Form No. 3429-464 Rev A

Universal Groomer Drive Kit

Greensmaster® Flex™/eFlex® 1800 and 2100, or Greensmaster® 3000 Series DPA Cutting Units

Model No. 04648—Serial No. 318000001 and Up

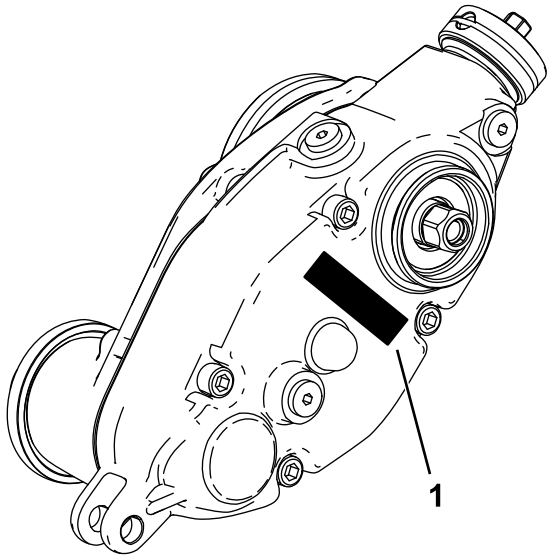
Installation Instructions

Introduction

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.Toro.com for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.



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Figure 1

1. Model and serial number location

Model No. _____

Serial No. _____

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

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CE

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3429-464 A

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	–	Prepare the machine.
2	No parts required	–	Prepare the cutting unit.
3	No parts required	–	Remove the drive-belt assembly.
4	Weight Torx-socket screw Locknut Right reel adapter (silver) Left reel adapter (black) Shim washer Groomer drive box	1 2 2 1 1 1 1	Install the groomer drive box and weight.
5	Cap	1	Install the groomer drive cap (For universal groomer assemblies with no rear roller brush kit installed only).
6	Stub-shaft assembly Bearing shield Idler assembly Adjuster collar Flange nut	1 2 1 1 1	Install the idler assembly.
7	Groomer pin	2	Install the groomer pin (Greensmaster 3120, 3150, and 3250-D machines only).
8	Left HOC bracket assembly Right HOC bracket assembly Adjuster pin Cotter pin	1 1 2 2	Install the HOC assemblies and the front roller.
9	Bolt (1/4 to 1 1/2 inches) Jam nut Shaft clamp	4 4 4	Install the groomer assembly (ordered separately).
10	Pull link kit and extension coupler for Greensmaster 3120, 3150, and 3250 machines (ordered separately)	–	Install the suspension front roller.

1

Preparing the Machine

No Parts Required

Procedure

1. Park the machine on a level surface.
2. Engage the parking brake.
3. Shut off the engine and remove the key or spark plug; refer to your *Operator's Manual*.

2

Preparing the Cutting Unit

No Parts Required

Procedure

1. Separate the cutting unit from the traction unit; refer to the *Operator's Manual* for the traction unit.
2. On the cutting unit, loosen the mounting screws securing each end of the front roller to the height-of-cut arms (Figure 2).

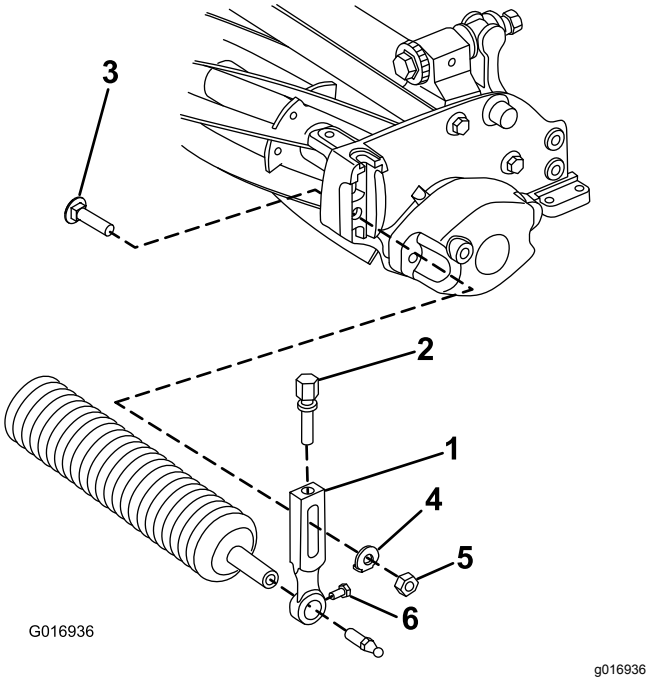


Figure 2

1. Height-of-cut arm
2. Adjusting screw
3. Plow bolt
4. Washer
5. Flange nut
6. Roller-mounting screw

3. Remove the plow bolts, washers, and locknuts securing the height-of-cut arms to each end of cutting unit (Figure 2). Remove the height-of-cut arms and roller assembly.

   Note: Save the removed hardware to install the new height-of-cut arms.
4. Remove the height-of-cut adjusting screws and roller-mounting screws from the height-of-cut arms (Figure 2).

   Note: Save the roller mounting screws and the roller for later installation.
5. **If you are installing the kit on a cutting unit of a TriFlex hybrid machine**, remove the 2 cap screws that secure the electrical counterweight to the reel, and remove the counterweight (Figure 3).

   Note: Retain the electrical counterweight and 2 cap screws for installation in Preparing the Counterweight (page 6).

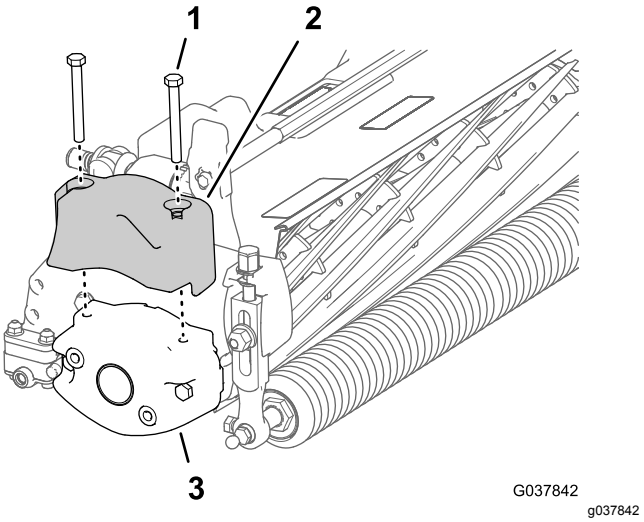


Figure 3

Cutting Unit—Hybrid TriFlex Machine

1. Cap screws (5/16 x 2-3/4 inches)
2. Counterweight (electric reel drive—hybrid TriFlex machine)
3. Counterweight (cutting unit)

6. Remove the 2 bolts (5/16 x 2-1/4 inches) from the 2 nuts (held captive by the side plate) securing the counterweight on the side plate of the cutting unit. Remove the counterweight (Figure 4).

   Note: You may discard the cutting unit counterweight and the mounting bolts.

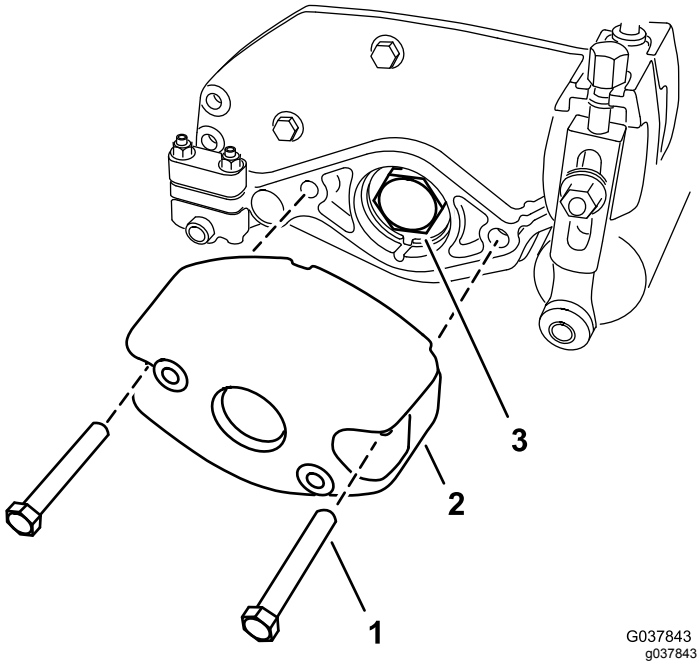


Figure 4

1. Bolt (5/16 x 2-1/4 inches)
2. Counterweight (reel-cutting unit)
3. Bearing nut

7. Restrain the reel to remove the bearing nut; refer to Restraining the Reel for Removing Threaded Inserts (page 18).
8. Remove the bearing nut from the reel shaft (Figure 4).

