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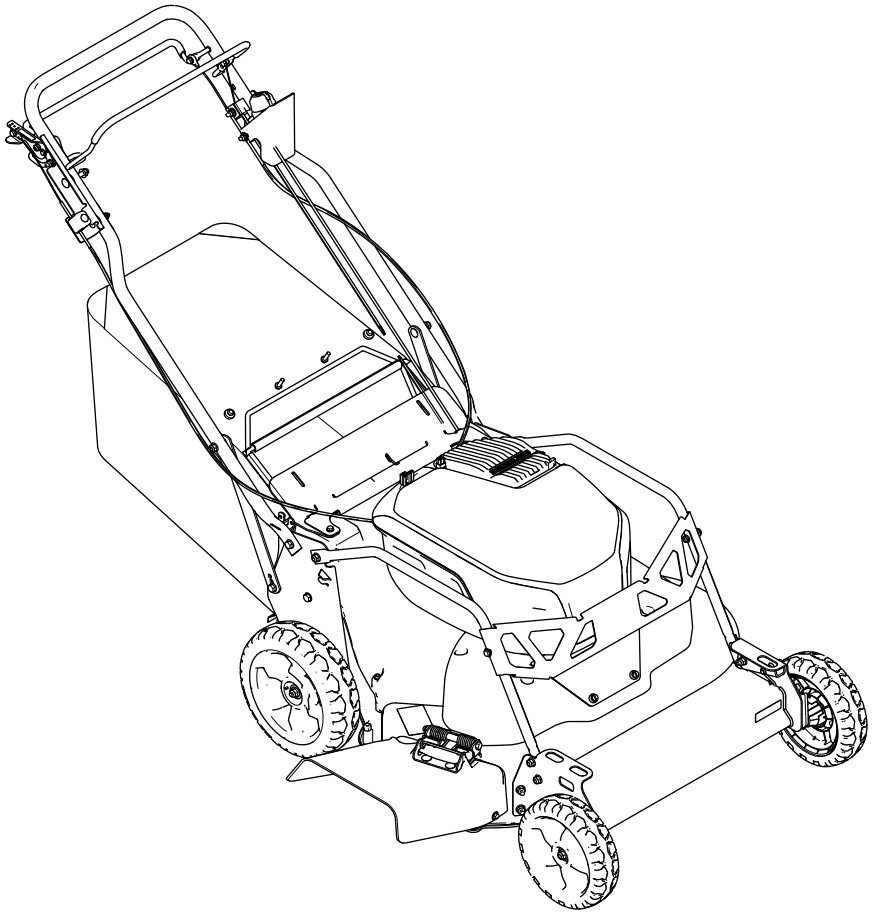
TORO®

Count on it.

Operator's Manual

30in TurfMaster® Revolution 60V Lawn Mower

Model No. 22232—Serial No. 400000000 and Up
Model No. 22232T—Serial No. 400000000 and Up



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

3461-758

For assistance, please see www.Toro.com/support for instructional videos or contact 1-888-384-9939 before returning this product.

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

The power cord on this product contains lead, a chemical known to the State of California to cause birth defects or other reproductive harm. Wash hands after handling.

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 rotary-blade, walk-behind lawn mower is intended to be used by professional, hired operators. It is designed primarily for cutting grass on well-maintained lawns on residential or commercial properties. It is designed to use Toro 60V lithium-ion battery packs. These battery packs are designed to be charged only by Toro 60V lithium-ion battery chargers. Using these products for purposes other than their intended use could prove dangerous to you and bystanders.

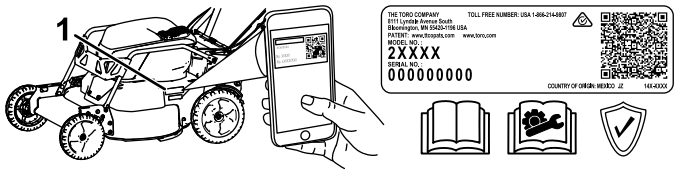
Model 22232T does not include a battery or a charger.

