Form No. 3414-295 Rev B

Universal Groomer Drive Kit

Reelmaster® 18-inch, 22-inch, or 27-inch Edge Series Cutting Units with 5-inch or 7-inch Reel

Model No. 03763

Model No. 03764

Model No. 03765

Model No. 03766

Model No. 03767

Model No. 03768

Model No. 132-7115

Model No. 132-7125

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.

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	–	Gather the tools required for setup.
3	No parts required	–	Determine where on the cutting unit to install the groomer.
4	Extended splined insert (right-hand threads)	3	Prepare the cutting unit.
	Extended splined insert (left-hand threads)	2	
	Flange locknut (3/8 inch)	10	
5	Weight bracket	5	Install the weight bracket and groomer drive box.
	Hex-socket, button-head bolt (3/8 x 3/4 inch)	10	
	Groomer drive box (left drive)	3	
	Groomer drive box (right drive)	2	
6	Hex-socket bolt	10	Install the idler assembly.
	Pivot hub	5	
	O-ring	5	
	Idler assembly (left)	2	
	Idler assembly (right)	3	
	Locknut (3/8 inch)	10	

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CE

Original Instructions (EN)
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3414-295 B

Procedure	Description	Qty.	Use
7	Left HOC bracket assembly Right HOC bracket assembly Adjuster pin Cotter pin Outer cover Hex-socket, button-head screw (5/16 x 1/2 inch)	5 5 10 10 5 5	Install the HOC bracket assemblies and the front roller.
8	Bolt (1/4 x 1-1/2 inches) Jam nut Shaft clamp	20 20 20	Install the groomer assembly (ordered separately) and optional broomer kit.
9	Hydraulic fitting—45° (Part No. 340–101; sold separately)	1	Install the angled fitting (for Reelmaster 3550 and 3555 machines, #1 front, center cutting location and kit Model 133-0150).

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.
4. Disconnect the battery; refer to your *Operator's Manual*.

2

Gathering the Tools Required for Setup

No Parts Required

Procedure

- Torque wrench—5.2 to 6.8 N·m (46 to 60 in-lb)
- Torque wrench—115 to 129 N·m (85 to 95 ft-lb)
- Torque wrench—135 to 150 N·m (100 to 110 ft-lb)
- Reel driveshaft tool, Part No. TOR4112 (used only on 5-inch reels)
- Reel driveshaft tool, Part No. TOR4074 (used only on 7-inch reels)

3

Determining the Setup

No Parts Required

Procedure

Use the following diagram to determine the position of the groomer kit and reel motors.

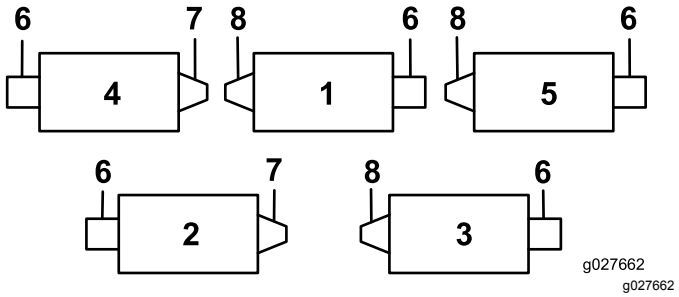

Figure 1

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 groomer kit
8. Left groomer kit

Note: If you are installing a groomer kit and a rear roller-brush kit on the cutting unit, install the groomer kit first.

4

Preparing the Cutting Unit

Parts needed for this procedure:

3	Extended splined insert (right-hand threads)
2	Extended splined insert (left-hand threads)
10	Flange locknut (3/8 inch)

Procedure

Note: You may discard all removed parts unless otherwise stated.

1. Remove all cutting units from the traction unit; refer to your *Operator's Manual*.
2. Remove the carriage bolts and locknuts securing the height-of-cut (HOC) brackets to the cutting-unit side plates (Figure 2).

   Note: Save the carriage bolts and locknuts to install the new HOC brackets.

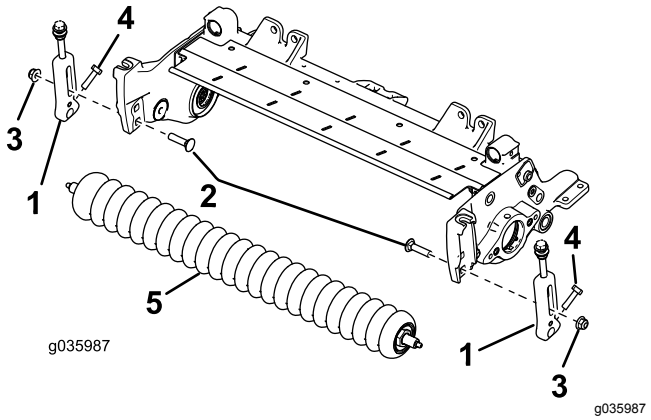

Figure 2

1. Height-of-cut bracket
2. Carriage bolt
3. Locknut
4. Screw
5. Front roller

3. Loosen the screws securing the height-of-cut brackets to the front-roller shaft (Figure 2).
4. Remove the existing height-of-cut brackets and the front roller from the cutting-unit side plates (Figure 2).

   Note: Save the front roller for later installation.
5. Remove the existing splined insert from each end of the reel shaft using the reel driveshaft tool (Part No. TOR4112 for the 5-inch reel and Part No. TOR4074 for the 7-inch reel). Refer to Figure 3.

