Form No. 3325–346

Dethatcher Kit

for Reelmaster® 5100/5300D

Model No. 03516—210000001 & Up

Operator’s Manual

CE

Original Instructions (EN/GB)

Safety and Instruction Decals

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



67-7960

Specifications

Note: Specifications and design are subject to change without notice.

Reel Construction	Blades and spacers bolted to hex shaft.
Height of Dethatching Range	1/8” below turf to 1–3/16” above turf.
Reel Diameter	5 in.
Power	Hydraulic motor splined to reel shaft.
Reel Bearings	Self aligning, roller ball type with cast housing and eccentric collar lock with setscrew.
Roller adjustment	Front–Fixed Rear–Screw adjustable with bolt clamp lock.

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Adjusting Dethatching Reel

Important Read this Operator's Manual thoroughly before operating the dethatching unit. Failure to do so may result in damage to the dethatching reel.

Note: The dethatching reel is shipped completely assembled. Two capscrews, two lockwashers, and two washers shipped loose with each dethatching unit are used to mount the reel drive motor to the dethatching unit. Retain these fasteners for later installation.

Adjusting Reel Blades For Positive Setting (Above Ground) (Fig. 1)

Note: Rear height of cut brackets are mounted to rear frame assembly.

1. Place the dethatcher reel on a level surface.
2. Loosen the (2) locknuts on carriage bolts securing rear roller brackets to dethatcher frame (Fig. 1).
3. Place a gauge bar, which has the desired height of blade above ground, under both ends of the dethatcher reel blades. Be sure bar covers full length of dethatcher reel blades.

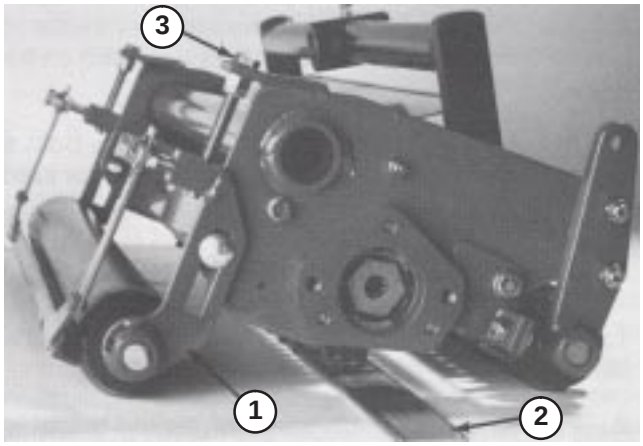

Figure 1

1. Rear roller brackets
2. Gauge bar
3. Adjusting screw

4. Turn the adjusting capscrew on each side of the dethatcher reel so that the rear roller bracket raises or lowers. Both front and rear rollers must be in contact with the flat surface and the reel blades must rest on the gauge bar.
5. Retighten the locknuts on the carriage bolts (2).

Adjusting Dethatcher Reel Blades For Negative Setting (Below ground)(Fig. 2)

Note: Maximum negative setting is 1/8" deep blade penetration.

1. Place the dethatcher reel on a level surface.
2. Loosen the (2) locknuts on carriage bolts securing rear roller brackets to dethatcher frame (Fig. 2).
3. Place (2) gauge bars, which have the desired depth of blade penetration below ground, under the front and rear rollers of the dethatcher reel (Fig. 2).

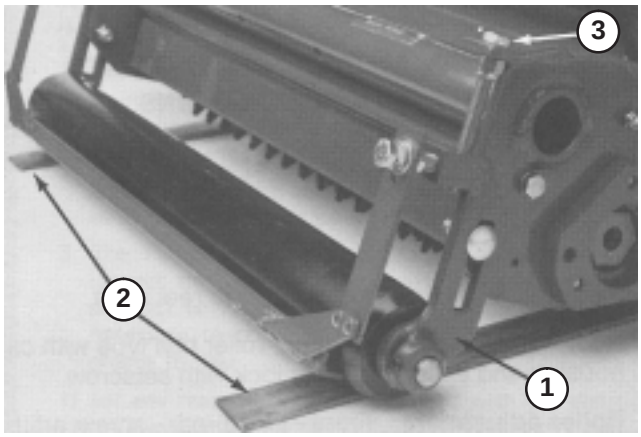

Figure 2

1. Rear roller brackets
2. Gauge bar
3. Adjusting screw

4. Turn the adjusting capscrew so the dethatcher reel blades come in contact with the level surface on both ends.
5. Retighten the (2) locknuts on the carriage bolts securing the rear roller brackets to the dethatcher frame.

