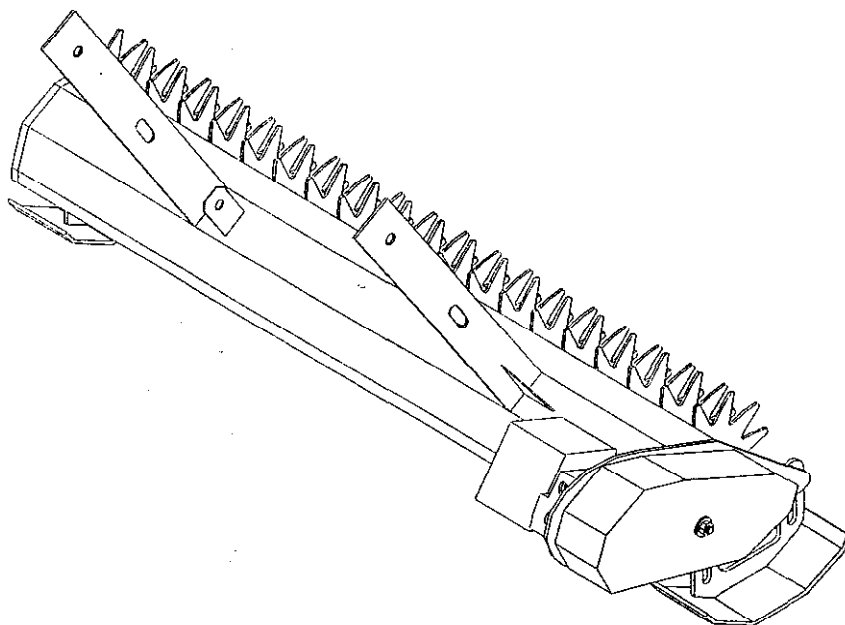




MODEL NO. 44031 - 70001 & UP

**OPERATOR'S
MANUAL**

THATCHING REEL 538
ATTACHMENT FOR TURF SWEEPER 5400HL



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.

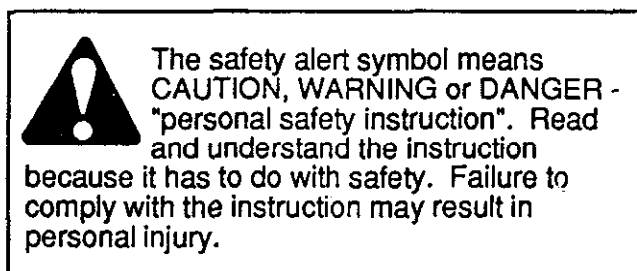
DANGER, WARNING and CAUTION, used with the triangular safety alert symbol, highlight safety messages. Always read and understand these messages because they relate to personal injury and your safety.

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.

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SAFETY INSTRUCTION



BEFORE OPERATING

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

The Toro Company
100 Industrial Parkway
Industrial Airport, Kansas 66031

2. **ALWAYS** follow all safety precautions in the sweepers operator manual pertaining to operation of the sweeper.

3. Do not allow children to operate the machine. Do not allow adults to operate the machine without proper instruction.

4. **Never** operate the machine while under the influence of drugs or alcohol.

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.

6. Before each use, be sure all bolts and nuts are tight. Check the general condition of the blades.

7. Do not alter this equipment in any manner which may cause hazardous conditions.

WHILE OPERATING

8. Do not carry passengers on the sweeper and keep everyone away from the areas of operation.

MAINTENANCE

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

10. If major repairs are ever needed or assistance desired, contact an Authorized TORO Distributor.

11. Make sure machine is in safe operating condition by keeping nuts, bolts and screws tight.

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

13. 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.

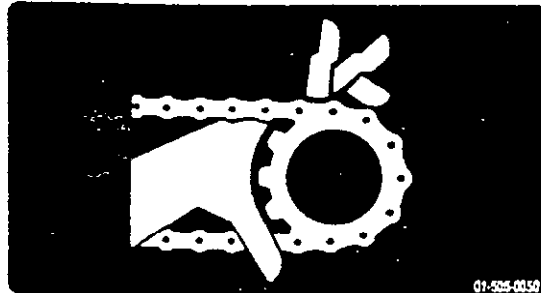
SAFETY AND INSTRUCTION DECALS

The following safety and instruction decals are installed on the unit. Replace any decals that becomes damaged or illegible. Part numbers for decals are listed below and in your Parts Catalog. Order replacements from your Authorized Toro Distributor.

