Form No. 3437-560 Rev D

TORO®

Count on it.

Operator's Manual

ProCore® 864 and 1298 Aerators

Model No. 09715—Serial No. 403410001 and Up

Model No. 09716—Serial No. 403410001 and Up

Register at www.Toro.com.
Original Instructions (EN)

CE

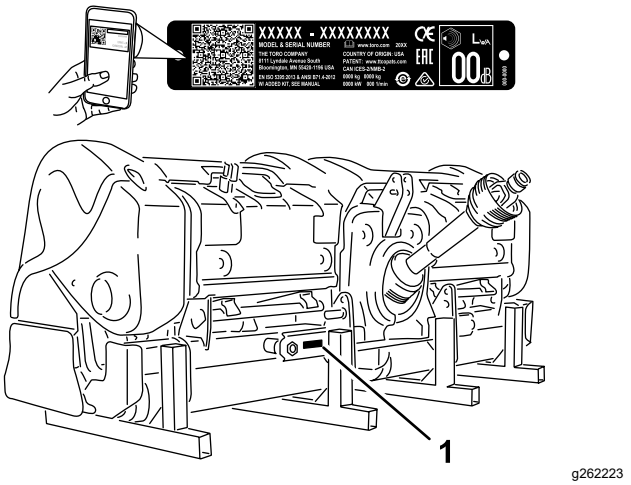
3437-560

This product complies with all relevant European directives; for details, please see the separate product specific Declaration of Conformity (DOC) sheet.

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

Use of this product may cause exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.



g262223

Figure 1
Model 09716

1. Model and serial number location

Introduction

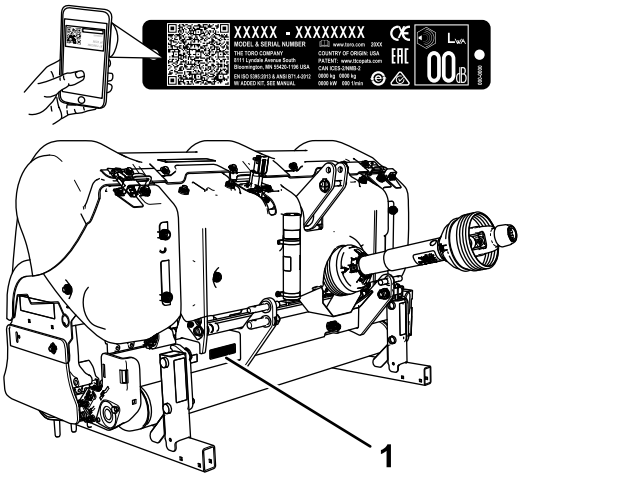
This machine is intended to be used by professional, hired operators in commercial applications. It is designed primarily for working large areas on well-maintained lawns in parks, golf courses, sports fields, and on commercial grounds. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

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 more information, including safety tips, 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 and Figure 2 identify the location of the model and serial numbers on the product. Write the numbers in the space provided.

Important: **With your mobile device, you can scan the QR code on the serial number plate (if equipped) to access warranty, parts, and other product information.**



g262224

Figure 2
Model 09715

1. Model and serial number location

Model No. _____

Serial No. _____

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 3), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.

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g000502

Figure 3
Safety-alert symbol

This manual uses 2 words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

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Safety

General Safety

This product is capable of amputating hands and feet and of throwing objects. Always follow all safety instructions to avoid serious personal injury.

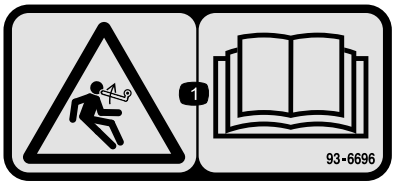
Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

- Read and understand the contents of this *Operator's Manual* before using the machine.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards and other safety protective devices in place and functioning properly on the machine.
- Keep clear of any discharge opening. Keep bystanders and pets away from the machine.
- Keep bystanders and children out of the operating area. Never allow children to operate the machine.
- Always shut off the engine of the traction unit, remove the key (if equipped), wait for all moving parts to stop, and allow the machine to cool before adjusting, servicing, cleaning, or storing the machine.

Improperly using or maintaining this machine can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety-alert symbol ⚠, which means Caution, Warning, or Danger—personal safety instruction. Failure to comply with these instructions may result in personal injury or death.

Safety and Instructional Decals

Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



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93–6696

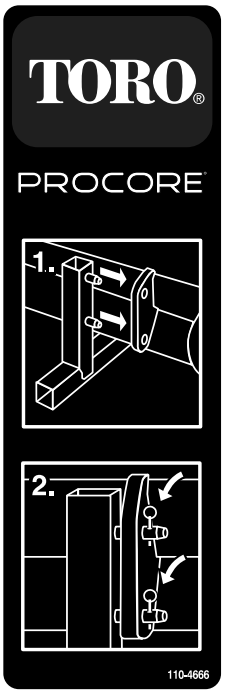
1. Stored energy hazard—read the *Operator's Manual*.



decal110-4665

110-4665

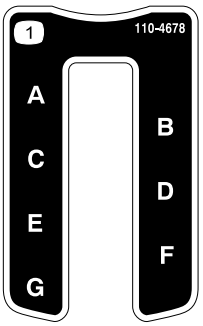
1. Read the *Operator's Manual.*



decal110-4666

110-4666

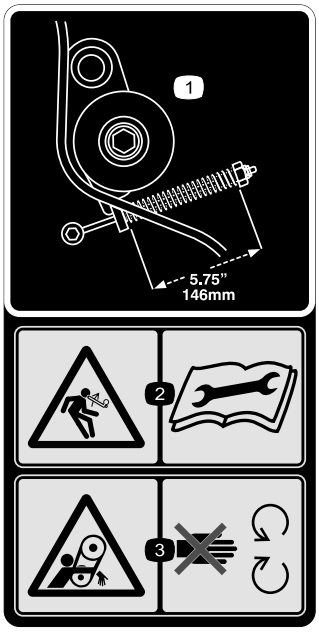
1. Install the posts in the stand to the holes in the frame.
2. Use pins to secure the frame to the stand.



decal110-4678

110-4678

1. Coring depth



decal110-4667

110-4667

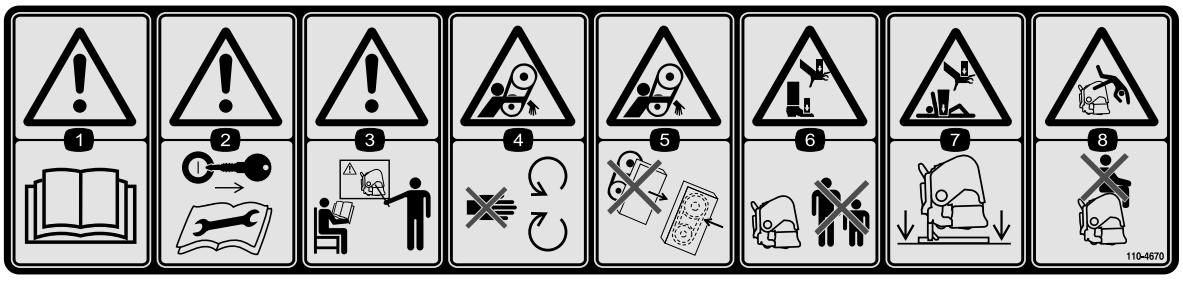
1. Spring length
2. Stored energy hazard—read the *Operator's Manual*.
3. Entanglement hazard, belt—stay away from moving parts.



decal110-4668

110-4668

1. Entanglement hazard, shaft—stay away from moving parts.
2. PTO speed and input direction.
3. Use clip to secure lash cable when not in use. Use lash cable to support the power take-off when the machine is disconnected from tractor.



decal110-4670

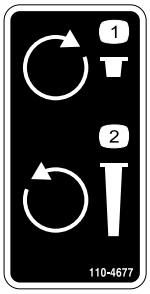
110-4670

1. Warning—read the *Operator's Manual.*
2. Warning—remove the key and read the instructions.
3. Warning—receive training before operating the machine.
4. Entanglement hazard, belt—stay away from moving parts.
5. Entanglement hazard, belt—keep all guards in place.
6. Crushing hazard of hand or foot—keep bystanders away from the machine.
7. Crushing hazard of hand and body—support machine on stand when not in use.
8. Falling hazard—do not carry passengers.



decal92-1581

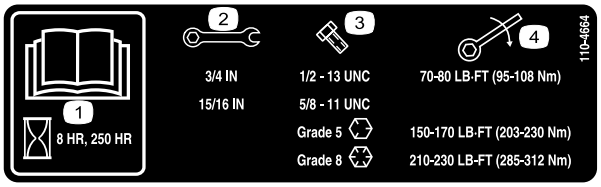
92–1581



decal110-4677

110-4677

1. Turn clockwise to decrease aeration depth.
2. Turn counterclockwise to increase aeration depth.



decal110-4664

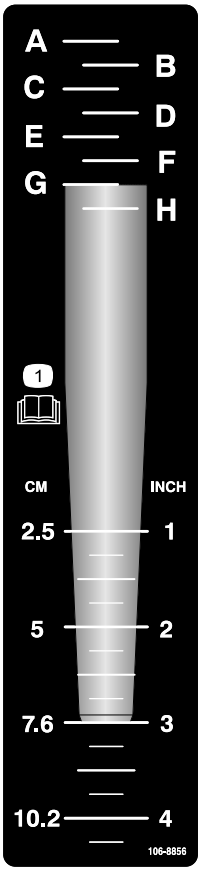
110-4664

1. Read the *Operator's Manual.*
2. Wrench size
3. Bolt size
4. Torque



decal92-1582

92–1582



decal106-8856

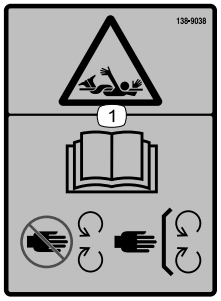
106-8856

1. Read the *Operator's Manual.*



decal133-8061

133-8061



decal138-9038

138-9038

1. Entanglement hazard—read the *Operator's Manual*; stay away from moving parts; keep all guards and shields in place.

Setup

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	–	Inspect the machine.
2	Lynch pin	2	Connect the lower link arms.
3	Link pin Lynch pin	1 1	Connect the upper link.
4	Bolt (1/2 x 3 inches) Nut (1/2 inch) Short driveshaft, Part No. 115-2839 (may be needed; sold separately)	1 1 –	Connect the PTO driveshaft.
5	No parts required	–	Adjust the sway links.
6	No parts required	–	Level the machine side-to-side.
7	No parts required	–	Adjust the roller scraper.
8	No parts required	–	Install the tine heads and the tines.
9	Turf guards (not included)	–	Install the turf guards.
10	CE Compliance Kit, Part No. 110-4693 (not included)	1	Secure the hood latches (required for CE only).
11	CE entanglement decal	4	Apply the entanglement decal—CE mowers
12	Lynch pin (ProCore 864) Lynch pin (ProCore 1298)	4 8	Remove the storage stands.

1

Inspecting the Machine

No Parts Required

Procedure

ProCore 864

Use the following list as a reference:

- Use a 30 PTO horsepower minimum when aerating in light to normal soil conditions (sandy to sandy/loam soils with average compaction).
- Use a 35 PTO horsepower minimum when aerating in normal to heavy soil conditions (heavy loam, clay, and rocky soils with above average compaction).
- The traction unit must have a category I or II 3-point hitch with a minimum implement lift capacity of 714 kg (1,575 lb).
- The traction unit must have a PTO output-shaft speed of 540 rpm.
- Adequate front-end weight (ballast) to offset the weight of the machine.
- Check the tire air pressure of the traction unit.

  Adjust the tire air pressure as needed.

  Important: **Do not exceed the maximum or minimum tire inflation pressures as recommended by tire manufacturer.**

ProCore 1298

Use the following list as a reference:

- Use a 45 PTO horsepower minimum when aerating in light to normal soil conditions (sandy to sandy/loam soils with average compaction).
- 50 PTO horsepower minimum when aerating in normal to heavy soil conditions (heavy loam, clay, and rocky soils with above average compaction).
- The traction unit must have a category II 3 point hitch with a minimum implement lift capacity of 1043 kg (2,300 lb) implement.
- The traction unit must have a PTO output-shaft speed of 540 rpm.
- Adequate front-end weight (ballast) to offset the weight of the machine.
- Check the tire air pressure of the traction unit.

  Adjust the tire air pressure as needed.

  Important: **Do not exceed the maximum or minimum tire inflation pressures as recommended by tire manufacturer.**

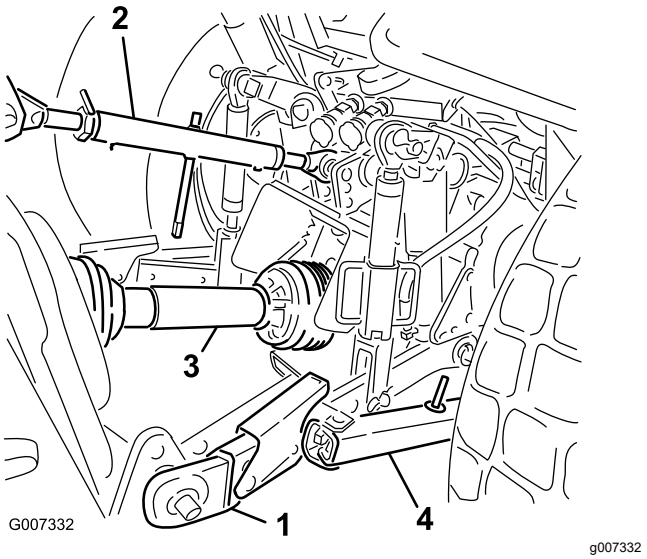


Figure 4

3-Point Hitch and PTO Components

1. Lower link arm
2. Upper link arm
3. PTO driveshaft
4. Sway link

Ballast Requirements

⚠ WARNING

Mounting the machine to the rear of the traction unit decreases the weight on its front axle.