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 your authorized Toro distributor or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

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



g426558

Figure 1

1. Model and serial number location

Model No. _____

Serial No. _____

Safety-Alert Symbol

The safety-alert symbol (Figure 2) shown in this manual and on the machine identifies important safety messages that you must follow to prevent accidents.



g000502

Figure 2
Safety-alert symbol

The safety-alert symbol appears above information that alerts you to unsafe actions or situations and is followed by the word **DANGER**, **WARNING**, or **CAUTION**.

DANGER indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.

WARNING indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.

CAUTION indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury.

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

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Bloomington, MN 55420

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Safety

IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING

When using electric lawn mowers, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following:

Read All Instructions

I. Training

1. The operator of the machine is responsible for any accidents or hazards occurring to others or their property.
2. Do not allow children to use or play with the machine, battery pack, or the battery charger; local regulations may restrict the age of the operator.
3. Do not allow children or untrained people to operate or service this device. Allow only people who are responsible, trained, familiar with the instructions, and physically capable to operate or service the device.
4. Before using the machine, battery pack, and battery charger, read all the instructions and cautionary markings on these products.
5. Become familiar with the controls and proper use of the machine, battery pack, and battery charger.

II. Preparation

1. Keep bystanders, especially children and pets, out of the operating area.
2. Do not operate the machine without all guards and safety devices, such as deflectors and grass catchers, in place and functioning properly on the machine.
3. 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.
4. Before using the machine, ensure that the blade, blade bolt, and blade assembly are not worn or damaged. Replace any damaged or unreadable labels.
5. Use only the battery pack specified by Toro. Using other accessories and attachments may increase the risk of injury and fire.
6. Plugging the battery charger into an outlet that is not 120V can cause a fire or electric shock. Do

not plug the battery charger into an outlet other than 120V. For a different style of connection, use an attachment plug adapter of the proper configuration for the power outlet if needed.

7. Do not use a damaged or modified battery pack or battery charger, which may exhibit unpredictable behavior that results in fire, explosion, or risk of injury.
8. If the supply cord to the battery charger is damaged, contact your authorized Toro distributor to replace it.
9. Charge the battery pack with only the battery charger specified by Toro. A charger suitable for 1 type of battery pack may create a risk of fire when used with another battery pack.
10. Charge the battery pack in a well-ventilated area only.
11. Follow all charging instructions and do not charge the battery pack outside of the temperature range specified in the instructions. Otherwise, you may damage the battery pack and increase the risk of fire.
12. Dress properly—Wear appropriate clothing, including eye protection; long pants; substantial, slip-resistant footwear (not barefoot or wearing sandals); and hearing protection. Tie back long hair and do not wear loose clothing or loose jewelry that can get caught in moving parts. Wear a dust mask in dusty operating conditions. Use of rubber gloves is recommended.

