Form No. 3323-833 Rev A

TORO®

5-, 7-, and 11-Blade Reels

for Reelmaster® 5500 & 6000 Series

03860—200000001 and Up
03861—200000001 and Up
03862—200000001 and Up

Operator's Manual

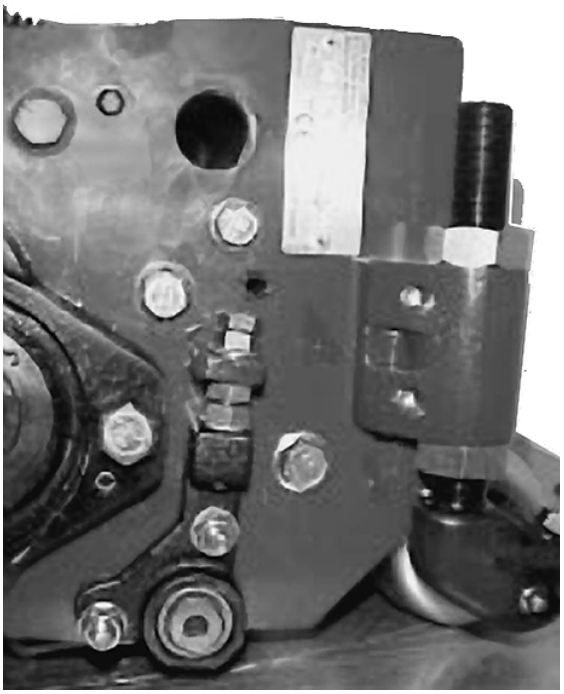
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Introduction

Thank you for purchasing a Toro product.

All of us at Toro want you to be completely satisfied with your new product, so feel free to contact your local Authorized Service Dealer for help with service, genuine Toro replacement parts, or other information you may require.

Whenever you contact your Authorized Service Dealer or the factory, always know the model and serial numbers of your product. These numbers will help the Service Dealer or Service Representative provide exact information about your specific product. You will find the model and serial number plate located in a unique place on the product as shown below.



1. Model and Serial Number Plate

For your convenience, write the product model and serial numbers in the space below.

Model No:_____

Serial No.:_____

Read this manual carefully to learn how to operate and maintain your product correctly. Reading this manual will help you and others avoid personal injury and damage to the product. Although Toro designs, produces and markets safe, state-of-the-art products, you are responsible for using the product properly and safely. You are also responsible for training persons who you allow to use the product about safe operation.

The Toro warning system in this manual identifies potential hazards and has special safety messages that help you and others avoid personal injury, even death. DANGER, WARNING and CAUTION are signal words used to identify the level of hazard. However, regardless of the hazard, be extremely careful.

DANGER signals an extreme hazard that will cause serious injury or death if the recommended precautions are not followed.

WARNING signals a hazard that may cause serious injury or death if the recommended precautions are not followed.

CAUTION signals a hazard that may cause minor or moderate injury if the recommended precautions are not followed.

Two other words are also used to highlight information. "Important" calls attention to special mechanical information and "Note" emphasizes general information worthy of special attention.

The left and right side of the cutting unit is determined by standing with the rear roller nearest you.

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Contents

Introduction 2

Contents 3

Safety 4
- Safe Operating Practices 4
- Safety and Instruction Decals 5

Specifications 6

Set-Up Instructions 7
- Adjusting The Front Shield 7
- Adusting The Rear Shield 7
- Adjusting The Turf Compensation Spring 7

Setting Height of Cut 9
- Adjusting (Parallel) The Bedknife To The Reel 9
- Setting Cutting Unit Attitude 10
- Setting Attitude for New Cutting units: 11
- Checking or Adjusting Attitude for Used Cutting Units 13
- Leveling the Front Roller 14
- Finalizing Height of Cut 14

Maintenance 16
- Backlapping Reelmaster 5500 Traction Units 16
- Backlapping Reelmaster 6000 Traction Units 18
- Lubrication 20
- Reel Bearing Adjustment 20
- Single-Point Spring Adjustment 21

Safety

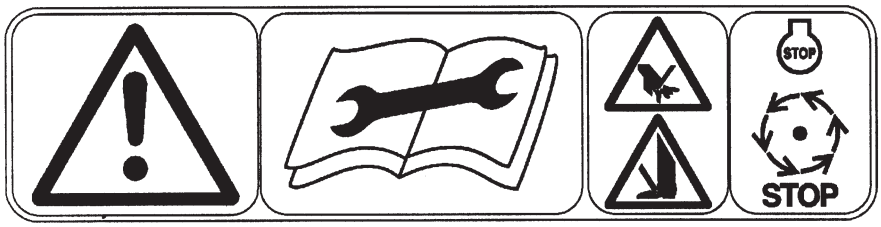
Safe Operating Practices

- Read, understand, and follow all instructions in the traction unit operator's manual before operating the cutting unit.
- Read, understand, and follow all instructions in this operator's manual before operating the cutting unit.
- Never allow children to operate the cutting units. Do not allow adults to operate traction unit or cutting units without proper instruction. Only trained operators who have read this manual should operate the cutting units.
- Never operate the cutting units when under the influence of drugs or alcohol.
- Keep all shields and safety devices in place. If a shield, safety device or decal is illegible or damaged, repair or replace it before operation is commenced. Also tighten any loose nuts, bolts and screws to assure the cutting unit is in safe operating condition.
- Always wear substantial shoes. Do not operate the cutting unit while wearing sandals, tennis shoes, sneakers or shorts. Also, do not wear loose-fitting clothing that 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.
- Remove all debris or other objects that might be picked up and thrown by the cutting unit's reel blades. Keep all bystanders away from the mowing area.
- If the cutting blades strike a solid object or the cutting unit vibrates abnormally, stop and shut the engine off. Check the cutting unit for damaged parts. Repair any damage before restarting and operating the cutting unit.
- Lower the cutting units to the ground and remove the key from the ignition switch whenever the machine is left unattended.
- Be sure cutting units are in safe operating condition by keeping nuts, bolts and screws tight.
- Remove the key from the ignition switch to prevent accidental starting of the engine when servicing, adjusting or storing the machine.
- Perform only those maintenance instructions described in this manual. If major repairs are ever needed or assistance is desired, contact an Authorized TORO Distributor.
- 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 the warranty of The Toro Company.

Safety and Instruction Decals

Safety decals and instructions are visible to the operator and are located near my area of potential danger. Replace any decal that is damaged or lost.

ON FRONT SHIELD OF THE CUTTING UNIT
(Part No. 93-6688)



Specifications

Reel Construction: Fairway reels. All welded. 5, 7 or 11 blades.

Recommended Height-Of-Cut Range:
5 Blade—1” to 1-3/4” (25–44 mm)
7 Blade—1/2” to 1” (13–25 mm)
11 Blade—3/8” to 3/4” (10–19 mm)

Note: Use bedknife Part No. 93-9774 for heights of cuts below 1/2” (13 mm).

