Form No. 3422-731 Rev B

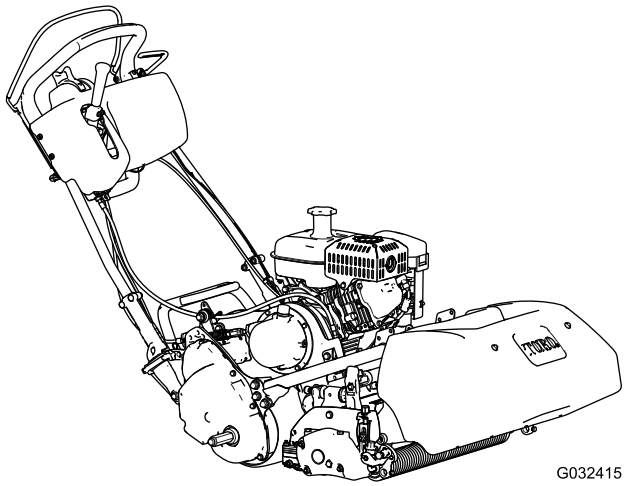
TORO®

Count on it.

Operator's Manual

Greensmaster® Flex™1820 and 2120 Traction Unit

Model No. 04044—Serial No. 403070001 and Up
Model No. 04045—Serial No. 403070001 and Up



G032415

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

CE

3422-731 B

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

It is a violation of California Public Resource Code Section 4442 or 4443 to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the engine is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order, or the engine is constructed, equipped, and maintained for the prevention of fire.

The enclosed engine owner's manual is supplied for information regarding the US Environmental Protection Agency (EPA) and the California Emission Control Regulation of emission systems, maintenance, and warranty. Replacements may be ordered through the engine manufacturer.

Operating this machine between 1,500 and 2,400 m (5,000 to 8,000 ft) above sea level requires the high-altitude kit. See your authorized Toro distributor.

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

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

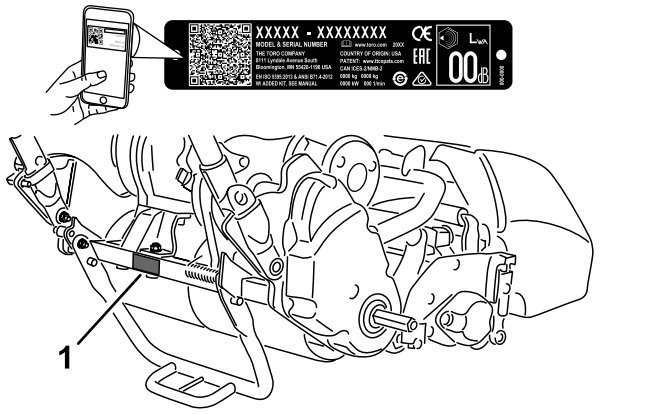
Introduction

This machine is a walk-behind, reel-blade lawn mower intended to be used by professional, hired operators in commercial applications. It is primarily designed for cutting grass on well-maintained lawns in parks, golf courses, sports fields, and on commercial grounds. It is not designed for cutting brush, mowing grass and other growth alongside highways, or for agricultural uses.

Important: **To maximize the safety, performance, and proper operation of this machine, carefully read and fully understand the contents of this *Operator's Manual*. Failing to follow these operating instructions or to receive proper training may result in injury. For more information on safe operating practices, including safety tips and training materials, go to www.Toro.com.**

Whenever you need service, genuine Toro parts, or additional information, contact an authorized Toro distributor and have the model and serial numbers of your product ready. The model and serial numbers are located on a plate on the rear frame. Write the numbers in the space provided.

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



g234204

Figure 1

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 2), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



g000502

Figure 2
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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Contents

Safety 4
General Safety 4
Safety and Instructional Decals 4
Setup 7
1 Preparing the Traction Unit 8
2 Installing the Cutting Unit to the Traction Unit 8
3 Installing the Handle Retainers 9
4 Installing the Transport Wheels 9
5 Checking the Engine-Oil Level 10
6 Installing the Production-Year Decal 10
7 Installing the Grass Basket 11
8 Breaking in the Machine 11
Product Overview 12
Controls 12
Specifications 16
Attachments/Accessories 16
Before Operation 17
Before Operation Safety 17
Performing Daily Maintenance 17
Checking the Engine-Oil Level 17
Fuel Specifications 17
Filling the Fuel Tank 18
Setting the Machine to Match Turf Conditions 19
Adjusting the Handle Height 20
Adjusting the Handle Angle 20
Adjusting the Throttle Control 20
Checking the Operation of the Interlock Switches 21
Transporting the Machine to a Job Site 22
During Operation 22
During Operation Safety 22
Starting the Engine 23
Shutting Off the Engine 23
Releasing the Transmission 24
Operating Tips 24
After Operation 25
After Operation Safety 25
Transporting the Machine 25
Maintenance 26
Recommended Maintenance Schedule(s) 26
Daily Maintenance Checklist 27
Pre-Maintenance Procedures 28
Pre-Maintenance Safety 28
Engine Maintenance 28
Engine Safety 28
Servicing the Engine Oil 28
Servicing the Air Cleaner 29
Servicing the Spark Plug 30
Fuel System Maintenance 31
Cleaning the Fuel-Tank Screen 31
Replacing the Fuel Line 31
Replacing the Breather Hose 31
Electrical System Maintenance 31
Servicing the Traction-Interlock Switch 31
Servicing the Brake-Interlock Switch 32
Brake Maintenance 32
Adjusting the Service/Parking Brake 32
Belt Maintenance 33
Inspecting the Reel-Drive Belt 33
Visually Inspecting the Reel Clutch 33
Engaging/Disengaging the Transmission-Belt Tensioner 34
Controls System Maintenance 34
Adjusting the Traction Control 34
Adjusting the Reel Control 35
Storage 36
Storage Safety 36
Storing the Machine 36

Safety

This machine has been designed in accordance with EN ISO 5395:2013 and ANSI B71.4-2017 and meets these standards when you add the Operator Presence Kit and required decals.

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.

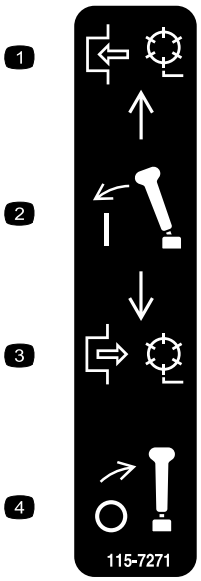
- Read and understand the contents of this *Operator's Manual* before starting the machine.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards and other safety protective devices in place and working on the machine.
- Keep clear of any discharge opening. Keep bystanders a safe distance away from the machine.
- Keep children out of the operating area. Never allow children to operate the machine.
- Shut off the machine and disconnect the battery before servicing or unclogging 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 (Figure 2), which means Caution, Warning, or Danger—personal safety instruction. Failure to comply with these instructions may result in personal injury or death.

You can find additional safety information where needed throughout this manual.

Safety and Instructional Decals

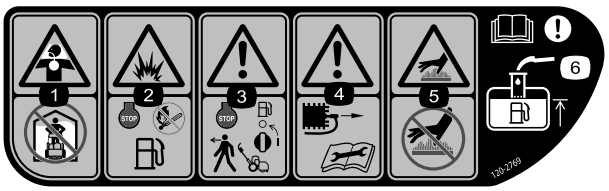
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



decal115-7271

115-7271

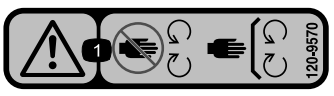
1. Engage the reel.
2. Engage the lever.
3. Disengage the reel.
4. Disengage the lever.



decal120-2769

120-2769

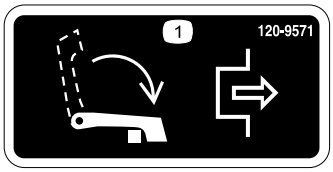
1. Toxic gas inhalation hazard—do not operate indoors.
2. Explosion hazard—shut off the engine and keep away from open flames when refueling.
3. Warning—shut off the engine and turn off the fuel before leaving the machine.
4. Warning—disconnect the spark plug wire and read the *Operator's Manual* before servicing or performing maintenance.
5. Hot surface/burn hazard—do not touch hot surfaces.
6. Warning—read the *Operator's Manual*; when adding fuel to the tank, only fill to the bottom of the fill tube.



decal120-9570

120-9570

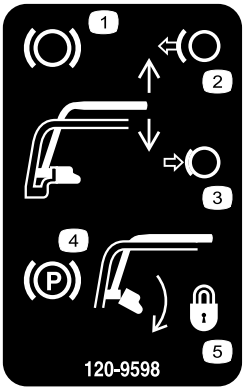
1. Warning—stay away from moving parts, keep all guards and shields in place.



decal120-9571

120-9571

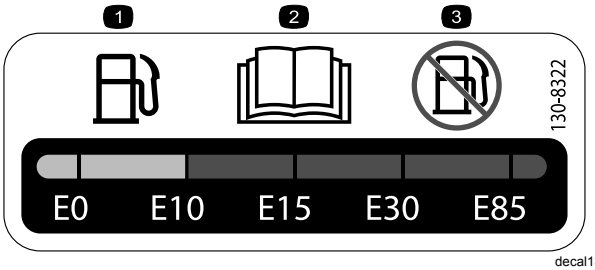
1. Lower the lever to disengage the traction.



decal120-9598

120-9598

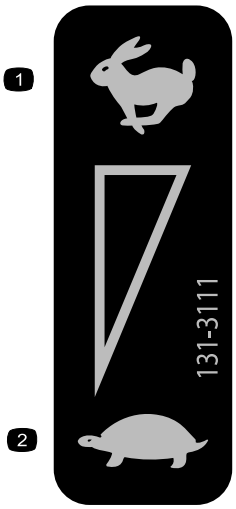
1. Brake
2. Release handle to disengage the brake.
3. Compress the handle to engage the brake.
4. Parking brake
5. Rotate the latch to lock the parking brake; compress the handle to release the latch.



decal130-8322

130-8322

1. Use only gasoline that contains 10% ethanol by volume (E10) or less.
2. Read the *Operator's Manual*.
3. Do not use gasoline that contains more than 10% ethanol by volume (E10).



decal131-3111

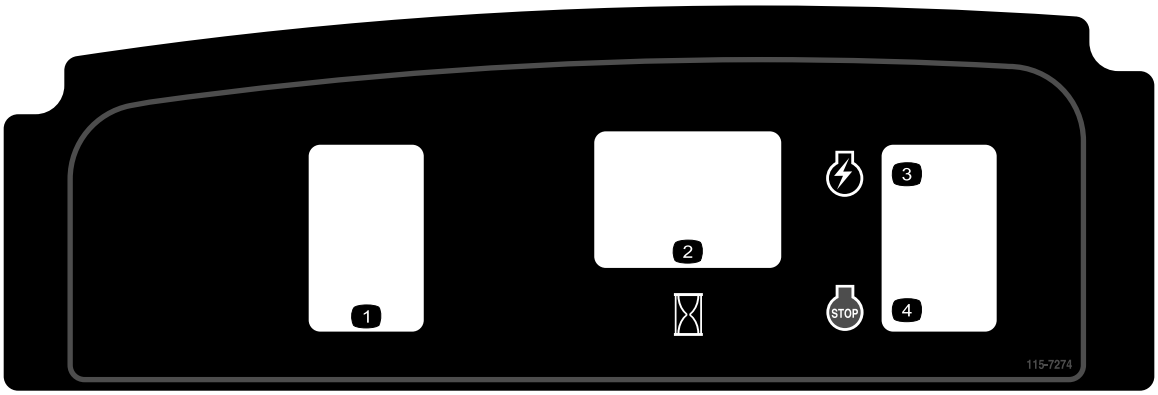
131-3111

1. Fast
2. Slow



decal133-8062

133-8062



decal115-7274

115-7274

1. Lights (optional)
2. Hour meter
3. Engine—start
4. Engine—shut off



decal133-2335

133-2335

1. Warning—read the *Operator's Manual*; do not operate the machine unless you are trained.
2. Warning—wear hearing protection.
3. Thrown object hazard—keep bystanders a safe distance away from the machine.
4. Warning—stay away from moving parts; keep all guards and shields in place.
5. Do not tow the machine.

Setup

Loose Parts

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

Procedure	Description	Qty.	Use
1	No parts required	–	Prepare the traction unit (optional).
2	Bolt (3/8 x 3/4 inch)	2	Install the cutting unit to the traction unit.
3	Handle retainer Hairpin cotter	2 2	Install the handle retainers.
4	Transport wheels—Transport Wheel Kit (Model No. 04123 [Optional])	2	Install the transport wheels.
5	No parts required	–	Check the engine-oil level.
6	Production-year decal	1	Install the production-year decal
7	Grass basket	1	Install the grass basket.
8	No parts required	–	Break in the machine.

Media and Additional Parts

Description	Qty.	Use
Operator's Manual Engine Owner's Manual Certificate of Compliance	1 1 1	Read or view these materials before operating the machine.

