



# **52'' Mower**

**for**

**220 Traction Units**

**Model No. 30652 – 490001 & Up**

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## **Operator's Manual**

**IMPORTANT:** Read this manual carefully. It contains information about your safety and the safety of others. Also become familiar with the controls and their proper use before you operate the product.

# FOREWORD

This 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

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.

3. Operating Instructions
4. Maintenance

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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.

The cutting unit has been tested and certified for compliance with the B71.4–1990 specifications of the American National Standards Institute. Although 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 replacement manual is available by sending complete Model and Serial Number to:

The Toro Company  
8111 Lyndale Avenue South  
Bloomington, 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. Do not operate machine unless all shields, guards, covers and safety devices in place. If a shield, guard, safety device or decal is illegible or damaged, repair or replace it before operating machine.

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. Start engine only when parking brake is set, PTO (blade) is disengaged and transmission is in neutral.

## WHILE OPERATING

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

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

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

B. Watch for holes or other hidden hazards.

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

D. Reduce speed when making sharp turns.

E. Avoid sudden starts and stops.

F. Cut slopes carefully. Do not start, stop, or turn suddenly on hillsides.

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

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

10. Do not operate unless grass deflector or entire grass collector is installed. The grass deflector must always be installed and in lowest position on the side discharge cutting unit. This product is designed to drive objects into the ground where they lose energy quickly in grassy areas. **However, 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.

11. Never raise the cutting unit or change height-of-cut while the blade(s) are rotating.

12. If the cutting blade(s) strike a solid object or the machine vibrates abnormally, shut the engine off. Remove spark plug wire(s) to prevent 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 blade(s) are in good condition and blade bolts are tightened to specification.

13. 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.

# SAFETY INSTRUCTIONS

## MAINTENANCE

**14.** Remove key from ignition switch and disconnect spark plug wire(s) to prevent accidental starting of the engine when servicing, adjusting or storing the machine.

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

**16.** To reduce potential fire hazard, keep the engine free of excessive grease, grass, leaves and accumulations of dirt.

**17.** 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.

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

**19.** 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.

**20.** Before disconnecting or performing any work on the hydraulic system, all pressure in system must be relieved by stopping engine and placing hydrostatic traction control in neutral.

**21.** 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.

**22.** Allow engine to cool before storing mower in any enclosure such as a garage or storage shed. Make sure the mower fuel tank is empty if machine is to be stored in excess of 30 days. Do not store mower near any open flame or where gasoline fumes may be ignited by a spark. Always store gasoline in a safety-approved, red metal container.

**23.** At the time of manufacture, the machine conformed to the safety standards in effect. To ensure optimum performance and continued safety conformance of the machine, use genuine TORO replacement parts and accessories. Replacement parts and accessories made by other manufacturers may result in non-conformance with safety standards and could void the warranty.

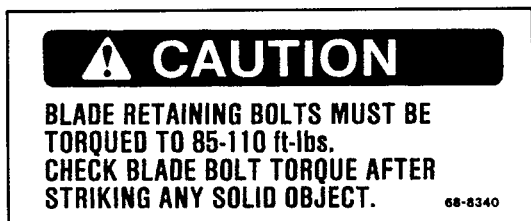
# SAFETY AND INSTRUCTION DECALS

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. Replacement can be ordered from your Authorized Toro Distributor.

See Traction Unit Operator's Manual for  
Glossary of Safety Symbols



ON BOTH SIDES OF CUTTING UNIT  
(Part No. 66-1340)



ON LEFT SIDE OF CUTTING UNIT  
(Part No. 68-8340)



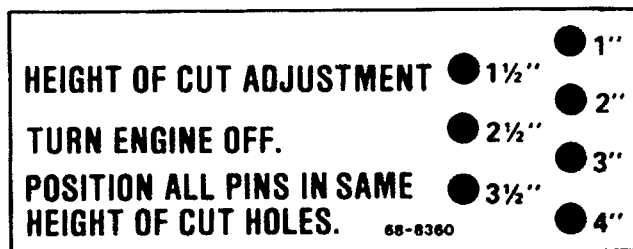
ON LEFT AND CENTER  
OF DECK, UNDER SHIELDS  
(Part No. 67-5360)



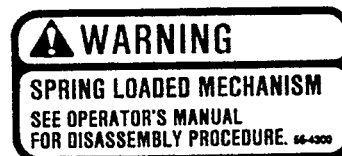
ON GEAR BOX BRACKET  
(Part No. 70-2560)



ON LEFT SIDE OF CUTTING UNIT  
(Part No. 43-8480)



ON LEFT SIDE OF CARRIER FRAME  
(Part No. 68-8360)



ON SPRING COVERS  
(Part No. 55-4300)



UNDER DEFLECTOR  
(Part No. 66-6380)



ON REAR CENTER OF CUTTING UNIT  
(Part No. 88-1270)



ON DEFLECTOR  
(Part No. 54-9220)

# SPECIFICATIONS

**Width of Cut:** 51-3/4" (1.32 m).

**Height of Cut:** Adjustable from 1" to 4" (25 to 102 mm) in 1/2" (13 mm) increments.

**Blade Tip Speed:** 15,764 ft/min. @ 3300 engine rpm.  
15,525 ft/min. @ 3250 engine rpm.

**Cutter Blades:** Three heat treated steel blades, each 3/16 in. (4.8 mm) thick and 18 in. (457 mm) long.

**Pneumatic Wheels:** 8 in. (203 mm) dia. with greaseable roller bearings. (Inflation 20–30 P.S.I.)

**Unit Drive System:** Belt drive from implement jackshaft to right angle gear box. Belt drive to all spindles.

## Optional Equipment:

**Leaf Mulcher:** Model 68–7210

**Recycler Kit:** Model 59225

**52" Front Baffle Kit:** Part No. 68–7210  
(For Dry Conditions)

**Rear Weight Kit:** (Traction Unit) Part No. 24–5780

**Phenolic Caster Wheels:** Part No. 27–1050 use with Spanner Part No. 69–8980 or order Part No. 40–0370 Caster Fork and 3/4" bolts Part No. 328–9.  
Specifications and design subject to change without notice.

# LOOSE PARTS

**NOTE:** Use this chart as a checklist to assure all parts have been received.

| DESCRIPTION                         | QTY. | USE                                  |
|-------------------------------------|------|--------------------------------------|
| Rear Cradle                         | 2    | Mount to lift arms                   |
| Bolt 3/8–16 x 2" (51 mm)            | 6    |                                      |
| Spacer                              | 2    |                                      |
| Flange Nuts 3/8"                    | 6    |                                      |
| Bolt 1/2–13 x 1-1/2" (38 mm)        | 4    |                                      |
| Washer 3/8"                         | 4    |                                      |
| Carrier Frame                       | 1    |                                      |
| Castor Wheel Assembly               | 2    | Mount Castor Wheels to Carrier Frame |
| Thrust Washer                       | 8    |                                      |
| Lynch Pin                           | 2    |                                      |
| Baffle                              | 1    | Install front deflector              |
| Carriage bolt 5/16–18 x 3/4" (19mm) | 5    |                                      |
| Lock nut 5/16" thin                 | 5    |                                      |
| Clevis Pin                          | 4    | Mount Mower to Carrier Frame         |
| Hair Pin Cotter                     | 4    |                                      |
| Cushion Shim                        | 4    |                                      |
| V-Belt                              | 1    |                                      |

| DESCRIPTION                  | QTY. | USE   |
|------------------------------|------|---|
| Mounting Bracket             | 1    | Mount Weight Transfer Kit to Traction Unit            |
| Lock Pin Assembly            | 2    |   |
| Self Tapping Screw           | 2    |   |
| Spring Cover                 | 1    |   |
| Clevis Pin                   | 1    |   |
| Hairpin Cotter               | 1    |   |
| Spring End–Top               | 1    |   |
| Extension Spring             | 1    |   |
| Spring End–Lower             | 1    |   |
| Knee Link                    | 1    |   |
| Bolt 3/8–16 x 2-1/4" (57 mm) | 2    |   |
| Bolt 3/8–16 x 1" (26 mm)     | 2    |   |
| Shoulder Bolt                | 2    |   |
| Lock Nut 3/8"                | 4    |   |
| Operator's Manual            | 1    | Read Before Operating Cutting Unit and Ordering Parts |
| Parts Catalog                | 1    |   |