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.**

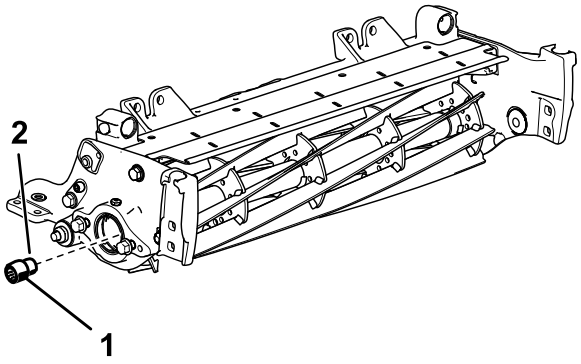

Figure 3

Right side of cutting unit shown

1. Extended splined insert (Torque to 115 to 128 N·m (85 to 95 ft-lb))
2. Apply medium-strength removable locking compound to the threads

6. Apply medium-strength thread-locking compound (such as Blue Loctite® 243) to the threads of the new longer splined insert, and secure it to the reel shaft. Torque the insert to 115 to 128 N·m (85 to 95 ft-lb).

   Important: **Allow the thread-locking compound to cure for 15 minutes before continuing the procedure.**
7. For 7-inch cutting units or if a support rod is installed, remove the support rod and flip the bolts around as follows:

   A. Remove the 2 flange-head bolts securing the support rod, and remove the support rod (Figure 4).

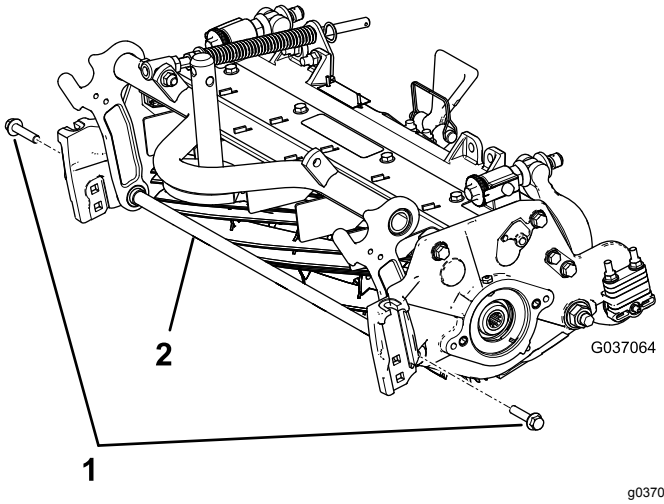

Figure 4

1. Flange-head bolts
2. Support rod

B. Install the 2 existing flange-head bolts from the inside of the cutting unit, and secure them with the 3/8 inch flange locknuts (Figure 5).

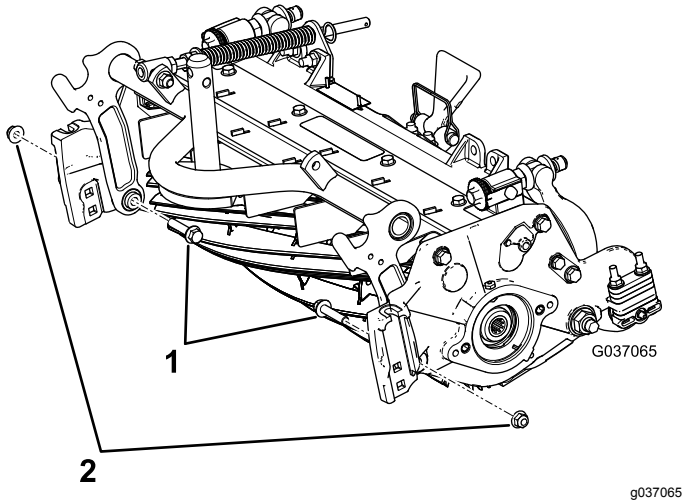

Figure 5

1. Flange-head bolts
2. Flange locknuts (3/8 inch)

5

Installing the Weight Bracket and the Groomer Drive Box

Parts needed for this procedure:

5	Weight bracket
10	Hex-socket, button-head bolt (3/8 x 3/4 inch)
3	Groomer drive box (left drive)
2	Groomer drive box (right drive)

Procedure

1. Identify the left-drive groomer drive boxes and the right-drive groomer drive boxes; refer to Figure 6.

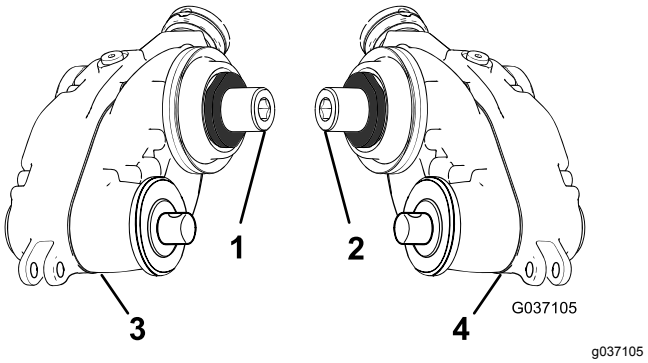

Figure 6

1. Right (yellow) adapter
2. Left (green) adapter
3. Groomer drive box—right drive
4. Groomer drive box—left drive

2. Secure the weight bracket to the reel using 2 hex-socket, button-head bolts (3/8 x 3/4 inch) as shown in Figure 7.

   Note: Attach the weight bracket to the side of the reel where you intend to mount the groomer drive box.

