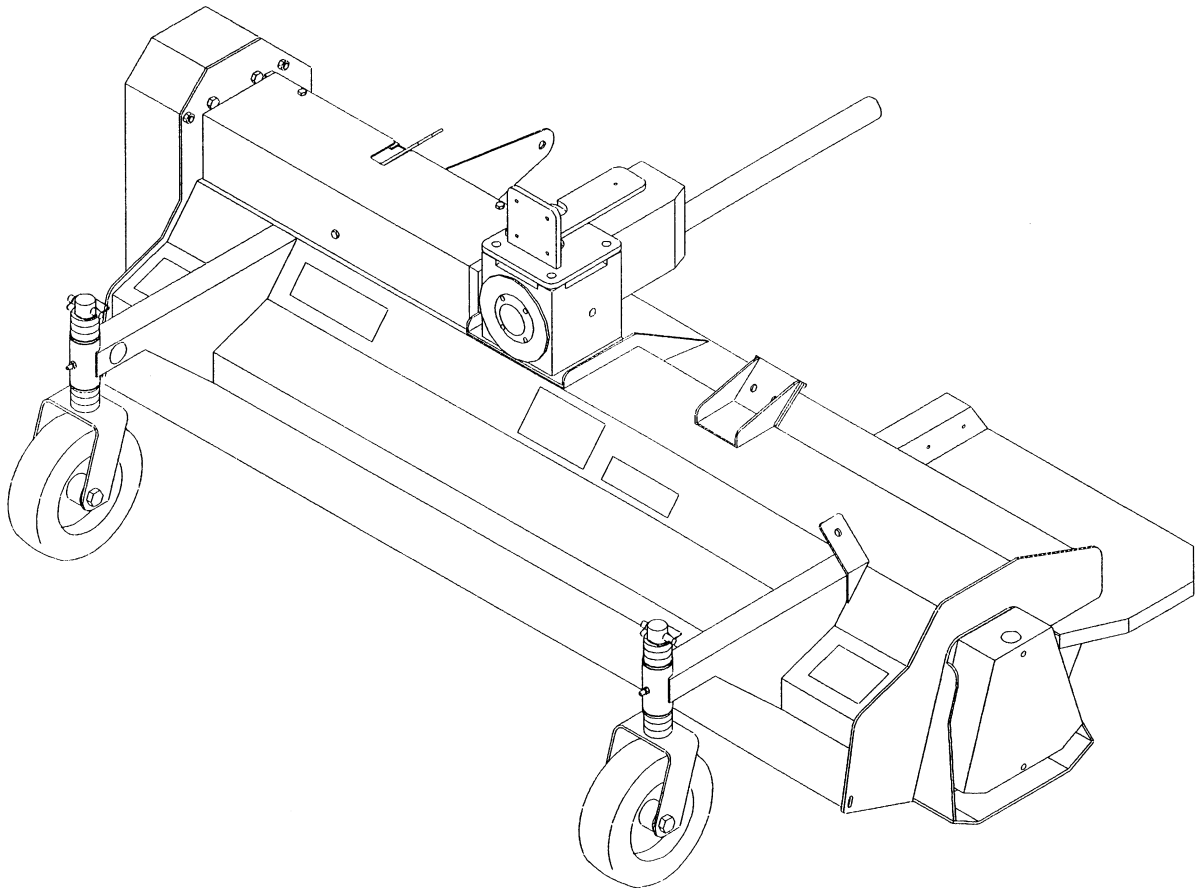




MODEL NO. 44590—60001 & UP

**OPERATOR'S
MANUAL**

FLAIL 2760
ATTACHMENT FOR 300 SERIES GROUNDSMASTER®



FOREWORD

Thank you for buying a high-quality Toro turf care product. To get the best performance from this machine , operate and maintain it according to the instructions in this manual.

Toro also wants to stress the importance of safety. You and anyone else using or maintaining this machine are strongly urged to read this manual, especially all the safety instructions.

