FORM NO. 3321–125 Rev. A

TORO®

MODEL NO. 02000–80001 thru 90001 & UP
MODEL NO. 02001–80001 thru 90001 & UP
MODEL NO. 02002–80001 thru 90001 & UP

OPERATOR'S MANUAL

GROUNDS PRO™ 2000

Traction Units and Cutting 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 mower 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.

FOREWORD

The Grounds Pro 2000 was developed to provide an efficient, reliable and time−saving method of mowing high quality turf. The latest concepts in engineering and design have been incorporated into this machine along with the highest quality parts and workmanship. Excellent service will be derived if proper operation and maintenance practices are followed.

We know, since you have purchased the industry leader in mowing excellence, that future performance and dependability are of prime importance. TORO also is concerned about future use of the machine and of safety to the user. Therefore, this manual should be read by you and those involved with the Grounds Pro 2000 to ensure that safety, proper set−up, operation and maintenance procedures are followed at all times. The major sections of the manual are:

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

Safety, mechanical and some general information in this manual is emphasized. DANGER, WARNING and CAUTION identify safety messages. Whenever the triangular safety alert symbol appears, it is followed by a safety message that must be read and understood. For more complete details concerning safety, read the safety instructions on pages 4 and 5. IMPORTANT identifies special mechanical information and NOTE identifies general information worthy of special attention.

⚠ WARNING: ⚠

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

OPTIONAL SPARK ARRESTER

In some places a spark arrester muffler must be used because of local, state or federal regulations. The spark arrester available from your local Toro Distributor is approved by the United States Department of Agriculture and the United States Forest Service. Order the following part:

Spark Arrester Screen Part No. 95−5819

When the mower is used or operated on any California forest, brush or grass covered land, a properly operating spark arrester must be attached to the muffler. The operator is violating state law, Section 442 Public Resources Code if a spark arrester is not used.

Whenever you have questions or need service, contact your local authorized Toro Distributor. In addition to having a complete line of accessories and professional turf care service technicians, the distributor has a complete line of genuine TORO replacement parts to keep your machine operating properly. Keep your TORO all TORO. Buy genuine TORO parts and accessories.

TABLE OF CONTENTS

SAFETY INSTRUCTIONS

Improper use or maintenance by the operator or owner of the machine can result in injury. To reduce the potential for any injury, comply with the following safety instructions.

BEFORE OPERATING

1. Operate the machine only after reading and understanding the contents of this manual. A free replacement manual is available by sending complete model and serial number to:

The Toro Company
8111 Lyndale Ave. S.,
Bloomington, MN 55420−1196.

2. Only trained operators, skilled in slope operation and who have read this manual should operate the machine. Never allow children to operate the machine or adults to operate it without proper instructions.

3. Become familiar with the controls and know how to stop the machine and engine quickly.

4. Do not carry passengers on the machine. Keep everyone, especially children and pets, away from the areas of operation.

5. Keep all shields, safety devices and decals in place. If a shield, safety device or decal is damaged, malfunctioning or illegible, repair or replace it before operating the machine.

6. Always wear substantial shoes. Do not operate machine while wearing sandals, tennis shoes or sneakers. Do not wear loose fitting clothing because it could get caught in moving parts and possibly cause personal injury.

7. Wearing safety glasses, safety shoes, long pants and a helmet is advisable and required by some local ordinances and insurance regulations.

8. Make sure the work area is clear of objects which might be picked up and thrown by the reels.

9. Since gasoline is highly flammable, handle it carefully.

A. Use an approved gasoline container.

B. Do not remove cap from fuel tank when engine is hot or running.

C. Do not smoke while handling gasoline.

D. Fill fuel tank outdoors and not over one inch (25 mm) from the top of the tank, not the filler neck. Do not overfill.

WHILE OPERATING

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

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

12. Check the interlock switches daily for proper operation, refer to page 24. If a switch should fail, replace the switch before operating the machine. (After every two years, replace all four interlock switches in the wiring system, regardless if they are working properly or not.)

13. When starting the engine:

A. Engage parking brake.

B. Be sure traction pedal is in neutral and PTO switch is in disengage position.

C. After engine starts, release parking brake and keep foot off traction pedal. Machine must not move on a level surface. If movement is evident, the neutral control linkage is incorrectly adjusted: therefore, shut engine off and adjust until machine does not move when traction pedal is released. Refer to Adjusting Transmission for Neutral, page 33.

D. Hills over 15 degrees should be mowed up and down, not side to side; see slope gauge, page 39.

E. Mowing hills may be dangerous. However, hills over 20 degrees generally should not be mowed unless special safeguards, skills and conditions exist; see slope gauge, page 39.

F. Stay alert for holes in terrain and other hidden hazards. Use extreme care when operating close to sand traps, ditches, creeks, steep hillsides or other hazards.

G. Reduce speed when making sharp turns. Avoid sudden stops and starts. Use reverse pedal for braking. Cutting units must be lowered when going down slopes for steering control.

H. Before backing up, look to the rear and assure no one is behind the machine. Watch out for traffic when near or crossing roads. Always yield the right of way.

14. Keep hands, feet and clothing away from moving parts and the reel discharge area. Grass baskets, if so equipped, must be in place during reel operation for maximum safety.

15. 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.

16. Raise the cutting units when driving from one work area to another.

SAFETY INSTRUCTIONS

17. Do not touch engine, muffler, exhaust pipe or hydraulic tank while engine is running or soon after it has stopped because these areas could be hot enough to cause burns.

18. If a cutting unit strikes a solid object or vibrates abnormally, stop immediately. Turn engine off, wait for all motion to stop and inspect for damage. A damaged reel or bedknife must be repaired or replaced before operation is continued.

19. Before getting off the seat:

A. Disengage the PTO switch and wait for the reels to stop spinning.

B. Move traction pedal to neutral.

C. Set the parking brake.

D. Stop the engine and remove key from the ignition switch.

20. Whenever machine is left unattended, make sure reels are not spinning, key is removed from ignition switch and parking brake is set.

MAINTENANCE

21. Before servicing or making adjustments to the machine, stop the engine, remove key from switch and disconnect wire from spark plug to prevent accidental starting of the engine.

22. Check performance of all four interlock switches daily. Do not defeat interlock system. It is for your protection.

23. To ensure entire machine is in good operating condition, frequently check and keep all nuts, bolts, screws and hydraulic fittings tight.

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

25. Keep body and hands away from pin hole leaks or nozzles that eject hydraulic fluid under high pressure. Use paper or cardboard, not hands, to search for leaks. Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin and do serious damage. If fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

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

27. If major repairs are ever needed or if assistance is desired, contact an Authorized Toro Distributor.

28. To reduce potential fire hazard, keep the engine area free of excessive grease, grass, leaves and accumulation of dirt.

29. If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing, and any other parts of the body away from the cutting units and any moving parts. Keep everyone away.

30. Do not overspeed the engine by changing governor settings. To assure safety and accuracy, have an Authorized Toro Distributor check maximum engine speed with a tachometer.

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

32. To insure optimum performance and safety, use genuine TORO replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty of The Toro Company

SOUND PRESSURE LEVEL

This unit has an equivalent continuous A-weighted sound pressure at the operator ear of: 83 dB(A), based on measurements of identical machines per Directive 84/538/EEC and amendments.

VIBRATION LEVEL

Hand-Arm

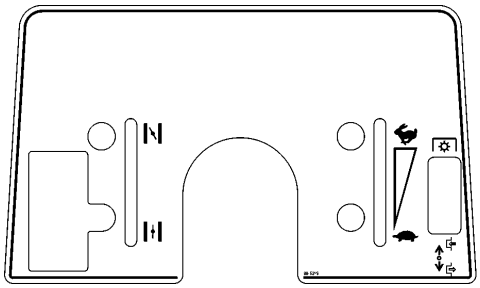
This unit does not exceed a vibration level of 2.5 m/s^2 at the hands based on measurements of identical machines per ISO 5349 procedures.

Whole Body

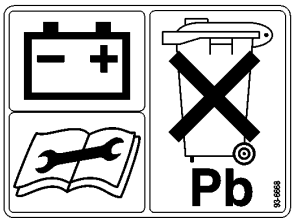
This unit does not exceed a vibration level of 0.5 m/s^2 at the posterior based on measurements of identical machines per ISO 2631 procedures.

SAFETY AND INSTRUCTION DECALS

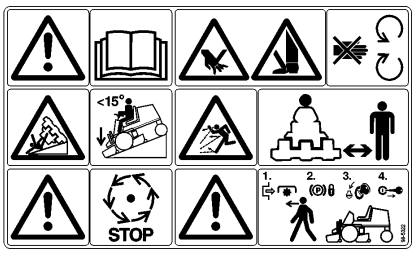
The following safety and instruction decals are affixed to the traction unit. If any decal becomes illegible or damaged, install a new decal. Part numbers are listed below and in your Parts Catalog. Order replacements from your Authorized Toro Distributor.



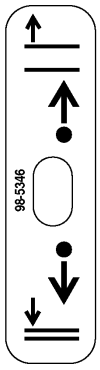
ON INSTRUMENT PANEL
(Part No. 98−5319)



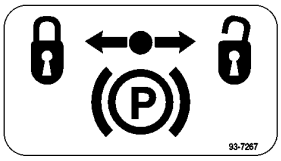
ON BATTERY
(Part No. 93−6668)



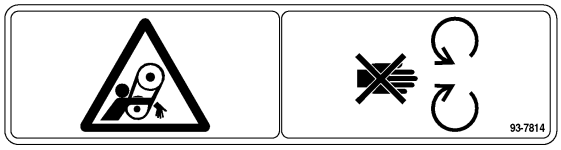
ON BATTERY ACCESS PLATE
(Part No. 98−5322)



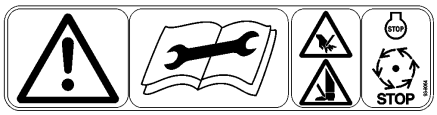
ON INSTRUMENT PANEL
(Part No. 98−5346)



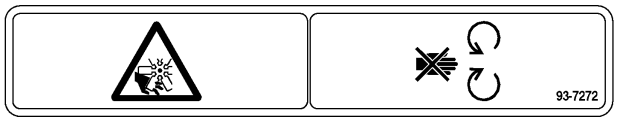
ON PARKING BRAKE
(Part No. 93−7267)



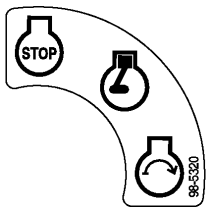
ON FRAME RAIL UNDER HOOD
(Part No. 93−7814)



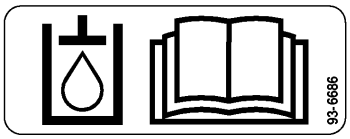
ON CUTTING UNITS
(Part No. 93−8064)



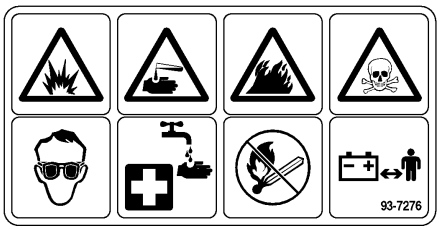
ON FRAME RAIL UNDER HOOD
(Part No. 93−7272)



ON STEERING TOWER
(Part No. 98−5320)

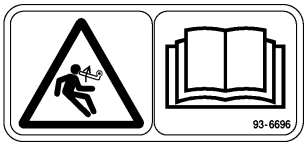


ON HYDRAULIC ACCESS COVER
(Part No. 93−6686)

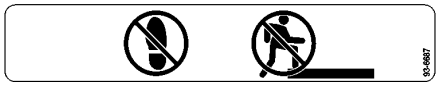


ON BATTERY
(Part No. 93−7276)

ON SEAT PLATE
(Part No. 93−9077)



ON LIFT ARMS
(Part No. 93−6696)



ON FENDER
(Part No. 93−6687)

SPECIFICATIONS

Model No. 02000−Base Tractor
Model No. 02001−4 Wheel Tractor
Model No. 02002 −3 Wheel Tractor

Engine: Briggs & Stratton Vanguard, twin cylinder, 4 cycle, air cooled, 16 hp @ 3600 rpm, 35.90 cu. in. (588 cc) displacement, governed speed of 3200 rpm. Mechanical fuel pump, large capacity dual element air cleaner. 5−1/4 pint oil capacity.

Fuel Capacity: 20 liter.

Traction Drive: Eaton model 11 hydrostatic transmission integrally coupled to a Peerless model 1310 axle. Travel speed range is 0−13.5Km/h (0−8.5 mph) forward and 4.8 Km/h reverse (0−3 mph).

Controls: Foot−operated traction pedal. Hand−operated throttle, choke, ignition switch, PTO switch, lift lever, parking brake and seat adjustment.

Cutting Drive: Constant tension belt drive system with electric clutch utilizing poly−V belt from engine to jackshaft and BX section V−belt drive from jackshaft to each cutting unit.

Tires and Wheels: Two 23 x 8.5−12 front−drive turf tires with 4−ply construction. Rear tires for the four−wheel configuration, 16 x 6.5−6 turf tires with 4−ply construction. Rear tire for the three wheel configuration, 18 x 6.5−8 with 4−ply construction. 12−18 psi inflation pressure for all tires.

Electrical Features: 12−volt 255 cca at 180 C, 50 amp reserve capacity at 270 C. battery16 amp alternator. Seat switch, traction, PTO and parking brake interlock switches, electrical leads provided for optional light and hourmeter installations.

Steering: Pinion and gear sector with solid control link to rear steer assembly, 2.5 turns lock to lock.

Brakes: Service braking accomplished through dynamic characteristics of hydrostatic transmission. Parking brake controls secondary shaft internal to the axle assembly and is actuated by an overcenter control lever.

Main Frame: All steel welded construction utilizing tubular and formed sheet metal sections

Seat: Standard cushion seat or deluxe suspension seat with arm rest and weight adjustment is adjustable fore and aft. Arm rest kit also available.

Lift System: Category ”0” A−Frame mounting system connected to the tractor via parallel linkage. One double−acting 60 mm bore 140 mm stroke hydraulic cylinder receiving oil from hydrostatic transmission charge pump via the control valve with float position. Maximum operating pressure is 1000 psi. When the traction unit is equipped with cutting units, all three units are raised and lowered via the single control lever. The lift system works in conjunction with the electric clutch to engage and disengage the cutting units.

Overall Dimensions And Weight

Wheel Tread Width	105.3 cm
Width Across Front Tires	132 cm
Wheel Base	138.5 cm
Overall Length w/ Cutting Units Installed	229 cm
Overall Height	119 cm
Tractor Weight	50.4 kg
Weight with 5−Blade Fixed Cutting Units	640 kg
Weight with 8−Blade Floating Culling Units	696 kg
Overall Width w/Fixed Head Units	195 cm
Overall Width w/Floating Head Units	203 cm
Transport Width w/Fixed Head Units	140 cm
Transport Width w/Floating Head Units	200 cm

Optional Equipment:

L.H. 5 Blade Fixed Cutting Unit (2 req.)	Model No. 03434
R.H. 5 Blade Fixed Cutting Unit	Model No. 03436
L.H. 8 Blade Floating Cutting Unit (2 req.)	Model No. 03437
R.H. 8 Blade Floating Cutting Unit	Model No. 03439
Lift Arm Kit, Fixed Cutting Unit	Model No. 02100
Lift Arm Kit, Floating Cutting Unit	Model No. 02101
Rear Axle, 3 Wheel	Model No. 02200
Rear Axle, 4 Wheel	Model No. 02201
Full Roller Kit*	Model No. 03440
Sectional Roller Kit*	Model No. 03445
Wiehle Roller Kit*	Model No. 03450
Skid Kit*	Model No. 03446
Anti−Scalp Roller Kit*	Model No. 03447
Grass Basket Kit, Floating C.U.	Model No. 02302
Grass Basket Kit, Fixed C.U.	Model No. 02304
Remote Hydraulics Kit	Model No. 02300
Power Take−off Kit, 1:1 Ratio	Model No. 02301
Power Take−off Kit, 1.5:1 Ratio	Model No. 02303
Standard Seat Kit	Model No. 30769
Deluxe Suspension Seat Kit	Model No. 02305
Arm Rest Kit for Model 30769	Model No. 30707
Debris Blower	Model No. 02202
Large Pulley Kit	Part No. 98−5413
Hour Meter Kit	Part No. 98−5411
Roller Scraper Kit*	Part No. 60−9560
Comb Kit*	Part No. 67−9400
Rear Weight	Part No. 24−5790
Rear Weight (2)	Part No. 24−5780
Gauge Bar Kit	Part No. 13−8199
Backlap Kit	Part No. 84−5510
Tire Chains	Part No. 82531

*3 per kit

LOOSE PARTS CHART

Note: Use this chart as a checklist to assure all parts necessary for assembly have been received. Without these parts, total set-up cannot be completed. Some parts may have already been assembled at factory.

Castor Fork Assembly Wheel Assy. Spacers Flat Washer Wheel Bolt Locknut Socket Head Screw Capscrew Mounting Bar Washer Locknut	1 1 2 1 1 1 2 2 2 2 2	Install 3 Wheel Rear Axle
Axle Assembly Wheel Assy. Washer Cotter Pin Dust Cover Capscrews Mounting Bar Washer Locknut	1 2 2 2 2 4 2 4 4	Install 4 Wheel Rear Axle
Capscrew Washer Locknut	1 2 2	Secure Steering Rod
Steering Wheel Lockwasher Nut	1 1 1	Mount Steering Wheel
Thrust Washers Flat Washer Lockwasher Capscrew	3 3 3 3	Mount Cutting Units to Lift Arms.
Tensioner Rod Pin	4 4	Mount Tensioner Rods to Traction Unit
Tensioner Bracket Capscrew Nut Capscrew Washer Nut	4 4 4 4 8 4	Install Belt Tension Rod to Cutting Unit (Fixed Cutting Units only).
V−Belt	3	Install to Jackshaft Pulleys and Reel Pulleys.
Operators Manual Parts Catalog Registration Card	1 1 1	Read Before Operating Machine. Fill out and send to the Toro Co.

Specifications and design subject to change without notice.

SET-UP INSTRUCTIONS

INSTALL 3 WHEEL REAR AXLE (Fig. 1–2)

1. Position rear wheel into castor fork assembly. Insert wheel bolt into one of the mounting holes, install a spacer and slide the bolt through the wheel.

