FORM NO. 3323–705

TORO®

MODEL NO. 30372–200000001 & UP

OPERATOR'S MANUAL

GUARDIAN® 72" RECYCLER®

FOR GROUNDSMASTER© 3000 SERIES TRACTION UNITS

To assure maximum safety, optimum performance, and to gain knowledge of the product, it is essential that you or any other operator of the machine read and understand the contents of this manual before the engine is ever started. Pay particular attention to the SAFETY INSTRUCTIONS highlighted by this symbol —

The safety alert symbol means CAUTION, WARNING or DANGER — personal safety instruction. Failure to comply with the instruction may result in personal injury.

TORO®
THIS UNIT CONFORMS TO ANSI/OPEI B71.4–1990

The Groundsmaster 3000 Series Traction unit with a GUARDIAN 72" RECYCLER Deck conforms to the American National Standards Institute's for Riding Mowers.

FOREWORD

The Guardian® 72" Recycler® Cutting Deck has advanced concepts in engineering, design and safety; and if maintained properly, will give excellent service.

Since this is a high−quality product, Toro is concerned about the future use of the machine and safety of the user. Therefore, read this manual to familiarize yourself with proper set−up, operation and maintenance instructions. The major sections of the manual are:

1. Safety Instructions
2. Set−up Instructions
3. Before Operating
4. Operating Instructions
5. Lubrication
6. Maintenance

Certain information in this manual is emphasized. DANGER, WARNING and CAUTION identify personal safety related information. IMPORTANT identifies mechanical information demanding special attention. Be sure to read this directive because it deals with the possibility of damaging a part or parts of the machine. NOTE identifies general information worthy of special attention.

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SAFETY INSTRUCTIONS

The safety alert symbol means CAUTION, WARNING or DANGER — "personal safety instruction". Read and understand the instruction because it has to do with safety. Failure to comply with the instruction may result in personal injury.

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

1. Read and understand the contents of this Operator's Manual before operating the machine. Become familiar with all controls and know how to stop quickly. A free replacement manual is available by sending complete Model and Serial Number to:

The Toro Company
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420−1196

2. 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.

3. Never operate the machine when under the influence of drugs or alcohol.

4. Remove all debris or other objects that might be picked up and thrown by the cutter blades. Keep all bystanders away from the mowing area.

5. 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 assure machine is in safe operating condition.

6. Do not operate 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.

7. Check interlock switches daily for proper operation (Refer To Section in Traction Unit Operator's Manual on Checking Interlock Switches). Do not rely entirely on safety switches -shut off engine before getting off 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:

A. Engine cannot be started unless traction pedal is released (neutral position) and PTO switch is DISENGAGED (off position).

B. Engine stops if operator gets off seat when traction pedal is depressed.

C Engine stops if operator gets off seat when PTO lever is ENGAGED (on position).

8. Fill fuel tank before starting the engine. Avoid spilling any fuel. Since fuel is flammable, handle it carefully.

A. Use an approved fuel container.

B. Do not fill tank while engine is hot or running.

C. Do not smoke while handling gasoline.

D. Fill fuel tank outdoors and up to about one inch from top of the tank, not the filler neck.

E. Wipe up any spilled gasoline.

WHILE OPERATING

9. Do not run the engine in a confined area without adequate ventilation. Exhaust fumes are hazardous and could possibly be deadly.

10. Maximum seating capacity is one person. Never carry passengers.

11. Sit on the seat when starting the engine and operating the machine.

12. 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.

13. Before starting the engine:

A. Engage the parking brake.

B. Ensure traction pedal is in neutral and PTO is in the OFF, disengaged position.

C. After engine is started, release parking brake and keep foot off traction pedal. Machine must not move. If movement is evident, the neutral return mechanism is adjusted incorrectly; therefore, shut engine off and adjust until machine does not move when traction pedal is released.

14. Using the machine demands attention, and to prevent loss of control:

A. Mow only in daylight or when there is good artificial light.

B. Drive slowly and watch for holes or other hidden hazards.

SAFETY INSTRUCTIONS

C. Do not drive close to a sand trap, ditch, creek or other hazard.

D. Reduce speed when making sharp turns and when turning on hillsides.

E. Avoid sudden starts and stops.

F. Before backing up, look to the rear and assure no one is behind the machine.

G. Watch out for traffic when near or crossing roads. Always yield the right−of −way.

15. If 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.

16. DON'T TAKE AN INJURY RISK! When a person or pet appears unexpectedly in or near the mowing area, **STOP MOWING**. Careless operation, combined with terrain angles, ricochets, or improperly positioned guards can lead to thrown object injuries. Do not resume mowing until area is cleared.

17. Never raise the cutting unit while the blades are rotating.

18. If the cutting blades strike a solid object or the machine vibrates abnormally, disengage PTO, move throttle to SLOW, set parking brake and shut engine off. Remove key from switch to prevent possibility of accidental starting. Check cutting unit and traction unit for damage and malfunctioning parts. Repair any damage before restarting the engine and operating the cutting unit. Be sure blades are in good condition and blade bolts are tight.

19. Cut grass slopes carefully. Do not start, stop, or turn suddenly.

20. Do not touch engine or muffler while engine is running or soon after it is stopped. These areas could be hot enough to cause a burn.

21. Before getting off the seat:

A. Move traction pedal to neutral position and remove foot from pedal.

B. Set the parking brake and disengage the PTO.

C. Shut the engine off and remove the key from the ignition switch. Wait for all movement to stop before getting off the seat.

22. Lower the cutting unit to the ground and remove key from ignition switch whenever machine is left unattended.

MAINTENANCE

23. Remove key from ignition switch to prevent accidental starting of the engine when servicing, adjusting or storing the machine.

24. Perform only those maintenance instructions described in this manual. If major repairs are ever needed or assistance is desired, contact an Authorized Toro Distributor.

25. To reduce 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.

26. Be sure machine is in safe operating condition by keeping nuts, bolts and screws tight. Check the blade mounting bolts and nuts frequently to be sure they are tightened to specification.

27. Make sure all hydraulic line connectors are tight, and all hydraulic hoses and lines are in good condition before applying pressure to the system.

28. Keep 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.

29. Before disconnecting or performing any work on the hydraulic system, all pressure in system must be relieved by stopping engine and lowering cutting unit to the ground.

30. If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing and other parts of the body away from the cutting unit blades and other moving parts.

31. Do not overspeed the engine by changing governor settings. To be sure of safety and accuracy, have an Authorized TORO Distributor check maximum engine speed with a tachometer.

32. Engine must be shut off before checking oil or adding oil to the crankcase.

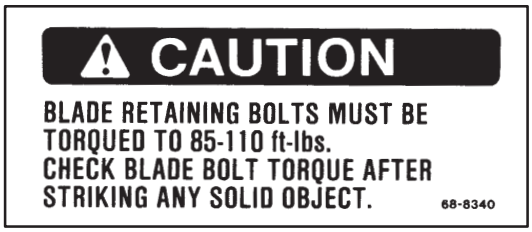
33. At the time of manufacture the cutting unit conformed to safety standards in effect for riding mowers. Therefore, to ensure optimum performance and safety, always purchase genuine TORO replacement parts and accessories to keep the Toro all TORO. NEVER USE "WILL−FIT" REPLACEMENT PARTS AND ACCESSORIES MADE BY OTHER MANUFACTURERS. Look for the TORO logo to assure genuineness. Using unapproved replacement parts and accessories could void the warranty of The Toro Company.

SAFETY AND INSTRUCTION DECALS

The following decals are installed on the machine. If any become damaged or illegible, replace it. The decal part number is listed below and in your parts catalog. Replacements can be ordered from your Authorized Toro Distributor.