Reel Diameter: 7 in. (178 mm)

Power Attachment: Reel motors feature quick disconnect for removal or installation onto the cutting unit. Cutting units can be driven from either end.

Height-of-cut & Roller Adjustment: Height-of-cut adjustment is made at the rear roller with the quick locating pin and/or the threaded micro adjustment. Front roller position is adjustable to set cutting unit attitude.

Bedknife And Bedbar Adjustment: Single-point adjustment mechanism.

Selected Clip Control: The Reelmaster 5500 Traction Unit is equipped with manually adjustable reel speeds which control selected clip.

Note: Refer to Traction Unit Operator's

Automatic Clip Control: The Reelmaster 6000D series traction unit is equipped with an electronic controller that is programmed to achieve automatic clip control.

As the traction unit speed varies, the controller will automatically adjust the hydraulic flow to the reel motors to vary reel speed and maintain proper clip. For proper clip, the controller needs to know what cutting units are installed (5, 7 or 11 blade) and the height of cut.

Note: Refer to the traction unit operatorís manual for proper set-up procedure.

Rollers: The front roller is a 3” (76 mm) diameter cast Wiehle roller. The rear roller is a 3” (76 mm) diameter steel full roller. Both rollers use the same heavy-duty ball bearings with two conventional single-lip seals and a Toro labyrinth seal to provide four sealing surfaces to protect the bearings.

Optional Equipment

Dethatching Cutting Unit	Model No. 03871
Grass Basket Kit	Model No. 03882
High-Torque Reel Motor	Part No. 98-2448
Wiehle Roller Scraper	Part No. 100-9908
Rear Roller Scraper Kit	Part No. 100-9920
RM6000 Shoulder Wiehle Roller	Part No. 99-8675
RM5500 Shoulder Wiehle Roller	Part No. 100-9911
RM6000 Shoulder Wiehle Scraper	Part No. 99-8670
RM5500 Shoulder Wiehle Scraper	Part No. 100-9913
Low Height-of-Cut Bedknife*	Part No. 93-9774
Gauge Bar Assembly‡	Part No. 98-1852
Angle Indicator	Part No. 99-3503
Backlapping Brush Assembly	Part No. TOR299100
Bedknife Screw Tool	Part No. TOR510880
Cutting Unit Tool Kit	Part No. TOR4070
Reel Drive Shaft	Part No. TOR4074

* For height of cut below 0.5” (13 mm)
‡ Supplied with tractor

Set-Up Instructions

After you unbox the cutting unit, inspect the following:

1. Check each end of the reel for grease. Grease should be visibly evident in the reel bearings and internal splines of the reel shaft.

2. Insure that all nuts and bolts are securely fastened.

3. Make sure the carrier frame suspension operates freely and does not bind when moved back and forth.

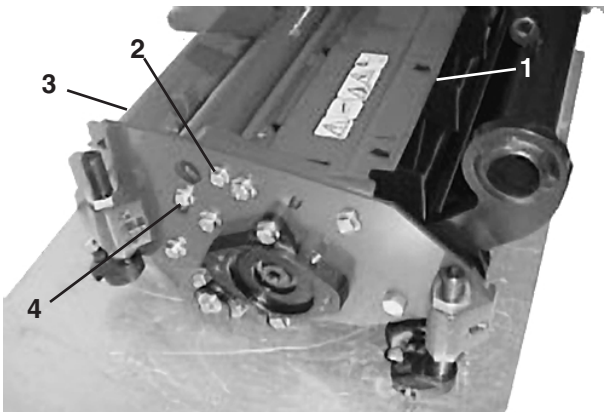
Adjusting The Front Shield

Adjust the front shield for desired grass clipping dispersion.

1. Position the cutting unit on a flat, level surface.

2. Loosen the flange head capscrew that securs the shield to the right side plate. Move the shield to the desired angle and tighten the screw.

Figure 1



1. Front grass shield
2. Front capscrew
3. Rear grass shield
4. Rear capscrew

Adusting The Rear Shield

Under most conditions, best dispersion is attained when the rear shield is closed (front discharge). When conditions are heavy or wet, the rear shield may be opened.

1. To open the rear shield (Fig. 1), loosen the flange head capscrew securing the shield to the left side plate, rotate the shield to the open position and tighten the capscrew.

Adjusting The Turf Compensation Spring

The turf compensation spring (Fig. 2), connecting the carrier frame to the cutting unit, controls the amount of fore-aft rotation available, and the amount of ground clearance in transport and turn around.

The turf compensation spring also transfers weight from the front to the rear roller. This helps reduce a wave pattern in the turf.

IMPORTANT: Make spring adjustments with the cutting unit mounted to the traction unit and lowered to the shop floor. Refer to the traction unit operator's manual for mounting instructions.

1. Tighten the lock nut on the rear of the spring rod until the gap (C) between the rear of the spring bracket and front of the washer is 1" (26 mm) (Fig. 2).

2. Tighten the hex nuts on the front end of the spring rod until the compressed length (A) of the spring is 8" (203 mm) (Fig. 2).

   Note: When cutting rough or undulating turf, increase the compressed length (A) of the spring to B=1/2" (216 mm) and the gap (C) between the rear of the spring bracket and the front of the washer to 1-1/2" (39 mm) (Fig. 5).

   Note: As the compressed spring length (A) DECREASES, weight transfer from the front roller to the rear roller INCREASES and the carrier frame/cutting unit rotation angle (B) DECREASES.

   Note: As the gap (C) between the spring bracket and washer INCREASES, cutting unit ground clearance DECREASES and the carrier frame/cutting unit rotation angle (B) INCREASES.

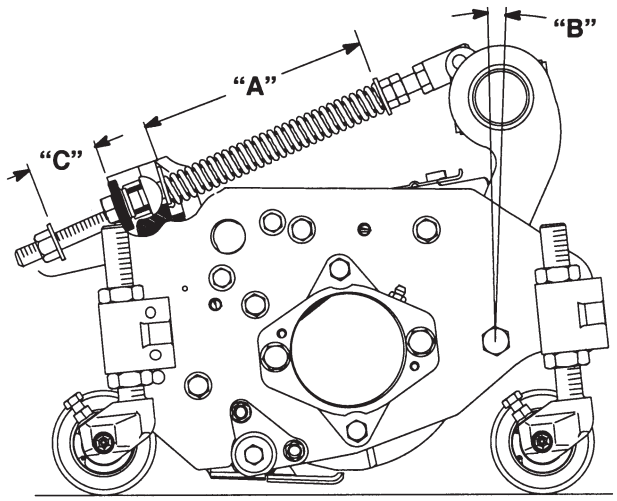


Figure 2

Setting Height of Cut

IMPORTANT. To insure proper setting of height of cut, these procedures must be followed in this order:

A. Adjusting (Parallel) the bedknife to the reel
B. Setting cutting unit attitude
C. Leveling the front roller
D. Finalizing height of cut

IMPORTANT: Each cutting unit must be set consistently. Minor differences in either 1) height of cut, 2) attitude, 3) bedknife wear or 4) Reel blade wear, between cutting units, may result in negative after-cut appearance.