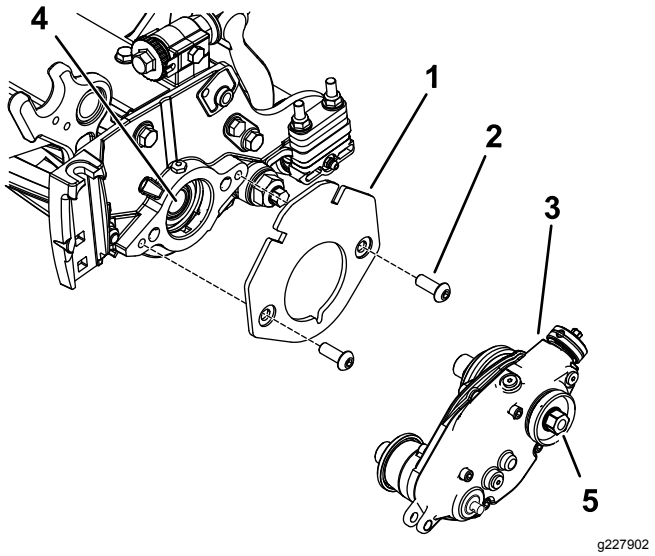

Figure 7

1. Weight bracket
2. Hex-socket, button-head bolt—3/8 x 3/4 inch (2)
3. Groomer drive box (left drive shown)
4. Thread-locking compound
5. Hex-head (Torque to 135 to 150 N·m (100 to 110 ft-lb))

3. Apply medium-strength thread-locking compound (such as Blue Loctite® 243) to the threads of the internal reel shaft (Figure 7).
4. Attach the groomer drive box to the reel shaft (Figure 7) using the hex-head on the groomer drive box.

   Important: **The reel threads on the left side of the cutting unit are left-handed, and the reel threads on the right side of the cutting unit are right-handed.**
5. Using a block of wood to restrain the reel, torque the hex head 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.**

6

Installing the Idler Assembly

Parts needed for this procedure:

10	Hex-socket bolt
5	Pivot hub
5	O-ring
2	Idler assembly (left)
3	Idler assembly (right)
10	Locknut (3/8 inch)

Procedure

1. Position the idler assembly on the opposite side of the reel from the groomer drive box.
2. Install the O-ring onto the pivot-hub assembly.
3. Apply anti-seize compound on the outside diameter of the pivot-hub assembly (Figure 8).

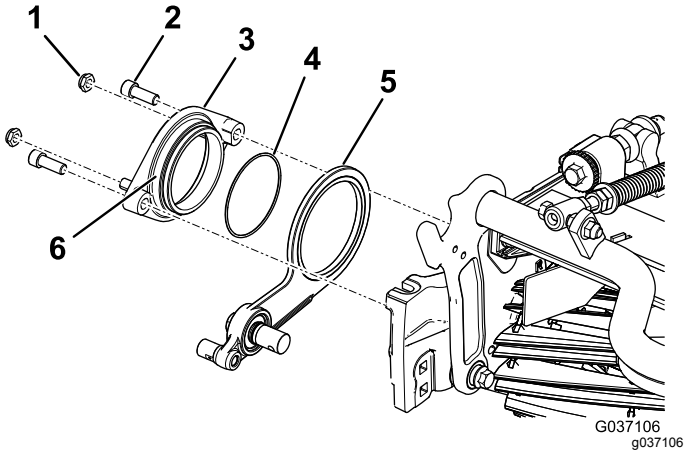

Figure 8

1. Locknut—3/8 inch (2)
2. Hex-socket bolt (2)
3. Pivot hub
4. O-ring
5. Idler assembly (right side shown)
6. Apply anti-seize compound on the outside diameter of the hub.

4. Secure the pivot hub over the idler assembly to the reel using 2 hex-socket bolts (Figure 8).
5. Loosely install the 2 locknuts on the pivot hub (Figure 8).

7

Installing the HOC Bracket Assemblies and the Front Roller

Parts needed for this procedure:

5	Left HOC bracket assembly
5	Right HOC bracket assembly
10	Adjuster pin
10	Cotter pin
5	Outer cover
5	Hex-socket, button-head screw (5/16 x 1/2 inch)

Procedure

1. Loosely install the left and right HOC bracket assemblies and the front roller assembly to the cutting-unit side plates using the previously removed carriage bolts and locknuts (Figure 9).

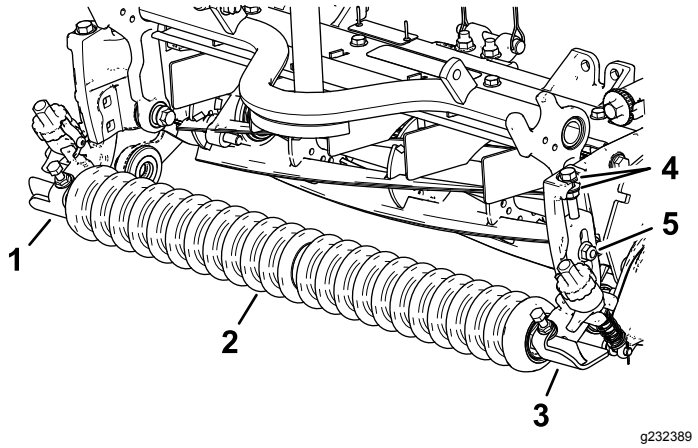

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Figure 9

1. Right HOC bracket assembly
2. Front roller assembly
3. Left HOC bracket assembly
4. Washers
5. Carriage bolt and locknut

2. On the groomer box side, slide the adjuster-arm rod of the HOC bracket into the gap on the groomer drive box and secure it with an adjuster pin and cotter pin as shown in Figure 10.