2. Install another spacer onto bolt and route bolt through remaining castor fork mounting hole.

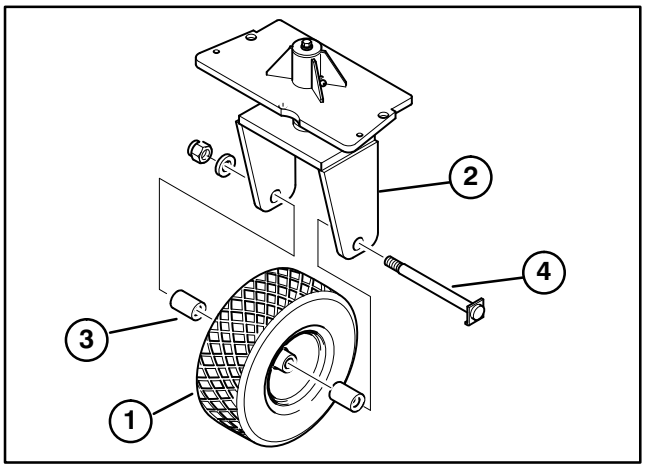


Figure 1

1. Wheel assembly
2. Rear castor fork
3. Spacer
4. Wheel bolt

3. Position wheel bolt flange under bottom edge of castor fork.

4. Secure wheel to castor fork with a washer and locknut. Torque nut to 160–220 N·m (120–160 ft–lb).

5. Position castor mounting plate onto traction unit frame rails aligning mounting holes as shown in figure 2.

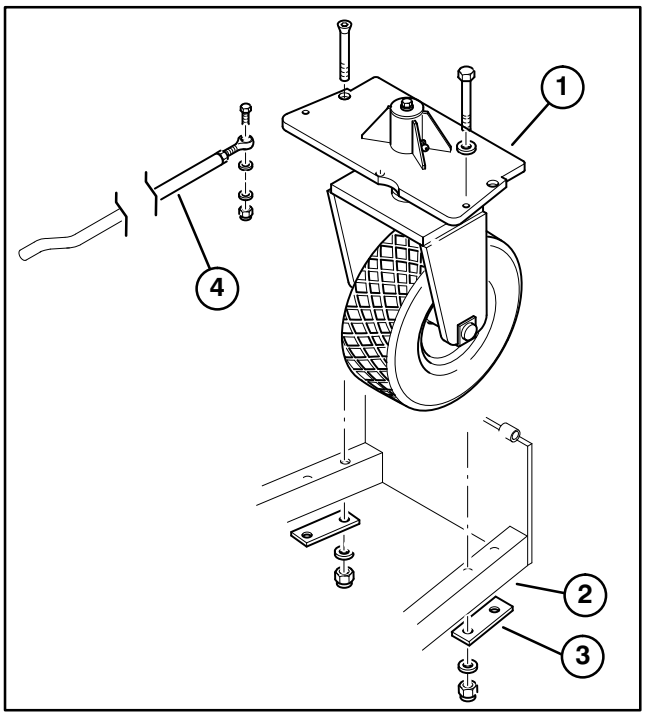


Figure 2

1. Castor mounting plate
2. Frame rail
3. Mounting bars
4. Steering rod

6. Secure each side of mounting plate to frame rail with a socket head screw, capscrew, mounting bar, (2) washers and locknuts.

7. Secure steering rod to top of castor fork with a capscrew, (2) washers and a locknut. Position a washer on each side of castor fork. Tighten nut to 40–45 N·m (30–35 ft–lb).

IMPORTANT: Make sure curved end of steering rod is forward.

8. Wipe grease fittings clean on wheel assembly and mounting plate tube. Pump grease into fittings until grease is seen exiting at both bearings, thus assuring cavities are full. Wipe up excess grease.

INSTALL 4 WHEEL REAR AXLE (Fig. 3–6)

1. Slide a wheel **(valve stem inboard)** and washer onto a axle shaft.

2. Insert cotter pin through the axle and bend the ends of the pin open.

3. Push the dust cover onto the end of the axle so it snaps over washer.

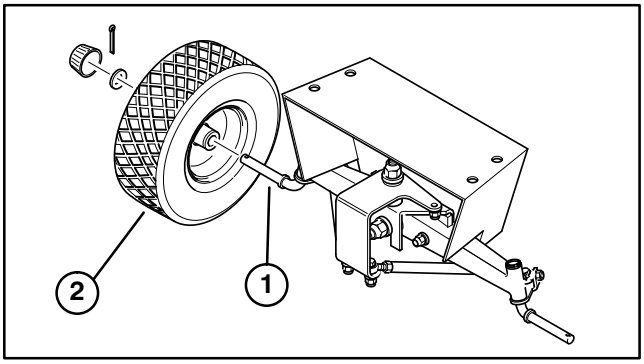


Figure 3

1. Axle shaft
2. Wheel assembly

4. Repeat steps on opposite side.

5. Mount each side of axle assembly to underside of rear frame rails with (2) capscrews, mounting bar, (2) washers and locknuts.

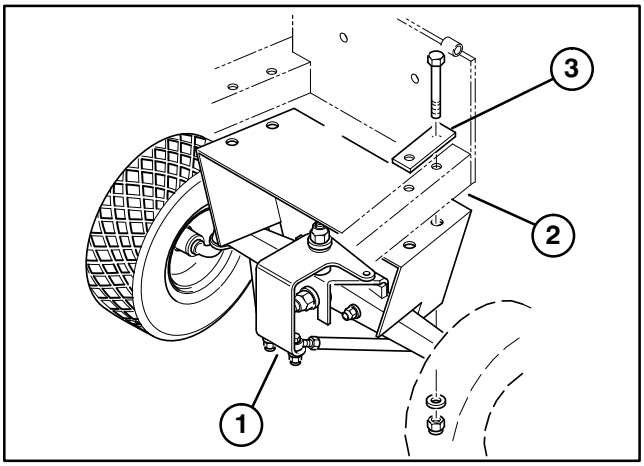


Figure 4

1. Axle assembly
2. Rear frame rails
3. Mounting bars

SET-UP INSTRUCTIONS

6. Remove capscrew, washers and locknut securing front end of steering rod to steering sector gear (4 wheel rear axle only) (Fig. 5). Re−position rod so curved end of rod is to the rear. Secure straight end of rod to steering sector gear with fasteners previously removed. Make sure a washer is on each side of steering sector. Tighten nut to 40−45 N·m (30−35 ft−lb).

IMPORTANT: Make sure curved end of steering rod is to the rear.

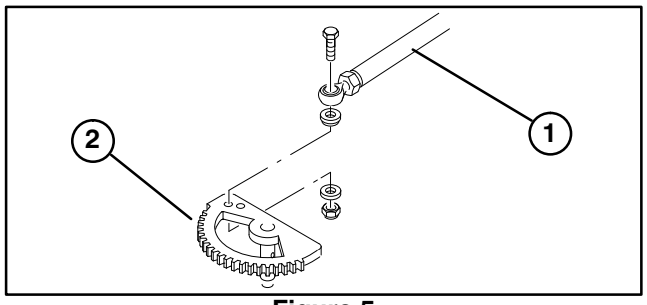


Figure 5
1. Steering rod
2. Steering sector gear

7. Secure other end of steering rod to top of axle pivot with a capscrew, (2) washers and a locknut. Position a washer on each side of axle pivot plate. Tighten nut to 40−45 N·m (30−35 ft−lb).

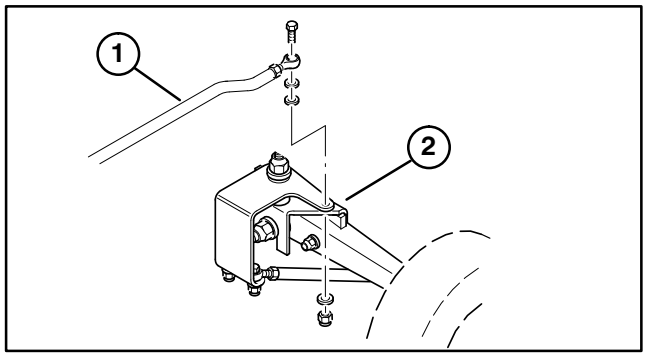


Figure 6
1. Steering rod
2. Axle pivot

8. Wipe grease fittings clean on wheels, wheel spindles and pivot tube. Pump grease into fittings until grease is seen exiting at both bearings, thus assuring cavities are full. Wipe up excess grease.

9. Adjust toe−in and steering stops. Refer to Adjusting Toe−in and Steering Stops, page 33.

INSTALL STEERING WHEEL (Fig. 7)

1. Position rear wheel(s) straight ahead.

2. Remove logo cover by releasing (3) latches from back side with screwdriver.

3. Line up center spoke toward the seat and position the steering wheel onto shaft spline.

4. Secure steering wheel with lockwasher and nut.

5. Tighten steering wheel nut to 37 N·m (50 ft-lbs).

6. Snap logo cover into place.

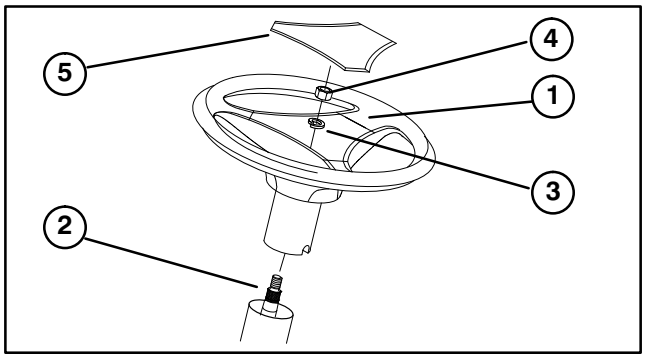


Figure 7
1. Center spoke
2. Shaft spline
3. Lockwasher
4. Nut
5. Logo cover

INSTALL SEAT (Fig. 8−9)

The Grounds Pro 2000 is shipped without the seat assembly. Standard Seat Kit, Model 30769 or Deluxe Suspension Seat Kit, Model 02305 must be installed as follows:

Seat Kit, Model No. 30769, Standard Seat:

1. Mount a seat adapter plate to each seat spring with (2) spacers, socket head screws and locknuts (Fig. 8).

2. Mount each seat adapter plate to bottom of seat with (2) capscrews and washers. Position adapters and springs as shown in figure 8.

3. Install seat switch into seat and secure electrical connector.

4. Loosely mount front of seat springs to seat plate with (2) capscrews and washers and rear with (2) knobs and washers (Fig. 8).

Note: Mount seat in forward holes to attain forward adjustment.

5. Slide seat to desired operating position and tighten knobs.

6. Before starting machine, sit on set to activate seat switch.

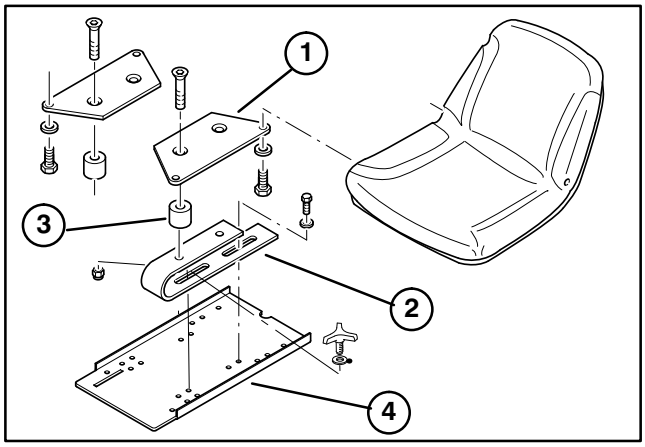


Figure 8
1. Adapter plate
2. Seat spring
3. Spacer
4. Seat plate

SET-UP INSTRUCTIONS

Seat Kit, Model No. 02305, Deluxe Suspension Seat:

1. Loosely mount seat slides to bottom of seat suspension with (4) large spacers, (2) small spacers, (4) carriage bolts and flange locknuts. Small spacers to be positioned on top of rear large spacers. Seat slide with fore and aft adjusting lever to be mounted on right side of suspension.

2. Position threaded mounting studs of seat slides into holes in seat mounting plate.

Note: Mount seat in forward holes to attain forward adjustment.

3. Mount seat to seat suspension with (4) capscrews, lockwashers and flatwashers.

4. Secure seat slide to seat mounting plate with (4) locknuts.

Note: Seat plate may be removed from frame to ease seat spring installation.

5. Plug seat switch wire connector into harness wire connector.

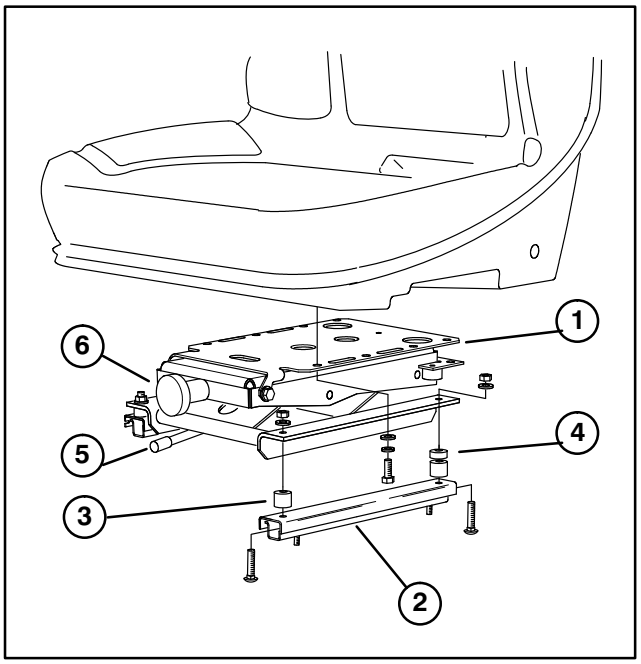


Figure 9

1. Seat suspension
2. Seat slide
3. Large spacer
4. Small spacer
5. Adjusting handle (fore & aft)
6. Adjusting knob (operator weight)

6. To adjust seat for operator's comfort and weight proceed as follows:

A. To adjust seat fore and aft, move handle, on front of seat assembly, to the left. Release handle to lock seat position.

B. To adjust for operator's weight, turn spring tension knob; clockwise to increase tension, counterclockwise to decrease spring tension.

INSTALL LIFT ARM KIT (Fig. 10−17)

The Grounds Pro 2000 is shipped without a lift arm kit. Fixed Cutting Unit Lift Arm Kit, Model 02100 or Floating Cutting Unit Lift Arm Kit, Model 02101 must be installed as follows:

1. Slide lift arm kit A−frame onto traction unit A−frame.

2. Secure A−frames together with locking pin and hair pin cotter.

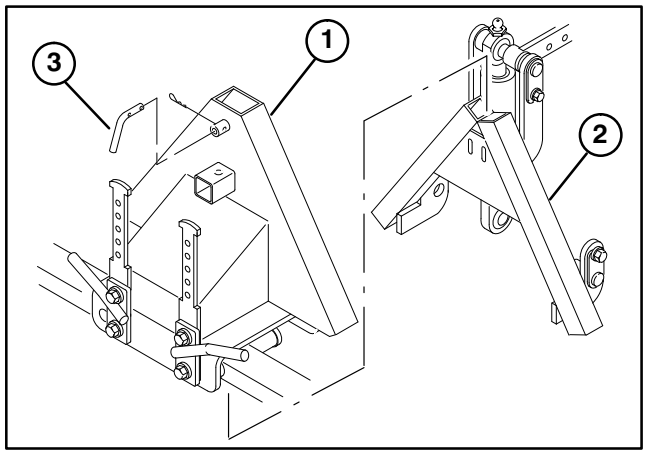


Figure 10

1. Lift arm A−frame
2. Traction unit A−frame
3. Locking pin

3. Mount a rubber stop (Fig. 11) to frame bracket on each side of traction unit as follows:

A. On traction units equipped with a fixed cutting unit lift arm kit, mount a U−bracket to each frame bracket with (2) washers and screws. Then, mount a rubber stop to each U−bracket with (2) screws.

B. On traction units equipped with a floating cutting unit lift arm kit, mount a rubber stop directly to each frame bracket with (2) screws.

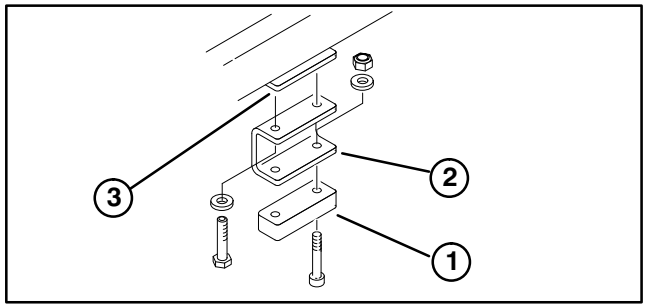


Figure 11

1. Rubber cutting unit stop
2. U−bracket
3. Frame bracket

4. On **front** cutting units only, remove (2) flange head screws securing front of each cutting unit cover to frame (Fig. 12).

SET-UP INSTRUCTIONS

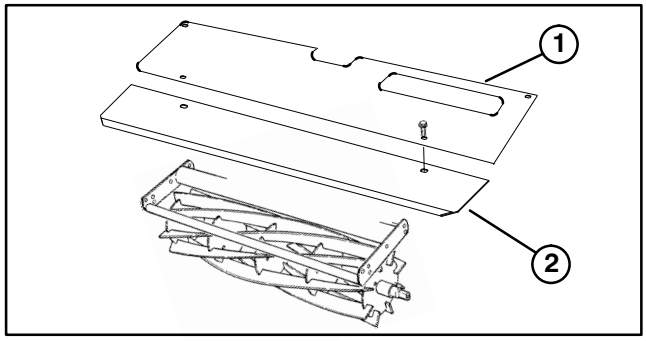


Figure 12
1. Cutting unit cover 2 Cutting unit shield

5. Insert a cutting unit shield between cover and frame, align mounting holes and secure with flange head screws previously removed (Fig. 12).

6. On **rear, floating** cutting unit, remove fasteners securing each end of carrier frame to cutting unit.

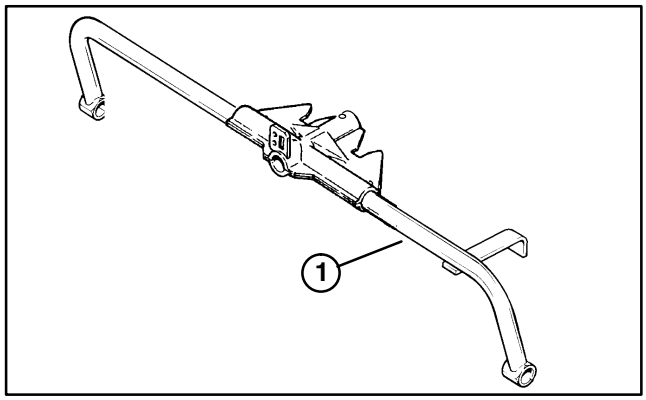


Figure 13
1. Rear carrier frame

7. On **rear, fixed** cutting unit, remove (2) carriage bolts, washers and locknuts securing side guard to left side plate of cutting unit (Fig. 14).

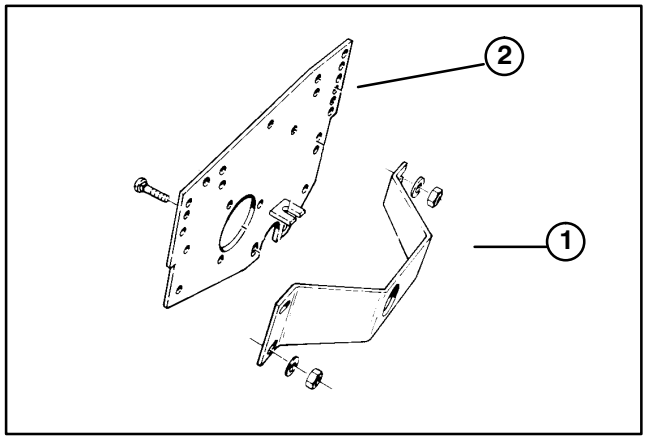


Figure 14
1. Side guard
2. Cutting unit side plate

8. Mount a tensioner bracket to left side plate with (2) carriage bolts, washers and locknuts previously removed (Fig. 15).