   Important: **Clean the threads in the end of the reel shaft of any debris or grease before installing the kit splined insert and groomer box.**
9. **If you are installing the kit on a Triflex machine**, remove the 2 bolts securing the motor mount to the cutting unit. Remove the motor mount (Figure 5).

   Note: Retain the bolts and nuts for later installation.

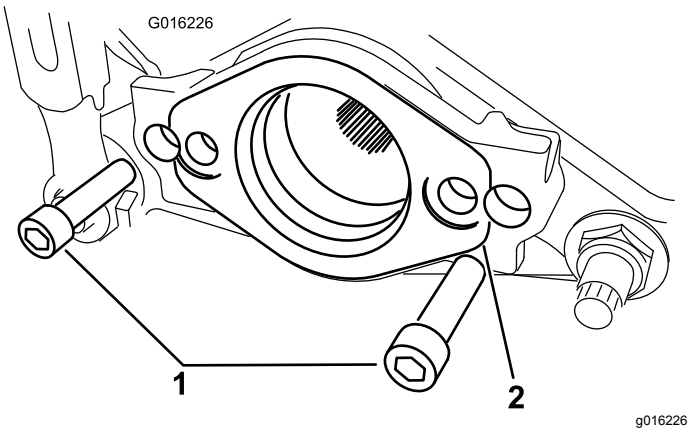


Figure 5

1. Bolts
2. Motor mount

3

Removing the Belt-Drive Assembly

Walk-Behind Greensmowers

No Parts Required

Procedure

Note: Retain all parts in this section except where noted.

1. Loosen the captive bolt securing the belt cover to the cutting unit until you can remove the cover (Figure 6).

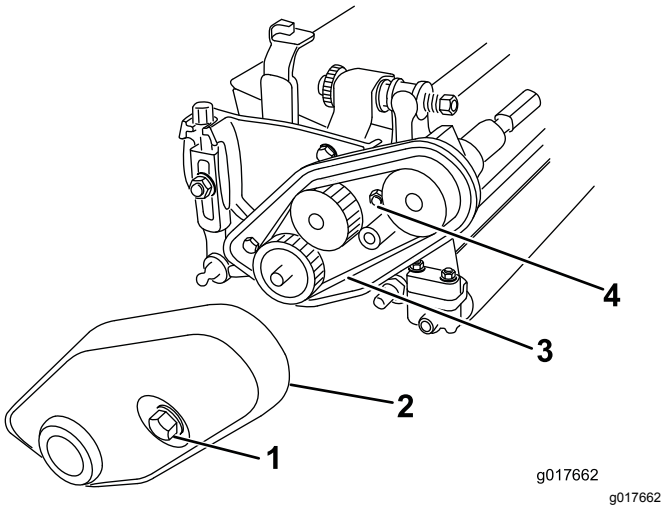


Figure 6

1. Belt-cover bolt (captive)
2. Belt cover
3. Belt
4. Belt-tensioning nut

2. Loosen the belt-tensioning nut and remove the belt (Figure 6).
3. Loosen the 2 set screws securing the lower pulley and remove the pulley from the reel shaft (Figure 7).

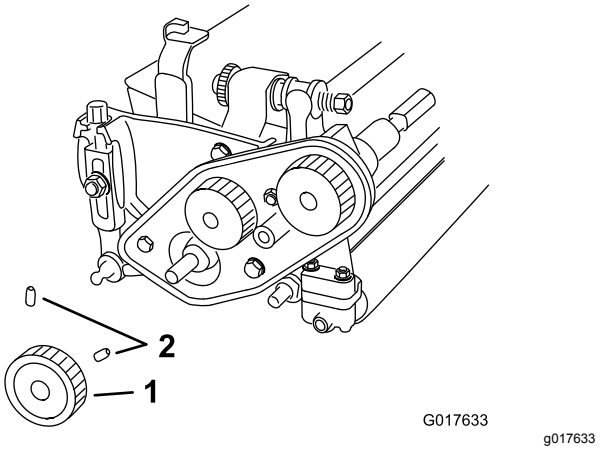


Figure 7

1. Lower pulley
2. Set screws

4. Remove the 3 bolts securing the belt-drive assembly to the cutting unit, if equipped, and remove the whole assembly (Figure 8).

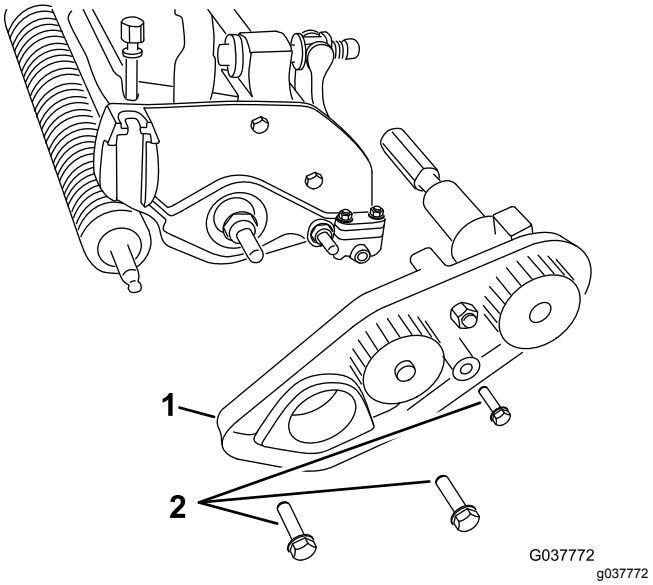


Figure 8

1. Belt-drive assembly
2. Bolt

4

Installing the Counterweight and Groomer Drive Box

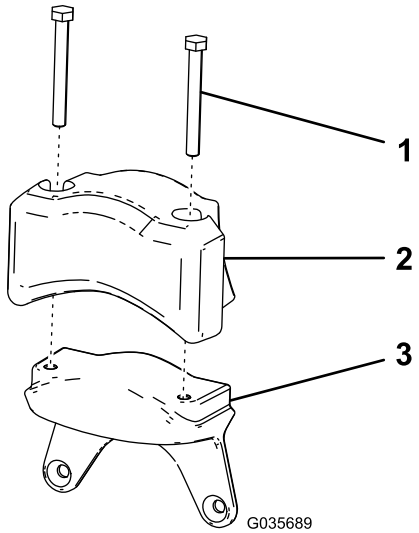
Parts needed for this procedure:

1	Weight
2	Torx-socket screw
2	Locknut
1	Right reel adapter (silver)
1	Left reel adapter (black)
1	Shim washer
1	Groomer drive box

Preparing the Counterweight

TriFlex Machines with an Electric Reel-Cutting Unit

1. Assemble the electric counterweight and 2 cap screws (5/16 x 2-3/4 inches) that you removed in step 5 of 2 Preparing the Cutting Unit (page 3) to the new weight (Figure 9).



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Figure 9

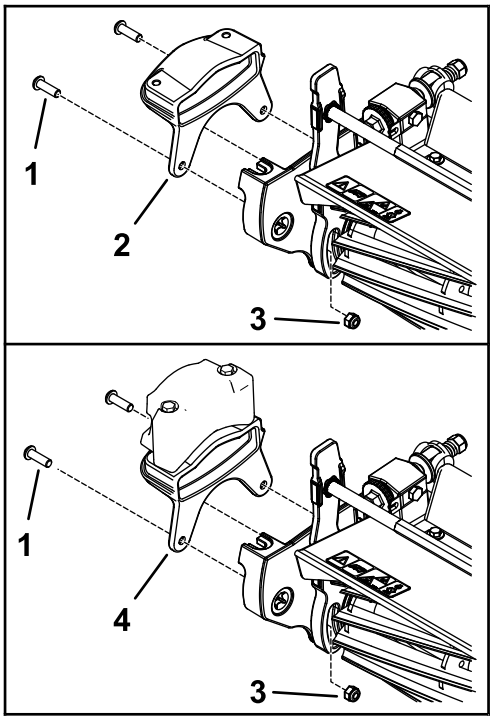
1. Cap screw (5/16 x 2-3/4 inches)
2. Electrical counterweight
3. New weight

2. Torque the bolts to 198 to 254 N·m (175 to 225 in-lb).

Installing the Counterweight

1. Secure the new weight to the side of the cutting unit using 2 bolts (5/16 inch) and 2 nuts (5/16 inch) as shown in Figure 10.