Adjusting Front Grass Shield

(Fig. 3)

1. Loosen the (2) capscrews retaining the front grass shield (Fig.3).
2. Pull top of front grass shield to desired height and tighten (2) capscrews.
3. Rotate the dethatcher blades to insure the blades do not contact or interfere with the front grass shield.

Note: As the dethatcher blades wear, the diameter of the reel will decrease, and the positive or negative setting will change. Check the height setting periodically to insure the desired setting is achieved.

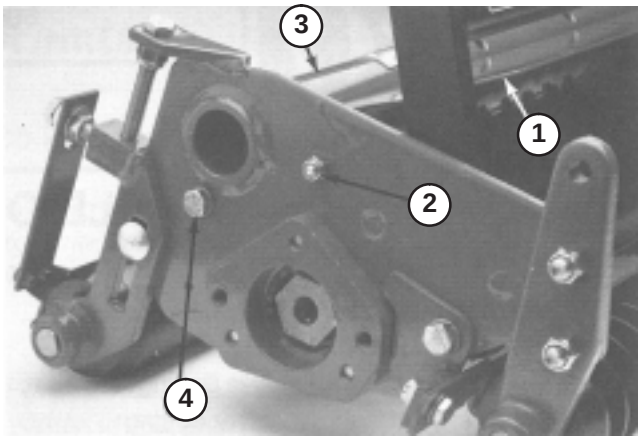

Figure 3

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

Adjusting Rear Grass Shield

(Fig. 3)

Note: When operating in turf conditions where much debris is encountered, or unusually heavy thatch, open the rear discharge shield to help allow the debris to discharge from the reel.

1. Loosen the capscrew on the right side of the dethatcher reel, located on the pivot of the rear grass shield (Fig. 3).
2. Rotate the rear grass shield to the desired setting and tighten the capscrew.

Adjusting Front Roller Scraper

(Fig. 4)

1. Loosen the (2) capscrews securing front roller scraper to brackets. Slide front roller scraper to ensure the teeth of scraper are centered between the disks of the front wiehle roller (Fig. 4).

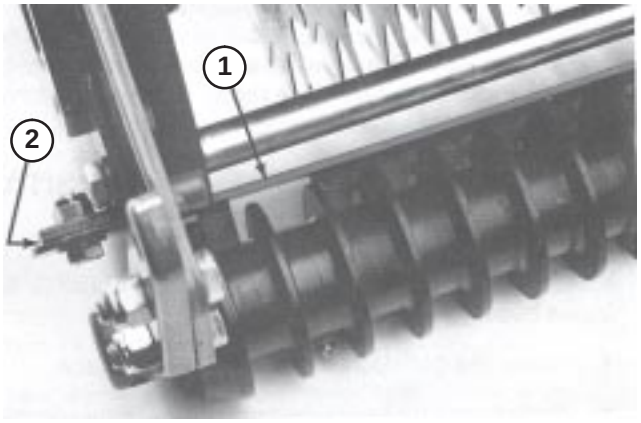

Figure 4

1. Front roller scraper
2. Roller bracket

2. Retighten capscrews securing roller scraper to front roller scraper brackets.

Adjusting Rear Roller Scraper

(Fig. 5)

1. Thread jam nuts in or out on capscrews until scraper makes slight contact with roller and is parallel to roller.

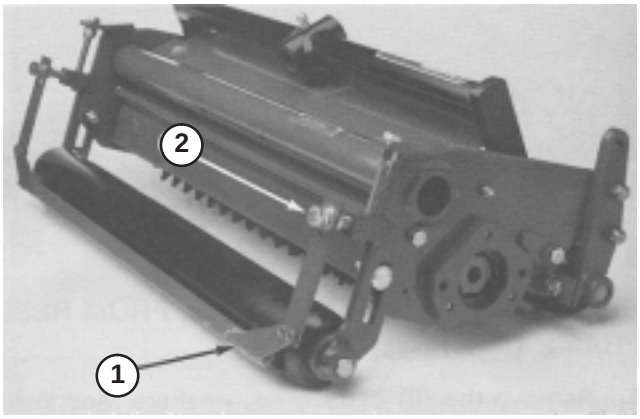

Figure 5

1. Rear roller scraper
2. Jam nuts

2. Secure scraper at desired height on roller by tightening jam nuts. Recheck setting.

Note: Adjust scraper to desired position to meet turf conditions.