   Note: The adjuster pin must be installed from the inside of the machine to the outside of the machine.

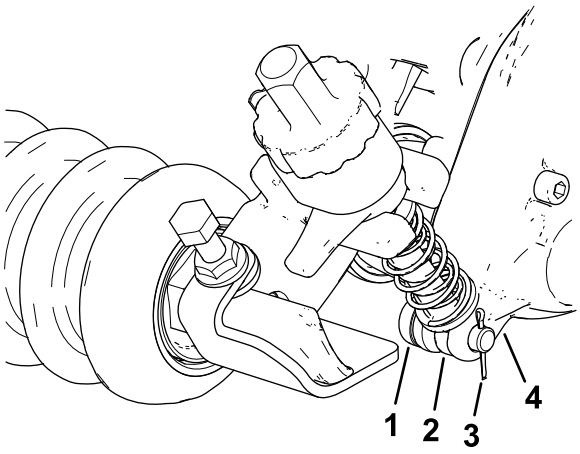

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Figure 10

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

3. On the idler assembly side, align the adjuster-arm rod of the HOC bracket with the adjuster collar on the idler assembly and secure it with an adjuster pin and cotter pin (Figure 11).

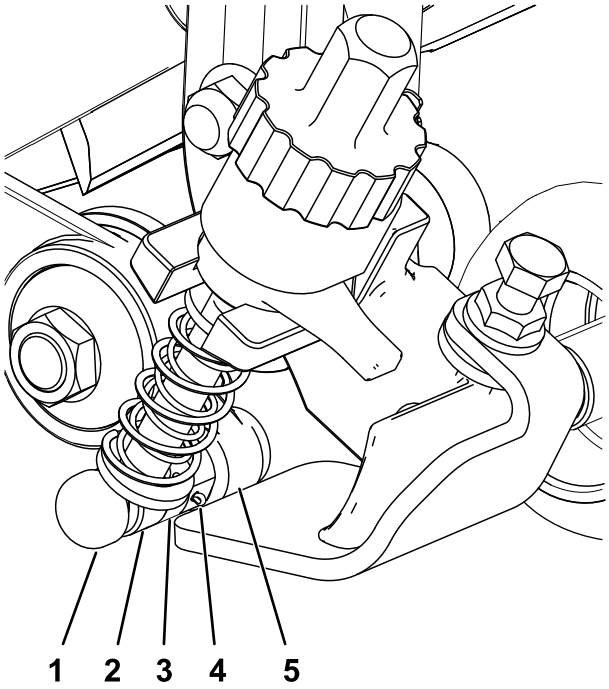

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Figure 11

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

4. Tighten the carriage bolts and locknuts securing the HOC bracket assemblies to the side plates (Figure 12).

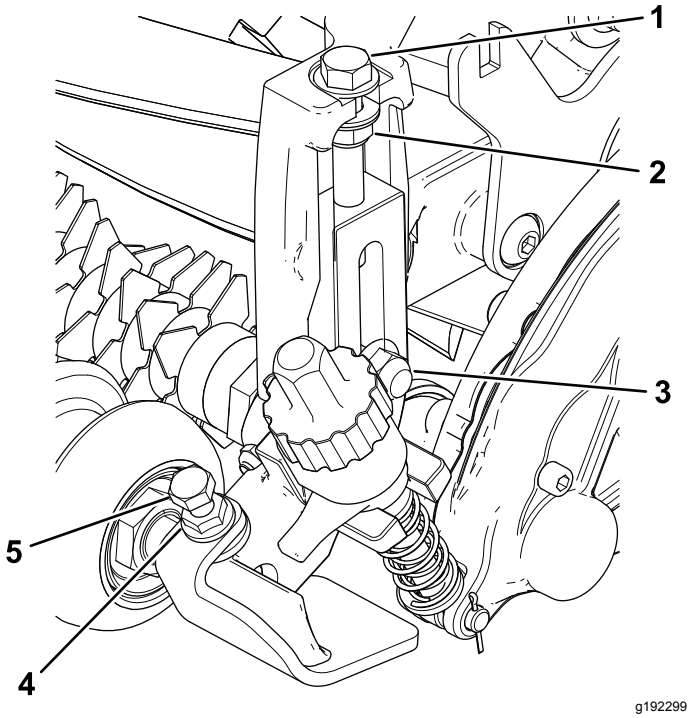

Figure 12

1. Adjusting bolt
2. Locknut
3. Carriage bolt and locknut
4. Capscrew
5. Flange nut

5. Tighten the locknut on the HOC adjuster bolt, then back off the locknut 1/2 turn (Figure 12).
6. Center the front roller between the HOC bracket assemblies and lock it in place with the cap screws and flange nuts (Figure 12).
7. **For the Universal Groomer assembly only (no rear roller brush kit installed):** Install the outer cover with a hex-socket, button-head screw (5/16 x 1/2 inch) as shown in Figure 13.

