



Reel Bearing and Seal Rebuild Kit

2011 and Before 11 or 14-Blade Cutting Unit for Greensmaster® Flex™ Mower

Model No. 130-0105

Installation Instructions

Installation

⚠ 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.

1

Preparing the Machine

No Parts Required

For All Models

1. Position the mower on a flat, level work surface. Make sure the engine is Off. Remove the spark plug wire from the spark plug.
2. Separate the cutting unit from the traction unit; refer to your *Operator's Manual* for the procedure.

Note: If a grooming reel kit is installed to the cutting unit, remove the grooming reel; refer to your *Grooming Reel Operator's Manual* for the procedure.
3. Remove the bedbar from the cutting unit; refer to your *Operator's Manual* for the removal procedure.
4. Remove the belt cover and the reel drive belt from the left side of the cutting unit; refer to your *Operator's Manual* for the procedure.
5. Block the reel with a piece of wood to prevent it from turning. Remove the flange nut securing the drive pulley to the reel shaft (Figure 2 and Figure 3). Remove the pulley from the shaft. Remove the woodruff key and the spacer from the reel shaft.
6. Loosen and remove the 2 locknuts, capscrews, and lockwashers securing the reel drive plate assembly to the left side of the cutting unit (Figure 1). Remove

the assembly from cutting unit sideplate. Remove the spacer (if equipped) from behind the reel drive plate.

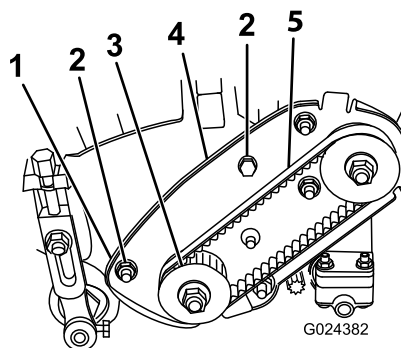


Figure 1

- | | |
|--------------------------------------|------------------------------|
| 1. Spacer | 4. Reel drive plate assembly |
| 2. Locknut, capscrew, and lockwasher | 5. Reel drive belt |
| 3. Reel drive pulley | |

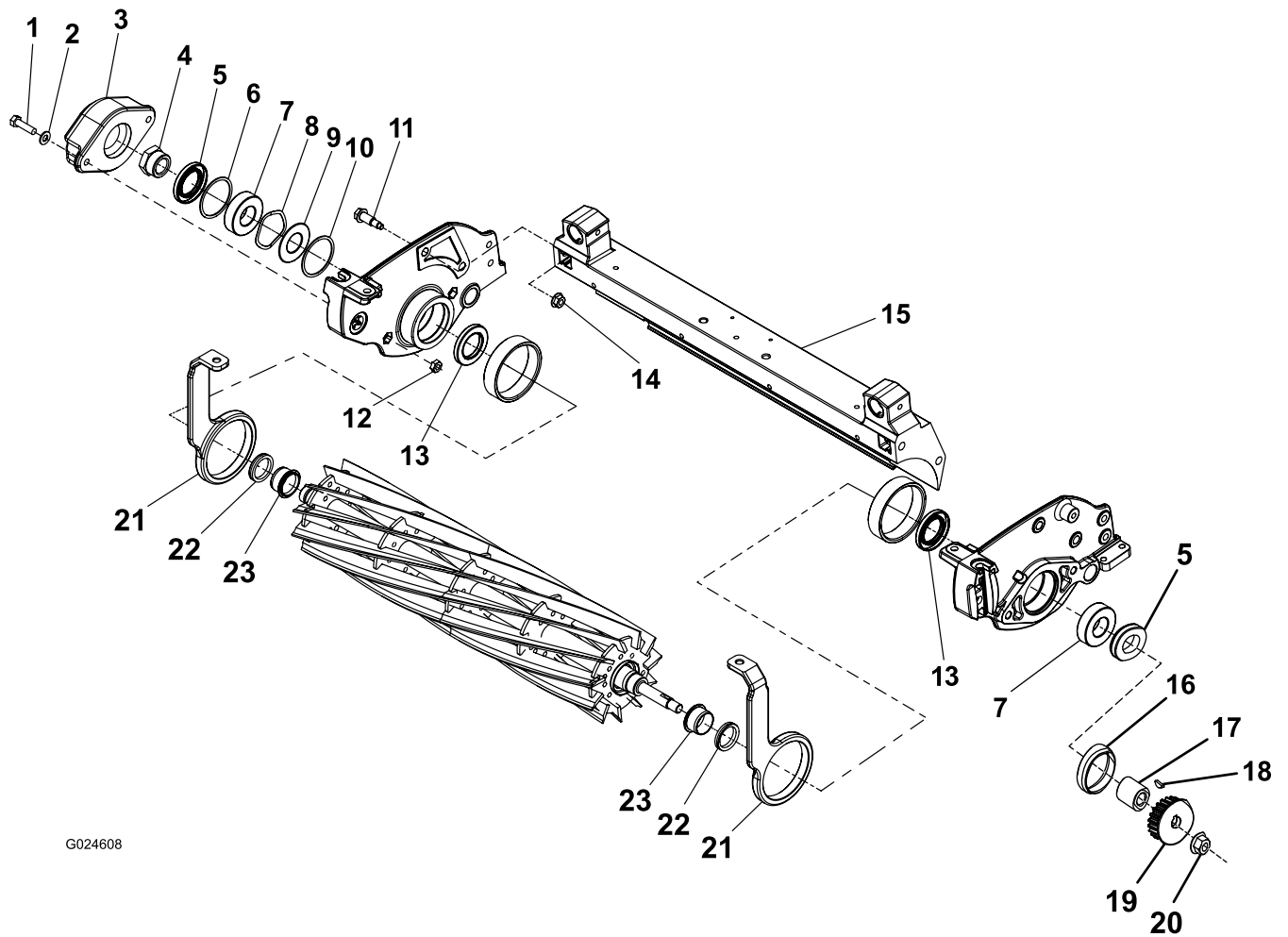
7. Remove the front roller; refer to your *Operator's Manual* for the removal procedure.