Installing Dethatcher Reels

(Fig. 6–7)

Important If the dethatcher reels are set at a negative setting care must be taken to prevent damage to the reel blades due to contact with a concrete floor or a paved surface.

Note: All dethatcher reels are interchangeable, therefore, they are all installed the same way.

1. Park the machine on a level surface, lower lift arms, stop engine and set parking brake.
2. Align the horizontal shaft of the dethatching unit attaching joint with the pivot tube on the carrier frame. Insert the attaching joint into the tube (Fig. 6).
3. Secure shaft in pivot tube with a thrust washer, flatwasher, lockwasher and capscrew.

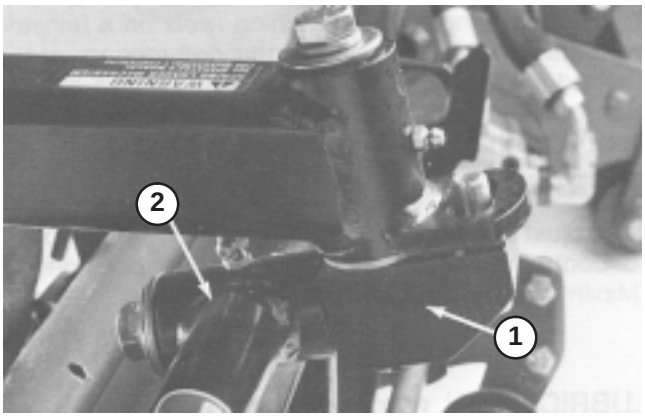

Figure 6

1. Cutting unit mounting shaft
2. Carrier frame pivot tube

4. Assemble the mounting capscrews, lockwashers and washers for the reel drive motor to each dethatching unit (Fig. 7). Leave approximately 1/2” of threads exposed on each mounting bolt.

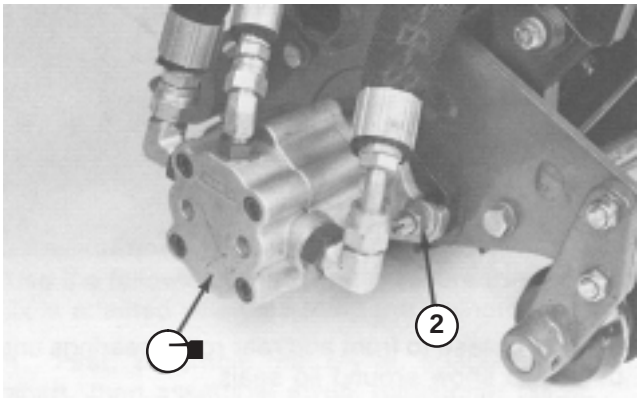

Figure 7

1. Reel drive motor
2. Mounting capscrews

5. Coat the spline shaft of the motor with clean grease and install the motor by rotating the motor clockwise so the motor flanges clear the capscrews. Rotate the motor counterclockwise until the flanges encircle the capscrews and tighten the capscrews. Ensure the washers are against the capscrew heads.
6. Detach chain from lift arm and secure it to cross tube on each rear dethatching unit with a capscrew, flatwasher and locknut.

Important Make sure all hydraulic hoses are routed away from dethatching unit so when dethatching unit pivots excessive rubbing does not occur.

Operation

Training Period

Before operating the dethatching reels on a fairway, evaluate the performance of the dethatchers at the desired setting. Operate in a clear, unused area to determine if the desired results will be achieved. Adjust the dethatchers if a change is desired.

Operating Tips

1. Adjust the (2) reel speed controls on the hydraulic control block beneath the seat to position 11. (Maximum reel speed)
2. Operate the traction unit at full throttle and between 3–5 MPH.
3. Maximum negative setting on the dethatcher blades is 1/8” deep penetration.
4. Power requirements to operate the dethatcher units will vary with turf and soil conditions. Travel speed may need to be reduced in some conditions.

Maintenance

Lubrication (Fig. 8–9)

There are (7) grease fittings on each dethatching unit, which must be lubricated after every 15 hours of operation. Lubricate using a #2 multipurpose lithium base grease. A hand operated grease gun is recommended for best results.