## SET-UP INSTRUCTIONS

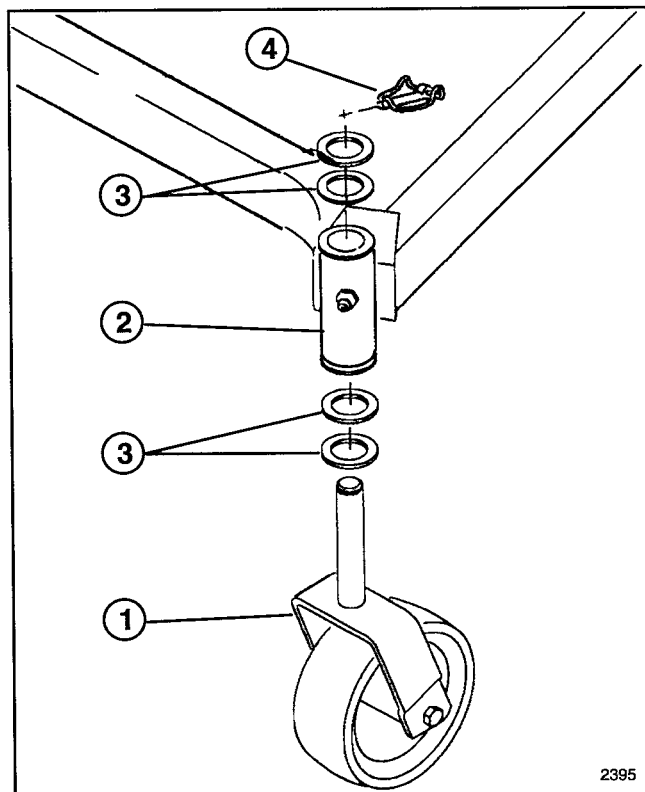
### INSTALL CASTOR WHEELS

1. Place (2) thrust washers onto castor wheel shaft (Fig. 1).

2. Insert shaft into carrier frame mounting tube. Install (2) thrust washers and secure with lynch pin (Fig. 1).

**Note:** Check tire pressure 10–15 psi. (68–103 kPa).

**Note:** Grease castor wheels and spindles.



**Figure 1**

- |                         |                 |
|-------------------------|-----------------|
| 1 Castor wheel assembly | 3 Thrust washer |
| 2 Carrier frame         | 4 Lynch pin     |

# SET-UP INSTRUCTIONS

## MOUNT CARRIER FRAME TO TRACTION UNIT

1. Slide carrier frame onto lift arms. Align spacer and mounting holes (Fig. 2).
2. Secure each side with (3) 1/2 x 1-1/2" (38 mm) bolts (Fig. 2).
3. Torque mounting screws to 70–80 ft. lbs. (95–109 Nm) (Fig. 2).

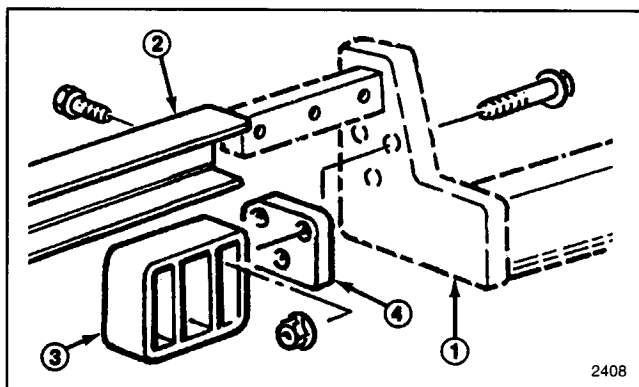


Figure 2

- |                 |               |
|-----------------|---------------|
| 1 Lift arm      | 3 Rear cradle |
| 2 Carrier frame | 4 Spacer      |

## INSTALL FRONT BAFFLE

1. Locate baffle inside front of mower, so left end fits into curved edge and bottom edge is 3/4" (19 mm) below front lip of deck. Using baffle as a guide, mark and drill (5) 9 mm holes in front of mower as shown (Fig. 3).
2. Install front baffle inside mower with 5/16" bolts, from the inside and secure with 5/16" thin lock nuts (Fig. 3).

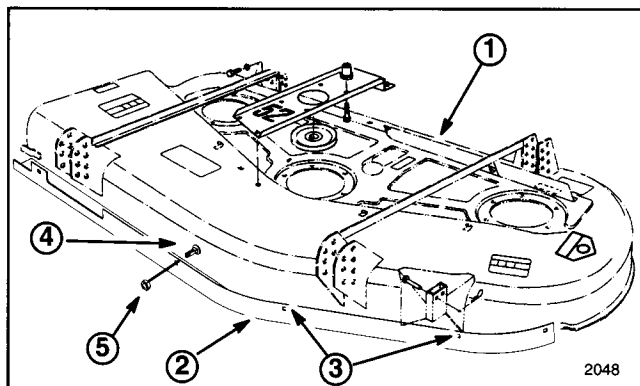


Figure 3

- |                   |                                       |
|-------------------|---------------------------------------|
| 1 52" mower       | 4 Carriage bolt 5/16–18 x 3/4" (19mm) |
| 2 Front baffle    | 5 Lock nut 5/16" thin                 |
| 3 Drill 8 mm hole |                                       |

## MOUNTING MOWER

1. Engage parking brake, be sure traction pedal is in neutral, PTO lever is in DISENGAGED position, start engine and raise frame. Stop engine.
2. Remove hair pin cotters and clevis pins from height-of-cut brackets (Fig. 11).
3. Position mower under carrier frame and align gear box input shaft with PTO shaft and slide together. Secure with roll pin and tighten bolts and locknuts (Fig. 4).

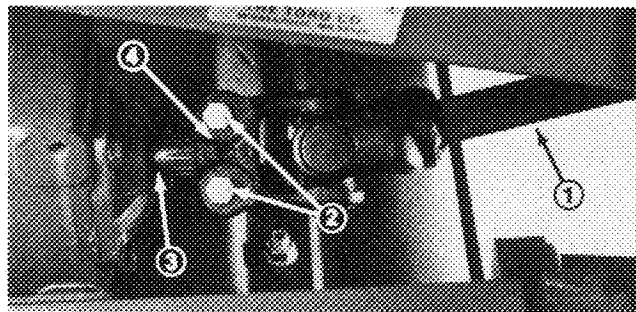


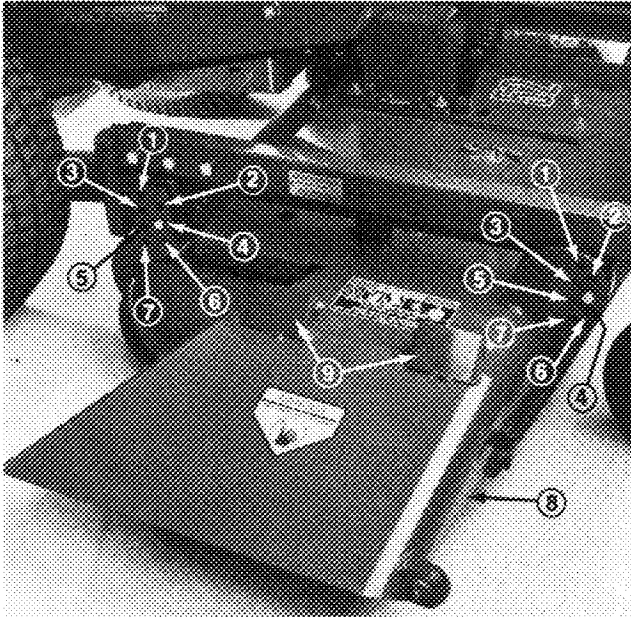
Figure 4

- |                       |                 |
|-----------------------|-----------------|
| 1 PTO shaft           | 3 Gearbox shaft |
| 2 Bolts and lock nuts | 4 Roll pin      |

# SET-UP INSTRUCTIONS

4. Lower carrier frame and install (4) clevis pins through desired height-of-cut bracket holes and frame brackets. Secure (4) pins with hair pin cotters (Fig. 11).

**Note:** All four pins must be in the same hole locations to prevent uneven cutting.



**Figure 5**

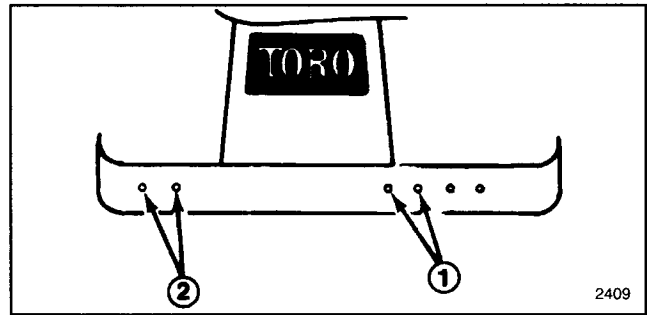
|   |           |         |   |                 |          |
|---|-----------|---------|---|-----------------|----------|
| 1 | 1 in.     | (25 mm) | 6 | 3-1/2 in.       | (89 mm)  |
| 2 | 1-1/2 in. | (38 mm) | 7 | 4 in.           | (102 mm) |
| 3 | 2 in.     | (51 mm) | 8 | Grass deflector |          |
| 4 | 2-1/2 in. | (64 mm) | 9 | Spring hinges   |          |
| 5 | 3 in.     | (76 mm) |   |                 |          |

## INSTALL WEIGHT TRANSFER KIT

1. Fully raise the cutting deck, set the parking brake, rotate the ignition key to OFF and remove key from ignition switch.