III. Operation

1. Contact with the moving blade will cause serious injury. Keep your hands and feet away from the cutting area and all moving parts of the machine. Keep clear of any discharge opening.
2. Using this machine for purposes other than its intended use could prove dangerous to you and bystanders.
3. Disengage the self-propel drive (if equipped) before starting the machine.
4. Do not tilt the machine when starting the motor.
5. Prevent unintentional starting—Ensure that the electric-start button is removed from the electric-start switch before connecting the battery pack and handling the machine.
6. Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
7. Stop the machine, remove the electric-start button, remove the battery pack from the machine, and wait for all movement to stop before adjusting, servicing, cleaning, or storing the machine.
8. Remove the battery pack and electric-start button from the machine whenever you leave it unattended or before changing accessories.
9. Do not force the machine—Allow the machine to do the job better and safer at the rate for which it was designed.
10. Stay alert—Watch what you are doing and use common sense when operating the machine. Do not use the machine while ill, tired, or under the influence of alcohol or drugs.
11. Do not use a battery-operated lawn mower in rain.
12. Operate the machine only in good visibility and appropriate weather conditions. Do not operate the machine when there is the risk of lightning.
13. Use extreme caution when reversing or pulling the machine toward you.
14. Keep proper footing and balance at all times, especially on slopes. Mow across the face of slopes, never up and down. Use extreme caution when changing directions on slopes. Do not mow exceedingly steep slopes. Walk, never run with the machine.
15. Do not direct the discharge material toward anyone. Avoid discharging material against a wall or obstruction; material may ricochet toward you. Stop the blade(s) when crossing surfaces other than grass.
16. Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could cause you to lose your balance or footing.
17. Wet grass or leaves can cause serious injury if you slip and contact the blade. Do not mow in wet conditions. Do not mow when it is raining.
18. If the machine strikes an object or starts to vibrate, immediately shut off the machine, remove the electric-start button, remove the battery pack, and wait for all movement to stop before examining the machine for damage. Make all necessary repairs before resuming operation.
19. Stop the machine and remove the electric-start button before loading the machine for hauling.
20. Under abusive conditions, the battery pack may eject liquid; avoid contact. If you accidently come into contact with the liquid, flush with water. If the liquid contacts your eyes, seek medical help. Liquid ejected from the battery pack may cause irritation or burns.

IV. Maintenance and Storage

1. Stop the machine, remove the electric-start button, remove the battery pack from the machine, and wait for all movement to stop before adjusting, servicing, cleaning, or storing the machine.
2. Do not attempt to repair the machine except as indicated in the instructions. Have your authorized Toro distributor perform service on the machine using identical replacement parts.
3. Wear gloves and eye protection when servicing the machine.
4. Sharpen a dull blade on both edges to maintain balance. Clean the blade and ensure that it is balanced.
5. Replace the blade if it is bent, worn, or cracked. An unbalanced blade causes vibration, which could damage the motor or cause personal injury.
6. When servicing the blade, be aware that the blade can still move even though the power source is off.
7. Check the grass collection bag frequently for deterioration or wear, and replace a worn bag with a Toro [replacement] bag.
8. For best performance, use only genuine Toro replacement parts and accessories. Other replacement parts and accessories could be dangerous, and such use could void the product warranty.
9. Maintain the machine—Keep cutting edges sharp and clean for the best and safest performance. Keep handles dry, clean, and free from oil and grease. Keep guards in place and in working order. Keep blades sharp. Use identical replacement blades only.
10. Check the machine for damaged parts—If there are damaged guards or other parts, determine whether the machine will operate properly. Check for misaligned and binding moving parts, broken parts, mounting, and any other condition that may affect its operation. Unless indicated in the instructions, have your authorized Toro distributor repair or replace a damaged guard or part.
11. When the battery pack is not in use, keep it away from metal objects such as paper clips, coins, keys, nails, and screws that can make a connection from 1 terminal to another. Shorting the battery terminals may cause burns or a fire.
12. Check the blade and motor mounting bolts frequently for tightness.
13. When you are not using the machine, store it indoors in a dry, secure place out of the reach of children.
14. Do not expose a battery pack or machine to fire or excessive temperature. Exposure to fire or temperature above 130°C (265°F) may cause explosion.
15. CAUTION—A mistreated battery pack may present a risk of fire, explosion, or chemical burn.
    - Do not disassemble the battery pack.
    - Replace the battery pack with a genuine Toro battery pack only; using another type of battery pack may cause a fire or risk of injury.
    - Keep battery packs out of the reach of children and in the original packaging until you are ready to use them.