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

1

Preparing the Traction Unit

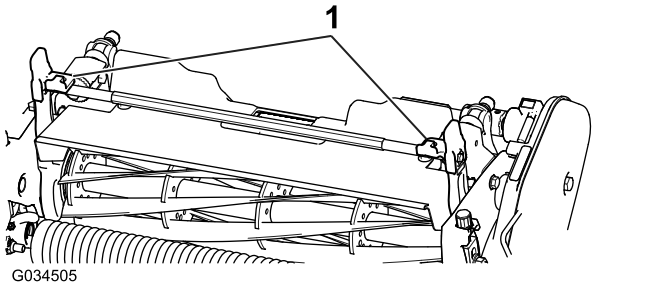
Optional—Cutting Unit Models 04251, 02452, 04253, or 04254

No Parts Required

Procedure

If you are installing cutting unit Models 04251, 02452, 04253, or 04254 on this traction unit, complete the following steps:

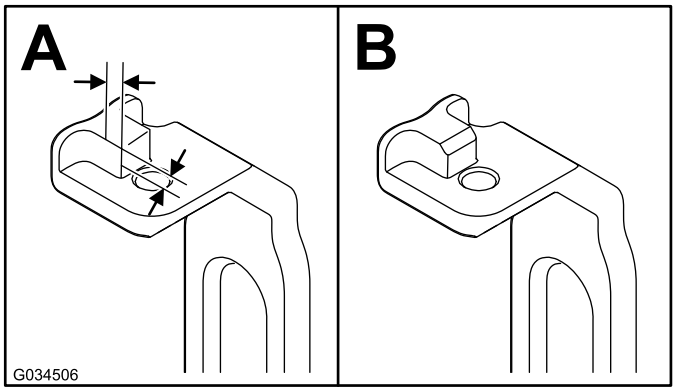
1. Position the cutting unit on a flat, level surface.
2. On both pitch arms (Figure 3), measure 2.3 mm (0.09 inch) in on the tabs and grind down the corner as shown in Figure 4.



g034505

Figure 3

1. Pitch arms



g034506

Figure 4

3. Paint the revealed metal to prevent corrosion.

2

Installing the Cutting Unit to the Traction Unit

Parts needed for this procedure:

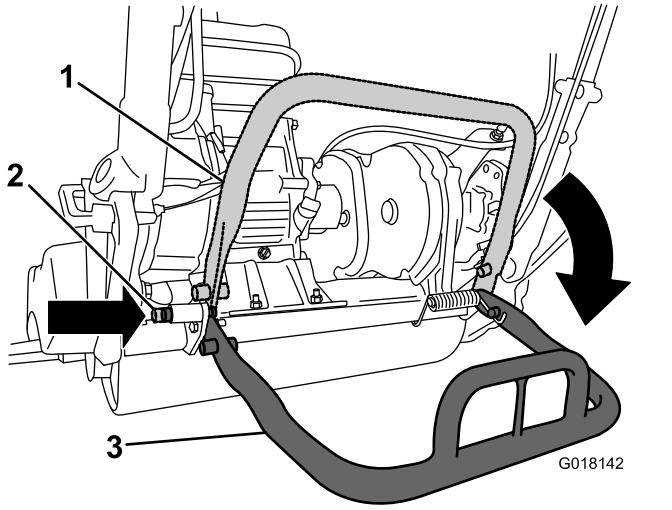
2	Bolt (3/8 x 3/4 inch)

Procedure

Note: To install the weight rod onto your machine, refer to the installation instructions in your cutting unit *Operator's Manual*.

1. Place the mower on its drums on a level surface.
2. Lower the kickstand and push in the locking pin to lock the kickstand in the SERVICE position (Figure 5). Allow the machine to rest on the locked kickstand.

   Note: Place the kickstand in the SERVICE position whenever you remove the cutting unit. This kickstand position keeps the machine from tipping backward onto the handle.



g018142

Figure 5

1. Kickstand—STORAGE position
2. Locking pin
3. Kickstand—SERVICE position

3. Push the cutting unit under the traction unit and to the left to engage the transmission coupling (Figure 6).

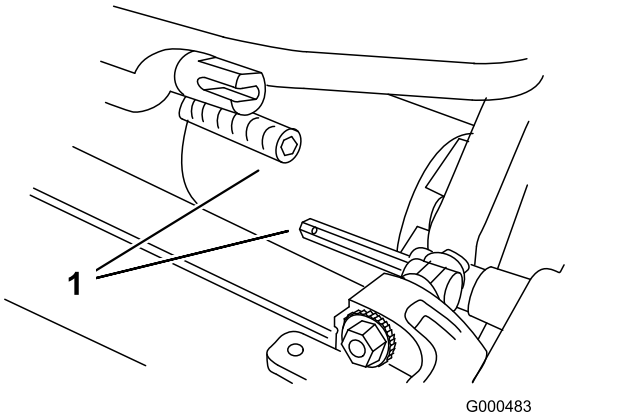


Figure 6

1. Transmission coupling

4. Maneuver the machine frame forward until it engages the cutting unit pivot arms Figure 7.

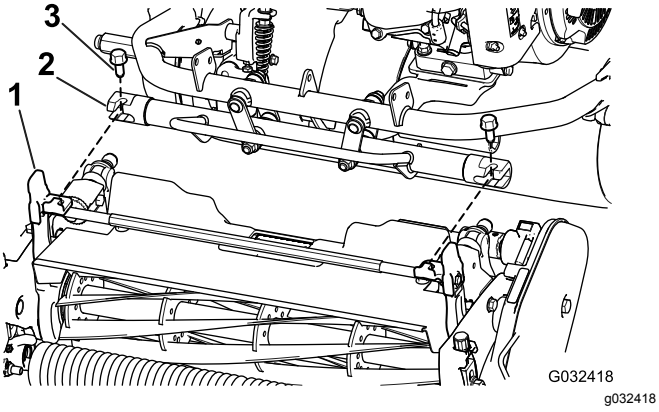


Figure 7

1. Telescoping coupler
2. Cutting-unit hex shaft
3. Bolt

5. Secure the machine frame to the cutting unit pivot arms with the 2 bolts (3/8 x 3/4 inch) (Figure 7).
6. Move the kickstand to the STORAGE position by releasing the locking pin and allowing the kickstand to rotate up.
7. Set the cutting-unit height of cut; refer to your cutting unit *Operator's Manual*.

3

Installing the Handle Retainers

Parts needed for this procedure:

2	Handle retainer
2	Hairpin cotter

Procedure

1. While supporting the handle, remove the cable ties that secure the handle clamps to the side plates (Figure 8).

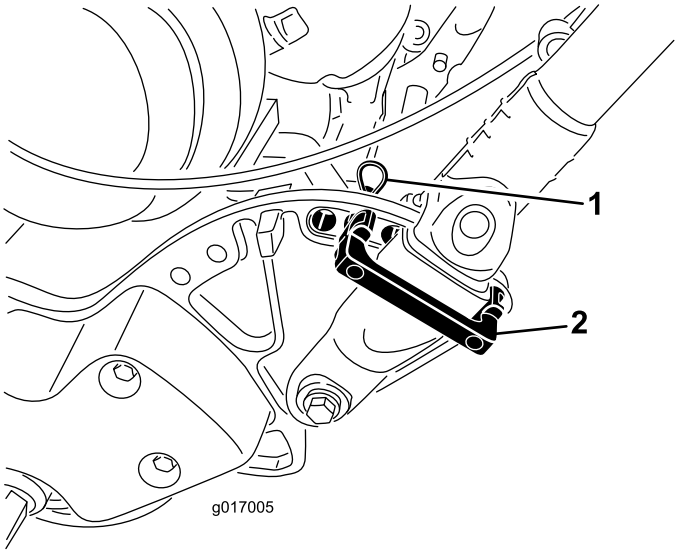


Figure 8

1. Hairpin cotter
2. Handle retainer

2. Pivot the handle to the desired operating position and insert a handle retainer over the handle clamp and into the matching holes in the side plate (Figure 8).
3. Secure the clamp in position with a hairpin cotter (Figure 8).
4. Repeat the procedure on the opposite side of the handle.
5. Adjust the handle height to the desired position; refer to Adjusting the Handle Height (page 20).

   Note: The machine is shipped with the handle adjusted to the lowest position. The machine is traditionally operated with the handle telescoped out to its maximum height.

4

Installing the Transport Wheels

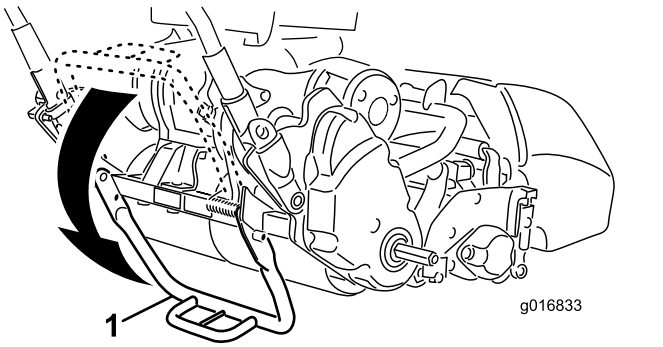
Optional

Parts needed for this procedure:

2	Transport wheels—Transport Wheel Kit (Model No. 04123 [Optional])

Procedure

1. Use your foot to push the center of the kickstand down and pull up on the lower handle support until the kickstand has rotated forward and over center (Figure 9).

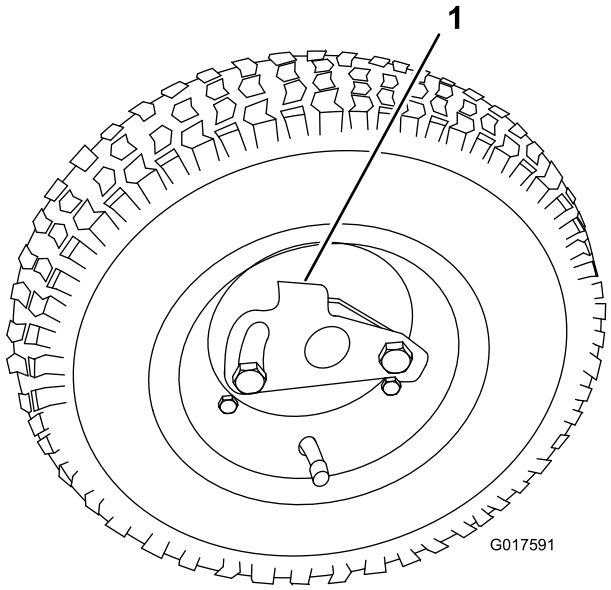


g016833

Figure 9

1. Kickstand

2. Press the wheel locking clip toward the center of wheel and slide the wheel onto the hex shaft (Figure 10).



g017591

Figure 10

1. Locking clip

3. Rotate the wheel back and forth until it fits onto the axle and the locking clip is secured in the groove on the axle shaft.
4. Repeat the procedure on the opposite side of the machine.
5. Inflate the tires to 83 to 103 kPa (12 to 15 psi).
6. Carefully lower the machine off of the kickstand by pushing forward slowly or by lifting the lower handle support, allowing the kickstand to spring back to the STORAGE position.

5

Checking the Engine-Oil Level

No Parts Required

Procedure

Check the engine-oil level; refer to Checking the Engine-Oil Level (page 28).

6

Installing the Production-Year Decal

CE Machines Only

Parts needed for this procedure:

1	Production-year decal

Procedure

If you use this machine in a country that complies to CE standards, apply the production-year decal near the serial plate; refer to Figure 11.

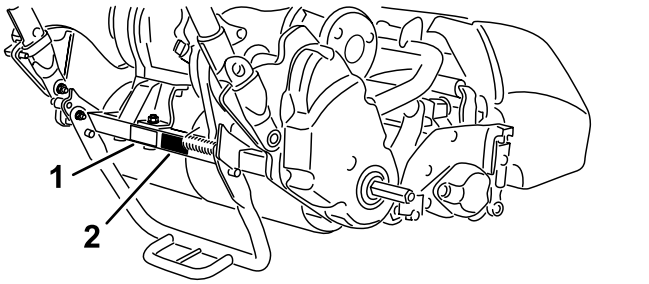


Figure 11

1. Serial plate
2. Production-year decal

7

Installing the Grass Basket

Parts needed for this procedure:

1	Grass basket

Procedure

1. Grasp the basket by the handle.
2. Guide the basket lip between the cutting unit side plates and over the front roller (Figure 12).

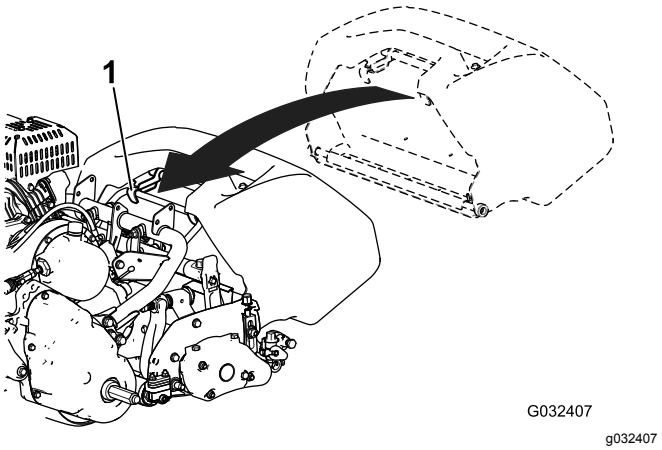


Figure 12

1. Basket hooks

3. Install the basket hooks over the frame loop (Figure 12).

Important: **If you ever drop the basket, examine the pitch-arm contact points near the lower lip of the basket for damage (Figure 13). Straighten them before using the basket.**

Using the basket with bent pitch-arm contact points may cause contact between the basket and cutting unit, causing undesired noise and/or damage to the basket and cutting unit.

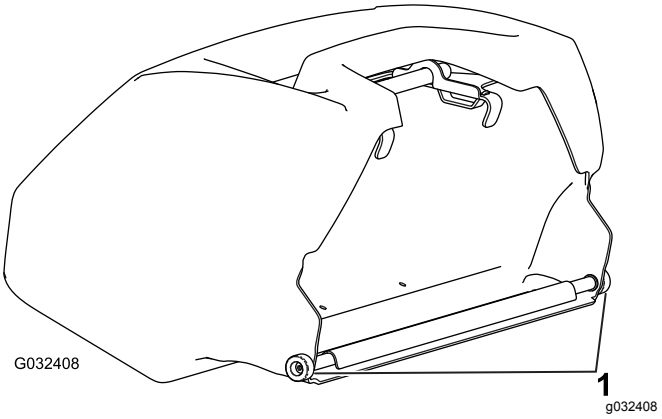


Figure 13

1. Pitch-arm contact point

8

Breaking in the Machine

No Parts Required

Procedure

Only 8 hours of mowing operation is required for the break-in period.