2. Place blocks under the cutting deck to prevent it from falling during assembly.

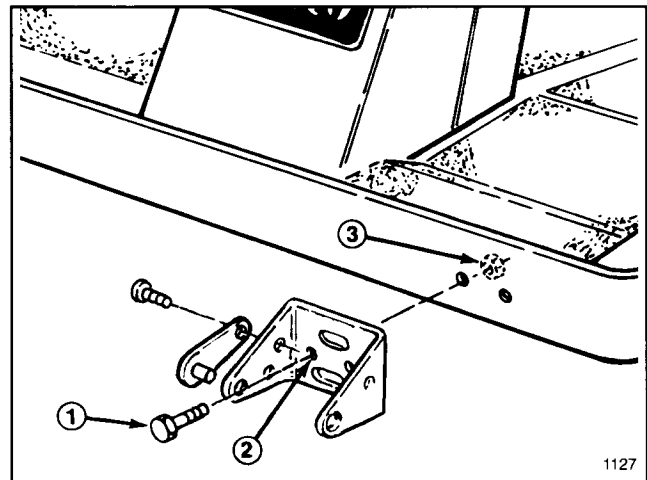
**Note:** Mounting brackets for weight transfer kit must be installed in different locations depending on the cutting deck. Refer to (Fig 6) for mounting location.



**Figure 6**

1 52" side discharge deck      2 52" deck w/bagger

3. To install the mounting brackets, insert (2) 3/8 x 1" flangehead capscrews through the slotted bracket holes. Thread the screws into the captivated frame nuts and torque to 45–50 ft-lb (Fig. 7).



**Figure 7**

1 Flangehead capscrew      3 Lock nut  
2 Slotted hole

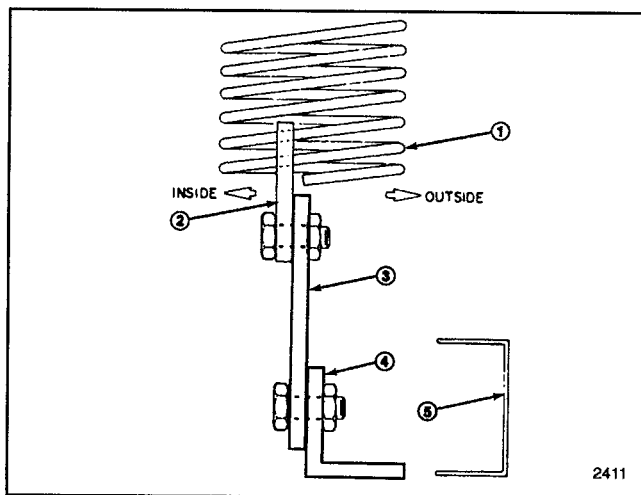
# SET-UP INSTRUCTIONS

4. Thread extension spring coil into the top and bottom spring end holes (Fig. 10).

5. Mount knee link to bottom spring end with wide part of knee link pointing forward and spring end stop pointing forward. Secure knee link to outer side of spring end with shoulder bolt and lock nut (Fig. 8, 9 & 10).

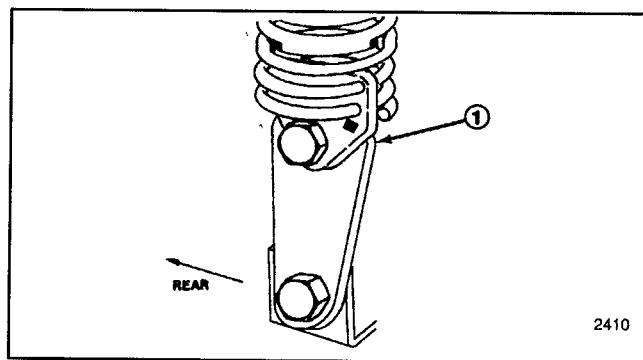
**IMPORTANT: The knee link must be assembled pointing in the proper direction or spring will not pivot correctly when deck is raised.**

6. Mount bottom of knee link to deck bracket with a shoulder bolt and locknut.



**Figure 8**

- |                          |                   |
|--------------------------|-------------------|
| 1 Weight transfer spring | 4 Deck bracket    |
| 2 Spring end plate       | 5 Flotation frame |
| 3 Knee link bracket      |                   |

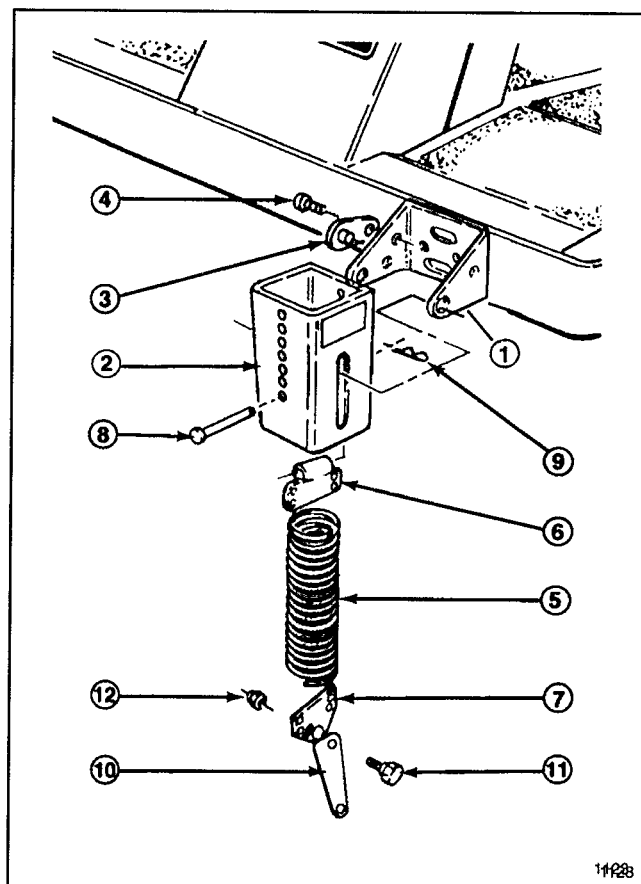


**Figure 9**

- 1 Wide part of knee link

7. Align slotted holes in the spring cover (slot toward the bottom) with the mounting bracket holes. Insert lock pin assemblies into the bracket holes and secure each to the bracket with self-tapping screws (Fig. 10). Torque the screws to 20 ft-lb. (27 Nm).

8. From the bottom, insert the spring and top spring end into the spring cover. Select a hole that matches the cutter deck height-of-cut setting; i.e., top cover hole matches the highest height setting, bottom cover hole the lowest, etc. Align the top spring end hole with the selected spring cover holes and insert the clevis pin to secure the spring inside the cover (Fig. 10). Secure clevis pin with a hair pin cotter.



**Figure 10**

- |                          |                      |
|--------------------------|----------------------|
| 1 Mounting bracket       | 7 Bottom spring end  |
| 2 Spring cover           | 8 Clevis pin         |
| 3 Lock pin assembly (2)  | 9 Hair pin cotter    |
| 4 Self tapping screw (2) | 10 Knee link         |
| 5 Extension spring       | 11 Shoulder bolt (2) |
| 6 Top spring end         | 12 Locknut (2)       |

9. Remove the blocks from under the cutting unit. Make final counterbalance adjustments under actual cutting conditions; refer to Tension Spring Adjustment.

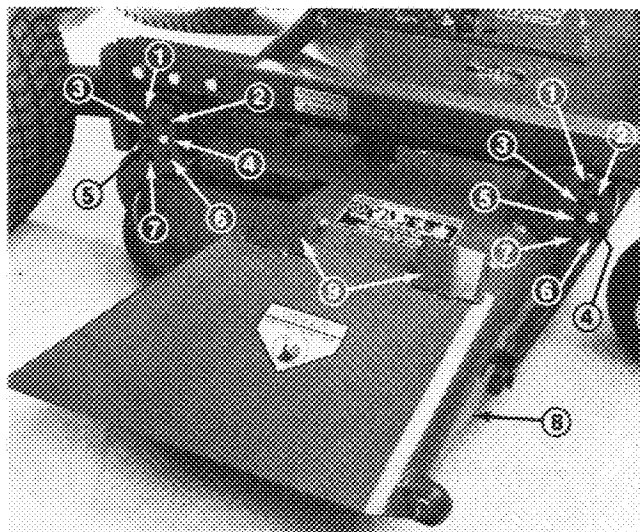
10. Check to make sure front height-of-cut pins are resting properly on frame cushions (Fig. 5). If pins are not resting properly, place a shim or shims under cushion to raise it for proper alignment.