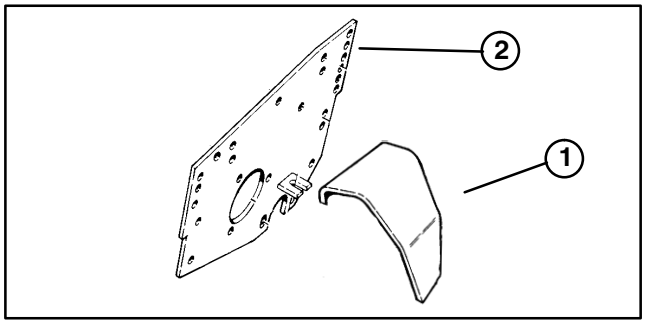


Figure 15
1. Tensioner bracket

9. Mount new carrier frame (supplied in lift arm kit) to each end of rear cutting unit with fasteners previously removed.

10. Using a tipper bracket (Fig. 16) as a template, locate, mark and drill (2) 9mm dia. holes in top of each **front, fixed** cutting unit tensioner bracket. Make sure tipper bracket is centered on tensioner bracket, as shown in figure 16. Holes may exist.

11. Mount a tipper bracket to each tensioner bracket with (2) capscrews, washers and locknuts.

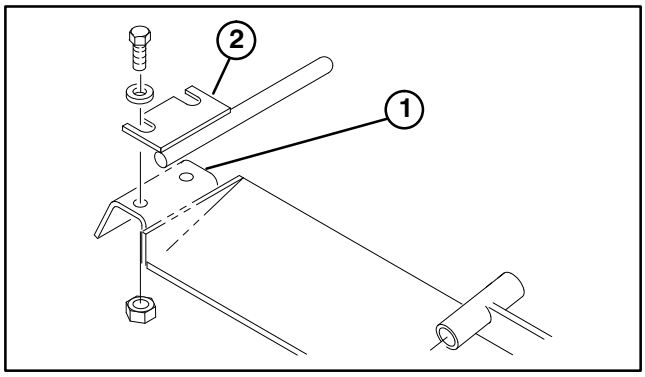


Figure 16
1. Tensioner bracket
2. Tipper bracket

12. On **rear, fixed** cutting unit, remove (4) capscrews and locknuts securing rear pivot support to top of cutting unit (Fig. 17).

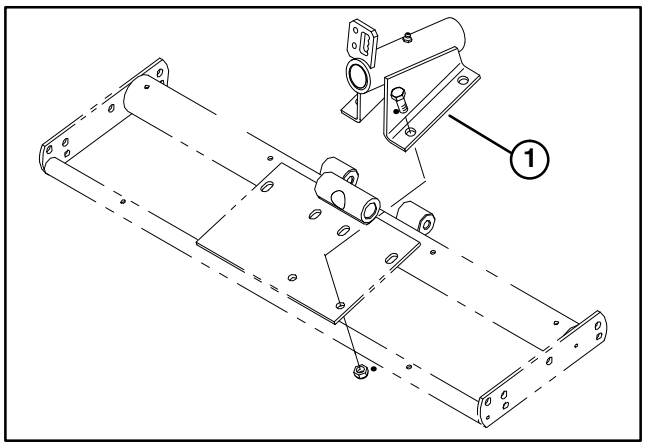


Figure 17
1. Rear pivot support

13. Mount new rear pivot support (supplied in lift arm kit) to top of rear cutting unit with (4) capscrews and locknuts previously removed.

SET–UP INSTRUCTIONS

MOUNT FRONT ROLLER (Fig. 18) (Floating Cutting Unit)

1. Remove (2) locknuts securing each angle bracket to cutting unit.

2. Remove height–of–cut pins.

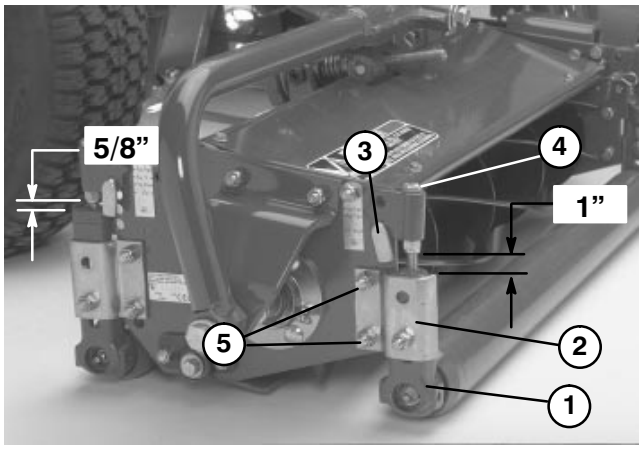


Figure 18

1. Roller bracket
2. Angle bracket
3. Height–of–cut pin
4. Support capscrew
5. Locknuts

3. Insert smaller dia. shaft end of roller into white bushing in roller bracket, making sure flanged end of nylon bushing faces inside toward roller. **Hex of roller bracket must mate with hex of nut adjustment.**

4. Press roller bracket onto other shaft end of roller. **Hex of roller bracket must mate with hex of nut adjustment.**

5. Hold one roller bracket stationary and use other bracket as a wrench to adjust bearing clearance. Roller to rotate freely with no bearing end play.

6. Roller brackets must be aligned for installation onto cutting unit. If necessary to align after bearing adjustment, remove roller bracket on side with flanged nyliner, align with opposite roller bracket within ± one hex flat and replace.

7. Reinstall Height–of–Cut pins.

8. Reinstall (2) locknuts securing each angle bracket to cutting unit.

SET HEIGHT OF CUT AND LEVEL REAR ROLLER (Fig. 18) (Floating Cutting Unit)

Note: For best results, perform adjustments on cutting units when they are removed from traction unit.

1. Position cutting unit on a flat level table or board.

2. Slightly loosen (crack) nut securing each roller bracket to angle bracket.

3. Adjust support capscrew to achieve 1” ± 1/16 dimension between Height–of–Cut support and *front* roller bracket (2 places).

4. Adjust support capscrew to achieve 5/8” ±1/16 dimension between Height–of–Cut support and *rear* roller bracket (2 places).

5. Remove hairpin cotters securing *rear* Height–of–Cut pins and reinstall in the 1/2” setting as indicated on Height–of–Cut plate.

6. Remove hairpin cotters securing front Height–of–Cut pins and reinstall in the 1/4” setting as indicated on Height–of–Cut plate to allow clearance between roller and table.

7. Position a 1/2” or thicker bar under the reel blades and against the front face of the bedknife. Make sure bar covers the full length of reel blades.

8. Verify if rear roller is level, by inserting a piece of paper under each end of roller.

9. Level roller by adjusting appropriate support capscrew on rear roller supports until roller is parallel and entire length of roller contacts table.

10. When roller is level, adjust both rollers to desired Height–of–Cut pins. **Tighten nuts securing roller brackets.**

11. Verify that rollers are level and bedknife is parallel to surface.

SET HEIGHT–OF–CUT AND LEVEL REAR ROLLER (Fig. 19) (Fixed Cutting Units)

Note: For best results, perform adjustments to cutting units when they are mounted on traction unit.

1. Position cutting unit on flat level surface or board.

2. Slightly loosen (crack) nuts securing roller brackets to angle brackets.

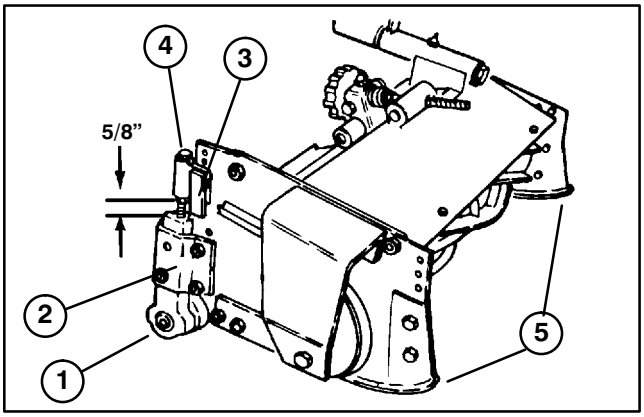


Figure 19

1. Roller bracket
2. Angle bracket
3. Height–of–cut pin
4. Support capscrew
5. Skid

3. Adjust support capscrews to achieve 5/8”± 1/16 ” dimension between Height–of–Cut support and roller bracket (2 places).

4. Remove hairpin cotters securing Height–of–Cut pins and reinstall in hole at desired setting as indicated on Height–of–Cut plate.

5. Use a gage block with a thickness equal to the desired height−of−cut and position it against the front edge of the bedknife at one end. Turn the support capscrew to adjust the height of the bedknife equal to the gage block.

6. Repeat the procedure at the other end, then recheck the original end.

7. Tighten nuts securing roller brackets.

8. After initial set−up, height−of−cut may be changed by re−positioning Height−of−Cut pins to desired setting.

9. Adjust skids 1/8" to 1/4" higher than height−of−cut setting.

ADJUST BEDKNIFE PARALLEL TO REEL

(Fig. 20−22)

(Floating or Fixed Cutting Units)

1. Make sure reel contact is removed by turning bedknife adjustment knob counterclockwise (Fig. 20). Tip cutting unit to gain access to reel and bedknife (Fig. 21).

Figure 20

1. Bedknife adjusting screw

2. On either end of reel, insert a long strip of dry newspaper between reel and bedknife. While slowly rotating reel into bedknife, turn bedknife adjusting knob clockwise, one click at a time until paper is pinched lightly, which results in a slight drag when paper is pulled.

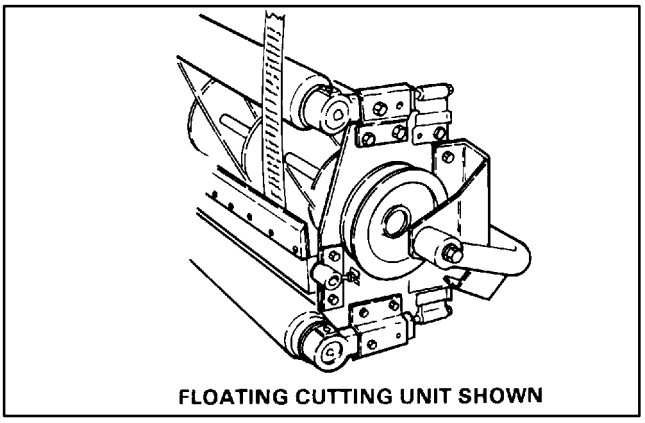


Figure 21

3. Check for light contact at other end of reel using paper. If light contact is not evident, proceed to next step.

4. Loosen (2) carriage bolts on bedbar adjuster (Fig. 22).

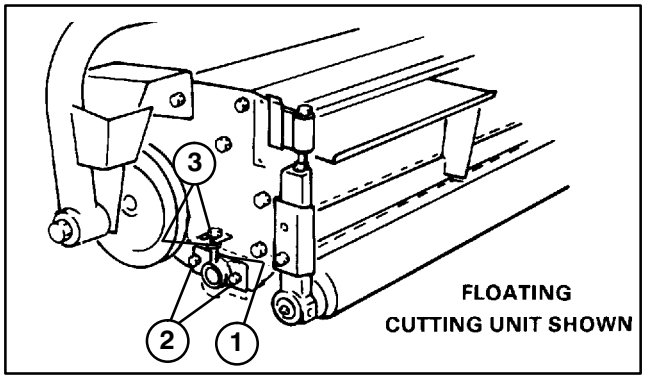


Figure 22

1. Bedbar adjuster
2. Carriage bolts
3. Adjustment nuts

5. Adjust nuts to move bedbar adjuster up or down until paper is pinched along entire bedknife surface, when bedknife adjustment knob is adjusted to no more than two clicks beyond first contact of reel bedknife.

6. Tighten nuts and carriage bolts and verify adjustment.

VERIFY HEIGHT−OF−CUT SETTING

(Fig. 23)

(Floating Cutting Unit)

1. On gauge bar, set head of screw to desired Height−of−Cut. This measurement is from bar face to underside of screw head. Gauge bar (Toro Part No. 13−8199) may be obtained from your local Toro Distributor.

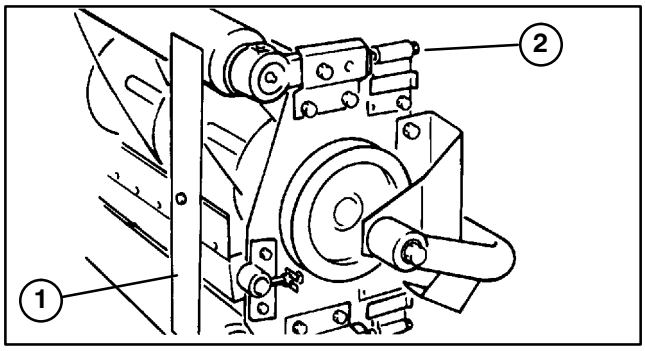


Figure 23

1. Gauge bar
2. Front roller support screw

2. Slightly loosen (crack) nut securing each front roller bracket to angle bracket.

3. Place the bar across the front and rear rollers and adjust the front roller support screws until the underside of screw head engages the bedknife cutting edge. Do this on both ends of reel.

4. Tighten nuts securing roller brackets.

5. Verify that rollers are level and bedknife is parallel to surface.

SET−UP INSTRUCTIONS

MOUNT CUTTING UNITS (Fig. 24) (Floating Cutting Unit)

1. Slide a thrust washer onto lift arm pivot rod.

2. Slide cutting unit carrier frame onto pivot rod and secure with a flatwasher, lockwasher and capscrew.

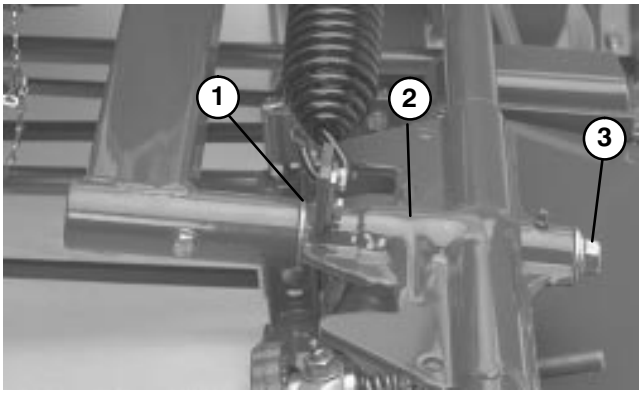


Figure 24
1. Thrust washer
2. Carrier frame
3. Flatwasher, lockwasher and capscrew

MOUNT CUTTING UNITS (Fig. 25) (Fixed Cutting Units)

1. Slide a thrust washer onto lift arm pivot rod.

2. Slide cutting unit support onto pivot rod and secure with a flatwasher, lockwasher and capscrew.

Note: Thrust washer to be positioned between rear of cutting unit support and flatwasher on rear cutting unit.

Note: When mounting rear cutting unit, thrust washer to be positioned between cutting unit support and flatwasher at rear.

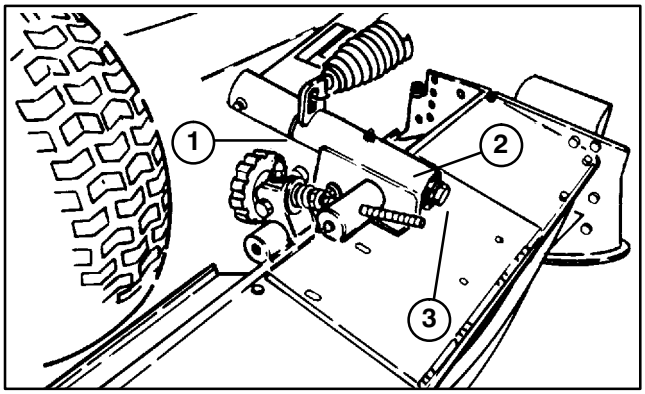


Figure 25
1. Thrust washer
2. Cutting unit support
3. Flatwasher, lockwasher & capscrew

3. Front cutting units should be parallel to front wheels. To adjust, loosen capscrews securing supports to cutting units, adjust cutting units until parallel, then, retighten screws.

INSTALL CUTTING UNIT DRIVE BELTS (Fig. 26−27) (Floating & Fixed Cutting Units)

1. Loosen wing screw securing plastic coupler to jack shaft.

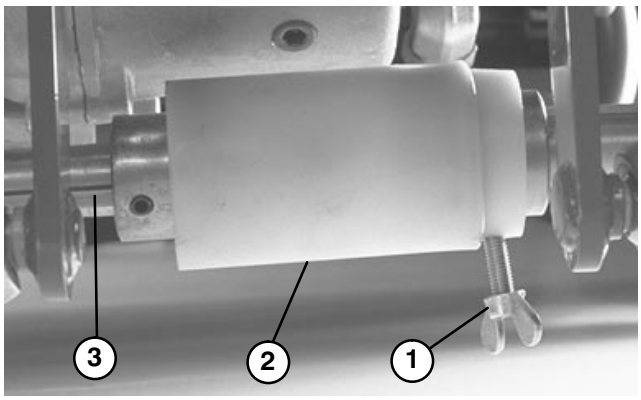


Figure 26
1. Wing screw
2. Coupler
3. Jackshaft

2. Move coupler to the left on shaft.

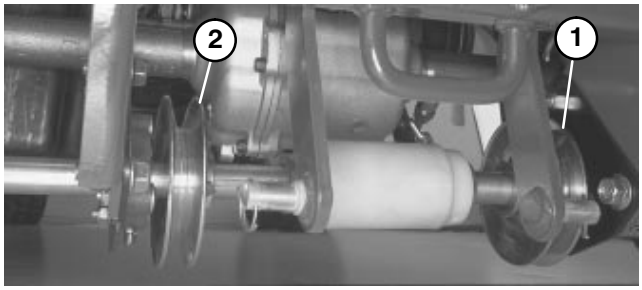


Figure 27
1. Jack shaft pulleys for front cutting units

3. Route (2) V−belts around jackshaft pulleys and front reel pulleys.

4. Slide coupler to the right, aligning with hole in shaft for wing screw and tighten screw.

5. Route a V−belt around jackshaft pulley on right end of shaft and rear reel pulley.

INSTALL BELT TENSIONERS (Fig. 28 & 29) (Floating Cutting Units)

1. Secure a tensioner rod to each traction unit hanger bracket with a pin (Fig. 28).

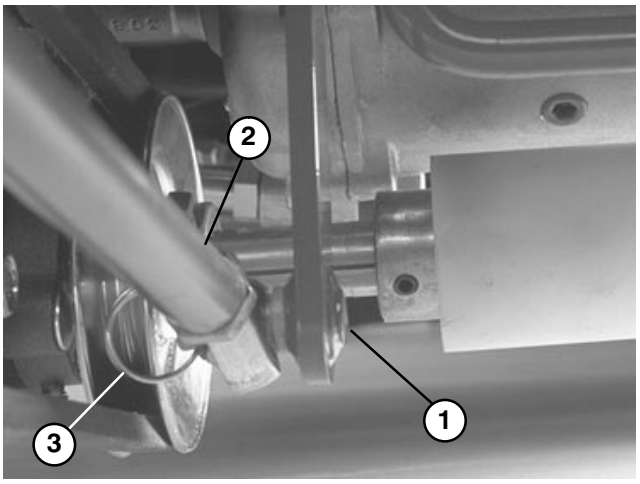


Figure 28
1. Hanger bracket
2. Tensioner rod
3. Klik pin

2. On pulley end of front cutting units and both ends of rear cutting unit, remove nut from bolt securing carrier frame to tensioner bracket.