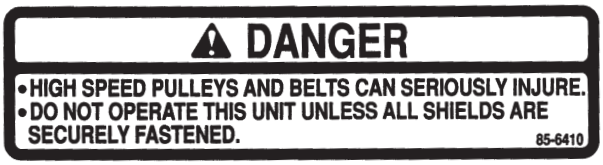
On Each Corner Of Cutting Unit (Part No. 43−8480)

On Left Caster Arm (Part No. 93−0299)

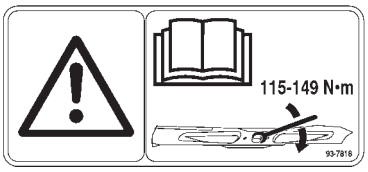


On Front of Cutting Unit (Part No. 68−8340)

On Gearbox Base (Part No. 93−6697)

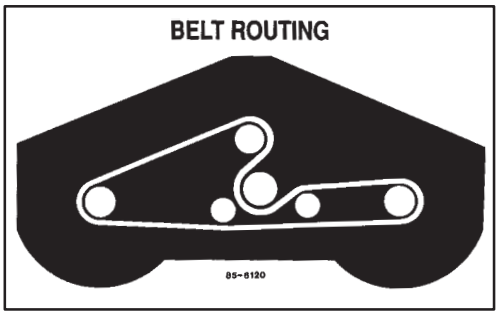


On Deck Channels, Under Covers (Part No. 85−6410)

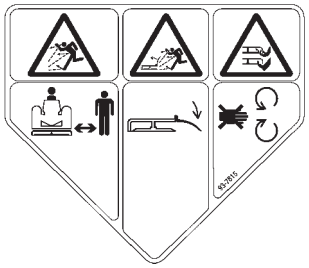


On Front of Cutting Unit (Part No. 93−7818)
Replaces Decal Part No. 68−8340 for CE

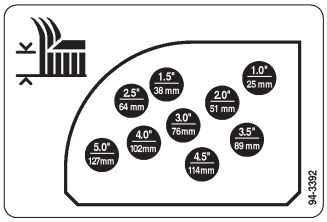
On Front of Deck (Part No. 88−1270)



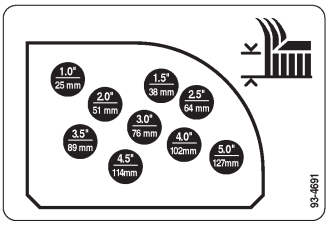
On Right Rear Top of Deck Under Cover (Part No. 85−6120)



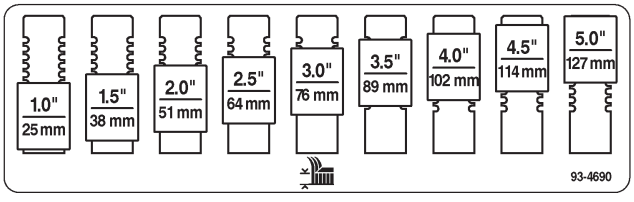
On Each Corner Of Cutting Unit (Part No. 93−7815)
Replaces Decal Part No. 43−8480 for CE



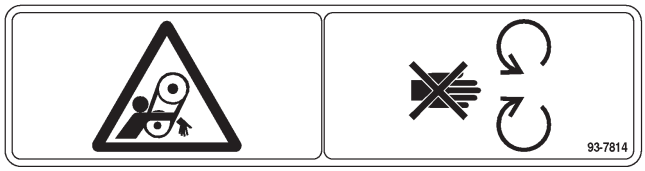
On Right Rear Top of Deck (Part No. 94−3392)



On left Rear Top of Deck (Part No. 93−4691)



On Front Deck Hanger (Part No. 93−4690)



On Deck Channels, Under Covers (Part No. 93−7814)
Replaces Decal Part No. 85−6410 for CE

SPECIFICATIONS

Type: 72” width of cut, 3 blades. Toro Recycler technology.

Height Of Cut: 1” to 5” inches adjustable in 1/2 inch increments. Front adjustment is with snapper pin and grooves in castor shaft. Rear adjustment is with hanger brackets and pin.

Construction: Housing is made of 12 gauge steel and reinforced with 2−1/2” x 10 gauge channel.

Cutter Drive: Gear box mounted on cutting unit is driven by PTO shaft. Power is transmitted to the blades by one hex B section belt. Spindle shafts are 1−1/4 inch diameter and supported by two externally sealed, greaseable, tapered roller bearings.

Blades: Three 25.18” long, .25” thick, heat−treated steel.

Suspension & Castor Wheels: Two front castors, consisting of 10” pneumatic wheel and tire assembly with sealed ball bearings. Rear of deck is suspended from lift arms with adjustable deck rake. Hydraulic counter balance and lift system designed integral with deck for maximum flotation.

Anti−scalp Features: Anti−scalp cup located on each blade. Three anti−scalp rollers. Adjustable skid on each end of deck.

Deck Covers: High impact plastic covers.

Quick Attach System: Tapered joint with over center adjustable tensioning latch.

Weight: 555 lbs.

Specifications and design subject to change without notice.

LOOSE PARTS

NOTE: Use this chart as a checklist to assure all parts have been received. Without these parts, total set−up cannot be completed.

Description	Qty.	Use
Castor Wheel Assembly	2	Install Castor Wheel Assemblies
Lift Arm Assembly	2	Mount to Traction Unit and Cutting Unit
PTO Shield Self Tapping screws	4	Mount PTO Shield
Decals	9	Apply for CE applications
Operator’s Manual	1	Read Before Operating Machine
Parts Catalog	1	
Registration Card	1	Fill Out And Return To Toro

SET–UP INSTRUCTIONS

INSTALL CASTOR WHEEL ASSEMBLIES (Fig. 1)

The snapper pins have been installed in castor arms for shipping.

1. Remove snapper pins shipped on each castor arm.

2. Slide castor wheel assembly into castor arm to desired height–of–cut.

3. Insert snapper pin through holes in castor arm and groove in castor shaft to secure assembly. Lock snapper pin.

4. Assure both castor wheels are set at same height–of–cut.

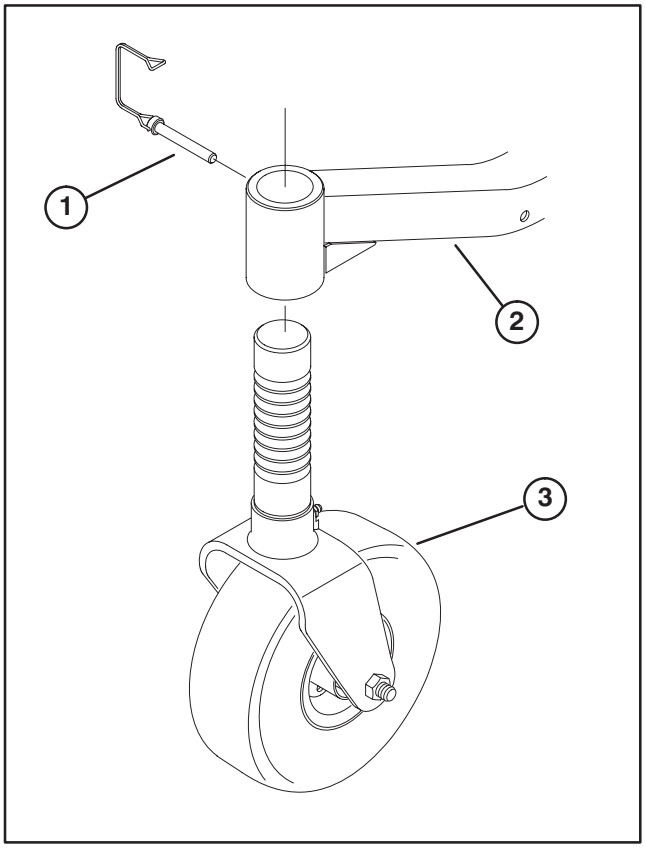


Figure 1

1. **Snapper pin**
2. **Castor arm**
3. **Castor wheel**

MOUNT PTO SHIELD (Fig. 2)

1. Mount PTO shield to top of cutting unit gear box mounting plate with (4) self–tapping screws.

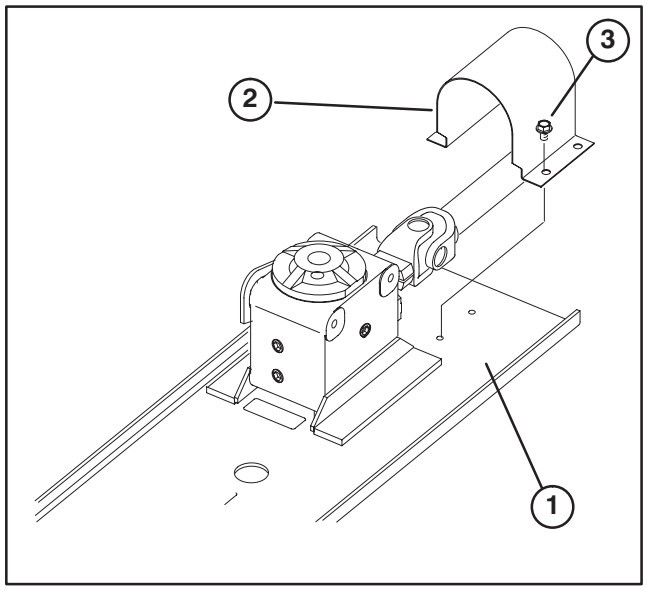


Figure 2

1. **Gear Box mounting plate**
2. **PTO shield**
3. **Self tapping screw**

INSTALL LIFT ARMS TO CUTTING UNIT AND TRACTION UNIT (Fig. 5–4)

1. Adjust ball joint in each lift arm assembly until a dimension of 2.50 inches from end of lift arm to center of ball joint is attained. Do not tighten jam nut.