   Note: Attach the weight to the side of the cutting unit on which you intend to mount the groomer drive box.



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Figure 10

1. Torx-socket screw (5/16 x 1-1/4 inches)
2. Counterweight
3. Locknut (5/16 inch)
4. Counterweight (TriFlex machines with an electric cutting unit)

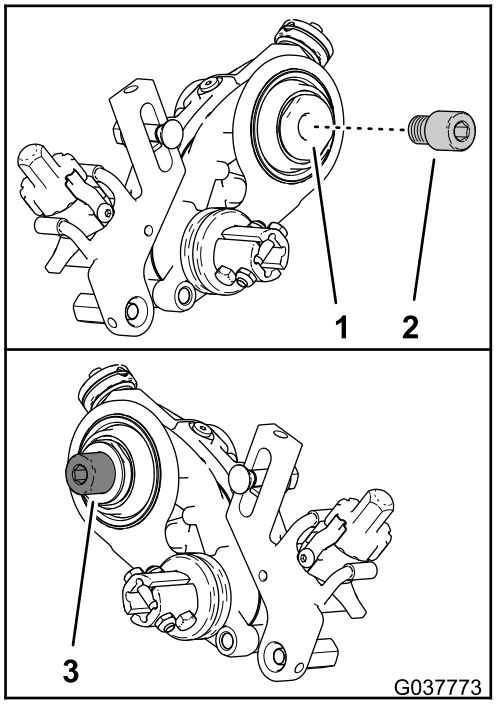
2. Torque the screws and locknuts to 20 to 26 N·m (175 to 225 in-lb).

Installing the Groomer Drive Box

1. Apply medium-strength thread-locking compound (such as Blue Loctite® 243) to the internal threads of the drive-box shaft and torque the reel adapter and groomer drive-box shaft to 150 to 163 N·m (110 to 120 ft-lb).

   Note: Use the silver adapter if you installed the counterweight at the right side of the cutting unit. Use the black reel adapter if you installed the counterweight at the left side of the cutting unit.

   Important: **Clean the threads in the end of the reel shaft of any debris or grease before installing the kit splined insert.**



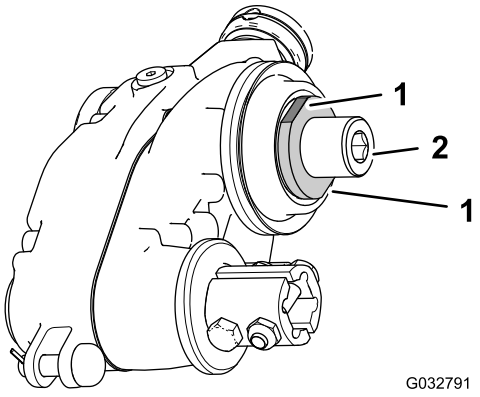
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Figure 11

1. Groomer drive-box shaft
2. Reel adapter—**silver** (groomer drive-box and counterweight at the **right** side of the cutting unit)
3. Reel adapter—**black** (groomer drive-box and counterweight at the **left** side of the cutting unit)

Important: **Allow the thread-locking compound to cure for 15 minutes before continuing the procedure.**

Note: When torquing the reel adapter and drive-box shaft, restrain the drive-box shaft with a wrench on the wrench flats at the inboard side of the groomer drive box (Figure 12).



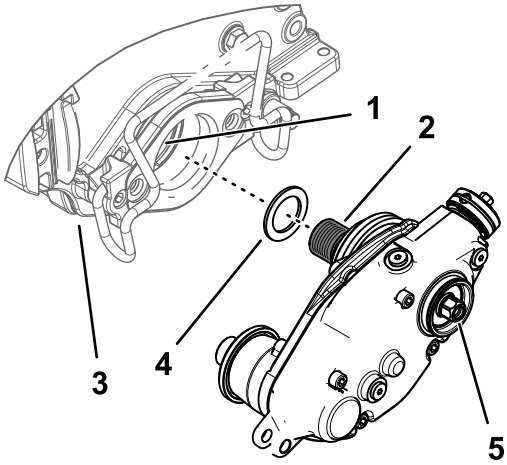
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Figure 12

1. Wrench flats (drive-box shaft)
2. Hex socket (reel adapter)

2. For a groomer drive box installed at the left side of the cutting unit, assemble the shim washer over the threads of the black reel adapter (Figure 13).

Note: No shim washer is installed with groomer drive box installed at right side of the cutting unit.



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Figure 13

1. Apply thread-locking compound
2. Reel adapter (black) into reel shaft
3. Cutting unit
4. Shim washer
5. Hex-head

3. Apply medium-strength thread-locking compound (such as Blue Loctite® 243) to the internal threads of the reel shaft threads.
4. Attach the groomer drive box to the reel shaft (Figure 13).

   Important: **The splined insert on the left side of the cutting unit has left-hand threads. The splined insert on the right side of the cutting unit has right-hand threads.**
5. Restrain the cutting reel to install the insert; refer to Restraining the Reel for Installing Threaded Inserts (page 19).
6. While the reel is restrained, torque the hex-head of the drive-box shaft to 135 to 150 N·m (100 to 110 ft-lb); refer to Figure 13.

   Important: **You must torque the hex head of the drive-box shaft to 135 to 150 N·m (100 to 110 ft-lb).**

   Important: **You must use a 6-point socket with heavy wall.**

   Important: **Do not use an impact wrench for this step.**

   Important: **Allow the thread-locking compound to cure for 15 minutes before continuing the procedure.**

Note: Do not damage the seal under the outer cover.

Note: The clutch-knob assembly comes installed from the factory for a right drive installation.

7. If you are installing the groomer at the left side of the machine, perform the following (Figure 14):
   A. Remove the O-ring from the clutch knob.
   B. Remove the shear pin that secures the clutch knob to the actuator shaft.
   C. Remove the clutch-knob assembly and flip it over.
   D. Assemble the clutch knob to the actuator shaft with the shear pin.
   E. Install the O-ring into the groove in the clutch knob.

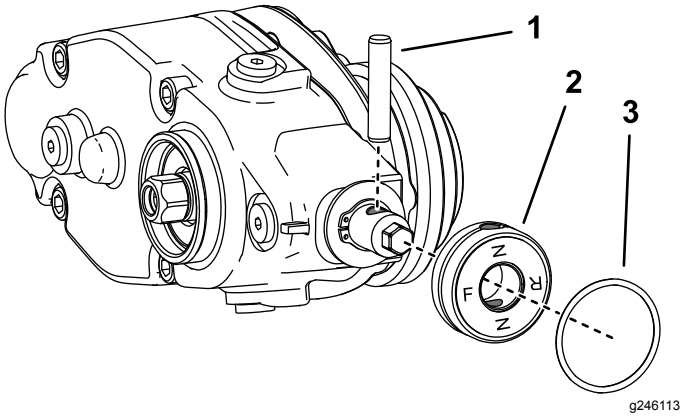


Figure 14
Left-side install shown

1. Shear pin
2. Clutch-knob assembly
3. O-ring

5
Installing the Groomer Drive Cap

Parts needed for this procedure:

1	Cap

Procedure

Only for Universal Groomer assemblies with no rear roller brush kit installed:

1. Apply medium-strength cylindrical bonding retaining compound (such as Green Loctite 609®) around the snap ring groove and the outer diameter surface (Figure 15).
2. Install the cap as shown in Figure 15.

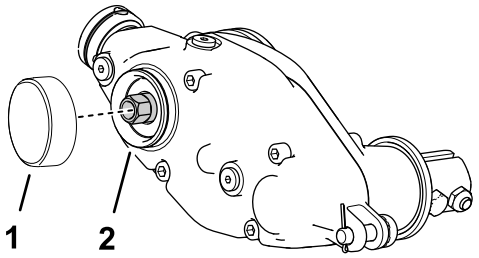


Figure 15

1. Cap
2. Apply medium-strength bonding compound

6

Installing the Idler Assembly

Parts needed for this procedure:

1	Stub-shaft assembly
2	Bearing shield
1	Idler assembly
1	Adjuster collar
1	Flange nut

Procedure

1. Assemble the loose parts to the idler assembly as shown in Figure 16.

   Note: Install parts 1 through 5 in reverse if you are installing the idler assembly on the opposite side in Figure 16.