3. Install a spacer, belt tension rod and washer onto capscrew.

Note: Loosen tension rod jam nut and rotate rod to adjust rod length for installation.

4. Reinstall nut previously removed.

5. The cutting unit drive belts should have a maximum deflection of 1/2 inch with a 10 pound load applied.

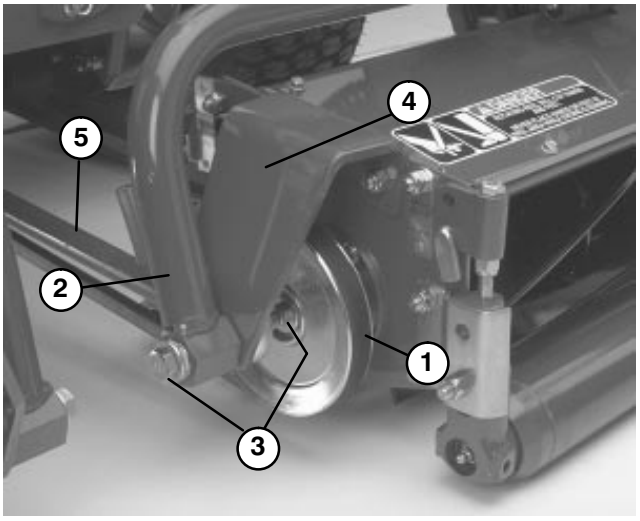


Figure 29
1. Cutting unit drive belt
2. Carrier frame
3. Capscrew, (2) flatwashers & nut
4. Tensioner bracket
5. Belt tensioner

6. Loosen jam nut on end of belt tension rod. Rotate rod to lengthen or shorten rod to desired length. Tighten jam nut.

INSTALL BELT TENSIONERS (Fig. 28 & 30) (Fixed Cutting Units)

1. Secure a tensioner rod to each traction unit hanger bracket with a pin.

2. On pulley end of front cutting units and both ends of rear cutting unit, install a belt tension bracket to inside of tensioner bracket with a capscrew, washer, nut & spacer.

3. Insert tension rod ball joint onto tension bracket pin and secure with a washer and capscrew.

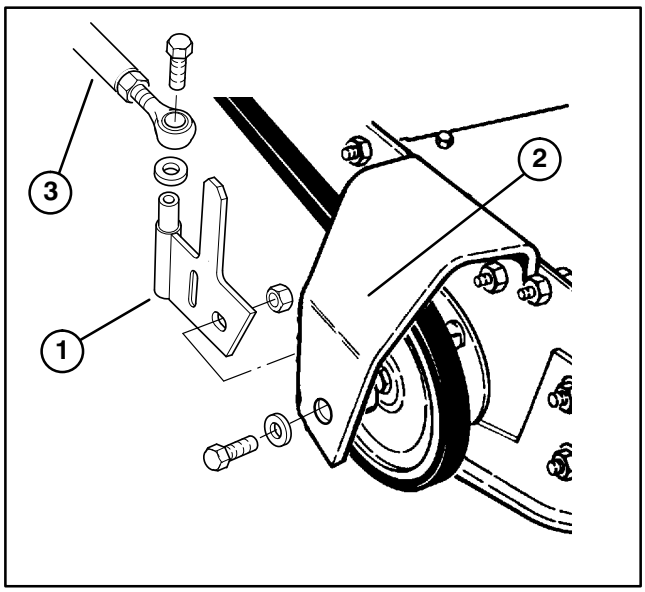


Figure 30
1. Belt tension bracket
2. Tensioner bracket
3. Belt tensioner rod

Note: Loosen tension rod jam nut and rotate rod to adjust rod length for installation.

4. Secure with nut.

5. The cutting unit drive belts should have a maximum deflection of 1/2 inch with a 10 pound load applied.

6. Loosen jam nut on end of belt tension rod. Rotate rod to lengthen or shorten rod to desired length. Tighten jam nut.

ADJUST PULLEY CLEANERS (Fig. 31)

1. Adjust cleaner bracket so it is centered in groove of pulley and tighten carriage bolt and locknut.

2. Adjust cleaner bracket so there is approximately .030 – .060 clearance between bracket and pulley, then tighten capscrew and locknut.

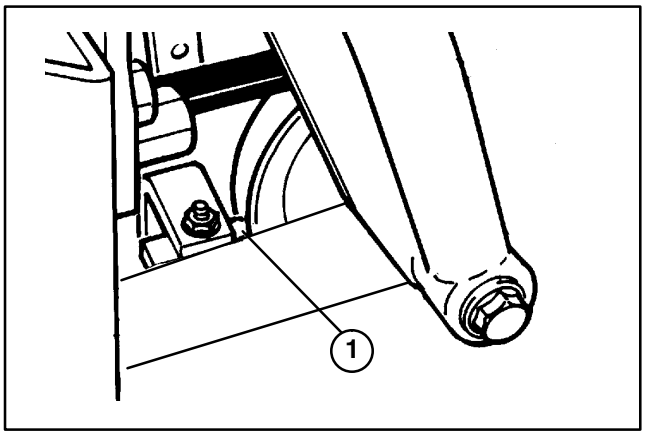


Figure 31
1. Cleaner bracket

INSTALL COUNTERBALANCE SPRINGS

(Figs. 32–35)

WARNING

Use caution when tensioning springs as they are under heavy load.

Front Cutting Units

1. Hook one end of spring into second hole (from bottom) on cutting unit lift tab (Fig. 32).

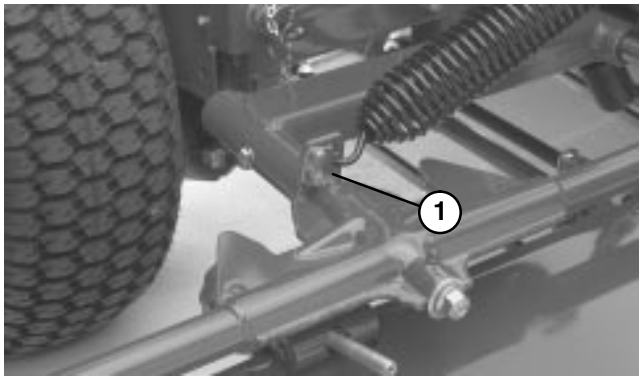


Figure 32
1. Front cutting unit lift tab

2. Secure other end of spring to appropriate hole on counterbalance arm with spring shackle, clevis pin and cotter pin (Fig. 33) as follows:

A. Use **second hole** from bottom when equipped with 5 blade reels.

B. Use **middle hole** when equipped with 8 blade reels without baskets.

C. Use **top hole** when equipped with 8 blade reels with baskets.

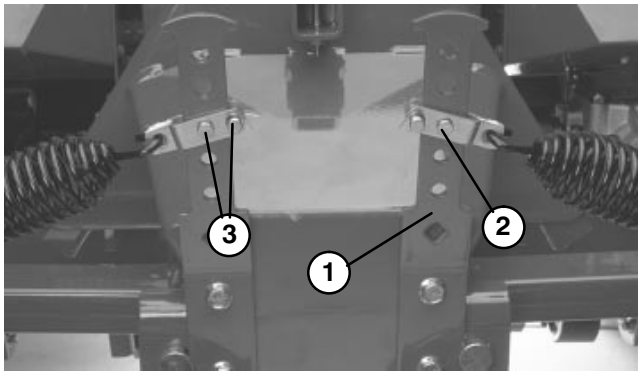


Figure 33
1. Counterbalance arm
2. Spring shackle
3. Clevis pin & cotter pin

3. Tension front counterbalance springs as follows:

A. Remove cotter pin and clevis pin securing spring shackle to counterbalance arm. Do not remove other clevis pin.

B. Move shackle up or down on counterbalance arm, until aligned with desired hole of arm. Reinstall clevis pin and cotter pin.

Rear Cutting Unit

1. Hook one end of spring into appropriate hole in cutting unit lift tab (Fig. 34) as follows:

A. Use **upper hole** when equipped with 5 or 8 blade reels without baskets.

B. Use **lower hole** when equipped with 5 or 8 blade reels with baskets.

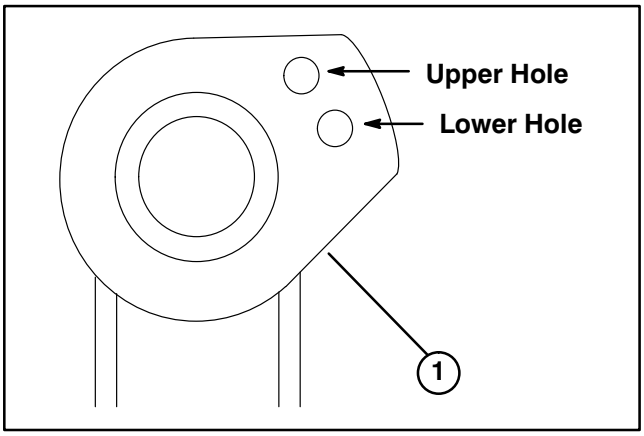


Figure 34
1. Rear cutting unit lift tab

2. Hook other end of spring to anchor bolt.

3. Loosely secure anchor bolt and spring to upper or lower hole in frame bracket (Fig. 35) with round spacer and counterbalance adjustment knob positioning as follows:

A. Use **upper** hole in bracket when equipped with 5 blade reels.

B. Use **lower** hole in bracket when equipped with 8 blade reels.

SET−UP INSTRUCTIONS

4. To tension rear counterbalance spring, rotate counterbalance knob (Fig. 35) until distance between center of anchor bolt opening and inside of frame **"X"** is as follows:

A. Distance "X" is **50mm** when equipped with 5 or 8 blade reels without baskets.

B. Distance "X" is **15mm** when equipped with 5 or 8 blade reels with baskets.

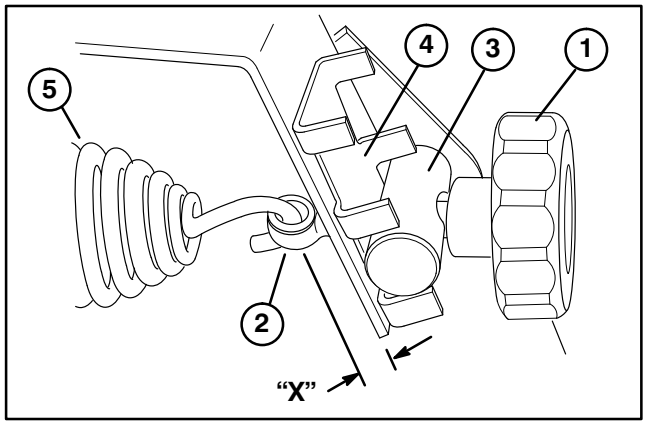


Figure 35

1. Rear counterbalance knob
2. Anchor bolt
3. Spacer
4. Frame bracket
5. Counterbalance spring

IMPORTANT: **These are recommended settings. Readjust spring positions to attain optimum performance and counterbalance. By raising spring locations, cutting unit weight on ground is reduced and traction is increased.**

ADD REAR BALLAST

This unit complies with ANSI B 71.4−1984 Standard and CE when equipped with rear ballast. Use the following chart to determine weight or combinations of weights needed.

Traction Unit Configuration	Weight Required
3 Wheel Axle and equipped with Baskets	Calcium Chloride in rear tire and rear weights, Part No. 24−5790 and 24−5780.
4 Wheel Axle and equipped with Baskets	Calcium Chloride in rear tire and rear weights, Part No. 24−5780.

IMPORTANT: If a puncture occurs in a tire with calcium chloride, remove unit from turf area as quickly as possible. To prevent possible damage to turf, immediately soak affected area with water.

Either Type 1 (77%) or Type 2 (94%) commercial calcium chloride flake may be used.

Plain water freezes solid at 32° F (0°C). The 3−1/2 pound (1 .6 kg) calcium chloride to one gallon (3.8 L) of water solution is slush free to −12°F (−24°C), and will freeze solid at −52° F (−46°C). The 5 pound (2.3 kg) per gallon (liter) solution is slush free to −50°F (−45°C) and will freeze solid at −62°F (−52°C).

Tires should be filled to approximately 75% capacity (valve level with valve at the top).

ACTIVATE AND CHARGE BATTERY

(Fig. 36−37)

1. If Battery is not filled with electrolyte or activated, bulk electrolyte with 1.260 specific gravity must be purchased from a local battery supply outlet and added to battery.

2. Remove access panel from rear of tower (Fig. 36).

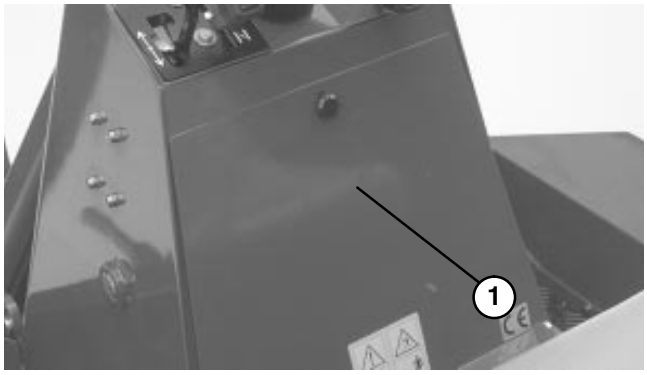


Figure 36

1. Access panel

CAUTION

Wear safety goggles and rubber gloves when working with electrolyte. Charge the battery in a well ventilated place so gasses produced while charging can dissipate. Since the gases are explosive, keep open flames and electrical spark away from the battery; do not smoke. Nausea may result if the gases are inhaled. Unplug charger from electrical outlet before connecting to or disconnecting charger leads from battery posts.

3. Remove filler cap from battery and slowly fill each cell until electrolyte is just above the plates.

4. Replace filler cap and connect a 3 to 4 amp battery charger to the battery posts. Charge the battery at a rate of 3 to 4 amperes for 4 to 8 hours.

5. When battery is charged, disconnect charger from electrical outlet and battery posts.

6. Remove filler cap. Slowly add electrolyte to each cell until level is up to fill ring. Install filler cap.

IMPORTANT: **Do not overfill battery. Electrolyte will overflow onto other parts of the machine and severe corrosion and deterioration will result.**

Figure 37
1. Battery

7. Install the positive cable (rubber boot over end) to the positive (+) terminal and the negative cable (black) to the negative (—) terminal of the battery. Slide the rubber boot over the positive terminal to prevent possible short–out from occurring.

BEFORE OPERATING

CHECK ENGINE OIL (Fig. 38)

The engine is shipped with 1−3/4 quarts (w/ filter) (1.7 l) of oil in the crankcase; however, level of oil must be checked before and after engine is first started.

1. Position machine on a level surface.

2. Unscrew dipstick and wipe it with a clean rag. Screw dipstick into the tube and make sure it is seated fully. Unscrew dipstick out of tube and check level of oil. If oil level is low, remove filler cap from valve cover and add enough oil to raise level to FULL mark on dipstick.

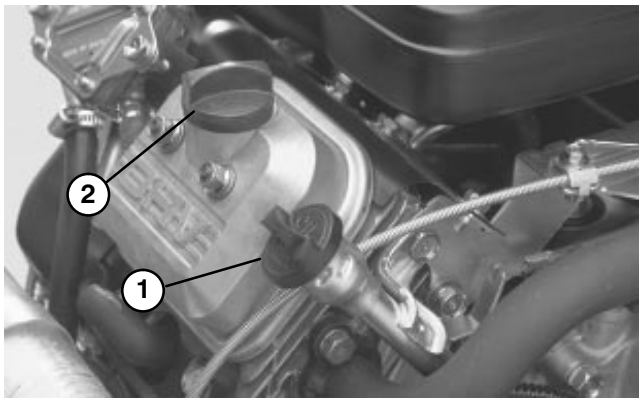


Figure 38
1. Dipstick
2. Filler cap

3. The engine uses any high-quality detergent oil having the American Petroleum Institute -API- "service classification" SE, SF or SG. Recommended viscosity (weight) is SAE 30. Refer to Engine Operator's Manual for additional information.

4. Pour oil into opening in valve cover until the oil level is up to the "FULL" mark on the dipstick. Add the oil slowly and check the level often during this process. DO NOT OVERFILL.

IMPORTANT: Check level of oil every 8 operating hours or daily. Initially, change oil after the first 8 hours of operation; thereafter, under normal conditions, change oil every 50 hours and filter every 100 hours. However, change oil more frequently when engine is operated in extremely dusty or dirty conditions.

5. Install the filler cap and dipstick firmly in place.

FILL FUEL TANK (Fig. 39)

THE TORO COMPANY STRONGLY RECOMMENDS THE USE OF CLEAN, FRESH **UNLEADED** REGULAR GASOLINE IN TORO GASOLINE POWERED PRODUCTS. UNLEADED GASOLINE BURNS CLEANER, EXTENDS ENGINE LIFE, AND PROMOTES GOOD STARTING BY REDUCING THE BUILD−UP OF COMBUSTION CHAMBER DEPOSITS. LEADED GASOLINE CAN BE USED IF UNLEADED IS NOT AVAILABLE.

NOTE: NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOHOL CONTAINING MORE THAN 10% ETHANOL, GASOLINE ADDITIVES, PREMIUM GASOLINE, OR WHITE GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.

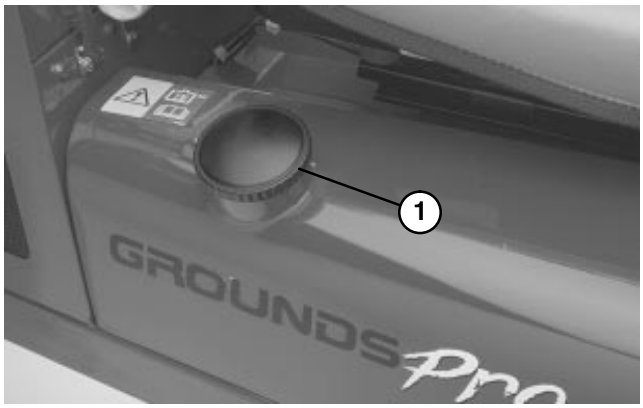


Figure 39
1. Fuel tank cap

1. Fill the gasoline tank to bottom of filler neck. DO NO OVERFILL. Install the cap and tighten securely in place.

DANGER

Because gasoline is flammable, caution must be used when storing or handling it. Do not fill fuel tank while engine is running, hot or when machine is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many feet away. DO NOT SMOKE while filling the fuel tank to prevent the possibility of an explosion. Always fill fuel tank outside and wipe up any spilled gasoline before starting engine. Use a funnel or spout to prevent spilling gasoline before starting engine and fill tank to about

I inch from top of tank, not filler neck. Store gasoline in a clean safety− approved container and keep the cap in place on the container. Keep gasoline in a cool, well−ventilated place; never in an enclosed area such as a hot storage shed. To assure volatility, do not buy more than a 30 day supply of gasoline. Gasoline is a fuel for internal combustion engines; therefore, do not use it for any other purpose. Since many children like the smell of gas, keep it out of their reach because the fumes are explosive and dangerous to inhale.

BEFORE OPERATING

CHECK HYDRAULIC SYSTEM FLUID

(Fig. 40−41)

The hydraulic system is designed to operate on SAE 10W−30 engine oil or, as a substitute, SAE 10W−40 engine oil. The reservoir is filled at the factory with approximately 5 quarts of 10W−30 engine oil. Check reservoir oil level before engine is first started and daily thereafter.

