Form No. 3406-400 Rev A

Rear Roller Brush and Groomer Kit

Reelmaster® 3550 Series 18-inch Cutting Unit

Model No. 03917

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.

Loose Parts

Use the chart below to verify that all parts have been shipped.

Description	Qty.	Use
No parts required	–	Gather the items required for installation.
No parts required	–	Determine the position of the roller brush and the reel motor.
Roller-brush housing	5	Install the roller brush.
Hex-socket-head bolt	10	
Right-drive roller-brush assembly	2	
Left-drive roller-brush assembly	3	
Shoulder bolt	5	
Right-drive belt-cover/plate assembly	2	
Left-drive belt-cover/plate assembly	3	
Bolt (5/16 x 5/8 inch)	10	
Spacer	5	
Drive pulley	5	
Flange-head bolt (3/8 x 2 inches)	5	
Belt	5	
Shim washer (as required for belt alignment)	5	
Right-drive driveshaft	2	
Left-drive driveshaft	3	
90° grease fitting	5	
High height-of-cut brush (sold separately)	–	Install the high height-of-cut brush (optional).
Front bumper assembly	1	Install the front bumper assembly.
Washer	2	
Rear bumper assembly	1	Install the rear bumper assembly.

8111 Lyndale Avenue South
Bloomington, MN 55420

Register at www.Toro.com.

CE

Original Instructions (EN)
Printed in the USA

3406-400 A

Media and Additional Parts

Description	Qty.	Use
Installation Instructions	1	Read the instructions before installing and operating.
Parts Catalog	1	Use the parts catalog to look up replacement parts.

Note: Determine the left and right sides of the cutting unit from behind the cutting unit.

Important: Use the Rear Roller Brush Kit only when cutting in the height-of-cut range of 6 to 25 mm (1/4 to 1 inch). Use the High Height of Cut Brush (Part No. 121-3199) when cutting above 25 mm (1 inch). Refer to the procedure for Installing High Height of Cut Brush.

The Rear Roller Brush Kit (Model 03917) may be used on the following:

Cutting Unit Model (5) 03911, (5) 03912, (5) 03480, (5) 03481, (5) 03485, and (5) 03486 for the Reelmaster 3550 Traction Unit with (3) 03914 left-hand and (2) 03915 right-hand groomer kits.

Gathering the Items Required for Installation

Acquire the following tools before proceeding with the installation:

- 1/2 inch deep-well socket
- 9/16 inch deep-well socket
- 1/2 inch wrench
- 9/16 inch wrench
- 5/16 inch hex key
- 12 inch straightedge (Toro Part No. 114-5446)
- Torque wrench 20 to 25 N·m (15 to 19 ft-lb)
- Torque wrench 36 to 45 N·m (27 to 33 ft-lb)
- Torque wrench 47 to 54 N·m (35 to 40 ft-lb)
- Torque wrench 115 to 128 N·m (85 to 95 ft-lb)
- Torque wrench 2 to 3 N·m (20 to 25 in-lb)
- Blue 242 Loctite

Determining the Roller Brush Orientation

All cutting units are shipped with the counter weight mounted to the left end of the cutting unit. Use Figure 1 to determine the position of the roller brush and reel motors.

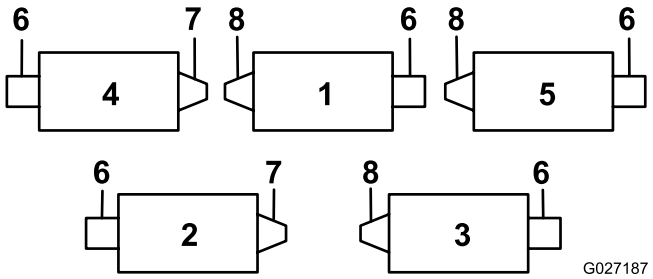

Figure 1

1. Cutting unit 1
2. Cutting unit 2
3. Cutting unit 3
4. Cutting unit 4
5. Cutting unit 5
6. Reel motor
7. Right roller-brush drive assembly
8. Left roller-brush drive assembly

Note: These instructions and illustrations show the installation of the kit on cutting units with the end weights mounted on the left end of the cutting unit.

Installing the Roller Brush

Preparing to Install the Roller-Brush Assembly

1. Remove the 2 flange nuts securing the groomer access cover to the groomer cover and set them aside (Figure 2).
2. Remove the 2 flange-head bolts securing the groomer cover plate and gasket to the groomer access cover (Figure 2).

   Note: Discard the bolts, the cover plate, and the gasket.
3. Remove the 2 groomer cover mounting nuts and save them.