Failure to add required ballast may result in an accident and severe injury or death.

- **To ensure adequate steering control and stability you may need to add ballast to the front of the traction unit.**
- **Refer to the traction unit operator's manual for ballast requirements.**

2

Connecting the Lower Link Arms

Parts needed for this procedure:

2	Lynch pin

Procedure

1. Ensure that the machine is positioned on a level surface for installation.
2. Ensure that the PTO is disengaged.

3. Back the traction unit squarely up to the machine until the lower link arms are aligned with the hitch pins.
4. Engage the parking brake, shut off the engine, and remove the key from the ignition. Wait for the engine and all moving parts to stop before leaving the operator's seat.

   Note: For maximum ground clearance, install the hitch pins in the lower mounting holes of the hitch plate for the machine (Figure 5). To determine when to use the upper mounting holes, refer to setup procedure 4 Connecting the PTO Driveshaft (page 11).

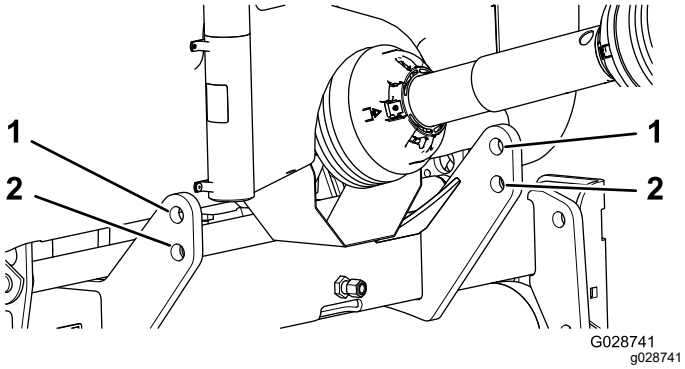


Figure 5

1. Top hole (hitch plate—machine)
2. Bottom hole (hitch plate—machine)

5. Insert the right and left lower link arms onto the hitch pins (Figure 6).

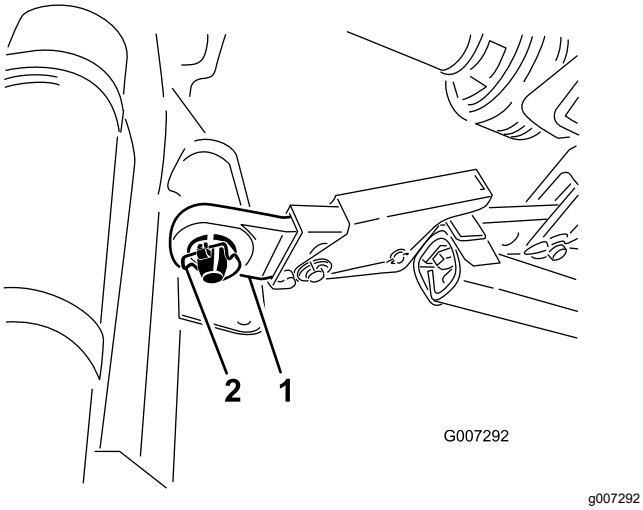


Figure 6

1. Lower link
2. Lynch pin

6. Secure the lower link arms to the hitch pins with the lynch pins (Figure 6).

3

Connecting the Upper Link

Parts needed for this procedure:

1	Link pin
1	Lynch pin

Procedure

Note: For best aeration hole quality, align the front of the machine vertical while operating it (Figure 7). Adjust the upper link to control this angle. Refer to Operating Tips (page 27) for additional information.

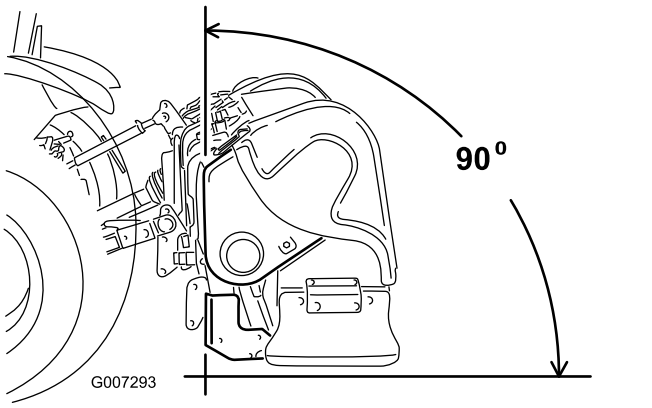


Figure 7

1. Connect the upper link to the lower hole in the bracket and secure it with the link pin and the lynch pin (Figure 8).

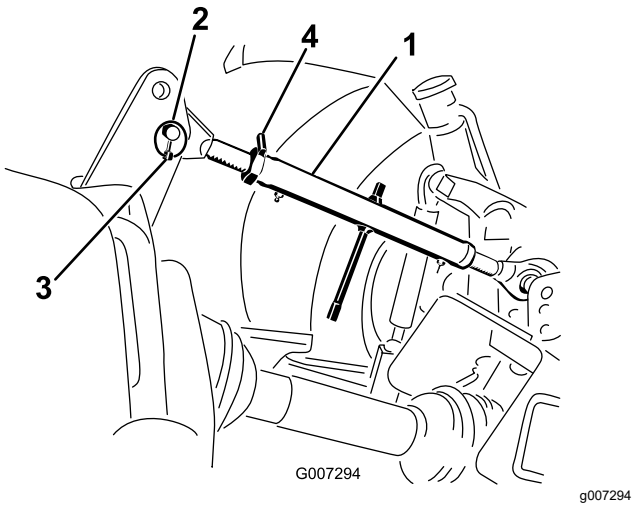


Figure 8

1. Upper link
2. Link pin
3. Lynch pin
4. Locknut

2. Grease the threaded steel upper link tubes.
3. Rotate the upper link to tighten the link. Adjust it until the frame at the front of the machine is vertical (Figure 8).
4. Tighten the locknut to secure the upper link into position.

4

Connecting the PTO Driveshaft

Parts needed for this procedure:

1	Bolt (1/2 x 3 inches)
1	Nut (1/2 inch)
–	Short driveshaft, Part No. 115-2839 (may be needed; sold separately)

Determining the Trailing Arm Length and PTO Driveshaft

Important: **Refer to the PTO driveshaft owner's manual for additional operating and safety information.**

1. Place a straightedge across the ends of the trailing arms to help you determine the distance between them and the end of the PTO output shaft (Figure 9).

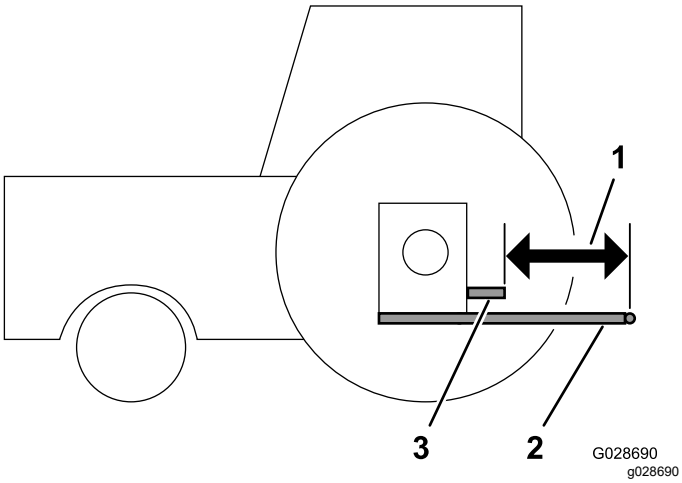


Figure 9

1. "M" dimension
2. Lower trailing arms
3. PTO output shaft (traction unit)

2. Measure the distance between the end of the PTO output shaft and the attachment point of the lower trailing arms (Figure 9). Record your measurement here:

_____

Important: **Contact your authorized Toro distributor if you need any assistance when performing this measurement and if you need to order an optional shorter PTO driveshaft assembly.**

3. Determine whether you need a standard length PTO driveshaft or a short PTO driveshaft from the position of the PTO output shaft on the traction unit, relative to the position of the lower trailing arms. This distance is designated as "M" dimension.
   - The standard PTO driveshaft included with your machine fits a traction unit "M" dimension as small as 48.89 cm (19.25 inches).
   - If the "M" dimension is smaller, we offer an optional short PTO driveshaft assembly, which fits a traction unit "M" dimension as small as 39.37 cm (15.50 inches); refer to the *Parts Catalog* for your machine.

     Important: **If necessary, install the short driveshaft, Part No. 115-2839 (sold separately). In most cases, the short driveshaft is not needed.**
4. If your traction unit is equipped with adjustable trailing arms, change the length of trailing arms until the "M" dimension measures:

   Refer to the operator's manual for your traction unit.
   - 48.89 cm (19.25 inches) or longer for the standard PTO shaft
   - 39.37 cm (15.50 inches) or longer for the optional short PTO shaft

Installing the PTO Driveshaft

⚠ CAUTION

Operating the machine without the PTO guards and shields may cause injury or death.

- **Keep all PTO guards and shields in place.**
- **On CE models, connect the chains between the PTO driveshaft guards and the link arms.**

1. On the ProCore 864 only, remove the lower PTO shield (Figure 10).

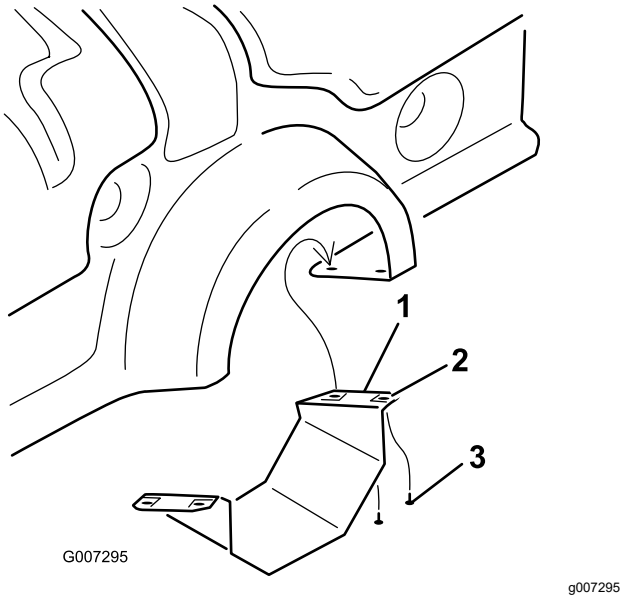


Figure 10
ProCore 864

1. Lower PTO shield
2. Clip nut
3. Screw

2. Assemble the PTO driveshaft to the gearbox input shaft of the machine (Figure 11) with a bolt (1/2 x 3.00 inches) and a nut (1/2 inch).

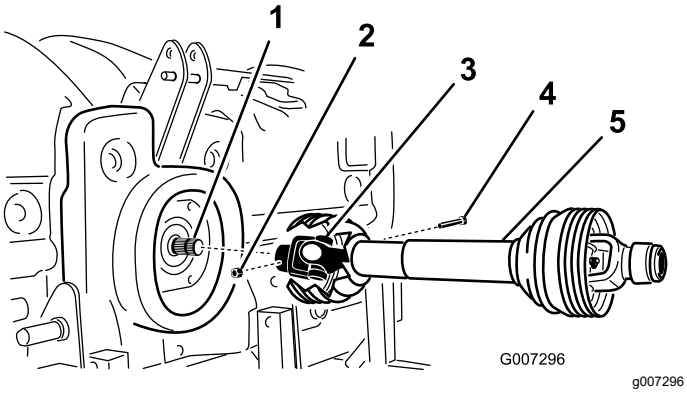


Figure 11

1. Gearbox input shaft
2. Nut
3. PTO shaft coupler
4. Bolt
5. PTO driveshaft

3. Assemble the PTO driveshaft to the PTO output shaft of the traction unit.

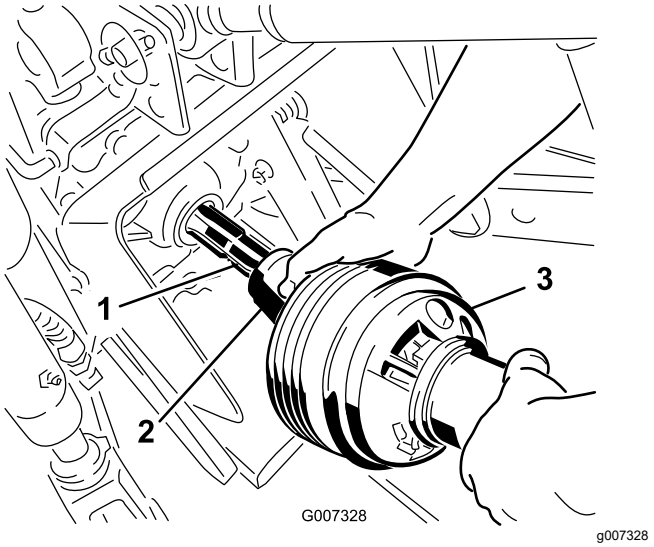


Figure 12

1. PTO output shaft (traction unit)
2. PTO shaft coupler
3. PTO driveshaft

4. Slide the PTO driveshaft forward as far as the PTO output shaft allows.
5. Pull back on the locking collar of the PTO shaft coupler to secure the PTO driveshaft. Slide the PTO driveshaft back and forth to ensure that it is locked securely.
6. On CE models only, connect the safety chains from the driveshaft guards to the welded clips on the link arms. Make sure that the chains remain slack when the machine is raised or lowered.
7. On the ProCore 864, install the lower PTO shield to the machine.
8. Verify that the telescoping tube has a minimum of 76 mm (3 inches) overlap when the machine is raised to the maximum height.