1. Position machine on a level surface and stop the engine.

2. Remove access panel exposing hydraulic system dipstick filler cap.

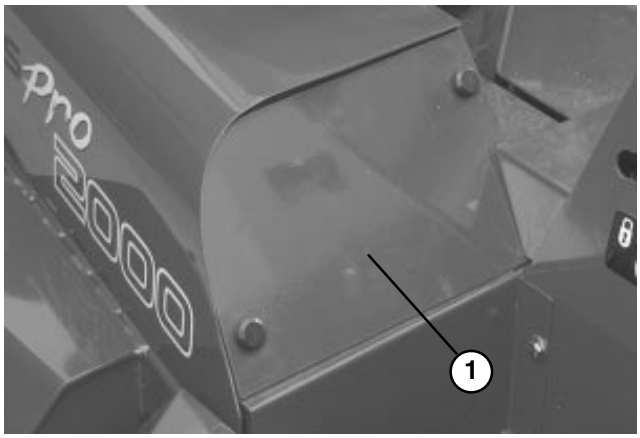


Figure 40
1. Access panel

3. Remove dipstick cap from filler neck and wipe it with a clean rag. Insert dipstick cap onto filler neck; then remove it and check level of oil.

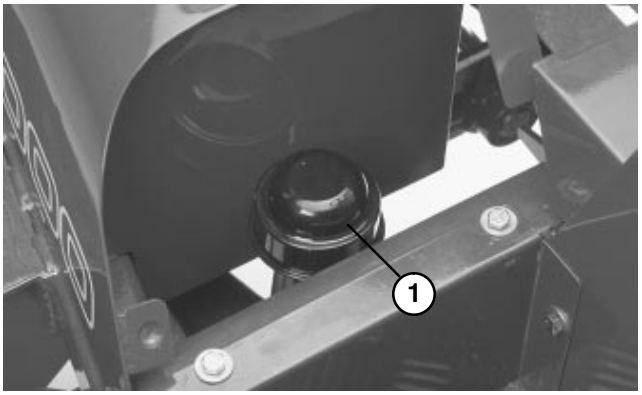


Figure 41
1. Dipstick filler cap

4. If level is not within 1/2 inch from full mark on dipstick, add SAE 10W−30 engine oil to raise level to FULL mark. Do not overfill.

5. Install dipstick filler cap onto filler neck.

6. Run engine for approximately 1 minute, recheck reservoir oil level and add as required.

CHECK TIRE PRESSURE

Correct air pressure in front and rear tires is 12 to 18 psi.

LUBRICATE BEARINGS AND BUSHINGS

The traction unit and cutting unit's grease fittings must be lubricated with No. 2 General Purpose Lithium Base Grease.

CHECK REEL TO BEDKNIFE CONTACT

(Fig. 42)

Each day before operating, check reel to bedknife contact, regardless if quality of cut had previously been acceptable. There must be light contact across the full length of the reel and bedknife. Refer to Adjusting Bedknife Parallel To Reel.

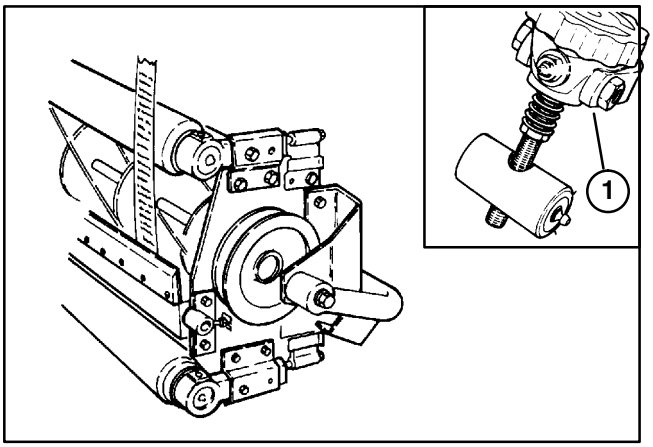


Figure 42
1. Bedknife adjusting knob

CONTROLS

Traction Pedal (Fig. 43) — Traction pedal has three functions: one, to make the machine move forward, two, to move it backward and three, to stop machine. Using the heel and toe of the right foot, depress top of pedal to move forward and bottom of pedal to move backward or to assist in stopping when moving forward. Also, allow pedal to move or move it to neutral position to stop machine. **For operator comfort, do not rest heel of foot on reverse when operating forward (Fig. 44).**

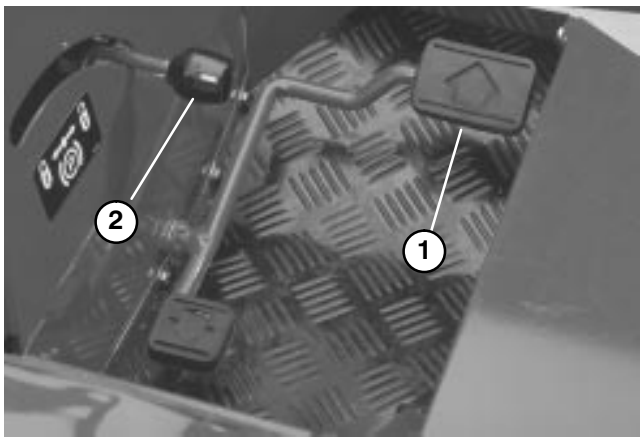


Figure 43
1. Traction pedal
2. Parking brake

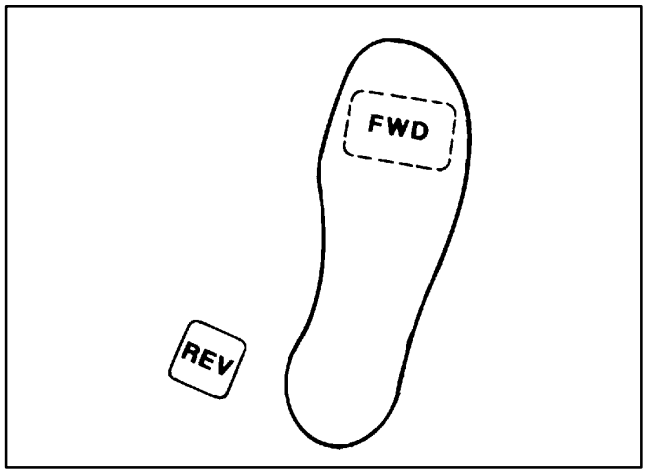


Figure 44

Parking Brake (Fig. 43) — Whenever the engine is shut off, the parking brake must be engaged to prevent accidental movement of the machine. To engage the parking brake, pull back on lever. After releasing parking brake, move mower slightly in reverse to release brakes before moving forward.

Throttle (Fig. 45)—Throttle is used to operate engine at various speeds. Moving throttle upward increases engine speed, downward decreases engine speed. The throttle controls the speed of the reel blades and, in conjunction with traction pedal, controls ground speed of the machine.

Choke (Fig. 45) — To start a cold engine, close carburetor choke by moving choke control upward to ON position. After engine starts, regulate choke to keep engine running smoothly. As soon as possible, open the choke by pulling it downward to the OFF position. A warm engine requires little or no choking when starting.

Lift Lever (Fig. 45) The lift lever has four positions: LOWER, RAISE, NEUTRAL and FLOAT. To lower cutting units to the ground, move lift lever forward. To raise cutting units, pull lift lever rearward to the RAISE position.

PTO Switch (Fig. 45) — The switch has two positions: ENGAGE and DISENGAGE. Raise cover and push switch lever forward to engage electromagnetic clutch to drive cutting units. Close cover to disengage clutch.

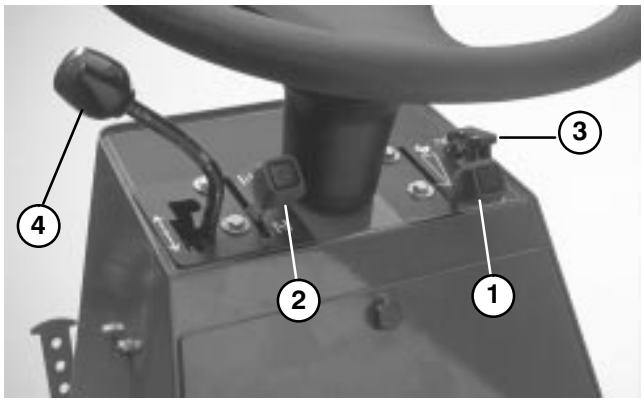


Figure 45
1. Throttle control
2. Choke control
3. PTO switch
4. Cutting unit lift lever

Ignition Switch (Fig. 46) — The ignition switch, used to start and stop the engine, has three positions: OFF, RUN and START. Rotate key clockwise — START position — to engage starter motor. Release key when engine starts. The key will move automatically to the ON position. To shut engine off, rotate key counterclockwise to OFF position.

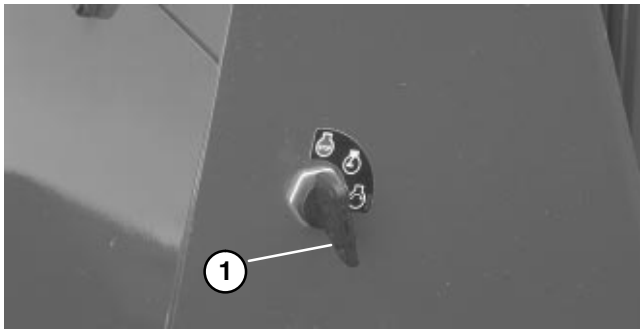


Figure 46
1. Ignition switch

CONTROLS

Seat Adjustments

Deluxe Suspension Seat (Fig. 47)
Fore and Aft Adjustment — Pull handle on front of seat assembly outward. Release handle to lock seat position.
Operator Weight Adjustment – Turn spring tension knob; clockwise to increase tension, counterclockwise to decrease spring tension.

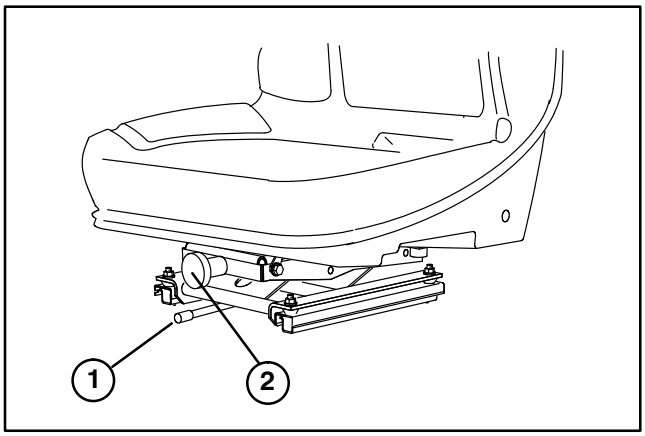


Figure 47
1. Fore and aft lever
2. Weight adjustment lever

Standard Seat (Fig. 48)
Fore and Aft Adjustment — Loosen adjustment screws, slide seat to desired position and tighten screw to lock seat into position.

Cutting Unit Lock−up Lever (Fig. 48) — Locks rear cutting unit in raised position.

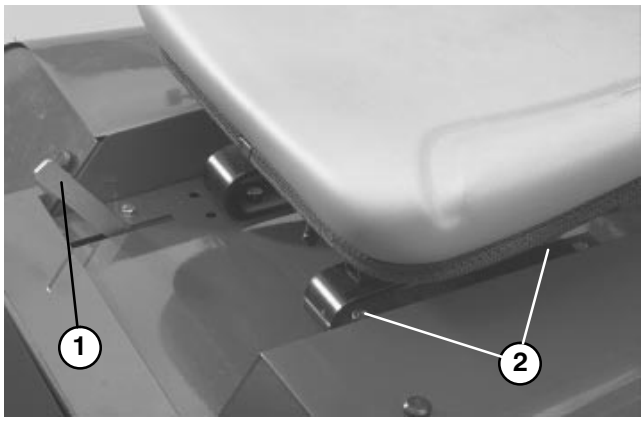


Figure 48
1. Cutting unit lock−up lever
2. Seat adjusting screws

Fuel Shut−off Valve (Fig. 49) — Close fuel shut−off valve (located under fuel tank) when storing machine**.**

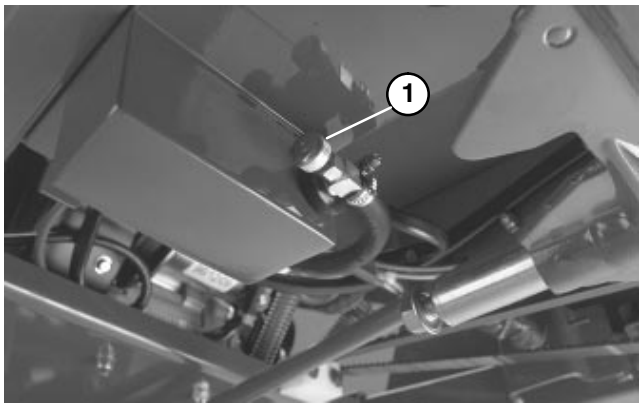


Figure 49
1. Fuel shut−off valve

OPERATING INSTRUCTIONS

STARTING/STOPPING ENGINE

1. Be sure parking brake is set and PTO switch is in DISENGAGED position.

2. Remove foot from traction pedal and make sure pedal is in neutral position.

3. Move choke lever to ON position — when starting a cold engine — and throttle lever to half throttle position.

4. Insert key into ignition switch and rotate it clockwise to start the engine. Release key when engine starts. Regulate the choke to keep engine running smoothly.

IMPORTANT: To prevent overheating of the starter motor, do not engage starter longer than 10 seconds. After 10 seconds of continuous cranking, wait 60 seconds before engaging starter motor again.

5. When engine is started for the first time, or after overhaul of the engine, operate the machine in forward and reverse for one to two minutes. Also operate the lift lever and PTO switch to be sure of proper operation of all parts.

Turn steering wheel to the left and right to check steering response. Then shut engine off and check for oil leaks, loose parts and any other noticeable malfunctions.

CAUTION

Shut engine off and wait for all moving parts to stop before checking for oil leaks, loose parts and other malfunctions.

6. To stop engine, move throttle control downward to IDLE position, move PTO switch to OFF and rotate ignition key to OFF. Remove key from switch to prevent accidental starting.

7. Set the parking brake.

8. Close fuel shut off valve before storing machine.

OPERATING THE POWER TAKE OFF (PTO)

The power take off (PTO) switch engages and disengages power to the electric clutch.

Engaging the PTO

1. Release the parking brake.

2. Release pressure on the traction pedal to stop movement.

3. To engage, lift cover and move the PTO switch forward to the “ON” position.

Disengaging the PTO

1. Closing the cover moves the PTO switch to the “OFF”disengaged position.

DRIVING FORWARD OR BACKWARD

The throttle control regulates the engine speed. Place the throttle control in the 3/4 position for best performance.

Forward

1. To go forward, place your foot on the traction pedal.

2. Release the parking brake.

3. Slowly press on the upper pad of the traction control to move forward.

Backward

1. To go backward, place your foot on the traction pedal.

2. Release the parking brake.

3. Slowly press on the lower pad of the traction pedal to move rearward.

CHECK OPERATION OF INTERLOCK SWITCHES

CAUTION

Do not disconnect the safety switches because they are for the operator’s protection. Check operation of the switches daily to be sure the interlock system is operating correctly. If a switch is not operating properly, replace it before operating the machine. Replace the switches every two years to be sure of maximum safety.

1. With operator off the seat, traction pedal in neutral and PTO switch in disengage position, the engine should start. If either the traction pedal is depressed or the PTO switch is engaged, the engine should stop. Correct problem if not operating properly.

2. With operator in the seat, parking brake engaged and engine running, depress traction pedal either forward or reverse, the engine should stop. Correct problem if not operating properly.

3. With operator in the seat, parking brake engaged and engine running, lower cutting units to the ground. Engage PTO switch, the electric clutch on engine should engage. Proceed to raise cutting units, PTO switch should disengage. Correct problem if not operating properly.

OPERATING INSTRUCTIONS

IMPLEMENT LIFT LEVER

The implement lift lever is used to raise and lower various attachments.

Raising Attachments

1. Pull implement lift lever rearward to raise attachment to the desired height.

Lowering Attachments

1. Push implement lift lever forward to lower attachment.

NOTE: Hold lift lever in down position 1−2 seconds after attachment in down to extend lift cylinder allowing attachment to float with changes in ground contour.

PUSHING OR TOWING THE MACHINE

In an emergency, the traction unit can be pushed or towed for a very short distance. Toro does not recommend this as standard procedure.

IMPORTANT: Do not push or tow the traction unit faster than 2 to 3 mph because transmission may be damaged. If traction unit must be moved a considerable distance, transport on a truck or trailer.

1. To push or tow forward, the traction pedal must be fully depressed forward.

2. To push or tow in reverse, the traction pedal must be fully depressed in reverse.

TRAINING PERIOD

Before mowing with the Grounds Pro 2000, The Toro Company suggests you find a clear area and practice starting and stopping, raising and lowering cutting units, turning, etc. This training period will be beneficial to the operator in gaining confidence in the performance of the Grounds Pro 2000.

BEFORE MOWING

Inspect the area for debris and clear area if necessary. Determine the direction best to mow on the previous mowing direction. Always mow in an alternate pattern from the previous mowing, so that the grass blades will be less apt to lay down and therefore be difficult to gather between the reel blades and bedknife.

OPERATING CHARACTERISTICS

Practice operating the Grounds Pro 2000 and become thoroughly familiar with it. Because of its hydrostatic transmission its characteristics differ from many turf maintenance machines. Points to consider when operating are the traction drive, engine speed and load on the cutting units. Regulate the traction pedal to keep engine rpm high and somewhat constant while mowing to maintain adequate power for the traction and cutting units.

Follow operating guidelines presented in this manual and know how to operate the machine safely on all types of terrain. Use the slope gauge, page 39, to assist in determining slope angles of questionable areas. Hills (or slopes) over 15 degrees should be traversed or mowed up and down, not side to side and hills over 20 degrees should generally be avoided unless special safeguards, skills and conditions exist. Always plan well ahead to avoid the need for sudden stops, starts or turns. To stop, use the reverse pedal for braking. Before stopping the engine, disengage all controls, move throttle to IDLE position, and set parking brake.

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.

TRANSPORT OPERATION

Be sure the lift arms are in fully up position, transport bracket is installed (fixed cutting units only) and secured with retainer (Fig. 50). Also, lock rear cutting unit in raised position (Fig. 51).

