Form No. 3391-569 Rev A

Dethatcher Kit

Greensmaster® 1000

Model No. 04109

Installation Instructions

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

This product complies with all relevant European directives. For details, please see the Declaration of Incorporation (DOI) at the back of this publication.

Removing the Bedbar

1. Position the mower on a flat, level work surface and ensure the engine is off.
2. Remove the high tension lead from the spark plug.
3. Remove the bedbar from the mower. Refer to your *Operator's Manual* for removal instructions.

   Note: Bedbar adjusters may also be removed from the mower side plates.

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8111 Lyndale Avenue South
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CE

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Removing the Reel

1. Remove 4 cap screws, 4 lock washers, and the reel drive cover from the mower (Figure 1).

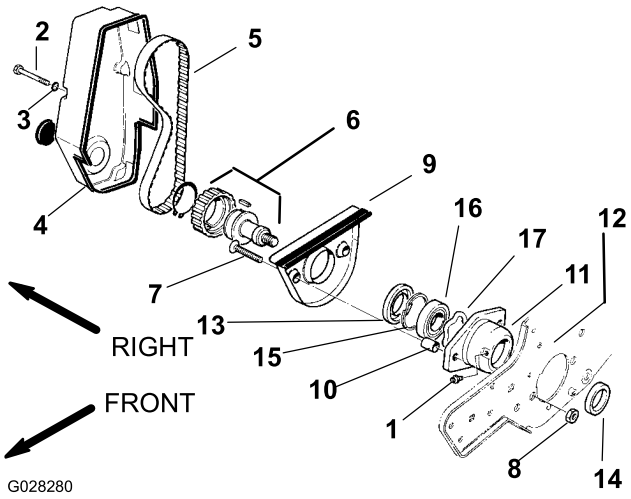


Figure 1

1. Grease fitting
2. Capscrew
3. Lock washer
4. Reel drive cover
5. Reel drive belt
6. Pulley and drive assembly
7. Flathead screw
8. Nut
9. Groomer arm cover
10. Cover standoff
11. Right-hand bearing housing
12. Frame
13. Large seal
14. Small seal
15. Retaining ring
16. Bearing
17. Wave washer

2. Remove the reel drive belt from the pulley and drive assembly (Figure 1).

   Important: Do not disassemble the pulley and drive assembly and retaining ring.

3. Remove both cap screws, locknuts, and the bearing cover from the left bearing housing (Figure 2).

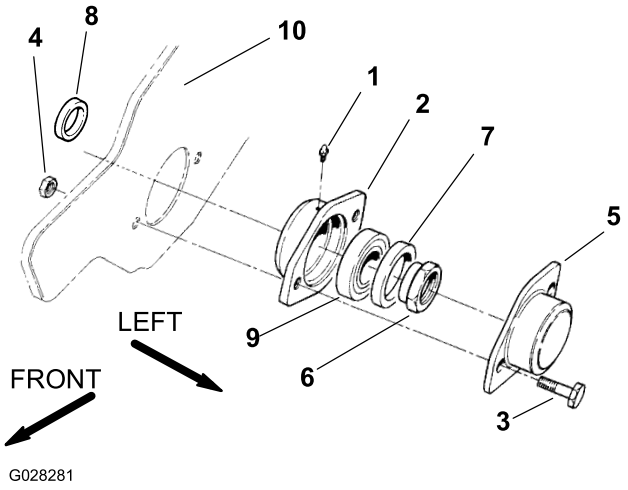


Figure 2

1. Grease fitting
2. Left bearing housing
3. Capscrew
4. Locknut
5. Bearing cover
6. Bearing locknut
7. Large seal
8. Small seal
9. Bearing
10. Frame

4. Use a 1/2 inch square drive in the pulley and drive assembly (Figure 1) to remove the assembly from the reel drive shaft. Remove the bearing locknut (Figure 2) from the reel drive shaft at the same time.
5. Use an Allen wrench to remove both flat head screws, the groomer arm cover, and both cover standoffs from the bearing housing (Figure 1).
6. Remove the grease fittings from both bearing housings (Figure 1 and Figure 2).
7. Pull both bearing housings from the frame and reel (Figure 1 and Figure 2) and remove the reel from the mower.