For Models with Integrated Bearing Housings

1. Loosen the screws securing the rear roller.
2. Remove the 2 screws, washers, and locknuts securing the counterweight to the right end of the cutting unit (Figure 2).
3. Remove the reel bearing lock nut from the right side of the reel (Figure 2).

Note: The reel bearing lock nut has left hand threads.
4. Remove the side plates from the frame and reel; refer to your *Operator's Manual*. Remove the reel.
5. Remove and discard both the oil seals from each bearing housing (Figure 2).
6. Remove and discard the bearing from the left hand side plate.
7. Remove and discard the retaining rings, bearing, wave washer, and thrust washer from the right hand side plate.
8. Clean the bearing housings.





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Figure 2

- | | | | |
|-------------------------|--------------------|---------------------|-----------------------|
| 1. Bolt | 7. Ball bearing | 13. Inner oil seal | 19. Reel drive pulley |
| 2. Washer | 8. Wave washer | 14. Flange head nut | 20. Flange nut |
| 3. Counterweight | 9. Thrust washer | 15. Frame | 21. Pitch arm |
| 4. Reel bearing locknut | 10. Retaining ring | 16. Spacer | 22. V-ring |
| 5. Outer oil seal | 11. Shoulder bolt | 17. Spacer | 23. Sleeve |
| 6. Retaining ring | 12. Locknut | 18. Woodruff key | |

For Models with Removable Bearing Housings

1. Remove the 2 locknuts securing the counterweight to the right end of the cutting unit (Figure 3). Remove the counterweight.
2. Remove the reel bearing lock nut from the right side of the reel (Figure 3).

Note: The reel bearing lock nut has left hand threads.

3. Remove the 2 tapered nuts and plow bolts securing each reel bearing housing to the cutting unit side plates (Figure 3).

Note: If this kit is being used to retrofit the canister seals to oil seals, a new bearing locknut and spacer (Figure 3) are required. The oil seals in this kit require the bearing locknut and spacer to have a 3.2 cm (1.25

inch) outer diameter (old parts have a 2.8 cm (1.125 inch) outer diameter). Order part no. 107-3227 bearing locknut and 107-3228 spacer from your local authorized Toro Distributor.

