

## OPERATORS MANUAL & PARTS LIST

#### TURF EQUIPMENT

OMC-LINCOLN P.O. BOX 82409 LINCOLN, NEBRASKA 68501



MODELS 544829 544830 544831

# REN-O-THIN POWER RAKE

250-584-GP

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#### **MODEL DESIGNATION**

REN-O-THIN II Power Rake 544829
REN-O-THIN III Power Rake 544830
REN-O-THIN IV Power Rake 544831

#### **SPECIFICATIONS**

Models	Ren-O-Thin II 544829	Ren-O-Thin III 544830	Ren-O-Thin IV 544831						
ENGINE	4 H.P., 4 cycle Briggs & Stratton, No. 100232, 3600 RPM governor no load, recoil starter.	4 H.P., 4 cycle Briggs & Stratton, No. 100232, 3600 RPM governor no load, recoil starter.	7 H.P., 4 cycle Briggs & Stratton, No. 170432, 3600 RPM governor no load, recoil starter.						
СLUТСН	Spring loaded belt tightener type belt stretching.	e. Remotely-controlled deadman	clutch provides safety and allows for						
CHASSIS	Formed steel 11 gauge plate, we	elded construction.							
DRIVE	Single "A" section belt from engine to reel.	Single "A" section belt from engine to reel.	Dual "A" section belts from engine to reel.						
AXLES	½" diameter bolted to housing.								
REDUCTION	Engine to reel — 1.33:1.								
WHEELS	Four smooth tread semi-pneumatic tires. 8 x 1.75	Four smooth tread semi-pneumatic tires. Front $-8 \times 1.75$ Rear $-10 \times 1.75$							
WHEEL BASE	15 11/16" at level position.								
REEL SPEED	2700 R.P.M.								
BLADES	Reversible. Made from high carl	oon steel and hardened, hardfacir	ng along edges.						
CUTTING WIDTH	18 inches								
CUTTING DEPTH	Adjustable range of 1 3/8" (3/8" above ground to 1" into ground)	Adjustable range of 1 7/8". (1"	above ground to 7/8" into ground.)						
WEIGHT (Less Reel)	98 lbs.	109 lbs.	126 lbs.						

#### SAFETY

THE PURPOSE OF SAFETY SYMBOLS IS TO ATTRACT YOUR ATTENTION TO POSSIBLE DANGERS. THE SYMBOLS, AND THE EXPLANATIONS WITH THEM, DESERVE YOUR CAREFUL ATTENTION AND UNDERSTANDING, SAFETY WARNINGS DO NOT BY THEMSELVES ELIMINATE ANY DANGER: THE INSTRUCTIONS OR WARNINGS THEY GIVE ARE NOT SUBSTITUTES FOR PROPER ACCIDENT PREVENTION MEASURES.



SAFETY WARNING: FAILURE TO OBEY A SAFETY WARNING MAY RESULT IN INJURY TO YOU OR OTHERS.



NOTE: ADVISES YOU OF INFORMATION OR INSTRUCTIONS VITAL TO THE OPERATION OR MAINTENANCE OF YOUR EQUIPMENT.

#### INTRODUCTION

The Ryan Ren-O-Thin is a precision-made tool. With proper care, it will give many years of service. Follow the Operating and Service Instructions for best performance and long life.

#### SETUP INSTRUCTIONS

#### **POWER RAKE**

Remove machine and parts from packing box and inspect for possible shipping damage. You should have the following items:

- 1. Pre-assembled machine.
- 2. Deflector guard and hinge rod.
- 3. Upper and lower handle sections.
- 4. Loose hardware bag.
- 5. Reel assembly if ordered with machine.



NOTE: DO NOT ADD GAS OR OIL BEFORE INSTALLATION OF REEL.



Figure 1

#### **REEL INSTALLATION**

- Remove belt guards and tilt machine back to expose underside.
- Loosen or remove reel clamps and set reel assembly into place. Bearing guides will provide correct alignment. See figs. 1 & 2.
- Replace reel clamps and tighten securely. Do not overtighten.
- 4. Check reel to insure free rotation.