DANGER

ROTATING CHAINS AND SPROCKETS CAN
CAUSE SERIOUS PERSONAL INJURY

DO NOT OPERATE MACHINE UNLESS ALL
GUARDS ARE IN PLACE



ON CHAIN GUARD
(Part No. 01-506-0050)

DANGER

ROTATING BLADES, DISCS OR TINES
CAN CAUSE SERIOUS INJURY

- KEEP HANDS AND FEET OUT OF BLADES,
DISCS OR TINES WHILE ENGINE
IS RUNNING.
 - KEEP BYSTANDERS OUT OF AREA OF
OPERATION.
 - STOP ENGINE BEFORE SERVICING
MACHINE.
- 01-506-0340

EACH SIDE SWEEPER FRAME
(Part No. 01-506-0340)



NEAR BEARINGS & GREASE POINTS
(Part No. 01-506-0550)

SPECIFICATIONS

DRIVE: hydraulic pump to motor, #50 chain drive to blade shaft, independent of sweeper reels

BLADE ROTATION: Reverse direction

FRAME: All welded steel construction

RAISE/LOWER: Manual control

BEARINGS: Self sealed, self aligned

THATCHER BLADES: (27) 13 pt., Blue Spring Steel mounted on 1-1/2" centers.

THATCHER HOUSING: Free floating to eliminate or minimize damage to the turf.

SHIPPING WEIGHT: 225 lbs.

OPTIONS: 3/4" and 3" blade centers.

BLADE SPACINGS

1 -1/2" CENTERS: A preventive thinning application for all turf grasses, also used to cut surface runners of many hot weather varieties such as Kikuyu, Zoysia and Bermuda Grass. This blade spacing should be used with a penetration of 1/4" to 1/2" below the side skid shoes for thinning thatch and grasses from the top layer downward. This procedure will keep the turf surface open to maximize benefits of water, fertilizer and air.

3/4" CENTERS: Scalping and winter overseeding preparation in hot weather grass zones. The close blade spacing will remove as much material as possible in one pass to remove undesirable, dormant grasses.

3" CENTERS: Deep penetration up to 1" deep in established thatch problem layers. This wider blade spacing is to reduce the lifting of weak thatch blankets, yet penetrate the layer for entry of water, air and fertilizers below the problem area.

SET UP INSTRUCTIONS

ATTACH THATCHER TO SWEEPER (Fig. 1 & 2)

IMPORTANT: The Thatcher 538 will only fit Olathe Model 54 Sweepers with serial numbers 540409 and up. The Thatcher 538 fits all Toro Turf Sweepers 5400.

1. Attach the main arm to the bottom of the mounting plate using the 1" x 3" bolts. Be sure to install the plastic pivot washers between the plates as shown. Leave bolts finger tight.

2. Attach the mounting plate to the front main frame using the 1/2" x 2" bolts provided. Secure nuts.

3. Mount the main frame and lift assembly to the underside brace of the sweeper at both (A) points using 1/2" x 1-1/2" bolts. Line up the thatcher

blades so they are parallel with the sweeper frame. Secure all hardware.

4. Attach the main arm to the main frame as shown in Fig. 1, using the 1/2" x 1-1/2" bolts. Secure nuts.

5. Push the threaded end of the lift rod through the slot in the main frame. See Fig. 1.

6. Attach the lift rod at the bottom of the lift assembly using the cotter pin.

7. Mount the brace plate and the lift rod bracket to the top of the main frame. Use 1/2" x 2" bolts with hardware as shown in Fig. 2. and secure.