The first several hours of operation are critical to future dependability of the machine. You must monitor the machine performance closely so that minor difficulties, which could lead to major problems, are noted and can be corrected. During the first few hours of operation, inspect the machine frequently for signs of oil leakage, loose fasteners, or any other malfunction.

Refer to the engine owner's manual for the recommended break-in-period oil change and maintenance procedures.

Product Overview

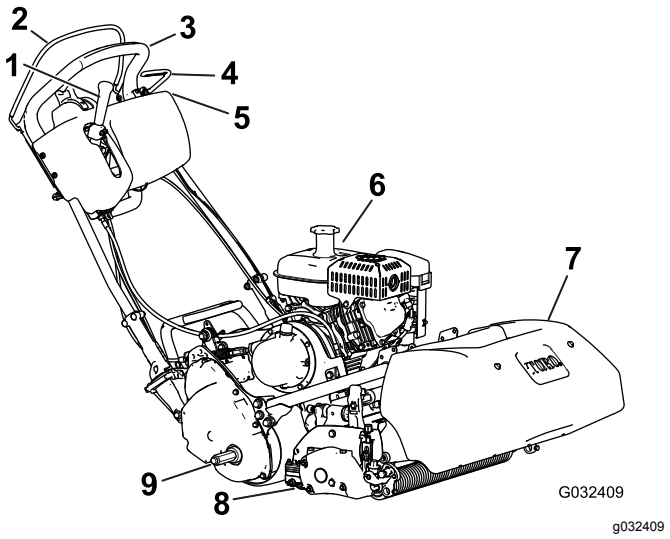


Figure 14

1. Traction and reel-drive engagement lever
2. Operator-presence control
3. Handle
4. Service brake
5. Control panel
6. Fuel tank
7. Grass basket
8. Cutting unit
9. Transport-wheel axle

Controls

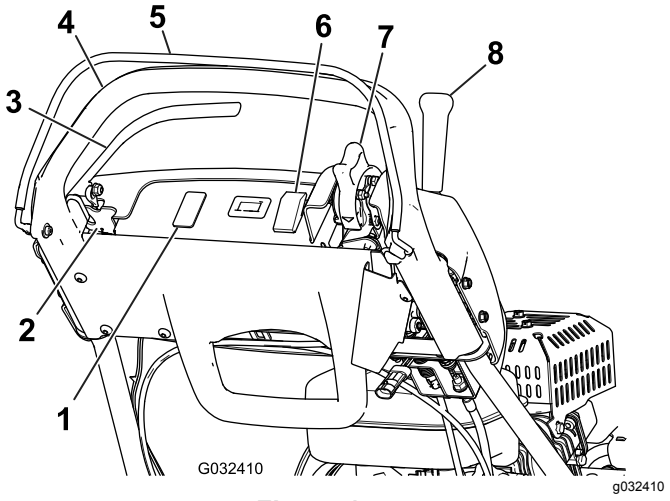


Figure 15

1. Open space for optional lights
2. Parking-brake latch
3. Service brake
4. Handle
5. Operator-presence control
6. On/Off switch
7. Throttle control
8. Traction and reel-drive engagement lever

Throttle Control

The throttle control (Figure 15 and Figure 16) is located on the right, rear side of the control panel. Rotate the throttle to regulate the engine speed.

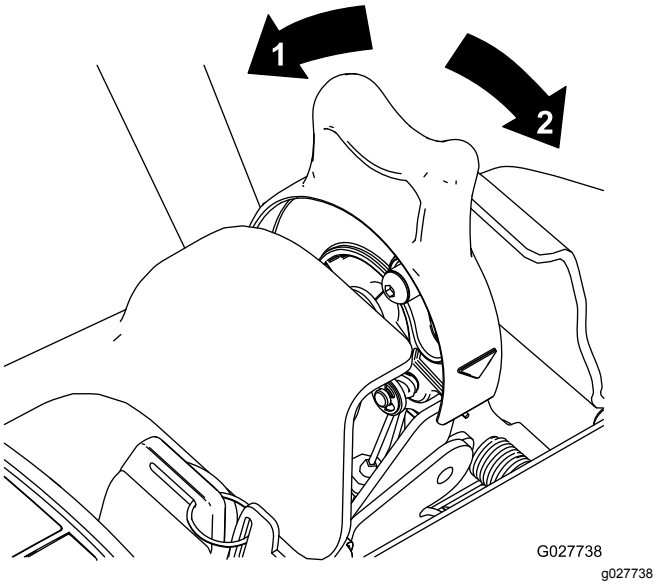


Figure 16

1. Full speed
2. Slow speed

Traction and Reel-Drive Engagement Lever

The traction and reel-drive engagement lever (Figure 17) is located on the front right side of the control panel.

To transport the machine, the lever has 2 positions: NEUTRAL and FORWARD. Pushing the lever to the traction—FORWARD (transport) position or the traction—FORWARD and reel drive—ENGAGE position engages the traction drive (Figure 17).

Note: To move the lever, you must first engage the operator-presence control.

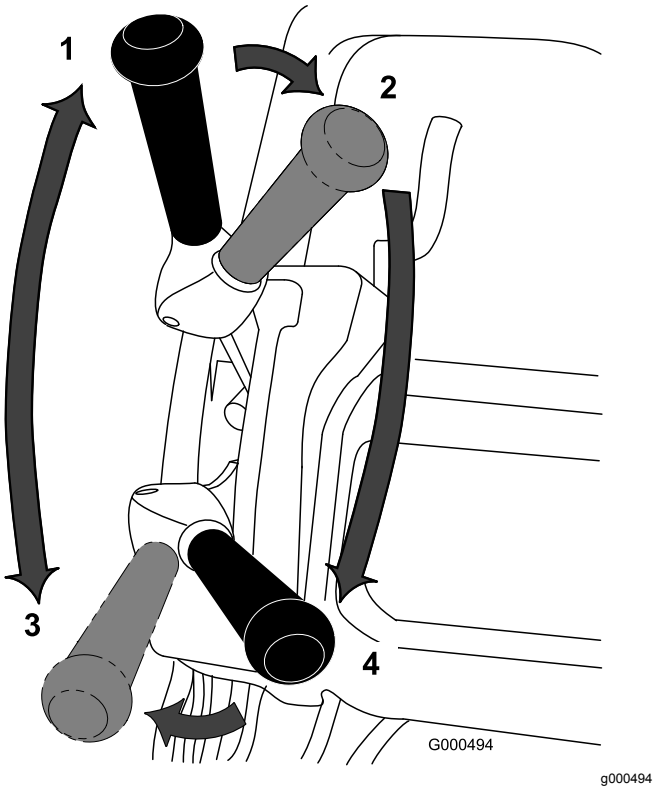


Figure 17

1. NEUTRAL
2. Traction—NEUTRAL and reel drive—DISENGAGE
3. Traction—FORWARD (transport)
4. Traction—FORWARD and reel drive—ENGAGE

To operate the reel, the lever has 2 positions: ENGAGE and DISENGAGE. Move the top of the lever to the left, then forward to the traction—FORWARD and reel drive—ENGAGE position to engage the reel and begin mowing. Push the lever to the right to the traction—FORWARD (transport) position to disengage the reel and continue forward motion or pull back on it to the traction—NEUTRAL and reel drive—DISENGAGE position to disengage both the reel and the traction drive (Figure 17).

Note: If you release the operator-presence control, the lever returns to neutral and the machine stops.

Service Brake

The service brake (Figure 18) is located on the left front side of the handle. Pulling back the lever applies the service brake.

You must disengage the brake before you engage the traction drive. If you operate the machine with the brake engaged, the machine moves, but with a high resistance and increased power consumption.

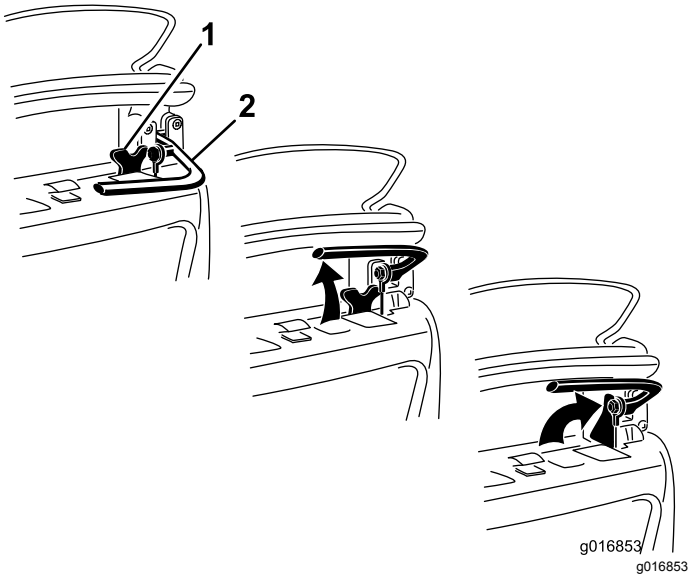


Figure 18

1. Parking-brake latch
2. Service brake

Parking-Brake Latch

Use the parking-brake latch (Figure 18) with the service brake. Rotate the parking-brake latch toward the brake handle to hold the service brake in place. Pull the brake lever to release.

Note: You cannot move the traction-control lever while the latch is engaged.

On/Off Switch

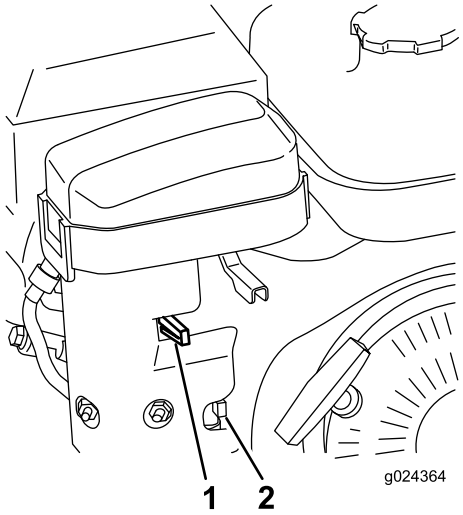
The On/Off switch (Figure 15) is located on the top of the control panel. Move the switch to the ON position to start the engine and the OFF position to shut off the engine.

Operator-Presence Control (OPC)

You must engage the operator-presence control (Figure 15) before you engage the traction lever. If you release the OPC during operation, the traction lever returns to neutral and the engine continues to run.

Choke Lever

The choke lever (Figure 19) is located on the left front of the engine. The lever has 2 positions: RUN and CHOKE. Move the lever to the CHOKE position when starting a cold engine. After the engine starts, move the lever to the RUN position.



g024364

Figure 19

1. Choke lever
2. Fuel-shutoff valve

Fuel-Shutoff Valve

The fuel-shutoff valve (Figure 19 and Figure 20) is located on the left front of the engine near the choke lever. The valve has 2 positions: CLOSED and OPEN. Move the lever up to the CLOSED position when you store or transport the machine. Open the valve before you start the engine by rotating the lever down.

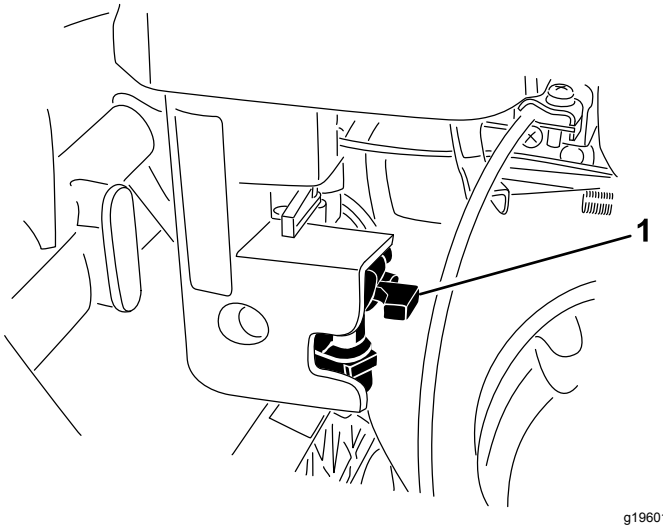
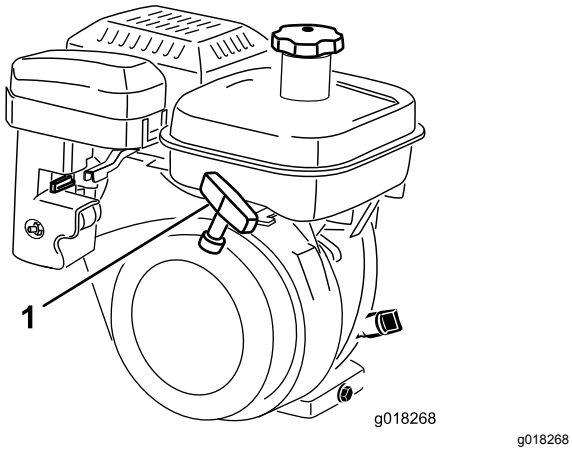


Figure 20

1. Fuel-shutoff valve—CLOSED position

Recoil-Starter Handle

Pull the recoil-starter handle (Figure 21) to start the engine.



g018268

Figure 21

1. Recoil-starter handle

Kickstand

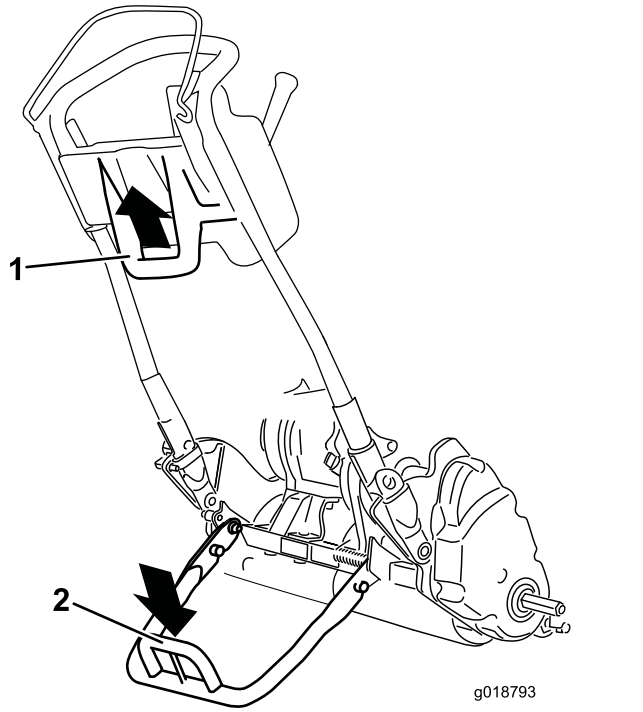
The kickstand (Figure 23) is mounted to the rear of the machine. Use the kickstand when you install or remove the transport wheels or the cutting unit.