   To check the overlap, measure the distance between the end shields, as shown in Figure 13. This dimension must not exceed 406 mm (16 inches). If so, move the lower lift pins to the upper set of holes before operating the machine.

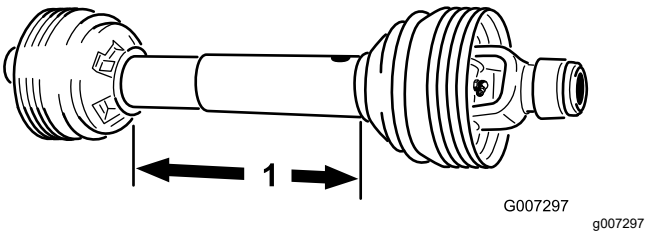


Figure 13

1. 406 mm (16 inches)

5

Adjusting the Sway Links

No Parts Required

Procedure

- The ProCore 864 is designed to be offset from the traction unit center line. The gearbox input shaft is offset 40 mm (1.57 inches) to the left of center and the machine is offset 145 mm (5.70 inches) to the right of the center line. Adjust the sway links as needed.
- The ProCore 1298 is designed to be centered with the traction unit center line. Adjust the sway links as needed.

Adjust the sway links on the lower draft arms of the 3 point hitch to resist side-to-side sway to a maximum of 25 mm (1 inch) at each side (Figure 14).

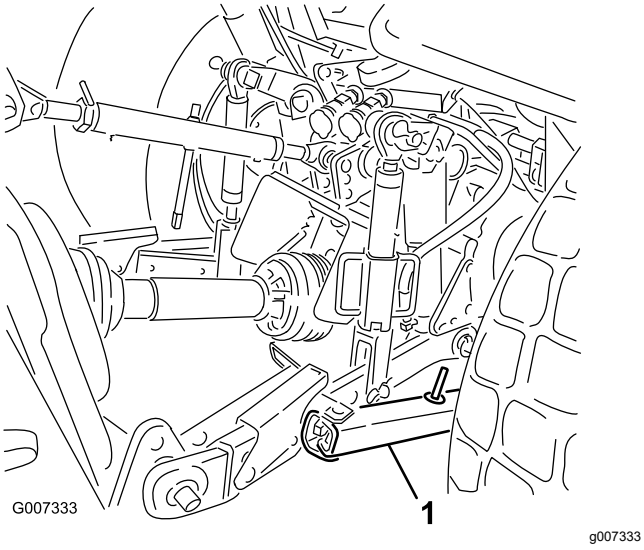


Figure 14

1. Sway link (lower draft arm)

Adjust the lower links inboard until they contact the machine mounting plates. This reduces stress on the pins. If the traction unit has sway chains instead of sway links, install washers between the lower link arm and lynch pin to reduce the overhung load on the lift pins.

Note: Refer to the traction unit operator's manual for additional installation and adjustment procedures.

6

Leveling the Machine Side-to-Side

No Parts Required

Procedure

1. Park the traction unit and the machine on a level, firm surface.
2. Place a level on top of the frame of the machine to check it for level side-to-side (Figure 15).

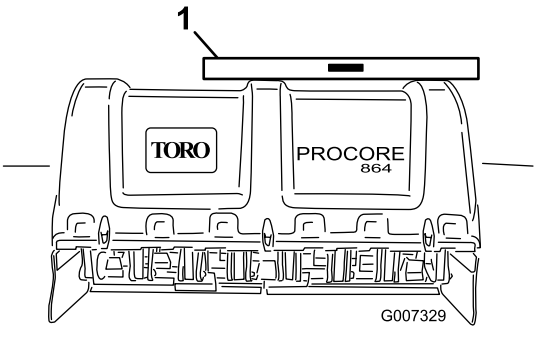


Figure 15

1. Level

3. If provided, turn the adjustable link body to raise or lower the link arm until the machine is leveled side-to-side.

   Note: Refer to the traction unit operator's manual for additional adjustment procedures.

7

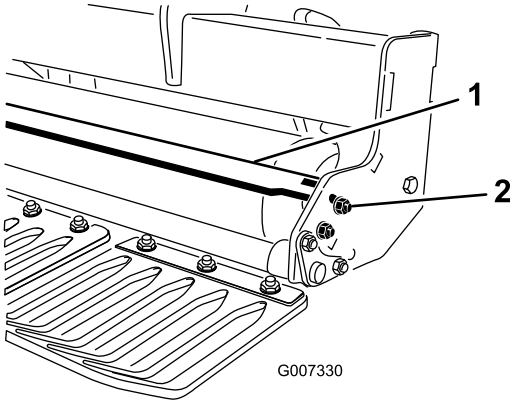
Adjusting the Roller Scraper

No Parts Required

Procedure

Adjust the roller scraper so that there is a gap of approximately a 1 to 2 mm (0.06 to 0.09 inch) between the scraper and the roller.

1. Loosen the fasteners securing each end of scraper to roller scraper tab (Figure 16).



g007330

Figure 16

1. Roller scraper
2. Nut

2. Slide the roller scraper in or out until the required position is attained, and tighten the fasteners.
3. On the ProCore 864 only, you can adjust the stop bolt on the center support to attain the proper gap.

8

Installing the Tine Heads and the Tines

No Parts Required

Procedure

A wide selection of tines and tine heads are available for the machine. Choose the tine type, size, and spacings required for the job. Install the tine head and tines per the Installation Instructions supplied with each tine kit; refer to ProCore 864 tine configuration table and ProCore 1298 tine configuration table in Attachments/Accessories (page 17).

Important: **Never operate the machine without the tine heads installed. The arms may move excessively and damage the frame of the machine.**

9

Installing the Turf Guards

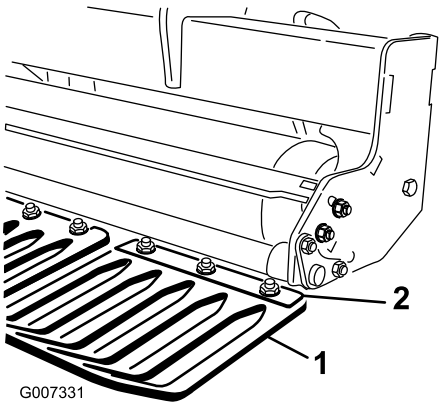
Parts needed for this procedure:

–	Turf guards (not included)

Procedure

A wide selection of turf guards is available for the machine. Use the appropriate turf guards for the selected tine heads.

1. Loosen the nuts securing the turf guard clamps to the turf guard tool bar (Figure 17).



g007331

Figure 17

1. Turf guard
2. Turf guard clamp

2. Slide the appropriate turf guard under the turf guard clamp.
3. Adjust the turf guards, left to right, to maintain equal distance to the tines within each slot.
4. Tighten the nuts securing the turf guard.
5. Mount the remaining turf guards and secure the turf guard clamps.

   Important: **From the rear of the machine, check that the tines line up with the center of the gaps in the turf guards.**

10

Securing the Hood Latches (CE only)

Parts needed for this procedure:

1	CE Compliance Kit, Part No. 110-4693 (not included)

Procedure

Note: The CE Completion Kit, Part No. 110-4693 is required to complete this step.

1. On the ProCore 864 model, install a lock bracket over the left and right rear lower hood and upper hood latches with a tap bolt (4 total); refer to Figure 18.

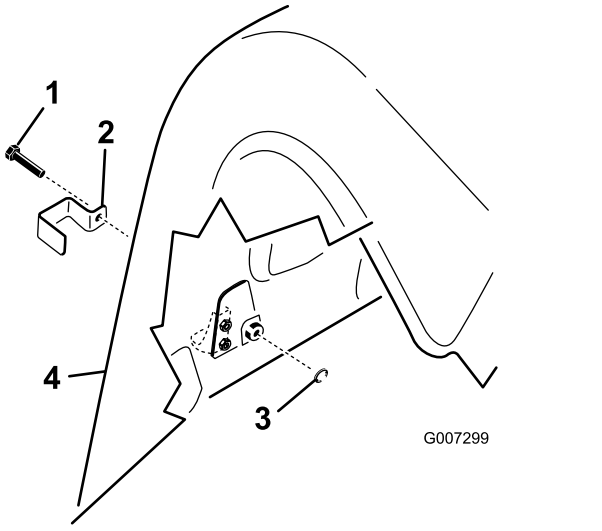


Figure 18

1. Tap bolt
2. Lock bracket
3. Internal lock washer
4. Rear cover

2. On the ProCore 1298 model, install a lock bracket over all the rear lower hood latches and the outside upper hood latch on both the right and the left rear covers with a tap bolt (3 per coring head, 6 total); refer to Figure 18).
3. Using a pliers or adjustable wrench, thread an internal lock washer onto each bolt (1 to 2 threads) to secure the latch (Figure 18).

11

Applying the Entanglement Decal

CE Mowers

Parts needed for this procedure:

4	CE entanglement decal

Procedure

Important: **This procedure is required for all CE countries and anywhere English is not commonly spoken.**

1. Rotate the shaft guard to access the existing entanglement decal (Figure 19).

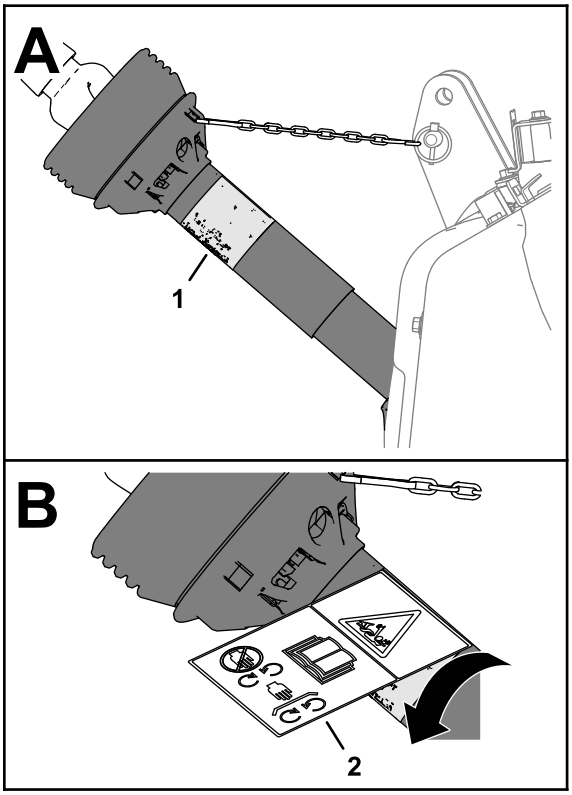


Figure 19

1. Existing entanglement decal
2. CE entanglement decal

2. Clean the existing entanglement decal and the guard area surrounding the decal.
3. Remove the backing from the CE entanglement decal.

4. Place the CE entanglement decal over the existing entanglement decal (Figure 19).

12

Removing the Storage Stands

Parts needed for this procedure:

4	Lynch pin (ProCore 864)
8	Lynch pin (ProCore 1298)

Procedure

1. Raise the machine 7.6 to 15.2 cm (3 to 6 inches) off the ground.
2. Remove the nuts and the lock washers securing the storage stands to the machine (Figure 20).

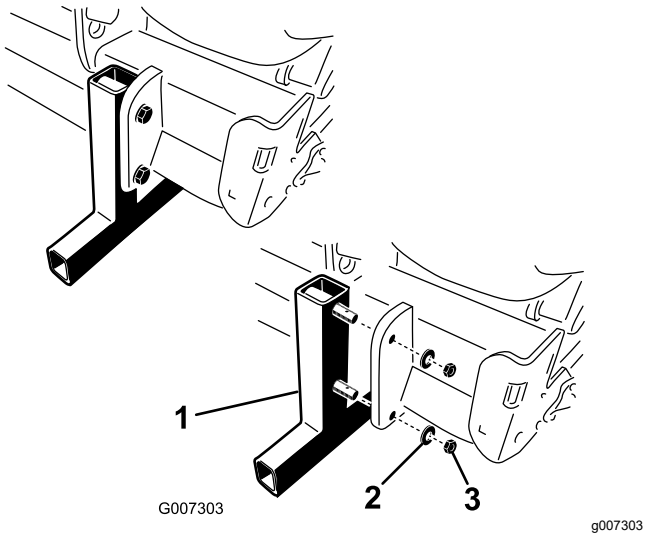


Figure 20

1. Storage stand
2. Lock washer
3. Nut

3. Remove the storage stands.
4. Insert the lynch pins (included in loose parts) into the stand pins for storage (Figure 20).

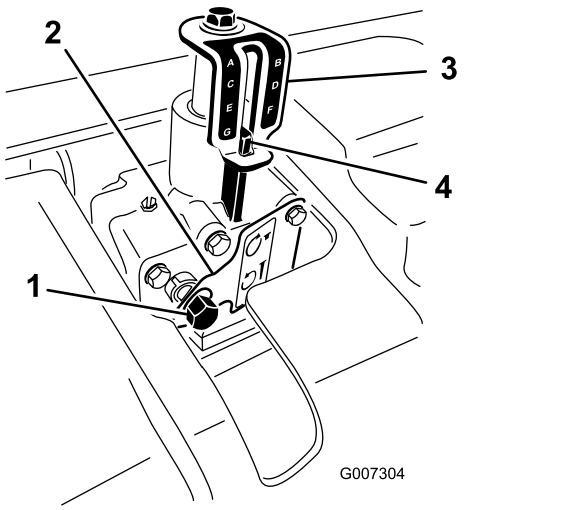
   Note: Use the storage stands whenever you remove the machine from the traction unit.