8. Attach the lift handle to the lift rod bracket using a 1/2" x 1-1/2" bolt, flatwasher and double nuts.

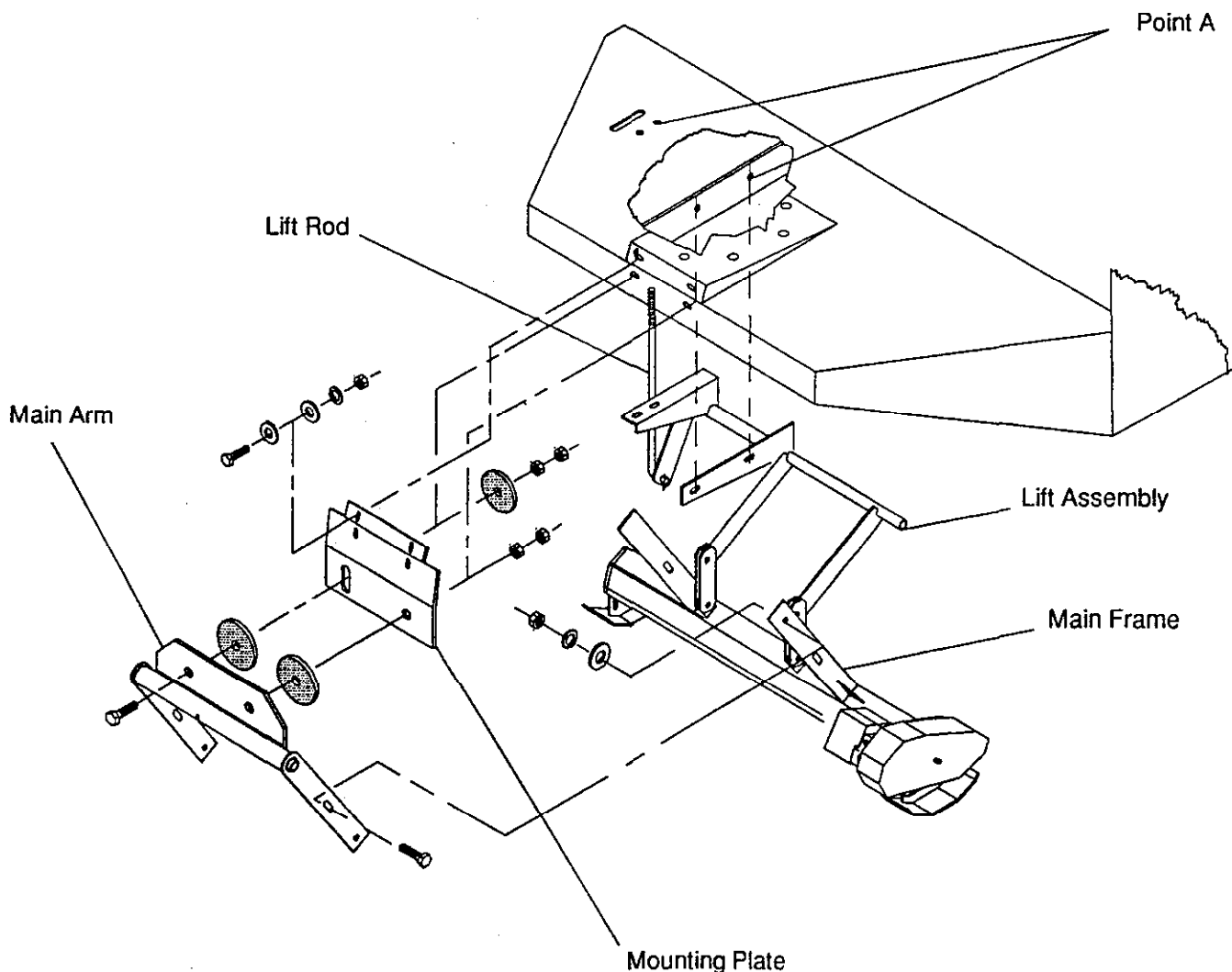


Figure 1

SET UP INSTRUCTIONS (Continued)

9. Put a nut on the end of the lift rod and thread to the bottom of the threads.

10. Slide the pivot bolt over the lift rod and attach to the lift handle as shown in Fig. 2. Secure nuts.

11. Mount the thatcher valve and flow control valve shown in Fig. 4 to the underside of the seat bracket.

12. Attach the 3/8" x 15" hydraulic line between the thatcher valve and the flow control valve. See hydraulic schematic, page 11.

13. Remove the existing Sundstrand pump from the Cessna pump and replace with the new pump provided with the thatcher. See Fig. 3.

14. Reroute the existing 1/4" x 51" and 3/8" x 36" hydraulic lines from the hopper lift valve and the door lift valve to the flow control valve. See hydraulic schematic, page 11.

15. Install a 3/8" x 36" hydraulic line and fittings from the pump to the thatcher valve. See hydraulic schematic, page 11.