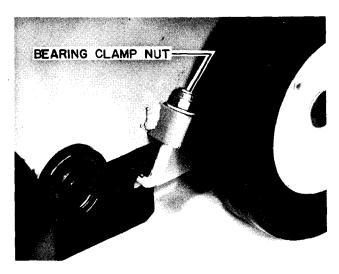


Figure 2

#### PULLEY AND BELT INSTALLATION

- Insert Woodruff key into reel shaft and tap gently into place.
- Check set screws in pulley to make sure they do not protrude inside pulley.
- 3. Place pulley hub out, on shaft and tap into place.
- 4. Check reel pulley alignment with engine pulley, using a straightedge, and when correct secure set screws.
- 5. Check upper pulley to make sure setscrews are secure.
- Install belt or belts as shown in diagram on side of machine.
- 7. Replace belt guards.



SAFETY WARNING: DO NOT OPERATE THE MACHINE WITHOUT BELT GUARDS IN PLACE. THEY PROVIDE PROTECTION AGAINST FINGERS, CLOTHING, ETC., FROM BECOMING ENTANGLED IN THE BELT DRIVE SYSTEM.

#### **DEFLECTOR GUARD INSTALLATION**

(This guard not needed if catcher is to be used.)



SAFETY WARNING: THE DEFLECTOR GUARD IS AN IMPORTANT SAFETY FEATURE OF THIS MACHINE. NEVER OPERATE THE MACHINE WITHOUT THE GUARD IN PLACE.

- 1. Place guard in position on machine and align with holes. See fig. 3. (next page)
- 2. Insert hinge rod and install locknut. Tighten nuts so guard is free to move up and down. On units with large rear wheels you may need to remove one rear wheel to insert hinge rod.

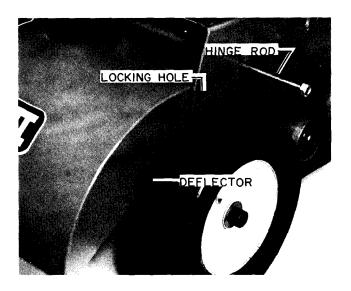


Figure 3

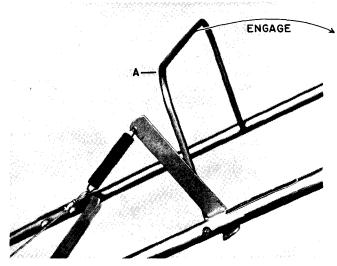


Figure 4

#### HANDLE ASSEMBLY AND MOUNTING

- Assemble upper and lower handle sections, using the four bolts and locknuts supplied.
- 2. Mount the handle on the machine by placing it on pins at chassis center and secure with hairpin clips.
- Connect control cable spring to control cable with offset spring end clipped to the arm on the bail control. (Fig. 4)
- 4. Place clips over cable at extreme lower end of handle.

The Power Rake is now set up. Do not operate machine without referring to the operating instructions.



NOTE: MACHINE IS SHIPPED WITH WHEELS MOUNTED IN THE LOWEST POSITION POSSIBLE FOR PACKING. FOR OPERATIONS IN MOST CONDITIONS, THE 10" WHEELS SHOULD BE MOUNTED IN THE CENTER HOLE. 8" WHEELS SHOULD BE MOUNTED IN BOTTOM HOLE.

#### **CONTROLS**

A. Bail Control - engages or releases drive belt.

To engage reel — stand behind handlebar. Pull bail control back to handlebar and hold. Do not run reel when machine is not moving. To stop reel — release bail control.



SAFETY WARNING: THE BAIL CONTROL IS SPECIFICALLY DESIGNED TO REQUIRE POSITIVE ACTION BY THE OPERATOR TO KEEP DRIVE BELT ENGAGED. DO NOT CLAMP OR FASTEN BAIL CONTROL TO HANDLE DURING OPERATION.

B. Throttle Control lever — (Ren-O-Thin IV) Controls engine speed (fig. 5). Engine speed is preset on all other models.

C. Engine shut-off switch. (Fig. 5)

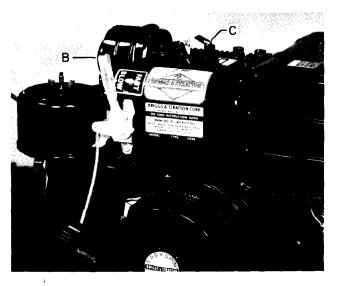


Figure 5

#### OPERATING INSTRUCTIONS



SAFETY WARNING: DO NOT OPERATE MACHINE WITHOUT GUARDS OR CATCHER IN PLACE. DO NOT MAKE ANY ADJUST-MENTS WITH ENGINE RUNNING.