# OPERATING INSTRUCTIONS

## ADJUST HEIGHT-OF-CUT

The height-of-cut is adjustable from 1" to 4" (25 to 102 mm) in 1/2" (13 mm) increments by relocating clevis pins in different holed locations in brackets at each corner of cutting unit (Fig. 11). Stop engine before making height-of-cut adjustment.

**Note:** All four pins must be in the same hole location for even cutting.



**Figure 11**

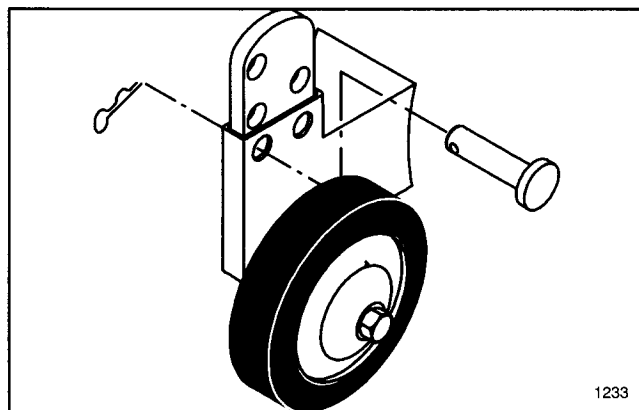
|   |           |       |   |                 |        |
|---|-----------|-------|---|-----------------|--------|
| 1 | 1 in..    | 25 mm | 6 | 3-1/2 in.       | 89 mm  |
| 2 | 1-1/2 in. | 38 mm | 7 | 4 in.           | 102 mm |
| 3 | 2 in.     | 51 mm | 8 | Grass deflector |        |
| 4 | 2-1/2 in. | 64 mm | 9 | Spring hinges   |        |
| 5 | 3 in.     | 76 mm |   |                 |        |

## ADJUST GAGE WHEEL

With machine on a level surface and height-of-cut in desired position, gage wheels are to be positioned so it is approximately 3/8" (10 mm) above the ground (Fig. 12).

**IMPORTANT:** Gage wheel must be adjusted each time height-of-cut is changed, so deck will follow the contour of the ground and not scalp the turf.

1. Remove hair pin cotter and clevis pin securing gage wheel to cutting deck (Fig. 12).
2. Move gage wheel up or down to desired setting and install clevis pin and hair pin cotter (Fig. 12).
3. Reposition gage wheel each time height-of-cut setting is changed.



**Figure 12**

- |   |       |   |                 |
|---|-------|---|-----------------|
| 1 | Wheel | 3 | Hair pin cotter |
| 2 | Pin   |   |                 |

# OPERATING INSTRUCTIONS

## GRASS DEFLECTOR



### WARNING

The grass deflector (Fig. 13) is a safety device that diverts grass and other foreign objects discharged downward. Without deflector mounted in place on the cutting unit and spring loaded hinges holding deflector in the down position, the blades could hurl grass and foreign objects out the discharge opening with enough force to cause injury or property damage. If the grass deflector or spring hinges are worn, broken or damaged, repair or replace the affected part(s). Do not operate cutting unit without deflector or entire grass collector mounted on the cutting unit. Always be sure the deflector chute is in the lowest possible position.

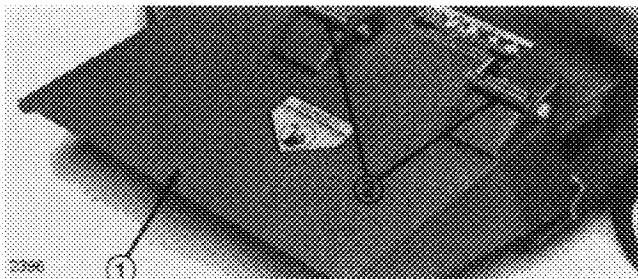


Figure 13

1 Grass deflector

2 Spring hinges

## TENSION SPRING ADJUSTMENT

For best performance, so cutting unit bounce on uneven turf is minimal and it does not ride heavily over flat terrain. If scalping occurs or the cut is uneven from side to side, there may too much weight on the deck and weight may have to be transferred to the traction unit: i.e. increased spring tension.

By contrast, if too much weight is transferred to the traction unit, the deck will bounce excessively and the cut will be uneven. If the cutting unit does not perform properly, adjust as follows:

1. Stop the machine on a level surface, set parking brake, fully raise cutting unit turn ignition key to OFF and remove key from switch.
2. Remove hair pin cotter from clevis pin securing spring end to spring cover and remove clevis pin. Align the top spring end hole with the new hole selected in the spring cover, insert clevis pin and secure with hairpin cotter.
3. Resume operations. If further adjustments are required repeat procedure.



### CAUTION

Counterbalance spring is in tension when deck is in lowered position. Always raise deck before adjusting or removing spring.

# OPERATING INSTRUCTIONS

## REMOVING MOWER

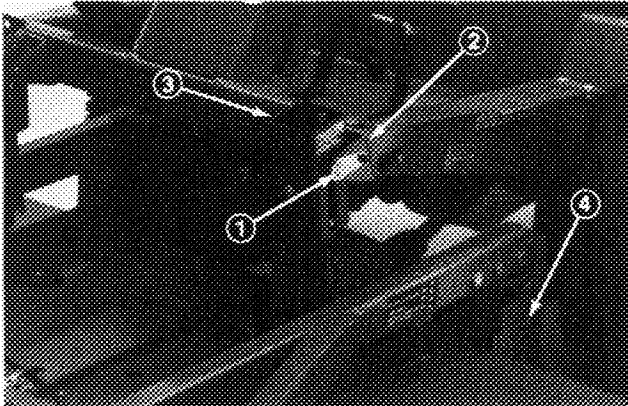
1. Position machine on a level surface, raise cutting unit, engage parking brake, be sure traction pedal is in neutral position, PTO lever in OFF position, shut engine OFF and remove key from switch.



### CAUTION

**Counterbalance spring is in tension when deck is in lowered position. Always raise deck before adjusting or removing spring.**

2. Disconnect counterbalance from traction unit, remove lock pins from brackets, separate spring tension assemblies from brackets and lay them down on the deck. Loosely secure lock pins to brackets to prevent losing them (Fig. 14).



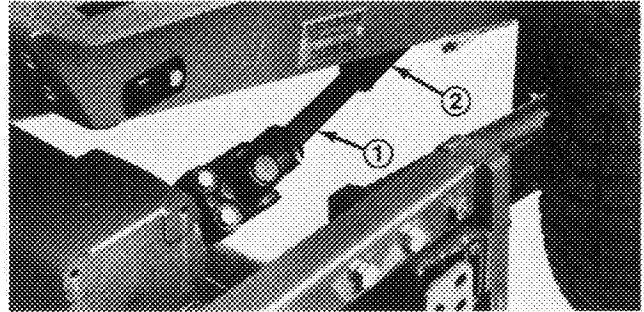
**Figure 14**

- |            |                            |
|------------|----------------------------|
| 1 Lock pin | 3 Spring tension assembly  |
| 2 Bracket  | 4 Height-of-cut clevis pin |

3. Lower cutting unit, remove (4) pins from height-of-cut brackets (Fig. 11).

4. Start engine, raise cutting unit frame. Stop engine.

5. Slide cutting unit away from traction unit and carrier frame, separating male and female sections of PTO shaft (Fig. 15).



**Figure 15**

1 Male PTO shaft

2 Female PTO shaft



### CAUTION

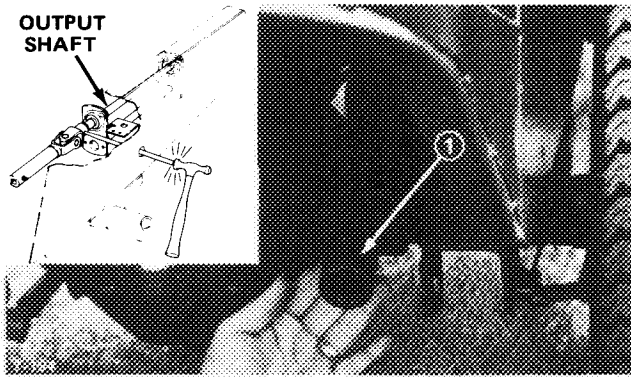
**Do not start engine and engage the PTO lever when PTO shaft is not connected to gear box on cutting unit. If engine is started and PTO shaft is allowed to rotate, serious injury could result.**

6. Deck carrier frame must be removed if traction unit will be used with any other accessory.

# OPERATING INSTRUCTIONS

## PTO SHAFT REMOVAL

1. Jack left wheel off shop floor. Support the axle with a jack stand to prevent machine from falling accidentally.
2. Remove (5) wheel nuts and slide wheel off axle to expose access hole in side of chassis (Fig. 16).
3. Rotate PTO shaft to align hole in PTO shaft with hole in chassis (Fig. 16).
4. Through access hole in chassis, drive roll out of PTO shaft with pin punch and hammer (Fig. 16 inset).
5. Loosen or remove bolts and locknuts and remove PTO shaft.
6. Install left wheel with (5) wheel nuts previously removed. Tighten nuts to 60–80 ft-lb. (81–109 Nm).
7. Lower machine and remove jack.