DANGER, WARNING and CAUTION, used with the triangular safety alert symbol, highlight safety messages. Always read and understand these messages because they relate to personal injury and your safety

If you ever need help or have questions about your new Toro turf care product, contact your local Authorized Toro Distributor . The Toro Distributor has a complete supply of replacement parts, a full line of accessories and a professional service staff to support you. Keep your Toro all Toro. Buy genuine Toro parts and accessories.

TABLE OF CONTENTS

Page	
SAFETY INSTRUCTIONS	3 –4
SAFETY AND INSTRUCTION DECALS	4–5
SPECIFICATIONS	6
SET UP INSTRUCTIONS	6–7
BEFORE OPERATING	8–9
OPERATING INSTRUCTIONS	9
MAINTENANCE	10
STORAGE	12
IDENTIFICATION AND ORDERING .	12


Safety Instructions

The safety alert symbol



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

Hazard control and accidental prevention are dependent upon the awareness, concern, and proper training of the personnel involved in the operation, transport, maintenance, and storage of the machine. Improper use or maintenance of the machine can result in injury or death. To reduce the potential for injury or death, comply with the following safety instructions.

**WARNING**

- Engine exhaust contains carbon monoxide is also known to the State of California to cause birth defects.
- Do not run engine indoors or in an enclosed area.

BEFORE OPERATING

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

The Toro Company
100 New Century Parkway
New Century, KS 66031

2. Never allow children to operate the machine. Do not allow adults to operate machine without proper instruction. Only trained operators who have read this manual should operate this machine.
3. Never operate the machine while under the influence

of drugs or alcohol.

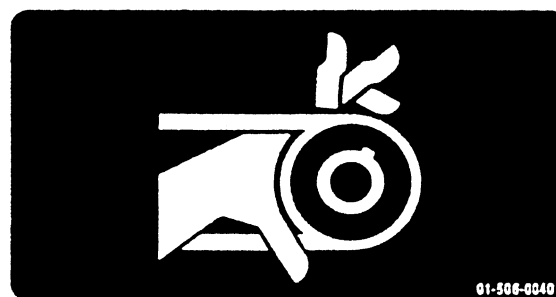
4. Remove all debris or other objects that might be picked up and thrown by the cutter blades. Keep all bystanders away from the mowing area.
5. Keep all shields and safety devices in place. If a shield, safety device or decal becomes damaged, malfunctioning or illegible, repair or replace it before operation is commenced. Also tighten loose nuts, bolts to ensure machine is in safe operating condition. This includes all shields on the PTO.
6. Do not operate machine while wearing sandals, tennis shoes, sneakers or shorts. Also, do not wear loose fitting clothing which could get caught in moving parts. Always wear long pants and substantial shoes. Wearing safety glasses, safety shoes and a helmet is advisable and required by some local ordinances and insurance regulations.
7. **DON'T TAKE AN INJURY RISK!** When a person or pet appears unexpectedly in or near the area, STOP MOWING. Careless operation, combined with terrain angles, ricochets, or improperly positioned guards can lead to thrown object injuries. Do not resume mowing until area is cleared .
8. Never raise the Flail 2760 unit while the blades are rotating.
9. If the cutting blades strike a solid object or the machine vibrates abnormally, disengage the PTO, move the throttle to SLOW, set the parking brake and shut off the engine. Remove the key from the switch to prevent possible accidental starting. Check the cutting unit and traction unit for damage and malfunctioning parts. Repair any damage before restarting the engine and operating the Flail 2760. Be sure the cutting blades are in good condition and the blade bolts are torqued to proper specifications.
10. Lower the Flail to the ground and remove the key from the ignition switch whenever the machine is left unattended.

MAINTENANCE

- 11.** Be sure the machine is in safe operating condition by keeping nuts, bolts and screws tight. Check the blade bolts and nuts frequently to be sure they are tightened to specification.
- 12.** If the engine must be running to perform a maintenance adjustment, keep hands, feet, clothing and other parts of the body away from the Flail blades and other moving parts.
- 13.** To ensure optimum performance and safety, always purchase genuine TORO replacement parts and accessories to keep the Toro all TORO. NEVER USE "WILL-FIT" REPLACEMENT PARTS AND ACCESSORIES MADE BY OTHER MANUFACTURES. Look for the TORO logo to assure genuineness. Using unapproved replacement parts and accessories could void warranty of The Toro Company.