Installing the New Grass Shield

1. Remove the fasteners securing the grass shield to the mounting brackets and remove the shield.

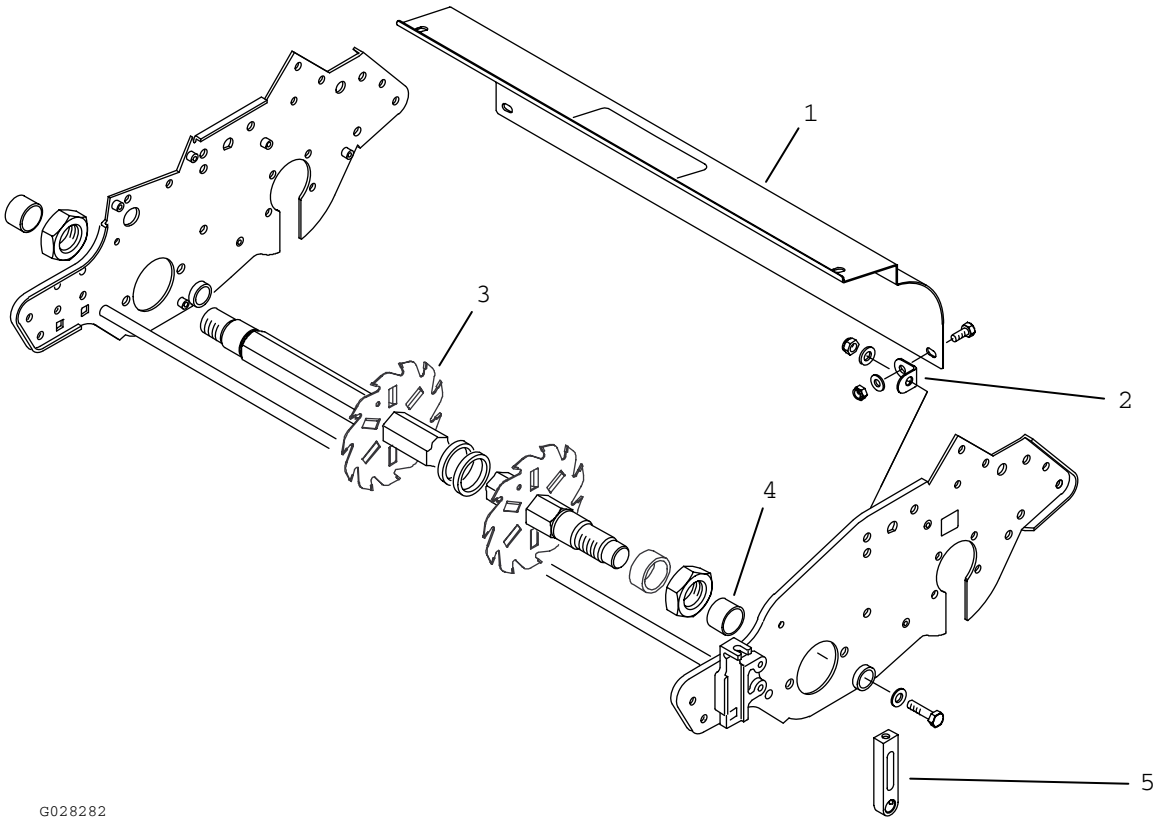


Figure 3

1. Shield
2. Shield bracket
3. Dethatcher assembly
4. Spacer-seal
5. Height-of-cut arm

2. Loosely mount a shield bracket to each end of the new grass shield with a 5/8 inch capscrew, flat washer, and lock nut as shown in Figure 3.
3. Mount the shield brackets to each side plate of the mower through the bedbar pivot hole with a 1–1/4 inch capscrew, 2 flat washers, and a locknut as shown in Figure 3.
4. Using the previously removed fasteners, secure the top of the grass shield to the mounting brackets.
5. Tighten all of the shield fasteners.

Installing the Dethatcher Reel

1. Position the reel in the frame to accept the bearing housings.

   Note: The reel shaft end with the internal threads should be on the right side of the frame.

2. Install a spacer-seal onto each end of the reel shaft (Figure 3).
3. Attach the right-hand bearing housing through the frame onto the reel shaft (Figure 1).
   A. Push the housing onto the reel shaft.