**Figure 16**

1 PTO shaft

# LUBRICATION

## GREASE BEARINGS AND BUSHINGS

The cutting unit must be lubricated regularly, after every 8 hours of operation or daily, whichever comes first. Grease with No. 2 general purpose lithium base or molybdenum base grease. All other bearings and bushings must be lubricated every 50 hours of operation.

1. Grease: castor spindle bushings, castor wheel bearings (Fig. 17) and blade spindle bearings (Fig. 18).

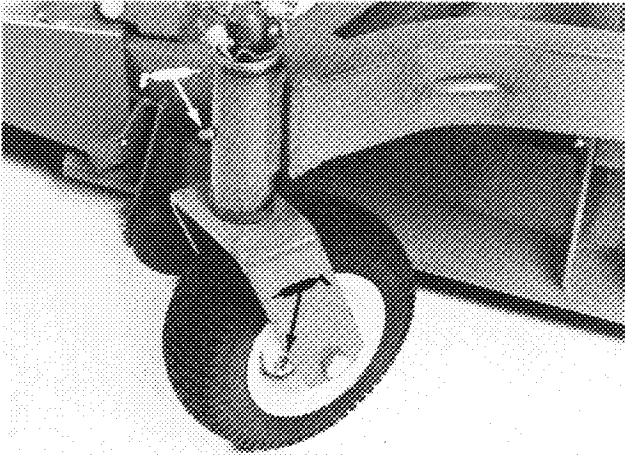


Figure 17

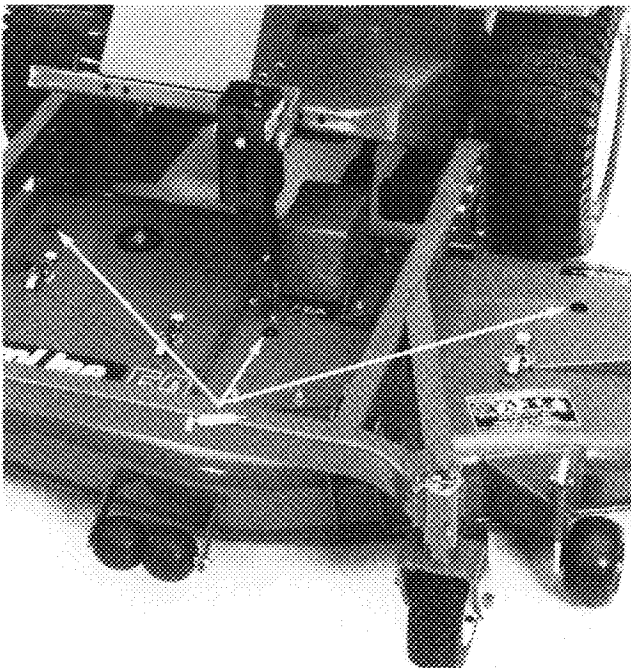


Figure 18

## GEAR BOX LUBRICATION

After every 50 hours of operation check level of oil in gear box. If level is low, add SAE E.P. 80–90 wt. gear lube to bring level to bottom of filler hole.

1. Lower mower so castor wheels are on a level surface. Be sure all height-of-cut pins are in the same hole locations. Clean area around gear box filler plug (Fig. 19) to prevent contamination from entering gear box.
2. Remove check plug, lubricant should be at the bottom of the hole. Install check plug (Fig. 19).

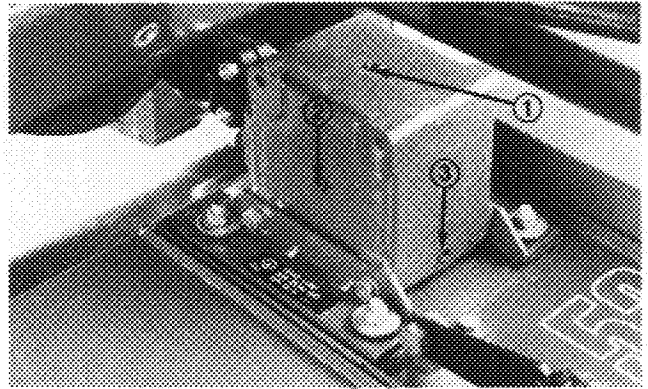


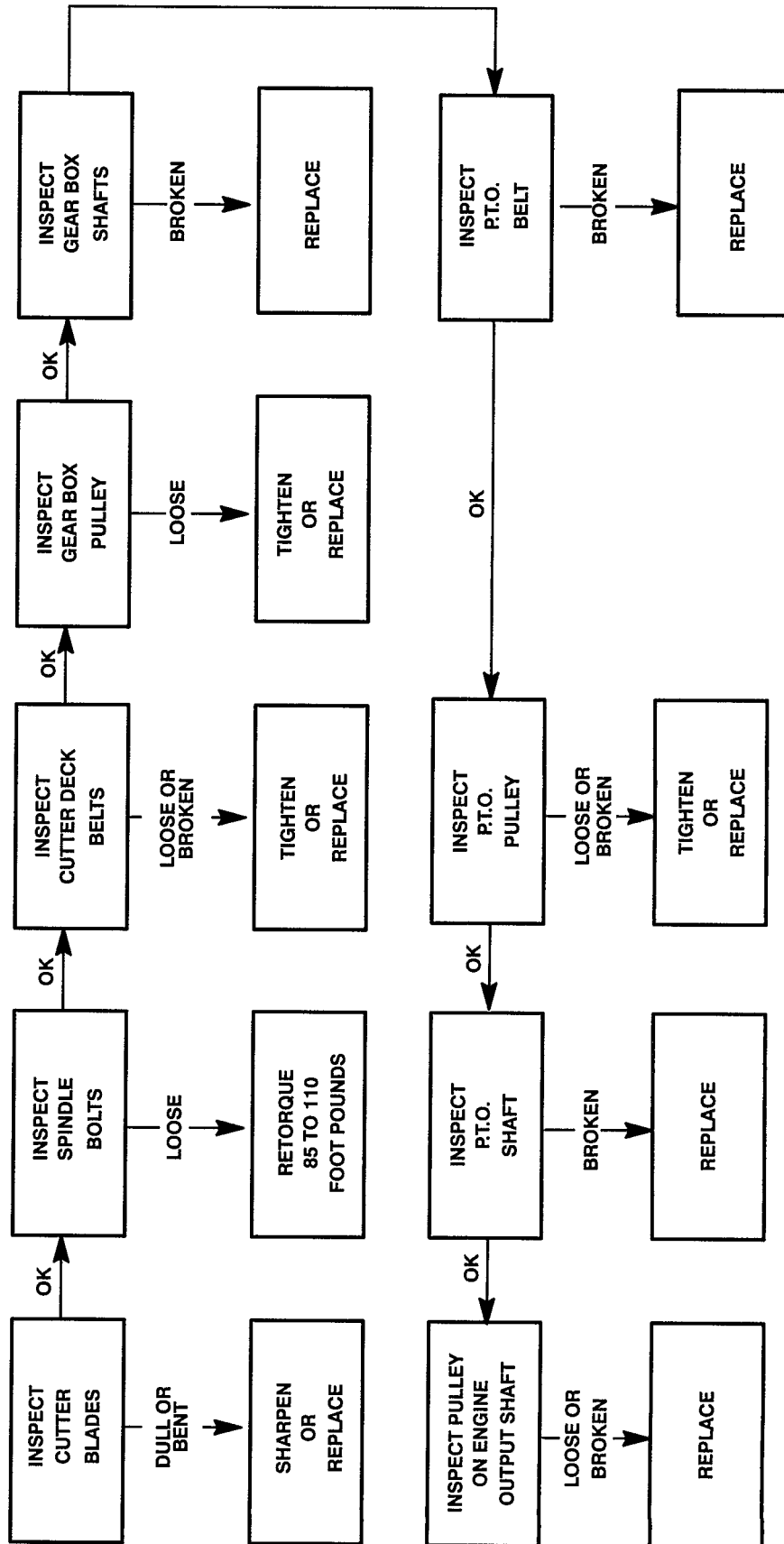
Figure 19

- |               |              |
|---------------|--------------|
| 1 Filler plug | 3 Drain plug |
| 2 Check plug  |              |

# MAINTENANCE

## TROUBLE SHOOTING: UNIT WILL NOT CUT OR CUTS POORLY

UNIT WILL NOT CUT OR CUTS POORLY



# MAINTENANCE

## REPLACE CASTOR ARM BUSHINGS

Castor arms have bushings pressed into the top and bottom of the tube. To check bushings, move castor fork back and forth, and side-to-side. If castor spindle is loose, bushings are worn and must be replaced.