Note: The cutting unit has been set at the factory at 16 mm (5/8") height of cut and with a cutting unit attitude of 2 degrees. Also, the bedknife has been retracted from the reel to prevent shipping damage. Verity the setting to ensure changes did not occur during shipment.

Adjusting (Parallel) The Bedknife To The Reel

IMPORTANT. The reel and bedknife must be parallel to an even cut of grass, and that the reel and bedknife wear evenly.

Note: Toro recommends light contact between the reel and bedknife. However, for dry and/or sparse conditions a .001–.002" (.03–05 mm) clearance may be required to prevent heat buildup, which can cause uneven wear in the reel and bedknife.

Note: A 3/4-inch (19 mm) wrench is needed to rotate the bedknife adjustment knob. Each notch on the knob will move the bedknife 0.0005 inches (.013 mm) closer to the reel (Fig. 3).

1. Rotate the cutting unit backward to gain access to reel and bedknife (Fig. 4).

2. While slowly rotating the reel in the mowing direction, turn the bedknife adjusting knob clockwise until you hear light contact between the reel and bedknife.

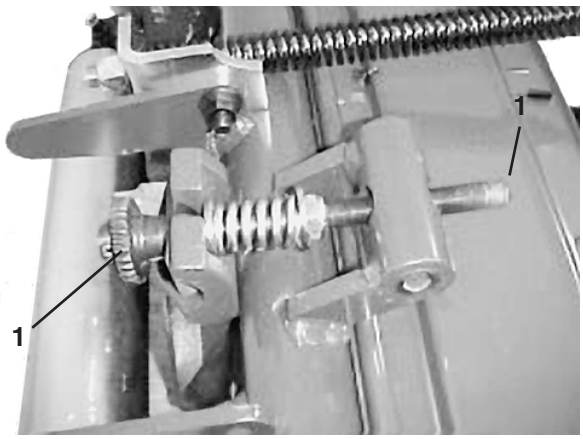


Figure 3
1. Bedknife adjusting knob

3. Insert a 3-cm wide piece of newspaper perpendicular to the bedknife, and then turn the reel slowly in the mowing direction to see if the reel cuts the paper—do this on both ends of the bedknife (Fig. 4).

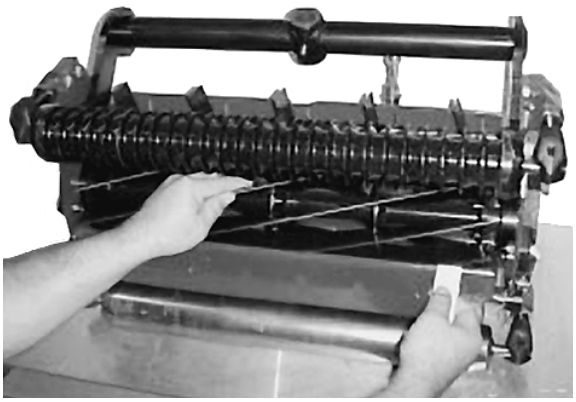


Figure 4

4. If paper is cut on both ends, the bedknife is parallel to the reel. If not go to step 5.

Note: If the reel makes contact on both sides of the bedknife but still does not cut paper, the cutting unit may need to be backlapped (refer to Backlapping) and/or reel and bedknife may need to be reground (refer to Toro manual for Sharpening Reel and Rotary Mowers, Form No. 80-300PT).

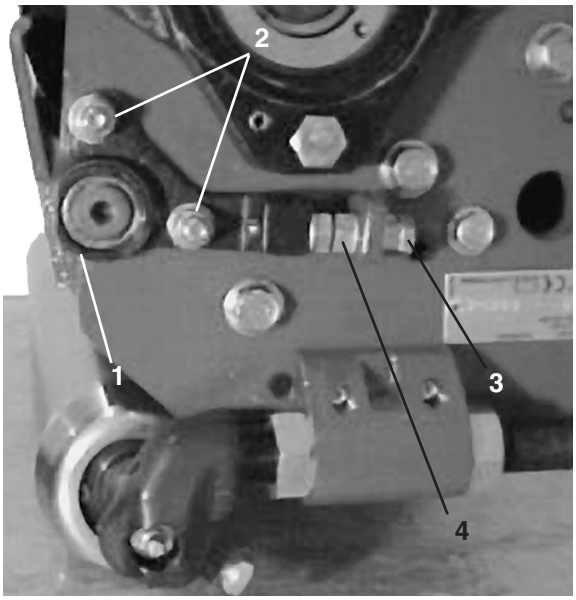


Figure 5

1. Pivot hub
2. Pivot hub locknuts
3. Top adjusting nut
4. Bottom adjusting nut

5. Loosen the pivot hub lock nuts to allow movement of the pivot hub (Fig. 5).

6. If the paper was not cut on the left side: loosen the bottom adjusting nut on the pivot hub, then turn the top adjusting nut clockwise to pull the pivot hub up. OR If paper was not cut on the right side: loosen the top adjusting nut on the pivot hub, then turn the bottom adjusting nut counterclockwise to push the pivot hub down (Fig. 5).

Note: To reduce thread play, always tighten the bottom adjusting nut last.

7. Recheck the reel-to-bedknife contact on both ends of the bedknife, and repeat step 6 as necessary.

Note: Reel-to-bedknife contact may become too tight or too loose after the previous adjustment, therefore, turn the bedknife adjustment knob, accordingly, for lighter contact.

8. Retighten the pivot hub lock nuts.

Note: Recheck whether the paper still cuts on both ends of the reel to insure the bedknife did not move when tightening the pivot hub lock nuts.

Setting Cutting Unit Attitude

IMPORTANT: Cutting unit "attitude" has a significant impact on the performance of the cutting unit. Attitude refers to the angle of the knife relative to the ground (Fig. 6). Adjustable front and rear brackets allow for variable adjustment of the cutting unit attitude within the height-of-cut range. All cutting units on a machine must be set to the same attitude. If they arenít, the after-cut appearance will be negatively affected.