   Important: **Install the bearing shields with the fabric side toward the bearings.**

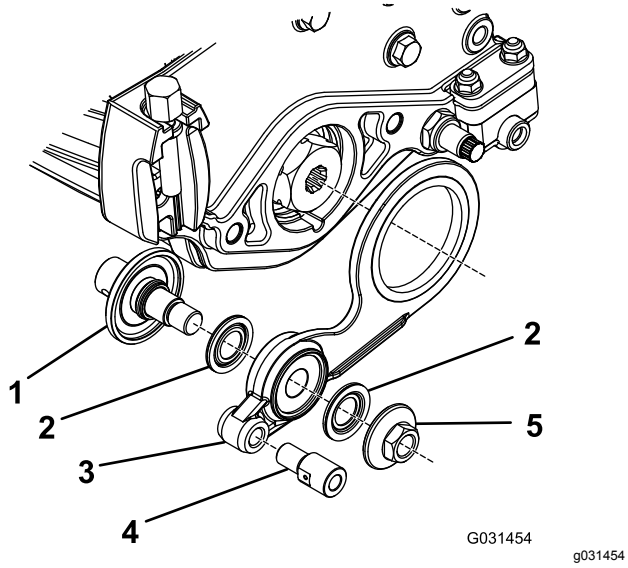


Figure 16

Left side shown

1. Stub-shaft assemby
2. Bearing shield
3. Idler assembly
4. Adjuster collar—torque to 23 to 31 N·m (17 to 23 ft-lb)
5. Flange nut—torque to 37 to 45 N·m (27 to 33 ft-lb)

2. Remove the motor mount.
3. Position the idler assembly on the opposite side of the reel from the groomer drive box.
4. **If you are installing the kit on a cutting unit of a TriFlex machine**, proceed to step 5. **If you are installing the kit on the cutting unit of a walk-behind greensmower**, perform the following steps:

   A. Install the belt-drive assembly to the cutting unit using the 3 bolts that you removed previously (Figure 8).

   B. Install the pulley to the reel shaft using the 2 set screws that you removed previously (Figure 7); torque the set screws to 8.4 to 8.9 N·m (74 to 79 in-lb).

   C. Install the belt and tighten the belt-tensioning nut (Figure 6).

   D. Install the belt cover and tighten the captive bolt (Figure 6).

5. **If you are installing the kit on a cutting unit of a TriFlex machine**, install the motor mount to the left end of the cutting unit using the 2 bolts that you removed previously (Figure 5).
6. Torque the bolts to 20 to 26 N·m (175 to 225 in-lb).

7

Installing the Groomer Pins

Greensmaster 3120, 3150, and 3250-D Machines Only

Parts needed for this procedure:

2	Groomer pin

Procedure

1. Apply removable thread-locking compound to the hole for the groomer pin if it is not present on the groomer-pin threads.
2. Secure the groomer pin to the height-of-cut arm (Figure 17).

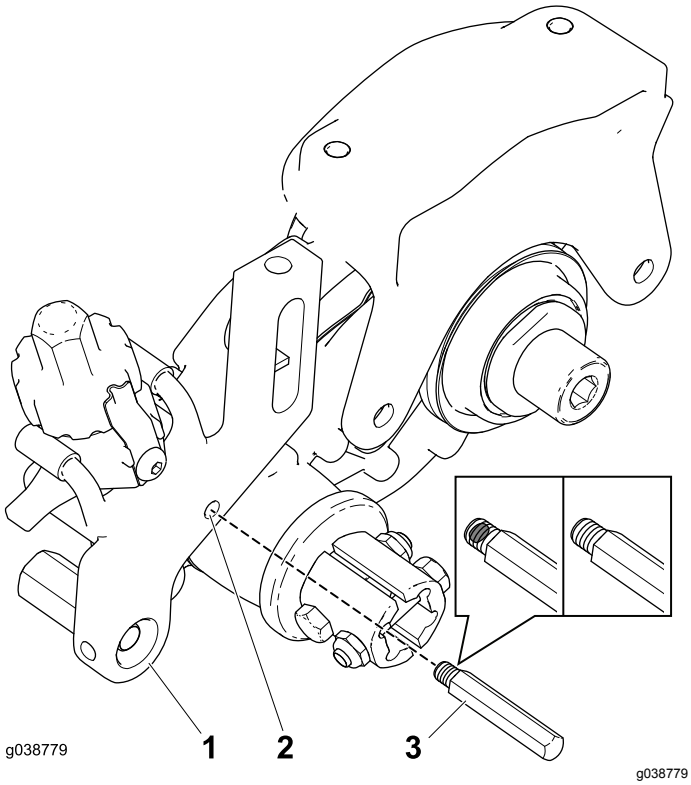


Figure 17

1. Height-of-cut arm
2. Hole
3. Groomer pin (shown with or without removable thread-locking compound)

3. Perform this procedure to the opposite side.

8

Installing the Height-of-Cut Bracket Assemblies and the Front Roller

Parts needed for this procedure:

1	Left HOC bracket assembly
1	Right HOC bracket assembly
2	Adjuster pin
2	Cotter pin

Procedure

1. Thread the previously removed height-of-cut adjusting screws into the top of the height-of-cut assemblies (Figure 18).

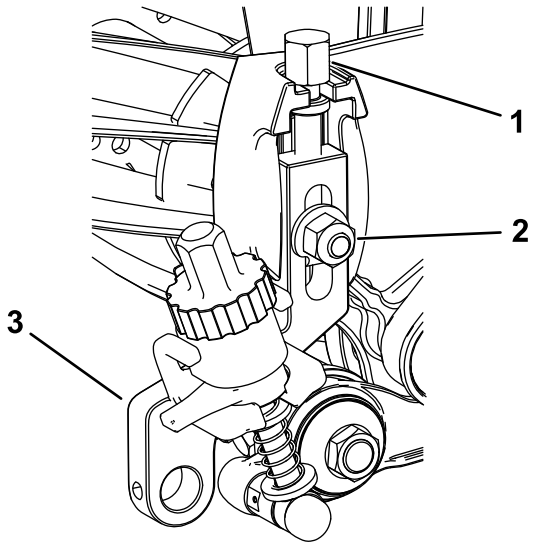
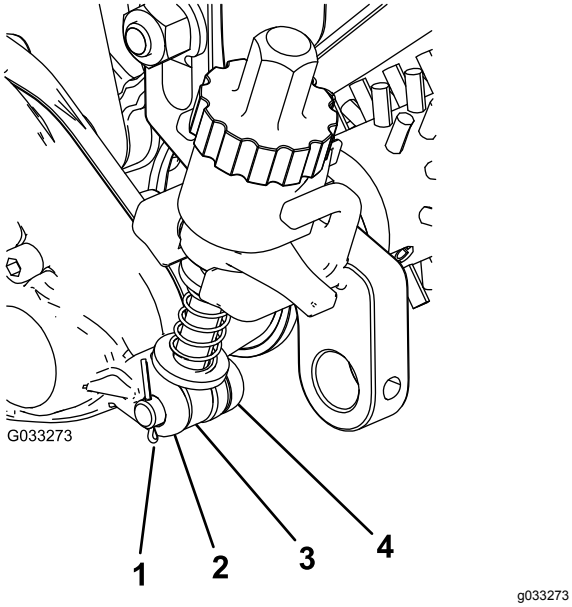


Figure 18

1. Height-of-cut adjusting screw
2. Plow bolt, nut, and special washer
3. Height-of-cut bracket assembly

2. Install the height-of-cut assemblies to the cutting unit side plates using the previously removed plow bolt, nut, and special washer (Figure 18).
3. Slide the adjuster-arm assembly rod near the groomer drive box into the gap on the drive box and secure it with an adjuster pin and cotter pin (Figure 19).

Note: Make sure that you bend the legs of the cotter pin so that the pin does not fall out of the adjuster pin.



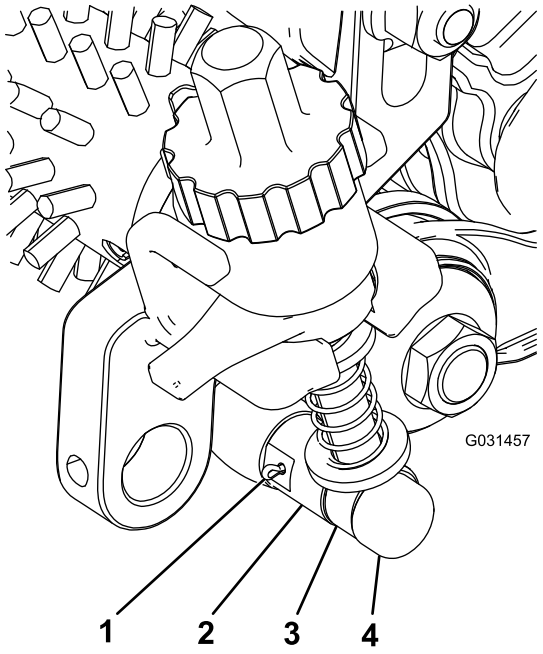
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Figure 19

1. Cotter pin
2. Groomer drive box
3. Adjuster-arm assembly rod
4. Adjuster pin

4. Align the adjuster-arm assembly rod near the idler assembly with the adjuster collar on the idler assembly and secure it with an adjuster pin and cotter pin (Figure 20).