- To use the kickstand to install the transport wheels, lower the kickstand to the ground and step down on the loop while pulling up and back on the lower-center handle (Figure 22).

⚠ CAUTION

The machine is heavy and can cause back strain if lifted improperly.

Put your foot pressure down on the kickstand loop and use only the lower-center handle to raise the machine. Attempting to raise the machine onto the kickstand any other way can cause injury.



g018793

Figure 22

1. Lower-center handle
2. Kickstand loop

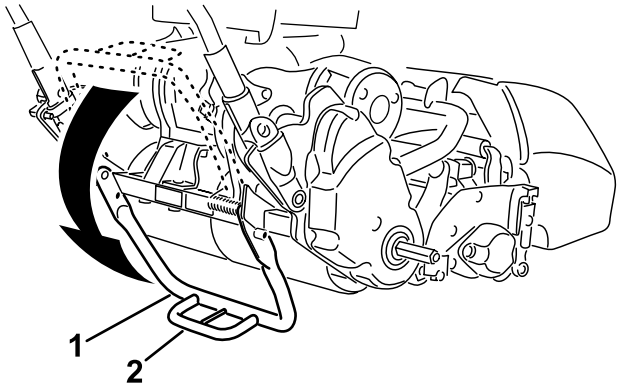


Figure 23

1. Kickstand
2. Kickstand loop

- To prevent the machine from tipping backward when removing the reel, lower the kickstand and push in the locking pin to lock it in the SERVICE position (Figure 24).

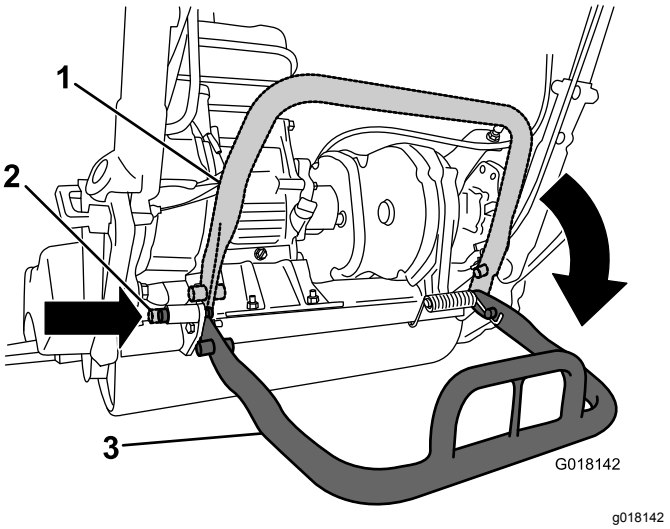


Figure 24

1. Kickstand—STORAGE position
2. Locking pin
3. Kickstand—SERVICE position

Specifications

1820 Traction Unit

Width	82.5 cm (32-1/2 inches)
Height	104.8 cm (41-1/4 inches)
Length with basket	152.4 cm (60 inches)
Net Weight (with 11-blade cutting unit and grass basket installed)	117 kg (258 lb)
Width of cut	46 cm (18 inches)
Height of cut	1.5 to 7.5 mm (1/16 to 19/64 inch) with Micro-Cut bedknife
Clip frequency	Adjustable (refer to your cutting unit *Operator's Manual*)

2120 Traction Unit

Width	90.1 cm (35-1/2 inches)
Height	104.8 cm (41-1/4 inches)
Length with basket	152.4 cm (60 inches)
Net Weight (with 11-blade cutting unit and grass basket installed)	117.9 kg (260 lb)
Width of cut	53.3 cm (21 inches)
Height of cut	1.5 to 7.5 mm (1/16 to 19/64 inch) with Micro-Cut bedknife
Clip frequency	Adjustable (refer to your cutting unit *Operator's Manual*)

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.

Operation

Before Operation

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

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. Know how to shut off the engine quickly.
- Check that operator-presence control (if equipped), safety switches, and shields are attached and functioning properly. Do not operate the machine unless they are functioning properly.
- Inspect the area where you will use the machine, and remove all objects that could interfere with the operation of the machine or that the machine could throw.
- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job.

Fuel Safety

- Use extreme care in handling fuel. It is flammable and its vapors are explosive
- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Do not remove the fuel cap or fill the fuel tank while the engine is running or hot.
- Do not add or drain the fuel in an enclosed space.
- Do not store the machine or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or other appliance.
- If you spill fuel, do not attempt to start the engine; avoid creating any source of ignition until the fuel vapors have dissipated.

Performing Daily Maintenance

Perform the daily maintenance procedures; refer to Daily Maintenance Checklist (page 27).

Checking the Engine-Oil Level

Check the engine-oil level before each use or every 8 operating hours, refer to Checking the Engine-Oil Level (page 28).

Fuel Specifications

Fuel tank capacity: 3.0 L (0.79 US gallons)

Recommended fuel: Unleaded gasoline with an octane rating of 87 or higher ((R+M)/2 rating method)

Ethanol: Gasoline with up to 10% ethanol (gasohol) or 15% MTBE (methyl tertiary butyl ether) by volume is acceptable. Ethanol and MTBE are not the same. Gasoline with 15% ethanol (E15) by volume is not approved for use.

- **Never use gasoline that contains more than 10% ethanol by volume**, such as E15 (contains 15% ethanol), E20 (contains 20% ethanol), or E85 (contains up to 85% ethanol).
- **Do not** use gasoline containing methanol.
- **Do not** store fuel either in the fuel tank or fuel containers over the winter unless a fuel stabilizer is used.
- **Do not** add oil to gasoline.
- For best results, use only clean, fresh (less than 30 days old) fuel.
- Using unapproved gasoline may cause performance problems and/or engine damage, which may not be covered under the warranty

Filling the Fuel Tank

⚠ DANGER

In certain conditions, fuel is extremely flammable and highly explosive. A fire or explosion from fuel can burn you and others and can damage property.

- **Fill the fuel tank outdoors, in an open area, when the engine is cold. Wipe up any fuel that spills.**
- **Never fill the fuel tank inside an enclosed trailer.**
- **Do not fill the fuel tank completely full. Add fuel to the fuel tank until the level is 6 to 13 mm (1/4 to 1/2 inch) below the bottom of the filler neck. This empty space in the tank allows fuel to expand.**
- **Never smoke when handling fuel, and stay away from an open flame or where fuel fumes may be ignited by a spark.**
- **Store fuel in an approved container and keep it out of the reach of children. Never buy more than a 30-day supply of fuel.**
- **Do not operate without entire exhaust system in place and in proper working condition.**

⚠ DANGER

In certain conditions during fueling, static electricity can be released, causing a spark which can ignite the fuel vapors. A fire or explosion from fuel can burn you and others and can damage property.

- **Always place fuel containers on the ground away from your vehicle before filling.**
- **Do not fill fuel containers inside a vehicle or on a truck or trailer bed because interior carpets or plastic truck-bed liners may insulate the container and slow the loss of any static charge.**
- **When practical, remove equipment from the truck or trailer and fuel it on the ground. If this is not possible, then fuel such equipment with a portable container rather than from a fuel-dispenser nozzle.**
- **If you must use a fuel-dispenser nozzle, keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete.**

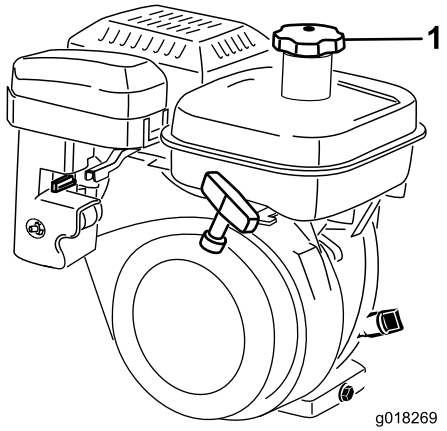
⚠ WARNING

Fuel is harmful or fatal if swallowed. Long-term exposure to vapors can cause serious injury and illness.

- **Avoid prolonged breathing of vapors.**
- **Keep your face away from the nozzle and fuel tank or conditioner bottle opening.**
- **Avoid contact with skin; wash off spills with soap and water.**

1. Clean around the fuel-tank cap and remove the cap from the tank (Figure 25). Fill the fuel tank no higher than to the bottom of the filter screen.

   Important: **Do not overfill the tank with fuel.**



g018269

Figure 25

1. Fuel-tank cap

2. Install the fuel-tank cap and wipe up any spilled fuel.

Setting the Machine to Match Turf Conditions

Use the following table to set the machine to match turf conditions.

Bedbars: Standard and Optional (Flex/eFlex 2120 Machines)			
Part Number	**Description**	**Aggressiveness**	**Comments**
106-2468-01	Non-Aggressive	Less	Red, Standard
99-3794-03	Aggressive	More	Black
Bedbars: Standard and Optional (Flex/eFlex 1820 Machines)			
110-2282-01	Non-Aggressive	Less	Red, Standard
110-2281-03	Aggressive	More	Black

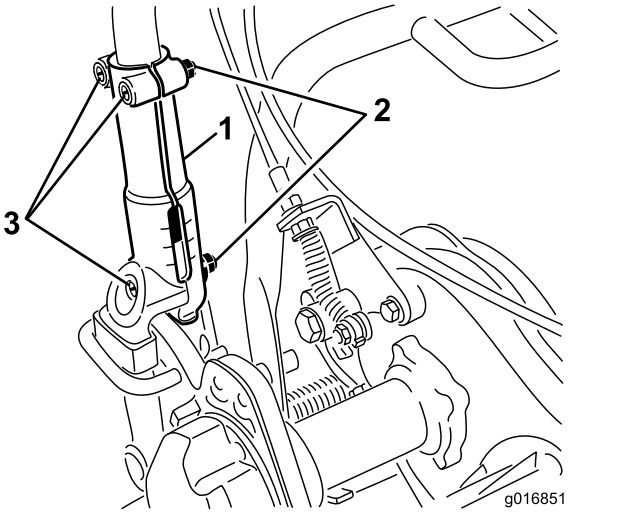
Bedknives: Standard and Optional (Flex/eFlex 2120 Machines)			
Part Number	**Description**	**Height-of-cut Range**	**Comments**
115-1880	Microcut-EdgeMax	1.6 to 3.2 mm (0.062 to 0.125 inch)	Standard
93-4262	Microcut	1.6 to 3.2 mm (0.062 to 0.125 inch)	
108-4303	Extended Microcut	1.6 to 3.2 mm (0.062 to 0.125 inch)	Less aggressive
115-1881	Tournament- EdgeMax	3.2 to 6.4 mm (0.125 to 0.25 inch)	
93-4263	Tournament	3.2 to 6.4 mm (0.125 to 0.25 inch)	
108-4302	Extended Tournament	3.2 to 6.4 mm (0.125 to 0.25 inch)	Less aggressive
93-4264	Low Cut	6.4 mm (0.25 inch) and up	
Bedknives: Standard and Optional (Flex/eFlex 1820 Machines)			
117-1530	Microcut-EdgeMax	1.6 to 3.2 mm (0.062 to 0.125 inch)	Standard
98-7261	Microcut	1.6 to 3.2 mm (0.062 to 0.125 inch)	
110-2300	Extended Microcut	1.6 to 3.2 mm (0.062 to 0.125 inch)	Less aggressive
98-7260	Tournament	3.2 to 6.4 mm (0.125 to 0.25 inch)	
117-1532	Tournament- EdgeMax	3.2 to 6.4 mm (0.125 to 0.25 inch)	
110-2301	Low Cut	6.4 mm (0.25 inch) and up	

Rollers (Flex/eFlex 2120 Machines)			
Part Number	**Description**	**Diameter/Material**	**Comments**
04255	Narrow Wiehle	6.4 cm (2.5 inches)/Aluminum	Narrow spaced grooves
04256	Wide Wiehle	6.4 cm (2.5 inches)/Aluminum	More penetration, wide spaced grooves
04257	Full Roller	6.4 cm (2.5 inches)/Steel	Least penetration
04258	Narrow Wiehle—Long	6.4 cm (2.5 inches)/Aluminum	More edge support; 4.3 cm (1.7 inches) longer
04267	Paspalum	6.4 cm (2.5 inches)/Aluminum	Less penetration, softened narrow spaced grooves
115-7356	Rear Roller	5.1 cm (2.0 inches)/Aluminum	Standard rear
120-9595	Rear Roller	5.1 cm (2.0 inches)/Steel	Steel rear
Rollers (Flex/eFlex 1820 Machines)			
120-9607	Narrow Wiehle	6.4 cm (2.5 inches)/Aluminum	Narrow spaced grooves
120-9609	Wide Wiehle	6.4 cm (2.5 inches)/Aluminum	More penetration, wide spaced grooves
120-9611	Full Roller	6.4 cm (2.5 inches)/Steel	Least penetration
121-4681	Narrow Wiehle—Long	6.4 cm (2.5 inches)/Aluminum	More edge support; 4.3 cm (1.7 inches) longer
120-9605	Rear Roller	5.1 cm (2.0 inches)/Aluminum	Standard rear

Adjusting the Handle Height

Note: The machine is shipped with the handle adjusted to the lowest position. The machine is normally operated with the handle telescoped out to its maximum height.