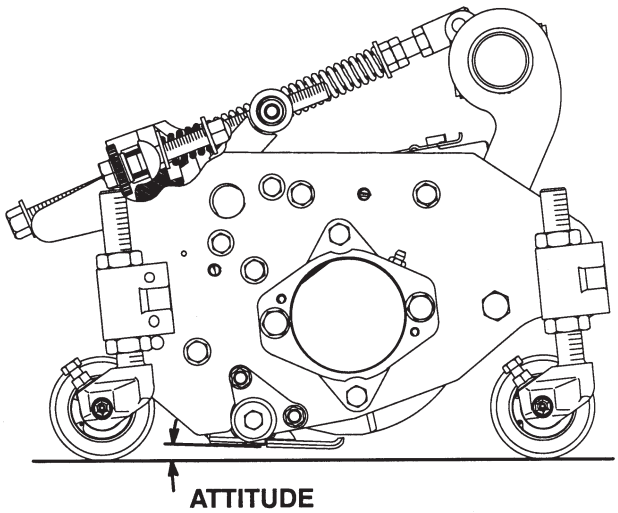


Figure 6

1. Attitude

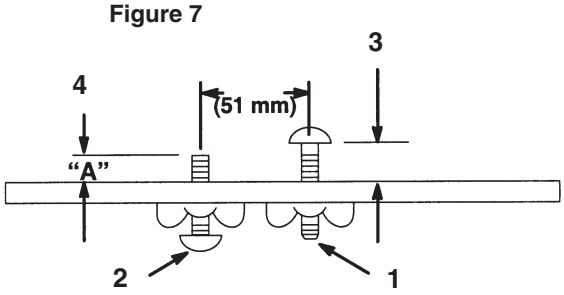
The best cutting unit attitude depends on your turf conditions and desired results. Experience with the cutting unit on your turf will determine the best setting to use. Cutting unit attitude can be adjusted throughout the cutting season to allow for various turf conditions.

In general, less aggressive attitudes (example: 2 degrees) are more appropriate for warm season grasses while cool season grasses may require more aggressive attitudes (example: 6 degrees). More aggressive attitudes cut more grass off by allowing the spinning reel to pull more grass up into the bedknife. An angle that is too flat (attitude less than 1 degree) may allow the bedbar or other parts of the

cutting unit to drag in the turf causing tufting. Therefore, minimum recommended attitude is 1 degree.

For setting consistent cutting unit attitude, Toro strongly recommends using a two-screw gauge bar, Toro part no. 98-1852 (Fig. 7). The first screw is set for height of cut, and the second screw is set for cutting unit attitude. The second screw setting is an easy method of transferring cutting unit attitude to all cutting units on a machine.

Figure 7



1. First screw
2. Second screw
3. Height-of-cut setting
4. Attitude

Setting Attitude for New Cutting units:

Table 1 lists dimensions for setting up a new cutting unit with attitudes of 2, 4, 6 and 8 degrees.

Note: The second screw setting will change throughout the life of the bedknife and reel due to wear even if the height of cut is not changed. Therefore, after initial set up, use the *Checking and Adjusting Attitude for Used Cutting Unit* procedure.

1. Using a two-screw gauge bar, Toro part no. 98-1852, set the first screw to the desired height of cut. This setting is from the bar face to the underside of the screw head (Fig. 7).

2. Using Table 1, set the attitude, "A", for the second screw on the gauge bar. This setting is from the bar face to the end of the screw (Fig. 7).

3. Rotate the cutting unit backward and gain access to the reel and bedknife.

4. Set the front height-of-cut rod height, "B", using the dimension given in Table 1. This measurement is between the top survace of the height-of-cut rod and the top cone nut (Fig.8).

5. Set the rear support casting in either the top or bottom location indicated in table 1. Set the rear height-of-cut rod height 3 mm less than the dimension given in Table 1, which will creat a gap between the rear roller and the gauge bar (Fig. 8).

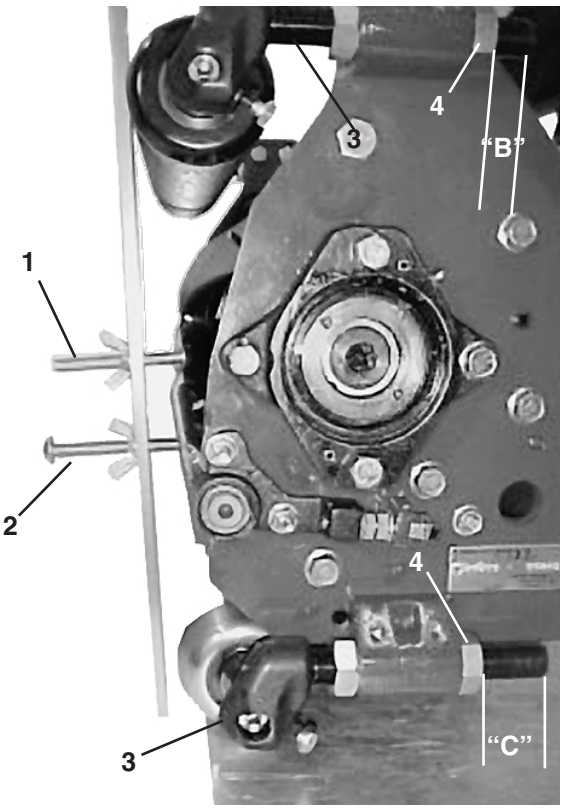


Figure 8

1. First screw
2. Second screw
3, Height-of-cut rod
4. Cone nut

6. Place the gauge bar across the front and rear rollers. The first screw head should fit snugly over the edge of the bedknife and the end of the second screw should contact the bottom of the bedknife (Fig. 8). If there is a gap between the front roller and the gauge bar, or if you cannot put the gauge bar on, adjust the front roller until 1) the first height-of-cut screw fits snugly over the bedknife, 2) the scond screw just contacts the bedknife, and 3) the gauge bar

Desired Height of Cut (mm)	Desired Attitude (degrees)	Second Screw "A" (mm) Fig. 7	Front Height-of-Cut Rod "B" (mm) (Fig. 8)	Rear Height-of-Cut Rod "C" (mm) (Fig. 8)	Rear Support Bracket (Fig. 8) (location)
10mm	2°*	4.6	41.3	47.4	top
	4°*	5.9	46.4	41.3	top
	6°*	–	54.5	35.2	top
	8°*	–	–	–	top
13mm	2°*	7.6	38.1	44.2	top
	4°*	9.0	43.2	38.1	top
	6°*	10.5	48.3	32.1	top
	8°*	–	–	–	top
	2°	5.8	34.5	48.5	top
	4°	7.2	39.6	42.4	top
	6°	8.7	39.6	26.3	top
	8°	–	49.9	30.3	top
16mm	2°	9.0	31.3	45.3	top
	4°	10.4	36.4	29.2	top
	6°	11.9	41.6	24.6	top
	8°	–	46.7	27.1	top
19mm	2°	12.1	28.2	42.1	top
	4°	13.6	33.3	36.0	top
	6°	15.0	38.4	29.9	top
	8°	16.5	43.5	23.9†	top
22mm	2°	15.3	25.0†	38.9	top
	4°	16.8	30.1	45.5	top
	6°	18.2	35.2	26.8	top
	8°	19.7	40.3	20.7†	top
25mm	2°	18.5	21.8	35.7	top
	4°	19.9	26.9	29.6	top
	6°	21.4	32.0	23.6†	top
	8°	22.9	37.2	17.6†	top
29mm	2°	21.7	18.6†	32.6	top
	4°	23.1	23.7†	25.5	top
	6°	24.6	28.9	20.4†	top
	8°	26.0	35.3	14.4†	top
32mm	2°	24.8	15.4†	29.4	top
	4°	26.3	20.5†	23.3†	top
	6°	27.7	25.7	17.2†	top
	8°	29.2	30.8	11.2†	top
35mm	2°	28.0	12.2†	26.2	top
	4°	29.5	17.4†	20.1†	top
	6°	30.9	22.5†	14.0†	top
	8°	32.4	27.6	8.0†	top
38mm	2°	31.2	9.0†	23.0†	top
	4°	32.6	14.2†	16.9†	top
	6°	34.1	19.3†	10.9†	top
	8°	35.6	24.5†	4.9†	top
41mm	2°	–	5.8†	35.7	bottom
	4°	35.8	11.0†	29.6	bottom
	6°	36.2	16.2†	23.6†	bottom
	8°	38.7	21.3†	17.6†	bottom
45mm	2°	–	2.6†	32.5	bottom
	4°	39.0	7.8†	26.4	bottom
	6°	40.4	13.0†	20.4†	bottom
	8°	41.9	18.1†	14.4†	bottom

