

1. Thoroughly clean the blower. The fan housing should be free of dirt, leaves, and debris.
2. Lubricate all grease fittings. Wipe off any excess lubricant.
3. Place a light coat of grease on the splines of the PTO adapter.
4. Tighten all fasteners.



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:

- 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.

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.

- 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.