      Note: If necessary, tap it into position with a soft hammer.

   B. Ensure the grease fitting hole is positioned to the front of the mower.
   C. Attach the groomer arm cover to the bearing housing and frame with the 2 flat head screws, cover standoffs, and lock nuts.

4. Attach the left-hand bearing housing through the frame onto the reel shaft (Figure 2).

   A. Push the housing onto the reel shaft.

      Note: If necessary, tap it into position with a soft hammer.

   B. Make sure the grease fitting hole is positioned to the front of the mower.

   C. Align the housing holes to the frame holes with both cap screws and lock nuts.

      Note: Fasteners should be only finger tightened.

5. Tighten the flat head screws and nuts securing the right-hand bearing housing to the frame (Figure 1).
6. While tightening the bearing lock nut (Figure 2) to the reel shaft, tighten the pulley and drive assembly (Figure 1) to the reel shaft at the same time. Torque assembly and nut to 68 N–m (50 ft–lb).
7. Remove both of the capscrews and locknuts holding the left-hand bearing housing to the frame.
8. Position the bearing cover to the housing and secure it to the frame with both capscrews and locknuts (Figure 2).
9. Install the reel drive belt to the pulley and drive assembly.
10. Install the reel drive cover with 4 lock washers and capscrews to the mower (Figure 1).
11. Install the grease fittings onto both bearing housings and lubricate them with general-purpose lithium-based grease (Figure 1 and Figure 2).

Installing the New Height-of-Cut Arms (Model 04052 and 04055)

1. Remove the locknuts securing the height-of-cut arms to the height-of-cut brackets (Figure 4).

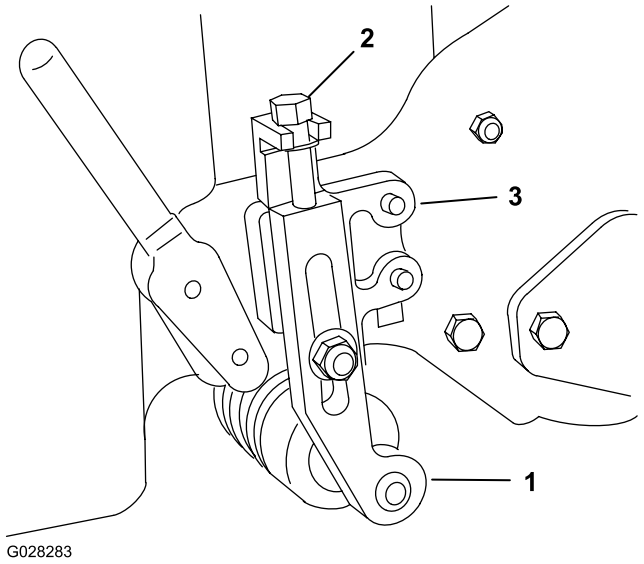


Figure 4

1. Height-of-cut arm
2. Adjusting screw
3. Height-of-cut bracket

2. Remove the height-of-cut arms from the roller.
3. Remove the adjusting screw from the height-of-cut arm (Figure 4).
4. Reverse the procedure to install the new height-of-cut arms.

Operation

Training Period

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

Operating Tips

- Operate the mower at full throttle.
- The maximum negative setting on the dethatcher blades is 16 mm (5/8 inch) deep penetration.
- The power requirements to operate the dethatcher will vary with turf and soil conditions. Speed may need to be reduced in some conditions.

Maintenance

Removing the Blades from the Shaft

1. Remove 1 of the 1–1/8 inch nuts from the shaft.
2. Disassemble the spacers and the dethatching blades from the shaft.

   Note: When disassembling the blades from hex shaft, pay close attention to the position of the index holes in the blades. This is very important for the later assembly of the blades.

⚠ CAUTION

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

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

   Note: The 3/4 inch spacers must be assembled on each end of the shaft. Do not invert individual dethatching reel blades. The order of disassembly is extremely important. Do not invert the 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.