1. Raise cutting unit so castor wheels are off the floor and block up with jack stands.
2. Remove lynch pin and thrust washer(s) from top of castor spindle (Fig. 20).

**IMPORTANT: Note location of washers on each spindle shaft to assure correct installation and to maintain a level deck.**

3. Pull castor spindle out of mounting tube. Leaving thrust washers on bottom of spindle.
4. Insert pin punch into mounting tube and drive out bushings (Fig. 20). Clean inside mounting tube.

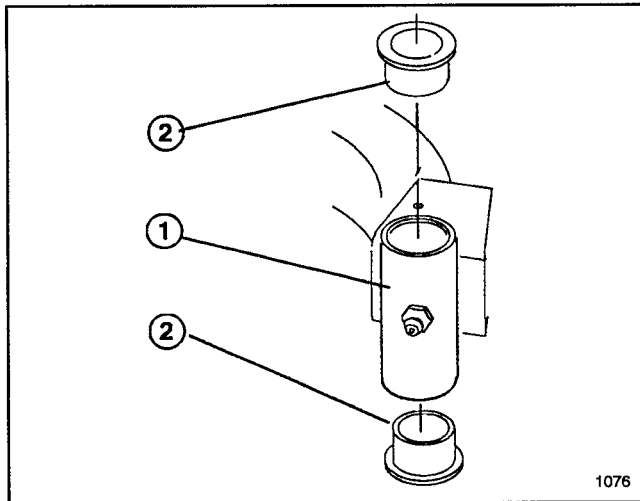


Figure 20

- 1 Mounting tube                      2 Bushing

5. Apply grease inside and outside new bushings. Using a hammer and flat plate, drive bushings into mounting tube.
6. Inspect castor spindle for wear; replace if necessary.
7. Slide castor spindle through bushings and mounting tube. Place thrust washer(s) and spacer(s) onto spindle and secure with retaining ring.

**IMPORTANT: When bushings are installed, the inside diameter may collapse slightly, this may not allow castor spindle to be installed. If castor spindle does not slide through new bushings, ream both bushings to inside diameter of 1.126" (28.6mm).**

8. Grease castor arm bushings using No. 2 general purpose lithium base or molybdenum base grease.

## SERVICE CASTOR WHEEL AND BEARING

Castor wheels rotate on a roller bearing supported by a spanner bushing. If the bearing is kept well lubricated, wear will be minimal. Failure to keep the bearing well lubricated will cause rapid wear. A wobbly castor wheel usually indicates a worn bearing.

1. Remove lock nut and wheel bolt holding castor wheel between castor fork (Fig. 21).
2. Remove bushing and pull spanner bushing and roller bearing out of wheel hub.

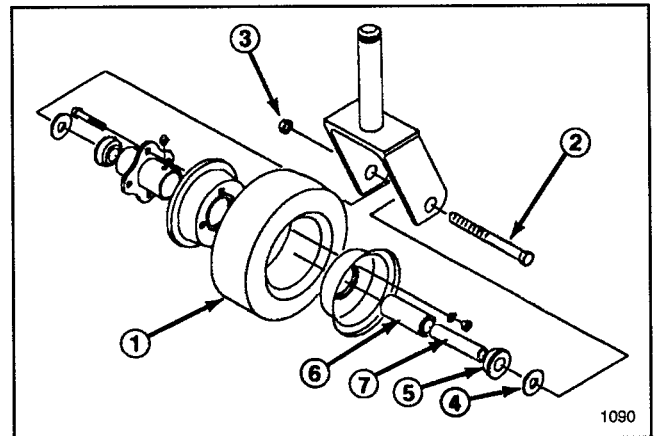


Figure 21

- |              |                   |
|--------------|-------------------|
| 1 Wheel      | 5 Bushing         |
| 2 Wheel bolt | 6 Roller bearing  |
| 3 Lock nut   | 7 Spanner bushing |
| 4 Washer     |                   |

3. Remove bushings from wheel hub. Clean grease and dirt from wheel hub.
4. Inspect bearing, spanner, bushing and inside of wheel hub for wear. Replace defective parts (Fig. 21).
5. To assemble place one (1) bushing into wheel hub. Grease bearing and spanner bushing and slide into wheel hub. Place second bushing into wheel hub.
6. Install castor wheel into castor fork and secure with bolt and lock nut. Tighten until spanner bushing bottoms against inside of castor forks. Grease wheel.

# MAINTENANCE

## CHECK FOR BENT BLADE

1. Park mower on a level surface. Turn PTO switch OFF, turn engine OFF, engage parking brake and disconnect spark plug wire(s).
2. Rotate blade(s) until the ends face forward and backward. Measure from inside of cutting unit to cutting edge at front of blade (Fig. 22), and remember this dimension.

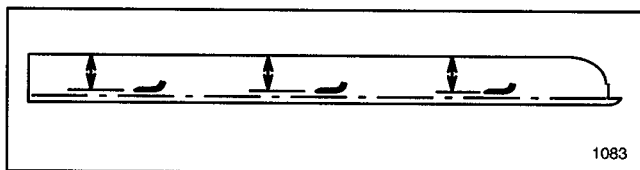


Figure 22

3. Rotate opposite end of blade forward. Measure between the cutting unit and cutting edge of blade at the same position as in step 2. The difference between dimensions obtained in steps 2 and 3 must not exceed 1/8" (3mm). If dimension exceeds 1/8" (3mm), replace the blade(s) because it is bent: refer to Replacing Cutter Blade.



### 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 safety.

## REPLACE CUTTER BLADE

Blade(s) must be replaced if a solid object is hit, the blade is out-of-balance or bent. To ensure optimum performance and continued safety conformance of the machine, use genuine TORO replacement blades. Replacement blades made by other manufacturers may result in non-conformance with safety standards.

1. Park mower on a level surface. Turn PTO switch OFF, turn engine OFF, engage parking brake and disconnect spark plug wire(s).
2. Hold the blade end using a rag or thickly padded glove. Remove blade bolt, flatwasher, anti-scalp cup and blade from spindle shaft (Fig. 23).

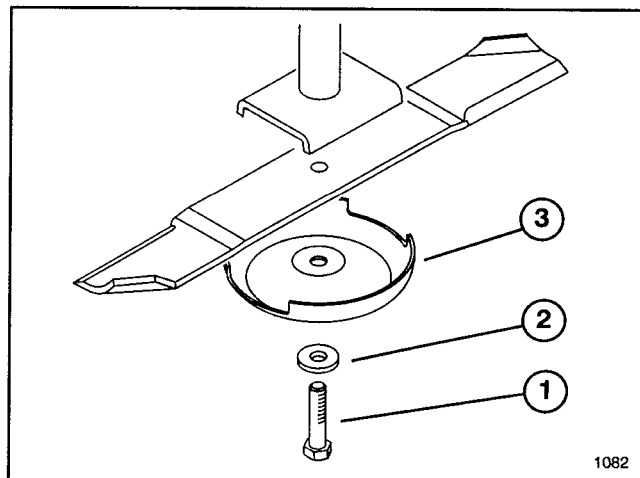


Figure 23

- |               |                  |
|---------------|------------------|
| 1 Blade bolt  | 3 Anti-scalp cup |
| 2 Flat washer |                  |

3. Install blade-sail facing toward cutting unit with anti-scalp cup, flatwasher and blade bolt (Fig. 23). Torque blade bolt to 85–110 ft. lb. (115–150 Nm).

# MAINTENANCE

## CHECK BLADE SAIL AND SHARPENING

Both cutting edges and blade sail contribute to good quality-of-cut. The sail, the turned up portion opposite the cutting edge, is important as it pulls grass up straight, thereby producing an even cut. The sail gradually wears down during operation, this condition is normal. As the sail wears down, the quality-of-cut will degrade, although the cutting edges are sharpened. The cutting edge of the blade must be sharp so the grass is cut rather than torn. A dull cutting edge is evident when tips of the grass appear brown and shredded. Sharpen the cutting edges to correct this condition.