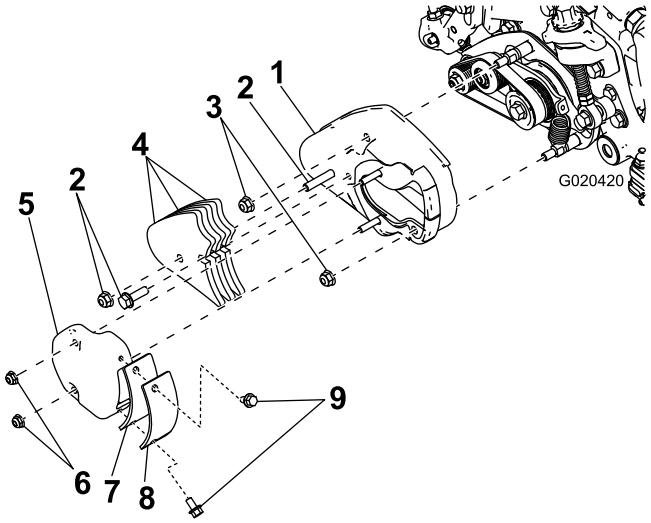

Figure 2

1. Cover
2. Weight nuts and bolts (discard)
3. Cover-mounting nuts (keep)
4. Weights (discard)
5. Access cover (keep)
6. Flange nuts (keep)
7. Gasket (discard)
8. Cover plate (discard)
9. Cover bolts (discard)

4. Remove the groomer cover.
5. Remove the 2 bolts and nuts securing the groomer weights to the groomer cover and discard them (Figure 2).
6. Apply 242 Loctite (blue) to the 2 setscrews included with the groomer kit and install them into the holes previously used for the groomer weights.

   Note: Install the setscrews so that they are flush with the groomer cover.
7. Install the groomer cover and secure it with 2 flange nuts.

   Important: Do not overtighten the nuts.
8. Remove the straight grease fitting at the front of the side plate and install the 90° grease fitting in the same spot (Figure 3).

   Note: Install the 90° grease fitting so that it faces rearward.

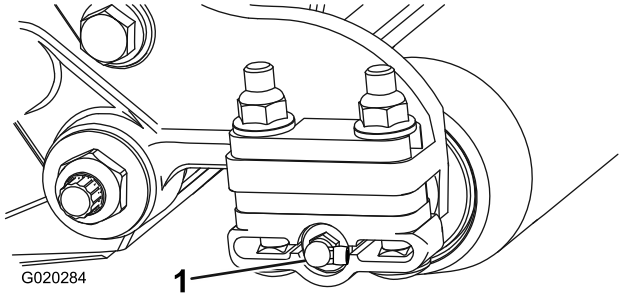

Figure 3

1. 90° grease fitting

9. Remove the 2 flange locknuts and washers securing each roller bracket to the side plates (Figure 4).

   Note: Do not remove the bolts. Also, remove any 6 mm (1/4 inch) spacers positioned on the top side of the side-plate mounting flange.

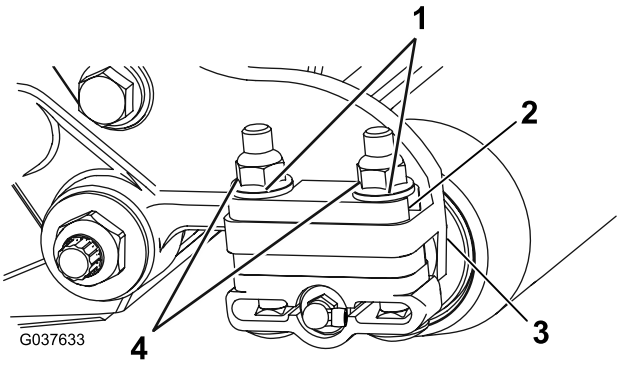

Figure 4

1. Washers
2. Spacer—6 mm (1/4 inch)
3. Side-plate mounting flange
4. Flange locknuts

Installing the Roller-Brush Assembly

1. Position the roller-brush assembly mounting brackets onto the roller-bracket bolts (Figure 5).

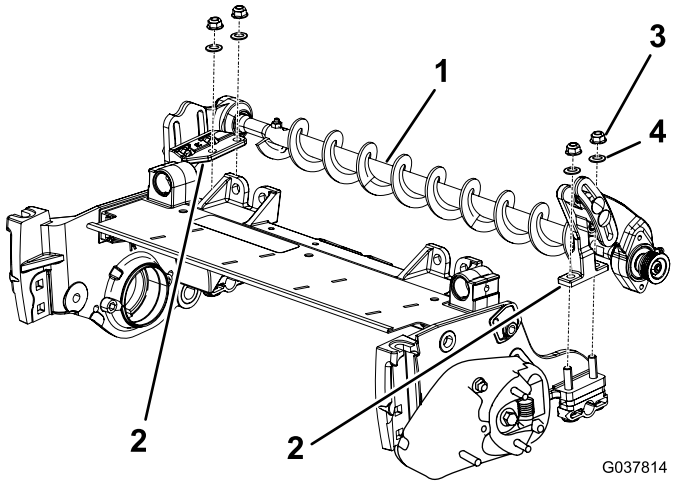

Figure 5

1. Roller-brush assembly (left-drive configuration shown)
2. Roller-brush mounting bracket
3. Flange locknut (4)
4. Washer (4)

2. Secure the brush-assembly mounting brackets to the cutting-unit side plates with the flange locknuts and washers previously removed.

   Important: The brush-assembly mounting brackets must be mounted directly to the top surface of the cutting-unit side plate mounting flange. Do not put spacers between the roller brush mounting brackets and the side plate mounting flanges. Save the additional 6 mm (1/4 inch) spacers for potential use later.