Product Overview

Controls

Depth Adjuster

Rotate the depth adjuster input shaft clockwise to reduce the aeration depth or counterclockwise to increase the aeration depth (Figure 21).



g007304

Figure 21

1. Depth adjuster input shaft
2. Locking plate
3. Depth indicator decal
4. Depth alignment mark

Note: 17 revolutions of the depth adjuster equal approximately 6.4 mm (1/4 inch) depth change.

Specifications

Note: Specifications and design are subject to change without notice.

ProCore 864 Aerator

Working Width	163 cm (64 inches)
Overall Width	170 cm (67 inches)
Overall Length	89 cm (35 inches)
Overall Height	98 cm (38.5 inches)
Weight	714 kg (1,575 lb)

ProCore 1298 Aerator

Working Width	249 cm (98 inches)
Overall Width	257 cm (101 inches)
Overall Length	89 cm (35 inches)
Overall Height	98 cm (38.5 inches)
Weight	1043 kg (2,300 lb)

Attachments/Accessories

A selection of Toro approved attachments and accessories is available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or authorized Toro distributor or go to www.Toro.com for a list of all approved attachments and accessories.

To ensure optimum performance and continued safety certification of the machine, use only genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty.

ProCore 864 Tine Configuration Table 1 of 3

Tine Kit Description	Needle Tine			Quad Tine (2x5)			Quad Tine (1x6)		
Model No.	09739			09736			09737		
Kit Qty.	4			4			4		
Tines Required	40			80			48		
Lateral Spacing	40 mm (1.6 inches)			40 mm (1.6 inches)			33 mm (1.3 inches)		
Mount	5 mm and 8 mm			10 mm (3/8 inch) diameter			10 mm (3/8 inch) diameter		
Turf Guard Part No.	120-1047	120–1061	120-1062	120-1047	120-1061	120-1062	120-1050	120-1063	120-1064
Required Qty.	2	1	1	2	1	1	2	1	1
Tine Options	5 mm and 8 mm Needles			Titan and Titan Quad; Titan and Titan Max Cross; Titan Solid Round			Titan and Titan Quad; Titan and Titan Max Cross; Titan Solid Round		

ProCore 864 Tine Configuration Table 2 of 3

Tine Kit Description	3-Tine			4-Tine			3-Tine HD		
Model No.	09794			09796			09797		
Kit Qty.	4			4			4		
Tines Required	24			32			24		
Lateral Spacing	66 mm (2.6 inches)			51 mm (2.0 inches)			66 mm (2.6 inches)		
Mount	19 mm (3/4 inch) diameter			19 mm (3/4 inch) diameter			22 mm (7/8 inch) diameter		
Turf Guard Part No.	120-1044	120-1057	120-1058	120-1045	120-1059	120-1060	120-1044	120-1057	120-1058
Required Qty.	2	1	1	2	1	1	2	1	1
Tine Options	Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject			Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject			Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject		
	Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round			Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round			Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round		

ProCore 864 Tine Configuration Table 3 of 3

Tine Kit Description	Quick Change (3-Tine)			Quick Change (4-Tine)		
Model No.	09711			09719		
Kit Qty.	4			4		
Tines Required	24			32		
Lateral Spacing	66 mm (2.6 inches)			51 mm (2.0 inches)		
Mount	Not Applicable			Not Applicable		
Sleeve Description	19 mm (3/4 inch)	122 mm (7/8 inch)		19 mm (3/4 inch)	22 mm (7/8 inch)	
Part No.	108-6837	108-6838		108-6837	108-6838	
Required Qty.	24	24		32	32	
Tool Kit Part No. (1 required)	114-0890-01			114-0890-01		
Turf Guard Part No.	120-1044	120-1057	120-1058	120-1045	120–1059	120-1060
Required Qty.	2	1	1	2	1	1
Tine Options	Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject			Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject		
	Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round			Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round		

ProCore 1298 Tine Configuration Table 1 of 2

Tine Kit Description	Needle Tine		Quad Tine (2x5)		Quad Tine (1x6)		3-Tine	
Model No.	09739		09736		09737		09794	
Kit Qty.	6		6		6		6	
Tines Required	60		120		72		36	
Lateral Spacing	40 mm (1.6 inches)		40 mm (1.6 inches)		33 mm (1.3 inches)		66 mm (2.6 inches)	
Mount	5 mm and 8 mm		10 mm (3/8 inch) diameter		10 mm (3/8 inch) diameter		19 mm (3/4 inch) diameter	
Turf Guard Part No.	120-1047	120-1052	120-1047	120-1052	120-1050	120-1053	120-1044	120-1051
Required Qty.	4	2	4	2	4	2	4	2
Tine Options	5 mm and 8 mm Needles		Titan and Titan Quad; Titan and Titan Max Cross; Titan Solid Round		Titan and Titan Quad; Titan and Titan Max Cross; Titan Solid Round		Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject	
							Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round	

ProCore 1298 Tine Configuration Table 2 of 2

Tine Kit Description	4-Tine		3-Tine HD		Quick Change (3-Tine)		Quick Change (4-Tine)	
Model No.	09796		09797		09711		09719	
Kit Qty.	6		6		6		6	
Tines Required	48		36		36		48	
Lateral Spacing	51 mm (2.0 inches)		66 mm (2.6 inches)		66 mm (2.6 inches)		51 mm (2.0 inches)	
Mount	19 mm (3/4 inch) diameter		22 mm (7/8 inch) diameter		Not Applicable		Not Applicable	
Sleeve Description	Not Applicable		Not Applicable		19 mm (3/4 inch)	22 mm (7/8 inch)	19 mm (3/4 inch)	22 mm (7/8 inch)
Part No.					108-6837	108-6838	108-6837	108-6838
Required Qty.					36	36	48	48
Tool Kit Part No. (1 required)	Not Applicable		Not Applicable		114-0890-01		114-0890-01	
Turf Guard Part No.	120-1045	120-1046	120-1044	120-1051	120-1044	120-1051	120-1045	120-1046
Qty. (required)	4	2	4	2	4	2	4	2
Tine Options	Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject		Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject		Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject		Titan Hollow and Max Hollow; Titan Side Eject and Max Side Eject	
	Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round		Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round		Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round		Titan Cross and Max Cross*; Titan Slicing; Titan Fairway and HD Fairway Titan Split; Titan Solid Round	

Operation

Note: Determine the left and right sides of the machine from the normal operating position.

Before Operation

Before Operation Safety

General Safety

- Never allow children or untrained people to operate or service the machine. Local regulations may restrict the age of the operator. The owner is responsible for training all operators and mechanics.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- Always shut off the engine of the traction unit, remove the key, wait for all moving parts to stop, and allow the machine to cool before adjusting, servicing, cleaning, or storing the machine.
- Know how to stop the machine and shut off the engine quickly.
- Do not operate the machine without all guards and other safety protective devices in place and functioning properly on the machine.
- Before operating, always inspect the machine to ensure that the tines are in good working condition. Replace worn or damaged tines.
- Inspect the area where you will use the machine and remove all objects that the machine could strike.
- Locate and mark all electrical or communication lines, irrigation components, and other obstructions in the area to be aerated. Remove the hazards, if possible, or plan how to avoid them.
- Ensure that your traction unit is suitable for use with a machine of this weight. Check with your traction unit supplier or manufacturer.

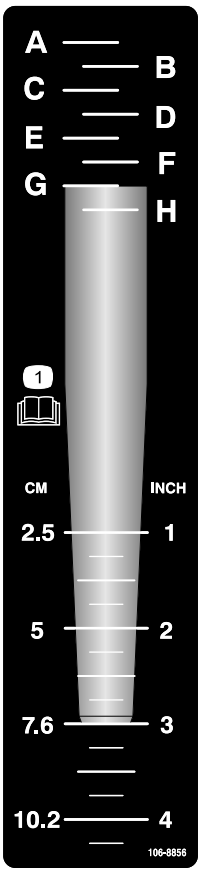
Outcross Traction Unit Controls

Refer to the Outcross traction unit *Operator's Manual* for information on controls and operation, as well as additional information on setting up the machine.

Adjusting the Aeration Depth

Important: **Adjust the aeration depth only when the traction unit is parked, the parking brake is engaged, the PTO is disengaged, and the engine is shut off.**

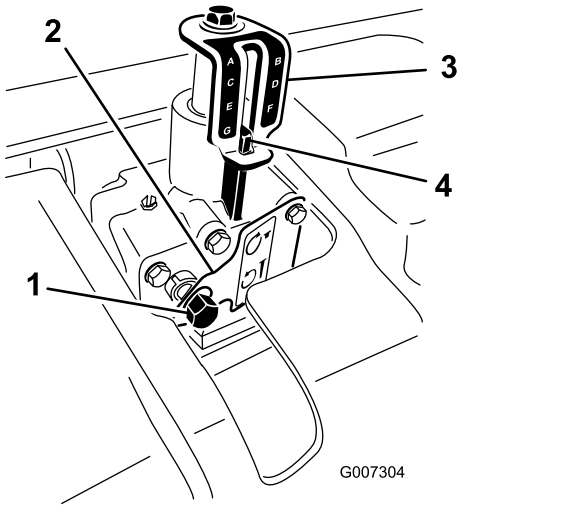
1. Lay the desired tine onto the depth decal while aligning the tine tip with the desired aeration depth as shown in Figure 22.



decal106-8856

Figure 22

2. Determine the letter setting aligned with the mounting end of the tine (Figure 22). Adjust the depth control to the corresponding letter on the decal.
3. Insert a 9/16-inch socket with a ratchet onto the depth adjuster input shaft (Figure 23).



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Figure 23

1. Depth adjuster input shaft
2. Locking plate
3. Depth indicator decal
4. Depth alignment mark

4. Push in on the socket or use your hand to press on the locking plate.
5. Rotate the depth adjuster clockwise to reduce the aeration depth or counterclockwise to increase the aeration depth. (Figure 23).
6. Rotate the depth adjuster input shaft until the desired depth is attained as shown on the depth indicator decal (Figure 23).

   Note: 17 revolutions of the depth adjuster input shaft equal approximately 6.4 mm (1/4 inch) depth change.

Understanding the Traction Unit Controls

Familiarize yourself with the operation of the following traction unit controls before operating the machine:

- PTO engagement
- 3 point hitch (raise/lower)
- Clutch
- Throttle
- Gear selection
- Parking brake

Important: **Refer to the traction unit operator's manual for operating instructions.**

Understanding the Principles of Operation

The 3-point hitch linkage of the traction unit lifts the machine for transport and lowers it for operation.

Power from the traction unit power take-off (PTO) is transmitted through driveshafts, a gearbox, and drive belts to a number of crankshafts, which drive the tine holding arms into the turf surface.

As the traction unit travels forward with the PTO engaged and the machine lowered, a series of holes are created in the turf.

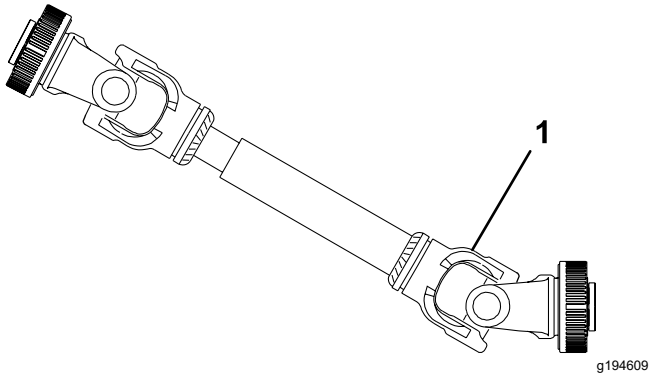
The penetration depth of the tines is determined by the height of the depth control.

The distance between the aeration holes is determined by the gear ratio (or hydrostatic traction pedal position) of the traction unit and the number of tines in each tine head.

Note: Changing the engine speed does not change hole spacing.

Practicing the Operating Procedures

Important: **When connecting the PTO, ensure that the machine is not lifted higher than is necessary. Lifting the machine too high causes the PTO driveshaft knuckles to break (Figure 24). The PTO can operate up to an angle of 25°, but can never exceed a 35° angle when the machine is at its highest position, or severe shaft damage may occur.**



g194609

Figure 24

1. Breakage occurs here.

Before using the machine, find a clear area and practice operating the traction unit with the machine installed.

Important: **If there are sprinkler heads, electrical or communication lines, or other obstructions in**

the area being aerated, mark these locations to ensure that these items are not damaged during operation.

- Operate the traction unit using the recommended gear settings and PTO drive speeds and become thoroughly familiar with the traction unit handling with the attached machine.
- Practice stopping and starting, raising the machine, and lowering the machine, disengaging the PTO drive, and aligning the machine with previous passes.

Practice sessions helps you gain confidence in the performance of the machine and helps ensure that you are using it properly.

⚠ WARNING

Adjusting or maintaining the machine while the traction unit is running may result in an accident and severe injury or death

- **Before leaving the operator's seat, disengage the PTO drive, engage the parking brake, shut off the engine, remove the key, and wait for all moving parts to stop.**
- **Lower the machine onto the storage stands or appropriate blocking or jacks repairing the machine.**
- **Ensure that all safety devices are secured in proper place before resuming operation.**

Preparing to Aerate

Inspect the area of operation for hazards that could damage the machine and remove them, if possible, or plan how to avoid them. Carry replacement tines and tools in case tines are damaged due to contact with foreign materials.