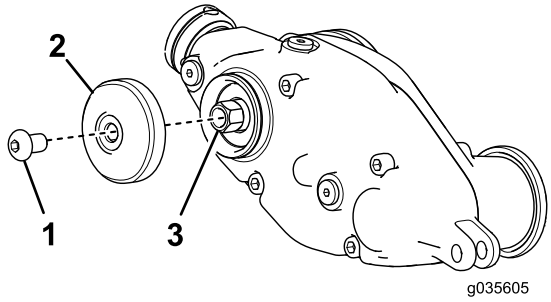

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Figure 13

1. Hex-socket, button-head screw (5/16 x 1/2 inch)
2. Outer cover
3. Hex-head

8

Installing the Groomer Assembly and Optional Broomer Kit

Groomer and Broomer Kits Come Separately

Parts needed for this procedure:

20	Bolt (1/4 x 1-1/2 inches)
20	Jam nut
20	Shaft clamp

Installing the Groomer Kit

Ordered Separately

Model Number	Groomer Kit
03764	18 inch Groomer Blade Cartridge Kit
03765	22 inch Groomer Blade Cartridge Kit
03241	27-inch Groomer Blade Cartridge Kit
03766	18 inch Groomer Perfection Grooming Brush Kit
03767	22 inch Groomer Perfection Grooming Brush Kit

1. Obtain a groomer blade cartridge kit or a brush kit appropriate for your needs and cutting unit; refer to the table above.
2. Line up the groomer assembly with the drive-stub shafts of the groomer drive box and idler assembly (Figure 14).

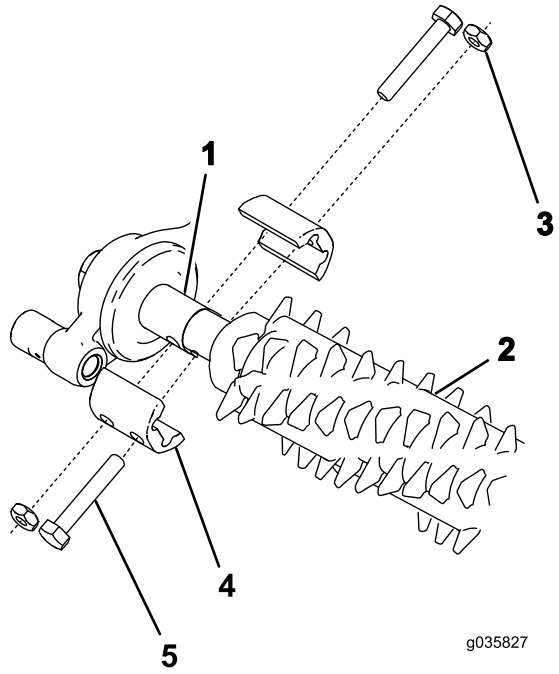

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Figure 14

1. Drive-stub shaft
2. Groomer assembly
3. Jam nut (4)
4. Shaft clamp (4)
5. Bolt (4) Torque to 5 to 7 N·m (46 to 60 in-lb)

3. Secure the groomer to the machine as shown in Figure 14 using 4 bolts (1/4 x 1-1/2 inches), 4 jam nuts, and 4 shaft clamps.
4. Torque the bolts to 5 to 7 N·m (46 to 60 in-lb).

Installing the Broomer Kit

Part Number	Broomer Kit
132-7115	18-inch Broomer Kit
132-7125	22-inch Broomer Kit
133-8222	27-inch Broomer Kit

1. Obtain an optional broomer kit for groomer blade cartridges appropriate for your needs and cutting unit; refer to the table above.
2. Loosen the groomer blade-retaining nuts on each end of the groomer shaft (Figure 15).

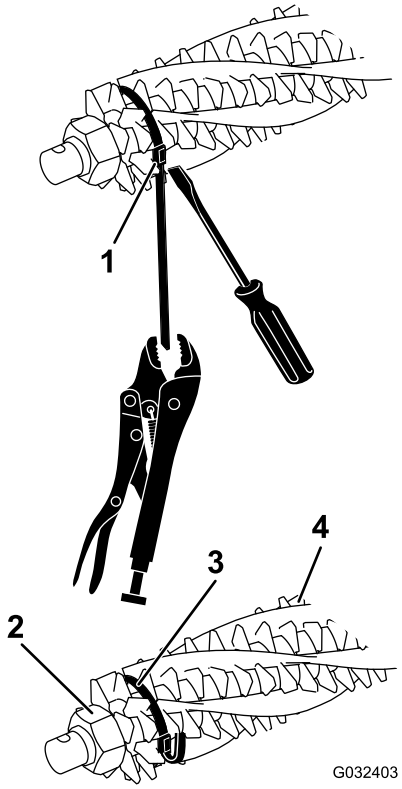

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Figure 15

1. Strap buckle
2. Retaining nut
3. Strap
4. Brush

3. From 1 side of the groomer reel, slide a brush into each groove around the full length of the groomer reel (Figure 16).