   Note: Make sure that you bend the legs of the cotter pin so that the pin does not fall out of the adjuster pin.

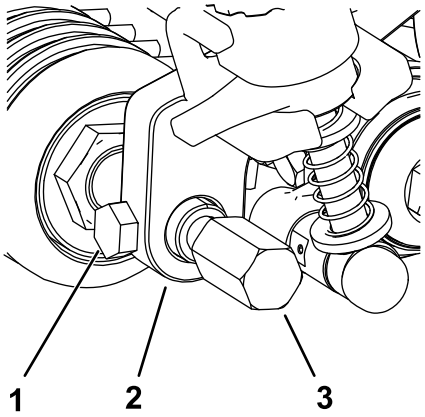


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Figure 20

1. Cotter pin
2. Adjuster collar
3. Adjuster-arm assembly rod
4. Adjuster pin

5. Insert and center the front roller shaft between the height-of-cut brackets and secure it with the 2 mounting screws removed from the old height-of-cut brackets (Figure 21).



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Figure 21

1. Mounting screw
2. Height-of-cut bracket assembly
3. Groomer guard

6. Attach the groomer guards to either side of the front roller shaft (Figure 21).
7. Torque the groomer guards to 22 to 24 N·m (16 to 18 ft-lb).

   Note: For setups where additional spring force is required, install the optional flange nut (Part No. 3290-357) to the eye bolt to compress

the height-of-groom springs at a low height of groom.

When using this optional part, set the spring length to 19 mm (3/4 inch) when the groomer is in the engaged position (Figure 22).

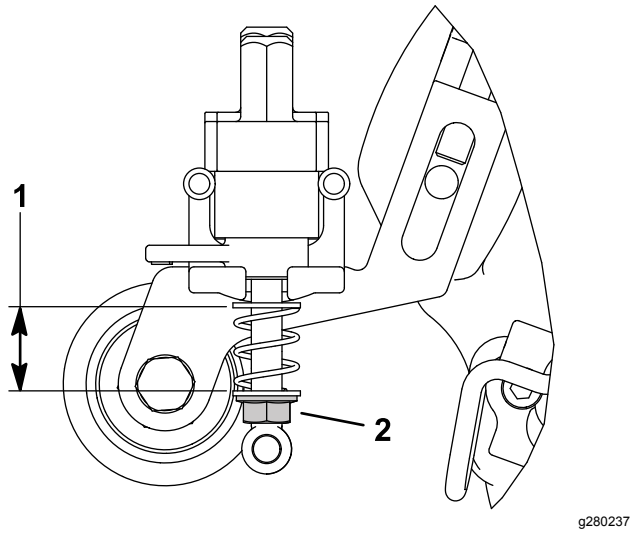


Figure 22

1. Set the spring length to 19 mm (3/4 inch) in the engaged position.
2. Optional flange nut (Part No. 3290-357)

9

Installing the Groomer

Parts needed for this procedure:

4	Bolt (1/4 to 1 1/2 inches)
4	Jam nut
4	Shaft clamp

Procedure

1. Obtain a groomer reel appropriate for your needs and cutting unit; refer to the following list of available groomer reels:
   - 18-inch twin tip groomer blade (Model number 04801)
   - 18-inch carbide groomer blade (Model number 04281)
   - 18-inch soft grooming brush (Model number 04268)
   - 18-inch stiff grooming brush (Model number 04269)
   - 21-inch twin tip groomer blade (Model number 04802)
   - 21-inch soft grooming brush (Model number 04270)
   - 21-inch stiff grooming brush (Model number 04271)
2. Line up the groomer with the groomer drive box and idler assembly (Figure 23).

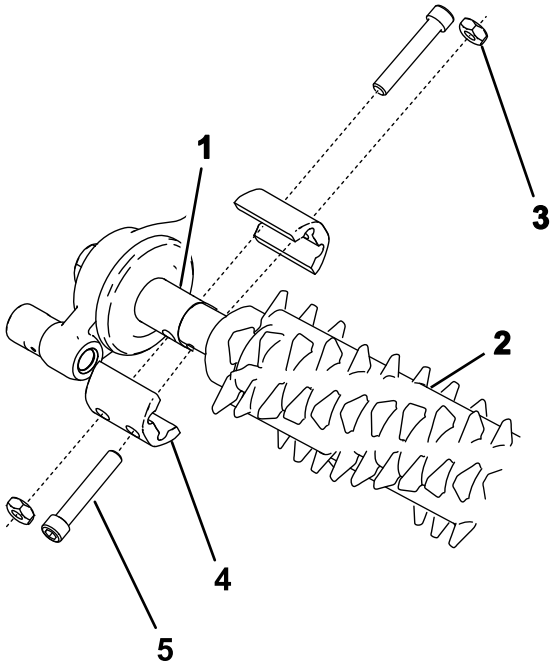


Figure 23

1. Drive-stub shaft
2. Groomer assembly
3. Jam nut (4)
4. Shaft clamp (4)
5. Bolt (4)

3. Secure the groomer to the machine as shown in Figure 23 and snug the bolts.
4. To prevent binding, set the height of cut and height of groom, then loosen the bolts.

   Note: To set the height of cut refer to your cutting unit *Operator's Manual*; refer to Adjusting the Groomer Height (page 15) for adjusting the height of groom.
5. Torque the bolts to 5 to 7 N·m (46 to 60 in-lb).
6. Check and adjust height of cut and height of groom as necessary.

10

Install the Suspension Front Roller

Parts needed for this procedure:

–	Pull link kit and extension coupler for Greensmaster 3120, 3150, and 3250 machines (ordered separately)

Procedure

Some machines require a pull link kit and extension couplers (Figure 24) when installing this universal groomer kit; refer to the following list and their installation instructions.

- Pre-2018 Greensmaster 3120, or 3150 traction units have roller shafts with fine threads and require pull link kit Part No. 106-2643 and 2 extension couplers (Part No. 99-4191, ordered separately).
- Post-2018 Greensmaster 3120, or 3150 traction units have roller shafts with course threads and require pull link kit Part No. 138-4976 and 2 extension couplers (Part No. 99-4191, ordered separately).
- Greensmaster 3250 traction units require 1 pull link kit Part No. 112-9248 per cutting unit.

  Note: This kit includes the extension couplers (Part No. 99-4191).

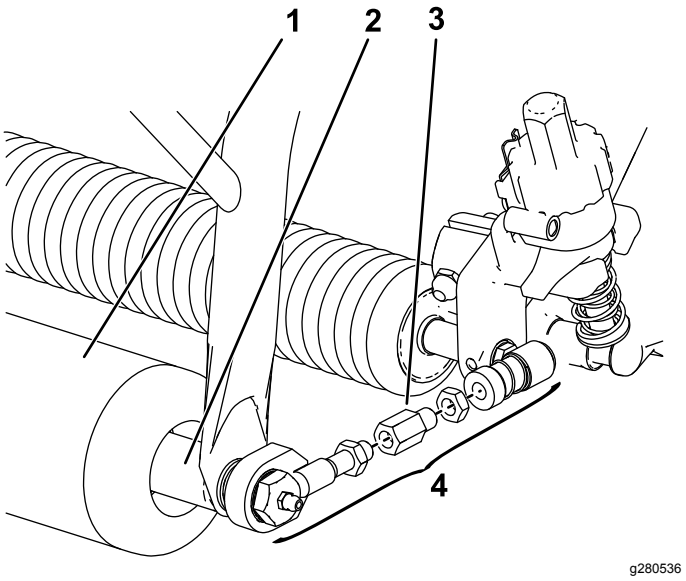


Figure 24

1. Front roller
2. Roller shaft with internal fine or course threads.
3. Extension coupler (Part No. 99-4191)
4. Pull link kit

Operation

Introduction

Grooming is performed in the turf canopy above the soil level. Grooming promotes vertical growth of grass plants, reduces grain, and severs stolons, producing a denser turf. Grooming produces a more uniform and tighter playing surface for faster and truer action of the golf ball.