Rotating members can cause serious personal injury. Do not operate machine unless shield is in place.



Rotating pulleys and belts can cause serious personal injury. Do not operate machine unless all guards are in place

Specifications

ROTOR: 144 Knives

Rotor Speed—2300 RPM

Rotor—4" OD x 3/16" wall

(10 cm x .47 cm wall)

Rotor Bearings—1.25" (3.8 cm)

CASTORS: Swivel castors**DRIVE:** Gearbox—50 HP

Drive Belt—2 3V Section Belts

CUTTING HEIGHT: 0-4"(0-10 cm) in 1/2"
(1.2 cm) increments**REAR ROLLER:** 5" (12.7 cm) O.D**BEARINGS:** 3 self-sealed and self-aligning**DIMENSIONS:**

Cutting Width: 60" (152 cm)

Overall Width: 69.5" (176.5 cm)

Weight: 480 lbs. (179 kg)

Set-Up Instructions

ATTACH FLAIL TO 300 SERIES GROUNDMASTER (Fig. 1)

**WARNING**

- Left- and right-hand push arm on the Groundsmaster is spring loaded.
- Sudden release of the push arm could cause serious personal injury.
- Keep hands and face away from the arm when it is held and blocked in the downward position.
- Use a helper and a wooden block to hold the push arm down during installation.

1. Remove the cutting unit or other attachment from the Groundsmaster. Refer to the cutting unit or attachment operator's manual.
2. Position the Groundsmaster to the rear of the FLAIL.

NOTE: The 2-1/2" 63.5 mm lift cylinder on the Groundsmaster be replaced with the 3" (76.2 mm) lift cylinder (part number 66-1250).

3. Attach the PTO of the Groundsmaster to the female half on the FLAIL gearbox.
4. Push the Flail toward the Groundsmaster until the push arms are in line with the mounting brackets. See Fig. 1.
5. Have a helper push down on the left push arm; then insert a (5 x 10 cm) block of wood between the frame and the top of the push arm.
6. Pull down the right push arm until it is level with the left push arm, then insert a (5 x 10 cm) block of wood between the frame and the top of the push arm. Try to keep both arms level as possible for easier installation.
7. Line up the left push arm with the lower push arm bracket (A). The Push Arm Bracket attaches underneath. Fasten with 7/16" x 1-1/2" bolts, flatwashers, lockwashers and nuts. Leave the bolts finger tight.
8. Line up the right push arm with the bracket on the

FLAIL housing (B). Fasten with 7/16"x 1-1/2" bolts, flatwashers, lockwashers and nuts. Leave the bolts finger tight.

9. Align the Flail 2760 parallel with the Groundsmaster using either one of the push-arm ends. Secure the bolts on the left push arm.
10. Secure the bolts on the right push arm.
11. Have a helper push down the *left* push arm; then remove the (5 x 10 cm) blocks of wood.
12. Have a helper push down the *right* push arm; then remove the (5 x 10 cm) blocks of wood.
13. Attach the left hand Chain (15 links) and the right-hand chain (4 links) to the center arm as shown in Fig. 1. Secure the shackle bolts.
14. Adjust chain links to get the FLAIL to raise and lower evenly.
15. Practice raising and lowering the FLAIL.

NOTE: When mounting the FLAIL to a 300 Series

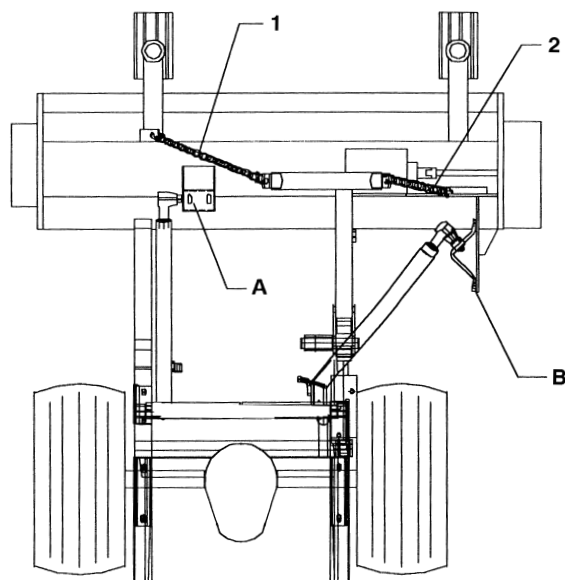
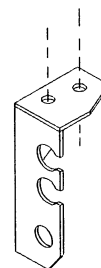