1. Loosen the 3 carriage bolts and nuts securing each side of the handle in the handle clamps (Figure 26).



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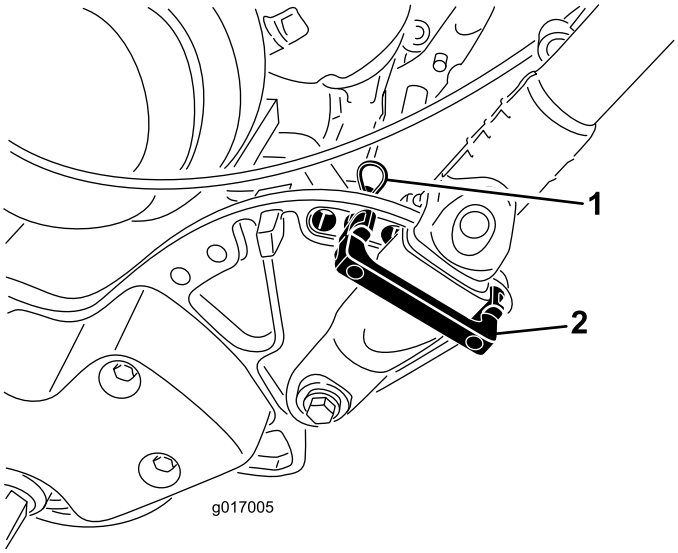
Figure 26

1. Handle clamp
2. Nut
3. Carriage bolts

2. Pull up on the handle slowly and evenly on each side until it is in the desired operating position.
3. Tighten the carriage bolts and nuts to lock the adjustment.

Adjusting the Handle Angle

1. Remove the hairpin cotters from the handle retainers on each side of the machine (Figure 27).



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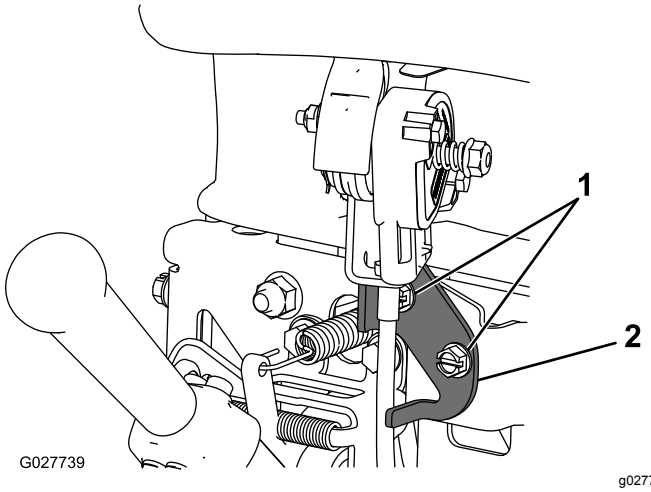
Figure 27

1. Hairpin cotter
2. Handle retainer

2. While supporting the handle, remove the hairpin cotters from each side and pivot the handle to the desired operating position (Figure 27).
3. Install the handle retainers and hairpin cotters.

Adjusting the Throttle Control

1. Remove the console cover.
2. Loosen the 2 fasteners securing the throttle control (Figure 28).



g027739

Figure 28

1. Fasteners
2. Throttle control

3. Adjust the throttle control to the desired position.
4. Tighten the throttle-control fasteners.
5. Install the previously removed console cover.

Checking the Operation of the Interlock Switches

Service Interval: Before each use or daily

⚠ CAUTION

If the safety interlock switches are disconnected or damaged, the machine could operate unexpectedly, causing personal injury.

- **Do not tamper with the interlock switches.**
- **Check the operation of the interlock switches daily and replace any damaged switches before operating the machine.**

Checking the Operator-Presence-Control (OPC) Interlock Switch

1. Push the kickstand down with your foot and pull up on the handle support until the kickstand has rotated forward, over center.
2. Start the engine.
3. With the OPC released, attempt to engage the traction lever (Figure 29). The traction lever **should not** engage. If the traction lever engages, the interlock system needs service. Correct the problem before operating the machine; refer to Servicing the Traction-Interlock Switch (page 31).

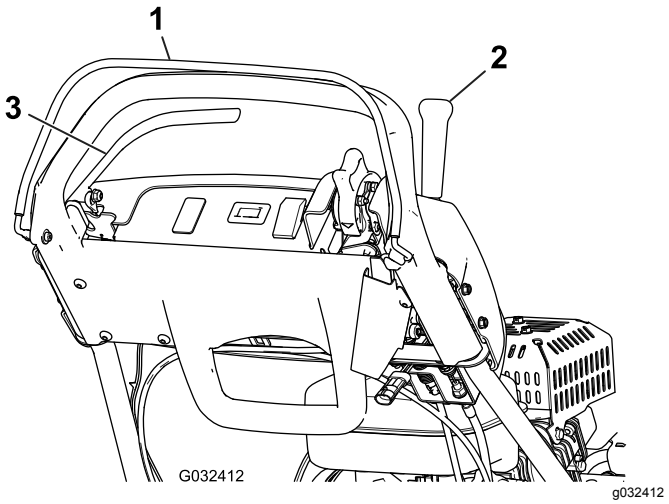


Figure 29

1. Operator-presence control (OPC)
2. Traction lever
3. Brake lever

4. With the OPC pressed and the traction lever engaged, release the OPC (Figure 29). The traction lever **should** disengage. If the traction lever does not disengage, the interlock system needs service. Correct the problem before operating the machine; refer to Servicing the Traction-Interlock Switch (page 31).
5. With the OPC pressed and the shift lever moved to the left, engage the traction and reel drive and release the OPC (Figure 29). The traction lever **should** disengage. If the traction lever does not disengage, the interlock system needs service. Correct the problem before operating the machine; refer to Servicing the Traction-Interlock Switch (page 31) or Adjusting the Reel Control (page 35).
6. With the OPC pressed and the shift lever moved to the left to engage the traction and reel drive, move the shift lever to the right to disengage the reel drive (Figure 29). The reel drive **should** disengage. If the reel drive does not disengage, the interlock system needs service. Correct the problem before operating the machine; refer to Adjusting the Reel Control (page 35).
7. Carefully lower the machine off the kickstand.

Checking the Traction-Interlock Switch

1. Push the kickstand down with your foot and pull up on the handle support until the kickstand has rotated forward, over center.
2. With the OPC pressed, the traction lever engaged, and the engine controls in the starting position (Figure 29), attempt to start the engine. The engine **should not** start. If the engine starts, the interlock switch needs service. Correct the problem before operating the machine; refer to Servicing the Traction-Interlock Switch (page 31).
3. Carefully lower the machine off the kickstand.

Checking the Brake-Interlock Switch

1. Push the kickstand down with your foot and pull up on the handle support until the kickstand has rotated forward, over center.
2. With the traction lever disengaged, the service brake engaged, and the engine controls in the starting position (Figure 29), attempt to start the engine. The engine **should** start. If the engine does not start, the interlock switch needs service. Correct the problem before operating the machine; refer to Servicing the Brake-Interlock Switch (page 32).
3. With the engine running, engage the service brake (not the parking-brake latch), press the

OPC, and engage the traction lever (Figure 29). The engine should labor to overcome the brake but should not shut off. If the engine shuts off immediately, the interlock switch needs service. Correct the problem before operating the machine; refer to Servicing the Brake-Interlock Switch (page 32).

4. With the engine running, engage the parking-brake latch, press the OPC, and engage the traction lever (Figure 29). The engine **should** shut off. If the engine does not shut off, the interlock switch needs service. Correct the problem before operating the machine; refer to Servicing the Brake-Interlock Switch (page 32).
5. Carefully lower the machine off the kickstand.

Transporting the Machine to a Job Site

Transporting the Machine Using Transport Wheels

Use the transport wheels to transport the machine a shorter distance.

1. Install the transport wheels; refer to 4 Installing the Transport Wheels (page 9)
2. Ensure that the traction and reel-drive controls are in the NEUTRAL position.
3. Start the engine; refer to Starting the Engine (page 23)
4. Set the throttle control to SLOW, tip the front of the machine up, gradually engage the traction drive, and slowly increase the engine speed.
5. Adjust the throttle to operate the mower at the desired ground speed and transport the machine to the desired destination.

Transporting the Machine Using a Trailer

Use a trailer to transport the machine a considerable distance. Use caution while loading and unloading the machine onto the trailer.

1. Carefully drive the machine onto the trailer.
2. Shut off the engine and engage the parking brake.
3. Securely fasten the machine to the trailer.

Note: The Toro Trans Pro trailer can be used to transport the machine. For instructions on loading the trailer, refer to your trailer *Operator's Manual*.

Important: **Do not run the engine while transporting it on a trailer because damage can occur to the machine.**

Hauling the Machine

- Use care when loading or unloading the machine into a trailer or a truck.
- Use a full-width ramp for loading the machine into a trailer or truck.
- Tie the machine down securely.

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.
- Wear appropriate clothing, including eye protection; long pants; slip-resistant, substantial footwear; and hearing protection. Tie back long hair, secure loose clothing, and do not wear loose jewelry.
- 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 operate the machine while ill, tired, or under the influence of alcohol or drugs. Keep bystanders, especially small children, out of the operating area. Shut off the engine if anyone enters the area.
- Do not run an engine in an enclosed area where exhaust gases can collect.
- Operate the machine only in good visibility and appropriate weather conditions. Do not operate the machine when there is the risk of lightning.
- Before you start the engine, disengage all blade-attachment clutches, shift into neutral, and engage the parking brake.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could cause a slip-and-fall accident.
- Use extreme care when approaching blind corners, shrubs, trees, or other objects that may block your view.
- Always stand in the operating position (behind the handle) when starting and operating the machine.
- Ensure that the grass basket is in place while mowing. Shut off the engine before emptying the basket.
- Never leave a running machine unattended.

- Do not touch the engine, muffler, or exhaust pipe while the engine is running or soon after it has shut off because these areas could be hot enough to cause burns.
- Shut off the engine and disengage the drive to the cutting unit in the following situations:
  - Before fueling
  - Before clearing blockages
  - Before removing the grass basket
  - Before checking, cleaning, or maintaining the cutting unit
  - After striking a foreign object or if an abnormal vibration occurs. Inspect the cutting unit for damage and make repairs before starting and operating the machine
  - Before leaving the operating position
- Disengage the drive to the cutting unit when transporting or not using the machine.
- Watch out for traffic when crossing or near roadways.
- Stop the blades whenever you are not mowing.
- Do not change the engine governor settings or overspeed the engine. Operating the engine at excessive speed may increase the hazard of personal injury.
- Use accessories and attachments approved by The Toro® Company only.

Slope Safety

- Slopes are a major factor related to loss of control and rollover accidents, which can result in severe injury or death. The operator is 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 in which the machine is being operated to determine whether the machine can be operated 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 may result in sliding and a loss of braking and steering.
  - Use extreme caution when operating the machine near dropoffs, ditches, embankments, water hazards, or other hazards. The machine could suddenly roll over if part of the traction goes over the edge or the edge caves in. Establish a safety area between the machine and any hazard.
  - Identify hazards at the base of the slope.

Starting the Engine

Note: For illustrations and descriptions of the controls referenced in this section, refer to Controls (page 12).

Note: Ensure that the spark-plug wire is installed on the spark plug.

1. Ensure that the traction and reel drive levers are in the DISENGAGED position.

   Note: The engine will not start if the traction lever is in the ENGAGED position.
2. Ensure that the fuel-shutoff valve is open.
3. Move the On/Off switch to the ON position.
4. Move the throttle control to the FAST position.
5. Move the choke lever halfway between the CHOKE and RUN positions when starting a cold engine.

   Note: The choke may not be required when starting a warm engine.
6. Pull the recoil-start handle out until positive engagement results, then pull it vigorously to start the engine.

   Important: **Do not pull the recoil rope to its limit or let go of the starter handle when the rope is pulled out; the rope may break or the recoil assembly may be damaged.**
7. Move the choke lever to the RUN position as the engine warms up.

Shutting Off the Engine

1. Move the traction and reel drive controls to the DISENGAGED position.
2. Move the throttle control to the SLOW position.
3. Move the On/Off switch to the OFF position.
4. Close the fuel-shutoff valve before you store or transport the machine

Releasing the Transmission

If the machine becomes disabled with the motor brake on, you can disengage the drum from the transmission to allow the machine to be maneuvered.

1. On the right rear corner of the machine, locate the traction engage/disengage lever next to the drive housing drum (Figure 30).