Grooming should not be considered as a replacement for verticutting. Verticutting is generally a more rigorous and periodic treatment that can temporarily damage the playing surface, while grooming is a routine and gentler treatment designed to manicure the turf.

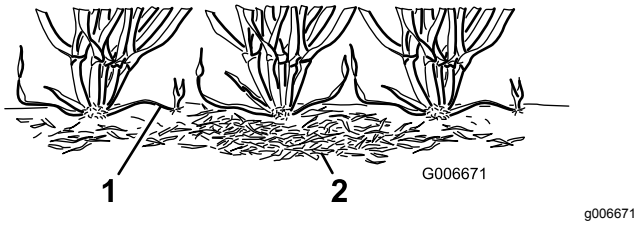


Figure 25

1. Grass runners (stolons) 2. Thatch

Grooming brushes are less intrusive than conventional grooming blades when adjusted to lightly contact the turf canopy. Brushing may be better for the ultra-dwarf cultivars, since these grass types have an upright growth pattern and do not fill in well through horizontal growth. Brushes can injure leaf tissue if they are set to penetrate too deeply into the canopy.

Groomer blades should never penetrate the soil. They are effective in cutting runners and removing thatch.

Because grooming injures leaf tissue, avoid grooming during periods of high stress. Cool season species, such as creeping bent grass and annual bluegrass, should not be groomed during high-temperature (and high-humidity) periods in midsummer.

Many variables affect the performance of grooming, including:

- The time of the year (i.e., the growing season) and the weather pattern
- The general condition of each green
- The frequency of grooming/cutting—both how many cuttings per week and how many passes per cutting
- The height-of-cut setting on the main reel
- The height/depth setting on the grooming reel
- How long the grooming reel has been in use on the green
- The type of grass on the green
- The overall greens management program (i.e., irrigation, fertilizing, spraying, coring, overseeding, etc.)
- Traffic
- Stress periods (i.e., high temperatures, high humidity, unusually high traffic)

These factors can vary from green to green. Inspect the greens frequently and change the grooming practice as needed.

Various grooming shaft assemblies are available. The 13 mm (1/2 inch) spacing allows you to groom slightly deeper to cut stolons without thinning out the turf excessively. By removing spacers and adding blades or by adding spacers and removing blades, you can adjust the spacing between the groomer and blade to 6 mm (1/4 inch) or 19 mm (3/4 inch).

Note: Groom with a 6 mm (1/4 inch) blade spacing for fast-growth periods (spring through early summer) to thin out the top layer of the canopy. Groom with a 19 mm (3/4 inch) blade spacing for slower growth periods (late summer through fall and winter). During high-stress periods, using the grooming reel may cause damage to the turf.

Note: Using the groomer reel improperly or too aggressively (i.e., too deep or too frequent grooming) may unnecessarily stress the turf, causing severe turf damage. Use the groomer cautiously.

Note: Continue changing the direction of cut whenever you use the groomer. This enhances the effects of the grooming.

Note: Operate the groomer in a straight line as much as possible. Use caution when turning while operating the groomer.

Adjusting the Groomer Height

Use the following chart, figures, and procedure to set the groomer height/depth.

Number of rear-roller spacers required	Height of cut (HOC)	Height-of-grooming range (HOG)
0	1.5 mm (0.06 inch)	0.8 to 1.5 mm (0.03 to 0.06 inch)
	3.0 mm (0.12 inch)	1.5 to 3.0 mm (0.06 to 0.12 inch)
	4.8 mm (0.19 inch)	2.3 to 4.8 mm (0.09 to 0.19 inch)
	6.4 mm (0.25 inch)	3.0 to 6.4 mm (0.12 to 0.25 inch)
1	7.9 mm (0.31 inch)	3.8 to 7.9 mm (0.15 to 0.31 inch)
	9.7 mm (0.38 inch)	4.6 to 9.7 mm (0.18 to 0.38 inch)
2	11.2 mm (0.44 inch)	5.3 to 11.2 mm (0.21 to 0.44 inch)
	12.7 mm (0.50 inch)	6.4 to 12.7 mm (0.25 to 0.50 inch)
3	15.9 mm (0.625 inch)	9.4 to 15.9 mm (0.37 to 0.625 inch)
4	19.1 mm (0.75 inch)	12.7 to 19.1 mm (0.50 to 0.75 inch)

Note: If you are using the groomer on an eFlex traction unit, note that the groomer causes the traction unit to deplete the battery faster than when not running the groomer. The deeper into the grass you set the groomer, the more power it requires and the faster the machine uses up the battery charge.

1. Ensure that the rollers are clean. Position the machine on a flat, level work surface.
2. Using the above chart, determine the amount of rear-roller spacers required to set the desired grooming height/depth.

   Note: If you are installing 3 or 4 spacers on each side of the rear roller, use the longer screws—included in the optional High Height of Groom Kit (Above 0.375 inch)—instead of the standard screws.
3. Set the height of cut of the main reel.
4. Using the chart, determine the position required to set the desired grooming height/depth. Raise or lower the grooming reel as follows:

   Important: **Never set the groomer lower that 1/2 the height of the cut—up to 13 mm (0.5 inch); you can make adjustments 0 to 6 mm (0 to 0.25 inch) below the height of cut thereafter.**

   Important: **If you set the groomer higher that the height of cut, inadvertent groomer contact with the basket may occur when using the QUICK-UP POSITION. Never set the groomer higher than the height of cut in the OPERATING position.**

   A. Rotate the quick-up levers (Figure 26) to the OPERATING position (the handle points toward the front of the cutting unit).

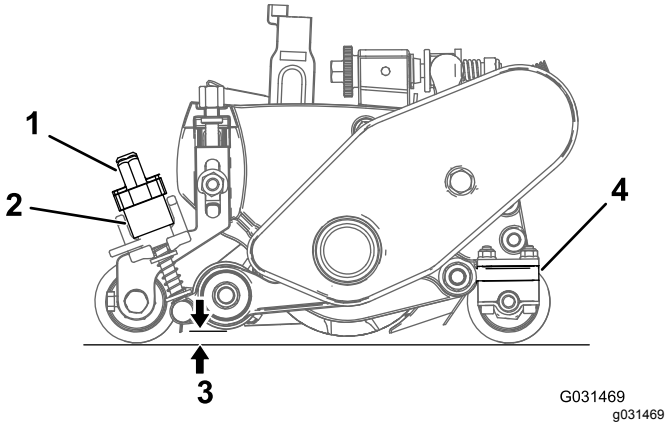


Figure 26

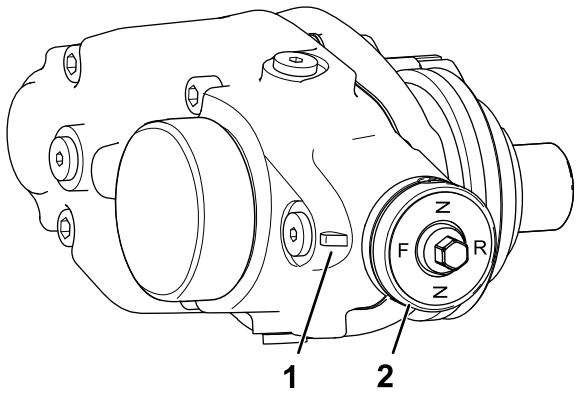
1. Height-adjuster knob
2. Quick-up lever (shown in the ENGAGED position)
3. Groomer height (HOG)
4. Number of rear-roller spacers (below side plate pad)

   B. At the end of the groomer reel, measure the distance from the lowest tip of the groomer blade to the working surface (Figure 26). Turn the height-adjuster knob (Figure 26) to raise or lower the tip of the groomer blade to the desired height.

   C. Repeat step B on the opposite end of the groomer, then check the setting on the first side of the groomer. The measured height at each end of the groomer reel must be identical. If the measured height at each end of the groomer is different, rotate the adjuster knob(s) until they are identical.

Changing the Groomer Operating Direction

The groomer has 3 settings: NEUTRAL, FORWARD, and REVERSE. To change the direction of the groomer, turn the knob at the end of the groomer drive box and align the desired position with the adjustment notch.



g246144

Figure 27

1. Adjustment notch
2. Knob

Testing the Groomer Performance

Important: **Improper or over-aggressive use of the grooming reel (i.e., too deep or too frequent grooming) may cause unnecessary stress on the turf, leading to severe greens damage. Use the groomer cautiously.**

⚠ DANGER

Contact with the reels or other moving parts can result in personal injury.