SAVE THESE INSTRUCTIONS

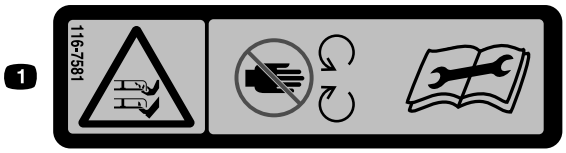
Safety and Instructional Decals

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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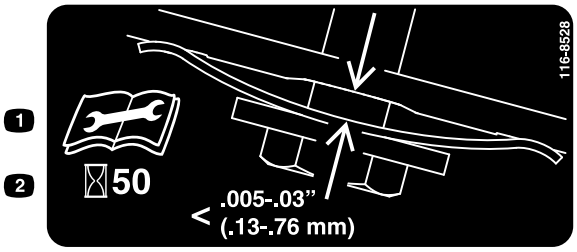
94-8072



decal116-7581

116-7581

1. Cutting/dismemberment hazard of hand or foot, mower blade—stay away from moving parts. Read the *Operator's Manual* before adjusting servicing, or cleaning the machine.



decal116-8528

116-8528

1. Read the *Operator's Manual* before performing any maintenance.
2. Check belt tension every 50 operating hours.



decal120-9570

120-9570

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



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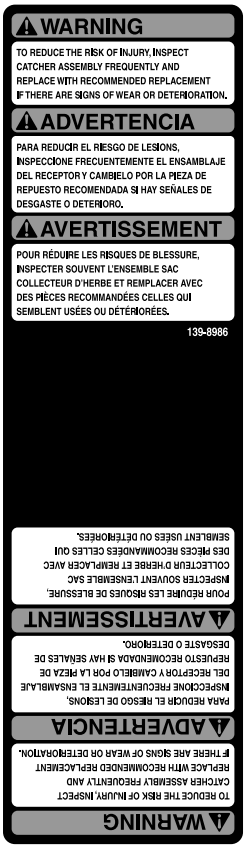
133-8054



decal139-5405

139-5405

1. Parking brake—engage
2. Parking brake—disengage



decal139-8986

139-8986



decal144-3175

144-3175

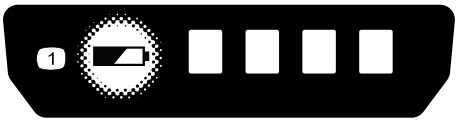
1. Read the *Operator's Manual*.
2. To start the machine, squeeze the bar to the handle and press the button.
3. To shut off the machine, release the bar.



decal145-8260

145-8260

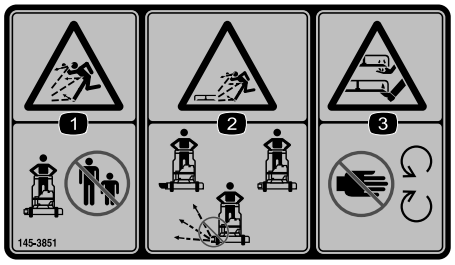
1. Read the *Operator's Manual*.
2. Keep away from open fire or flames.
3. Do not expose to rain.



decal145-8265

145-8265

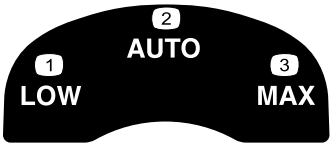
1. Battery charge status



decal145-3851

145-3851

1. Thrown object hazard—keep bystanders away
2. Thrown object hazard from discharge chute—Do not operate the machine without the side-discharge plug, chute, or deflector in place.
3. Cutting/dismemberment hazard of hand or foot, mower blade—stay away from moving parts.



decal145-4009

145-4009

1. Low speed
2. Auto speed
3. Max speed



decal140-8471

140-8471



decal137-9463

137-9463

1. The battery pack is charging.
2. The battery pack is fully charged.
3. The battery pack is over or under the appropriate temperature range.
4. Battery pack charging fault



decal116-7583

116-7583

1. Warning—read the *Operator's Manual*; do not operate this machine unless you are trained.
2. Thrown object hazard—keep bystanders away.
3. Thrown object hazard—do not operate the mower without the rear discharge plug or bag in place.
4. Cutting/dismemberment hazard of hand or foot, mower blade—stay away from moving parts; keep all guards in place.
5. Warning—wear hearing protection.
6. Cutting/dismemberment hazard of hand or foot, mower blade—do not operate up and down slopes; operate side to side on slopes; shut off the engine before leaving the machine; pick up any debris before mowing; look behind you when moving in reverse.