1. Wipe each grease fitting with a clean rag.
2. Apply grease to reel bearings until pressure is felt against handle.

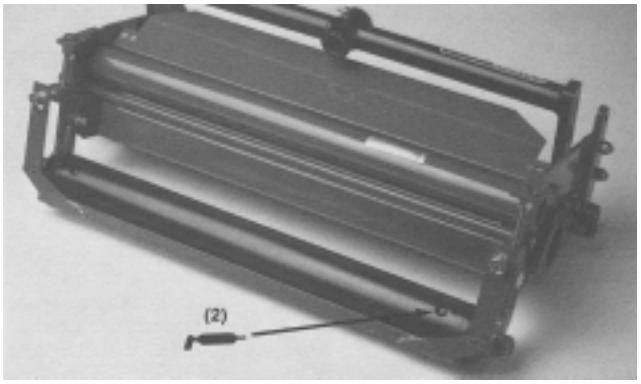

Figure 8

3. Apply grease to front and rear roller bearings until it begins to show around lip seals.

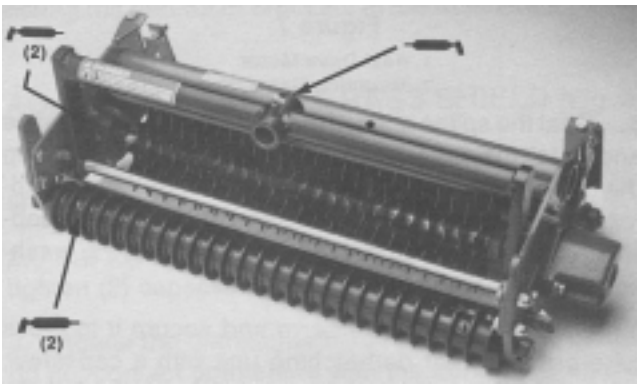

Figure 9

Important Do not apply too much pressure or grease seals will be permanently damaged.

4. Apply grease to carrier frame grease fitting after assembly to traction unit and thereafter every 15 hours.
5. Wipe excess grease away.

Removing Dethatcher Reel From Reel Frame (Fig. 10–11)

1. Remove the (2) capscrews, washers, and lockwashers from the end cap weight on the opposite end of the dethatcher reel from the driven end. Remove the end cap weight.
2. Remove the (2) capscrews, washers, and lockwashers from the reel motor. Remove the reel motor.
3. Remove the (3) capscrews, washers, and lockwashers from the non–driven end of the dethatcher unit. Remove the end bearing plate and carefully remove the plastic bearing debris seal. Remove the (3) capscrews, washers, and lockwashers from the driven end of the unit. Remove the end bearing plate and carefully remove the other plastic bearing debris seal (Fig. 10).

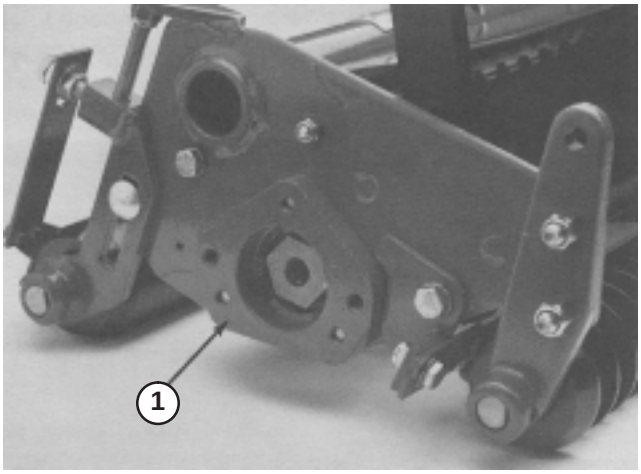

Figure 10

1. Bearing plate 2.

4. Carefully pull the dethatching reel assembly out of the frame along with the (2) reel bearings.
5. Remove the setscrews from the locking collars on the reel bearings.
6. With a drive pin and hammer, loosen the locking collars by driving the locking collar in direction opposite to normal rotation (Fig. 11).