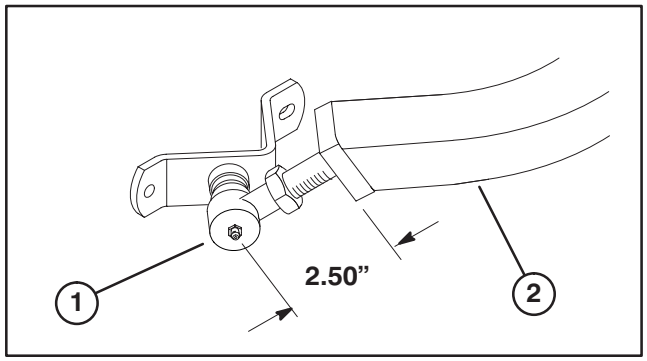


Figure 3

1. **Ball Joint**
2. **Lift Arm**

2. Secure lift arm assembly to traction unit as follows:

A. With engine off, raise seat and open needle valve. This allows lift arms to float freely.

B. Remove hair pin cotter and clevis pin securing latch cover to lift arm.

C. Pivot release lever upward.

D. Slide cutting unit lift arm onto traction unit lift arm, inserting shaft latch into slot in traction unit lift arm.

E. Pivot release lever downward and hand tighten by rotating clockwise.

F. Repeat installation on other lift arm.

SET–UP INSTRUCTIONS

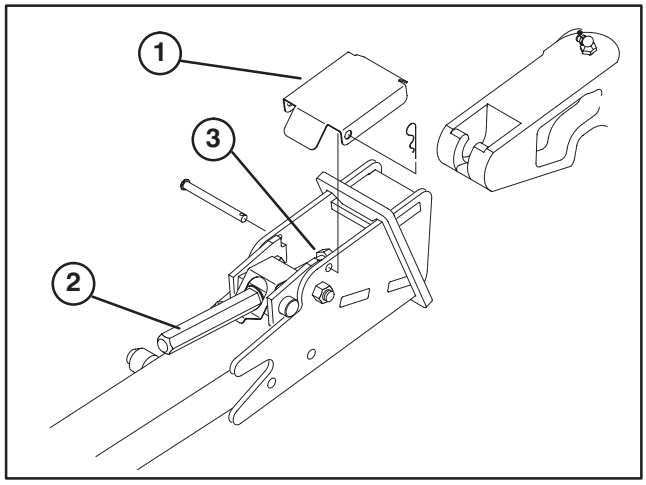


Figure 4
1. Latch Cover
2. Release Lever
3. Shaft latch

3. Move cutting unit in front of traction unit so ball joint brackets align with mounting holes in castor arms. Adjust ball joint brackets in or out equally until they easily line up with deck mounting holes.

4. Mount each ball joint bracket to castor arm with (2) 7/16–14 x 3" lg. capscrews and 7/16–14 locknuts.

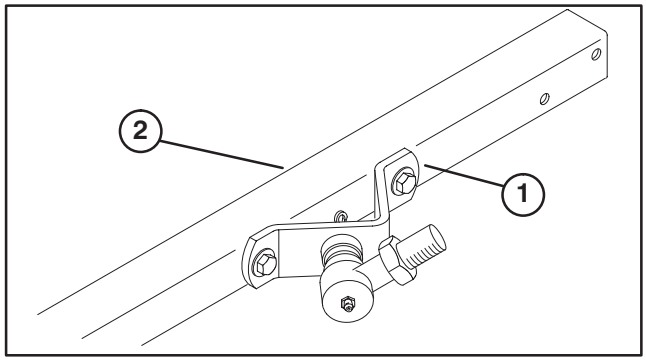


Figure 5
1. Ball Joint Bracket
2. Castor Arm

5. Tighten ball joint jam nuts.

6. Tighten release lever with a 3/4" (19mm) wrench.

7. Re–install latch cover to lift arm with clevis pin and hair pin cotter previously removed.

8. Close needle valve. Lower seat.

CONNECT DRIVE SHAFT TO TRACTOR (Fig. 6)

IMPORTANT: The drive shaft yokes must be exactly in line.

1. Rotate shaft until splines line up. To rotate drive shaft, insert screw driver into universal joint.

2. Slide coupler onto tractor PTO shaft until it clicks.

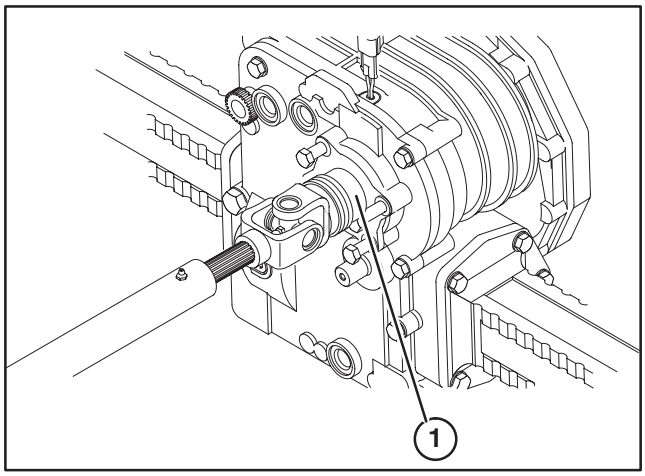


Figure 6
1. Drive Shaft Coupler

MOUNT HEIGHT–OF–CUT CHAINS (Fig. 7)

1. Remove hair pin cotter and clevis pin from height–of–cut bracket on deck.

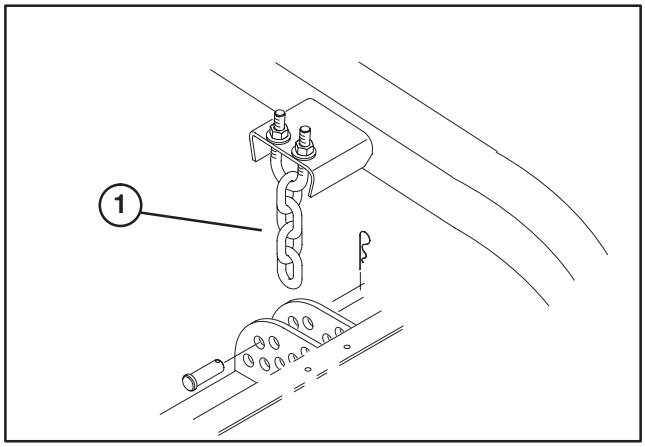


Figure 7
1. Height–of–Cut Chain

2. Start tractor and raise deck to highest possible position and turn off engine.

3. Align height–of–cut chain with hole for desired height–of–cut, install clevis pin and secure with hair pin cotter.

ADJUST TRANSPORT LATCH (Fig. 8)