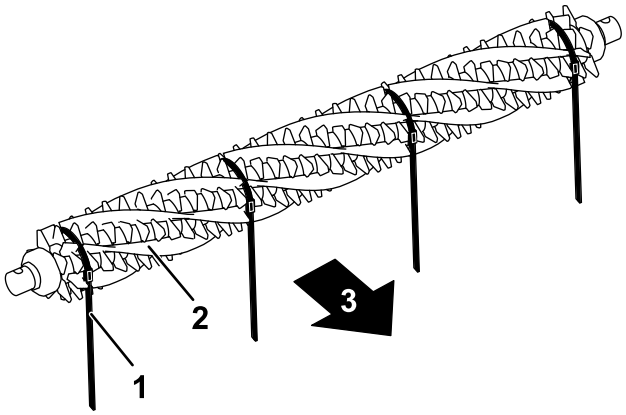

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Figure 16

22 inch groomer shown

1. Strap
2. Brush
3. Toward rear of machine

4. Verify that the brushes are seated in the groomer blade slots (Figure 15 and Figure 17).

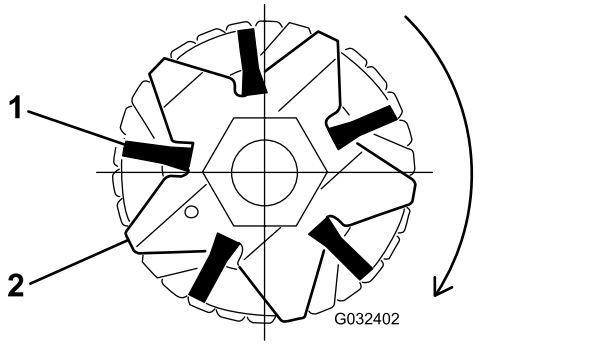

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Figure 17

1. Brush
2. Blade

5. Loosely wrap the straps, as shown in Figure 15, around the groomer reel shaft and brushes inserting the straps in the grooves in the brushes Figure 17.

   Position the straps on the brushes so using the following table:

Reel Size	Strap Spacing
18 inch	Position the straps between blades 2 and 3; 11 and 12; 21 and 22; and 30 and 31
22 inch	Position the straps between blades 2 and 3; 14 and 15; 26 and 27; and 38 and 39
27 inch	Position the straps between blades 2 and 3; 23 and 24 or 24 and 25; 35 and 36; and 45 and 46

   Important: **You must wrap the straps around the groomer blade and brush assembly in the primary rotating direction. Figure 16 shows the straps installed for forward rotation.**

   Note: If the broomer brushes are not seated properly in the blade slots, loosen the groomer-blade retaining nuts on each end of the groomer shaft, position the broomer brushes properly in the blade slots, and tighten the groomer-blade retaining nuts (Figure 15).

6. Tighten the groomer blade retaining nuts; torque them to 45.2 N·m (400 in-lb).
7. While pushing a screwdriver against the strap buckle, grasp each strap with a locking pliers and pull the straps tight until they lock into the brush grooves (Figure 15).
8. Trim the strap so that it is 6 mm (1/4 inch) from the buckle and fold the excess strap over the buckle.

9

Installing the Angled Fitting

For Reelmaster 3550 and 3555 Machines—#1 Front, Center Cutting Location and Kit Model 133-0150 Only

Parts needed for this procedure:

1	Hydraulic fitting—45° (Part No. 340–101; sold separately)

Procedure

Important: **For Reelmaster 3550 and 3555 machines—#1 front, center cutting location and kit model 133-0150 only; order 45° hydraulic fitting (Part No. 340–101) and follow the procedure below.**

1. Remove the hydraulic hose from the hydraulic fitting on the motor.
2. Remove the 2 O-rings on the new 45° fitting, lubricate them with grease, and install them on the fitting.
3. Remove the existing fitting.
4. Install the new 45° fitting, positioning the fitting with the angle of the fitting as shown in Figure 18. Torque the fitting to 47 to 58 N·m (35 to 43 ft-lb).