15. Install a 3/8" x 36" hydraulic line and fittings from the flow control valve to the tank for the return line.

16. Check the hydraulic schematic on page 11 and compare the hoses and fittings for proper locations.

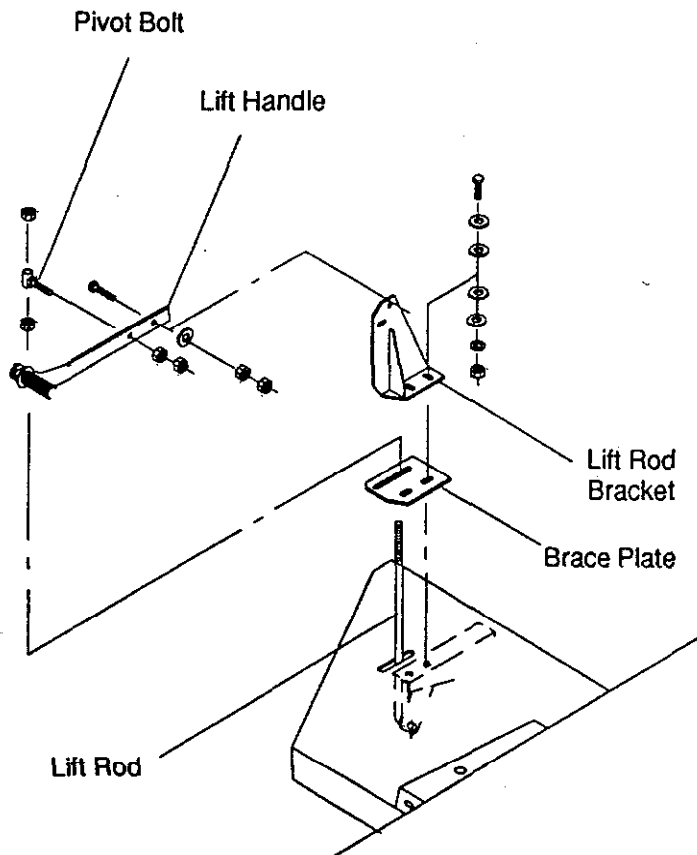


Figure 2

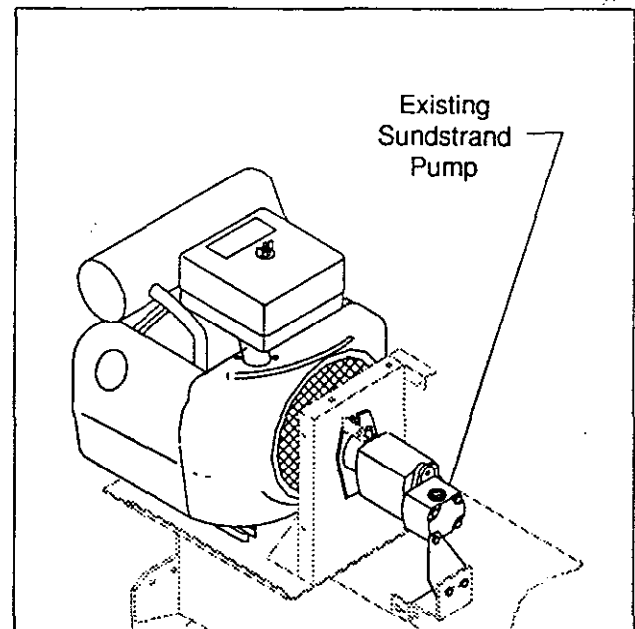


Figure 3

BEFORE OPERATING

CHECK HYDRAULIC SYSTEM OIL

The hydraulic system is designed to operate on any high quality detergent. Oil recommendations are: 10W30 SF-CC

IMPORTANT: The hydraulic oil level should be maintained at 1" over top mark on the dipstick. The additional oil is to provide additional cooling capacity in the reservoir when the thatcher is mounted.

1. Position the sweeper on a level surface and make sure engine is off.
2. Pull out the dipstick from the oil filler tube. Check the level indicated on the dipstick.
3. If low add sufficient oil to bring to 1" over the "Full" mark on the dipstick.. Do Not overfill.

IMPORTANT: When adding oil to the hydraulic system, use a funnel with a fine screen - 200 mesh - and ensure funnel and oil are immaculately clean. This procedure prevents accidental contamination of the hydraulic system which will damage the hydraulic system.