During Operation

During Operation Safety

General Safety

- The owner/operator can prevent and is responsible for accidents that may cause personal injury or property damage.
- Do not operate the machine when tired, ill, or under the influence of alcohol or drugs.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Wear appropriate clothing, including eye protection; slip-resistant, substantial footwear; long pants; and hearing protection. Tie back long hair and do not wear loose clothing or loose jewelry.
- Never carry passengers on the machine and keep bystanders and pets away from the machine during operation.
- Operate the machine only in good visibility to avoid holes or hidden hazards.
- Keep your hands and feet away from the tines.
- Look behind and down before backing up to be sure of a clear path.
- Stop the machine, shut off the engine, wait for all moving parts to stop, and inspect the tines after striking an object or if there is an abnormal vibration in the machine. Make all necessary repairs before resuming operation.
- The machine is heavy. When attached to a traction unit and in the raised position, its weight affects stability, braking and steering. Exercise caution when transporting between working areas.
- Always maintain proper traction unit tire pressure.
- Ensure that you comply with all regulations before transporting equipment on the public roads and highways. Make sure that all required reflectors and lights are in place and are clean and visible by overtaking and oncoming traffic.
- Reduce speed on rough roads and surfaces
- Independent wheel brakes should always be locked together when transporting.
- Operate the machine only in good visibility. Do not operate the machine when there is the risk of lightning.
- For all PTO driveshaft steel parts (tubes, bearings, joints, etc.) disassembly or repairs, it is highly advisable to contact your local Toro distributor. Removal of components for repairs and reassembly may damage some parts if not performed with special tools by trained technicians.
- The PTO driveshaft must not be used without the guards supplied.
- Friction clutches may become hot during use. Do not touch. To avoid the risk of fire, keep the area around the clutch free of flammable material and avoid prolonged slipping of the clutch.

Slope Safety

- Review the traction unit specifications to ensure that you do not exceed its slope capabilities.
- Slopes are a major factor related to loss of control and rollover accidents, which can result in severe injury or death. You are responsible for safe slope

operation. Operating the machine on any slope requires extra caution.

- Evaluate the site conditions to determine if the slope is safe for machine operation, including surveying the site. Always use common sense and good judgment when performing this survey.
- Review the slope instructions listed below for operating the machine on slopes and review the conditions to determine whether you can operate the machine in the conditions on that day and at that site. Changes in the terrain can result in a change in slope operation for the machine.
- Avoid starting, stopping, or turning the machine on slopes. Avoid making sudden changes in speed or direction. Make turns slowly and gradually.
- Do not operate a machine under any conditions where traction, steering, or stability is in question.
- Remove or mark obstructions such as ditches, holes, ruts, bumps, rocks, or other hidden hazards. Tall grass can hide obstructions. Uneven terrain could overturn the machine.
- Be aware that operating the machine on wet grass, across slopes, or downhill may cause the machine to lose traction. Loss of traction to the drive wheels may result in sliding and a loss of braking and steering.
- Use extreme caution when operating the machine near drop offs, ditches, embankments, water hazards, or other hazards. The machine could suddenly roll over if a wheel goes over the edge or the edge caves in. Establish a safety area between the machine and any hazard.

Operating the Machine

Note: When using needle tine heads, make sure to read the instructions included with the kit for unique operating procedures.

1. Lower the machine on the 3 point linkage so that the tines are nearly to the ground at the lowest part of their stroke.
2. At a low engine rpm, engage the power take off (PTO) clutch to start the machine.

   Important: **Never operate the machine without the tine heads installed.**
3. Select a gear that gives a forward speed of approximately 1 to 4 km/h (0.6 to 2.5 mph) at the rated PTO speed of 540 rpm (refer to the traction unit operator's manual).
4. As the clutch is released and the traction unit moves forward, lower the machine fully into the turf and increase engine speed to give a maximum of 540 rpm at the PTO.

   Important: **Never operate the traction unit PTO faster than 540 rpm or you may damage to the machine.**

   Note: Make sure that the roller is on the ground.
5. Note the hole pattern. If you require greater hole spacing, increase forward the speed of the traction unit by shifting up a gear or with a hydrostatic drive traction unit, actuate the hydrostat lever or pedal to give faster speed. For closer hole spacing, decrease traction unit forward speed. **Changing engine speed in a particular gear does not change the hole pattern.**

   Important: **Look backward frequently to ensure that the machine is operating properly and alignment is maintained with previous passes.**
6. Use the front traction unit wheel as a guide to maintain equal lateral hole spacing with the previous pass.
7. At the end of the aeration pass, raise the machine and disengage the PTO.
8. If you back into a tight area (like a tee box), disengage the PTO and raise the machine to the highest position. Use caution not to catch the turf guards on the turf.
9. Always clear the area of all damaged machine parts, such as broken tines, etc., to prevent anything from being picked up and thrown by mowers or other turf maintenance equipment.
10. Replace broken tines; inspect and repair damaged tines that are serviceable. Repair any other machine damage before operation.

Adjusting the Hole Spacing

The forward hole spacing is determined by the traction unit gear ratio (or the hydrostatic traction pedal). Changing the engine speed does not change the forward hole spacing.

The lateral hole spacing is determined by the number of tines in the tine heads.

Hole spacing mm (inch)	**Ground speed km/h (mph)**												
25 (1)	0.6 (0.4)	0.6 (0.4)	0.6 (0.4)	0.6 (0.4)	0.6 (0.4)	0.6 (0.4)	0.6 (0.4)	0.6 (0.4)	0.8 (0.5)	0.8 (0.5)	0.8 (0.5)	0.8 (0.5)	0.8 (0.5)
32 (1.25)	0.8 (0.5)	0.8 (0.5)	0.8 (0.5)	0.8 (0.5)	0.8 (0.5)	0.8 (0.5)	0.8 (0.5)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)
38 (1.5)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)	1.0 (0.6)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)
44 (1.75)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)	1.1 (0.7)	1.3 (0.8)	1.3 (0.8)	1.3 (0.8)	1.3 (0.8)	1.3 (0.8)	1.3 (0.8)	1.3 (0.8)
51 (2)	1.3 (0.8)	1.3 (0.8)	1.3 (0.8)	1.3 (0.8)	1.3 (0.8)	1.4 (0.9)	1.4 (0.9)	1.4 (0.9)	1.4 (0.9)	1.4 (0.9)	1.4 (0.9)	1.6 (1.0)	1.6 (1.0)
57 (2.25)	1.4 (0.9)	1.4 (0.9)	1.4 (0.9)	1.4 (0.9)	1.4 (0.9)	1.6 (1.0)	1.6 (1.0)	1.6 (1.0)	1.6 (1.0)	1.6 (1.0)	1.8 (1.1)	1.8 (1.1)	1.8 (1.1)
64 (2.5)	1.6 (1.0)	1.6 (1.0)	1.6 (1.0)	1.6 (1.0)	1.6 (1.0)	1.8 (1.1)	1.8 (1.1)	1.8 (1.1)	1.8 (1.1)	1.9 (1.2)	1.9 (1.2)	1.9 (1.2)	1.9 (1.2)
70 (2.75)	1.6 (1.0)	1.8 (1.1)	1.8 (1.1)	1.8 (1.1)	1.8 (1.1)	1.9 (1.2)	1.9 (1.2)	1.9 (1.2)	1.9 (1.2)	2.1 (1.3)	2.1 (1.3)	2.1 (1.3)	2.1 (1.3)
76 (3)	1.8 (1.1)	1.9 (1.2)	1.9 (1.2)	1.9 (1.2)	2.1 (1.3)	2.1 (1.3)	2.1 (1.3)	2.1 (1.3)	2.3 (1.4)	2.3 (1.4)	2.3 (1.4)	2.3 (1.4)	2.4 (1.5)
83 (3.25)	1.9 (1.2)	2.1 (1.3)	2.1 (1.3)	2.1 (1.3)	2.3 (1.4)	2.3 (1.4)	2.3 (1.4)	2.3 (1.4)	2.4 (1.5)	2.4 (1.5)	2.4 (1.5)	2.6 (1.6)	2.6 (1.6)
89 (3.5)	2.1 (1.3)	2.3 (1.4)	2.3 (1.4)	2.3 (1.4)	2.4 (1.5)	2.4 (1.5)	2.4 (1.5)	2.6 (1.6)	2.6 (1.6)	2.6 (1.6)	2.7 (1.7)	2.7 (1.7)	2.7 (1.7)
95 (3.75)	2.3 (1.4)	2.4 (1.5)	2.4 (1.5)	2.4 (1.5)	2.6 (1.6)	2.6 (1.6)	2.6 (1.6)	2.7 (1.7)	2.7 (1.7)	2.7 (1.7)	2.9 (1.8)	2.9 (1.8)	3.1 (1.9)
102 (4)	2.4 (1.5)	2.6 (1.6)	2.6 (1.6)	2.6 (1.6)	2.7 (1.7)	2.7 (1.7)	2.7 (1.7)	2.9 (1.8)	2.9 (1.8)	3.1 (1.9)	3.1 (1.9)	3.1 (1.9)	3.2 (2.0)
108 (4.25)	2.6 (1.6)	2.7 (1.7)	2.7 (1.7)	2.7 (1.7)	2.9 (1.8)	2.9 (1.8)	3.1 (1.9)	3.1 (1.9)	3.1 (1.9)	3.2 (2.0)	3.2 (2.0)	3.2 (2.0)	3.4 (2.1)
114 (4.5)	2.7 (1.7)	2.9 (1.8)	2.9 (1.8)	2.9 (1.8)	3.1 (1.9)	3.1 (1.9)	3.2 (2.0)	3.2 (2.0)	3.2 (2.0)	3.4 (2.1)	3.4 (2.1)	3.5 (2.2)	3.5 (2.2)
121 (4.75)	2.9 (1.8)	3.1 (1.9)	3.1 (1.9)	3.1 (1.9)	3.2 (2.0)	3.2 (2.0)	3.4 (2.1)	3.4 (2.1)	3.5 (2.2)	3.5 (2.2)	3.5 (2.2)	3.7 (2.3)	3.7 (2.3)
127 (5)	3.1 (1.9)	3.2 (2.0)	3.2 (2.0)	3.2 (2.0)	3.4 (2.1)	3.4 (2.1)	3.5 (2.2)	3.5 (2.2)	3.7 (2.3)	3.7 (2.3)	3.9 (2.4)	3.9 (2.4)	4.0 (2.5)
133 (5.25)	3.2 (2.0)	3.4 (2.1)	3.4 (2.1)	3.4 (2.1)	3.5 (2.2)	3.5 (2.2)	3.7 (2.3)	3.7 (2.3)	3.9 (2.4)	3.9 (2.4)	4.0 (2.5)	4.0 (2.5)	4.2 (2.6)
140 (5.5)	3.4 (2.1)	3.4 (2.1)	3.5 (2.2)	3.5 (2.2)	3.7 (2.3)	3.7 (2.3)	3.9 (2.4)	3.9 (2.4)	4.0 (2.5)	4.0 (2.5)	4.2 (2.6)	4.2 (2.6)	4.3 (2.7)
146 (5.75)	3.5 (2.2)	3.5 (2.2)	3.7 (2.3)	3.9 (2.4)	3.9 (2.4)	4.0 (2.5)	4.0 (2.5)	4.2 (2.6)	4.2 (2.6)	4.3 (2.7)	4.3 (2.7)	4.5 (2.8)	4.5 (2.8)
152 (6)	3.7 (2.3)	3.7 (2.3)	3.9 (2.4)	4.0 (2.5)	4.0 (2.5)	4.2 (2.6)	4.2 (2.6)	4.3 (2.7)	4.3 (2.7)	4.5 (2.8)	4.5 (2.8)	4.7 (2.9)	4.7 (2.9)
PTO rpm	**420**	**430**	**440**	**450**	**460**	**470**	**480**	**490**	**500**	**510**	**520**	**530**	**540**

Aerating Hard Ground

If the ground is too firm to obtain the desired coring depth, the coring head can get into a “bouncing” rhythm. This is due to the tines attempting to penetrate the hard pan. This condition can be corrected by attempting one or more of the following:

- Best results are obtained after a rain or when turf has been watered the previous day.
- Reduce the number of tines per stomper arm. Attempt to maintain a symmetrical tine configuration to evenly load the stomper arms.
- Reduce tine penetration (depth setting) if the ground is hard packed. Clean up the cores, water the turf, and aerate again at a deeper penetration.

Aeration of soil types built on top of hard subsoils (i.e. sand/soil cap placed over rocky ground) can cause undesired hole quality. This is caused when the aeration depth is greater than the soil cap and the subsoil is too hard to penetrate. When the tines contact this subsoil, the machine may lift and cause the top of the holes to become elongated. Reduce the aeration depth sufficiently to avoid penetration into the hard subsoil.

Using Needle Tines

Long slender tines used in either a needle tine head or mini tine head can leave the front or rear of the hole tufted or slightly deformed. Hole quality for this configuration generally improves if you reduce coring head speed 10 to 15% from full operating speed. Reduce the engine speed until the PTO speed is around 460 to 490 rpm. The forward spacing is not affected by reducing the engine speed. The pushed hole can also be affected by the position of the rotalink damper assembly. Refer to Adjusting the Rotalink Assembly (page 26).