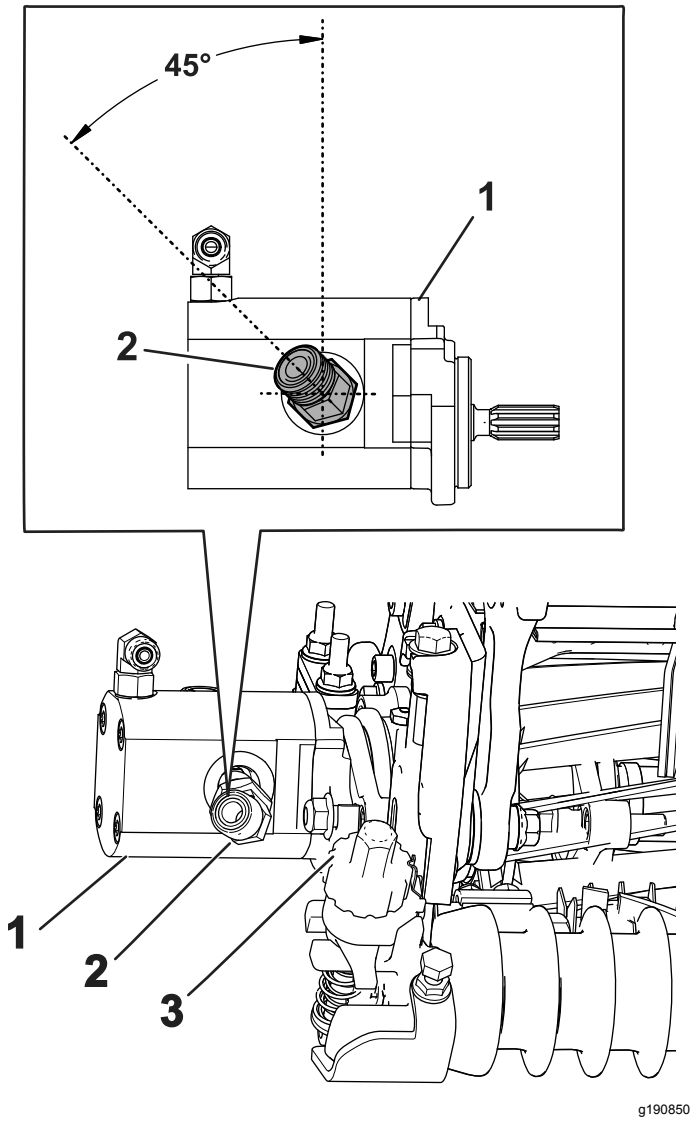

Figure 18

1. Cutting unit motor
2. Angled hydraulic fitting
3. Groomer adjuster

5. Connect the hydraulic hose into the new fitting; torque the hose fitting to 40 to 64 N·m (37 to 47 ft-lb).

   Note: Ensure that the fitting is positioned so that the hose does not contact the groomer adjuster.

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.

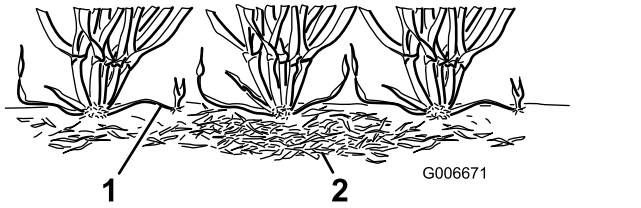

Figure 19

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 blue grass, 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 the grass
- 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
- The type of grass

- The overall 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 fairway to fairway. Inspect the mowing area frequently and change the grooming practice as needed.

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

1. Park the machine on a clean and level surface, lower the cutting units completely to the ground, shut off the engine, engage the parking brake, and remove the key.
2. Make sure that the rollers are clean and the cutting unit is set to the desired height-of-cut (see your cutting unit *Operator's Manual*).
3. Rotate the quick-up levers (Figure 20) to the ENGAGED position (the handle points toward the front of the cutting unit.

   Important: **Use the Height-of-Cut (HOC) and Height-of-Groom (HOG) recommended range chart for setting the gauge bar.**
4. At 1 end of the groomer reel, measure the distance from the lowest tip of the groomer blade to the working surface (Figure 20). Turn the height adjuster knob (Figure 20) to raise or lower the groomer blade tip to the desired height.

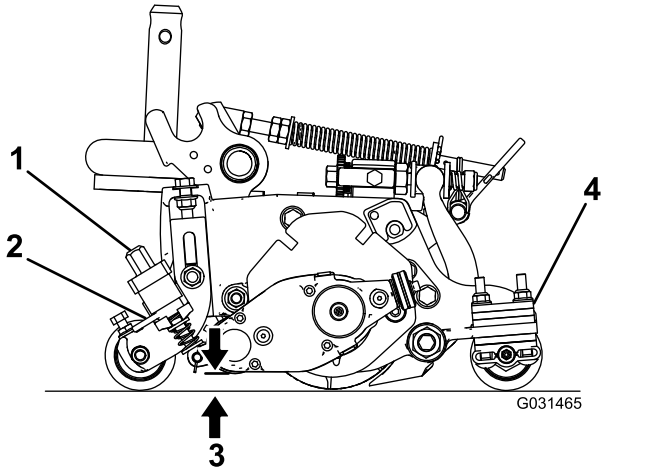

Figure 20

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

5. Repeat step 4 at the opposite end of the groomer, then check the setting on the first side of groomer.

   The height setting on both ends of the groomer should be identical. Adjust the height as required.

Height-of-Cut (HOC) and Height-of-Groom (HOG) Recommended Range

Height-of-Cut (mm)	Height-of-Cut (inch)	Number of Rear Roller Spacers	Recommended HOG = HOC - Groomer Engagement (mm)	Recommended HOG = HOC - Groomer Engagement (inch)
6.3	**0.250**	0	3.1 to 6.3	0.125 to 0.250
9.5	**0.375**	0	4.7 to 9.5	0.187 to 0.375
9.5	**0.375**	1	4.7 to 9.5	0.187 to 0.375
12.7	**0.500**	0	6.3 to 12.7	0.250 to 0.500
12.7	**0.500**	1	6.3 to 12.7	0.250 to 0.500
12.7	**0.500**	2	6.3 to 9.5	0.250 to 0.375
15.8	**0.625**	0	9.5 to 15.8	0.375 to 0.625
15.8	**0.625**	1	9.5 to 15.8	0.375 to 0.625
15.8	**0.625**	2	9.5 to 12.7	0.375 to 0.500
19.0	**0.750**	1	12.7 to 19.0	0.500 to 0.750
19.0	**0.750**	2	12.7 to 19.0	0.500 to 0.750
19.0	**0.750**	3	12.7 to 15.8	0.500 to 0.625
22.2	**0.875**	1	15.8 to 22.2	0.625 to 0.875
22.2	**0.875**	2	15.8 to 22.2	0.625 to 0.875
22.2	**0.875**	3	15.8 to 19.0	0.625 to 0.750
25.4	**1.00**	2*	19.0 to 25.4	0.750 to 1.00
25.4	**1.00**	3	19.0 to 25.4	0.750 to 1.00
25.4	**1.00**	4	19.0 to 22.2	0.750 to 0.875

Note: Maximum HOG recommended is half the HOC to 6 mm (1/4 inch) maximum engagement

***** Move the groomer front height-of-cut (HOC) bracket to the bottom (cutting unit location) side-plate hole.

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.