Figure 1

1. 15 links
2. 4 links

Groundsmaster with the 88" (223.5 cm) Triflex mowing deck, the hydraulic line support on the Groundsmaster must be replaced. Failure to do so will result in the PTO hitting the bracket, causing damage to the PTO. To replace, follow the instructions below.

- A. Remove the existing bracket. Disconnect the hoses from the bracket and temporarily from the valve banks.
- B. Install the Hydraulic Bracket (part number 67-005-2371) (Fig. 2) in the same location with existing hardware.
- C. Beginning with the top hose, reconnect the hoses to the new bracket. Fasten with the existing snap rings. Connect the hoses back to original positions on the valve.
- D. Start the unit, then raise and lower the FLAIL to check for clearance.



NOTE: This Bracket Must Be Installed When Mounting Flail To A 300 Series GROUNDMASTER With An 88" Mowing Deck.

Before Operating

INSPECT BLADES



CAUTION

Sharp edges of the mower blades can cut you. ALWAYS wear gloves for any type of blade maintenance or adjustment.

1. Follow these instructions before operating:

Always inspect all the blades before using the Flail. Make sure all the bolts are tight and torqued 24-28 Nm.

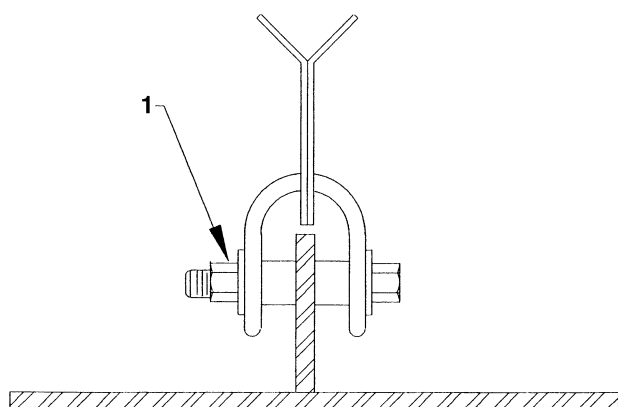


Figure 3

1. Torque nut 24–28 Nm.

Operating the Flail with missing or damaged cutter blades can cause severe vibration and damage to other components.

Sharpen or replace any damaged blades. Always replace the cutter blades in sets to avoid excessive and damaging vibration of the rotor.

Always sharpen the cutter blades the same length to avoid vibration of the rotor.

2. Clean any residue from the under side of the housing before each use. If residue is allowed to build up in housing, cutting performance may be unsatisfactory.

SET HEIGHT OF CUT (Fig. 4)

The height of cut is set by moving the height-of-cut bolt on the roller bracket and moving the front spacers on the wheel shaft. The number of spacers in the chart represent the number of spacers UNDER the main arm. See Fig. 4. The drawing shows the unit with a roller position of 2 and 2 spacers.

Height of Cut	Number of Spacers	Roller Position
0" (0 cm)	0	1
1/2" (1.2 cm)	0	2
1" (2.5 cm)	2	2
1-1/2" (3.8 cm)	4	2
2" (5.1 cm)	4	3
2-1/2" (6.4 cm)	4	4
3" (7.6 cm)	6	4
3-1/2" (8.9 cm)	5	5
4" (10.2 cm)	6	5

NOTE: To prevent uneven cutting and turf damage always use the same amount of spacers and the same roller position setting on both sides.