Avoiding Root Zone Lifting

Using the mini-tine heads in conjunction with larger coring tines or large diameter solid tines can induce significant stress on the root zone of the turf. This stress can fracture the root zone and cause a lifting action to the turf. If this damage occurs, try one or more of the following:

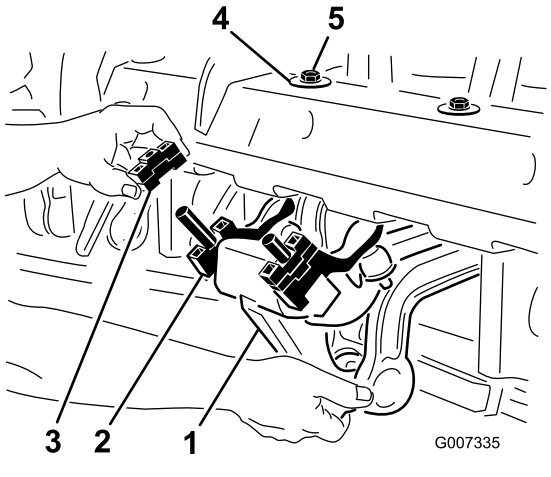
- Reduce the tine density (remove some of the tines).
- Decrease the coring depth.

  Note: Try decreasing core depth in 13 mm (1/2 inch) increments.
- Increase the forward hole spacing (change the traction unit transmission up one gear).
- Decrease the tine diameter (solid or coring).

Adjusting the Rotalink Assembly

The mounting height of the rotalink damper assembly affects the reactive force applied to the stomper arm and ground engagement during aeration. In the event of the front of the hole being pushed (elongated or dimpled), a “stiffer” position can help resist this push and improve hole quality. In the event of the back of the hole being pushed (elongated or dimpled) a “softer” position can improve the hole quality.

1. Remove the 2 locknuts (1/2 inch) securing the rotalink damper assembly to the underside of the coring head frame (Figure 25).
2. Lower the damper assembly to expose the spacers (Figure 25).
3. Move 1 or 2 spacers per side from the damper assembly to the top of the coring head frame. Each spacer is equivalent to 1/2 inch. The lower bumper spacer must remain on the damper assembly.



g007335

Figure 25

1. Rotalink damper assembly
2. Lower bumper spacer
3. Spacer(s)
4. D washer
5. Locknut

4. Assemble the damper assembly to the coring head frame again. Ensure that the D washer is installed against the coring head frame as shown in Figure 25. Secure the 2 locknuts.

   To see the effects of this adjustment, adjust only 3 to 4 assemblies to compare the original position and the new position on a trial pass. When satisfactory results are achieved, move the remaining assemblies to the same height as the desired arms.

Operating Tips

⚠ WARNING

Adjusting or repairing the machine while the traction unit is running may result in an accident and severe injury or death

- **Before leaving the operator's seat, disengaging the PTO drive, engaging the parking brake, shutting off the engine, and remove the key.**
- **Before repairing the machine, lower it onto the storage stands or appropriate blocking.**
- **Ensure that all safety devices are secured in proper place before resuming operation.**

- Engage the PTO at low engine speed. Increase engine speed to achieve PTO speed of 540 rpm (maximum) and the lower machine. Operate at engine at a speed that the machine runs most smoothly.

  Note: Changing engine/PTO speed in a particular traction unit gear (or fixed hydrostatic pedal position on a traction unit with a hydrostatic transmission) does not change hole spacing.
- Make very gradual turns when aerating. Never make sharp turns with the machine lowered. Plan your aeration path before lowering the machine.
- If the operating load slows the engine when aerating the machine on hard ground or going uphill, raise the machine slightly until the engine regains speed, then lower the machine again.
- Do not aerate if the ground is too hard or dry. Best results are obtained after a rain or when turf has been watered the previous day.

  Note: If the roller rides up off the ground while aerating, the ground is too hard to achieve the desired depth; reduce the aeration depth until the roller contacts the ground during operation.
- Raise the machine penetration if the ground is hard packed. Clean up cores and aerate at deeper penetration, preferably after watering.
- The ProCore 864 is offset to the right side of the traction unit to allow aerating without driving over the cores with the tires. Whenever possible, aerate with the longer offset towards the previous aeration pass.
- Always check/adjust the top link whenever you change the aeration depth. The front of the machine should be vertical.
- Look backward frequently to ensure that the machine is operating properly, and alignment is maintained with previous passes.
- Always clear the area of all damaged machine parts, such as broken tines, etc., to prevent them from being picked up and thrown by mowers or other turf maintenance equipment.
- Replace broken tines, and inspect and correct damage to those still usable. Repair any other machine damage before commencing operation.

After Operation

After Operation Safety

General Safety

- Park the machine on a level surface; engage the parking brake; shut off the engine; remove the key; and wait for all movement to stop before leaving the machine.
- Keep all parts of the machine in good working condition and all hardware tightened.
- Replace all worn, damaged, or missing decals.

Transporting the Machine

To begin transport operation, raise the machine and disengage the PTO. To avoid loss of control, traverse steep inclines slowly, approach rough areas at reduced speed and cross severe undulations carefully.

Important: **Do not exceed transport speeds of 24 km/h (15 mph).**

Cleaning the Machine after Use

After daily use, thoroughly wash the machine with a garden hose **without** a nozzle to avoid contamination and seal and bearing damage due to excessive water pressure. You can use a brush to remove caked-on material. Use mild detergent to clean the covers. After cleaning, grease all drive lines and roller bearings, inspect for machine damage, oil leakage, and component and tine wear.

Remove, clean, and oil the tines. Spray a light oil mist on the coring head bearings (crank and damper links).

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 8 hours	• Change the gearbox lubrication. • Check the torque of the coring head fasteners.
Before each use or daily	• Check the belt tension. • Check the belt tension.
Every 50 hours	• Grease the bearings and bushings. • Inspect the bearings.
Every 100 hours	• Check the gearbox lubrication.
Every 250 hours	• Change the gearbox lubrication. • Check the torque of the coring head fasteners.
Every 500 hours	• Inspect and replace the bearings as needed.
Before storage	• Perform all 50-hour maintenance procedures. • Paint areas that are scratched, chipped, or rusted. • Remove and clean the tines. • Remove all debris.
Yearly	• Inspect the belts.

Maintenance Safety

- Before adjusting, cleaning, servicing, or leaving the machine, do the following:
  - Position the machine on a level surface.
  - Move the throttle switch to the low-idle position.
  - Disengage the PTO.
  - Ensure that the traction is in neutral.
  - Engage the parking brake.
  - Shut off the engine of the traction unit and remove the key.
  - Wait for all moving parts to stop.
  - Allow machine components to cool before performing maintenance.
- Perform only those maintenance instructions described in this manual. If major repairs are ever needed or assistance is desired, contact an authorized Toro distributor.
- Ensure that the machine is in safe operating condition by keeping nuts, bolts, and screws tight.
- If possible, do not perform maintenance while the engine is running. Keep away from moving parts.
- Do not check or adjust the chain tension when the traction unit engine is running.
- Carefully release pressure from components with stored energy.
- Support the machine with blocks or storage stands when working beneath it. Never rely on the hydraulic system to support the machine.
- Check the tine mounting bolts daily to be sure that they are tightened to specification.
- Ensure that all guards are installed and the hood is secured shut after maintaining or adjusting the machine.
- To ensure safe, optimal performance of the machine, use only genuine Toro replacement parts. Replacement parts made by other manufacturers could be dangerous, and such use could void the product warranty.

Jacking the Machine

⚠ CAUTION

If the machine is not properly supported by blocks or jack stands, the machine may move or fall, which may result in personal injury.

- **Ensure that the machine is parked on a solid, level surface such as a concrete floor. Always chock the traction unit tires.**
- **Prior to raising the machine, remove any attachments that may interfere with the safe and proper raising of the machine.**
- **When changing attachments or performing other service, use correct blocks, hoists or jacks.**
- **Use jack stands or solid wood blocks to support the raised machine.**

Note: If available, use a hoist to lift the rear of the machine. Use the eyelets in the coring head bearing housings as hoist attachment points (Figure 26)

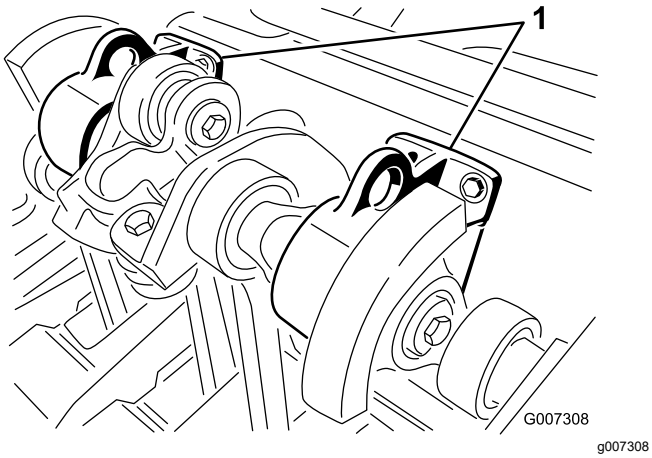


Figure 26

1. Lifting eyelets

Greasing the Bearings and Bushings

Service Interval: Every 50 hours

The main working bearings of the machine are sealed for life and require no maintenance or lubrication. This drastically reduces the maintenance required and eliminates the risk of grease or oil being dropped onto the turf.

There are grease fittings that must be lubricated with an SAE multi-purpose, high-temperature grease with high-pressure (EP) performance or SAE multi-purpose lithium-based grease.

The lubrication points are:

PTO driveshaft (3) (Figure 27)

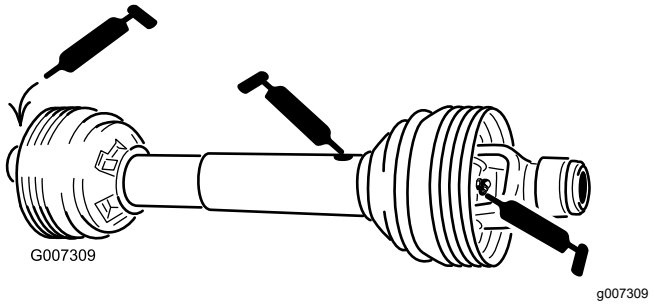


Figure 27

Roller bearings (ProCore 864: 2; ProCore 1298: 4) (Figure 28)

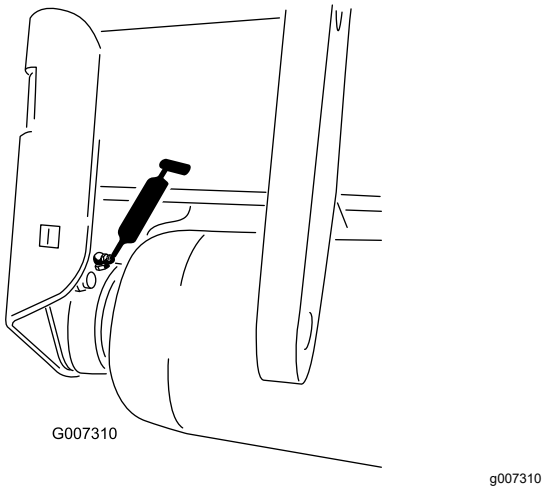


Figure 28

Driveshaft bearings (ProCore 864:1; ProCore 1298: 2) (Figure 29)

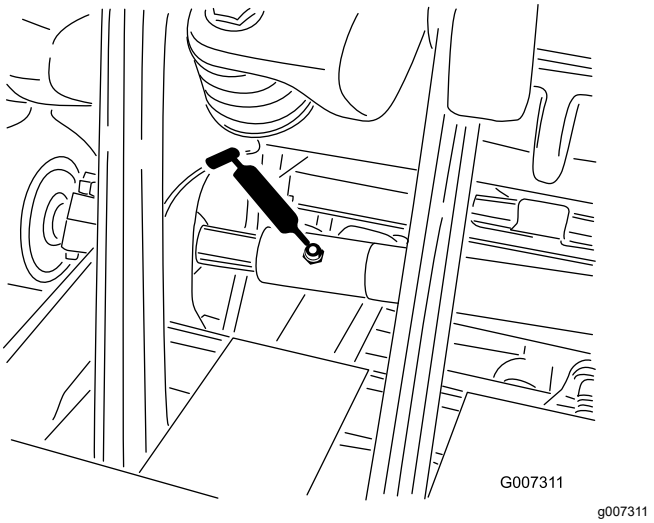


Figure 29

Important: **Bearings rarely fail from defects in materials or workmanship. The most common reason for failure is moisture and contamination working its way past the protective seals. Bearings that are greased rely upon regular maintenance to purge harmful debris from the bearing area. Sealed bearings rely on an initial fill of special grease and a robust integral seal to keep contaminants and moisture out of the rolling elements.**

The sealed bearings require no lubrication or short term maintenance. Use of sealed bearings minimizes routine service and reduces the potential turf damage from grease contamination. Inspect of bearing condition and seal integrity periodically to avoid downtime. Inspect the sealed bearings seasonally and replaced them if they are damaged or worn. Check that the bearings do not produce high heat, emit noise, vibrate excessively, or weep rust; the bearings should operate smoothly.

Due to the operating conditions these bearing/seal packages are subject to (i.e. sand, turf chemicals, water, impacts, etc.) they are considered normal wear items. Bearings that fail due to other than defects in materials or workmanship are typically not covered under warranty.

Note: Bearing life can be negatively affected by improper washing procedures. Do not wash the unit when it is still hot and avoid directing high-pressure or high-volume spray at the bearings.