* Optional Low-Cut Bedknife, Toro part no. 93-9774, is required for height of cut below 13mm

† For front "B" or rear roller distances "C" less than 25mm, order a long cone nut (Part No. 95-2720) to replace the bottom cone nut for improved support.

touches the front roller. Verify front roller attitude at each end of the bedknife.

Note: At this time there should be a small gap between the rear roller and gauge bar.

Checking or Adjusting Attitude for Used Cutting Units

Note: As a starting point for adjusting cutting unit attitude, the cutting unit may be set up using the dimensions from Table 1. However, because of wear on the bedknife and reel, the following procedure must be used to ensure the correct attitude setting.

1. Rotate the cutting unit backward to gain access to the reel and bedknife.

2. Place an angle indicator, Toro Part No. 99-3503, on the bedknife and record the bedknife angle (Fig. 9).

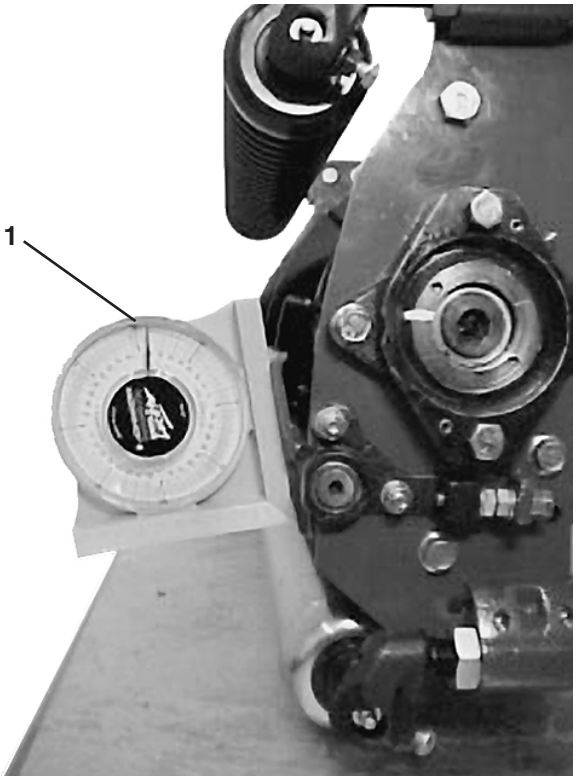
3. Using a two-screw gauge bar, Toro Part No. 98-1852, set the first screw to the desired height of cut.

4. Place the gauge bar across the front and rear rollers. The first screw head must fit snugly over edge of the bedknife, while the gauge bar contacts the front roller (Fig. 10).

   Note: The rear roller does not have to contact the gauge bar.

5. Adjust the second screw to contact the bedknife. Move the rear roller up, if needed.

6. Place an angle indicator on the gauge bar and record the gauge bar angle (Fig. 10).



(Fig. 9)

1. Bedknife angle

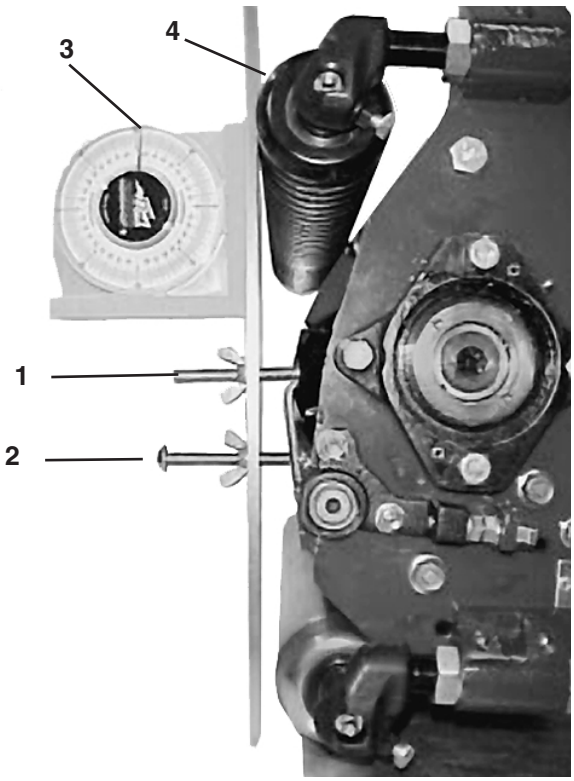


Figure 10

1. First screw
2. Second screw
3. Gauge bar angle
4. Front Roller

7. Adjust the front roller to your desired cutting unit attitude:

Bedknife Angle (step 2)

– Gauge Bar Angle (step 6)

= Cutting Unit Attitude (degrees)

Note: Moving the front roller down will decrease cutting unit attitude, while moving the front roller up will increase cutting unit attitude (Fig. 10).

Leveling the Front Roller

IMPORTANT: Toro strongly recommends the use of a leveling plate when setting up or adjusting any reel-type cutting unit. The leveling plate will help to ensure accurate and consistent adjustments. Contact your local Toro Distributor to order a leveling plate.

1. Position the cutting unit on a flat surface.

2. Position a 25 mm or thicker bar (for higher heights of cut) under the reel blades and against the cutting edge of the bedknife. Make sure the bar covers the full length of the reel blades.

3. Rock the cutting unit forward (on the reel blades and steel bar) until the front roller contacts the flat surface. The reel blades and bedknife must maintain contact with the bar. The rear roller should not contact the surface (Fig. 11).

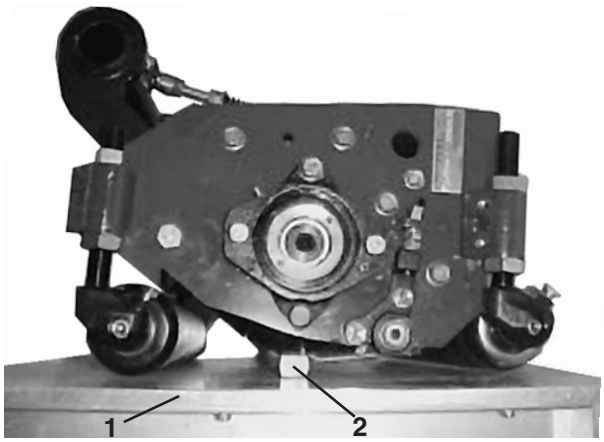


Figure 11

1. Flat surface
2. Bar stock

4. Use a piece of newspaper or visually check to see if any gap exists between the front roller ends and the flat surface (Fig. 12). If needed, adjust the front height-of-cut rods until both ends of the roller are incontact with the level surface.