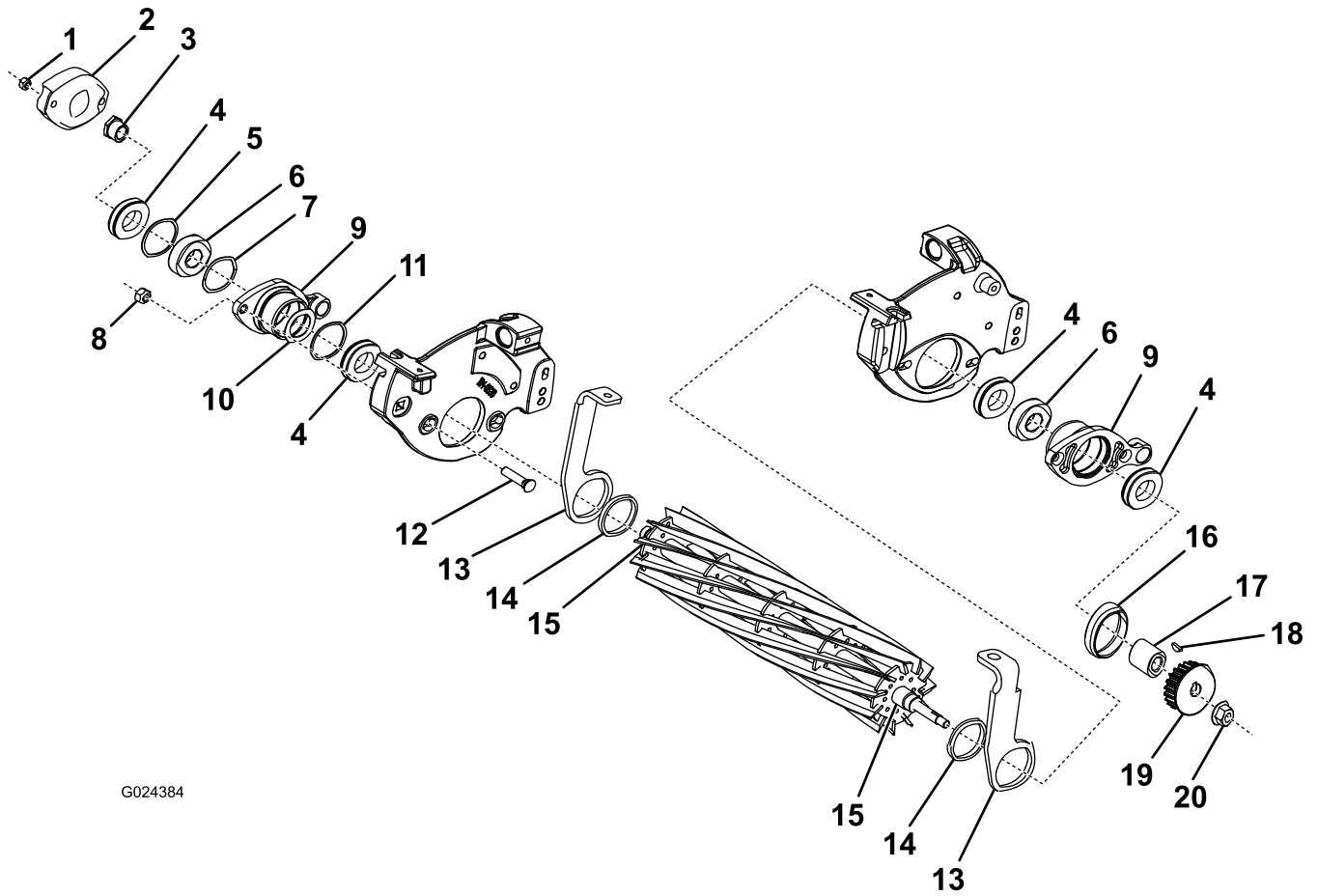
⚠ CAUTION

Contact with the reel, bedknife, or any other cutting unit parts may result in personal injury. Use heavy gloves when handling the cutting unit.

Important: Support the reel to prevent it from falling when bearing housings are removed.

4. Remove both of the bearing housings from the frame and reel.

5. Remove and discard both the oil seals from each bearing housing (Figure 3).
6. Remove and discard the bearing from the left hand bearing housing.
7. Remove and discard the 2 retaining rings, bearing, wave washer, and thrust washer (if installed) from the right hand bearing housing.
8. Clean the bearing housings.