Installing the Brush-Plate Assembly

1. Slide each excluder seal outward until the lip seals are in light contact with each bearing housing (Figure 6).

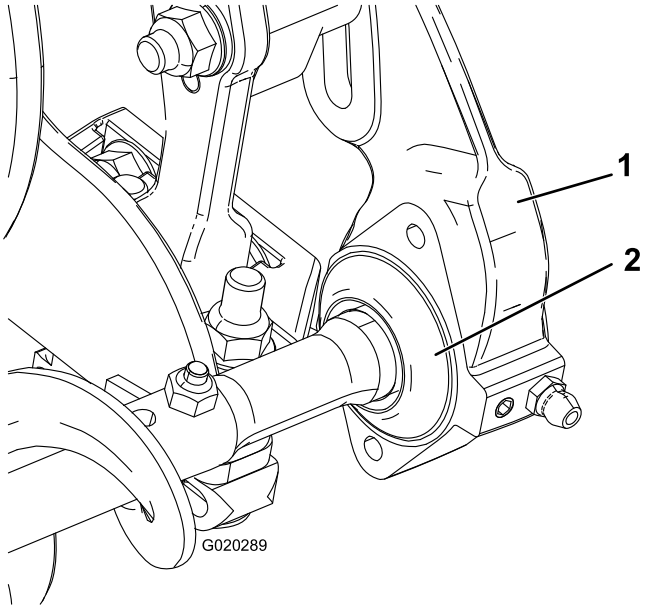

Figure 6

1. Excluder seal
2. Bearing housing

2. Loosen, but do not remove, the bolts securing the roller-brush bearing housing to the roller-brush mounting bracket.
3. Apply 242 Loctite (blue) to the 2 bolts (5/16 x 5/8 inch) and use them to mount the brush plate to the roller-brush bearing housing (Figure 7).

   Note: Torque the bolts to 20 to 25 N·m (15 to 19 ft-lb).

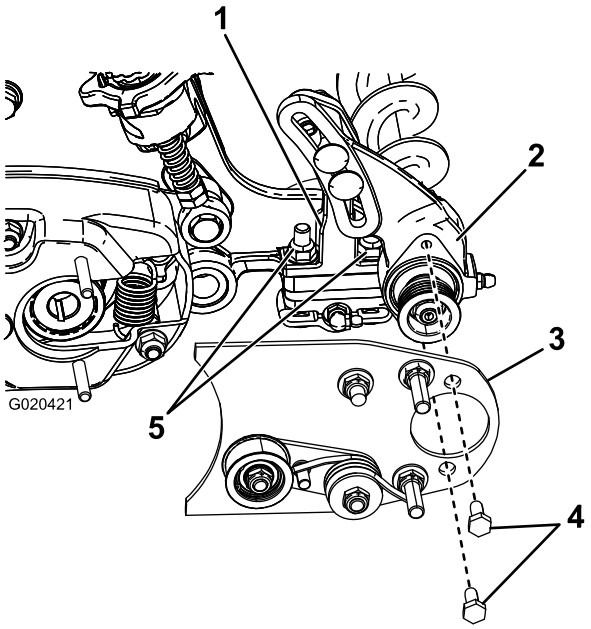

Figure 7

1. Roller-brush mounting bracket
2. Roller-brush bearing housing
3. Brush-plate assembly
4. Bolts
5. Locknuts

4. Check to make sure that the roller-brush plate is parallel to the cutting-unit side plate. If it is not parallel, proceed as follows:

   A. Loosen the 2 flange locknuts securing the roller-brush mounting bracket to the cutting-unit side plate.

   B. Rotate the roller-brush bearing housing until the brush plate is parallel to the cutting-unit side plate and there is an even gap between the brush plate and the groomer cover.

   C. Tighten the 2 flange locknuts securing the roller-brush mounting bracket to the cutting-unit side plate.

Positioning the Roller Brush

1. Loosen the 2 bolts securing each roller brush bearing housing to the roller brush mounting bracket (Figure 8).

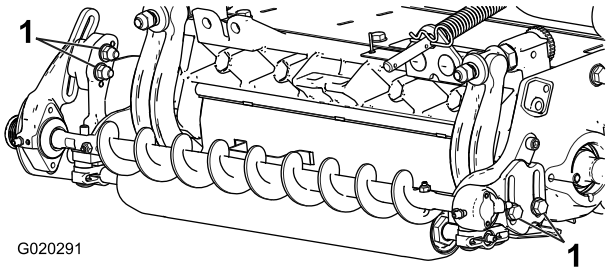

Figure 8

1. Loosen these bolts.

2. Position the roller brush so that it just touches or rests on the rear roller (Figure 9).

   Important: The roller brush shaft must not contact the cutting unit side plate.

   Important: Heavy brush contact on the roller will cause premature brush wear.