1. Start tractor and raise deck to highest possible position and turn off engine.

2. Loosen (2) flange head capscrews securing latch plate to side of gearbox.

3. Rotate latch rod downward from front of traction unit.

4. Insert latch rod into rear hole (transport position) in latch plate.

5. Tighten flange head capscrews securing latch plate to gearbox.

6. Remove hair pin cotters and clevis pins securing height–of–cut straps to rear of deck.

7. Remove latch rod from rear hole in latch plate.

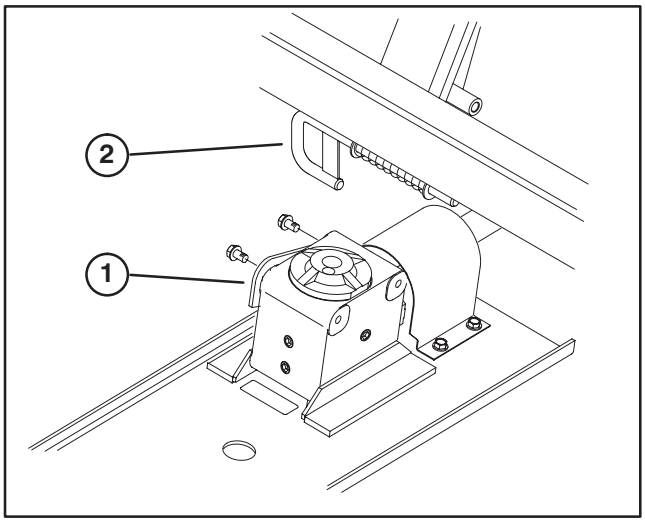


Figure 8
1. **Latch Plate**
2. **Latch Rod**

8. Rotate front of deck upward and insert latch rod into front hole (service position) in latch plate.

9. Loosen latch plate flange head capscrews and adjust latch plate position if required.

GREASE CUTTING UNIT

Before the cutting unit is operated, it must be greased to assure proper lubricating characteristics: refer to Lubrication section of manual. Failure to properly grease the cutting unit will result in premature failure of critical parts.

BEFORE OPERATING

CHECK LUBRICANT IN GEAR BOX

(Fig. 9)

The gear box is designed to operate with SAE 80−90 wt. gear lube. Although the gear box is shipped with lubricant from the factory, check the level before operating the cutting unit.

1. Position the machine and cutting unit on a level surface.

2. Remove check plug from side of gear box and make sure lubricant is up to bottom of hole. If level of lubricant is low, remove fill plug on end of gear case and add enough lubricant to bring it up to bottom of hole in side.

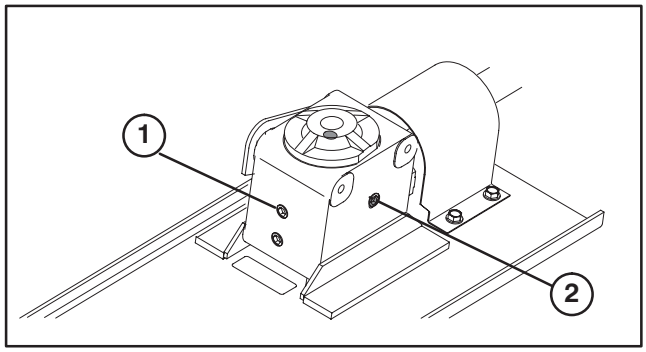


Figure 9

1. **Filler Plug**
2. **Check Plug**

ADJUSTING HEIGHT − OF − CUT

(Fig. 10−13)

The height−of−cut is adjustable from 1 to 5 inches in 1/2 inch increments.

1. Start engine and raise cutting. Stop engine after cutting unit is raised.

2. Remove front snapper pins from castor arms and slide castor wheel assembly up or down.

3. Insert snapper pin into castor arm and through groove in castor shaft to get desired height−of−cut.

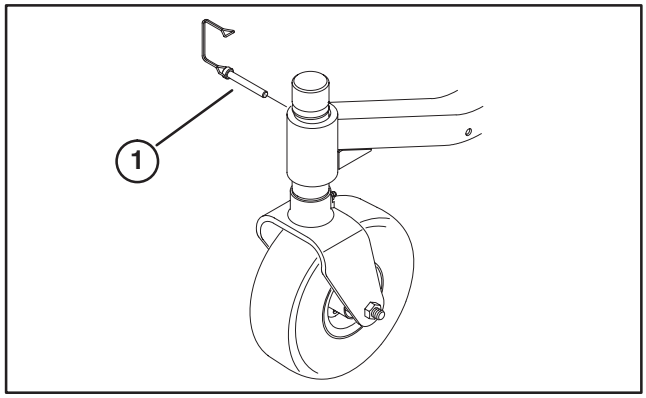


Figure 10

1. **Snapper Pin**

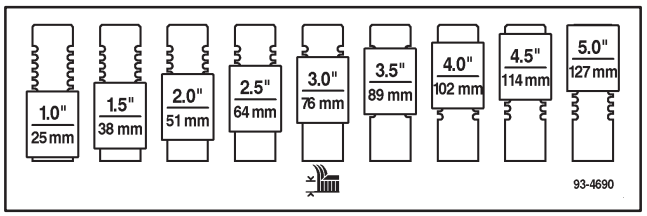


Figure 11

4. Remove hair pin cotter and clevis pin securing height−of−cut chain to rear of deck.

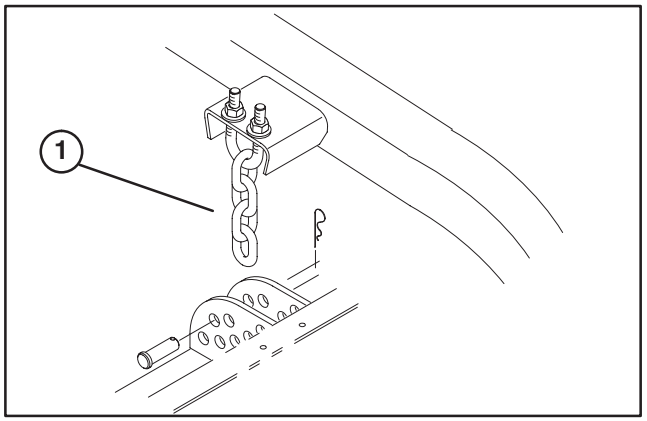


Figure 12

1. **Height−of−Cut chain**

5. Mount height−of−cut chain to desired height−of−cut hole with clevis pin and hair pin cotter.

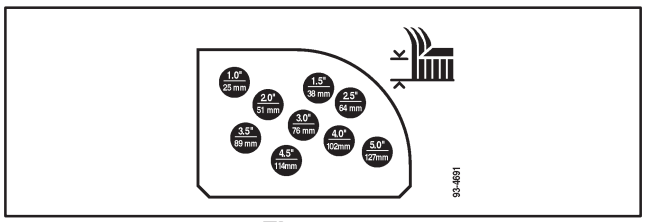


Figure 13

6. When using 1 inch height−of−cut, move skids and anti−scalp rollers to the highest holes.

ADJUSTING ANTI−SCALP ROLLERS

Note: If cutting unit is to be used in the 1" or 1−1/2" height−of−cut setting, cutting unit rollers must be repositioned in the top bracket holes.

To adjust front and rear rollers:

1. Remove cotter pins securing roller shafts to underside of deck.

2. Slide shafts out of lower bracket holes, align rollers with top holes and install shafts.

3. Install cotter pins to secure assemblies.

BEFORE OPERATING

ADJUSTING SKIDS (Fig. 14)

1. Adjust skids by loosening flange nuts, positioning as desired and re−tightening flange nuts.

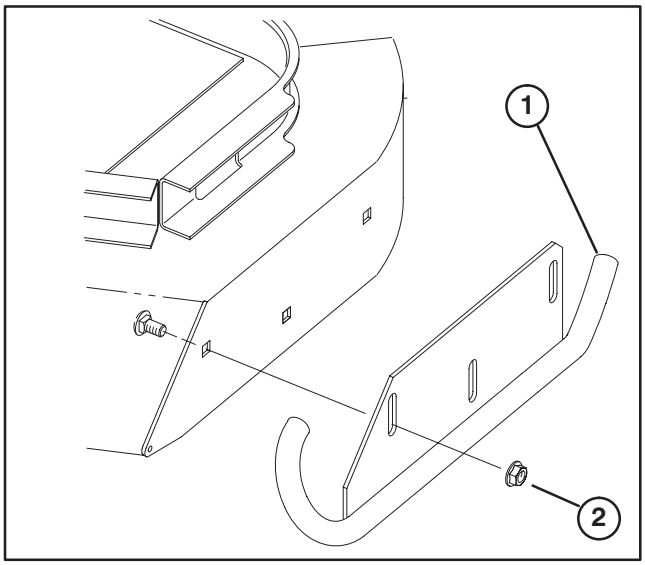


Figure 14
1. **Skid**
2. **Flange nut**

ADJUSTING DECK PITCH (Fig. 15)

Deck pitch is the difference in height−of−cut from the front of the blade plane to the back of the blade plane. TORO recommends a blade pitch of .25 inches. That is the back of the blade plane is .25 inches higher than the front.