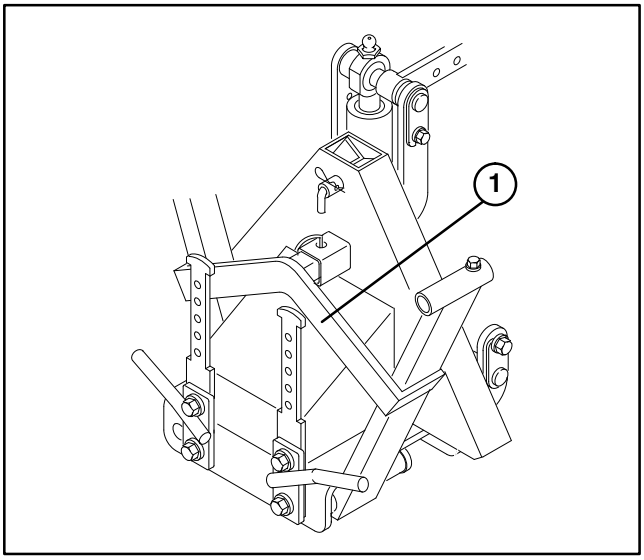


Figure 50

1. Transport bracket

Figure 51
1. Rear cutting unit lock−up lever

While operating on slopes and uneven terrain, always reduce speed and use extreme caution before turning to reduce risk of tipping or losing control. Watch carefully for, and avoid, holes in the terrain, sudden drop−offs and other hidden hazards. To prevent costly damage and down time, familiarize yourself with the width of the Grounds Pro 2000. Do not attempt to pass between immovable objects placed close together.

INSPECTION AND CLEAN−UP AFTER MOWING

At the completion of mowing operation, thoroughly wash the machine with a garden hose − without a nozzle − so excessive water pressure will not cause contamination and damage to seals and bearings.

Note: Do not spray water directly onto a hot engine or hot bearings.

Make sure cooling fins and area around engine cooling air intake are kept free of dirt or grass clippings. After cleaning, it is recommended the machine be inspected for possible hydraulic fluid leaks, damage or wear to hydraulic and mechanical components and the cutting units checked for sharpness and proper reel to bedknife adjustment.

CUTTING UNIT CHARACTERISTICS

The single knob bedknife−to−reel adjustment system incorporated in this cutting unit simplifies the adjustment procedure needed to deliver optimum mowing performance. The precise adjustment possible with the single knob/bedbar design gives the necessary control to provide a continual self−sharpening action — thus maintaining sharp cutting edges, assuring good quality−of−cut, and greatly reducing the need for routine backlapping.

In addition, the rear roller positioning system permits optimum bedknife attitude and location for varying height−of−cuts and turf conditions.

CUTTING UNIT DAILY ADJUSTMENTS

Prior to each day's mowing, or as required, each cutting unit must be checked to verify proper bedknife−to−reel contact. **This must be performed even though quality of cut is acceptable.**

1. Shut off engine and lower cutting units onto a hard surface.

2. Slowly rotate reel in reverse direction listening for reel−to−bedknife contact. If no contact is evident, turn bedknife adjusting knob clockwise, one click at a time, until light contact is felt and heard.

3. If excessive contact is felt, turn bedknife adjusting knob counterclockwise, one click at a time until no contact is evident. Then turn bedknife adjusting knob one click at a time clockwise, until light contact is felt and heard.

IMPORTANT: Light contact is preferred at all times. If light contact is not maintained, bedknife/ reel edges will not sufficiently self−sharpen and dull cutting edges will result after a period of operation. If excessive contact is maintained, bedknife/reel wear will be accelerated, uneven wear can result, and quality of cut may be adversely affected.

Note: As the reel blades continue to run against the bedknife a slight burr will appear on the front cutting edge surface the full length of the bedknife. If a file is occasionally run across the front edge to remove this burr, improved cutting can be obtained.

After extended running, a ridge will eventually develop at both ends of the bedknife. These must be rounded off or filed flush with cutting edge of bedknife to assure smooth operation.

LUBRICATION

GREASING BEARINGS AND BUSHINGS

(Fig. 52 – 63)

The traction unit and cutting unit's grease fittings must be lubricated regularly with No. 2 General Purpose Lithium Base Grease. If machine is operated under normal conditions, lubricate bearings and bushings after every 25 hours of operation. Bearings and bushings must be lubricated daily when operating conditions are extremely dusty and dirty. Dusty and dirty operating conditions could cause dirt to get into the bearings and bushings, resulting in accelerated wear. Lubricate grease fittings immediately after every washing, regardless of the interval listed.

The traction unit bearings and bushings that must be lubricated are:

Lift arms (2) (Fig. 52), rear axle pivot (3 & 4 wheel axle) (Fig. 53), rear wheel spindles (4 wheel axle only) (Fig. 54), rear wheel(s) (Fig. 55), lower steering shaft (Fig. 56), jack shaft bearings (Fig. 57), upper steering shaft (Fig. 58), front lift arm (Fig. 58), idler pulleys (Fig. 59), lift cylinder pivot (Fig. 60) and transmission neutral adjust eccentric (Fig. 61).

The cutting unit lubrication points are: Single point adjustment knob (Fig. 62), lift arm pivot (Fig. 62), reel flange bearing (2) and front and rear rollers (2 ea.) (Fig. 63).

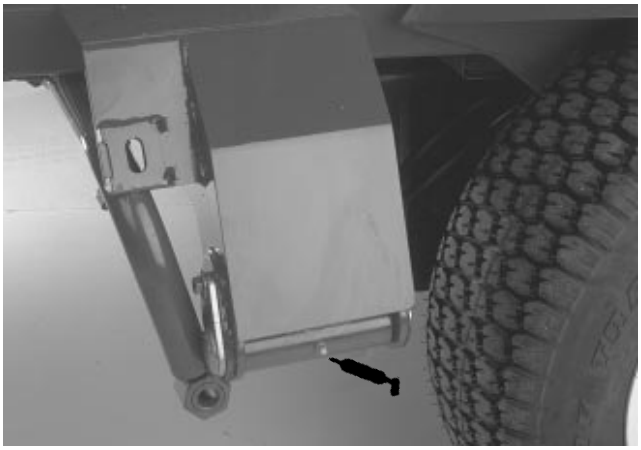


Figure 52

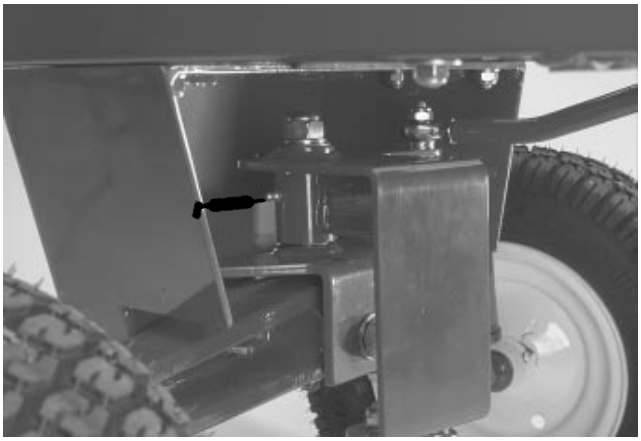


Figure 53

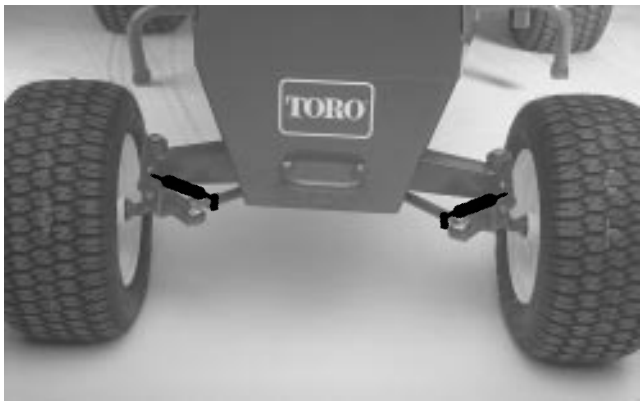


Figure 54

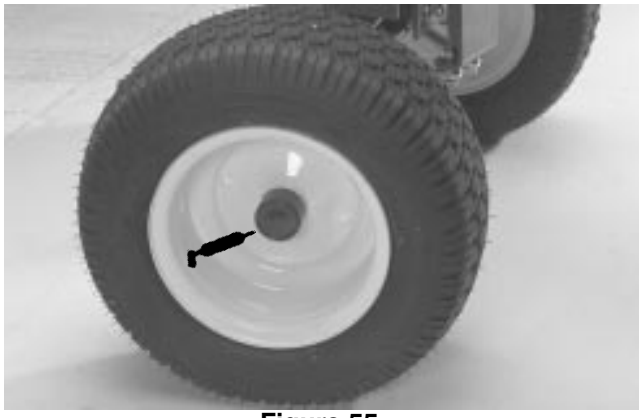


Figure 55

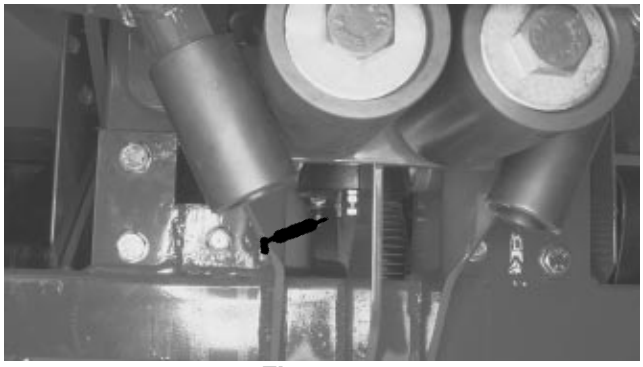


Figure 56

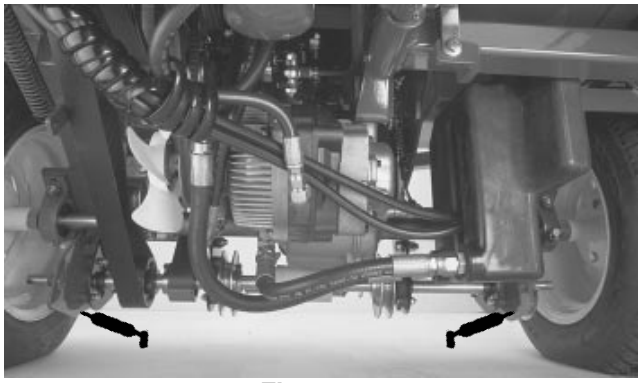


Figure 57

LUBRICATION

Figure 58

Figure 61

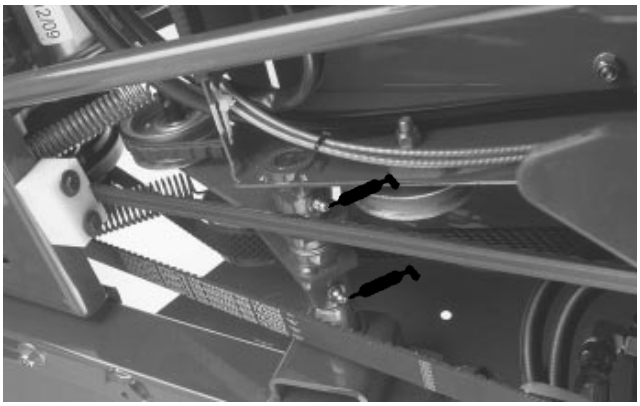


Figure 59

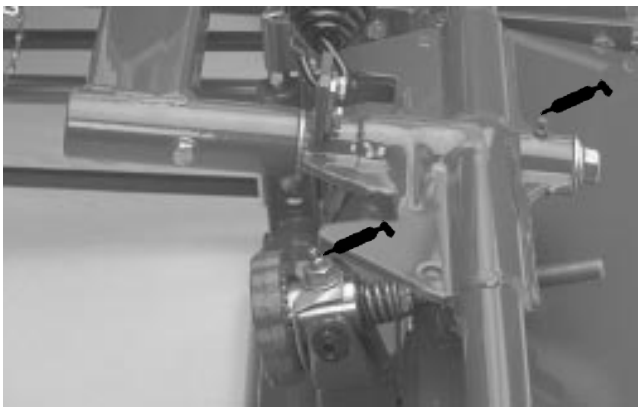


Figure 62

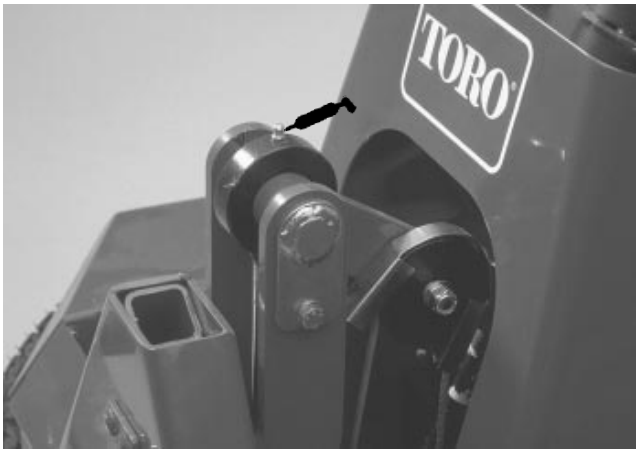


Figure 60

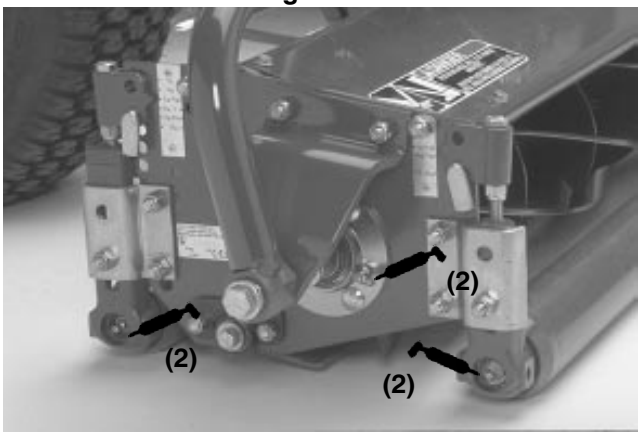


Figure 63

MAINTENANCE CHART AND CHECKLIST

Daily Maintenance: (duplicate this page for routine use)
Check proper section of Operator's Manual for fluid specifications

Maintenance Check Item ➧	**Daily Maintenance Check For Week Of _____**						
	MON	TUES	WED	THURS	FRI	SAT	SUN
✓ Safety Interlock Operation							
✓ Brake Operation							
✓ Engine Oil Level							
✓ Air Filter Pre–cleaner							
Clean Engine Cooling Fins							
✓ Unusual Engine Noises							
✓ Unusual Operating Noises							
✓ Hydraulic System Oil Level							
✓ Hydraulic Hoses for Damage							
✓ Fluid Leaks							
✓ Fuel Level							
✓ Tire Pressure							
✓ Instrument Operation							
✓ Reel–to–Bedknife Adjustment							
✓ Height–of–Cut Adjustment							
✓ Cutting Unit Belt Adjustment							
Lubricate All Grease Fittings[1]							
Touch–up Damaged Paint							

[1] = Immediately after every washing, regardless of the interval listed.

Notation for areas of concern: Inspection performed by_____

Item	Date	Information
1		
2		
3		
4		
5		
6		
7		
8		

MAINTENANCE

CAUTION

Before servicing or making adjustments to the machine, stop engine and remove key from the switch.

CHANGING ENGINE OIL AND FILTER (Fig. 64–65)

Change oil and filter initially after the first 8 hours of operation, thereafter change oil every 50 hours and filter every 100 hours.

Note: Change oil and filter every 25 hours when operating under heavy load or high ambient temperatures.

1. Remove drain plug and oil fill cap and let oil flow into drain pan. When oil stops, install drain plug.

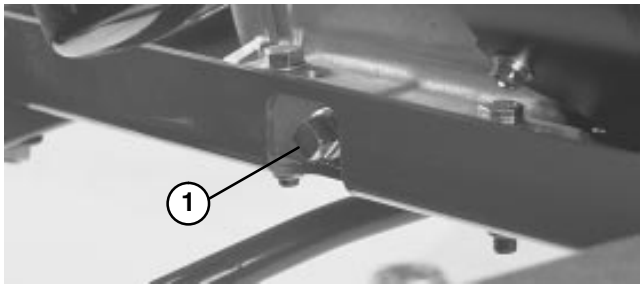


Figure 64

1. Drain plug

2. Remove oil filter. Apply a light coat of clean oil to the new filter gasket.

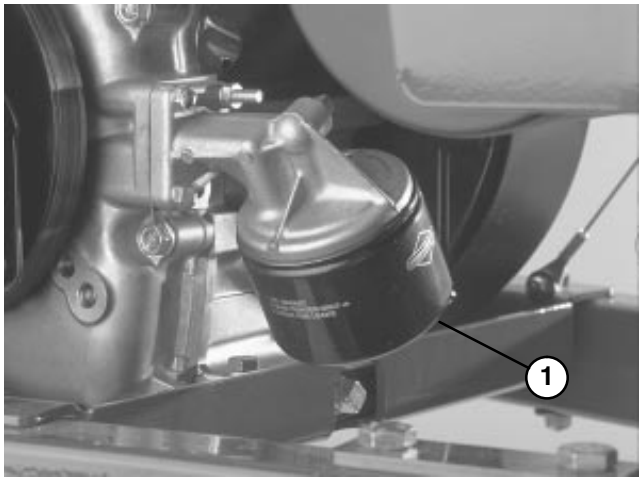


Figure 65

1. Oil filter

3. Screw filter on by hand until gasket contacts filter adapter, then tighten 1/2 to 3/4 turn further. DO NOT OVER–TIGHTEN.

4. Add oil to crankcase, refer to CHECK ENGINE OIL.

5. Start engine and check for leaks around filter.

6. Dispose of oil properly.

SERVICING AIR CLEANER (Fig. 66–67)

Service air cleaner foam pre –cleaner after every 50 operating hours and air cleaner cartridge after every 100 operating hours. More frequent cleaning is required when operating in dusty or dirty conditions.

1. Release locking clips and remove air cleaner cover. Clean cover thoroughly.

Figure 66

1. Air cleaner cover

2. Remove wing nut securing elements to air cleaner body.

3. If foam element is dirty, remove it from paper element. Clean thoroughly.

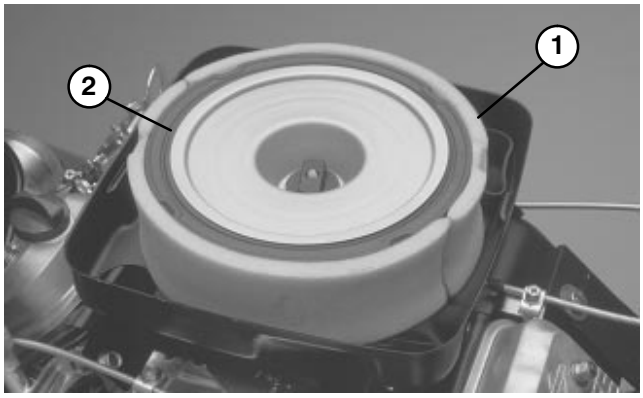


Figure 67

1. Foam element **2. Paper element**

A.WASH foam element in a solution of liquid soap and warm water. Squeeze to remove dirt, but do not twist because foam may tear.

B. DRY by wrapping in a clean rag. Squeeze rag and foam element to dry.

C. SATURATE element with clean engine oil. Squeeze element to remove excess oil and to distribute oil thoroughly. An oil damp element is desirable.

4. When servicing foam element, check condition of paper element. Clean by gently tapping on a flat surface or replace as required.

5. Reinstall foam element, paper element and air cleaner cover.

IMPORTANT: Do not operate engine without air cleaner element because extreme engine wear and damage will likely result.

MAINTENANCE

ADJUSTING THROTTLE CONTROL
(Fig. 68)

Proper throttle operation is dependent upon proper adjustment of throttle control. Before adjusting the carburetor, assure the throttle control is operating properly.