BLADE DEPTH SETTING (Fig. 4)

The depth of the blades is set according to the location of the skid shoes. Moving the skid shoes up increases the depth of the blades; while moving down decreases blade depth. Normal operating depth is 1/4" to 1/2".

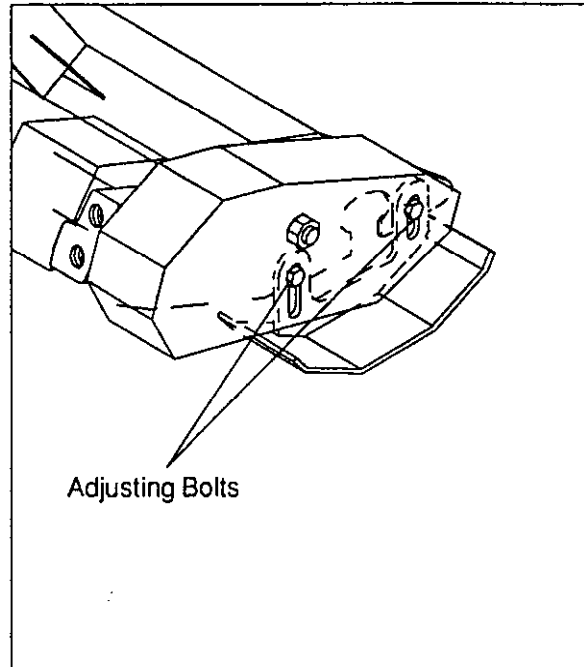


Figure 4

CONTROLS

BLADE ENGAGEMENT (Fig. 5)

The thatching blades are engaged with the valve control. Pushing the handle forward engages the blades.

LIFT HANDLE (Fig. 2)

The lift handle raises and lowers the main frame assembly for operating or transport positions. Pull back and lock over center for transport position. Push forward to drop the Main Frame to operating position.

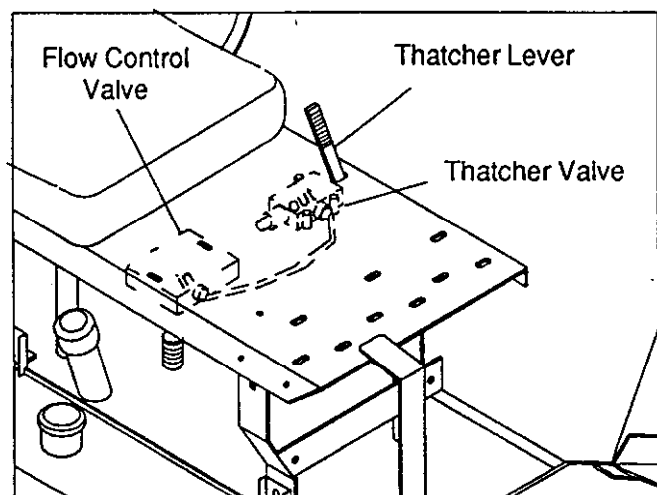


Figure 5

OPERATING INSTRUCTIONS

1. Place the sweeper on a level surface at the side to be thatched.
2. Move sweeper forward at a slow speed (approx. 1 mph).
3. Push the valve handle to engage the thatcher blades.
4. With the sweeper moving forward at a slow speed, slowly lower the thatching blades to the surface.

IMPORTANT: Always engage the thatcher blades before lowering to prevent dragging of the turf.

5. If sweeping and thatching simultaneously a slower ground speed is recommended (3 mph).

6. Always lift the thatcher up off the ground when making turns.

LUBRICATION

BEARINGS (Fig. 6)

The thatcher has two self sealing bearings that must be lubricated with a No. 2 Lithium based grease.

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

DRIVE CHAIN (Fig. 6)