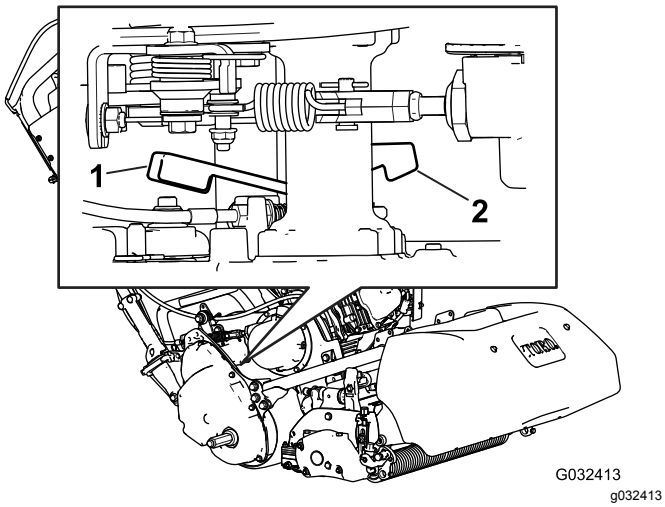


Figure 30

1. Traction engage/disengage lever-engaged
2. Traction engage/disengage lever-disengaged

2. Rotate the lever rearward to disengage the transmission from the drum.

   Important: **Push the lever from the front to prevent your hand from being struck by the spring loaded lever.**

3. Move the machine as needed

   Important: **If possible, do not tow the machine. If it is absolutely necessary, do not tow at any speed greater than 4.8 kph (3 mph); always disengage the transmission from the drum. Failing to do so will likely cause damage to the machine, especially the electrical components.**

4. When finished, rotate the lever forward to engage the transmission to the drum.

Note: The service brake is still operational with the transmission disengaged from the drum.

Operating Tips

Important: **Grass clippings act as a lubricant when mowing. Operating the cutting unit excessively without grass clippings can damage the cutting unit.**

- Mow the greens in a straight back-and-forth direction across the green.
- Avoid circular mowing or turning the machine on the greens areas to prevent scuffing.
- Turn the machine off the green by raising the cutting reel (pushing the handle down) and turning on the traction drum.
- Mow at a normal walking pace. Fast speeds saves little time and results in an inferior mowing job.
- To assist in maintaining a straight line across the green and to keep the machine an equal distance from the edge of the previous cut, use the alignment stripes on the basket (Figure 31).

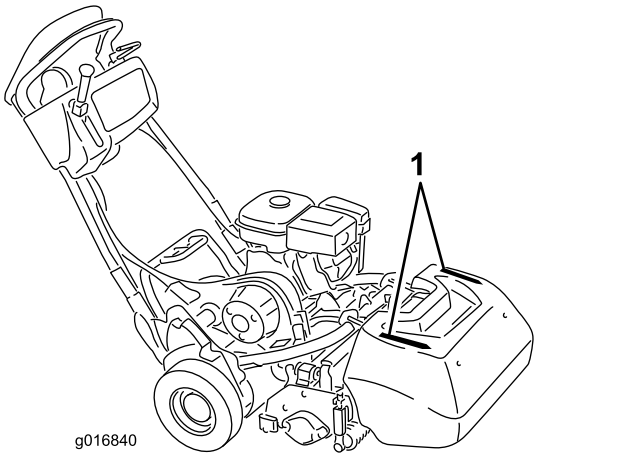


Figure 31

1. Alignment stripes

Operating the Machine in Low Light Conditions

Use the LED Light Kit when you operate the machine in low light conditions; contact your authorized Toro distributor.

Important: **Do not use other light systems with this machine, as they will not operate properly with the engine AC output.**

Operating the Controls while Mowing

1. Start the engine, set the throttle to a reduced speed, push down on the handle to raise the cutting unit, press the operator-presence control, move the traction and reel-drive engagement lever to the FORWARD (transport) position, and transport the machine onto the collar of the green (Figure 32).
2. Move the lever to the NEUTRAL position (Figure 32).

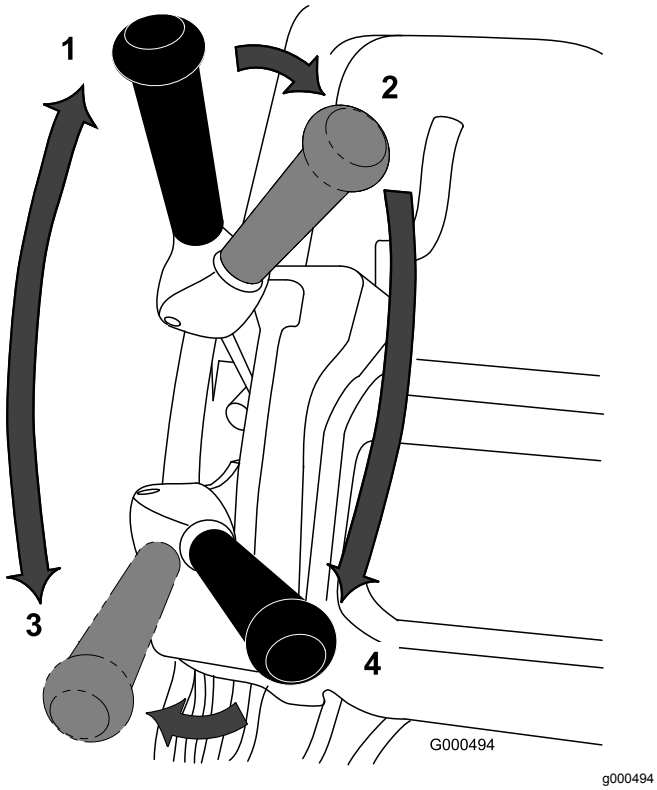


Figure 32

Traction and Reel-Drive Lever Positions

1. NEUTRAL
2. Traction—NEUTRAL and reel drive—DISENGAGE
3. Traction—FORWARD (transport)
4. Traction—FORWARD and reel drive—ENGAGE

3. Move the lever to the traction—NEUTRAL and reel drive—DISENGAGE position (Figure 32).
4. Move the lever to the traction—FORWARD and reel drive—ENGAGE position (Figure 32), increase the throttle speed until the machine is traveling at the desired ground speed, drive the machine onto the green, lower the cutting unit to the ground, and begin mowing.

Operating the Controls after Mowing

1. Drive off the green, move the reel drive and traction control levers to the DISENGAGED position, and shut off the engine.
2. Empty the grass basket of clippings, install the grass basket on the mower, and transport the machine to storage.

After Operation

After Operation Safety

General Safety

- Reduce the throttle setting before shutting off the engine and, if the engine has a fuel-shutoff valve, turn off the valve after mowing.
- Clean grass and debris from the machine to help prevent fires. Clean up oil or fuel spills.

Transporting the Machine

After mowing, transport the machine away from the job site; refer to Transporting the Machine Using Transport Wheels (page 22) or Transporting the Machine Using a Trailer (page 22).

Maintenance

⚠ WARNING

Failing to properly maintain the machine could result in premature failure of machine systems, causing possible harm to you or bystanders.

Keep the machine well maintained and in good working order as indicated in these instructions.

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

Important: **Do not tip the machine at an angle greater than 25°. Tipping beyond 25° leads to oil leaking into the combustion chamber and/or fuel leaking out of the fuel-tank cap.**

Important: **Refer to your engine owner's manual for additional maintenance procedures.**

Note: Download a free copy of the electrical or hydraulic schematic by visiting www.Toro.com and searching for your machine from the Manuals link on the home page.

⚠ CAUTION

If you leave the key in the ignition switch, someone could accidently start the engine and seriously injure you or other bystanders.

Remove the key from the ignition and disconnect the wires from the spark plugs before you do any maintenance. Set the wires aside so that they do not accidentally contact the spark plugs.

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 20 hours	• Change the engine oil. • Clean the fuel-tank screen.
Before each use or daily	• Check the operation of the interlock switches. • Check the engine-oil level.
Every 50 hours	• Change the engine oil (more frequently in dusty or dirty conditions). • Clean the air cleaner (more often in dirty or dusty conditions).
Every 100 hours	• Replace the paper air filter element (more often in dirty or dusty conditions). • Check the spark plug. • Clean the fuel-tank screen.
Every 500 hours	• Replace the clutch oil with Mobil ATF D/M Automatic Transmission Fluid (Toro Part No. 505-136).
Every 1,000 hours	• Replace the fuel line. • Replace the breather hose. • Inspect the reel-drive belt. • Check the transmission-drive belts. • Check the transmission bearings.

Daily Maintenance Checklist

Important: **Duplicate this page for routine use.**

Maintenance Check Item	For the week of:						
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Check the safety interlock operation.							
Check the parking brake operation.							
Check that pivot joints operate freely.							
Check the fuel level.							
Check the engine oil level.							
Check the air filter.							
Clean the engine cooling fins.							
Check for unusual engine noises.							
Check for unusual operating noises.							
Check the reel-to-bedknife adjustment.							
Check the height-of-cut adjustment.							
Touch up damaged paint.							

Notation for Areas of Concern		
Inspection performed by:		
Item	Date	Information

Pre-Maintenance Procedures

Pre-Maintenance Safety

- Disengage the drives and the cutting unit, engage the parking brake, shut off the engine, and disconnect the spark-plug wire. Wait for all movement to stop before adjusting, cleaning, or repairing the machine.
- If the engine must be running to perform a maintenance adjustment, keep your hands, feet, clothing, and any parts of the body away from the cutting unit, attachments, and any moving parts. Keep bystanders away.
- Keep all parts in good working condition and all hydraulic fittings tight. Replace all worn, damaged, or missing parts and decals. Keep all fasteners tight to ensure that the machine is in safe working condition.
- Check the grass catcher components frequently and replace them when necessary.
- Clean grass and debris from the cutting unit, drives, mufflers, cooling screens, and the engine to help prevent fires. Clean up oil or fuel spills.
- Carefully release pressure from components with stored energy.
- Replace faulty silencers.
- If major repairs are ever needed or if assistance is desired, contact an authorized Toro distributor.
- 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.

Engine Maintenance

Engine Safety

- Fuel is flammable and explosive, and can cause personal injury.
- Check all fuel lines for tightness and wear regularly. Tighten or repair them as needed.
- Tipping the machine may cause the fuel to leak. Do not tip the machine at an angle greater than 25°. If fuel comes in contact with the fuel cap, replace the cap.
- Run the engine dry or remove the fuel with a hand pump; never siphon the fuel. If you must drain the fuel tank, do it outdoors.

Servicing the Engine Oil

Fill the crankcase with approximately 0.6 L (20 fl oz) of the proper viscosity oil before starting. The engine uses a high-quality oil that has the American Petroleum Institute (API) service classification of SE or higher. Select the proper oil viscosity (weight) based on the ambient temperature. Figure 33 illustrates the temperature/viscosity recommendations.

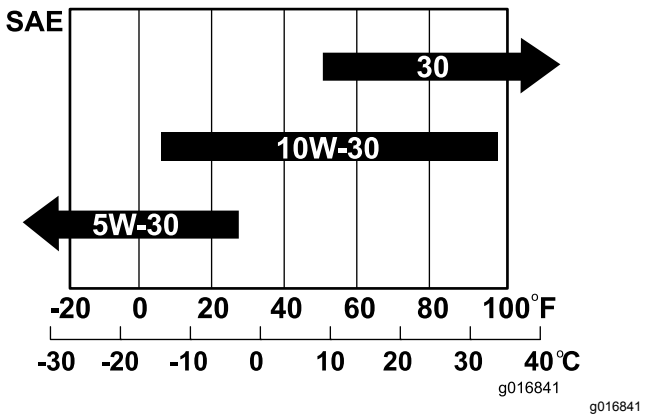


Figure 33

Note: Multi-grade oils (5W-20, 10W-30 and 10W-40) increase oil consumption. Check the engine-oil level more frequently when you use these oils.

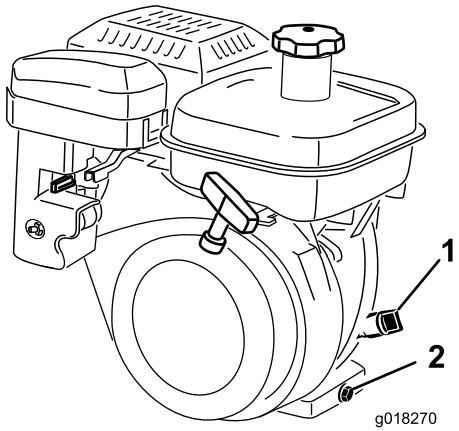
Checking the Engine-Oil Level

Service Interval: Before each use or daily

The ideal time to check the engine-oil level is when the engine is cool or before you have started the engine for the day. If you have already ran the engine, allow the oil to drain back down to the sump for at least 10 minutes before you check the engine-oil level.

1. Remove the transport wheels (if installed).

2. Position the machine so that the engine is level, and clean the area around the oil-level gauge (Figure 34).



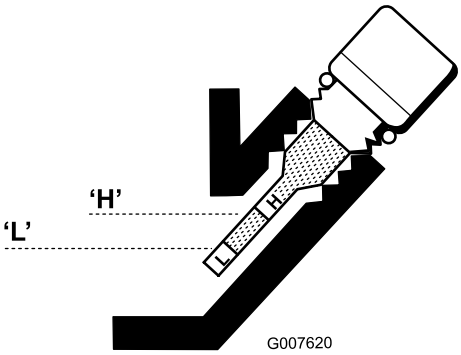
g018270

Figure 34

1. Oil-level dipstick 2. Drain plug

3. Remove the oil-level dipstick by rotating it counterclockwise (Figure 34).
4. Wipe the dipstick and insert it into the filler port, but do not screw the dipstick into the port.
5. Remove the dipstick and check the level of the oil.
6. If the level is low, add only enough oil to raise the level until it is between the “H” and “L” marks on the dipstick (Figure 35). Check the level of the oil.