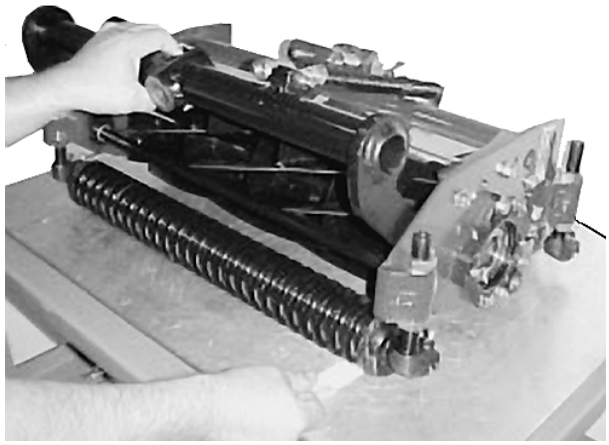


Figure 12

Note: If leveling the front roller causes the cutting unit attitude to be different from side to side by more than one degree, you may need to regrind the reel and/or bedknife to eliminate uneven wear.

Finalizing Height of Cut

1. Place the gauge bar acreoss the cutting unit's front and rear rollers as shown in Figure 13

.2. Adjust the rear roller until it contacts the gauge bar on both sides (fig. 13).

Note: Make sure the bauge bar is in contact with the front roller at all times to keep desired height of cut.

3. Slide the gauge bar toward the end of the cutting unit to remove it. The gauge bar can now be used to set the remaining cutting units on the machine.

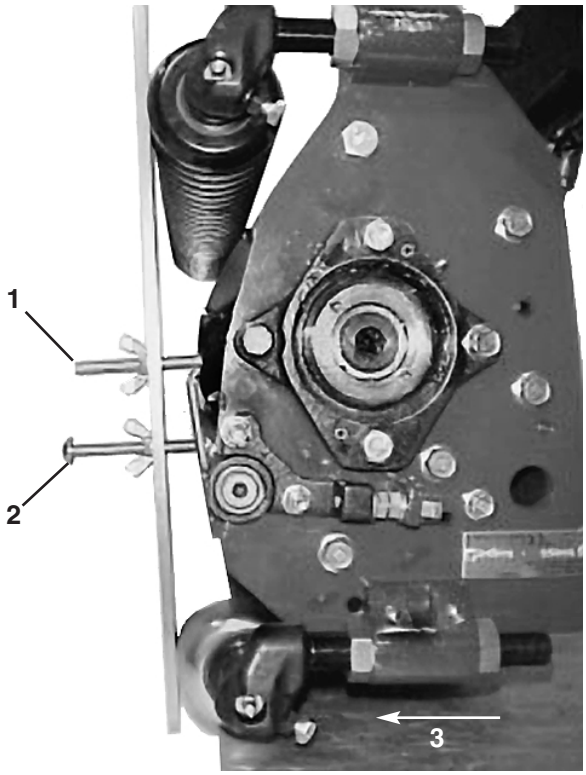


Figure 13

1. First screw
2. Second screw
3. Adjust the rear roller

Maintenance

Backlapping Reelmaster 5500 Traction Units

DANGER

POTENTIAL HAZARD
Reels may stall while backlapping.

WHAT CAN HAPPEN
Reels may restart. Contact with rotating reels will cause serious injury.

HOW TO AVOID THE HAZARD
- Do not attempt to restart reels by hand or touch reels while backlapping.
- Stop the engine and turn the height-of-cut knob one position toward “1”.

Note: When backlapping, the front units all operate together, and the rear units operate together.

1. Position the machine on a level surface, lower the cutting units, stop the engine, engage the parking brake, and move the Enable/Disable switch to the Disable position.

2. Unlock and raise the seat to expose controls.

3. Locate the reel speed selector knobs and backlap knobs (Fig. 14). Rotate the desired backlap knob(s) to the backlap position and the desired reel speed selector knob(s) to position “1.”

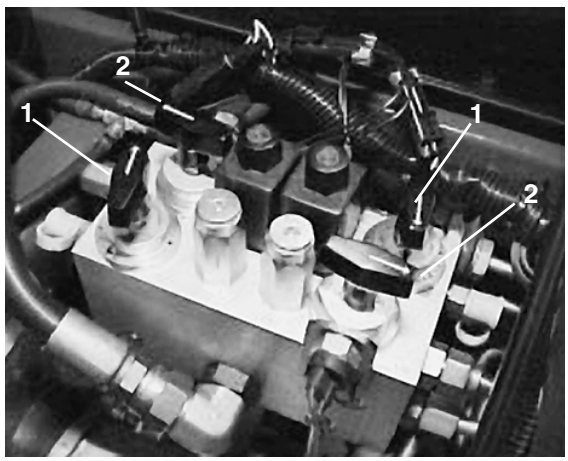


Figure 14
1. Reel speed selector knobs
2. Backlap knobs

Note: Backlapping speed may be increased by moving the height-of-cut selection knob toward “13”. Each position will increase speed approximately 60 rpm. After changing selector, wait 30 seconds for the system to respond to the new speed target.

4. Make initial reel-to-bedknife adjustments appropriate for backlapping on all cutting units that are to be backlapped.

5. Start the engine and run it at idle speed.

DANGER

POTENTIAL HAZARD
Changing engine speed while backlapping may cause reels to stall.

WHAT CAN HAPPEN
Reels may restart. Contact with rotating reels will cause serious injury.

HOW TO AVOID THE HAZARD
- Never place hands or feet in reel area while engine is running.
- Never change engine speed while backlapping.
- Only backlap at idle engine speed.
- Never attempt to turn reels by hand or foot while engine is running.

6. Select either the front or rear on the backlap switch to backlap either the front or rear reels.

DANGER: To avoid personal injury, be certain that you are clear of the cutting units before proceeding.

7. Move the Enable/Disable switch to the Enable position. Move the Lower Mow/Lift control forward to start backlapping operation on designated reels.

8. Apply lapping compound with a long-handle

brush (Toro Part No. 29-9100). Never use a short handled brush (Fig. 15).

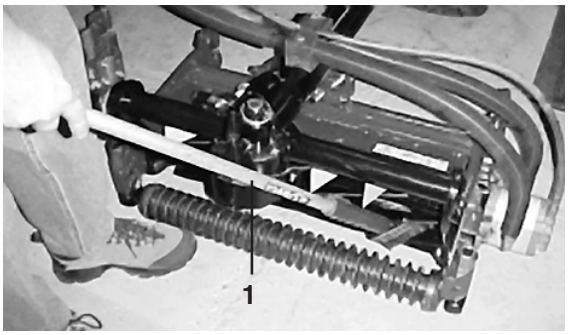


Figure 15
1. Long-handle brush

9. If reels stall or become erratic while backlapping, the reel control light will begin to blink and the reels will turn off. If this occurs, turn the height-of-cut selection knob one position closer to “A’. Then, toggle the Enable/Disable switch to the disable position followed by the enable position. To resume backlapping, move the Lower Mow/Lift control lever forward.