New bearings commonly purge some grease out of the seals on a new machine. This purged grease turns black in color due to collection of debris and not due to excessive heat. Wipe this excess grease from the seals after the initial 8 hours. The area around the seal lip may always appear wet. This is not detrimental to bearing life, but keeps the seal lip lubricated.

Replace the coring head bearing every of 500 hours. A bearing service kit that covers the complete coring head is available from your distributor.

Checking the Gearbox Lubrication

Service Interval: Every 100 hours

The gearbox is filled with 80W-90 gear oil or equivalent. Allow the gearbox to cool before checking the lubrication.

1. Clean debris from the fill plug and check the plug to avoid contamination.
2. Remove the check plug from the gearbox (Figure 30).

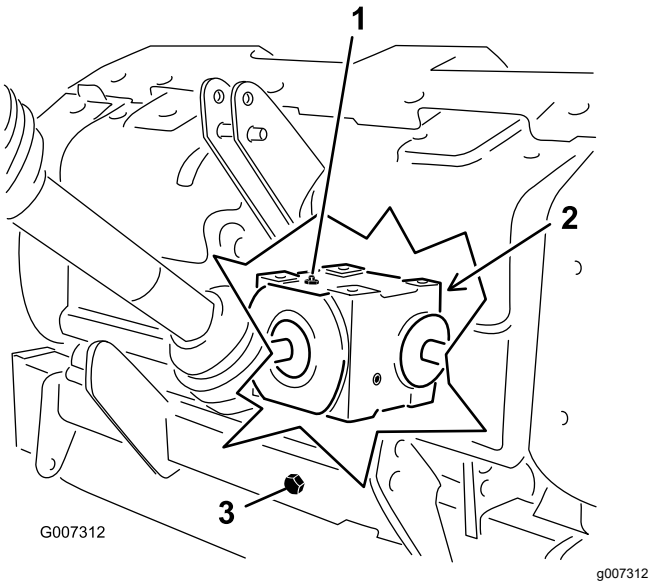


Figure 30

1. Fill plug
2. Check plug (rear of gearbox)
3. Drain plug

3. Make sure that the oil level is up to the bottom of the check plug hole in gearbox (Figure 30).
4. If the oil level is low, remove the fill plug from the gearbox and add oil as required.
5. Install the plugs.

Changing the Gearbox Lubrication

Service Interval: After the first 8 hours

Every 250 hours

The gearbox is filled with 80W-90 gear oil or equivalent.

1. Clean debris from the fill plug and the drain cap to avoid contamination (Figure 30).
2. Remove the fill plug to relieve air draw.
3. Position a drain pan under the drain tube and remove the drain cap.

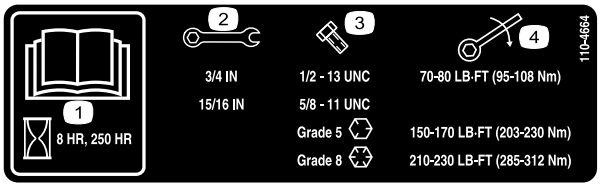
   Note: The high viscosity of cool oil extends the drain time (approximately 30 minutes).
4. After oil is completely drained, install the drain cap.
5. Fill the gearbox with 1650 ml (56 fl oz) of high quality 80W-90 gear lube.
6. Install the fill plug.
7. Check the oil level.

Checking the Coring Head Fastener Torque

Service Interval: After the first 8 hours

Every 250 hours

After the initial 8 hours of use, check the coring head fasteners to ensure that proper torque is maintained. Fastener torque requirements are listed on the reference service decal below and located on the coring head.



decal110-4664

Figure 31

1. Read the *Operator's Manual.*
2. Wrench size
3. Bolt size
4. Torque

Inspecting the Belts

Service Interval: Yearly

The drive belt(s) on the machine are durable. However, the normal exposure to UV radiation, ozone or incidental exposure to chemicals can deteriorate the rubber compounding over time and lead to premature wear or material loss (i.e. chunking).

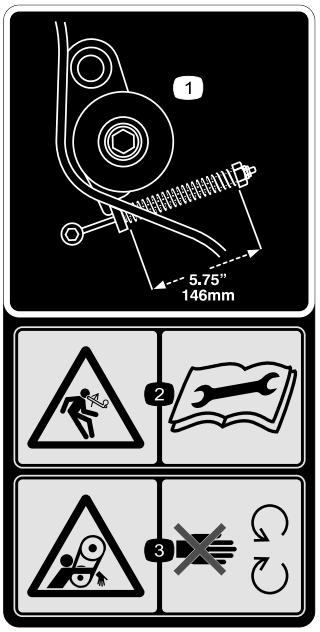
Annual belt inspection is highly recommended for signs of wear, excessive cushion cracks, or large embedded debris with replacement when needed.

Adjusting the Belt Tension

Service Interval: Before each use or daily

Make sure that the belt is properly tensioned to ensure correct operation of the machine and to prevent unnecessary wear.

1. Check for proper belt tension by compressing idler spring to a length of 146 mm (5-3/4 inches); refer to Figure 32.



decal110-4667

Figure 32

1. Spring length
2. Stored energy hazard—read the *Operator's Manual*.
3. Entanglement hazard, belt—stay away from moving parts.

2. Adjust the belt tension as follows:

   A. Remove the rear coring head cover (Figure 33).

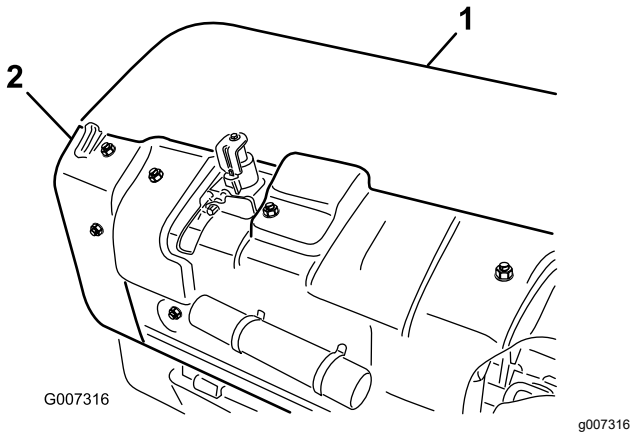


Figure 33

1. Rear coring head cover
2. Pulley shield

B. Remove the pulley shield mounting bolts and remove the shield (Figure 33).

C. Loosen the locknut securing the spring retainer (Figure 34).

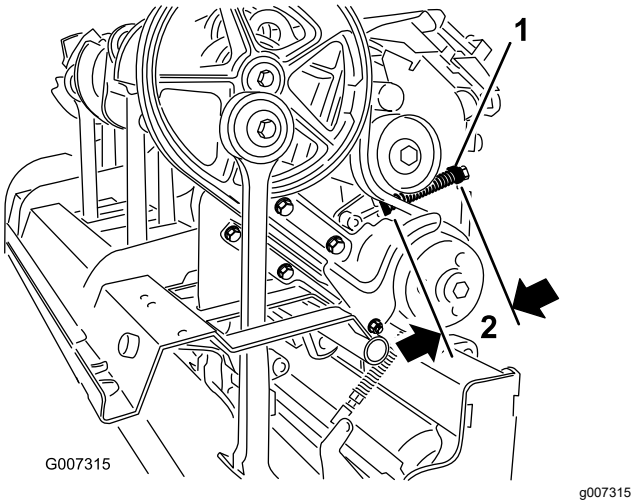


Figure 34

1. Spring retainer
2. 146 mm (5-3/4 inches)

D. Adjust the spring retainer to attain required compressed spring length (Figure 34).

E. Tighten the locknut against the spring retainer to lock the adjustment.

F. Install the pulley shield and the coring head cover.

Replacing the Drive Belt

Note: You **do not** need to remove the outside stomper arm to replace the drive belt.

Removing the Belt

1. Remove the rear coring head cover (Figure 35).

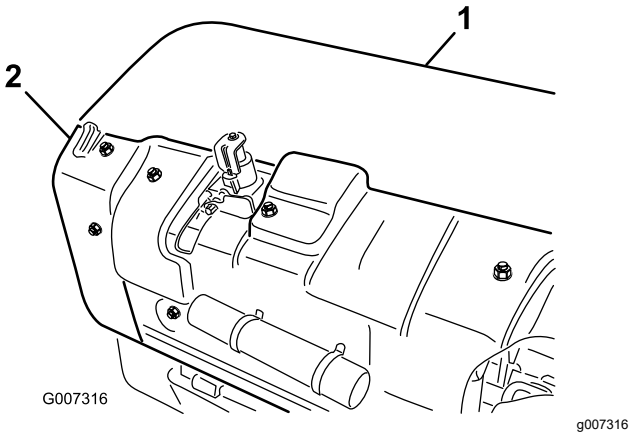


Figure 35

1. Rear coring head cover
2. Pulley shield

2. Remove the pulley shield mounting bolts and remove the shield (Figure 35).
3. Remove the fasteners securing the dirt shield and the lower belt shield (Figure 36). Remove the dirt shield and the lower belt shield.

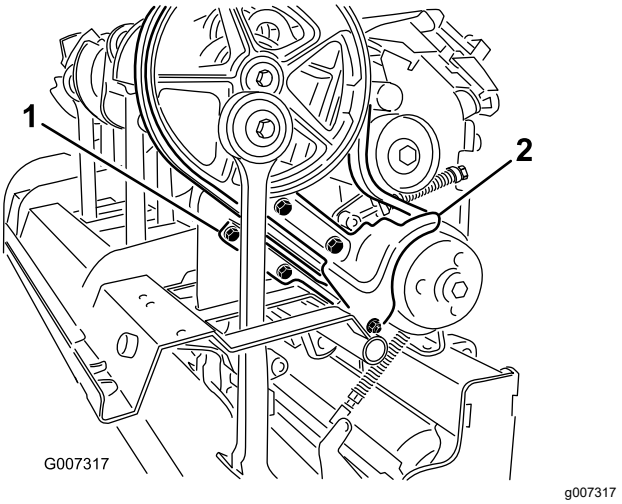


Figure 36

1. Lower belt shield
2. Dirt shield

4. To release the idler spring tension, loosen the locknut securing the spring retainer (Figure 37) and rotate the spring retainer.

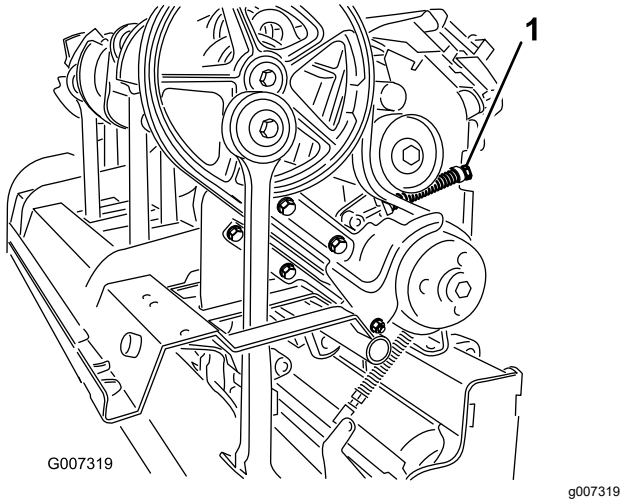


Figure 37

1. Spring retainer locknut

⚠ CAUTION

Springs are under tension, use caution when adjusting or removing.

5. Loosen and remove the 2 locknuts and washers securing the rotalink damper for the #1 stomper arm (Figure 38).

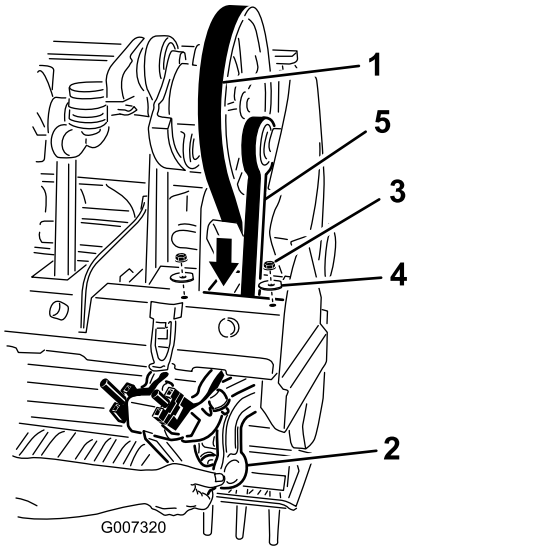


Figure 38

1. Drive belt
2. Rotalink damper
3. Nut
4. Washer
5. #1 Stomper arm

6. Lower the rotalink damper from the coring head frame.
7. Route the drive belt down through the coring head frame and around the lower end of the #1 stomper arm (Figure 38).

Installing the Belt

1. Route the new drive belt around the lower end of the #1 stomper arm and up through the coring head frame.
2. Position the drive belt onto the crank pulley, under the idler assembly and over the drive pulley.
3. Raise the rotalink damper for the #1 stomper arm to coring head frame. Ensure that the damper spacers are installed in the same position as in removal.
4. Secure the rotalink damper to the coring head with the 2 washers and locknuts previously removed.
5. Install and adjust the belt idler pulley and adjust it to the appropriate tension.
6. Install the dirt shield and the lower belt shield. Adjust the lower shield to ensure clearance with the belt.
7. Install the pulley and the coring head covers.

Adjusting the Side Shield

The coring head side shields should be adjusted so that the bottom rides between 25 to 38 mm (1 to 1-1/2 inches) from the turf while aerating.