   Important: **Do not overfill the crankcase.**



g007620

Figure 35

7. Install the dipstick and wipe up any oil that may have spilled.

Changing the Engine Oil

Service Interval: After the first 20 hours

Every 50 hours

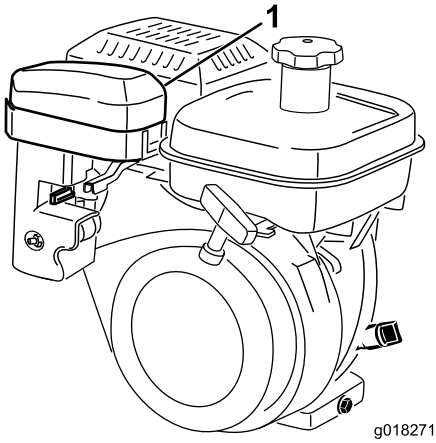
1. Start and run the engine for a few minutes to warm the engine oil.
2. At the rear of the machine, place a drain pan under the drain plug (Figure 34). Loosen the drain plug.
3. Push down on the handle to tip the machine and engine backward, allowing all the oil to run into the drain pan.

   Important: **Do not tip the machine at an angle greater than 25°. Tipping the machine beyond 25° leads to oil leaking into the combustion chamber and/or fuel leaking out of the fuel-tank cap.**
4. Install the drain plug and refill the crankcase with the specified oil.
5. Torque the drain plug to 20 to 23 N·m (15 to 17 ft-lbs).
6. Wipe up any spilled oil.
7. Dispose of the used oil properly. Recycle according to local codes.

Servicing the Air Cleaner

Service Interval: Every 50 hours

1. Ensure that the wire is off the spark plug.
2. Remove the wing nut that secures the air-cleaner cover to the air cleaner and remove the cover.
3. Clean the cover (Figure 36 and Figure 37).



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Figure 36

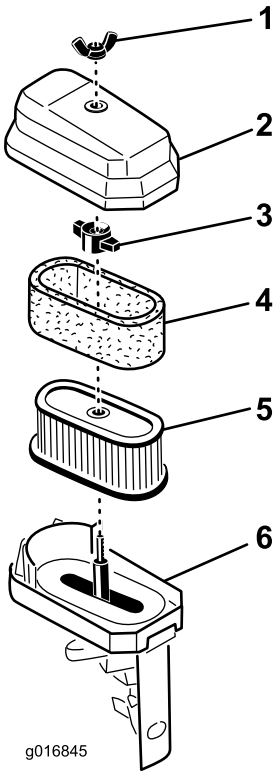
1. Air-cleaner cover

4. If the foam element is dirty, remove it from the paper element (Figure 37). Clean it as follows.
   A. Wash the foam element in a solution of liquid soap and warm water. Squeeze the element to remove the dirt, but do not twist it, as the foam may tear.
   B. Dry the foam element by wrapping it in a clean rag. Squeeze the rag and element to

dry it, but do not twist it, as the foam may tear.

C. Saturate the element with clean engine oil. Squeeze the element to remove the excess oil and to distribute the oil.

Note: A foam element that is damp with oil is desirable.



g016845

Figure 37

1. Wing nut
2. Air-cleaner cover
3. Wing nut
4. Foam element
5. Paper element
6. Air-cleaner base

5. Check the condition of the paper element. Clean it by gently tapping or replace it as necessary.

   Important: **Do not use compressed air to clean the paper element.**

6. Install the foam element, paper element, and air-cleaner cover.

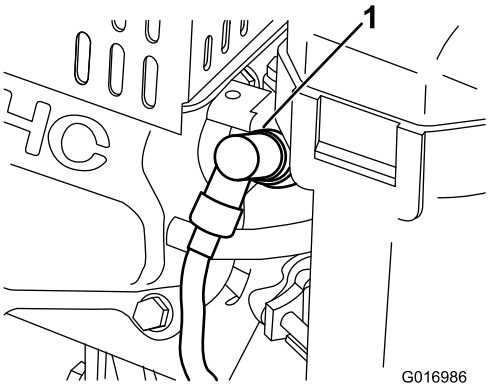
   Important: **Do not operate the engine without the air-cleaner element, as extreme wear and damage can likely occur to the engine.**

Servicing the Spark Plug

Service Interval: Every 100 hours

Use an NGK BR6HS spark plug or equivalent. The correct air gap is 0.6 to 0.7 mm (0.024 to 0.028 inch).

1. Pull the molded wire off the spark plug (Figure 38).



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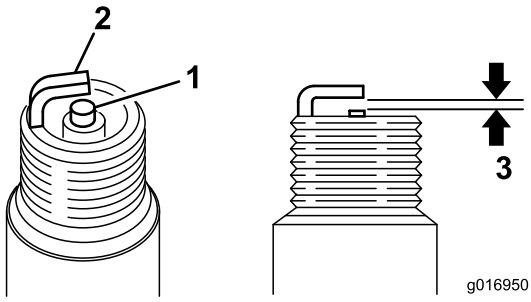
Figure 38

1. Spark-plug wire

2. Clean around the spark plug and remove the plug from the cylinder head.

   Important: **Replace a cracked, fouled, or dirty spark plug. Do not sand blast, scrape, or clean the electrodes because engine damage could result from grit entering the cylinder.**

3. Set the air gap at 0.6 to 0.7 mm (0.024 to 0.028 inch) as shown in Figure 39. Install the correctly gapped spark plug and tighten it firmly to 23 N·m (17 ft-lb).



g016950

Figure 39

1. Center-electrode insulator
2. Side electrode
3. Air gap—0.6 to 0.7 mm (0.024 to 0.028 inch)

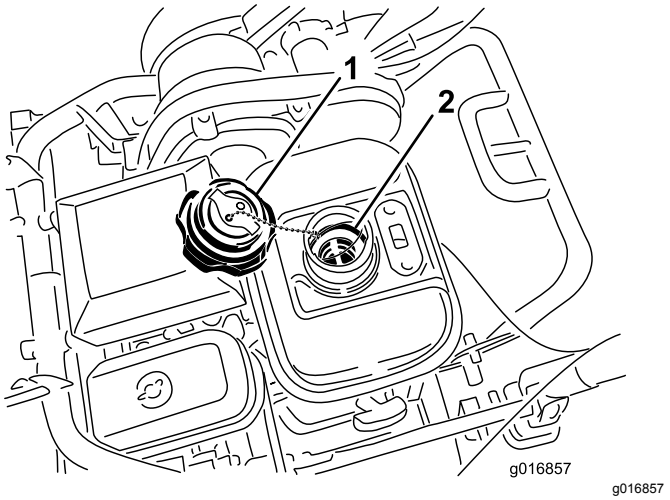
Fuel System Maintenance

Cleaning the Fuel-Tank Screen

Service Interval: After the first 20 hours

Every 100 hours/Monthly (whichever comes first)

1. Unscrew and remove the fuel-tank cap from the fuel tank (Figure 40).



g016857

Figure 40

1. Fuel-tank cap
2. Fuel-tank screen

2. Remove the fuel-tank screen from inside the fuel tank.
3. Clean the screen in clean fuel and install it in the tank.
4. Install the fuel-tank cap to the fuel tank.

Replacing the Fuel Line

Service Interval: Every 1,000 hours

If fuel leaks from the fuel line, replace the line immediately.

Replacing the Breather Hose

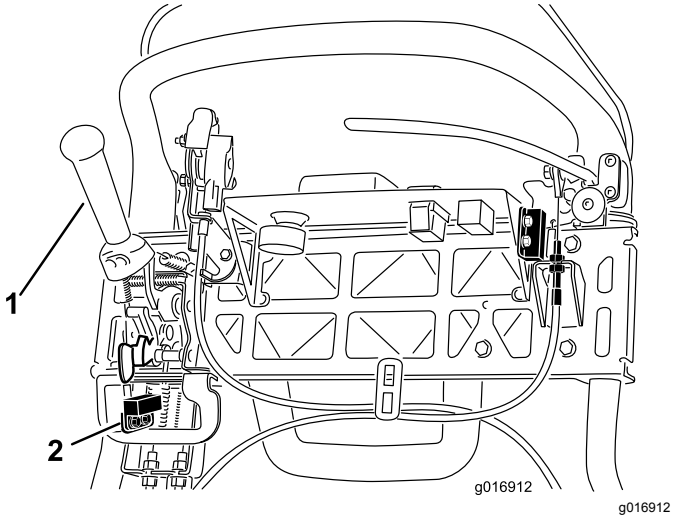
If the breather hose is damaged, replace it immediately.

Electrical System Maintenance

Servicing the Traction-Interlock Switch

Use the following procedure if the traction-interlock switch needs adjustment or replacement.

1. Ensure that the engine is off.
2. Remove the control panel.
3. Engage the traction lever.



g016912

Figure 41

1. Traction lever
2. Interlock switch

4. Loosen the interlock switch mounting fasteners (Figure 41).
5. Place a 1.6 mm (0.062 inch) thick shim between the traction lever and the interlock switch (Figure 41).
6. Tighten the interlock switch mounting fasteners.
7. Engage the traction lever and check the gap. The normal operating range is between 0.76 to 3.05 mm (0.03 to 0.12 inch). With the traction lever engaged, verify that the switch loses continuity. Replace the switch if necessary.

Servicing the Brake-Interlock Switch

1. Ensure that the engine is off.
2. Remove the control panel.
3. Engage the service-brake lever and engage the parking-brake latch.
4. Loosen and remove the interlock-switch mounting fasteners (Figure 42).

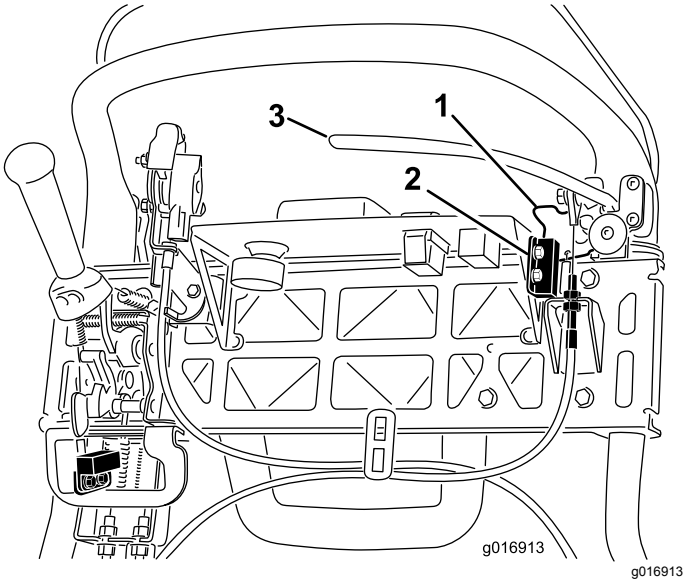


Figure 42

1. Parking-brake latch
2. Interlock switch
3. Service-brake lever

5. Place a 1.6 mm (0.062 inch) thick shim between the parking-brake latch and the interlock switch (Figure 42).
6. Install and tighten the interlock switch mounting fasteners. Check the gap. The latch must not contact the switch.
7. Engage the brake lever and rotate the latch. Verify that the switch loses continuity. Replace the switch if necessary.

Brake Maintenance

Adjusting the Service/Parking Brake

If the service/parking brake slips when operated, adjust the cable as follows:

1. Move the service/parking brake lever to the OFF position.
2. Remove the control panel.
3. To increase the cable tension, loosen the upper cable jam nut and tighten the lower cable jam nut (Figure 43) until a force of 156 N (35 lb) applied to the brake-lever handle is required to release the parking-brake latch.

   Important: **Do not over adjust the brake, as the brake band may drag.**

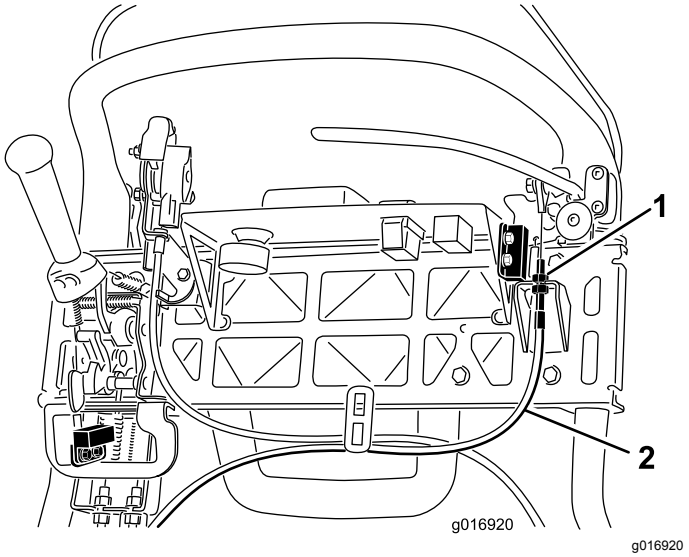


Figure 43

1. Jam nuts
2. Service-brake cable

Belt Maintenance

Inspecting the Reel-Drive Belt

Service Interval: Every 1,000 hours

1. Shut off the engine and remove the key.
2. Loosen the flange bolt that secures the belt cover and remove the belt cover to expose the belt (Figure 44).