#### PRE-OPERATION CHECK

Before operation visually check all moving parts and all fasteners. Be sure the reel is not obstructed and turns freely. Inspect reel for bent, broken or missing blades.



SAFETY WARNING: NEVER OPERATE MACHINE WITH REEL BLADES CRACKED, BADLY BENT, PARTIALLY MISSING OR IN ANY ABNORMAL CONDITION.

Make all passes across turf at uniform speed. Do not stop forward travel to make turns without disengaging reel.

When operating machine, it should be in motion before reel is engaged to prevent bogging of the engine or unnecessary damage to turf. This is especially important in thick, lush turf.

Reel should be disengaged at the end of each pass across the area being raked. This prevents any damage to turf when turning the machine around in one spot.

If engine bogs down when going through an extra thick patch of turf, etc., push the handle down slightly. This will lift the reel out of the turf allowing it to resume normal speed.

Be sure to overlap each row raked to insure a clean job. The end of the locking lever makes a handy reference guide for overlapping.



SAFETY WARNING: DO NOT GO OVER A SIDEWALK OR ANY OBSTRUCTIONS WITH REEL ENGAGED.



SAFETY WARNING: THE MACHINE IS NOT SELF-PROPELLED BY A MECHANICAL DRIVE SYSTEM. HOWEVER, UNDER MANY CONDITIONS REEL ROTATION MAY CAUSE THE UNIT TO MOVE UNDER ITS OWN POWER. THIS IS ESPECIALLY IMPORTANT TO REMEMBER IF UP-MILLING, AS MACHINE MAY TEND TO MOVE ITSELF TOWARD OPERATOR.

#### Depth Adjustments - Ren-O-Thin II (Fig. 6)

- 1. Make first depth adjustment on hard, level surface.
- Start with blades 1/8" above surface Further adjust to local turf conditions.
- To adjust, loosen front wheel locking levers start on engine side.
- 4. Lock wheel locking levers securely after adjustment.
- 5. Each number on decal changes depth 1/8".
- Rear wheels should be raised (lowering blade), or lowered (raising blade) only if proper depth cannot be obtained by adjusting front wheels.

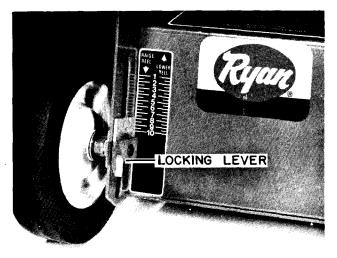


Figure 6

#### Depth Adjustments - Ren-O-Thin III & IV (Fig. 7)

- 1. Make first depth adjustment on hard, level surface.
- Start with blades 1/8" above surface Further adjust to local turf conditions.
- Loosen front wheel locking levers, slide to top of slot. Lock securely.
- 4. Loosen "T" screw two turns.
- Turning height adjusting knob clockwise raises blades
   -counterwise lowers blades,
- 6. At desired setting tighten "T" screw.
- 7. Under most conditions the locking levers can be left at the top of the slots. In cases where extremely smooth or level turf is being raked, you may want to lower the locking levers and secure the axle. (Fig. 7) Axle must be locked in position if up-milling.
- 8. Each number on decal changes depth 1/8".
- Rear wheels should be raised (lowering blade), or lowered (raising blade) only if proper depth cannot be obtained by adjusting front wheels.

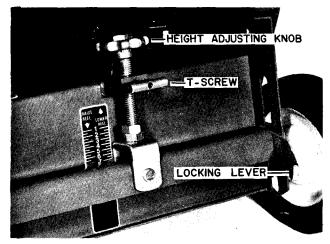


Figure 7

#### **STARTING INSTRUCTIONS**

Engine should be checked and serviced as per manufacturers instructions in engine manual supplied with your Ren-O-Thin Power Rake.