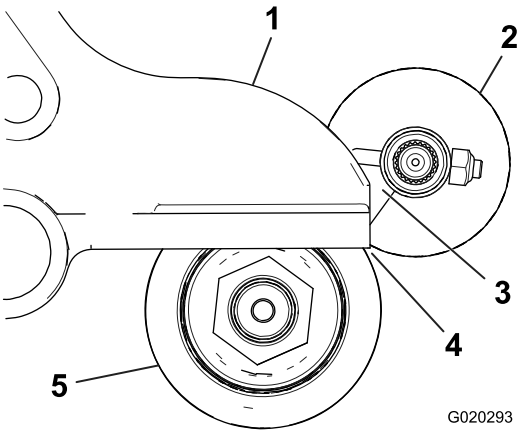

Figure 9

1. Side plate
2. Roller brush
3. Ensure that there is clearance here.
4. Light contact
5. Rear roller

   Note: The roller-brush shaft must be parallel to the rear roller.

   Note: The orientation of the non-drive roller brush bearing housing should be the same as drive-side bearing housing.

3. Tighten the 2 bolts securing each roller-brush bearing housing to the roller-brush mounting brackets.

Installing the Drive Pulley

1. Remove the bolt securing the groomer pulley to the driveshaft and discard it (Figure 10).

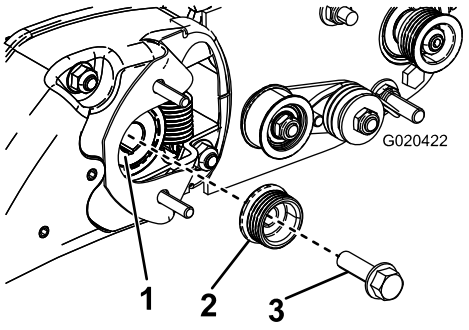

Figure 10

1. Groomer-drive pulley
2. Brush-drive pulley
3. Drive-pulley bolt

2. Install the brush-drive pulley to the groomer-drive pulley and onto the driveshaft.

   Note: Make sure that the pulley tabs are positioned in the slot in the drive shaft.

3. Secure the drive pulley to the shaft with a flange-head bolt (3/8 x 2 inch) (Figure 10). Torque the bolt to 47 to 54 N·m (35 to 40 ft-lb).

Important: **If the bolt is not properly torqued, *the bolt will come loose.***

Installing the Belt

1. Loop the belt around the drive pulley and then over the top of the idler pulley (Figure 11).

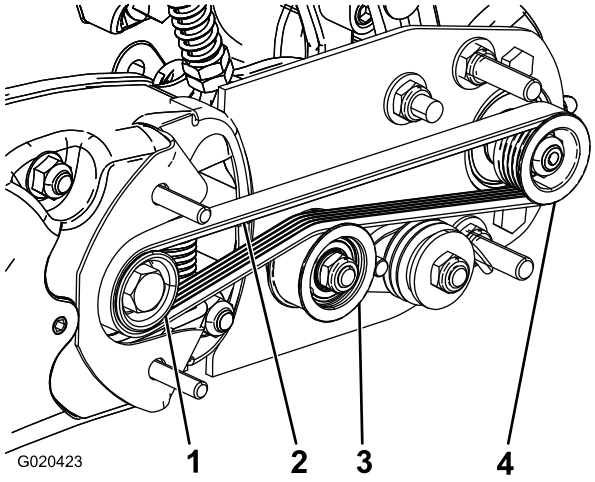

Figure 11

1. Drive pulley
2. Belt
3. Idler-pulley assembly
4. Driven pulley

2. Start the belt on the driven pulley.
3. Use a 9/16 inch deep-well socket to rotate the brush assembly and guide the belt onto the driven pulley (Figure 12).

   Important: **Make sure that the ribs on the belt are properly seated in the grooves in each pulley. Also, make sure that the belt is in the center of the idler pulley.**

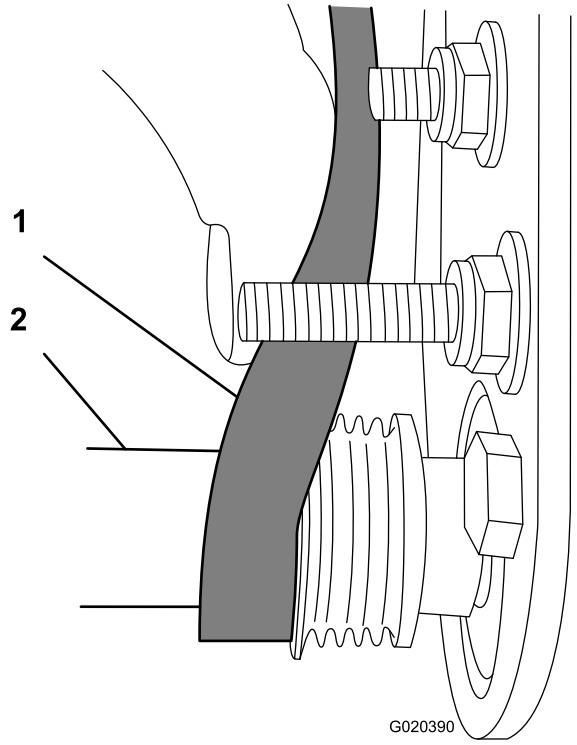

Figure 12

1. Belt
2. 9/16 inch deep-well socket

4. Push down on the idler pulley to ensure that the idler pulley assembly pivots freely.

Completing the Installation

1. Check the alignment of the belt/pulleys as follows:

   Note: The belt must be properly tensioned (installed) prior to checking alignment.