1. Loosen cable clamp screw securing cable to engine.

2. Move remote throttle control lever forward to FAST position.

3. Pull firmly on throttle cable until back of swivel contacts stop.

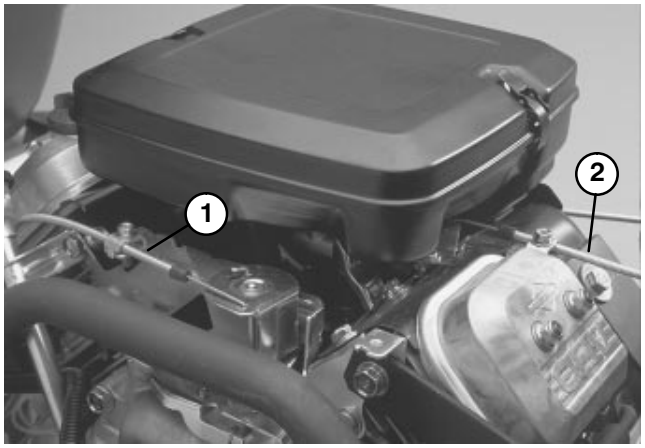


Figure 68
1. Throttle cable
2. Choke cable

4. Tighten cable clamp screw and check engine RPM setting.

High Idle: 3200 + 50 −100 −
Low Idle: 1400 ± 50 −

ADJUSTING CHOKE CONTROL (Fig. 68)

1. Loosen cable clamp screw securing cable to engine.

2. Move remote choke control lever forward to CLOSED position.

3. Pull firmly on choke cable until choke butterfly is completely closed, then tighten cable clamp screw.

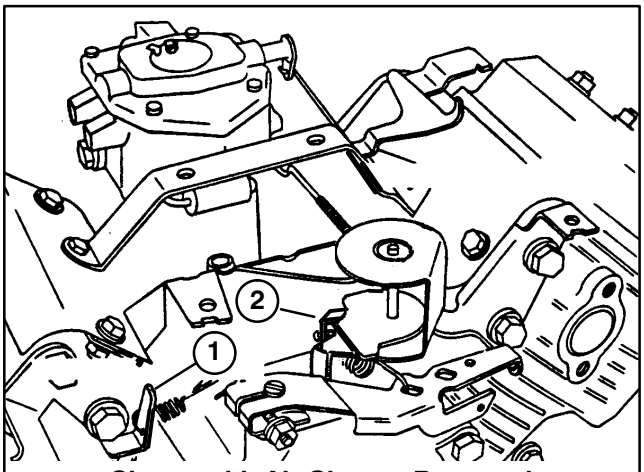
ADJUSTING CARBURETOR AND SPEED CONTROL (Fig. 69)

IMPORTANT: Before the carburetor and speed control are adjusted, the throttle and choke controls must be adjusted properly.

WARNING

Engine must be running during adjustment of the carburetor and speed control. To guard against possible personal injury, shift into neutral, and engage parking brake. Keep hands, feet, face, and other parts of the body away from the cutter blades, and any rotating engine parts.

1. Start engine and let it run at half throttle for approximately five minutes to warm up.



Shown with Air Cleaner Removed

Figure 69
1. Governed idle spring anchor tang
2. High speed spring anchor tang

2. Move the throttle control to SLOW setting. Hold governor lever so throttle lever is in the idle position (against idle stop screw) and adjust idle stop screw to 1400 ± 50 rpm by turning the screw in or out. Check speed with a tachometer.

3. Turn the idle mixture screw slowly clockwise (lean mixture) until the engine speed just starts to decrease. Note position of the needle.

Now turn the idle mixture screw slowly counterclockwise (rich mixture) until the engine speed just starts to decrease. Note position of the needle.

Set the screw midway between the rich and lean settings.

4. After the idle mixture has been adjusted, hold governor lever so throttle lever is in idle position (against idle stop screw) and readjust idle stop screw to bring speed to 1200± 50 rpm.

5. With governor control lever in governed idle position (no tension on high speed spring) bend governed idle spring anchor tang to attain governed idle speed of 1400± 50 rpm.

6. Move throttle control to FAST position. Bend high speed spring anchor tang to attain high speed of 3200 + 50 −100 rpm.

MAINTENANCE

REPLACING SPARK PLUGS (Fig. 70)

Replace spark plugs after every 800 operating hours. Recommended air gap is 7.5 mm (0.030”).
Correct spark plug to use is a Champion RC 12YC.

Note: The spark plug usually lasts a long time; however, the plug should be removed and checked whenever the engine malfunctions.

1. Clean area around spark plugs so foreign matter cannot fall into cylinder when spark plug is removed.

2. Pull spark plug wires off spark plugs and remove plugs from cylinder head.

3. Check condition of side electrode, center electrode, and center electrode insulator to assure there is no damage.

IMPORTANT: A cracked, fouled, dirty or otherwise malfunctioning spark plug must be replaced. Do not sand blast, scrape, or clean electrodes by using a wire brush because grit may eventually release from the plug and fall into the cylinder. The result is usually a damaged engine.

4. Set air gap between center and side of electrodes at 0.030”. Install correctly gapped spark plug w/gasket seal, and tighten plug to 200 in−lb. If torque wrench is not used, tighten plug firmly.

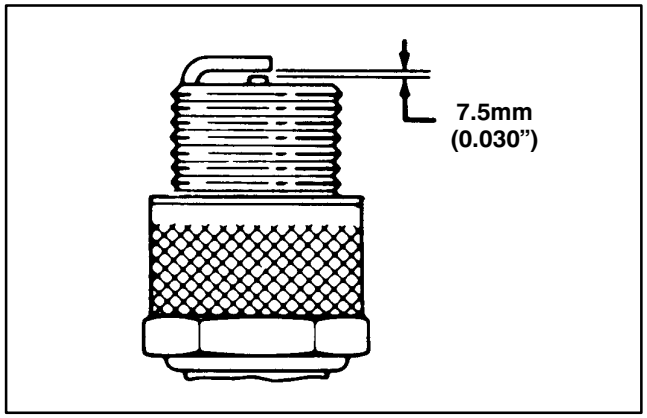


Figure 70

CHECKING PARKING BRAKE

1. Park the machine on a level surface, disengage the PTO switch, set parking brake and turn ignition key to “OFF” to stop the engine. Remove the key.

2. Drive wheels must lock when the brake is applied. Adjustment is required if the wheels turn and do not lock; refer to Adjusting the Brake.

3. Release the brake, wheels should rotate freely.

4. If both conditions are met no adjustment is required.

IMPORTANT: With the parking brake released, the drive wheels must rotate freely. If brake action and free wheel rotation cannot be achieved contact your service dealer immediately.

ADJUSTING PARKING BRAKE (Fig. 71)

If drive wheels do not rotate when brake lever is in the OFF position, or brake does not hold when lever is in the ON position, an adjustment is required.

1. Move brake lever to the ON position.

2. Measure distance between disc brake actuating arm and stop pin on axle bracket assembly. Distance should be less than 1/4 inch (6 mm).

3. If distance is greater than 1/4 inch (6 mm), tighten locknut to decrease distance between actuating arm and stop pin.

4. With the brake lever OFF, check clearance between brake pads and disc with a feeler gauge. Proper clearance is approximately 2.5 mm (.010 in.).

5. The actuating arm should be no more than 10 mm 3/8 in. away from stop with brake lever in the OFF position.

6. Check the brake operation again; refer to Checking the Brake.

7. Check adjustment. Drive wheels should rotate freely when brake lever is in the OFF position.

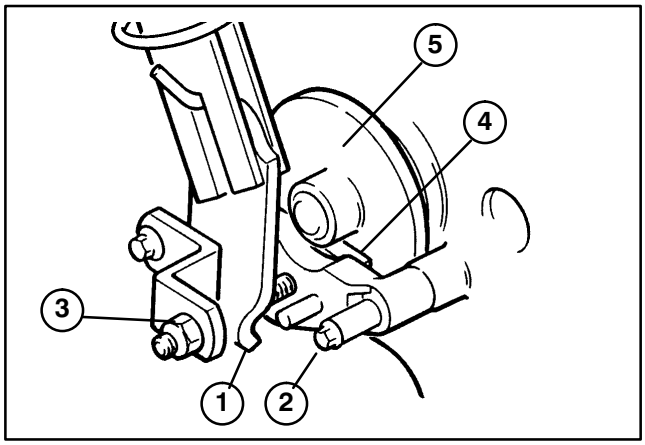


Figure 71

1. Brake actuating arm
2. Stop pin
3. Locknut
4. Brake pad
5. Disc

REPLACING FUEL FILTER (Fig. 72)

Replace the fuel filter after every 100 operating hours or yearly, whichever occurs first.

Note: Never install a dirty filter if it is removed from the fuel line.

1. Disengage the PTO switch, set parking brake and turn ignition key to “OFF” to stop the engine. Remove the key.

2. Close fuel shut off valve.

3. Loosen hose clamps and slide them up the hose, away from the filter.

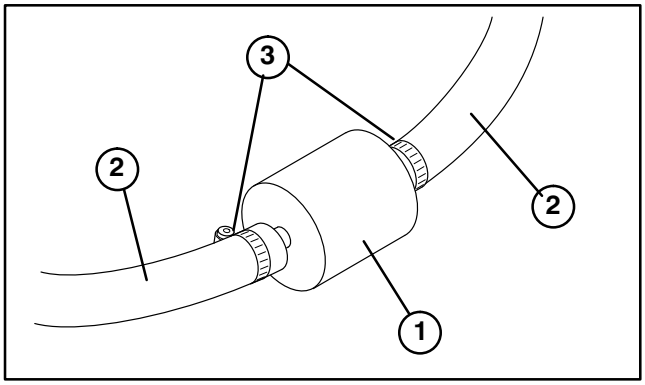


Figure 72
1. Fuel filter
2. Fuel line
3. Hose clamp

4. Remove the filter from the fuel lines.

5. Install a new filter, if the filter has an arrow, install with arrow pointing toward the carburetor.

6. Move the hose clamps close to the filter and tighten.

7. Open fuel shut off valve.

ADJUSTING TOE−IN & STEERING STOPS (Fig. 73)

(4 Wheel Rear Axle Only)

1. Make sure both tie rods are adjusted to the same length.

2. Measure toe-in distance (at axle height) at front and rear of steering tires. Front measurement must be 2−4 mm (.08−.16 in.) less than rear measurement.

3. Loosening jam nuts and rotate tie rod to adjust front of tires in or out.

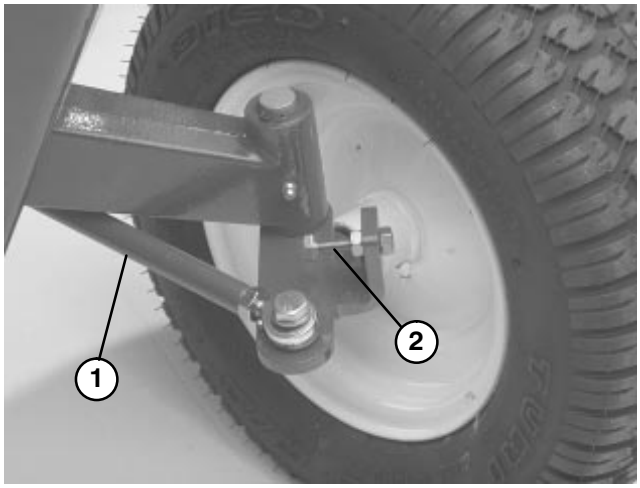


Figure 73
1. Tie rod
2. Steering stop

4. Loosen jam nuts and adjust left and right steering stops to allow 6 mm (.24 in.) clearance for steering arm in a full left and full right turn. Tighten jam nuts.

ADJUSTING TRANSMISSION FOR NEUTRAL (Fig. 74)

With the machine on a level surface and parking brake disengaged, the machine must not creep when traction pedal is released. If it does creep, an adjustment is required.

1. Park machine on a level surface, lower cutting unit and shut engine off. Disengage the PTO switch and engage the parking brake.

2. Jack up front of machine until tires are off shop floor. Support machine with jack stands to prevent it from falling accidentally.

3. Loosen lock nut on adjustment cam.

WARNING

Engine must be running so final adjustment of the traction adjustment cam can be performed. To guard against possible personal injury, keep hands, feet, face and other parts of the body away from the muffler, other hot parts of the engine, and other rotating parts.

4. Start engine and rotate adjusting cam in either direction until wheels stop rotating.

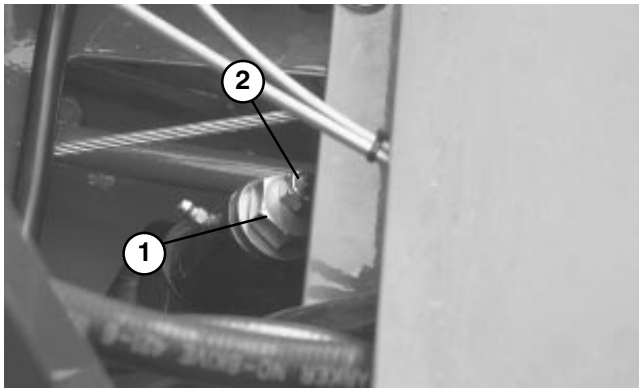


Figure 74
1. Adjustment cam
2. Locknut

5. Stop engine and tighten lock nut to secure adjustment.

6. Start engine and check adjustment. Repeat adjustment, if necessary.

7. Stop engine. Remove jack stands and lower machine to the shop floor. Test drive the machine to be sure it does not creep.

MAINTENANCE

ADJUSTING ELECTRIC CLUTCH (Fig. 75)

The clutch is adjusted to ensure proper engagement and braking action.

1. Disengage the PTO switch, set the parking brake, and turn the ignition key to “OFF” to stop the engine. Remove the key.

2. Adjust clutch by tightening or loosening the lock nuts on flange studs.

3. Check adjustment by inserting feeler gauge thru slots next to studs.

4. The proper disengaged clearance between the clutch plates is 0.23-0.30 mm (.009−.012 in.). It will be necessary to check this clearance at each of the three slots to ensure the plates are parallel to each other.

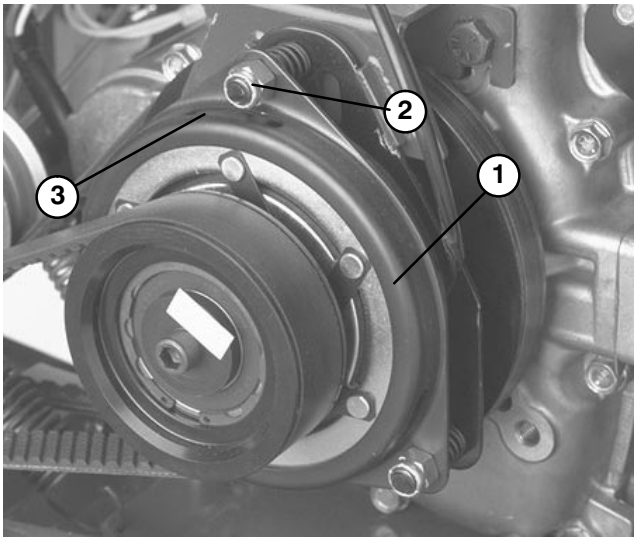


Figure 75
1. Clutch
2. Locknut
3. Adjustment slot

CHANGING HYDRAULIC SYSTEM OIL (Fig. 76−77)

The hydraulic system oil must be changed after every 400 hours of operation or yearly, whichever comes first. The reservoir has a capacity of approximately 5 U.S. quarts.

1. Park machine on a level surface, lower cutting units, engage parking brake. and shut engine off.

2. Clean the area around the hydraulic oil filter and remove the filter from the filter housing. Use bottom type filter wrench.

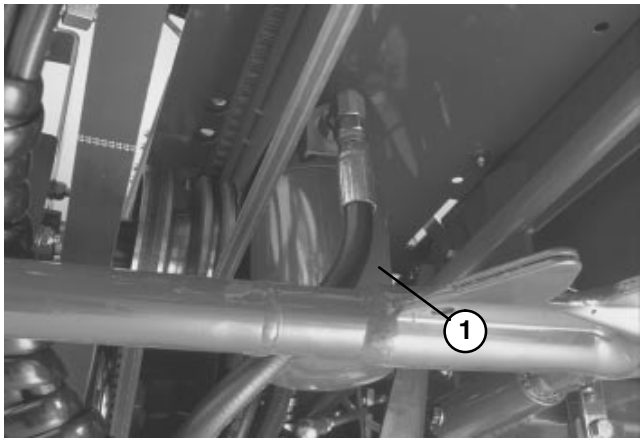


Figure 76
1. Hydraulic filter

3. Disconnect hose assemblies from reservoir and allow the oil to flow into a drain pan.

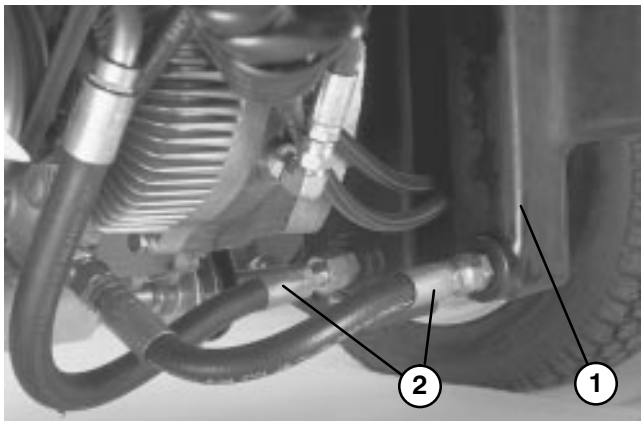


Figure 77
1. Reservoir
2. Hose assembly

Note: To drain oil remaining in system, disconnect spark plug wires and crank engine for 15 seconds. This will pump remaining oil out of system thru tube assembly. Do not crank engine for more than 15 seconds.

4. Install the new hydraulic filter to the filter housing.

5. Install the hose assemblies to reservoir.

6. Fill the reservoir to the proper level; refer to Check Hydraulic System Fluid.

7. Place all controls in neutral or disengaged position and start engine. Run engine at lowest possible RPM to purge the system of air.

8. Run engine until lift cylinder extends and retracts and forward and reverse wheel motion is achieved.

9. Stop the engine and check the oil level in reservoir, add oil if necessary.

10. Check all connections for leaks.

MAINTENANCE

CHANGING HYDRAULIC OIL FILTER
(Fig. 76)

The hydraulic oil filter keeps the hydraulic system relatively free of contaminants. However, the hydraulic oil filter must be serviced at regular intervals. The intervals are: initially, after the first 8 hours of operation, and thereafter every 200 hours of operation or yearly, whichever comes first. Use a genuine TORO oil filter for replacement.

1. Remove hydraulic oil filter from mounting head. Use bottom type filter wrench. Dispose of filter properly.

2. Apply a film of oil on the gasket. Install filter by hand until gasket contacts mounting head; then tighten filter an additional 3/4 turn.

3. Start engine and check for oil leaks. Allow engine to run for about 2 minutes so any air in system is purged. Then shut engine off.

4. Check level of oil in reservoir; refer to Check Hydraulic System Fluid.

CHANGING FRONT AXLE OIL (Fig. 78)

After every 400 hours of operation, change oil in the front axle.

Drive machine around for five minutes before changing oil to warm axle oil. Warm oil flows more freely and carries more contaminants than cold oil.

Clean area around drain plug and place a drain pan below drain plug on axle.