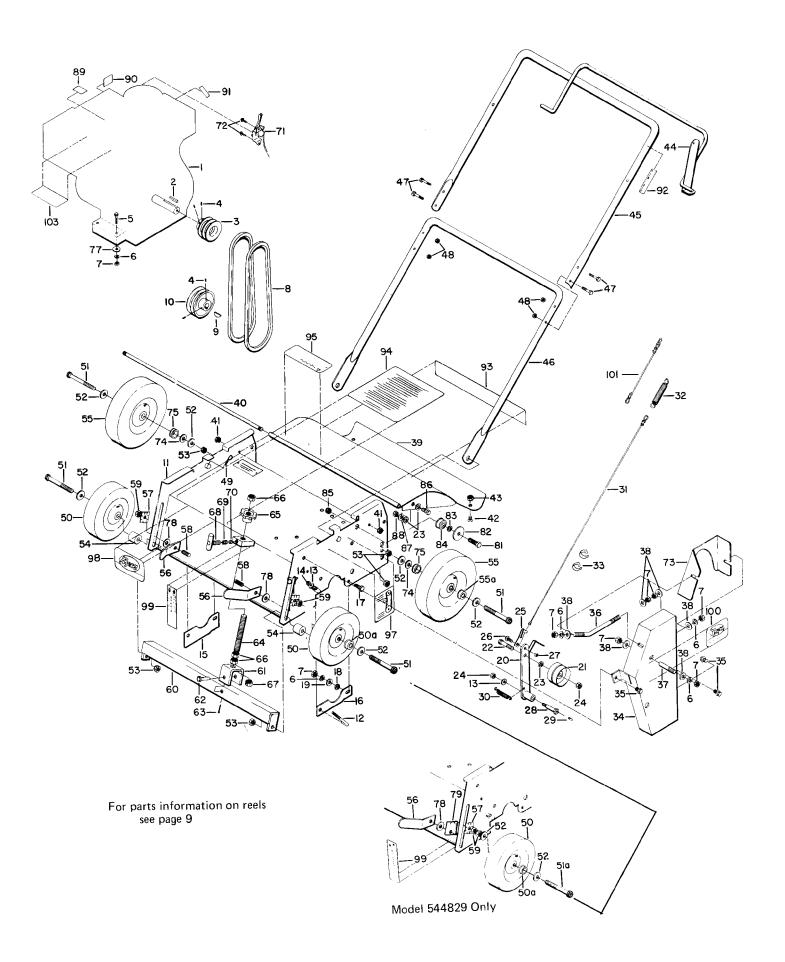
Always use clean fresh gasoline and check oil level in crankcase before each operation. Fill if necessary. Follow recommendations of engine manufacturer for type of oil. Do not mix gasoline and oil.

 Fill fuel tank with a good grade of leaded regular gasoline with a pump-posted octane number of not less than 86.

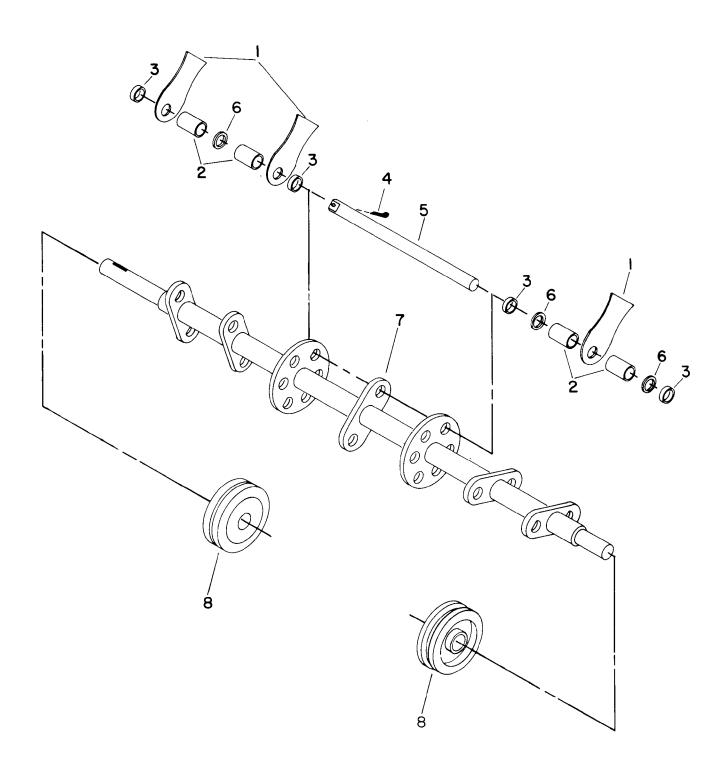


SAFETY WARNING: GASOLINE IS EXTREMELY FLAMMABLE AND HIGHLY EXPLOSIVE UNDER CERTAIN CONDITIONS. ALWAYS STOP ENGINE AND DO NOT SMOKE OR ALLOW OPEN FLAMES OR SPARKS WHEN REFUELING.