Installing the Dethatcher Blades

1. Assemble a 3/4 inch spacer on the reel shaft, then assemble a reel dethatcher blade.

   Note: Blades should be positioned so that the fins point toward the internal threaded end of the shaft.
2. Assemble 2 spacers (1/4 inch).
3. Install the next blade counter-clockwise so the index reference hole is misaligned with the first blade hole by 1 hex of the shaft (Figure 5). Continue to install the spacers and blades in this manner until the full complement of blades have been installed.

   Note: When properly assembled, the blades will be staggered in such a manner to give a helix appearance.

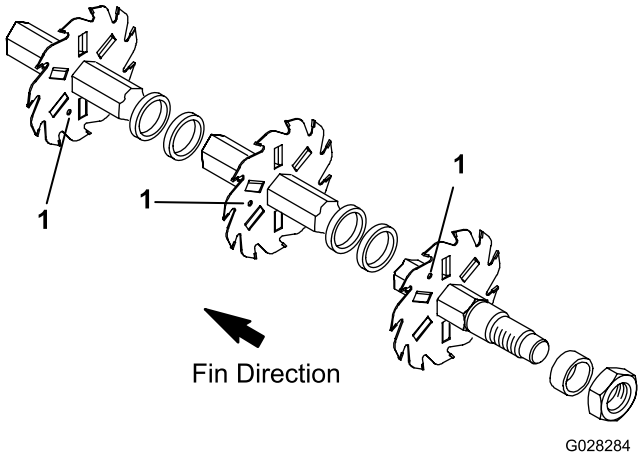


Figure 5

1. Index reference hole

4. Apply blue Loctite #242 to the 1–1/8 inch nut and tighten it to 108 to 135 N-m (80 to 100 ft–lb).

Installing the Optional Dethatcher Blades

1. Assemble a 1/4 inch spacer on the reel shaft, then assemble a reel dethatcher blade.
2. Assemble 2 spacers (1/4 inch).
3. Install the next blade counter-clockwise so that the index reference hole is misaligned with the first blade hole by 1 hex of the shaft (Figure 6). Continue to install spacers and blades in this manner until the full complement of blades have been installed.

   Note: When properly assembled, the blades will be staggered in such a manner to give a helix appearance.

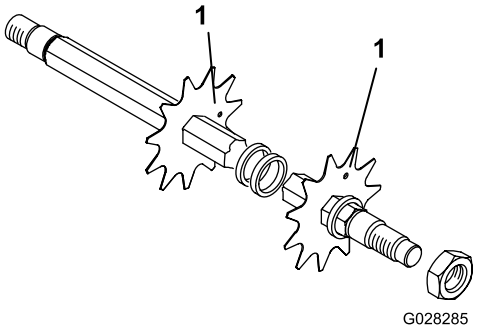


Figure 6

1. Index reference holes

4. Apply blue Loctite #242 to the 1–1/8 inch nut and tighten it to 108 to 135 N-m (80 to 100 ft–lb).

Reversing Dull Blades (Optional Blades Only)

When the optional dethatcher blades become dull, grinding is not required to sharpen them. The optional dethatcher blades can be disassembled from the reel, reversed 180° and reassembled.

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

Assemble the dethatcher blades by inverting all of them 180° and following the steps in Installing the Optional Dethatcher Blades (page 5).

Important: Make sure the sharp edges of the blades are in the direction of the rotation of the dethatching unit.

Declaration of Incorporation

Model No.	Serial No.	Product Description	Invoice Description	General Description	Directive
04109	—	Dethatcher Kit, Greensmaster 1000	DETHATCHING KIT - DYNABLADE GR 1000	Dethatching Kit	2006/42/EC

Relevant technical documentation has been compiled as required per Part B of Annex VII of 2006/42/EC.

We will undertake to transmit, in response to requests by national authorities, relevant information on this partly completed machinery. The method of transmission shall be electronic transmittal.

This machinery shall not be put into service until incorporated into approved Toro models as indicated on the associated Declaration of Conformity and in accordance with all instructions, whereby it can be declared in conformity with all relevant Directives.

Certified:



David Klis
Sr. Engineering Manager
8111 Lyndale Ave. South
Bloomington, MN 55420, USA
October 24, 2014

EU Technical Contact:

Peter Tetteroo
Toro Europe NV
B-2260 Oevel-Westerloo
Belgium

Tel. 0032 14 562960
Fax 0032 14 581911



Count on it.