- **Before making any adjustments to the cutting units, disengage the reels, set the parking brake, shut off the engine, and remove the key.**
- **Keep your hands and clothing away from the reels or other moving parts.**

To determine the proper height/depth setting, do the following:

1. Set the cutting reel to the height of cut that would normally be used without a grooming reel.
2. Set the groomer reel to the height-of-cut setting above the roller level.
3. Set the grooming brush equal to the height-of-cut setting above the roller.

   Note: Adjust the grooming brush (up or down) in 0.25 mm (0.01 inch) increments to avoid unintended turf damage.
4. Make a pass over the test green, then lower the grooming reel 1/2 the roller level and make another pass over the test green.

   Note: For example, to set a 3.2 mm (1/8 inch) height-of-cut, set the grooming reel at 1.6 mm (1/16 inch) above the roller.
5. Compare the results.

   Note: The first setting (when the groomer setting was adjusted to the height-of-cut setting above the roller level) should have removed significantly less grass and thatch than the second setting.
6. Check the test green 2 or 3 days after the first grooming for general condition or damage. If the groomed areas are turning yellow or brown, and the non-groomed areas are green, the grooming was too aggressive.

   Note: The color of the grass changes when you use the grooming reel. An experienced greens superintendent can judge by the color of the turf (along with close examination) if the current grooming practice is appropriate for the particular green. Because the groom reel stands up more grass and removes thatch, the quality of cut is not the same as without the groomer. This effect is most noticeable the first few times that you use a groomer on a green.

   Note: On multiple passes (i.e., double and triple cutting), the groomer penetrates deeper on each successive pass. Multiple passes are not recommended.

   After testing the performance of the groomer on a test green and you obtain satisfactory results, you can begin grooming on the playing greens. However, each green may respond differently to grooming. In addition, growing conditions constantly change. Inspect the groomed greens frequently and make adjustments to the grooming procedure as often as necessary.

Transporting the Machine

When you wish to mow without the groomer or need to transport the machine, raise the grooming reel into its raised transport position.

Maintenance

Changing the Gearbox Lubricant

Service Interval
After the first 100 hours
Every 500 hours / Yearly (Whichever comes first)

1. Clean the external surfaces of the groomer housing.

   Important: **Ensure that there is no dirt or clippings on the outside of the groomer housing; if debris gets inside of the groomer it can damage the gearbox.**
2. Remove the drain plug on the bottom of the housing (Figure 30).
3. Remove the fill plug on the side of the housing and loosen the air vent plug on the top so air can pass through (Figure 30).
4. Align a suitable container beneath the oil drain port to catch drained oil.
5. Tip the cutting unit vertically until the drain port is at the bottom to ensure complete drainage (Figure 28).

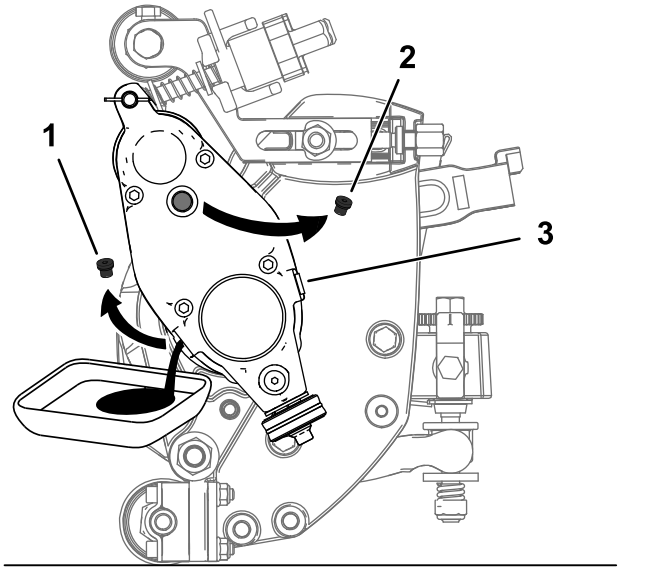


Figure 28

1. Remove the drain plug from the drain port.
2. Remove the fill plug from the fill port.
3. Loosen the air vent plug.

6. Rock the cutting unit back and forth to ensure complete drainage. When the oil is completely drained, place the cutting unit on a level surface.
7. Install the drain plug.
8. Use a syringe (Part No. 137-0872) to fill the drive box with 50 cc of 80-90W oil.

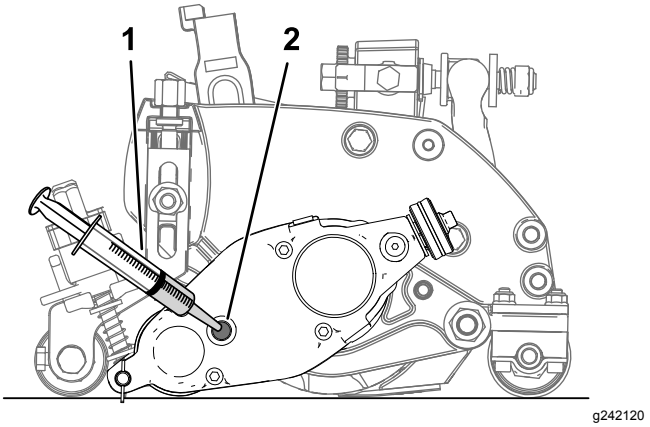


Figure 29

1. Syringe with 50 cc of 80-90W oil
2. Fill port

9. Install the fill plug and tighten the air-vent plug.
10. Torque all plugs to 3.62 to 4.75 N·m (32 to 42 in-lb).

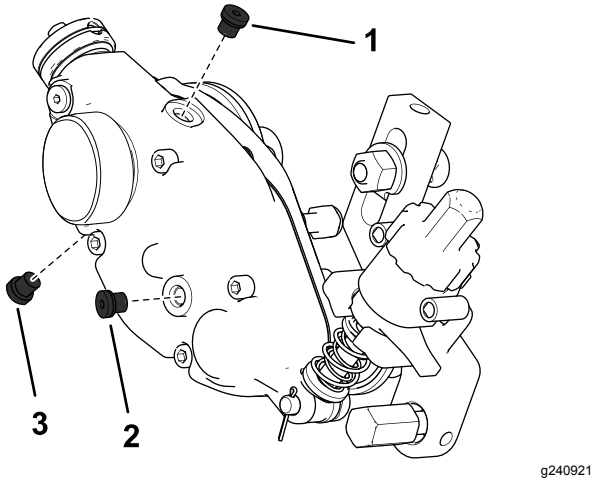


Figure 30
Left side shown

1. Air-vent plug
2. Fill plug
3. Drain plug

Cleaning the Grooming Reel

Service Interval: After each use

Clean off the grooming reel after using it by spraying it with water. Do not direct the water stream directly at the groomer bearing seals. Do not permit the grooming reel to stand in water so that the components rust.

Inspecting the Blades

Service Interval: Before each use or daily

Inspect the grooming-reel blades frequently for damage and wear. Straighten bent blades with a pliers. Replace worn blades, and torque the locknuts to 42 to 49 N·m (31 to 36 ft-lb). When inspecting the blades, check to see that nuts on the right and left blade-shaft ends are tight.

Note: If you are using spring steel blades, when 1 side of the blades become worn, remove the grooming reel, rotate it 180 degrees, and install it so that the unworn side is facing the direction of rotation.

Note: Because the groomer may introduce more debris (i.e., dirt and sand) into the cutting unit than what the reel would normally be exposed to, check the bedknife and main reel for wear more frequently. This is especially important in sandy soil and/or when the groomer is set for penetration.

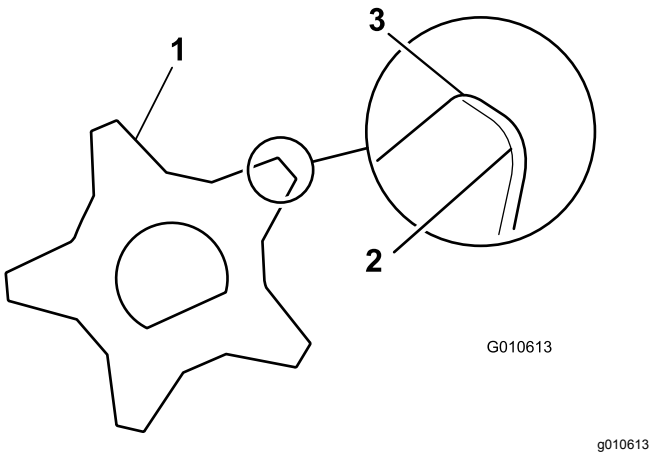


Figure 31

1. Grooming blade
2. Dull (rounded) edges
3. Sharp edges

Restraining the Reel

⚠ WARNING

The cutting reel blades are sharp and capable of amputating hands and feet.