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Figure 3

- | | | | |
|-------------------------|--------------------|----------------------|-----------------------|
| 1. Locknut | 6. Reel bearing | 11. Retaining ring | 16. Spacer |
| 2. Counterweight | 7. Wave washer | 12. Plow bolt | 17. Spacer |
| 3. Reel bearing locknut | 8. Tapered nut | 13. Pitch arm | 18. Woodruff key |
| 4. Oil seal | 9. Bearing housing | 14. Bushing | 19. Reel drive pulley |
| 5. Retaining ring | 10. Thrust washer | 15. Bearing journals | 20. Flange nut |

2

Installing the Kit

Parts needed for this procedure:

1	Thrust washer
4	Oil seal
1	Spacer
2	V-ring
2	Ball bearing
2	Retaining ring
2	Wave washer

1. Install the new bearing into the left hand bearing housing or sideplate (Figure 6).
2. Install the retaining ring, thrust washer, wave washer, bearing, and retaining ring into the right hand bearing housing or sideplate (Figure 5).
3. Insert an oil seal into each side of the bearing housing, positioning them flat side out.
 - On models with integrated bearing housings or bearing housings with a bore length of 4 cm (1.578 inches) (Figure 4), use the large washer (included in the kit) to press each seal into the bearing housing until the washer is flush with the outer edge of the bearing housing.

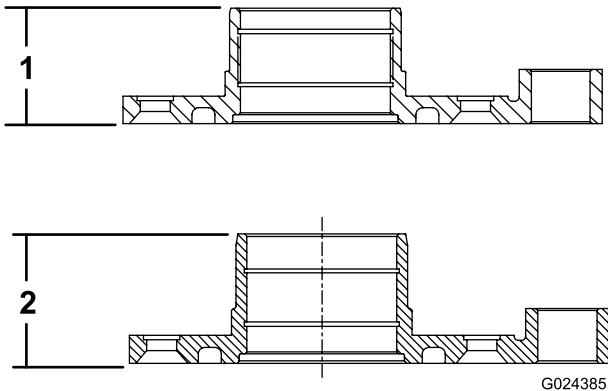
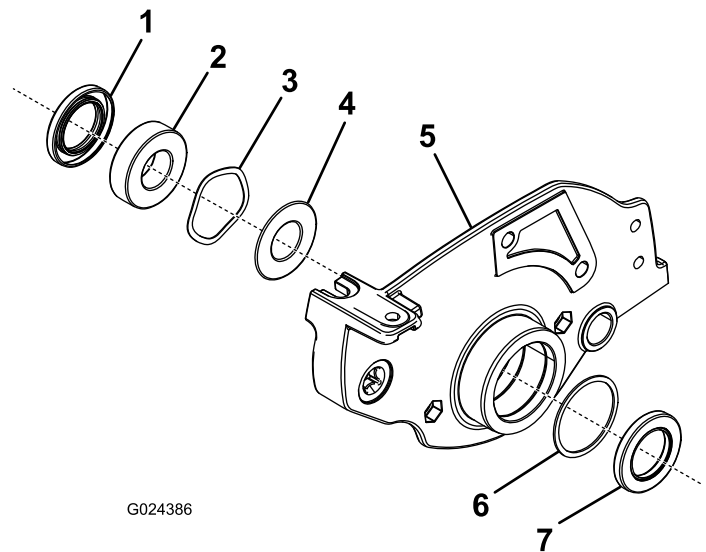


Figure 4

1. 4 cm (1.578 inches)
2. 4.5 cm (1.766 inches)



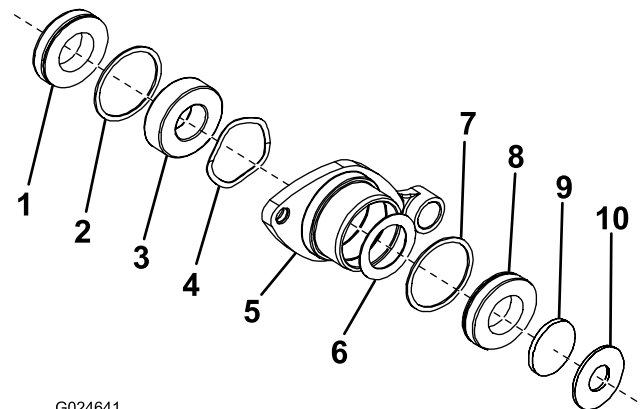
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Figure 5

Right hand bearing housing

- | | |
|-------------------|--------------------|
| 1. Outer oil seal | 5. Bearing housing |
| 2. Bearing | 6. Retaining ring |
| 3. Wave washer | 7. Inner oil seal |
| 4. Thrust washer | |

- On bearing housings with a bore length of 4.5 cm (1.766 inches) (Figure 4), press the inner seal into the bearing housing an additional 5 mm (0.188 inches) using the spacer and the large washer included in the kit (Figure 6). The spacer is 5 mm (0.188 inches) thick. Remove the spacer when it is flush with the outer edge of the bearing housing.