Setup

Important: **The battery pack is not fully charged when it is purchased. Before using the machine for the first time, refer to Charging the Battery Pack (page 20).**

Important: **Remove and discard the protective plastic sheet that covers the motor and any other plastic or wrapping on the machine.**

1

Assembling and Unfolding the Handle

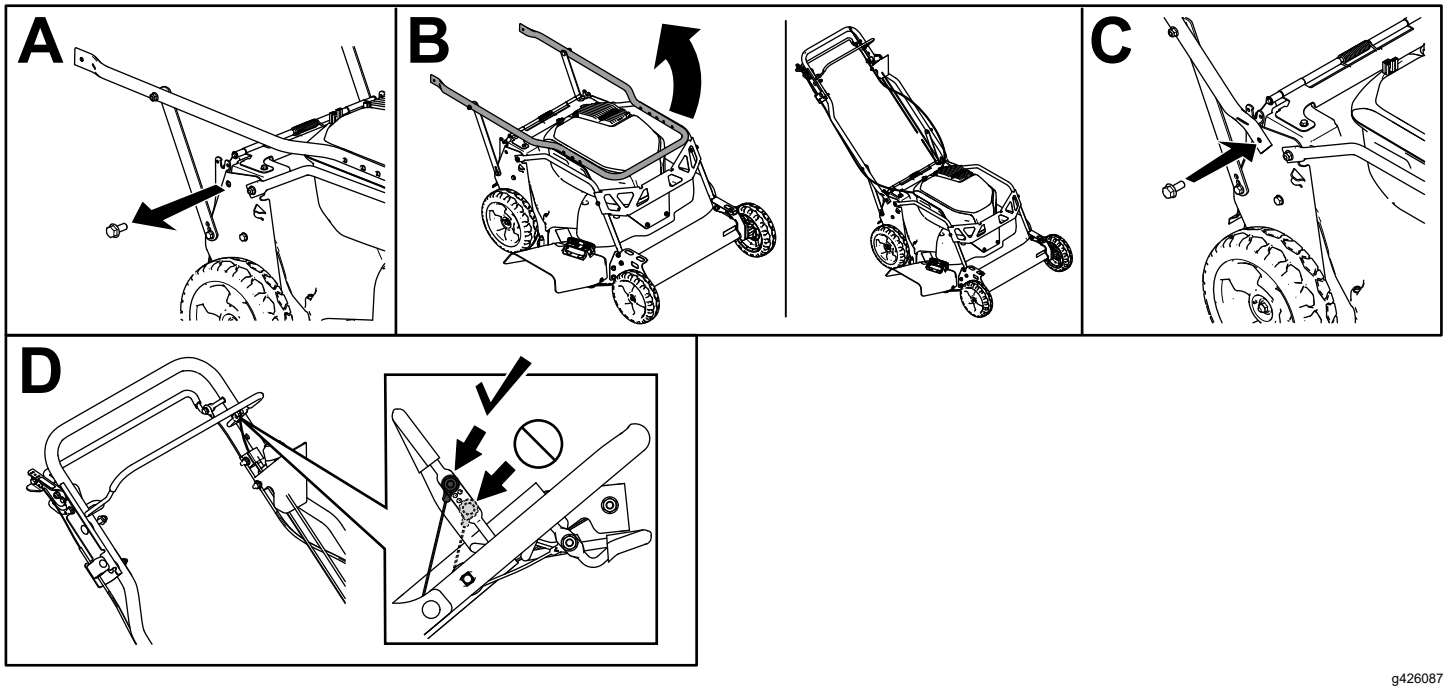
No Parts Required

Procedure

⚠ WARNING

Folding or unfolding the handle improperly can damage the cables, causing an unsafe operating condition.