1. Position machine on a level surface on shop floor.

2. Set deck to the desired height−of−cut.

3. Rotate (1) blade so it points straight forward.

4. Using a short ruler, measure from floor to front tip of blade. Then, measure from floor to rear tip of blade.

5. Subtract the front dimension from rear dimension to calculate your pitch.

6. To adjust pitch, start tractor and raise deck to highest possible position and turn off engine.

7. Loosen jam nuts on top or bottom of Height−of−Cut chain U−bolt.

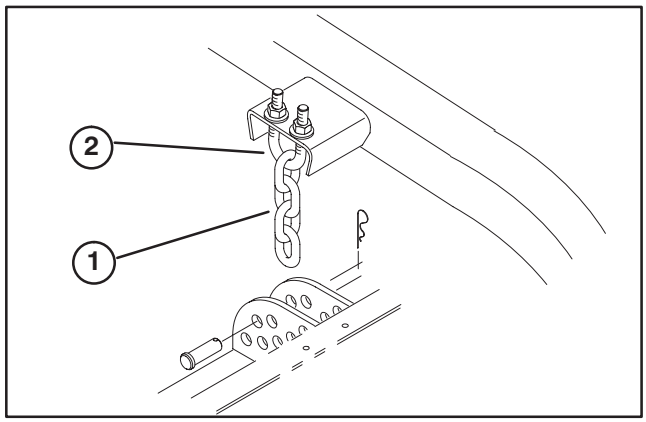


Figure 15
1. **Height−of−Cut chain**
2. **U−bolt**

8. Adjust other set of nuts to raise or lower rear of deck and attain correct deck pitch.

9. Tighten jam nuts.

10. Lower deck.

OPERATING INSTRUCTIONS

OPERATING TIPS

1. Mow When Grass Is Dry—Mow either in the late morning to avoid the dew, which causes grass clumping or in late afternoon to avoid the damage that can be caused by direct sunlight on the sensitive, freshly mowed grass.

2. Select The Proper Height—of—cut Setting To Suit Conditions – Remove approximately one inch or no more than 1/3 of the grass blade when cutting. In exceptionally lush and dense grass you may have to raise your height—of—cut to the next setting.

3. Mowing In Extreme Conditions – Air is required to cut and recut grass clippings in mower housing, so do not set height—of—cut too low or totally surround housing by uncut grass. Always try to have one side of the mower housing free from uncut grass, allowing air to be drawn into housing. When making an initial cut thru center of uncut area, operate machine slower and back up if mower starts to clog.

4. Mow At Proper Intervals – Under most normal conditions you'll need to mow approximately every 4—5 days. But remember, grass grows at different rates at different times. This means that in order to maintain the same height—of—cut, which is a good practice, you'll need to cut more frequently in early spring; as the grass growth rate slows in mid summer, cut only every 8—10 days. If you are unable to mow for an extended period due to weather conditions or other reasons, mow first with the height—of—cut at a high level; then mow again 2—3 days later with a lower height setting.

5. Always Mow With Sharp Blades – A sharp blade cuts cleanly and without tearing or shredding the grass blades like a dull blade. Tearing and shredding causes the grass to turn brown at the edges which impairs growth and increases susceptibility to diseases.

CAUTION: 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.

6. Stopping – If forward motion has to be stopped while cutting, a clump of grass clippings may be deposited on lawn. Follow this procedure for stopping while cutting:

A. With deck engaged, move onto a previously cut area.

B. Shift to neutral, move throttle control lever to SLOW position and rotate ignition key to OFF.

7. After Operating – To assure optimum performance, clean underside of mower housing, especially around inserts (kickers) after each use. If residue is allowed to build up in mower housing and on inserts, cutting performance will decrease.

8. Deck Pitch – Toro recommends a blade pitch of .25 inches. A pitch larger than .25 inches will result in less power required, larger clippings and a poorer quality of cut. A pitch less than .25 inches will result in more power required, smaller clippings and a better quality of cut.

LUBRICATION

GREASE BEARINGS, BUSHINGS AND GEAR BOX (Fig. 16)

The cutting unit must be lubricated regularly. If machine is operated under normal conditions, lubricate castor bearings and bushings with No. 2 general purpose lithium base grease or molybdenum base grease, after every 8 hours of operation or daily, whichever comes first. Lubricate fittings immediately after every washing, regardless of the interval listed.

1. The cutting unit has bearings and bushings that must be lubricated, and these lubrication points are: front castor shaft bushings (2), blade spindle bearings (3), idler arm pivot and right and left push arm ball joints (Fig. 16).

2. Position the machine and cutting unit on a level surface and lower cutting unit. Remove check plug from side of gear box and make sure lubricant is up to bottom of hole. If level of lubricant is low, remove fill plug on top of gear case and add SAE 80−90 wt. gear lube until level is up to bottom of hole in side.

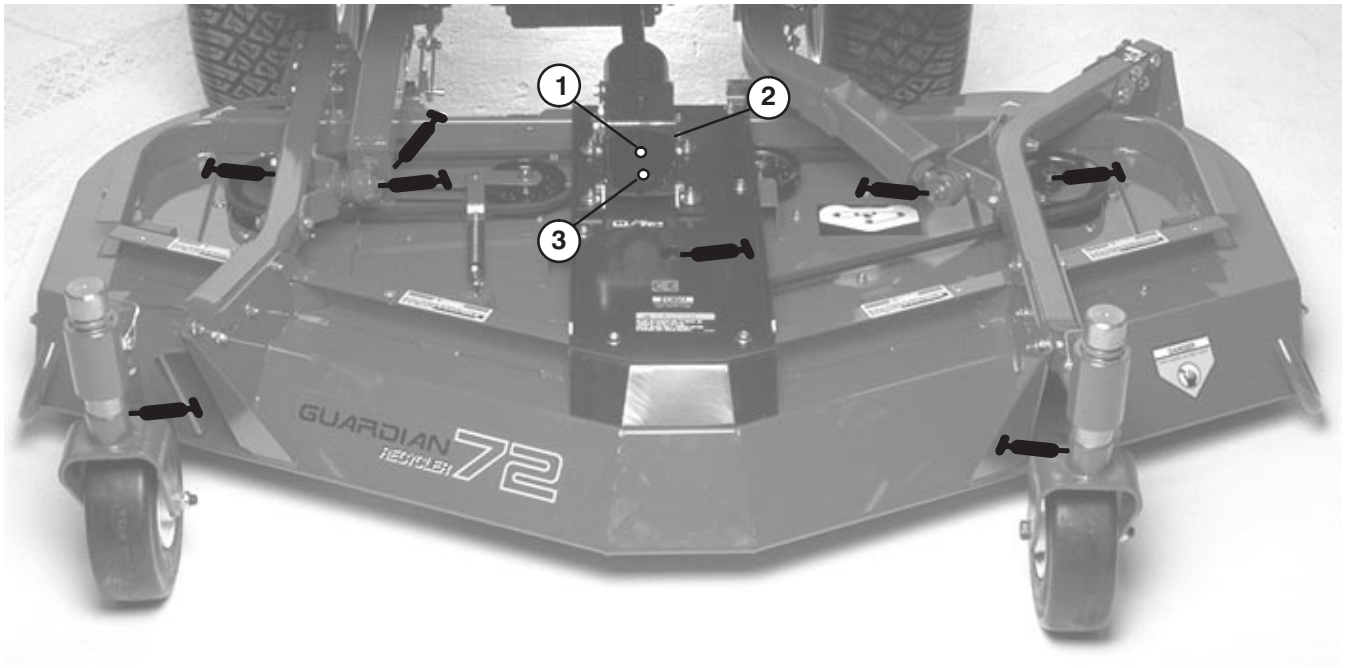


Figure 16
1. Filler Plug
2. Check Plug
3. Drain Plug

MAINTENANCE

CAUTION

To prevent accidental starting of the engine, while performing maintenance, shut engine off and remove key from ignition switch.

DISCONNECT CUTTING UNIT FROM TRACTION UNIT (Fig. 17–19)

Note: Implements are heavy and may require two people to handle.