1. Examine cutting ends of the blade carefully, especially where the flat and curved parts of the blade meet (Fig. 24-A). Sand and abrasive material can wear away the metal that connects the flat and curved parts of the blade. Check the blade(s) before using the mower. If wear is noticed (Fig. 24-B), replace the blade(s).

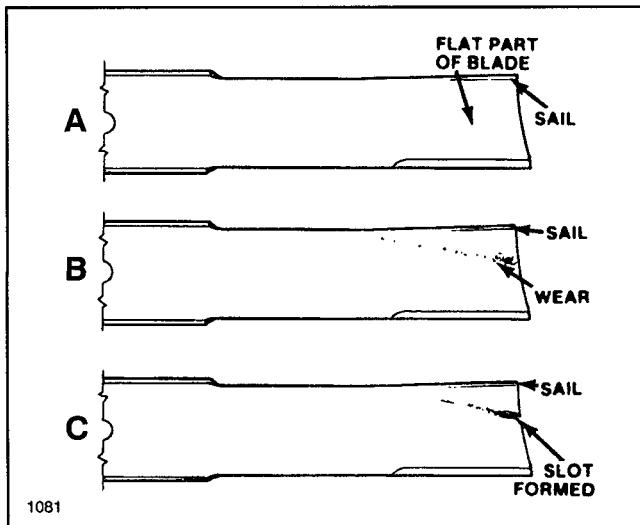


Figure 24

2. Examine cutting edges of all blade(s). Sharpen the cutting edges if they are dull or nicked. Sharpen only the top of the cutting edge and maintain the original cutting angle to make sure of sharpness (Fig. 25). The blade will remain balanced if same amount of metal is removed from both cutting edges.

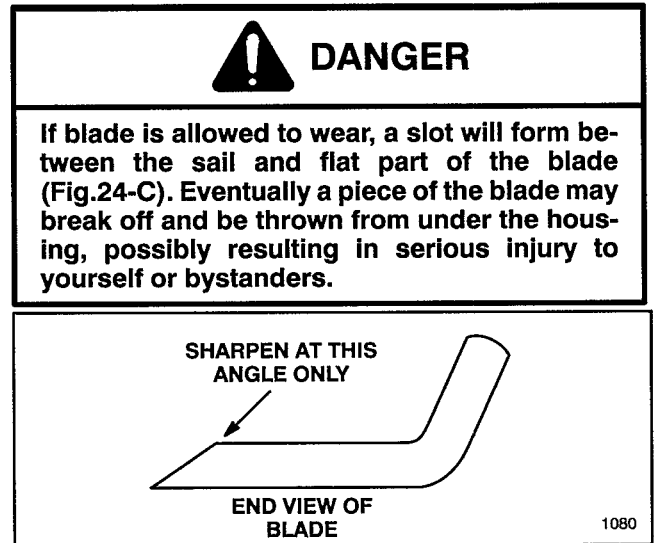


Figure 25

**Note:** Remove the blades: refer to Removing Cutter Blades, steps 2 and 3. After sharpening the cutting edges, reinstall blade with anti-scalp cup, flatwasher and blade bolt. Blade sails must be on top of blade. Torque blade bolt to 85–110 ft. lb. (115–150 Nm).

# MAINTENANCE

## CORRECTING CUTTING UNIT MISMATCH

If one cutter blade cuts lower than the others, correct as follows:

1. Park mower on a level surface. Turn PTO switch OFF, turn engine OFF, engage parking brake and disconnect spark plug wire(s).
2. Adjust tire pressure in all tires to specifications and check that blade(s) are not bent: refer to Checking for Bent Blade.
3. Place height-of-cut to the 2-1/2" (64 mm) position: refer to Adjusting Height-Of-Cut. Make sure height-of-cut pins are resting on frame cushions.
4. Rotate blades so tips line up with one another. Tips of all adjacent blades must be within 1/8" (3 mm) of each other. If tips are not within 1/8" (3 mm) of each other add shims Part No. 3256-24 between spindle housing and bottom of cutting unit to align blade(s).

### Front-to-Rear Pitch

1. Position blade(s) front-to-rear (Fig. 26). Measure at "C" and "D" locations (Fig. 26), from level surface to the cutting edge of blade(s) (Fig. 27).
2. Mower should be 1/8" – 5/8" (3 mm – 16 mm) lower in front "C" than rear "D".
3. To change front-to-rear pitch move equal number of thrust washers on both front castor shafts. Move thrust washers from top to bottom to raise, or bottom to top to lower pitch (Fig. 28).
4. Check side-to-side level of cutting unit.

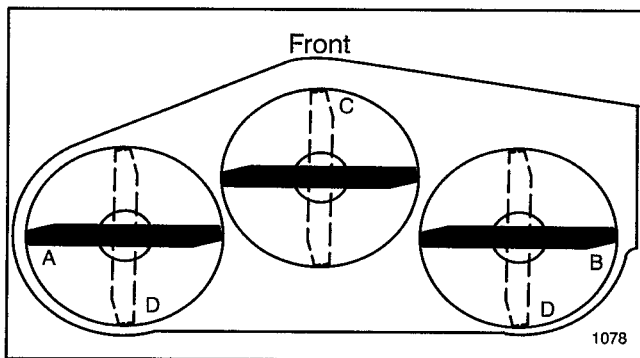


Figure 26

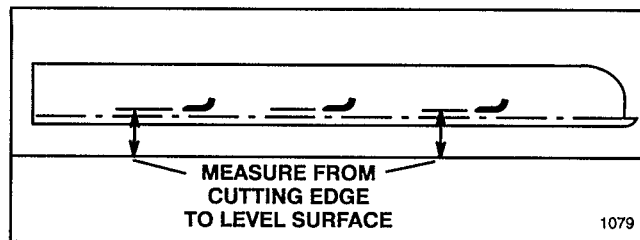


Figure 27

### Side-to-Side Leveling

1. Position blade(s) side-to-side (Fig. 26). Measure at "A" and "B" locations (Fig. 26), from level surface to the cutting edge of blade(s) (Fig. 27).
2. The difference between measurements "A" and "B" should be no more than 1/4" (6 mm).
3. To change side-to-side leveling move thrust washers on one front castor shaft only. Move thrust washers from top to bottom to raise, or bottom to top to lower (Fig. 28).
4. Re-check front-to-rear pitch of cutting unit.

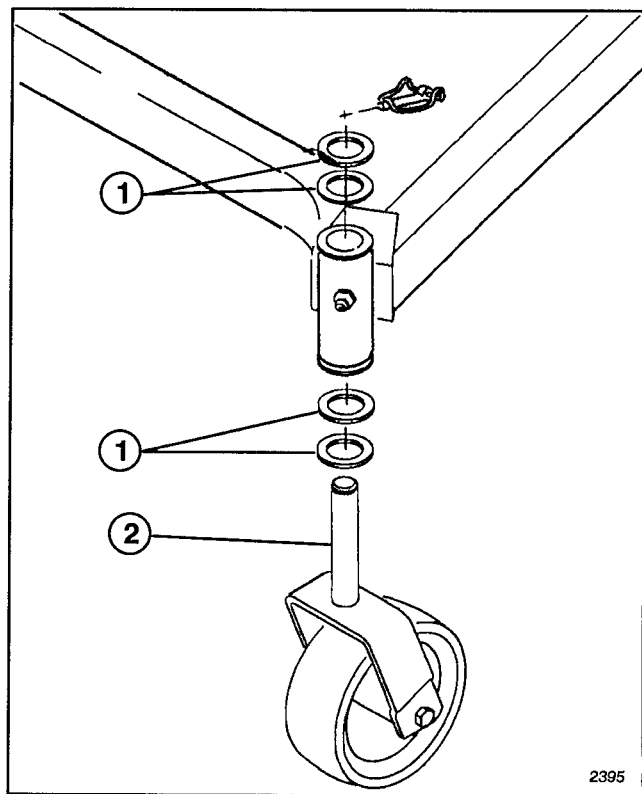


Figure 28

- 1 Thrust washer (locate as required)      2 Castor shaft

# MAINTENANCE

## REPLACE GRASS DEFLECTOR

1. Remove bolts, lock nuts and springs securing deflector mounts to pivot bracket (Fig. 29).
2. To remove pivot brackets, remove carriage bolts and nuts (Fig. 29).