- **Keep your hands and feet outside of the reel.**
- **Ensure that the reel is restrained before servicing it.**

Restraining the Reel for Removing Threaded Inserts

1. Tip up the cutting unit so that you access the bottom of the reel.
2. Insert a long-handled pry bar (recommended 3/8" x 12" with screwdriver handle) through the bottom of the cutting reel, closest to the side of the cutting unit that you will be torquing (Figure 32).
3. Place the pry bar against the weld side of the reel support plate (Figure 32).

   Note: Insert the pry bar between the top of the reel shaft and the backs of the reel blades so that the reel will not move.

   Important: **Do not contact the cutting edge of any blades with the pry bar; this may damage the cutting edge and/or cause a high blade.**

   Important: **The insert on the left side of the cutting unit has left-hand threads. The insert on the right side of the cutting unit has right-hand threads.**

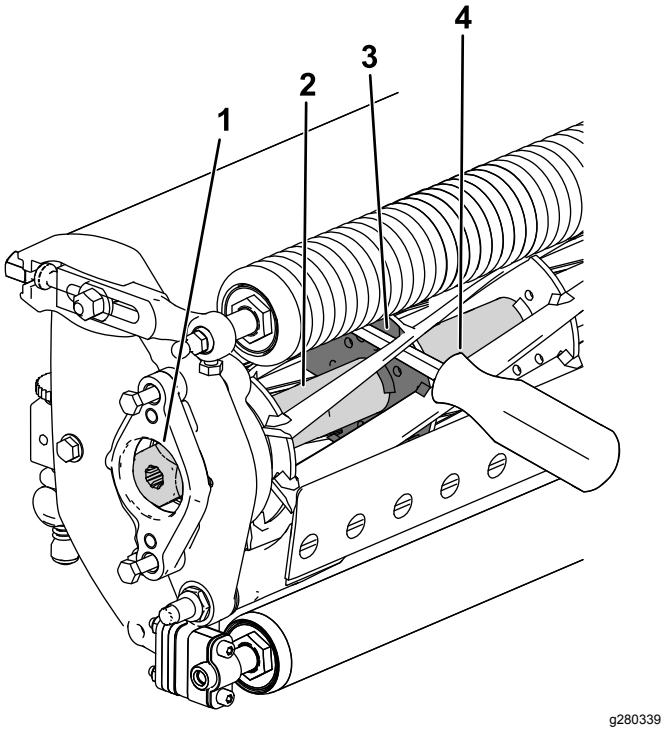


Figure 32

1. Threaded insert for removal
2. Reel shaft
3. Weld side of reel support plate
4. Pry bar

4. Rest the handle of the pry bar against the roller.
5. Complete the removal of the threaded insert while ensuring that the pry bar stays in place, then remove the pry bar.
6. Lower the cutting unit to rest on the rollers.

Restraining the Reel for Installing Threaded Inserts

1. Insert a long-handled pry bar (recommended 3/8" x 12" with screwdriver handle) through the front of the cutting reel, closest to the side of the cutting unit that you will be torquing (Figure 33).
2. Place the pry bar against the weld side of the reel support plate (Figure 33).

   Note: Insert the pry bar between the top of the reel shaft and the backs of the reel blades so that the reel will not move.

   Important: **Do not contact the cutting edge of any blades with the pry bar; this may damage the cutting edge or cause a high blade.**

   Important: **The insert on the left side of the cutting unit has left-hand threads. The insert on the right side of the cutting unit has right-hand threads.**

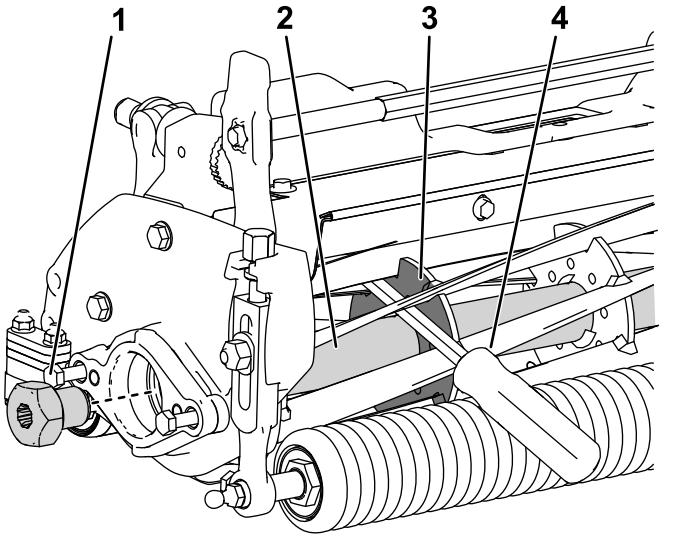


Figure 33

1. Threaded insert for installation
2. Reel shaft
3. Weld side of the support plate
4. Pry bar

3. Rest the handle of the pry bar against the roller.
4. Per the insert's installation instructions and torque requirements, complete the installation of the threaded insert while ensuring that the pry bar stays in place, then remove the pry bar.

Notes:

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
04648	—	Universal Groomer Drive Kit, Greensmaster Flex 1800 and 2100, eFlex 1800 and 2100 or Greensmaster 3000 Series DPA Cutting Units	UNIV GROOMER DRIVE, NEWGEN DPA GREENS CU	Groomer Drive System	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:



John Heckel
Sr. Engineering Manager
8111 Lyndale Ave. South
Bloomington, MN 55420, USA
January 2, 2019

Authorized Representative:

Marcel Dutrieux
Manager European Product Integrity
Toro Europe NV
Nijverheidsstraat 5
2260 Oevel
Belgium

Tel. +32 16 386 659

EEA/UK Privacy Notice

Toro's Use of Your Personal Information

The Toro Company ("Toro") respects your privacy. When you purchase our products, we may collect certain personal information about you, either directly from you or through your local Toro company or dealer. Toro uses this information to fulfil contractual obligations - such as to register your warranty, process your warranty claim or to contact you in the event of a product recall - and for legitimate business purposes - such as to gauge customer satisfaction, improve our products or provide you with product information which may be of interest. Toro may share your information with our subsidiaries, affiliates, dealers or other business partners in connection these activities. We may also disclose personal information when required by law or in connection with the sale, purchase or merger of a business. We will never sell your personal information to any other company for marketing purposes.

Retention of your Personal Information

Toro will keep your personal information as long as it is relevant for the above purposes and in accordance with legal requirements. For more information about applicable retention periods please contact legal@toro.com.

Toro's Commitment to Security

Your personal information may be processed in the US or another country which may have less strict data protection laws than your country of residence. Whenever we transfer your information outside of your country of residence, we will take legally required steps to ensure that appropriate safeguards are in place to protect your information and to make sure it is treated securely.

Access and Correction

You may have the right to correct or review your personal data, or object to or restrict the processing of your data. To do so, please contact us by email at legal@toro.com. If you have concerns about the way in which Toro has handled your information, we encourage you to raise this directly with us. Please note that European residents have the right to complain to your Data Protection Authority.

The Toro Warranty

Two-Year or 1,500 Hours Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial product ("Product") to be free from defects in materials or workmanship for 2 years or 1,500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.
* Product equipped with an 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 800–952–2740
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Repairs for product issues caused by failure to perform required maintenance and adjustments are not covered under this warranty.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This 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, or modified non-Toro branded accessories and products.
- Product failures which result from failure to perform recommended maintenance and/or adjustments.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts consumed through use that are not defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves.
- Failures caused by outside influence, including, but not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.
- Normal noise, vibration, wear and tear, and deterioration. 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.

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 are covered for the duration of the original product warranty and 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 remanufactured parts for warranty repairs.

Deep Cycle and Lithium-Ion Battery Warranty

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Note: (Lithium-Ion battery only): Pro-rated after 2 years. Refer to the battery warranty for additional information.

Lifetime Crankshaft Warranty (ProStripe 02657 Model Only)

The Prostripe which is fitted with a genuine Toro Friction Disc and Crank-Safe Blade Brake Clutch (integrated Blade Brake Clutch (BBC) + Friction Disc assembly) as original equipment and used by the original purchaser in accordance with recommended operating and maintenance procedures, are covered by a Lifetime Warranty against engine crankshaft bending. Machines fitted with friction washers, Blade Brake Clutch (BBC) units and other such devices are not covered by the Lifetime Crankshaft Warranty.

Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner's expense.

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 Emissions 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 supplied with your product or contained in the engine manufacturer's documentation.

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 your Authorized Toro Service Center.