1. Always maintain a heavy coat of grease on the drive chain.

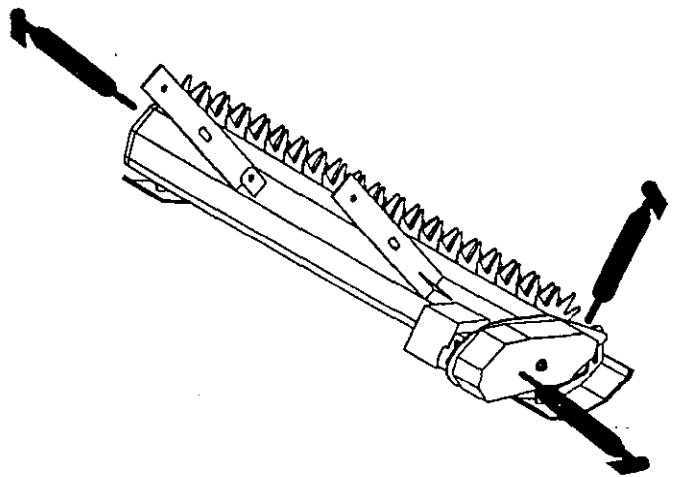


Figure 6

MAINTENANCE

CHANGING HYDRAULIC OIL AND FILTER

Normally, change hydraulic oil and filter after every 500 operating hours. If oil becomes contaminated, contact your local TORO Distributor because the system must be flushed. Contaminated oil looks milky or black when compared to clean oil.

1. Remove drain plug from reservoir and let hydraulic oil flow into drain pan. Reinstall and tighten plug when hydraulic oil stops draining.
2. Clean area around filter mounting area.

3. Fill the replacement filter with 10W30 SF-CC motor oil, and lubricate the sealing gasket and hand turn until gasket contacts filter head. Then tighten 3/4 turn further. Filter should now be seated.

4. Fill the hydraulic tank with approximately 12 gallons of 10W30 SF-CC motor oil.

5. Start the engine and run it at idle for 3 to 5 minutes to circulate the fluid and remove any air trapped in the system. Operate the hopper door and hopper lift valve control. Stop the engine and re-check the fluid level.

MAINTENANCE (Continued)

CHECKING HYDRAULIC LINES AND HOSES

After every 100 operating hours, check hydraulic lines and hoses for leaks, kinked lines, loose mounting supports, wear, loose fittings, weather deterioration and chemical deterioration. Make all necessary repairs before operating.



WARNING

Keep body and hands away from pin hole leaks or nozzles that eject high pressure hydraulic fluid. Use a cardboard or paper to find hydraulic leaks. Hydraulic fluid escaping under pressure can penetrate skin and cause injury. Fluid accidentally injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

DRIVE CHAIN ADJUSTMENT (Fig. 6)

The drive chain is adjusted to allow a 1/8" deflection with 5 lbs. of force. Do not over tighten the chain because it will wear rapidly. If chain is too loose, the sprocket will wear.

To adjust the drive chain:

- A. Loosen the 1/2" bolts attaching the hydraulic motor to the side plate.
- B. Slide the hydraulic motor until proper tension is achieved.
- C. Tighten the two bolts.