   A. Lay a straightedge along the outer face of the drive pulley (Figure 13). Do not lay the straightedge across both the drive and driven pulleys.

   The outer faces of the drive and driven pulleys should be in line within 0.7 mm (0.03 inch).

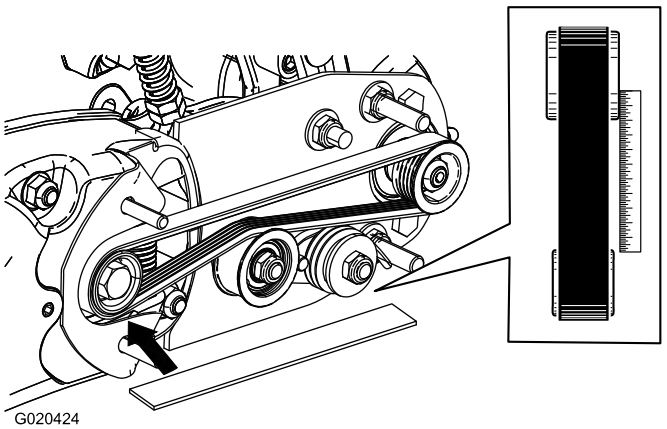

Figure 13

B. If the pulleys are not aligned, refer to Checking the Pulley Alignment (page 9).

If the pulleys are aligned, continue with the installation.

Note: **Do not** use the idler pulley to check the alignment.

Important: **The belt may fail prematurely if the pulleys are not properly aligned.**

2. Install the groomer access cover (Figure 14).

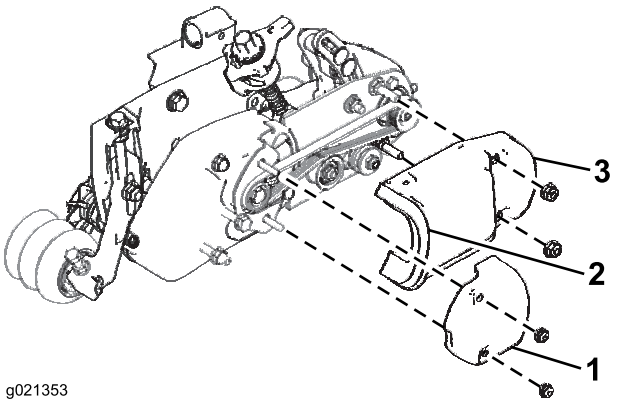

Figure 14

1. Groomer access cover
2. Gasket
3. Belt cover

3. Slide the belt cover onto the mounting bolts and secure with 2 flange nuts.

Note: Carefully install the rear roller brush cover to prevent damage or pinching to gasket.

Important: **Do not overtighten the nuts, or the cover may become damaged.**

4. Lubricate the grease fittings on each of the roller-brush bearing housings and on the remainder of the cutting unit with No. 2 lithium grease (Figure 15).

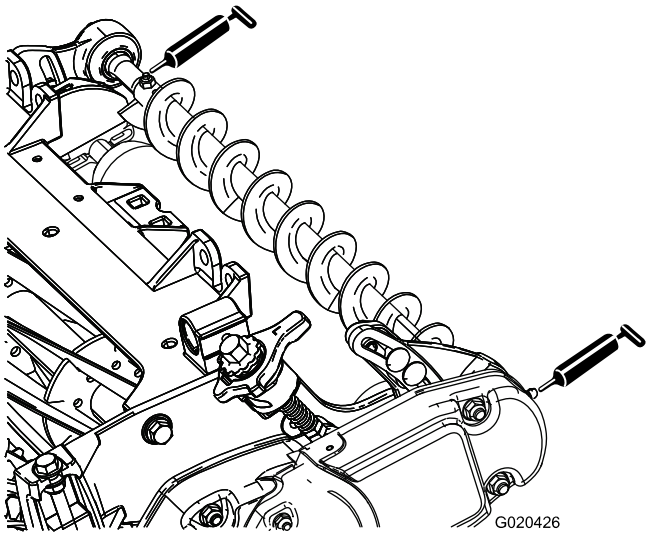

Figure 15

5. Wipe off any excess grease, especially around the excluder seals.

Installing the High Height-of-Cut Brush (Optional)

Install the High Height of Cut Brush (Part No. 110-1740) when cutting above 2.5 cm (1 inch) height of cut (5 or more spacers installed below the side plate pad).

1. If a roller brush is installed on the cutting unit, remove the 2 bolts, washers and nuts securing the non-drive bearing housing to the bearing housing mounting bracket (Figure 16).