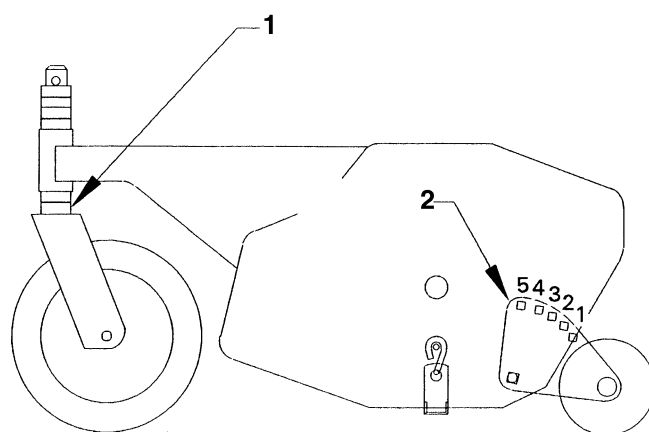


Figure 4

1. Front spacers
2. Roller position

Operating

INTERLOCK SWITCHES

The Groundsmaster has interlock switches in the electrical system. These switches are designed to stop the engine when the operator leaves the seat while either the PTO lever is engaged or the traction pedal is depressed. However, the operator may get off the seat while engine is running. Although engine will continue to run if the PTO lever is disengaged and traction pedal is released, it is strongly recommended that the engine be stopped before dismounting from the seat.



CAUTION

- Do not disconnect the interlock switches on the Groundsmaster.
- Check operation of switches daily to assure interlock system is operating correctly.
- If a switch is malfunctioning, replace it before operating the machine.
- To ensure maximum safety, replace all switches after every two years or 1000 hours, whichever comes first.

1. Start the Groundsmaster and run at a low RPM.
2. Lower the FLAIL using the Groundsmaster lift mechanism.
3. Engage the PTO while the engine is at idle speed .



WARNING

- When a person or pet appears in or near mowing area. STOP MOWING.
- Careless operation, combined with terrain angle, ricochets, or improperly positioned safety guards can lead to thrown object injuries.
- Do Not resume mowing until area is cleared.

4. Increase the engine speed to $\frac{3}{4}$ or full throttle.

OPERATING CHARACTERISTICS

To maintain enough power for the traction unit and implement while operating, the regulate traction pedal to keep engine RPM high and somewhat constant. A good rule to follow is: decrease ground speed as the load on the implement increases; and increase ground speed as the load decreases.

Another characteristic to consider is the operation of the turning pedals that are connected to the brakes. The brakes can be used to assist in turning the machine; however, use them carefully, especially on soft or wet grass because the turf may be torn accidentally. Another benefit of the turning brakes is to maintain traction.

For example: in some slope conditions, the uphill wheel slips and loses traction. If this situation occurs, depress the uphill turn pedal gradually and intermittently until the uphill wheel stops slipping; thus, increasing traction on the downhill wheel.

Before stopping the engine, disengage all controls and move the throttle to SLOW. Moving the throttle to SLOW reduces high engine rpm, noise and vibration. Turn the key to OFF to stop the engine.

BEFORE TRANSPORTING THE FLAIL 2760

1. Reduce the engine speed to the idle position.
2. Disengage the PTO and wait for the PTO to stop.
3. Raise the FLAIL to the transport position.



WARNING

(Flail) Deck must be lowered when going down hills.

Maintenance

LUBRICATION

BEARINGS (Fig. 5)

The FLAIL has three self-sealing bearings that must be lubricated with a No. 2 Lithium based grease.

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

WHEELS (Fig. 5)