9. If reels stall or become erratic while backlapping, stop backlapping by moving the Lower Mow/Lift control lever rearward. Once the reels have stopped, move the desired reel speed selector knob(s) one position closer to “13.” Resume backlapping by moving the Lower Mow/Lift control lever forward.

10. To make an adjustment to the cutting units while backlapping, turn reels OFF by moving the Lower Mow/Raise lever rearward; move the Enable/Disable switch to Disable and turn the engine OFF. After adjustments have been completed, repeat steps 5–9.

11. Backlap until the reels can cut paper.

Note: When the cutting unit is adequately sharpened, a burr will form on the front edge of the knife. Using a file, carefully remove the burr without dulling the cutting edge (Fig. 16).

12. Repeat the procedure for all cutting units to be backlapped.

13. When backlap operation has been completed, return the backlap knobs to the forward flow position, lower the seat and wash all lapping compound off the cutting units. Make the reel-to-bedknife adjustment as often as needed.

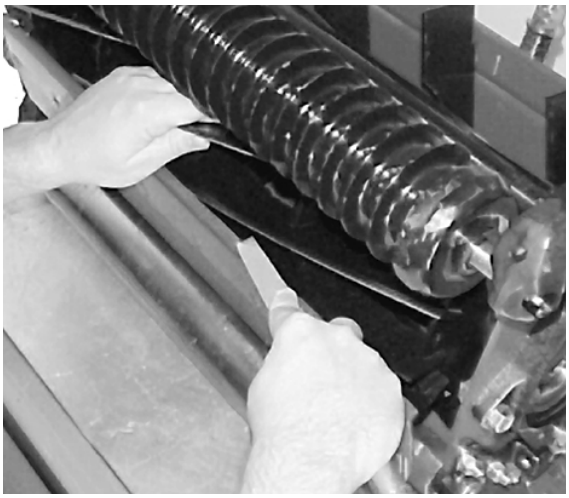


Figure 16

Important: If the backlap knobs are not returned to the forward flow position after backlapping, the cutting units will not raise or function properly.

Backlapping Reelmaster 6000 Traction Units

DANGER

POTENTIAL HAZARD
Reels may stall while backlapping.

WHAT CAN HAPPEN
Reels may restart. Contact with rotating reels will cause serious injury.

HOW TO AVOID THE HAZARD
- Do not attempt to restart reels by hand or touch reels while backlapping.
- Stop the engine and turn the height-of-cut knob one position toward “1”.

Note: When backlapping, the front units all operate together, and the rear units operate together.

1. Position the machine on a level surface, lower the cutting units, stop the engine, engage the parking brake, and move the Enable/Disable switch to the Disable position.

2. Unlock and raise the seat to expose the controls.

3. Open the control cover and turn the height-of-cut selection knob to position “P” (Fig. 17).

   Note: Backlapping speed may be increased by moving the height-of-cut selection knob toward to “A”. Each position will increase speed 60 rpm. After changing selector, wait 30 seconds for the system to respond to the new speed target.

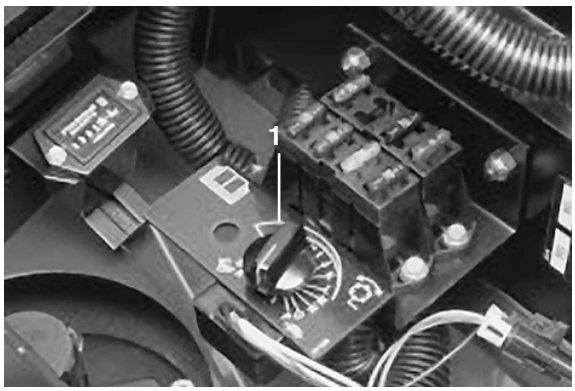


Figure 17
1. Height-of-cut selection knob

4. Make initial reel-to-bedknife adjustments appropriate for backlapping on all cutting units that are to be backlapped.

5. Start the engine and run it at idle speed.

DANGER

POTENTIAL HAZARD
Changing engine speed while backlapping may cause reels to stall.

WHAT CAN HAPPEN
Reels may restart. Contact with rotating reels will cause serious injury.

HOW TO AVOID THE HAZARD
- Never place hands or feet in reel area while engine is running.
- Never change engine speed while backlapping.
- Only backlap at idle engine speed.
- Never attempt to turn reels by hand or foot while engine is running.

6. Select either the front or rear on the backlap switch to determine whether front or rear reels will be backlapped.

7. Move the Enable/Disable switch to the Enable position. Move the Lower Mow/Lift control forward to start back-lapping operation on designated reels.

8. Apply lapping compound with the long-handle brush supplied with the machine (Toro Part No. 29-9100). Never use a short-handle brush.

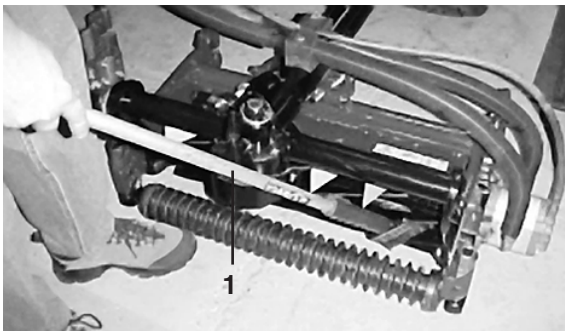


Figure 18

1. Long-handle brush

9. If the reels stall or become erratic while backlapping, the reel control light will begin to blink and the reels will turn off. If this occurs, turn the height-of-cut. selection knob one position closer to “A”. Then, toggle the Enable/Disable switch to the Disable position followed by the Enable position. To resume backlapping, move the Lower Mow/Lift control lever forward.

10. To make an adjustment to the cutting units while backlapping, turn the reels OFF by moving the Lower Mow/Raise lever rearward; move the Enable/Disable switch to Disable and turn the engine OFF. After adjustments have been completed, repeat steps 5–9.

11. Repeat this procedure for all cutting units to be backlapped.

11. Backlap until the reels can cut paper.

Note: When the cutting unit is adequately sharpened, a burr will form on the front edge of the knife. Using a file, carefully remove the burr without dulling the cutting edge (Fig. 19).