- Stand on right side of machine. Do not place foot on rear guard.
- 3. Start machine Choke as required.

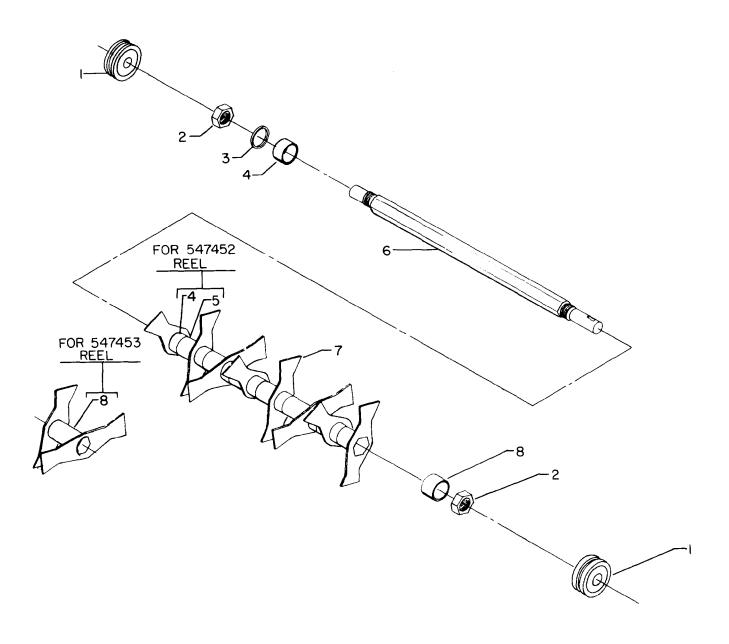


No.				itity R						ntity R	leq'd
Ref. N	Part No.	Description	Model 544829	Model 544830	Model 544831	Ref. No.	Part No.	Description	Model 544829	Model 544830	Model 544831
1	548280 548290	Engine B & S 4 H.P Engine B & S 7 H.P	1	1	1	52	548157	Washer, Flat ½	<b></b>	6	6
2		Key – SQ 3/16 x ¾ Key – SQ ¼ x 1"	1	1	1	53	308332	1	4	6	6
3	517099 517097	Pulley	1	1	1	54 55	520875 547437	Spacer   Wheel Ass'y 10" x 2.75		2	2 2
4	548201	Screw-Set 5/16-N.C	4	4 4	4	55A 56	520982 520881	1 -	2	4 2	4 2
5	306501 306423		4	Ì	4	57 58	520892 548992		2	2	2
6 7	306932	Washer—Lock 5/16 Spring Nut, 5/16 N.C.	9 12	9 12	9 12	59	306933	Cup point Nut—Jam ½ N.C	6	2	2 2
8	548997 548996		1	1	1	60 61	547463 520874			1	1 1
9	306367 517137	Key-Woodruff 3/16 Pulley	1 1	1	1	62 63	520876 304635	Pin, Clevis ½	,	1	1
11	517139 547460	PulleyChassis W.A. (non-float)	1		1	64	520880	Stud-Adj. Screw (5/8 N.C.)		1	1
12	547461 519043	Chassis W.A	2	1 2	1 2	65 66	517174 200652	Nut, Jam 5/8 N.C	!   	3	3
13	548155	Washer Flat 5/16	3	3	3	67 68	548072 547446	Screw-Locking Ass'y		1 1	1 1
14		(3/8 x 7/8 x 3/32) Nut Lock 3/8 N.F. Reg	2	2	2	69 70	548991 520939	, ,		1	1
15 16		Clamp R.H Clamp L.H	1	1	1	71 72	547442 548020	1	}		1
17 18		Bolt 5/16 N.C. x 7/8 Bushing	2	2	2			Type A Pan Hd			2
19 20	548154	Washer-Flat ¼ (5/16x¾ Std.) Arm—Idler W.A.	2	2	2	73 74	515889	Guard-Belt Inner Spacer	1	1 2	1 2
21	520870	Pulley-Idler Flat	1	1	1	75 77		Seal, V-Ring	4	2	2 4
22 23	548164	Bolt 3/8 NC x 1¾ Washer—Flat 3/8	1 5	1 5	1 5	78		Spacer	2 or ás	2 or as	2 or as
24 25		Nut Lock 3/8 N.C Bar—Cable Clip	2 1	2	2 1	79	E20003	Washer-Gauging	Req'd.	Req'd.	Reg'd.