- **Do not damage the cable(s) when folding or unfolding the handle.**
- **Ensure that the cable(s) are routed to the outside of the handle.**
- **If a cable is damaged, contact an Authorized Service Dealer.**



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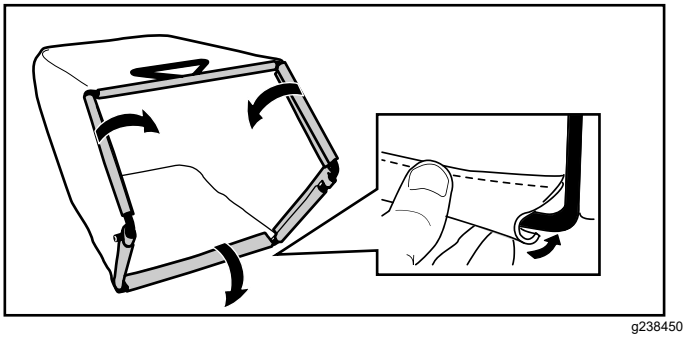
Figure 3

2

Assembling the Grass Bag

No Parts Required

Procedure



g238450

Figure 4

3

Mounting the Battery Charger (Optional)

Parts needed for this procedure:

2	Mounting hardware (not included)

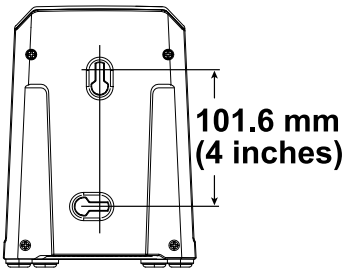
Procedure

If desired, mount the battery charger securely on a wall using the wall-mount key holes on the back of the charger.

Mount it indoors (such as a garage or other dry place), near a power outlet, and out of the reach of children.

Refer to Figure 5 for assistance in mounting the charger.

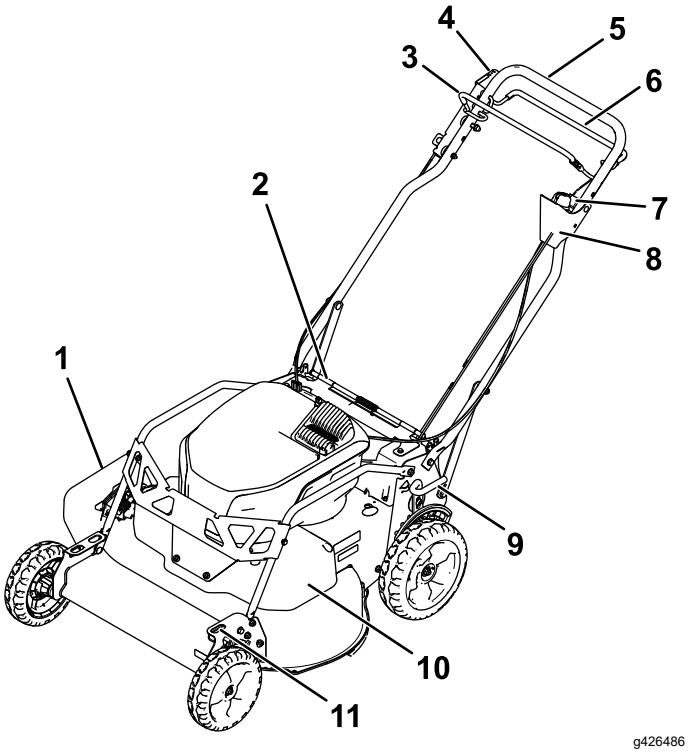
Slide the charger over the appropriately positioned hardware to secure the charger in place (hardware not included).