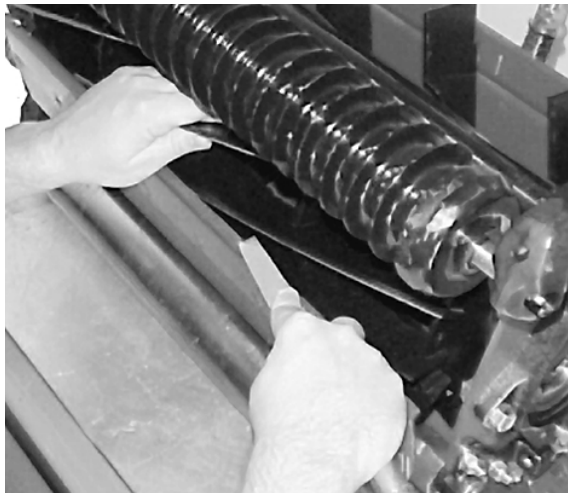


Figure 19

12. Repeat the procedure for all cutting units to be backlapped.

13. When backlap operation has been completed, return the backlap switch to OFF, lower the seat and wash all lapping compound off the cutting units. Make the reel-to-bedknife adjustment as often as needed.

Important: If the backlap switch is not returned to the OFF position after backlapping, the cutting units will not raise or function properly.

Lubrication

Each cutting unit has (7) grease fittings (Fig. 20) that must be lubricated regularly with No. 2 General Purpose Lithium Base Grease.

The lubrication points are front roller (2), rear roller (2), reel bearing (2) and bedknife adjuster.

IMPORTANT. Lubricating cutting units immediately after washing helps purge water out of bearings and increases bearing life.

1. Wipe each grease fitting with a clean cloth.

2. Apply grease until pressure is felt against the handle.

   Note: Apply grease to reel-bearing cavities until a small amount is evident at the inboard reel seal.

3. Wipe away excess grease.

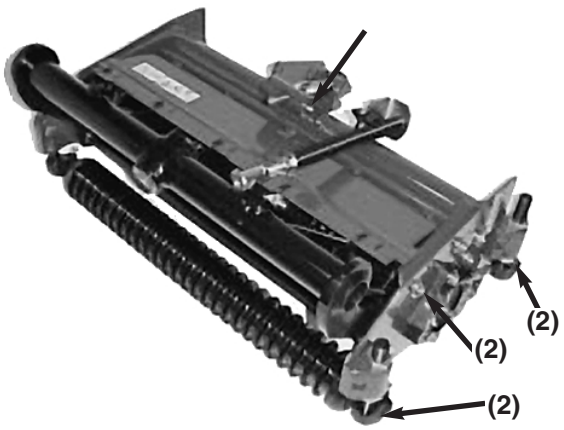


Figure 20

Reel Bearing Adjustment

To insure long life of the reel bearings, periodically check if reel end play exits. The reel bearings can be checked and adjusted as follows:

Note: The bearing and bearing housing were preset at the factory as indicated with a paint mark.

1. Loosen reel-to-bedknife contact by turning the bedknife adjusting knob (Fig. 21) counter -clockwise until no contact exists.

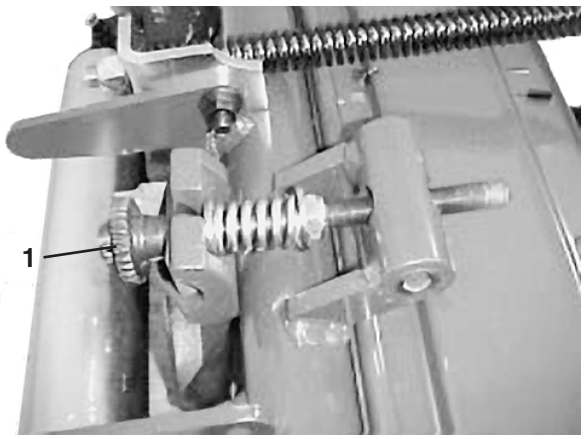


Figure 21
1. Bedknife adjusting knob

2. Hold on to the reel shaft and try to move the reel assembly side to side (Fig. 22).

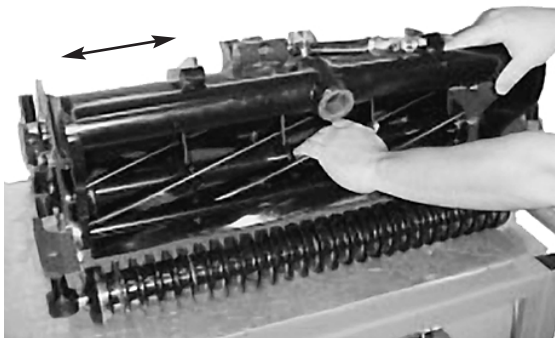


Figure 22

3. If end play exists, proceeded as follows:

   A. Loosen the set screw securing the bearing adjusting nut to the bearing housing located on the left side of the cutting unit (Fig. 23).

   B. Using a spanner wrench, slowly tighten the reel bearing adjustment nut until no end play of the reel exists. If the adjusting nut does not eliminate reel end play, replace the reel bearings.

   Note: Reel bearings do not require pre-load. Over tightening the reel bearing adjuster nut will damage the reel bearings.

   C. Retighten the set screw securing the

bearing adjusting nut to the bearing housing.

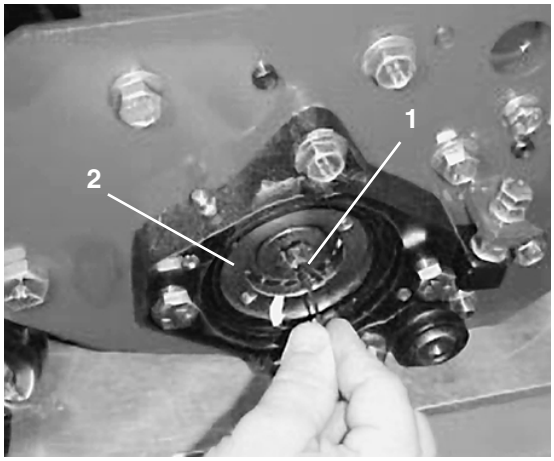


Figure 23
1. Set screw
2. Bearing adjusting nut

Single-Point Spring Adjustment

If the single-point adjustment assembly (Fig. 24) is removed for servicing, make sure the spring is compressed to a length of 1.25” (32 mm). This adjustment is attained by tightening the nut on knob shaft.

Note: The single point adjustment assembly has left-handed threads.

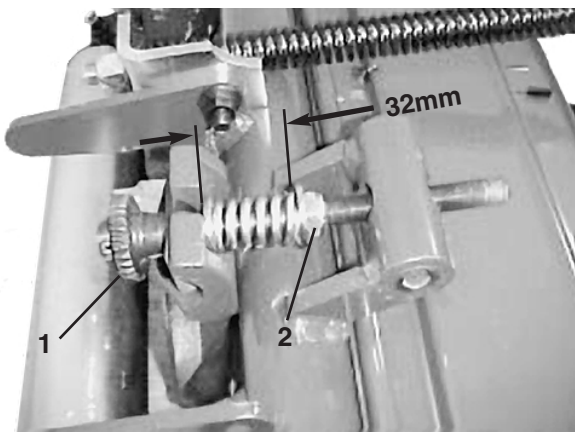


Figure 24
1. Single-point adjust assembly
2. Adjusting nut


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