1. Loosen the bolts and nuts securing the side shield to frame (Figure 39).

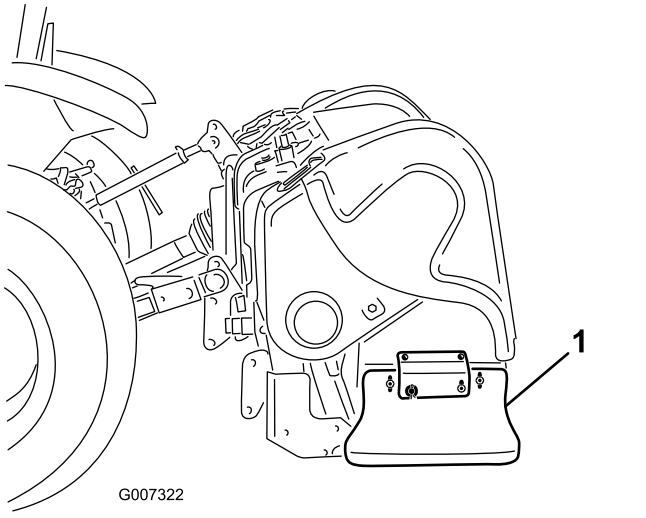


Figure 39

1. Side shield

2. Adjust the shield up or down and tighten the nuts.

Replacing the Turf Guards

All turf guards (Figure 40) should be replaced if broken or worn to less than 1/4 inch thickness. Broken turf guards can catch and tear turf, creating undesirable damage.

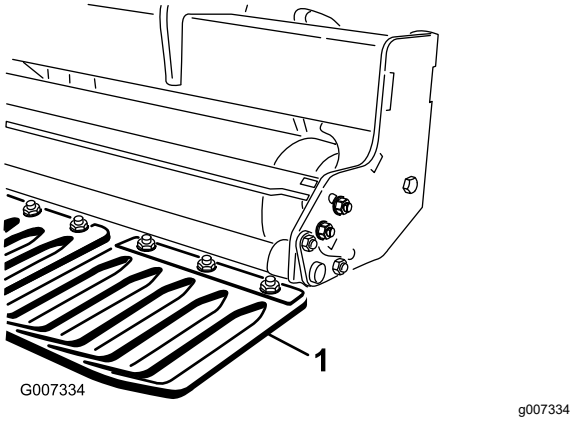


Figure 40

1. Turf guard

Coring Head Timing

The unitized coring head design of the machine provides industry-leading smooth operation while taking out the guesswork of timing.

ProCore 864 (Figure 41)

Each pair of crank arms joined through a bearing housing are timed 180 degrees apart (i.e. arm positions 1-2, 3-4, 5-6, 7-8). The adjacent pairs are all set with the same timing whereas the later pair lags by 120 degrees. The same pair of coupling castings are used between all adjacent pairs (i.e. coupling positions 2-3, 4-5, 6-7). To further reduce operating vibration, 2 counter weights are added at the #1 position on the pulley and the #8 position.

Note: The numbers cast into the crank arms **do not** align with the raised indicator mark on the bearing housings for the ProCore 864.

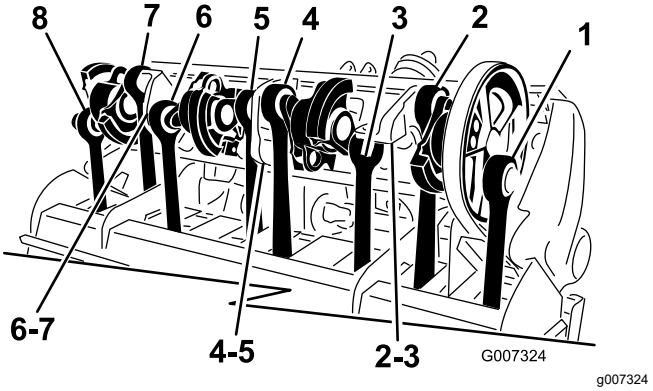
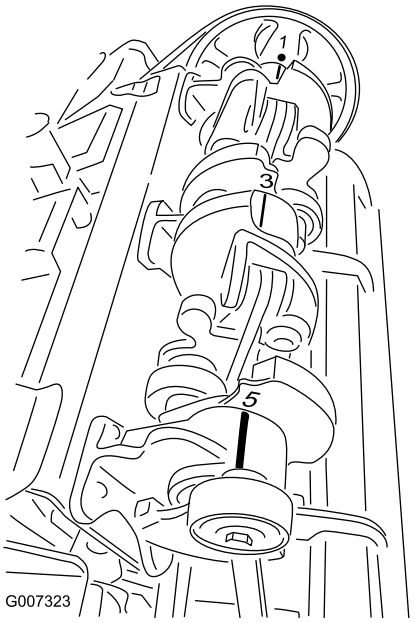


Figure 41

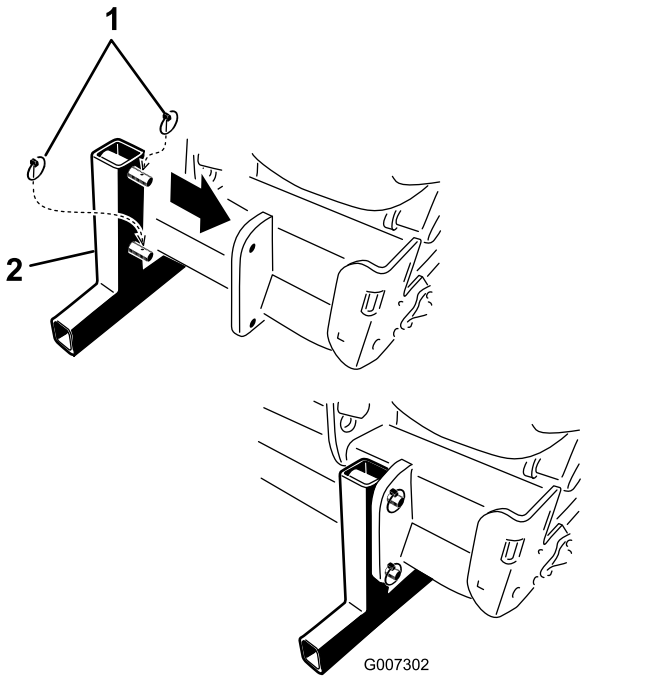
ProCore 1298 (Figure 42)

This unit is comprised of 2 independent coring heads with 6 arms each. The timing of either coring head is not dependent on the adjacent coring head. The timing marks are easily identified by the numbers cast into the crank arm castings and the raised locator on the bearing housings. The #1 arm always starts with the drive pulley.



g007323

Figure 42



g007302

Figure 43

1. Lynch pins
2. Storage stand

Removing the Machine from the Traction Unit

Important: **Refer to the PTO driveshaft owner's manual for additional operating and safety information.**

1. Park the traction unit and machine on a level surface, disengage the PTO, engage the parking brake, shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operator's seat.
2. Install the storage stands and secure them to the machine with the lynch pins (Figure 43).

   Note: You can store the machine on the original shipping pallet.
3. Slowly lower the machine until the storage stands contact the ground.
4. Loosen the locking nut and rotate the upper adjusting link to release the tension between the machine and the traction unit.
5. Remove the lynch pin and the top link pin securing the center link to the bracket. Retain the lynch pin and the top link pin with the machine.
6. Disconnect the safety shield chains from the traction unit PTO (CE only).
7. Pull back on the lock collar to disconnect the PTO driveshaft from the PTO output shaft on the traction unit.
8. Slide the PTO driveshaft back and remove it from the traction unit.
9. Support the PTO driveshaft by connecting the PTO tether to the PTO shield to prevent the driveshaft from contacting the ground (Figure 44).

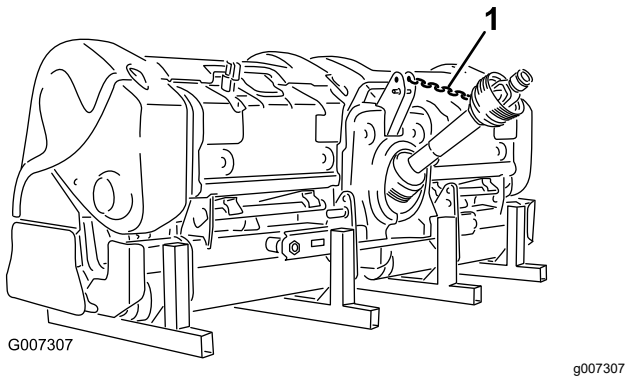


Figure 44

1. PTO tether

10. Remove the lynch pins and slide the lower link arms off the hitch pins.

    Retain the lynch pins with the machine.

Storage

Storage Safety

- Before adjusting, cleaning, storing, or repairing the machine, park the it on a level surface; engage the parking brake of the traction unit; shut off the engine; remove the key; and wait for all movement to stop before leaving the traction unit.
- Store the machine on the storage stands positioned on a firm, level surface so that it does not sink or tip over.
- Store the machine away from areas of human activity.
- Do not allow children to play on or around the stored machine.

Storing the Machine

At the end of an aerating season or when the machine is stored for a long period, do out the following procedure:

1. Clean off any dirt or grease that may have accumulated on the machine or any of the moving parts.
2. Remove and clean out the tines. Coat the tines with oil to prevent rusting during storage.
3. Open the hood and clean out the inside of the machine.
4. Lubricate all grease fittings.
5. Store the machine on the provided storage stands on a hard, dry surface.
6. Support the PTO driveshaft in the stored position with the tether to prevent damage, or remove the PTO and store it under the hood to minimize corrosion.
7. Paint the roller and touch up any other scratches on the painted surfaces.
8. Replace any missing or damaged decals.
9. Store the machine inside a dry, secure building. Inside storage reduces maintenance, gives a longer working life, and increases the residual value of the machine. If inside storage is not available, cover the machine with a heavy sheet or tarpaulin and secure it tightly.

Notes:

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.

California Proposition 65 Warning Information

What is this warning?

You may see a product for sale that has a warning label like the following:



WARNING: Cancer and Reproductive Harm—www.p65Warnings.ca.gov.

What is Prop 65?

Prop 65 applies to any company operating in California, selling products in California, or manufacturing products that may be sold in or brought into California. It mandates that the Governor of California maintain and publish a list of chemicals known to cause cancer, birth defects, and/or other reproductive harm. The list, which is updated annually, includes hundreds of chemicals found in many everyday items. The purpose of Prop 65 is to inform the public about exposure to these chemicals.

Prop 65 does not ban the sale of products containing these chemicals but instead requires warnings on any product, product packaging, or literature with the product. Moreover, a Prop 65 warning does not mean that a product is in violation of any product safety standards or requirements. In fact, the California government has clarified that a Prop 65 warning "is not the same as a regulatory decision that a product is 'safe' or 'unsafe.'" Many of these chemicals have been used in everyday products for years without documented harm. For more information, go to https://oag.ca.gov/prop65/faqs-view-all.

A Prop 65 warning means that a company has either (1) evaluated the exposure and has concluded that it exceeds the "no significant risk level"; or (2) has chosen to provide a warning based on its understanding about the presence of a listed chemical without attempting to evaluate the exposure.

Does this law apply everywhere?

Prop 65 warnings are required under California law only. These warnings are seen throughout California in a wide range of settings, including but not limited to restaurants, grocery stores, hotels, schools, and hospitals, and on a wide variety of products. Additionally, some online and mail order retailers provide Prop 65 warnings on their websites or in catalogs.

How do the California warnings compare to federal limits?

Prop 65 standards are often more stringent than federal and international standards. There are various substances that require a Prop 65 warning at levels that are far lower than federal action limits. For example, the Prop 65 standard for warnings for lead is 0.5 µg/day, which is well below the federal and international standards.

Why don't all similar products carry the warning?

- Products sold in California require Prop 65 labelling while similar products sold elsewhere do not.
- A company involved in a Prop 65 lawsuit reaching a settlement may be required to use Prop 65 warnings for its products, but other companies making similar products may have no such requirement.
- The enforcement of Prop 65 is inconsistent.
- Companies may elect not to provide warnings because they conclude that they are not required to do so under Prop 65; a lack of warnings for a product does not mean that the product is free of listed chemicals at similar levels.

Why does Toro include this warning?

Toro has chosen to provide consumers with as much information as possible so that they can make informed decisions about the products they buy and use. Toro provides warnings in certain cases based on its knowledge of the presence of one or more listed chemicals without evaluating the level of exposure, as not all the listed chemicals provide exposure limit requirements. While the exposure from Toro products may be negligible or well within the "no significant risk" range, out of an abundance of caution, Toro has elected to provide the Prop 65 warnings. Moreover, if Toro does not provide these warnings, it could be sued by the State of California or by private parties seeking to enforce Prop 65 and subject to substantial penalties.

The Toro Warranty

A two-Year 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 Hydroject or ProCore Aerator (“Product”) to be free from defects in materials or workmanship for two years or 500 operational hours*, whichever occurs first. This warranty is applicable to all products (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:

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*. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

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. A separate warranty may be provided by the manufacturer of these items.
- Product failures which result from failure to perform recommended maintenance and/or adjustments. Failure to properly maintain your Toro product per the recommended maintenance listed in the *Operator’s Manual* can result in claims for warranty being denied.
- Product failures which result from operating the Product in an abusive, negligent or reckless manner.
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brakes pads and linings, clutch linings, blades, reels, bed knives, tines, spark plugs, castor wheels, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, fertilizers, water, or chemicals, etc.
- 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, etc.

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.

Maintenance is at Owner’s Expense

Engine tune-up, lubrication cleaning and polishing, replacement of Items and Conditions Not Covered, 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 engine 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 printed in your *Operator’s Manual* or contained in the engine manufacturer’s documentation for details

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 the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.