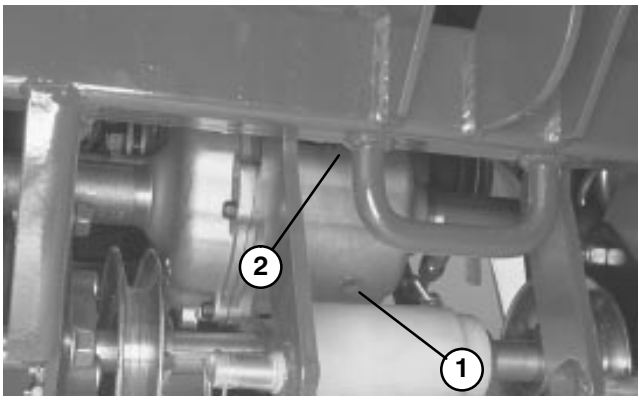


Figure 78
1. Drain plug
2. Fill plug

Remove drain plug and allow oil to flow into drain pan . After oil is drained, reinstall drain plug.

Remove fill plug and fill to plug level with ISO 150/220 (SAE EP-90) oil (approximately 44 oz.).

ADJUSTING CUTTING UNIT BELTS
(Fig. 79)

Make sure belts are properly tensioned to assure proper operation of the machine and prevent unnecessary wear. Check all belts midway in span of belt. Check belts frequently.

1. The cutting unit drive belts should have a maximum deflection of 1/2 inch with a 10 pound load applied.

2. Loosen jam nut on front end of belt tension rod. Rotate rod to lengthen or shorten rod to desired length. Tighten jam nut.

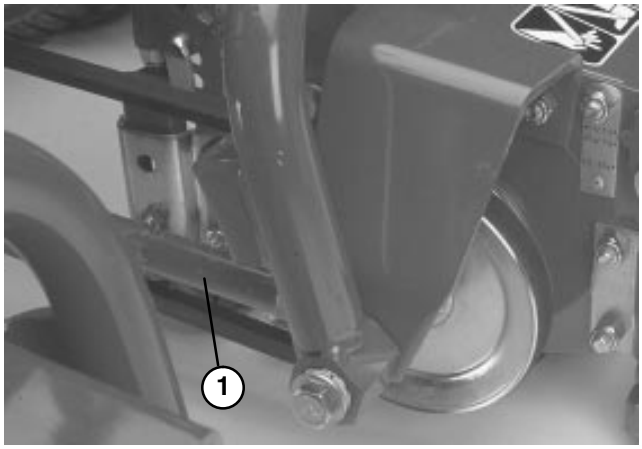


Figure 79
1. Belt tension rod

BATTERY CARE

1. Battery electrolyte level must be properly maintained and the top of the battery kept clean. If the Grounds Pro 2000 is stored in a location where temperatures are extremely high, the battery will run down more rapidly than if the machine is stored in a location where temperatures are cool.

CAUTION

Since the gasses from the battery and the gasoline fumes are explosive, keep open flame and electrical spark away from the area; do not smoke.

2. Check the electrolyte level every 25 operating hours or, if machine is in storage, every 30 days.

3. Maintain cell level with distilled or demineralized water. Do not fill cells above the bottom of the split ring inside each cell.

4. Keep top of battery clean by washing periodically with a brush dipped in ammonia or bicarbonate of soda solution. Flush the top surface with water after cleaning. Do not remove the fill caps while cleaning.

5. Battery cables must be tight on terminals to provide good electrical contact.

6. If corrosion occurs at terminals, disconnect cables, negative (−) cable first and scrape clamps and terminals separately. Reconnect cables, positive (+) cable first and coat terminals with petroleum jelly.

WIRE HARNESS SERVICE

Prevent corrosion of wiring terminals by applying Grafo 112X (Skin-over) grease, Toro Part No. 505-47, to the inside of all harness connectors whenever the harness is replaced.

Whenever working with the electrical system, always disconnect battery cables, negative (−) cable first, to prevent possible wiring damage from short-outs.

Before welding on the machine, disconnect ground cable from the battery to prevent damage to the electrical system.

BACKLAPPING CUTTING UNITS

The cutting units may be backlapped on the machine. Backlap Kit, Part no. 84−5510 is available from your Authorized TORO Distributor.

Backlap according to procedures in the Toro Sharpening Reel and Rotary Mowers Manual Form No. 80−300 PT.

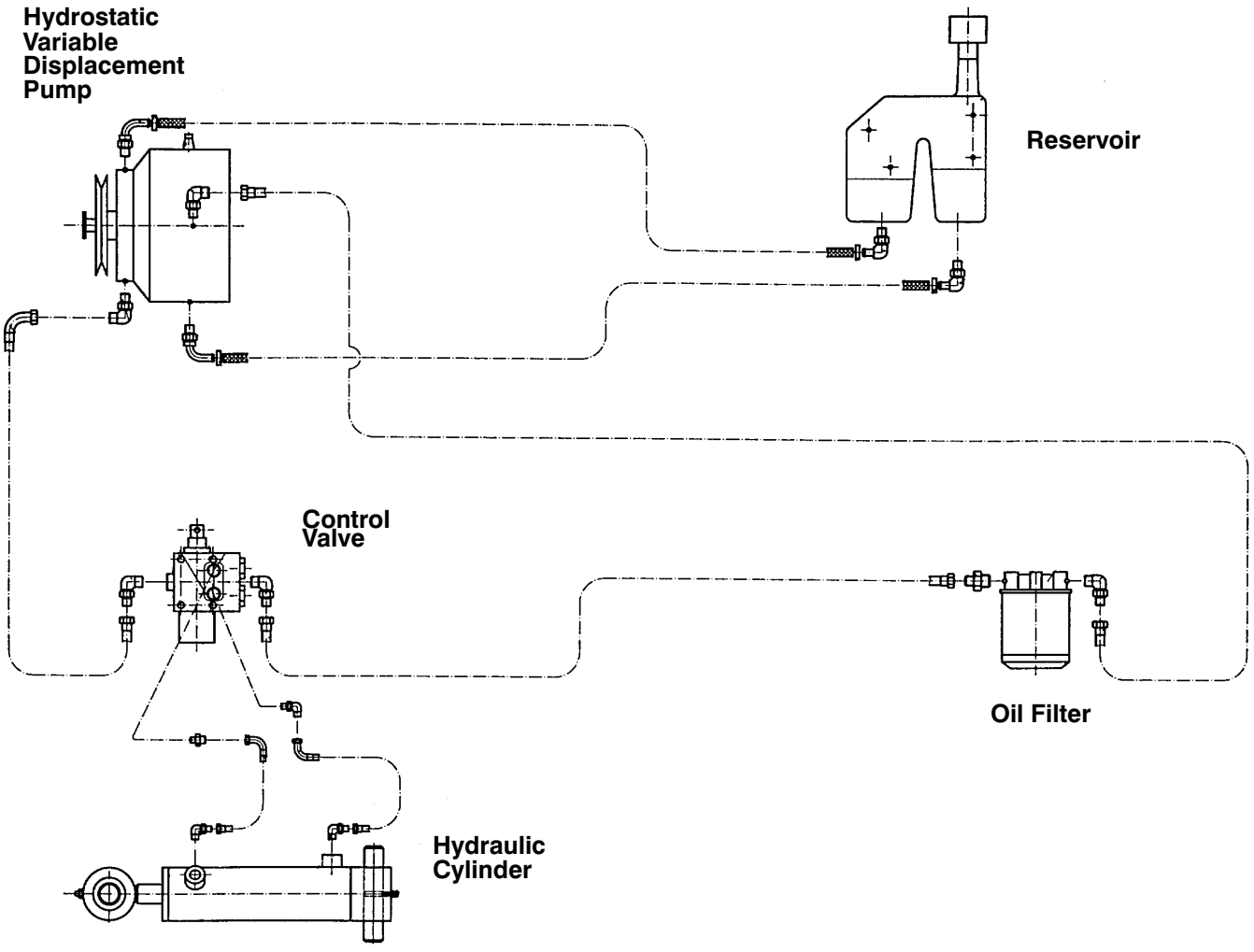
CAUTION

Be careful when lapping the reel because contact with the reel or other moving parts can result in personal injury.

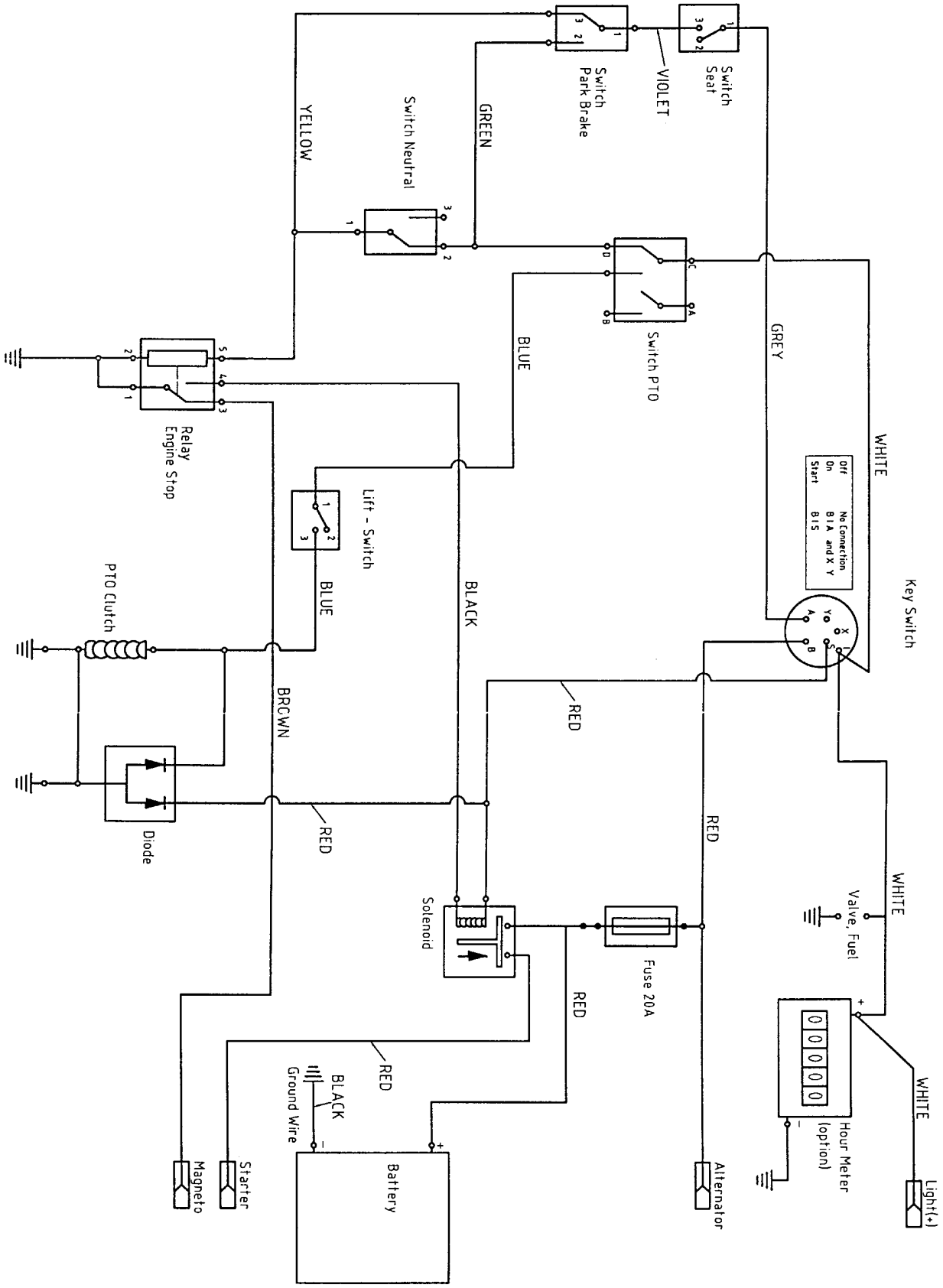
DANGER

Under no circumstances use a short handled paint brush. 29−9100 Handle assembly complete, or individual parts, are available from your local Authorized TORO Distributor.

HYDRAULIC SCHEMATIC



ELECTRICAL SCHEMATIC



MAINTENANCE SCHEDULE

Minimum Recommended Maintenance Intervals

Maintenance Procedure	Maintenance Interval & Service
Check Battery Fluid/Connections Lubricate Grease Fittings	Every 25hrs
† Change Engine Oil Service Air Filter Pre Cleaner † Check Cutting Belt Tension	Every 50hrs
Service Air Filter Cartridge † Change Engine Oil Filter † Torque Wheel Lug Nuts Replace Fuel Filter	Every 100hrs
† Replace Hydraulic Filter Adjust Electric Clutch † Change Hydraulic Fluid Filter	Every 200hrs
Change Hydraulic Fluid ‡ Check Engine RPM (idle and full throttle)	Every 400hrs
De−carbon Combustion Chamber Torque Head Bolts and Adjust Valves Service Spark Plugs	Every 800hrs

† Initial break in at 8 hours

‡ Initial break in at 50 hours

Replace Moving Hoses
Replace Safety Switches
Fuel Tank − Drain/Flush
Replace Fuel Filter
Hydraulic Tank − Drain/Flush

Annual Recommendations:
Items listed are recommended every 1000 hours or 2 years, whichever occurs first.

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBER

The mower has two identification numbers: a model number and a serial number. The two numbers are stamped into a plate that is riveted to the frame. In any correspondence concerning the mower, supply the model and serial numbers to assure that correct information and replacement parts are obtained.

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

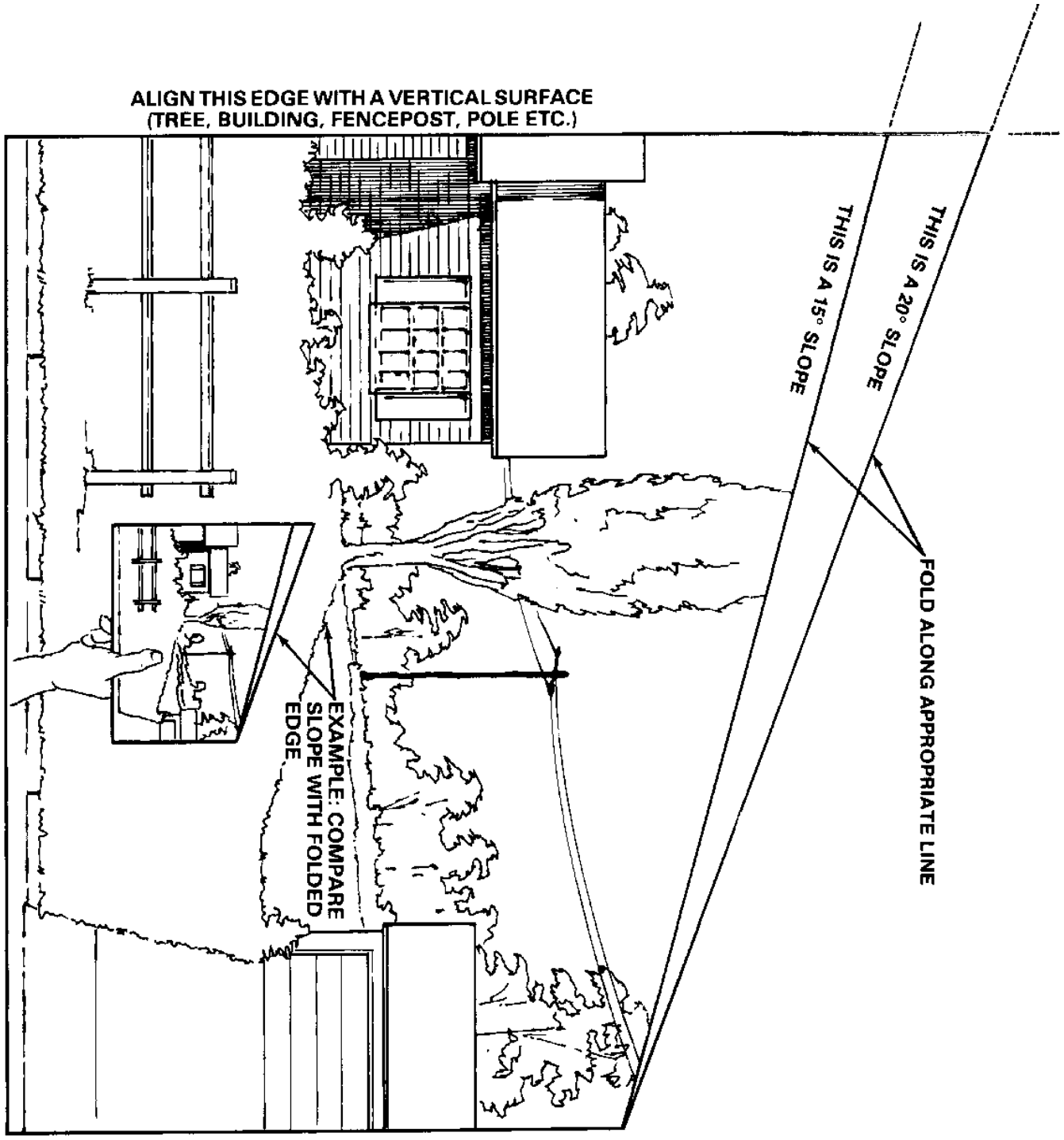
To order replacement parts from an Authorized TORO Service Dealer, supply the following information:

1. Model and serial numbers of the mower.

2. Part number, description and quantity of part(s) desired.

15° AND 20° SLOPE CHART

Read all safety decals and safety instructions in this manual .



The Toro Commercial Products Two Year Limited Warranty

The Toro Company warrants your 1996 or newer Toro Commercial Product ("Product") purchased after January 1, 1997, to be free from defects in materials or workmanship for the period of time listed below. Where a warrantable condition exists, Toro 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.

Warranty Duration: Two years or 1500 operational hours*, whichever occurs first.
***Product equipped with hour meter**

Owner Responsibilities:

As the Product owner, you are responsible for required maintenance and adjustments stated in your Owner's Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

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
8111 Lyndale Avenue South
Minneapolis, MN, 55420–1196
Telephone: (612) 888–8801
Facsimile: (612) 887–8258
E–Mail: Commercial.Service@Toro.Com

Maintenance Parts:

Parts scheduled for replacement as required maintenance ("Maintenance Parts"), are warranted for the period of time up to the scheduled replacement time for that part.

Items/Conditions Not Covered:

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. The items / conditions listed below are not covered by this warranty:

- Product failures which result from the use of non–Toro replacement parts, or from installation and use of add–on, modified, or unapproved accessories are not covered.
- Product failures which result from failure to perform required maintenance and/or adjustments are not covered.
- Product failures which result from operating the Product in an abusive, negligent or reckless manner are not covered.
- This warranty does not apply to 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.
- This warranty does not apply to 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.
- This warranty does not apply to 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.

Other Legal Disclaimers:

The above remedy of product defects through repair by an authorized distributor or dealer is the purchaser's sole remedy for any defect. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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 the express warranty.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

The Toro Company is not liable for indirect, incidental or consequential damages in connection with the use of the Product, including any cost or expense of providing substitute Product or service during periods of malfunction or non–use.

Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

Note to California residents: 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), 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 California Emission Control Warranty Statement printed in your Owner's Manual or contained in the engine manufacturer's documentation for details.