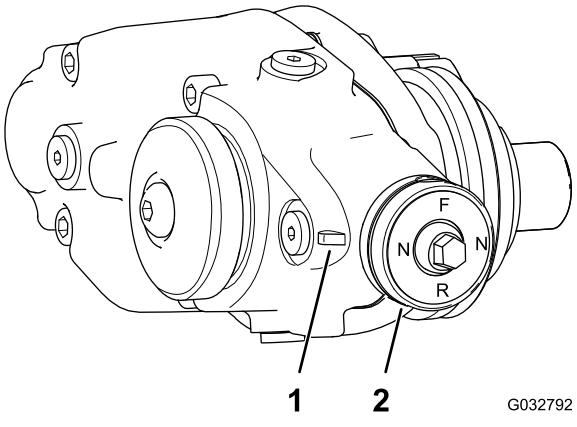

Figure 21

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 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.**

It is important to determine the performance of the groomer before putting it into regular use.

To determine the proper height/depth setting:

1. Set the main cutting reels to the height-of-cut setting that you would normally use without the grooming reel. Use a Wiehle roller on the front and a full roller on the rear.

   The amount of grass removed is a key indicator in determining the height/depth setting of the grooming reel.
2. Set each of the grooming reels to the desired height setting.
3. Examine the test area and determine if the groomed areas gives the desired results. If not, increase or decrease the height of the groomers and make another test pass.

Check the test area 2 or 3 days after the first grooming for general condition and damage. If the groomed areas are turning yellow and brown, and the non-groomed areas are green, then the grooming was too aggressive.

Maintenance

Changing the Gearbox Lubricant

Service Interval: Every 500 hours/Yearly (whichever comes first)

1. Clean the external surfaces of the groomer housing.
2. Remove the drain plug on the bottom of the housing (Figure 22).
3. Remove the level plug on the side of the housing to create a vent for improved drainage of oil (Figure 22).
4. Tip the cutting unit back until the drain port is at the bottom to ensure complete drainage.
5. When the oil is completely drained, place the cutting unit on a level surface.
6. Install the drain plug.
7. Remove the fill plug on the top of the housing (Figure 22).
8. Fill the groomer drive box with 80W-90 gear oil until the oil reaches the bottom of the level plug (approximately 50 cc for a 5-inch reel and 90 cc for a 7-inch reel).
9. Replace the level plug and the fill plug.
10. Torque all plugs to 3.62 to 4.75 N·m (32 to 42 in-lbs).

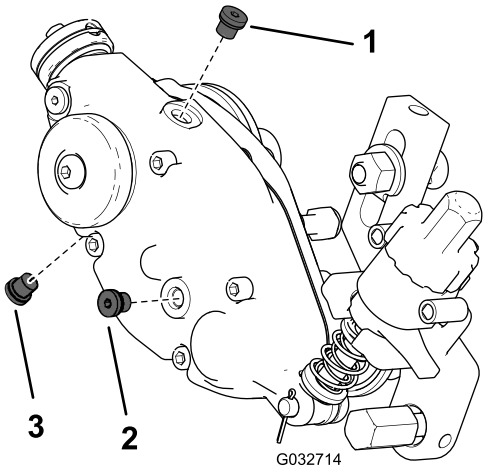

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Figure 22

1. Fill plug
2. Drain plug
3. Level 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 and replace worn blades. When inspecting the blades, check to see that nuts on the right and left blade-shaft ends are tight.

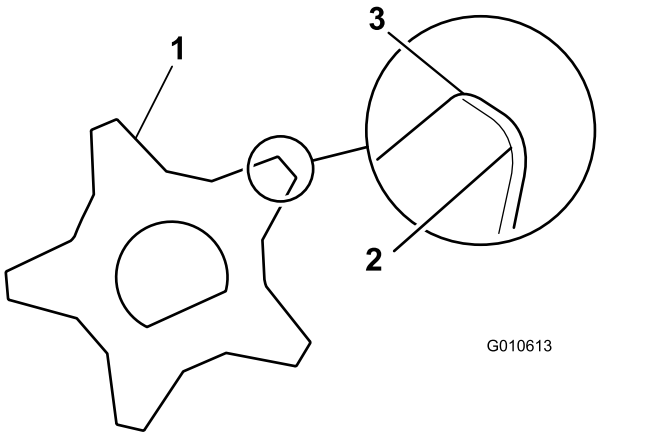

Figure 23

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

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
03763	—	Universal Groomer Drive Kit, Reelmaster 3550, 3555, 5010, and 5010-H Series 18-inch and 22-inch Cutting Units with 5" Reel	5IN RM UNIVERSAL/ BI-DIRECTIONAL GROOMER	Groomer Kit	2006/42/EC
03768	—	Universal Groomer Drive Kit, Reelmaster 3575, 5010, 5010-H, and 7000 Series 22-inch or 27-inch Cutting Units with 7" Reel	7IN RM UNIVERSAL/ BI-DIRECTIONAL GROOMER	Groomer 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:

John Heckel
Sr. Engineering Manager
8111 Lyndale Ave. South
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Count on it.