26 27		Bolt ¼ N.C. x ¾ Truss Hd . Nut ¼ N.C	1 1	1	1	81	311393	Bolt ½ N.C. x 1¼	2	1	1
28 29	520864	Bolt-Shoulder 3/8 N.C Fitting Grease	1 1	1	1	82		Washer Flat ½ x 2" O.C. x .104		1	1
30 31	548995	Spring Extension	1	1	1	83	548167	Washer Flat ½ x ¾ x 1/32 Fiber		1	1
32	548994	Cable Ass'y Spring Extension	1	1	1	84 85	520982 548076	Brg. – Ball Nut Lock ½ N.C		1	1 1
33 34	547467	Clip-Handle Guard W.A.—Belt	2 1	2	2 1	86 87		Bolt 3/8 N.C. x ¾		2 2	2 2
35 36		Bolt 5/16 N.C. x ½ Wiz Rod-Belt Guide	3	3	3	88	306562	Nut 3/8 N.C. R 4-10		2	2
37 38	520902	Rod-Belt Stop Washer Flat 5/16 SAE	1 6	1 6	1 6	89 90	520909 520914	Decal — Throttle	1	1	1 1
39	547458	Guard W.A	1	1	1	91 92	520910   520912		1 1	1 1	1
40 41		Rod-hinge Nut-Lock 5/16 N.C	1 2	2	2	93	520915	Decal — Ren-O-Thin II, Power Rake R 4-10	1		
42	548961	Screw-¼ N.C. x ½" Rd Hd (Nylon)	2	2	2		520916	Decal — Ren-O-Thin III Power Rake R 4-10		1	
43 44		Nut-¼ N.C. (Nylong) Bail Control W.A	2 1	2	2 1		520917	Decal — Ren-O-Thin IV Power Rake R 4-10		,	1
45 46	520868	Bar Handle (lower)	1	1	1	94	520925	Decal — Instructions II ·	1		
47	303459	Bolt ¼ N.C. × 1½	4	4	4	95	520926 520908	Decal - Warning	1	1	1
48   49	548190	Nut Lock ¼ N.C Pin–Hair 3/32 x 1¾	4 2	4   2	4 2	97 98	520935 520576	Decal — Ryan	1	1 1	1
50 50A		Wheel Ass'y 8" x 1.75 Brg. — Ball	4 8	2 4	2 4	99 100	520913 520575	Decal — Ht. Adj Decal — Ryan	2 1	1 1	1
51 51	548990 548947	, -	2	4	4	1	547447 520948	Cable Upmill Ass'y Decal — Warning Gasoline	1	1	1 1
		Bolt ½ N.C. x 3 Soc. Hd	2				320346	Decar — warning dasonne		'	



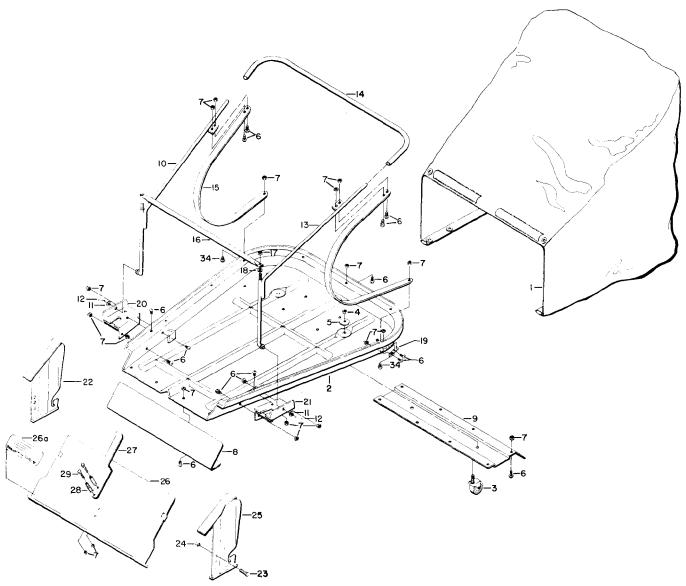
#### FLAIL REEL

Ref. No.	Part No.	Description	No. Req'd.	Ref. No.	Part No.	Description	No. Req′d.
1 2 3	544440 516897 517163 517162 306956	Blade Spacer Spacer	18 24 24 6	6 7	548163 546377	Shaft Washer Shaft Pillow Block	6 18 1 2