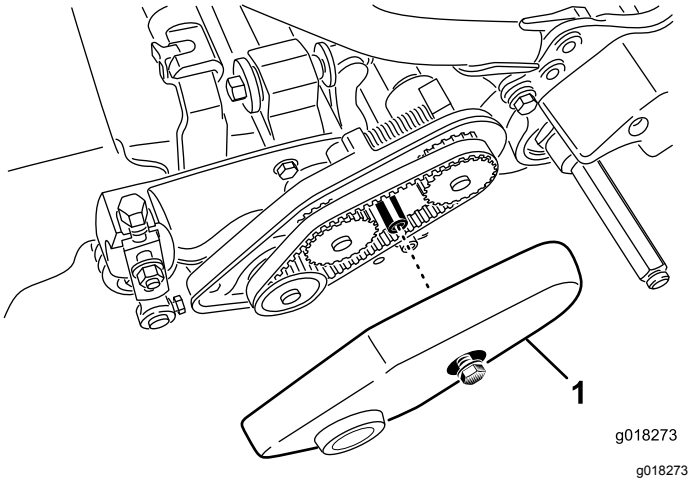


Figure 44

1. Belt cover

3. Perform he following steps to adjust the belt tension:
   A. Loosen the bearing-housing mounting nut (Figure 45).

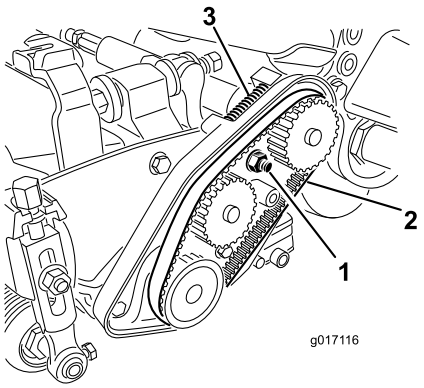


Figure 45

1. Bearing-housing mounting nut
2. Reel-drive belt
3. Compression spring

   B. Using a 16 mm (5/8 inch) wrench, rotate the bearing housing to ensure that it operates freely.
   C. Clean any debris from inside the belt compartment and from around the compression spring (Figure 45).
   D. Ensure that the compression spring is applying the proper tension on the belt.
   E. Tighten the bearing housing mounting nut.
   F. Install the belt cover.

Visually Inspecting the Reel Clutch

Remove the rubber plug (Figure 46) from the hole in the front of the transmission to visually inspect the reel clutch when making adjustments.

Important: **Replace the plug when finished to prevent water and debris from contaminating the clutch.**

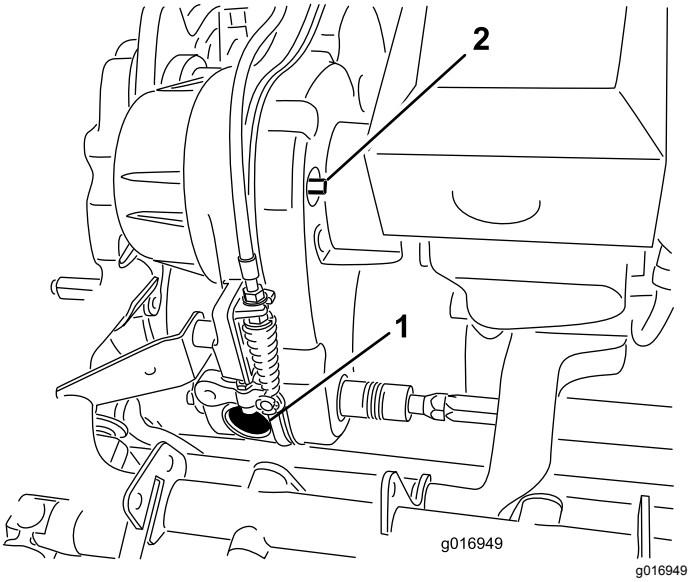


Figure 46

1. Rubber-hole plug
2. Engage/disengage shaft

Engaging/Disengaging the Transmission-Belt Tensioner

The transmission belt is tensioned by a spring-loaded idler pulley. If you must engage or disengage the belt tension, use a 3/8-inch wrench to rotate the engage/disengage shaft (Figure 46) to the desired position. Rotating the shaft 1/4-turn (90°) clockwise disengages the idler from the belt (Figure 47).

Note: You must disengage the belt tension before removing the transmission cover

Note: The transmission belt is properly tensioned when the alignment marks on the transmission cover and the engagement shaft are aligned.

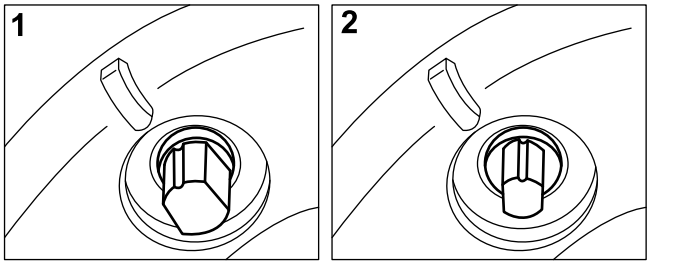


Figure 47

1. ENGAGED
2. DISENGAGED

Controls System Maintenance

Adjusting the Traction Control

If the traction control does not engage or if it slips during operation, an adjustment is necessary.

1. Move the traction control to the ENGAGED position.
2. Measure the distance from the pin on either end of the traction-control spring (Figure 48); if it is not within 7.3 to 7.6 cm (2-7/8 to 3 inches), adjust the clutch according to the steps below.

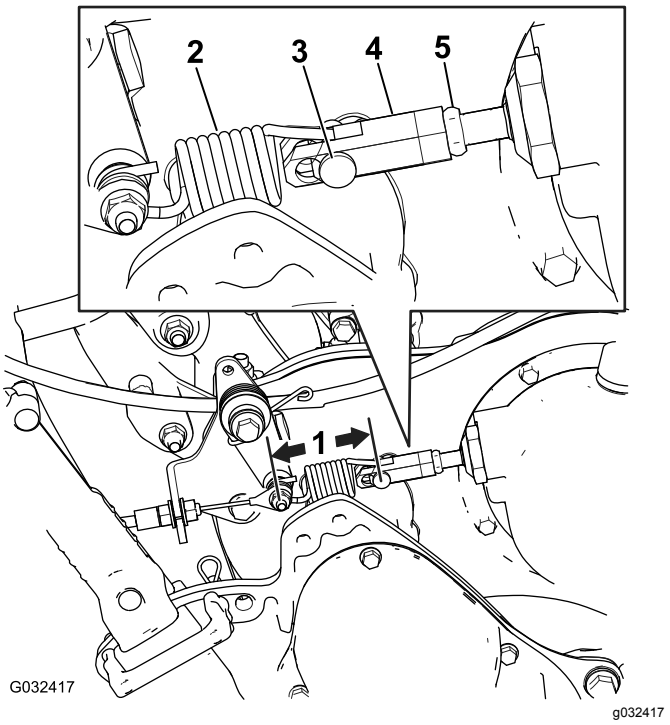


Figure 48

1. Measure this distance (should be 7.3 to 7.6 cm (2-7/8 to 3 inches).
2. Traction-control spring
3. Clevis pin
4. Turnbuckle
5. Jam nut

A. Disengage the traction-control lever.

B. Loosen the jam nut on the turnbuckle and remove the clevis pin, disconnecting the spring from the turnbuckle (Figure 48).

C. Turn the turnbuckle in or out to adjust the length as necessary.

D. Install the turnbuckle to the spring with the clevis pin.

E. Move the traction control to the ENGAGED position.

F. Measure the distance from the pin on either end of the traction-control spring (Figure 48); repeat steps A through F until it is within 7.3 to 7.6 cm (2-7/8 to 3 inches).

Adjusting the Reel Control

If the reel control does not properly engage, an adjustment is necessary.

1. Ensure that the reel control is disengaged.
2. At the transmission bulkhead, adjust the reel-control cable (Figure 49) to attain a spring length of 70.6 to 72.4 mm (2.78 to 2.85 inches).

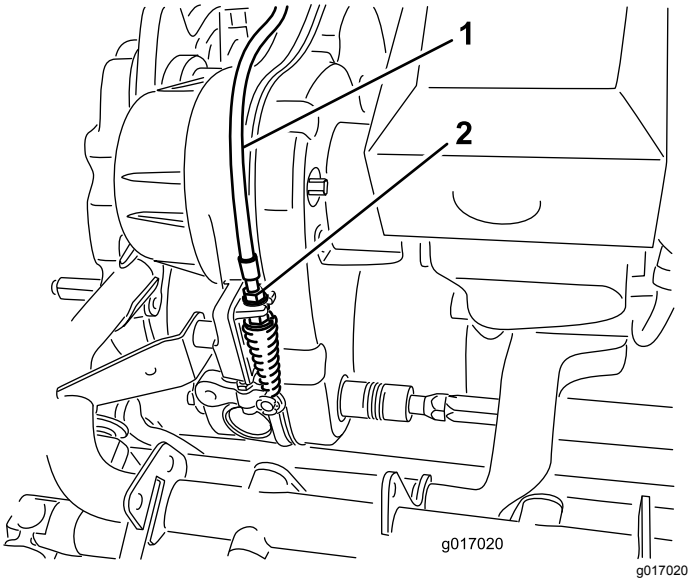


Figure 49

1. Reel-control cable
2. Jam nuts

3. At the control-handle bulkhead, loosen the reel-control cable until there is slack in the cable (Figure 50).

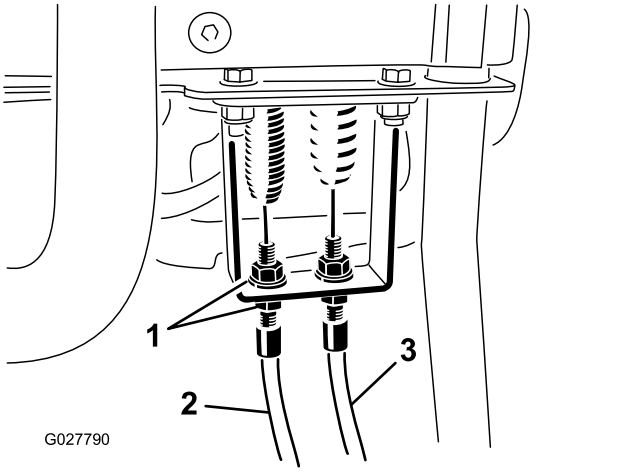


Figure 50

1. Jam nuts
2. Traction-control cable
3. Reel-control cable

4. At the control-handle bulkhead, tighten the reel-control cable enough to remove the slack from the cable without extending the spring.
5. Check the operation as follows:
   - Verify that the reel-clutch teeth disengage when the clutch is released and the reel-clutch teeth do not bottom out when engaged.

     Note: Remove the rubber plug (Figure 46) from the hole in the front of the transmission to view reel clutch.
   - The reel stopping time must be less than 7 seconds with the reel to bedknife backed off.
   - Refer to the *Service Manual* or contact your authorized Toro distributor for further assistance.

Storage

Storage Safety

- Never store the machine or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or on other appliances.
- Allow the engine to cool before storing the machine in any enclosure.

Storing the Machine

1. Remove any grass clippings, dirt, and grime from the external parts of the entire machine, especially the engine. Clean the dirt and chaff from the outside of the engine cylinder-head fins and the blower housing.

   Important: **You can wash the machine with mild detergent and water. Do not pressure-wash the machine. Avoid excessive use of water, especially near the shift-lever plate and the engine.**

2. For long-term storage (more than 30 days) add stabilizer/conditioner additive to the fuel in the tank.

   A. Run the engine to distribute conditioned fuel through the fuel system (5 minutes).

   B. Either shut off the engine, allow it to cool, and drain the fuel tank, or operate the engine until it shuts off.

   C. Start the engine and run it until it shuts off. Start the engine again, with the choke closed, until the engine does not start.

   D. Disconnect the spark-plug wire from the spark plug.

   E. Dispose of the fuel properly. Recycle it according to local codes.

      Note: Do not store fuel containing stabilizer/conditioner longer than the duration recommended by the fuel-stabilizer manufacturer.

3. Check and tighten all bolts, nuts, and screws. Repair or replace any part that is worn or damaged.
4. Paint all scratched or bare metal surfaces. Paint is available from your authorized Toro distributor.
5. Store the machine on a level surface in a clean, dry garage or storage area. Cover the machine to protect it and keep it clean.

Notes:

European Privacy Notice

The Information Toro Collects
Toro Warranty Company (Toro) respects your privacy. In order to process your warranty claim and contact you in the event of a product recall, we ask you to share certain personal information with us, either directly or through your local Toro company or dealer.

The Toro warranty system is hosted on servers located within the United States where privacy law may not provide the same protection as applies in your country.

BY SHARING YOUR PERSONAL INFORMATION WITH US, YOU ARE CONSENTING TO THE PROCESSING OF YOUR PERSONAL INFORMATION AS DESCRIBED IN THIS PRIVACY NOTICE.

The Way Toro Uses Information
Toro may use your personal information to process warranty claims, to contact you in the event of a product recall and for any other purpose which we tell you about. Toro may share your information with Toro's affiliates, dealers or other business partners in connection with any of these activities. We will not sell your personal information to any other company. We reserve the right to disclose personal information in order to comply with applicable laws and with requests by the appropriate authorities, to operate our systems properly or for our own protection or that of other users.

Retention of your Personal Information
We will keep your personal information as long as we need it for the purposes for which it was originally collected or for other legitimate purposes (such as regulatory compliance), or as required by applicable law.

Toro's Commitment to Security of Your Personal Information
We take reasonable precautions in order to protect the security of your personal information. We also take steps to maintain the accuracy and current status of personal information.

Access and Correction of your Personal Information
If you would like to review or correct your personal information, please contact us by email at legal@toro.com.

Australian Consumer Law

Australian customers will find details relating to the Australian Consumer Law either inside the box or at your local Toro Dealer.

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.

Toro General Commercial Product 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 Commercial product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.
* Product equipped with an hour meter.

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

952–888–8801 or 800–952–2740
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. 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, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Conditions considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals, etc.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.
- Normal noise, vibration, wear and tear, and deterioration.
- Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, 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.

Deep Cycle and Lithium-Ion Battery Warranty:

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Battery replacement may be required during the normal product warranty period at owner's expense. Note: (Lithium-Ion battery only): A Lithium-Ion battery has a part only prorated warranty beginning year 3 through year 5 based on the time in service and kilowatt hours used. Refer to the *Operator's Manual* for additional information.

Maintenance is at Owner's Expense

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

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note regarding 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 supplied with your product 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.

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