1. Start tractor and raise deck to highest possible position and turn off engine.

2. Remove hair pin cotters and clevis pins securing height–of–cut chains to rear height–of–cut brackets.

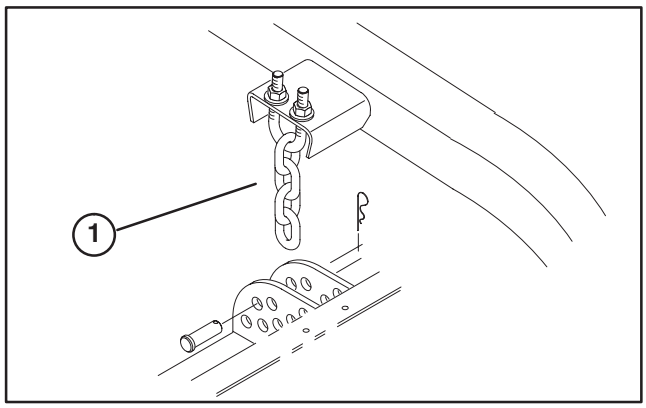


Figure 17
1. Height–of–Cut Chain

3. Rotate ignition key to run position and move lift lever forward to lower cutting unit.

4. Raise seat and open needle valve. This allows lift arms to float freely.

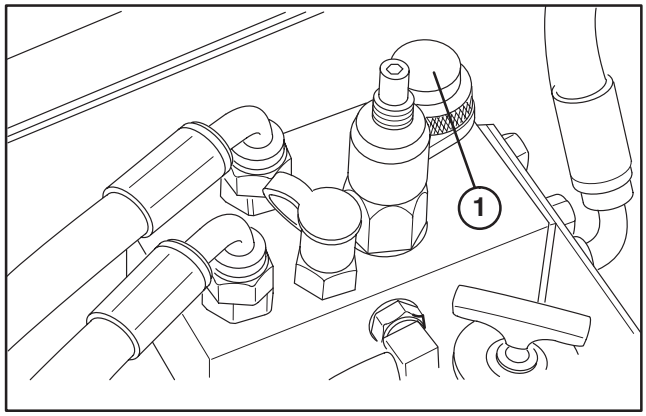


Figure 18
1. Needle Valve

5. Remove hair pin cotter and clevis pin securing latch cover to lift arm.

6. Loosen release lever by rotating it counterclockwise.

7. Pivot release lever upward and remove shaft latch from slot in traction unit lift arm.

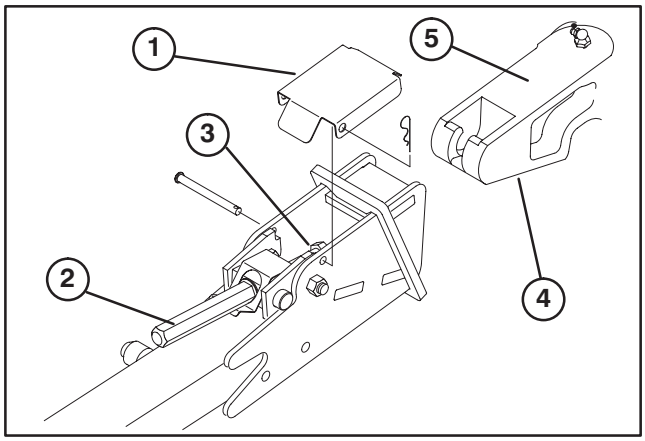


Figure 19
1. Latch Cover
2. Release Lever
3. Shaft latch
4. Traction Unit Lift Arm
5. Machined Surface

8. Pull rearward on lock collar to release drive shaft coupler from tractor.

9. Stay clear of lift arms and move deck away from tractor allowing lift arms to fall.

10. Secure hair pin cotter and clevis pin to height–of–cut straps for storage.

11. Close needle valve

CONNECT CUTTING UNIT TO TRACTION UNIT (Fig. 17–19)

1. Center traction unit in front of cutting unit on any flat hard surface.

2. Raise seat and open needle valve. This allows lift arms to float freely.

3. Adjust lift arms heights making sure that the machined surface on top of each traction unit lift arm is parallel to ground (Fig. 19). (Raise or lower lift arm casting by pushing up or down from behind the front tires or using wrench in front of tractor)

4. Check for dirt and debris on mating parts and clean as required.

5. Turn castor wheels so they point straight forward.

6. Secure first lift arm assembly to traction unit as follows:

A. Remove hair pin cotter and clevis pin securing latch cover to lift arm.

B. Pivot release lever upward.

C. Slide cutting unit lift arm onto traction unit lift arm, inserting shaft latch into slot in traction unit lift arm.

Note: If latch does not fall into slot in traction unit lift arm, raise or lower lift arm casting by pushing up or down from behind the front tires.

D. Pivot release lever downward and tighten securely by rotating clockwise.

7. Install other lift arm on tractor by rotating deck towards tractor, aligning lift arm to tractor arm and repeating step 5. If latch does not fall into slot in traction unit lift arm the arms are not lined up.

A. If lift arms on traction unit are not at the correct height for deck arms to slide on, push up or down on lift arm castings from behind the front tires until deck arm lines up and slides on.

B. If lift arms on deck do not line up side to side. Rotate castor wheels side ways so deck moves side to side easier. Move deck side to side until lift arms line up and slide on.

8. Move deck from side to side to check for tightness and re−tighten latches, if required.

9. Install latch covers to lift arms and secure with clevis pins and hair pin cotters.

10. Connect drive shaft to traction unit.

11. Close needle valve and lower seat.

12. Start tractor and raise deck to highest possible position and turn off engine.

13. Align height−of−cut chains with hole for desired height−of−cut, install clevis pin and secure with hair pin cotter.

CHANGING GEAR BOX LUBRICANT

(Fig. 20)

The gear box lubricant must be changed initially, after the first 400 hours of operation, and thereafter every 1600 hours of operation.

1. Position the machine and cutting unit on a level surface.

2. Loosen fixed idler pulley locking nut.

3. Loosen spring tensioning nut as required and remove belt.

4. Remove (4) locknuts securing gearbox mount to deck.

5. Remove belt from pulley.

6. Remove drain plug from end of gear box and tip gear box assembly allowing lubricant to drain from gear box.

7. Reinstall belt to pulley.

8. Reinstall gear box assembly to deck

9. Remove fill plug from end of gear case and check plug from side of gear case. Add SAE 80−90 wt. gear lube until level is up to bottom of hole in side.

10. Reinstall check plug to side of gear box and fill plug to end of gear case.

11. Re−tension belt. Refer to Replacing Drive Belts.

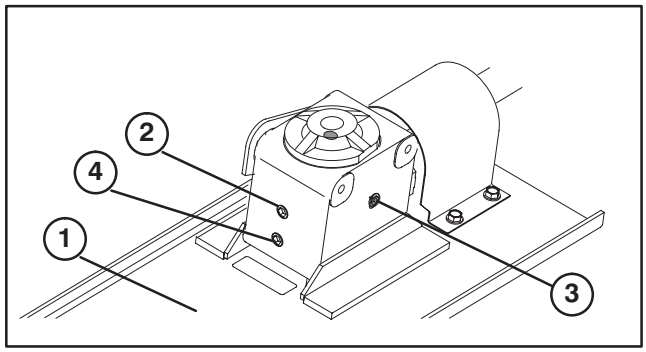


Figure 20

1. **Gear Box Mount**
2. **Filler Plug**
3. **Check Plug**
4. **Magnetic Drain Plug**

REPLACING DRIVE BELT (Fig. 20−22)

The blade drive belt, tensioned by the spring loaded idler, is very durable. However, after many hours of use, the belt will show signs of wear. Signs of a worn belt are: squealing when belt is rotating, blades slipping when cutting grass, frayed edges, burn marks and cracks. Replace the belt if any of these conditions are evident.

1. Lower cutting unit to the shop floor. Remove belt covers from top of cutting unit and set covers aside.

2. Unhook spring from idler arm bracket to release belt tension. Remove cotter pin and clevis pin securing idler arm bracket to idler arm.