#### FIXED REELS

Ref. No.	Part No.	Description	547452 1/16"	547453 1/32"	Ref. No.	Part No.	Description	547452 1/16"	547453 1/32"
3	305134 548176 516903	Pillow Block	2 2 1 13 12	2 2 1 1	6 7 or 8	516900 516901	Shaft	13	1 25 25



#### **CATCHER**

Ref. No.	Part No.	Description	Qty. Req'd.	Ref. No.	Part No.	Description	Qty. Req'd.
} 	544836	Catcher Ass'y	1	17	548048	Nut, Lock 5/16 — 18 NC	2
1	520975	Catcher Bag	1	18	316952	Washer 5/16 (21/64 I.D. x 9/16	
2	520972	Base, Catcher	1	ļ		O.D.)	2
3	520949	Caster	2	19	520995	Angle support	2
4	548804	Nut, 3/8 - 16 NC Whizlock	2	20	547470	Bracket, Lock R.H	1
5	520976	Washer, 25/64 x 1 5/8 x 16 GA	2	21	547469	Bracket, Lock L.H	1
6	548734	Bolt, Truss HD. ¼ x ½	39	22	547473	Plate, Mounting Ass'y R.H	1
7	548597	Nut, Lock ¼	43	23	548692	Bolt, ½ - 13 NC x 1" Whizlock	2
8	520970	Deflector, Catcher	1	24	308332	Nut, ½ – 13 NC	2
9	520968	Channel, Support	1	25	547474	Plate, Mounting Ass'y L.H	1
10	547471	Frame R.H	1	26	547477	Guard, Ass'y Catcher	1
11	548164	Washer, Flat 3/8 S.A.E	2	26a	520961	Decal, Warning	1
12	306328	Pin, Cotter 3/32 x 3/4	2	27	520960	Guide Bar	1
13	547472	Frame L.H	1	28	518474	Spring	2
14	520958	Tube, Frame	1	29	303459	, , ,	2
15	520964	Spring, Catcher	2	34	548735		2
16	520956	Tube, Guide	1				

#### UP-MILLING (Ren-O-Thin III & IV)

Some machines are equipped with special control accessories to allow up-milling. In order to up-mill the following operations are necessary:

- 1. Handle must be moved to front of machine.
- 2. Cable roller must be installed.
- Control cable must be looped under cable roller. (See figure 8) and clipped to bail control with cable extension attached.
- 4. If necessary, the deflector guard may be locked in an elevated position, by aligning hole in side of deflector with hole in chassis (See figure 3) and securing with 3/8 x ¾ bolts and nuts provided.
- 5. Lock axle in place.

All parts necessary for the up-milling operation are included in the loose hardware kit if applicable to your particular machine.

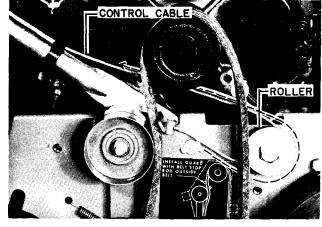
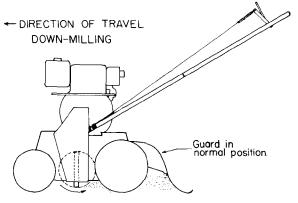
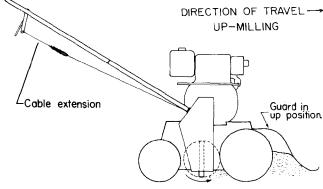


Figure 8





#### REPLACING BLADES ON SOLID BLADE REELS

To replace worn or damaged blades or to change to a different blade and spacer combination, proceed as follows:

- 1. Remove entire reel from chassis.
- Remove bearing on end of shaft opposite pulley, by loosening set screw in bearing collar. Turn collar on shaft about a quarter turn with small punch. This relieves cam action of collar and allows bearing to be removed freely.
- Hold shaft and remove nut. Blades are now readily removable.
- 4. Remove blades and replace as desired. When assembling the different reel combinations, it is important to start with a spacer.
- 5. Tighten the reel nut securely to prevent the blades from coming loose.

Blades worn on one cutting face may simply be reversed and used again.