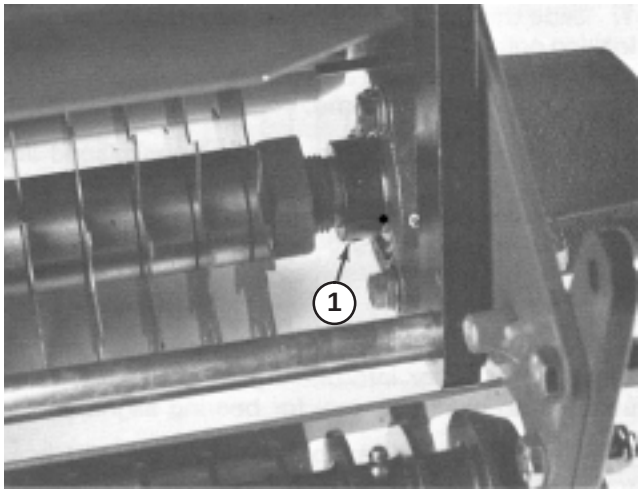

Figure 11

1. Locking collars

7. Slide the bearings off of the dethatcher reel shaft.

Removing Dethatcher Blades From Shaft (Fig. 12)

1. With a 1–11/16 in. wrench on each end of shaft, turn in a counter–clockwise direction.
2. Place the drive end of dethatcher shaft in a vise and secure (Fig. 12).
3. Remove the 1–1/8 in. nut from shaft and disassemble the spacers and dethatching blades.

Important When disassembling blades from hex shaft, pay close attention to the position of the index holes in the blades. This is very important for the reassembly of the blades.

Caution

Use caution when removing blades from shaft as they are extremely sharp and may have burrs that will cut your hands.

4. After blades and spacers are removed, clean and lubricate hex shaft with a light coating of grease to simplify assembly.

Important The two 1/4” spacers must assembled on each end of shaft. Do not invert dethatching reel blades. The order of disassembly is extremely important. Do not invert dethatching reel blades when disassembling or reverse the order when assembling. Note the thatcher blades index hole. The index hole is provided for assembly in order to obtain the PROPER HELIX FOR THE DETHATCHING REEL.

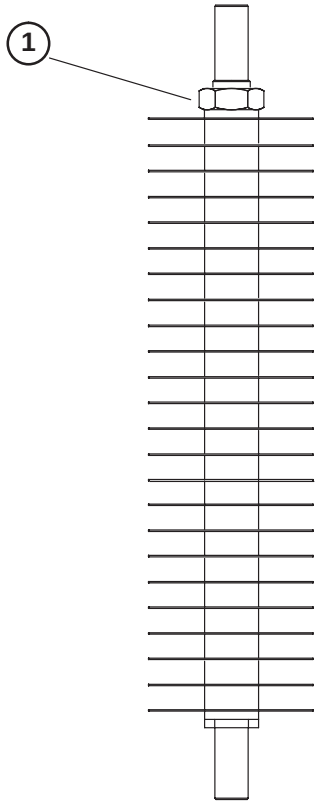

Figure 12

1. 1–1/8” nut 2.

Installing Dethatcher Blades

Use the following procedure to assure the proper helix is attained when installing the dethatcher blades.

1. First, assemble the 1/4 in. spacer on the reel shaft, then assemble a reel dethatcher blade.
2. Next, assemble a 3/4 in. spacer.
3. Do not invert dethatcher reel blades when reassembling on reel shaft. If the blades are inverted, the blades that are in use, (rounded) will be mixed with the sharp ends of the blades which were not in use. This will cause unsatisfactory performance in the dethatcher reel unit. Attention should always be taken when disassembling dethatching blades from reel.
4. Install the next blade counter–clockwise so the index reference hole is not aligned with the first blade hole by one hex of the shaft (Fig. 13). Continue to install spacers and blades in this manner until the full complement of blades have been installed. When properly assembled, the blades will be staggered in such a manner to give a helix appearance.