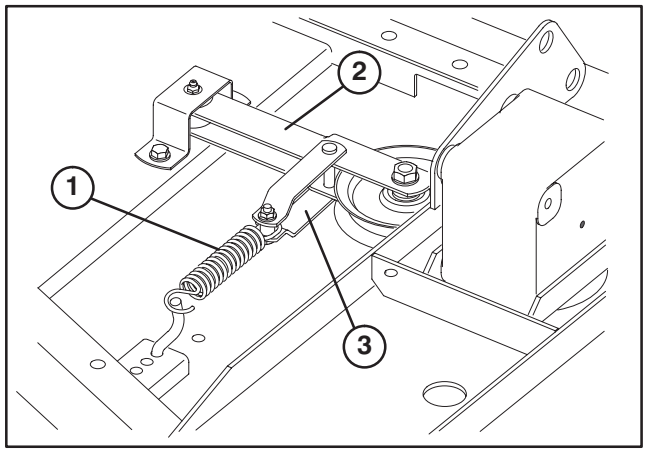


Figure 21

1. **Spring**
2. **Idler Arm**
3. **Idler Arm Bracket**

3. Remove capscrews and nuts securing gear box plate to deck channels. Lift gear box plate and gear box off deck channels and lay it on top of deck.

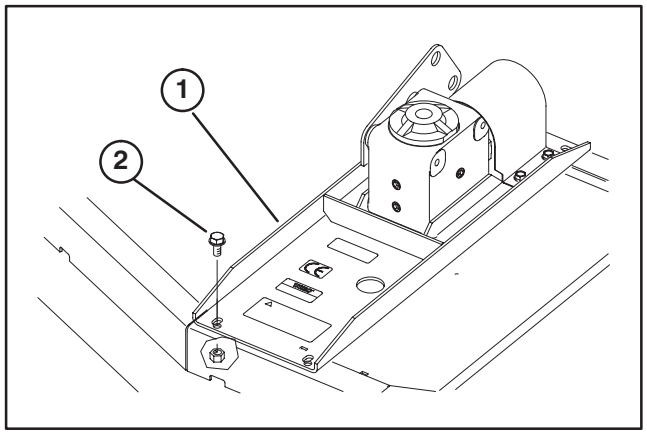


Figure 22

1. Gear Box Plate
2. Capscrews & Nuts

4. Remove old belt from around spindle pulleys and thru idler pulley assembly.

5. Route new belt around spindle pulleys and thru idler pulley assembly, as shown in figure 23.

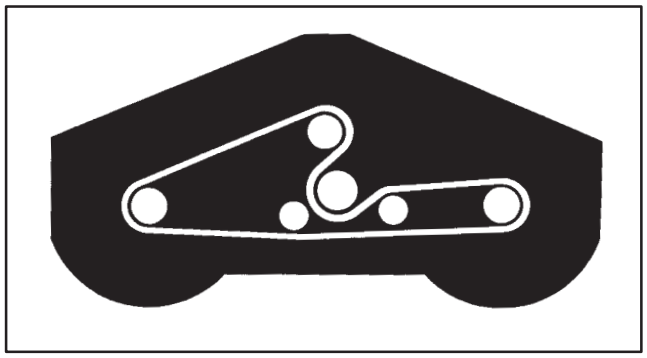


Figure 23

6. Reposition gear box plate on deck channels while routing belt around gear box pulley. Mount gear box plate to deck channels with capscrews and nuts previously removed.

7. Reinstall idler arm bracket to idler arm with cotter pin and clevis pin. Hook spring onto idler arm bracket. To assure there is proper tension on drive belt, spring should be extended to a length of approximately 7.00". If spring is not extended to this length, relocate spring rod to a new mounting holes further away from from belt.

8. Reinstall belt covers.

SERVICING FRONT BUSHINGS IN CASTOR FORKS (Fig. 24)

The castor forks have bushings pressed into the top and bottom of the casting and after many hours of operation, the bushings will wear. To check the bushings, move castor fork back and forth and from side to side. If castor spindle is loose around the bushings, bushings are worn and must be replaced.

1. Start tractor and raise deck to highest possible position and turn off engine.

2. Remove front snapper pins from castor arms and slide castor wheel assembly out of castor arm tube.

3. Remove locknut from capscrew holding castor wheel assembly between castor fork. Grasp castor wheel and slide capscrew out of fork.

4. Remove retaining ring, washer and wavey washer securing castor shaft to castor fork. Remove shaft from fork.

5. Insert pin punch into top or bottom of castor fork and drive bushing out of fork. Repeat for other bushing. Clean inside of forks to remove dirt.

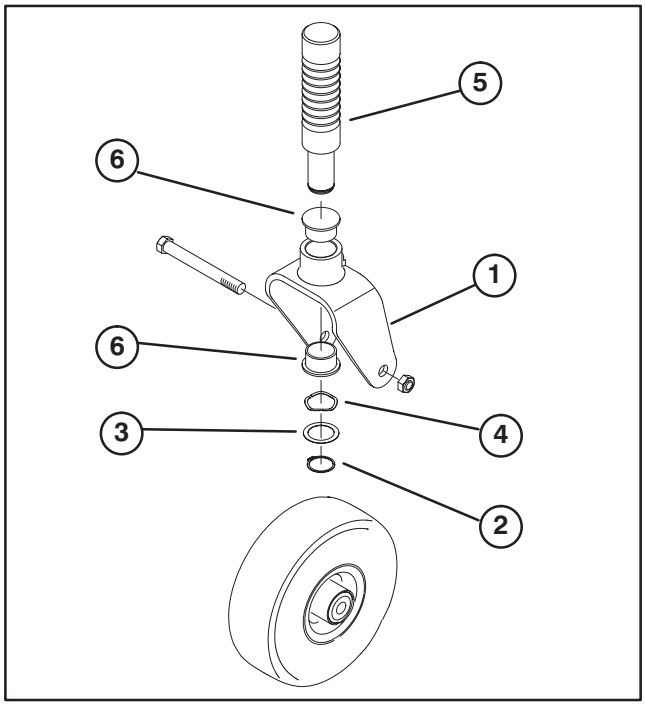


Figure 24

1. Front Castor Fork
2. Retaining Ring
3. Washer
4. Wavey Washer
5. Castor Shaft
6. Bushings

6. Apply grease to inside and outside of new bushings. Using a hammer and flat plate, drive bushings into fork.

7. Inspect castor shaft and fork for wear and replace if damaged.

8. Push castor shaft through bushings and fork and secure with wavey washer, washer and retaining ring.

9. Insert snapper pin into castor arm and through groove in castor shaft at desired height−of−cut.

SERVICING CASTOR WHEELS AND BEARINGS (Fig. 25)

The castor wheel rotates on a high−quality roller bearing. Even after many hours of use, provided that the bearing was kept well−lubricated, bearing wear will be minimal. However, failure to keep bearing lubricated will cause rapid wear. A wobbly castor wheel usually indicates a worn bearing.

1. Remove locknut from capscrew holding castor wheel assembly between castor fork. Grasp castor wheel and slide capscrew out of fork.

3. Remove bearing from wheel hub and allow spacer to fall out. Remove bearing from opposite side of wheel hub.

4. Check the bearings, spacer and inside of wheel hub for wear. Replace defective parts as required.

5. To assemble the castor wheel, push bearing into wheel hub. Slide spacer into wheel hub. Push other bearing into open end of wheel hub to captivate the spacer inside the wheel hub.

6. Install castor wheel assembly between castor forks and secure in place with capscrew and locknut.

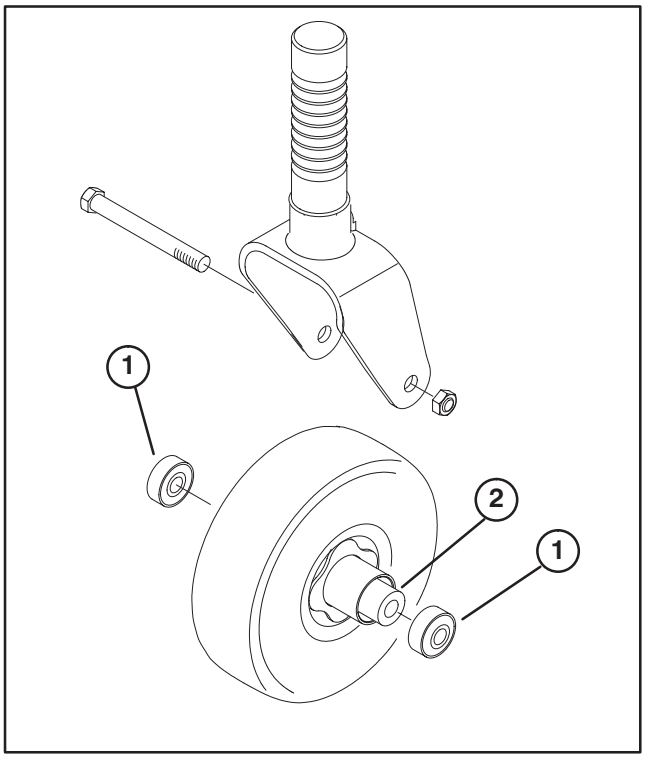


Figure 25
1. **Bearing**
2. **Spacer**

REMOVING CUTTER BLADE (Fig. 26)

The blade must be replaced if a solid object is hit, the blade is out−of−balance or if the blade is bent. Always use genuine TORO replacement blades to be sure of safety and optimum performance. Never use replacement blades made by other manufacturers because they could be dangerous.