#### REPLACING BLADES ON FLAIL REELS

- 1. Camp assembly in a vise.
- 2. Remove cotter pin from blade shafts.
- Slide blade shaft out from opposite end of cotter pin hale
- Replace necessary blades or other worn parts one shaft at a time.



SAFETY WARNING: WHEN REPLACING ANY BOLT, SCREW OR OTHER FASTENER, USE ONLY ORIGINAL EQUIPMENT REPLACEMENT PARTS OR PARTS OF EQUIVALENT STRENGTH AND MATERIAL TO INSURE COMPLIANCE WITH SAFETY SPECIFICATIONS.

#### SERVICE INSTRUCTIONS

Reel and crankshaft bearings are factory sealed and require no lubrication. Grease fittings are provided on the idler bearing and wheels. Lubricate lightly every 25 hours of service.

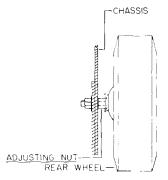
Belt Tension — The belt adjustment on your power rake is automatically controlled. No manual adjustment is necessary when using proper belts.



NOTE: IN MACHINES WITH DUAL BELT DRIVES, EXACTLY MATCHED BELTS MUST BE USED FOR CORRECT OPERATION. IF ONE BELT NEEDS REPLACEMENT, YOU MUST REPLACE BOTH. (Order part no. 548997).



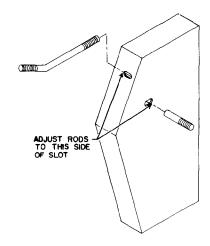
NOTE: WHEN INSTALLING REAR WHEEL, USE CARE TO INSURE THE ADJUSTING NUT ILLUSTRATED IS NOT TIGHTENED AGAINST THE WHEEL BEARING AND SEAL. CHECK TO INSURE FREE WHEEL MOVEMENT AFTER REPLACING WHEEL ASSEMBLY.



#### **GUARD ROD ADJUSTMENT**

The two rods in the belt guard serve as important parts of your power rake. The long rod helps to prevent the belt from coming off the pulley. The small rod is for the belt to contact when the bail control is released. This acts as a brake for the reel to insure that it stops quickly.

It is important, therefore, that correct adjustment be made after removing the belt guards for any reason. The adjustment is very simple and requires only that both rods be positioned at the end of their particular slots as shown.

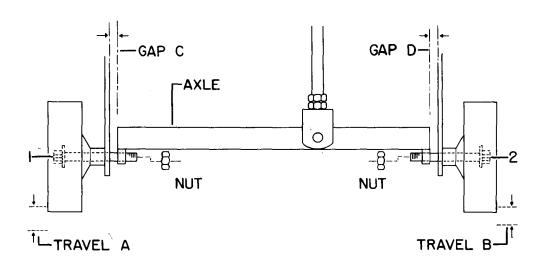


### FLOATING FRONT END CORRECT ADJUSTMENT PROCEDURE

In order to get the best use of the floating front end on your power rake, it is important that the correct adjustment be maintained. Adjustment should be checked after removal of any component part. Reassembly should be as listed below:

- 1. With axle in horizontal position, tighten bolt No. 2 until you begin to reduce gap "D".
- 2. Tighten bolt No. 1 finger tight. (Gaps "C" and "D" should not have changed.)
- 3. Bolt No. 1 should be backed off 1/3 turn.
- 4. Bolt No. 2 should be backed off 1/4 turn.
- 5. Lock bolts Nos. 1 and 2 in position with jam nuts.
- 6. Travel "A" should be approximately 1-1/4".
- 7. Travel "B" should be approximately 7/8".

The difference in length of travel is to allow for the off-center axle pivot location.



#### WARRANTY

The Manufacturer warrants all parts of equipment shipped under this agreement for ninety (90) days from date of purchase thereof, against defective material and/or workmanship but not against damage caused by accident, abuse or faulty operation. Normal wear items, i.e., tines, cutting blades, etc., are not warranted unless the Manufacturer deems them defective. The Manufacturer will repair or replace free of charge, f.o.b. factory, all defective parts returned to the factory, freight prepaid. The Manufacturer's liability for damage caused by

such defective parts shall be limited to such repair or replacement and in no event shall the Manufacturer be liable, without his consent for indirect or consequential damage or labor performed by any dealer.

**OMC**—**LINCOLN**, a division of Outboard Marine Corporation, reserves the right to make design and specification changes, additions and improvements, in its products without notice and without incurring obligation to install them on units already manufactured.