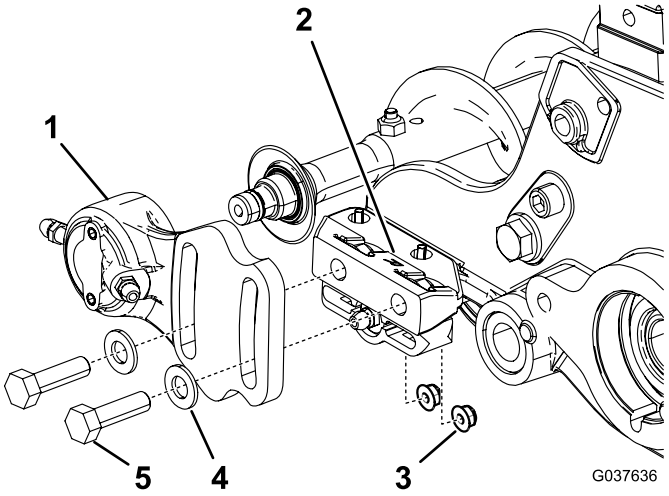

Figure 16

1. Non-drive bearing housing
2. Mounting bracket
3. Flange nut (2)
4. Washer (2)
5. Bolt (2)

2. Slide the non-drive bearing housing and excluder seal off the brush shaft (Figure 17).

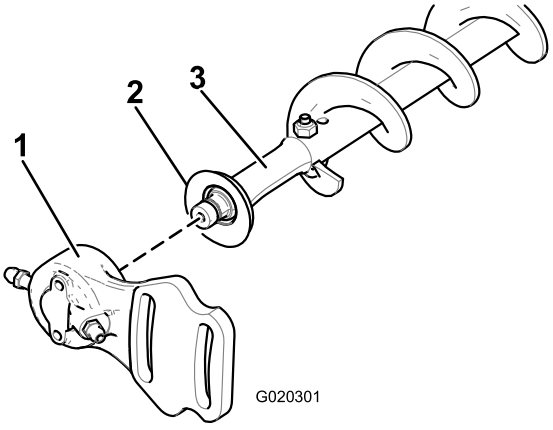

Figure 17

1. Non-drive bearing housing
2. Excluder seal
3. Brush shaft

3. Remove the 2 J-bolts and nuts.

4. Slide the existing brush off the brush shaft.
5. Loosen the 2 bolts, washers, and nuts securing the drive bearing housing to the bearing housing mounting bracket.
6. Slide the high height-of-cut brush onto the brush shaft.
7. Clamp the brush onto the shaft with the 2 J-bolts and nuts previously removed.

   Important: Insert the threaded end of the J-bolts through the outer holes of the brush shaft while hooking the curved ends of the J-bolts into the inner holes.
8. Torque the J-bolt locknuts to 2 to 3 N·m (20 to 25 in-lb); refer to Figure 18.

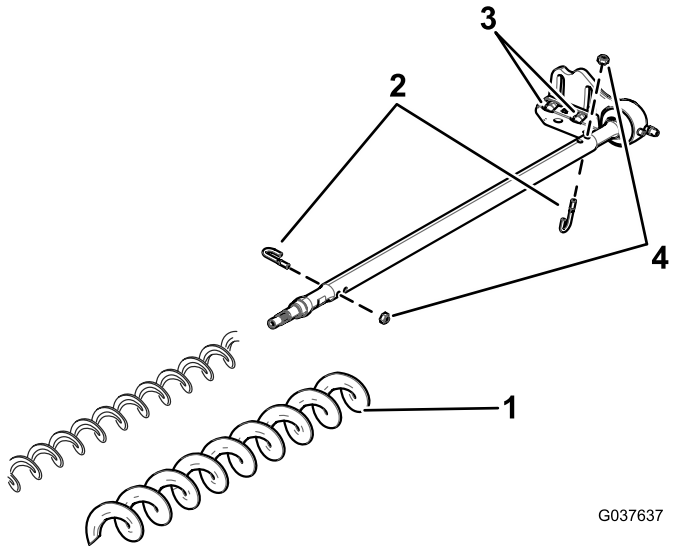

Figure 18

1. High height-of-cut brush
2. J-bolts
3. Loosen these bolts.
4. Nuts

9. Install the excluder seal and the non-drive bearing housing onto the brush shaft.
10. Mount the non-drive bearing housing to the bearing housing mounting bracket with the 2 bolts, washers, and nuts previously removed.

    Note: Be careful not to knock the seal spring off.
11. Tighten the 2 bolts, washers, and nuts securing the drive bearing housing to the bearing housing mounting bracket.

Installing the Front Bumper Assembly

For Cutting Units 1 and 4 Only

1. Lower the cutting units to the ground.
2. Remove the existing flange-head bolts and the round bumpers (Figure 19).

Note: Retain the flange-head bolts for installing the front bumper assembly. Discard the round bumpers.

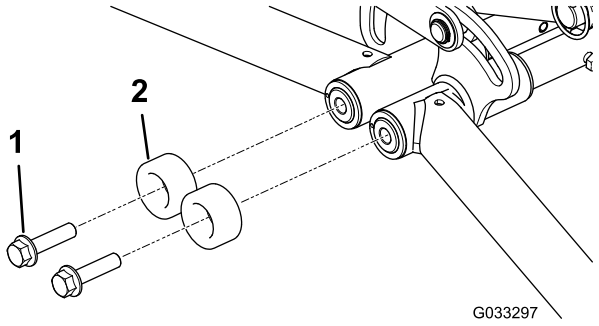

Figure 19

1. Flange-head bolt, existing (2)
2. Round bumper, existing (2)—discard

3. Apply 242 Loctite (blue) to the threads of the bolts.
4. Loosely install the front bumper assembly and the washers as shown in Figure 20.