1. Raise cutting unit to highest position, shut the engine off and engage the parking brake.

2. Remove hair pin cotters and clevis pins securing height−of−cut straps to rear of deck.

3. Rotate front of deck upward and insert latch rod into front hole (service position) in latch plate.

4. Grasp end of blade using a rag or thickly padded glove. Remove blade bolt, anti−scalp cup and blade from spindle shaft.

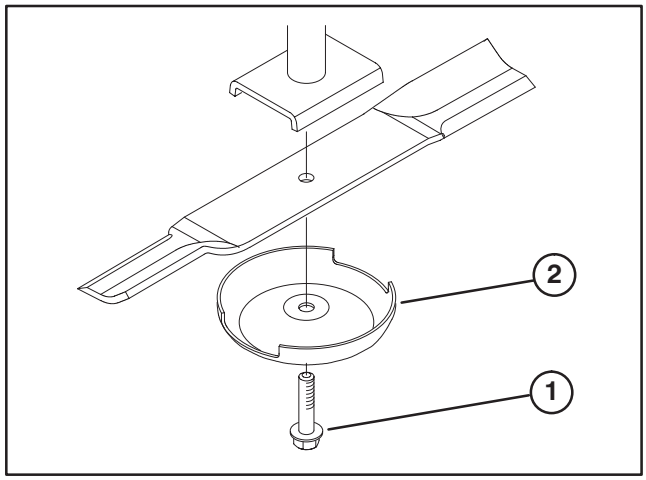


Figure 26
1. **Blade bolt**
2. **Anti−Scalp Cup**

5. Install blade−sail facing (up) toward cutting unit−with anti−scalp cup and blade bolt. Tighten blade bolt to 85−110 ft−lb.

WARNING

Do not try to straighten a blade that is bent, and never weld a broken or cracked blade. Always use a new blade to assure continued safety certification of the product.

INSPECTING AND SHARPENING BLADE (Fig. 27 − 28)

1. Raise cutting unit to highest position, shut the engine off and engage the parking brake.

2. Remove hair pin cotters and clevis pins securing height−of−cut straps to rear of deck.

3. Rotate front of deck upward and insert latch rod into front hole (service position) in latch plate.

4. Examine cutting ends of the blade carefully, especially where the flat and curved parts of the blade meet (Fig. 27–A). Since sand and abrasive material can wear away the metal that connects the flat and curved parts of the blade, check the blade before using the machine. If wear is noticed (Fig. 27–B), replace the blade: refer to Removing Cutter Blade.

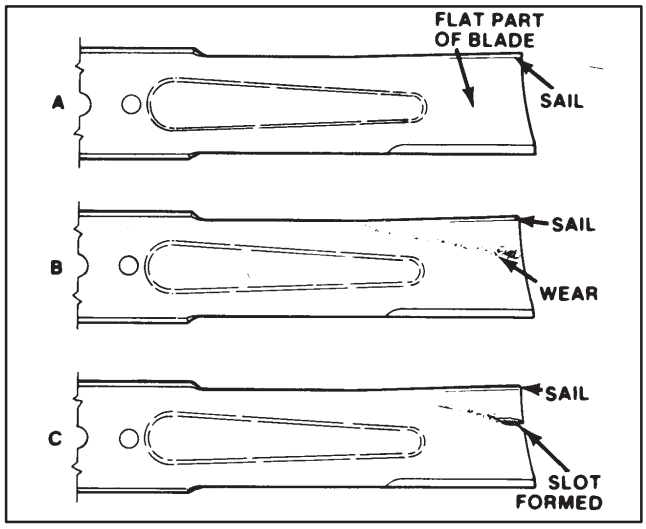


Figure 27

DANGER

If blade is allowed to wear, a slot will form between the sail and flat part of the blade (Fig. 27–C). Eventually a piece of the blade may break off and be thrown from under the housing, possibly resulting in serious injury to yourself or bystander.

5. Inspect cutting edges of all blades. Sharpen the cutting edges if they are dull or nicked. Sharpen only the top of the cutting edge and maintain the original cutting angle for best performance (Fig. 28). The blade will remain balanced if same amount of metal is removed from both cutting edges.

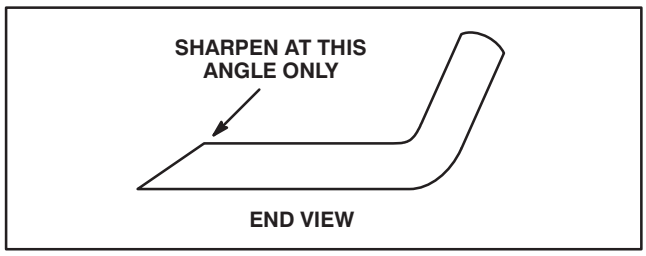


Figure 28

6. To check blade for being straight and parallel, lay blade on a level surface and check its ends. Ends of blade must be slightly lower than the center, and cutting edge must be lower than the heel of the blade. This blade will produce good quality of cut and require minimal power from the engine. By contrast a blade that is higher at the ends than the center, or if cutting edge is higher than the heel, the blade is bent or warped and must be replaced.

7. Install blade—sail facing (up) toward cutting unit–with anti–scalp cup and blade bolt. Tighten blade bolt to 85–110 ft–lb.

CORRECTING CUTTING UNIT MISMATCH

If there is mismatch between the blades, the grass will appear streaked when it is cut. This problem can be corrected by making sure the blades are straight and all blades are cutting on the same plane.

1. Using a 3 foot long carpenters level, find a level surface on the shop floor.

2. Raise height–of–cut to the highest position: refer to Adjusting Height–Of–Cut.

3. Lower cutting unit onto flat surface. Remove covers from top of cutting unit.

4. Unhook spring from idler arm bracket to release belt tension.

5. Rotate blades until the ends face forward and backward. Measure from floor to front tip of cutting edge and remember this dimension. Then rotate same blade so opposite end is forward and measure again. The difference between dimensions must not exceed 1/8 of an inch. If dimension exceeds 1/8 of an inch, replace the blade because it is bent. Make sure to measure all blades.

6. Compare measurements of outer blades with the center blade. Center blade must not be more than 3/8 of an inch lower than the outer blades. If center blade is more than 3/8 of an inch lower than the outer blades. proceed to step 7 and add shims between spindle housing and bottom of cutting unit.

7. Remove capscrews, flatwashers, lockwashers and nuts from outer spindle in the area where shims must be added. To raise or lower the blade, add a shim, Part No. 3256–24, between spindle housing and bottom of cutting unit. Continue to check alignment of blades and add shims until tips of blades are within the required dimension.

IMPORTANT: Do not use more than three shims at any one hole location. Use decreasing numbers of shims in adjacent holes if more than one shim is added to any one hole location.

8. Hook spring onto idler arm bracket. Reinstall belt covers.

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBERS

The cutting deck has two identification numbers: a model number and a serial number. The two numbers are stamped into a plate on front channel of the mower deck, under cover. In any correspondence concerning the mower, supply the model and serial numbers to assure that correct information and replacement parts are obtained.

To order replacement parts from an authorized TORO Distributor, supply the following information:

1. Model and serial numbers of the machine.

2. Part number, description and quantity of parts desired.

Note: Do not order by reference number if a parts catalog is being used; use the part number.

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
612-888-8801
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.
- 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.

Rev. 12/09/1999