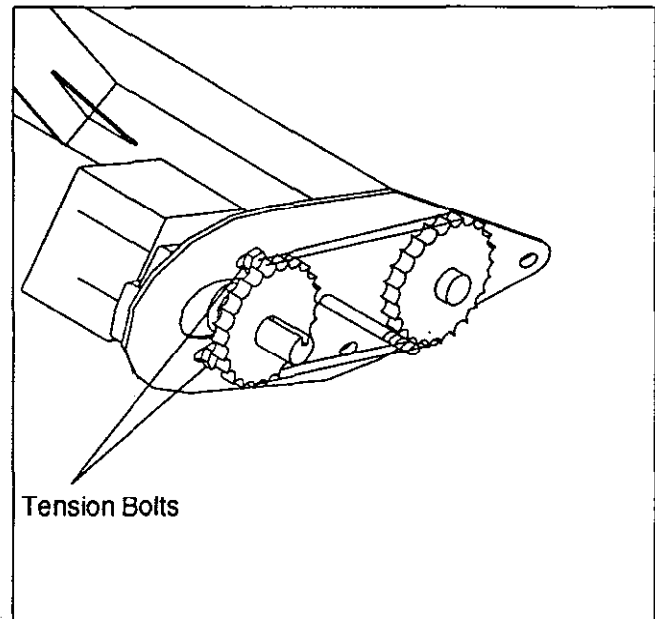
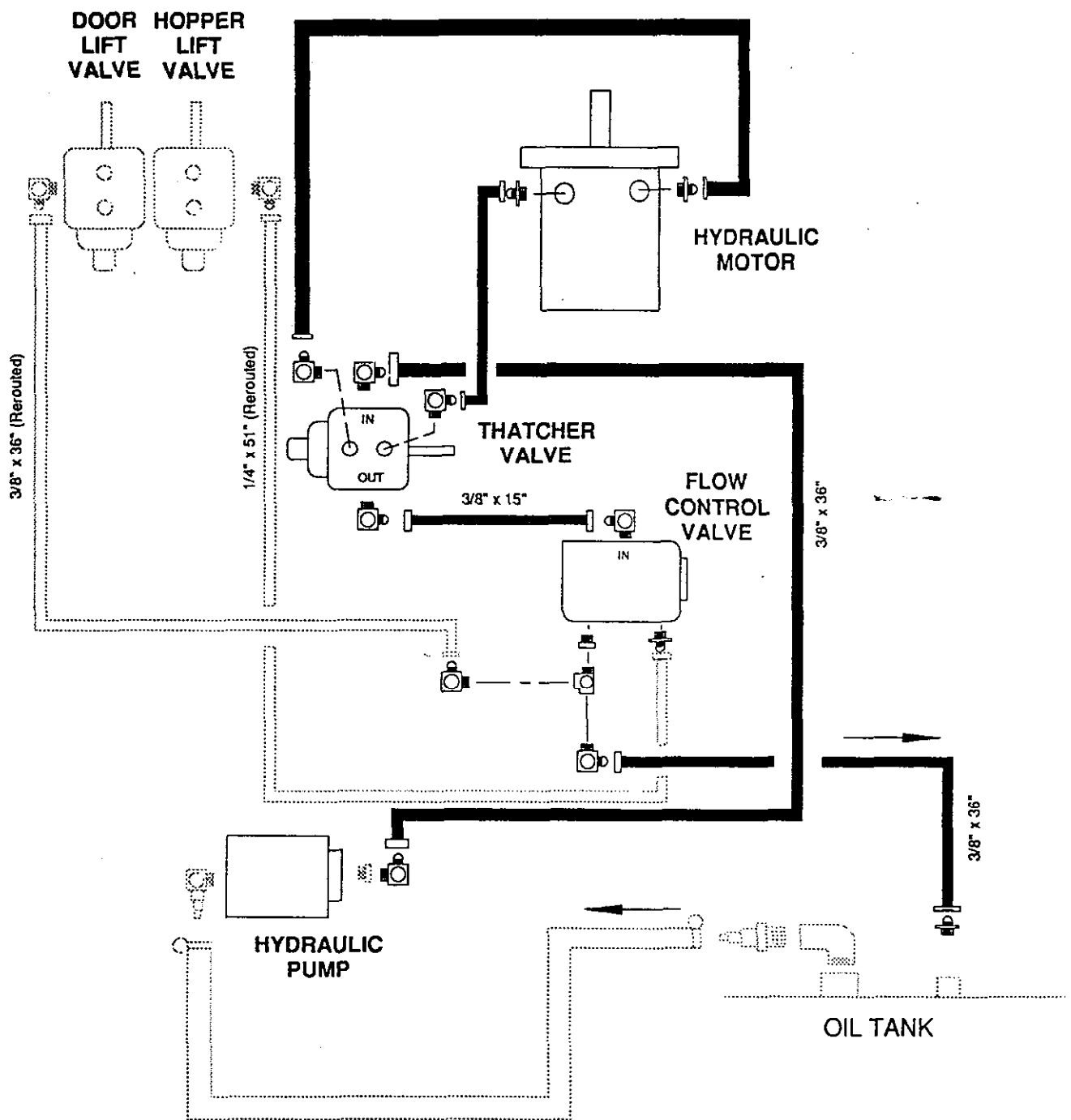


Figure 6

HYDRAULIC SCHEMATIC - THATCHING REEL 538



STORAGE

1. Thoroughly clean the thatcher. The blade area should be free of dirt, leaves and debris.
2. Check the condition of the blades. Replace any worn or broken blades.
3. Check all fasteners for looseness: tighten as necessary.
4. Grease or oil all grease fittings and bearings. Wipe off excess lubricant.
5. Check the tension and condition of the drive chain. Adjust the tension if necessary and lightly coat the chain with grease.

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBER

The THATCHING REEL 538 has two identification numbers: a model and serial number. The two numbers are stamped on a plate which is riveted to main frame. In any correspondence concerning the Thatching Reel 538, 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.

MAINTENANCE CHART

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MAINTENANCE CHART

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MAINTENANCE CHART

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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.