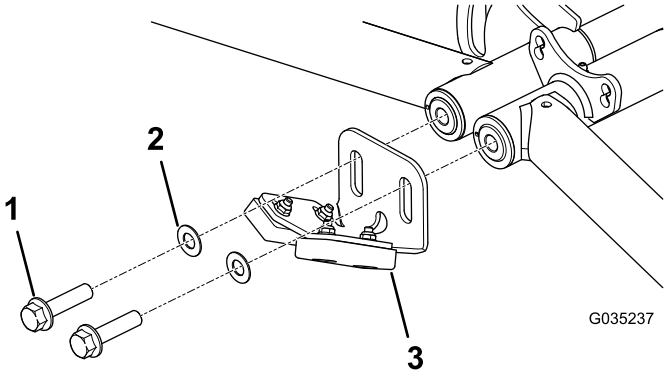

Figure 20

1. Flange-head bolt, existing (2)
2. Washer (2)
3. Bumper assembly

5. Adjust the front bumper so that it contacts the rear-roller-brush housings when the cutting units are raised and level.

   Note: When the bumper is positioned correctly, torque the bolts to 91 to 113 N·m (67 to 83 ft-lb).

Installing the Rear Bumper Assembly

For Cutting Units 2 and 3 Only

1. Lower the cutting units to the ground.
2. Install the rear bumper assembly as shown in Figure 21.

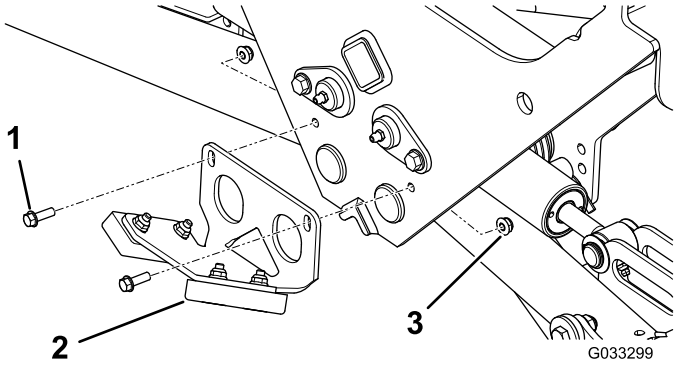

Figure 21

1. Flange-head bolt (2)
2. Rear bumper assembly
3. Locknut (2)

Maintenance

- Ensure that the brush is parallel to the roller with 1.5 mm (0.060 inch) clearance to light contact.
- Grease the fittings every 50 hours and after every washing.
- When replacing the roller brush, torque the J-bolts to 2 to 3 N·m (20 to 25 in-lb).
- When replacing the driven pulley, torque the nut to 36 to 45 N·m (27 to 33 ft-lb).
- When replacing the drive pulley, torque the bolt to 47 to 54 N·m (35 to 40 ft-lb).

Important: Backlapping at the incorrect reel speed may loosen and strip the drive-pulley threads. Refer to the cutting unit *Operator's Manual* for the backlapping procedure.

Note: The roller brush, the idler bearing, and the belt are considered consumable items.

Checking the Pulley Alignment

1. The driven pulley (at the roller-brush shaft) can move in or out (Figure 22).

   Make note of which way the pulley needs to move.

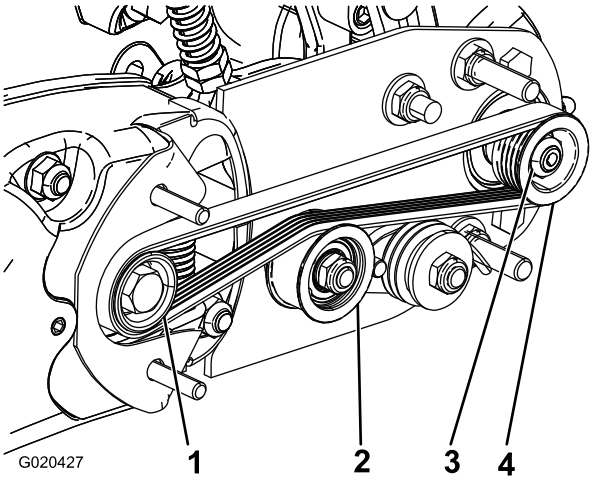

Figure 22

1. Drive pulley
2. Idler pulley
3. Driven-pulley nut
4. Driven pulley

2. While rotating the reel, which rotates the drive pulley, pry the belt off the drive pulley (Figure 22).

   Note: Wear a padded glove or use a heavy rag to rotate the reel.

3. Remove the locknut securing the driven pulley to the brush shaft (Figure 22 or Figure 23).

   Note: Use a 1/2-inch wrench on the roller-brush shaft flats to keep it from rotating.

4. Remove the driven pulley from the shaft (Figure 23).
5. If the pulley needs to move out, add a 0.8 mm (0.032 inch) thick spacer (Figure 23). If the pulley needs to move in, remove the existing 0.8 mm (0.032 inch) thick spacer.
6. Install the pulley.