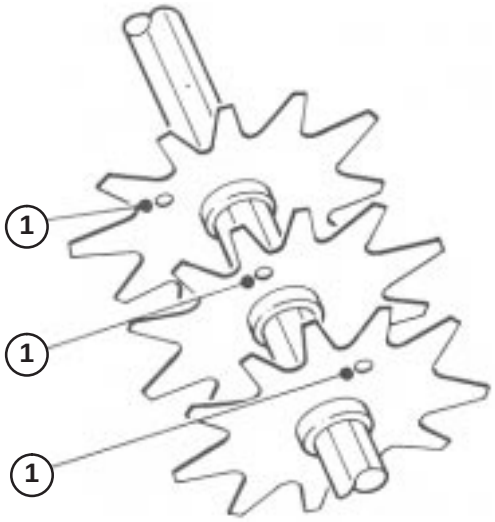

Figure 13

1. Index hole

5. After assembly of the spacers and blades, apply Blue Loctite #242 to the 1–1/8 in. nut and tighten to 80 –100 ft–lb.
6. Check positive or negative reel setting and readjust, if necessary.
7. The spline nut, on driven end, must be torqued to 40–60 ft–lb.

Reversing Dull Dethatcher Blades

When dethatcher blades become dull grinding is not required. The dethatcher blades can be disassembled from the reel, reversed 180_, and reassembled.

Grinding of the blades is only required when both sides of the reel have become dull or rounded.

Reassemble dethatcher blades by inverting them 180_ and reassembling them onto the hex shaft. This will be evident by all the sharp edges of the blades in the direction of rotation.

Check positive or negative reel setting and readjust, if necessary.

Important **Make sure the sharp edge of the blades are in the direction of the rotation of the dethatching unit.**

Assemble Dethatcher Reel Assembly To Frame

1. Slide the reel bearings onto the reel shaft with the locking collars facing inward and not tightened. Orientate the grease fittings on the bearings facing up and forward on the reel frame.
2. After reel shaft assembly has been placed into the frame apply blue loctite #242 unto (6) capscrews before assembly onto (2) outside bearing plates. Install (2) plastic bearing debris seals into opening on side frame before attaching bearing plates to the dethatcher frame.
3. Procure reel motor assembly (75–1400) and assemble reel motor into bearing plate. This is to be used as an assembly tool for bearing alignment.
4. Tighten the (3) capscrews, washers, and lockwashers to 170–220 in–lbs on the driven side of the dethatcher reel assembly with the reel motor acting as pilot for the bearing assembly.
5. Tighten the (3) capscrews, washers, and lockwashers to 170–220 in–lbs on the other end of the reel assembly. Remove reel motor.
6. Position the reel shaft assembly so that the spline nut is .50 inward from the outside surface of the bearing plate (Fig. 14)

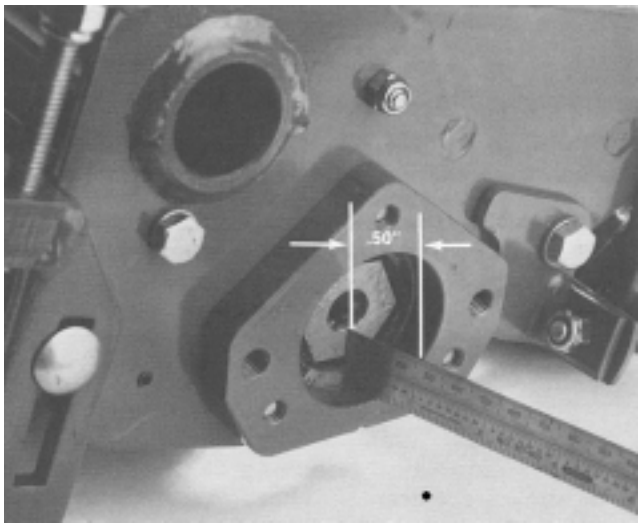

Figure 14

7. Use a drive pin and hammer to tighten the locking collars on the reel shaft bearings. Tighten in direction of rotation. Tighten setscrews (2).

Optional Blade Configurations

The dethatching reel is shipped from the factory with 3/4" spacing between blades. Three additional kits are available for other spacing options if desired. Kits are listed and configurations are shown below.

1/2" spacing, Kit Part No. 82–7000 – Includes (9) Blades (part no. 17–1590) and (66) 1/4" Thick Spacers (part no. 17–1600) (Fig. 15).