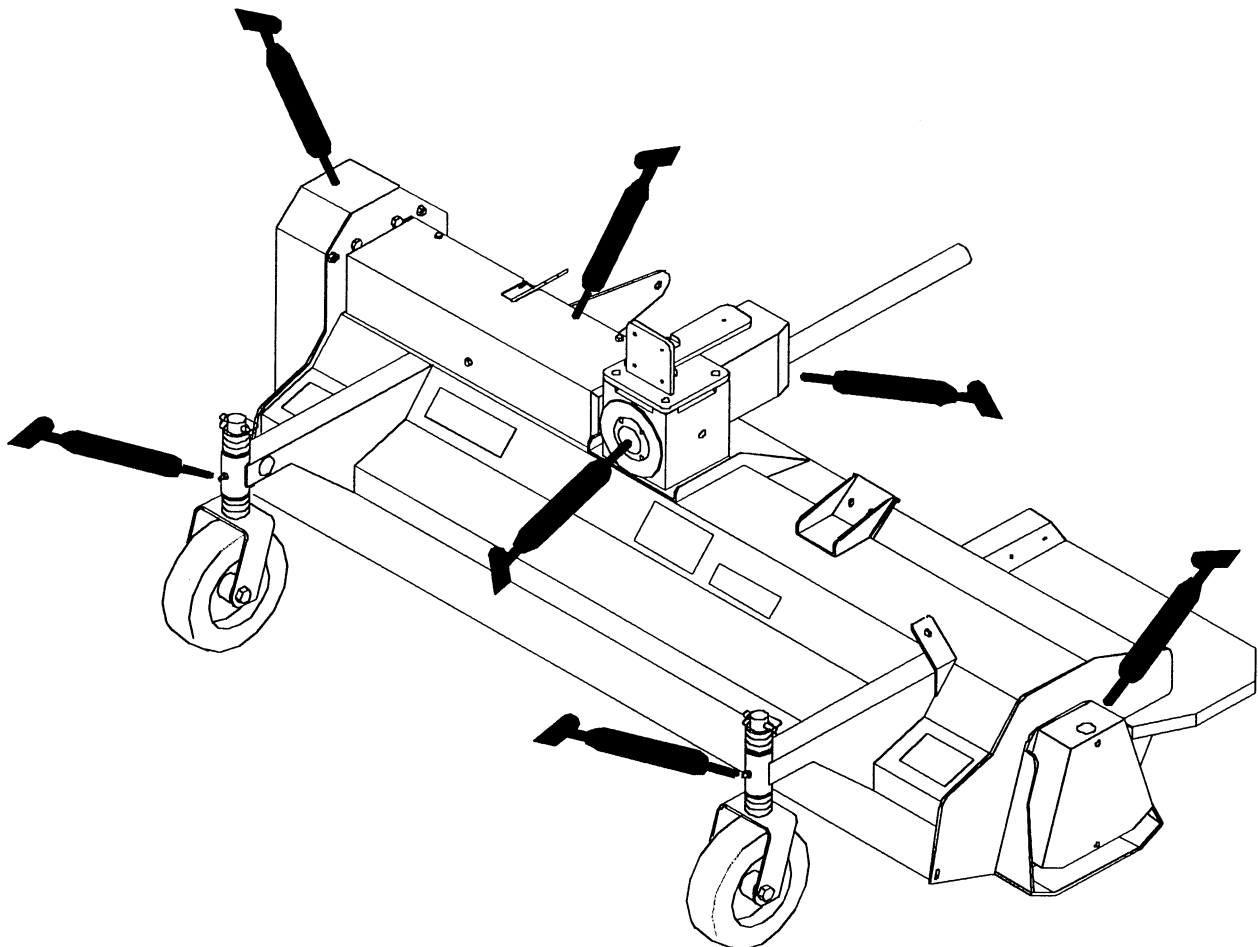
Under normal conditions, grease the wheels and the wheel pivot tubes every 50 hours of use. Use a No. 2 Lithium based grease.

PTO (Fig . 5)

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

GEARBOX (Fig. 5)

Check lubricant level in the gearbox every 40 hours of operation. Add good quality transmission oil, 80-90 weight Fill the gearbox to the level of the side filler plug. Oil should seep from opening when the plug is removed. Change oil in the gearbox after the first 100 hours of operation. Thereafter, change oil every 2500 hours or every six months, whichever comes first.



BLADE MAINTENANCE



CAUTION

The sharp edges of the mower blades can cut you. ALWAYS wear gloves for any type of blade maintenance or adjustment.

INSPECT BLADES

ALWAYS inspect the condition of the blades before every use.

Inspect the shackles and blades to be sure they are in good operating condition.

Sharpen or replace any damaged blades. Always replace the cutter blades in sets to avoid excessive and damaging vibration of the rotor.

Always sharpen the cutter blades the same length to avoid vibration of the rotor.

If all blades are worn on one side only, the rotor can be removed, turned 180 degrees and reassembled.