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Figure 6

Right hand bearing housing

- | | |
|--------------------|-------------------|
| 1. Outer oil seal | 6. Thrust washer |
| 2. Retaining ring | 7. Retaining ring |
| 3. Bearing | 8. Inner oil seal |
| 4. Wave washer | 9. Spacer |
| 5. Bearing housing | 10. Large washer |

4. Fill each bearing cavity approximately half full of multi-purpose grease.

- Remove the V-ring from the sleeve on each end of the reel shaft (Figure 7).

Note: Inspect the sleeves and replace them as required. A special sleeve driver is available; contact your Toro Distributor to obtain this tool. Press a new sleeve onto the end of each reel shaft until the sleeve is flush with the step in the shaft.

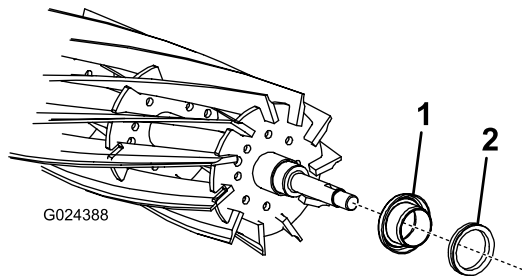


Figure 7

- Sleeve
- V-ring

- Install a new V-ring, flat side first, onto each end of the reel shaft until it is completely inserted onto the sleeve.
- Apply anti-seize lubricant to the bearing journals of the cutting reel (Figure 2 and Figure 3). Position the reel with the pitch arms and the bushings in the frame to accept the bearing housings.

Note: The reel shaft end with the keyway should be on the left side of the frame.

CAUTION

Contact with the reel, bedknife, or any other cutting unit parts may result in personal injury. Use heavy gloves when handling the cutting unit.

3

Finishing the Installation

No Parts Required

For Models with Integrated Bearing Housings

- Insert both side plates onto the reel shaft. If necessary, tap it into position with a soft hammer.
- Attach the side plates to the frame.
- Secure the rear roller.

For Models with Removable Bearing Housings

- Insert both the bearing housings (Figure 3) through the frame onto the reel shaft.
- Push the housing onto the reel shaft. If necessary, tap it into position with a soft hammer.
- Attach the bearing housing to the side plate of the cutting unit with the 2 plow bolts and tapered nuts. Tighten the fasteners.

For All Models

- Apply anti-seize lubricant to the internal threads of the bearing lock nut (Figure 2 and Figure 3). Block the reel with a piece of wood to prevent it from turning. Install and tighten the bearing lock nut to the reel shaft.

Note: The reel bearing lock nut has left hand threads.

- Install the counterweight to the right side of the cutting unit with the previously removed hardware (Figure 2 and Figure 3).
- Install the spacer in the left side reel bearing housing (Figure 1). Mount the reel drive plate assembly to the side of cutting unit with the previously removed locknuts, capscrews, and lockwashers. Tighten the fasteners to secure the assembly.
- Install the spacer and woodruff key to the reel shaft (Figure 2 and Figure 3). Apply anti-seize lubricant to the internal bore of the drive pulley and position the pulley onto the reel shaft. Install and tighten the flange nut that secures the pulley to the reel shaft.
- Check for free movement of the reel assembly by rotating the pulley. If binding is noted, identify and correct the problem.

Note: The Flex 21 will have slightly greater reel drag than other Toro greens mowers due to the reel seal design.

- Install the reel drive belt to the pulley and drive assembly (Figure 1). Adjust the drive belt tension and install the belt cover; refer to your *Operator's Manual* for the adjustment procedure.
- Install the front roller.
- Install the bedbar to the cutting unit.
- Install the cutting unit to the traction unit.

Notes:

Notes:



Count on it.