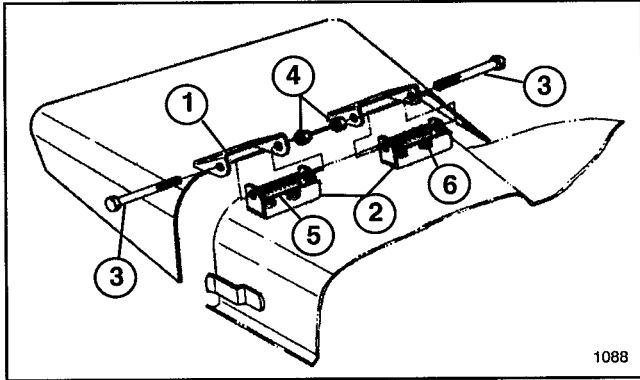


Figure 29

- |                   |                 |
|-------------------|-----------------|
| 1 Deflector mount | 4 Lock nut      |
| 2 Pivot bracket   | 5 Spring        |
| 3 Bolt            | 6 Carriage bolt |

3. Install pivot brackets on top of discharge opening with carriage bolts and nuts. Head of carriage bolts must be on inside of cutting unit.
4. Mounts deflector between pivot brackets. Secure with bolts, springs and lock nuts. Tighten lock nuts until they are against pivot brackets.
5. Deflector must be held firmly in full down position. Lift deflector and allow to drop to check proper tension. Correct if necessary.

## REPLACE DECK BELT

Squealing when belt is rotating, blades slipping when cutting grass, frayed edges, burn marks and cracks are signs of a worn belt. Replace the belt if any of these conditions are evident.

1. Park mower on a level surface. Turn PTO switch OFF, turn engine OFF, engage parking brake and disconnect spark plug wire(s).
2. Release and unhook latches securing belt covers to top of cutting unit. Remove covers.
3. Loosen two nuts securing idler plate in place to relieve tension (Fig. 30).
4. To install new belt, the gear box base must be removed. To do this, remove (4) bolts and lock nuts holding gear box base to mower.
5. Install new belt around spindle, gear box and idler pulley (Fig. 30).

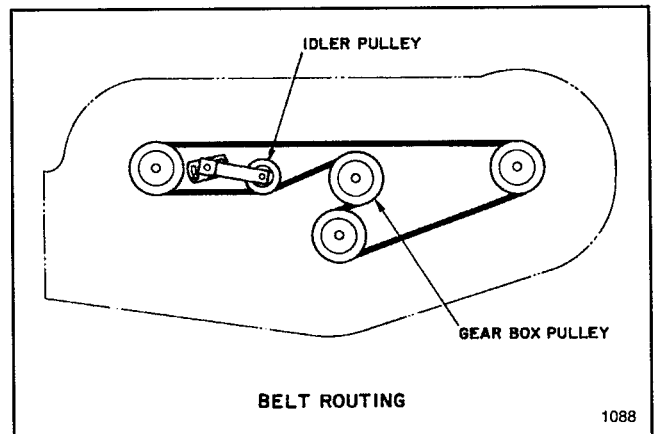


Figure 30

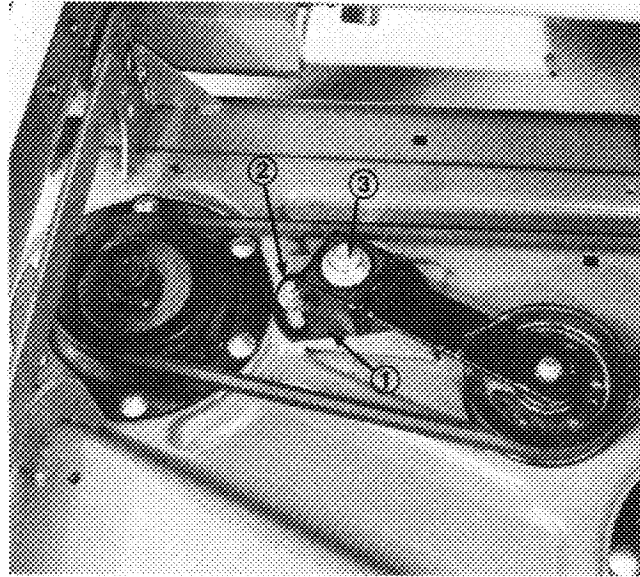
6. Install gear box base with carriage bolts and locknuts.

# MAINTENANCE

## ADJUSTING BELT TENSION

The idler pulley applies force against the belt so power can be transmitted to the blade pulleys. If the idler is not tensioned against the belt with sufficient force, maximum power will not be transmitted to the pulleys. Initial tension on a new belt requires 25 to 30 ft-lb of torque on the large nut, which applies force against the belt. As the belt wears and loosens, 20 to 25 ft-lb of torque on the large nut is required. If the idler is not adjusted to these specifications, adjustment is necessary.

1. Position machine on a level surface, lower cutting unit, engage parking brake, be sure traction pedal is in neutral position, PTO lever in OFF position, shut engine OFF and remove key from switch.
2. Using a socket and torque wrench, tighten the idler adjusting nut to 25–30 ft-lb. (Fig. 31).
3. Holding torque wrench against belt, tighten two flange nuts securing idler plate in place.
4. Install belt covers.



**Figure 31**

- |   |                 |   |                     |
|---|-----------------|---|---------------------|
| 1 | Idler plate     | 3 | Idler adjusting nut |
| 2 | Flange lock nut |   |                     |

## IDENTIFICATION AND ORDERING

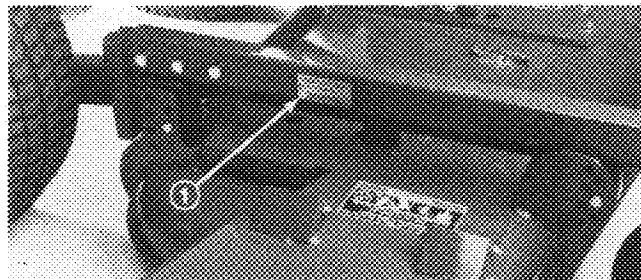
### MODEL AND SERIAL NUMBERS

The cutting deck has two identification numbers: a model number and a serial number. The two numbers are stamped into a plate which is located on carrier frame behind the right front castor wheel. 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.



**Figure 32**

- |   |                         |
|---|-------------------------|
| 1 | Model and Serial number |
|---|-------------------------|

## MAINTENANCE CHART

[illegible]



ProLine  
Products

## THE TORO TOTAL COVERAGE GUARANTEE

A One Year Limited Warranty  
(A Full Two-Year Warranty for Residential Use)

### What Is Covered By This Express Warranty?

The Toro Company promises to repair any TORO ProLine product used for commercial, institutional, or rental purposes if defective in materials or workmanship for a period of one year from the date of purchase. The cost of parts and labor are included as well as transportation within a 15 mile radius of a TORO ProLine Service Dealer.

### What Products Are Covered By This Warranty?

ProLine products covered by this warranty include the ProLine 118, 120, 220, 616, 620, 724 riding products and wide area walk behind mowers and their cutting decks and accessories.

### How About Residential Use?

TORO ProLine products used for residential use are covered by a full two-year warranty.

### How Do You Get Warranty Service?

Should you feel your TORO ProLine product contains a defect in materials or workmanship, contact the dealer who sold you the product or any TORO ProLine Service Dealer. The Yellow Pages of your telephone directory is a good reference source; look under TORO Commercial Service Dealers. The Service Dealer will either arrange service at his/her dealership or recommend another authorized Service Dealer who may be more convenient. You may need proof of purchase (copy of registration card, sales receipt, etc.) for warranty validation.

If for any reason you are dissatisfied with a Service Dealer's analysis of the defect in materials or workmanship or if you need a referral to a TORO ProLine Service Dealer, please feel free to contact us at the following address:

Toro Customer Service Department  
8111 Lyndale Avenue South  
Bloomington, MN 55420-1196  
612-888-8801

### What Must You Do To Keep The Warranty In Effect?

You must maintain your TORO Product by following the maintenance procedures described in the operator's manual. Such routine maintenance, whether performed by a dealer or by you, is at your expense.

### What Does This Warranty Not Cover? and

### How Does Your State Law Relate To This Warranty?

There is no other express warranty except as described above. This express warranty does not cover:

- Cost of regular maintenance service or parts, such as filters, fuel, lubricants, tune-up parts, blade sharpening, brake and clutch adjustments.
- Any product or part which has been altered or misused or required replacement or repair due to normal wear, accidents, or lack of proper maintenance.
- Repairs necessary due to improper fuel, contaminants in the fuel system, or failure to properly prepare the fuel system prior to any period of non-use over three months.
- Pickup and delivery charges for distances beyond a 15 mile radius from a TORO ProLine Service Dealer.

All repairs covered by this warranty must be performed by a TORO Service Dealer using Toro approved replacement parts.

Repair by a TORO Service Dealer is your sole remedy under this warranty.

**The Toro Company is not 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. Some states do not allow exclusions of incidental or consequential damages, so the above exclusion 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.**

### 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 The Toro Company.