To rotate the rotor or replace the blades:

1. Move the throttle to SLOW, lower the Flail to the ground position, disengage the PTO, set the parking brake and shut off the engine.
2. Remove the key from the switch to prevent possible accidental starting.
3. Remove the belt guard and left-hand guard.
4. Loosen the nuts on the spring rod to relieve tension of the belts.
5. Remove the belts.
6. Remove the three bolts that attach the skid shoes to the mainframe on each side. The rotor and skid shoes are no longer attached to the main frame.

7. Start the engine on the Groundsmaster. Slowly lift the 2760 Flail until the main frame is above the rotor.
8. Slowly back up the Groundsmaster until the main frame is clear of the rotor. Lower the main frame to ground level.

NOTE: If rotating the Rotor assembly continue to Step 9. If replacing only the blades skip to step 19.

9. Remove the spacer, washer and key from one end and place on the other end.
10. Remove the pulley from the rotor shaft and attach it to the other end but do not secure.
11. Turn the rotor assembly 180 degrees.
12. Slowly move the Groundsmaster forward and lower the 2760 Flail until the holes on the skid shoes line up with the holes on the side of the main frame. Turn off the engine and remove the key.
13. Replace all six bolts attaching the skid shoes to the main frame.
14. Using a straight edge, line up the two pulleys and secure. Replace the belt.
15. Using the adjustment nut on the spring rod, set the tension of the belt. (See Fig. 6).
16. Replace the belt guard and left hand guard.

Follow the steps below when replacing the blades.

17. Set the parking brake and shut off the engine.
18. Remove and replace the blades on the rotor.
19. Tighten the blade bolts to 24–28 Nm..
20. Slowly move the Groundsmaster forward and lower the Flail 2760 until the holes on the skid shoes line up with the holes on the side of the main frame.

Turn off the engine and remove the key.

21. Replace all six bolts attaching the skid shoes to the mainframe and secure.
22. Replace the belt.
23. Using the adjustment nut on the spring rod, set the tension of the belt.
24. Replace the belt guard and secure.

ADJUSTING THE BELT DRIVE (Fig. 6)

Make sure the belt is properly tensioned to assure correct operation of the unit and no unnecessary wear .

1. To adjust tension:
 - A. Remove the belt guard.
 - B. Check the tension by applying 6.8 Nm of force midway between the pulleys. The belt deflects 6 mm.
 - C. If tension is incorrect, the idler arm may be adjusted by turning the nuts on the spring rod. Adjust the idler pulley against the belt until proper deflection is achieved.
 - D. Install the belt guard.

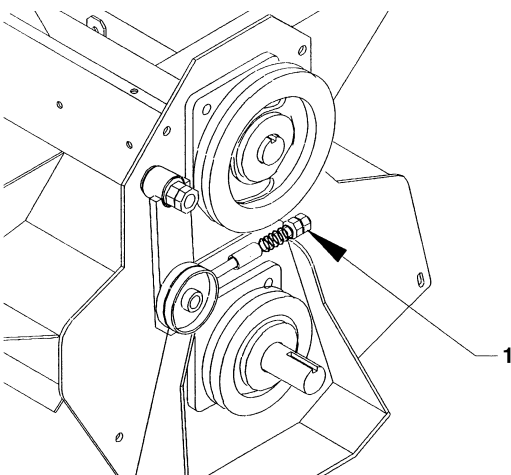


Figure 6

1. Adjustment nut

STORAGE

1. Thoroughly clean the FLAIL 2760. The housing should be free of dirt, leaves and debris.
2. Lubricate all grease fittings. Wipe off any excess lubricant.
3. Place a light coat of grease on the splines of the PTO adapter.
4. Tighten all fasteners.
5. Check the condition of the cutter blades. Replace any damaged blades.
6. Check the tension and the condition of the drive belt. Replace if worn.
7. Check all fasteners for looseness; tighten as necessary.

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBER.

The FLAIL 2760 has two identification numbers: a model number and serial number. The two numbers are stamped on a plate which is located on the housing. In any correspondence concerning the FLAIL 2760, supply model and serial numbers to be sure that the correct information and replacement parts are obtained.

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

1. Model and serial numbers of the machine.
2. Part number, description and quantity of parts desired.

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