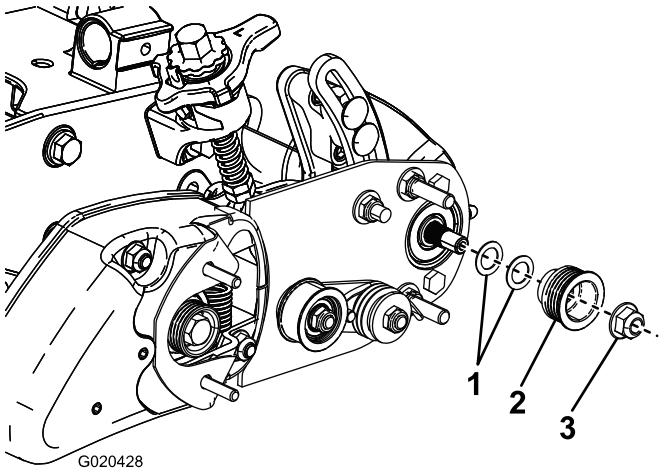

Figure 23

1. Spacers—0.80 mm (0.032 inch) thick
2. Driven pulley
3. Locknut

7. While holding the brush-shaft flats, secure the pulley on the shaft with the 3/8-16 flange nut previously removed.

   Note: Seat the locknut; then torque it to 36 to 45 N·m (27 to 33 ft-lb).

8. Install the belt onto the pulleys as follows:

   A. Loop the belt around the **drive** pulley and then over the top of the idler pulley (Figure 24).

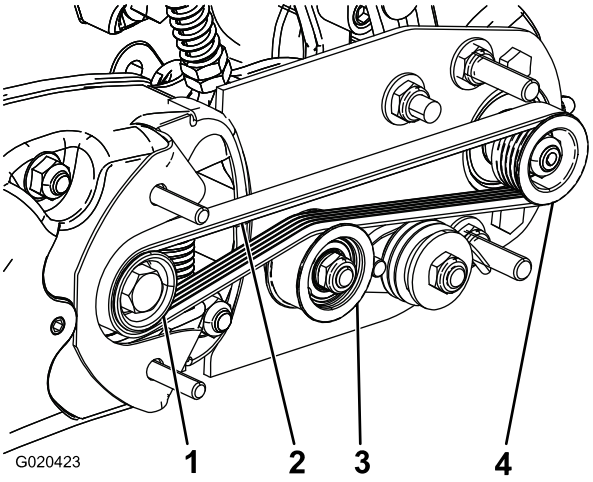

Figure 24

1. Drive pulley
2. Belt
3. Idler pulley
4. Driven pulley

   B. Start the belt on the **driven** pulley (Figure 24).

   C. Use a 9/16-inch deep-well socket to rotate the brush assembly and guide the belt onto the driven pulley (Figure 25).

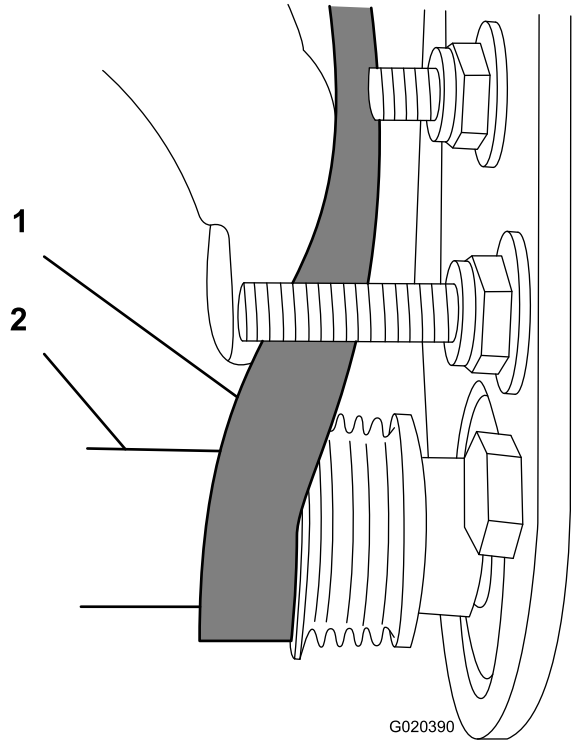

Figure 25

1. Belt
2. 9/16-inch deep-well socket

Important: Make sure that the ribs on the belt are properly seated in the grooves in each pulley and that the belt is in the center of the idler pulley.

9. Check the pulley alignment and adjust it if necessary.

Notes:

Declaration of Incorporation

The Toro Company, 8111 Lyndale Ave. South, Bloomington, MN, USA declares that the following unit(s) conform(s) to the directives listed, when installed in accordance with the accompanying instructions onto certain Toro models as indicated on the relevant Declarations of Conformity.

Model No.	Serial No.	Product Description	Invoice Description	General Description	Directive
03917	—	Rear Roller Brush and Groomer Kit (Reelmaster 3550 Series 18-inch Cutting Unit)	RM3550 18" RRB (W/GROOMER) KIT (5 CUS)	Roller Brush Kit	2000/14/EC 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
July 5, 2016

EU Technical Contact:

Marc Vermeiren
Toro Europe NV
B-2260 Oevel-Westerloo
Belgium

Tel. 0032 14 562960
Fax 0032 14 581911