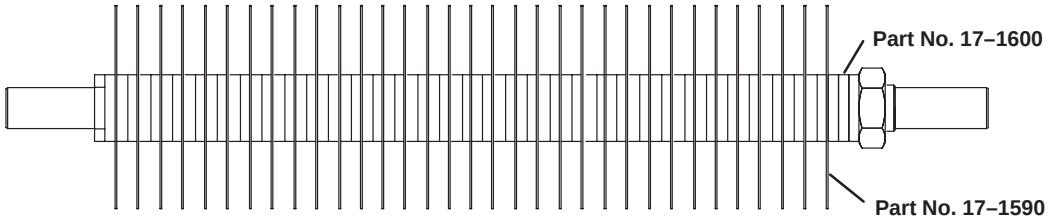

Figure 15

3/4" Spacing, (Standard) – Includes (24) Blades (part no.17–1590) (2) 1/4" Thick Spacers (part no.17–1600) (23) 3/4" Thick Spacers (82–6600) (Fig. 16).

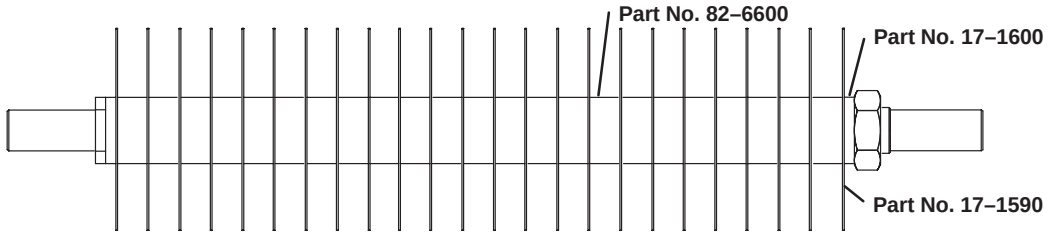

Figure 16

1" spacing, Kit Part No. 82–7001 – Includes (16) 1/4" Thick Spacers (part no.17–1600) (Fig. 17).

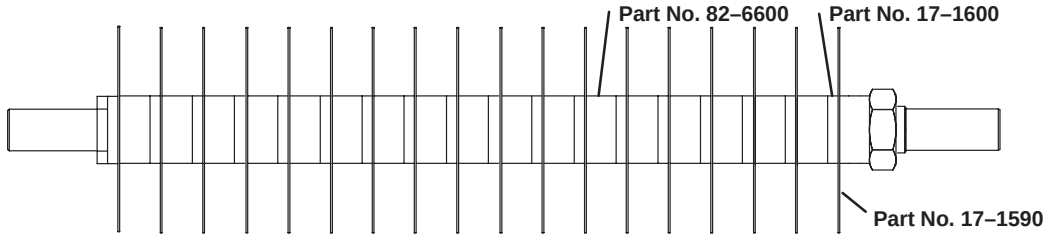

Figure 17

1–1/4" spacing, Kit Part No. 82–7002 – Includes (28) 1/4" Thick Spacers (part no.17–1600) (Fig. 18).

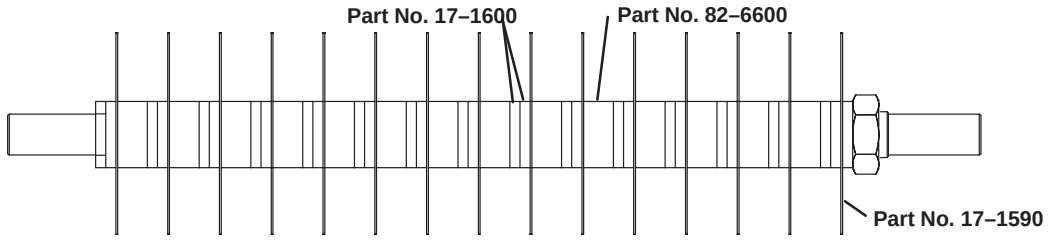

Figure 18

The Toro General Commercial Products Warranty

A Two-Year Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your 1996 or newer Toro Commercial Product ("Product") purchased after January 1, 1997, to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. Where a warrantable condition exists, we 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.

* Product equipped with hour meter

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
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196
952-888-8801 or 800-982-2740
E-mail: commercial.service@toro.com

Owner Responsibilities

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

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This express warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, modified, or unapproved accessories
- Product failures which result from failure to perform required maintenance and/or adjustments
- Product failures which result from operating the Product in an abusive, negligent or reckless manner
- 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.
- 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.
- 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.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part.

Parts replaced under this warranty become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use factory remanufactured parts rather than new parts for some warranty repairs.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. 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 this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note regarding engine warranty: 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) and/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 Engine Emission Control Warranty Statement printed in your operator's manual or contained in the engine manufacturer's documentation for details.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.

Part No. 374-0031 Rev. –