g290534

Figure 5

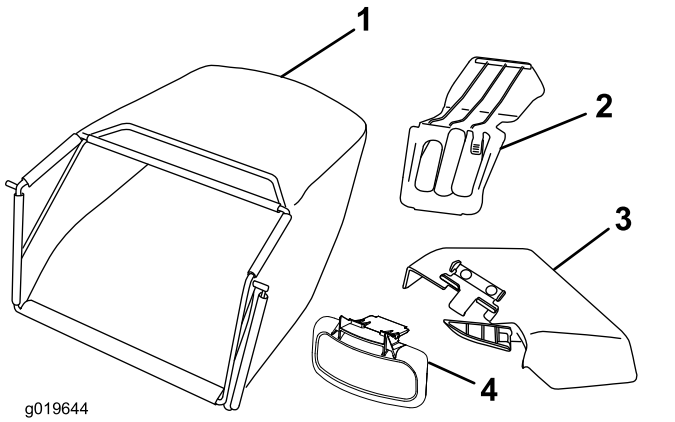
Product Overview



g426486

Figure 6

1. Side-discharge deflector
2. Rear deflector
3. Blade-control bar
4. Parking brake
5. Handle
6. Drive bar
7. Self-propel adjustment
8. Electric-start housing
9. Rear cutting-height lever
10. Belt cover
11. Front cutting-height lever

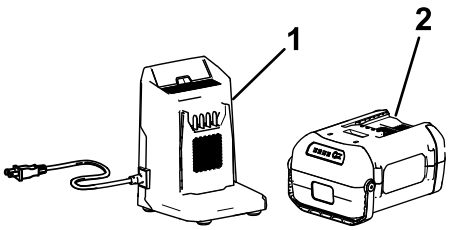


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g019644

Figure 7

1. Grass bag
2. Rear-discharge plug
3. Side-discharge chute
4. Side-discharge deflector

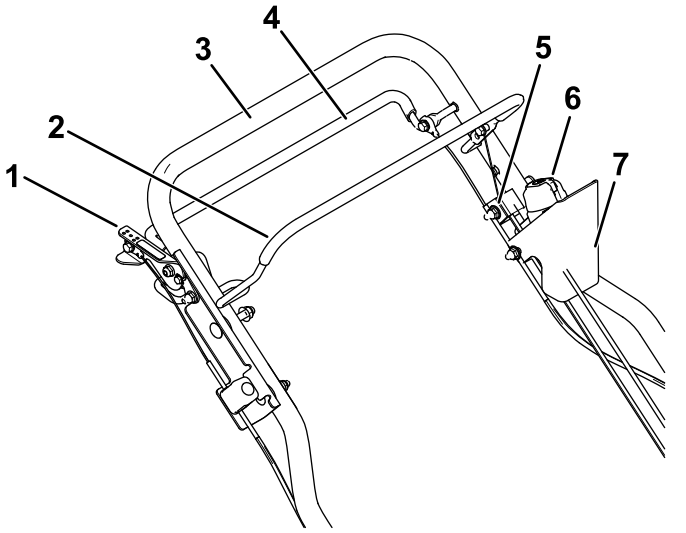


g429384

Figure 8

1. Battery charger model 88605 (included with Model 22232)
2. Battery pack Model 66810 (3 included with Model 22232)

Controls



g426488

Figure 9

1. Parking brake
2. Blade-control bar
3. Handle
4. Drive bar
5. Self-propel adjustment
6. Electric-start button
7. Electric-start switch

Specifications

Model	Weight	Length	Width	Height
22232 and 22232T	76.6 kg (169 lb)	170 cm (67 inches)	81 cm (32 inches)	99 cm (39 inches)

Battery Pack

Model	66810
Battery pack capacity	10.0 Ah 540 Wh
Battery manufacturer rating = 60V maximum and 54V nominal. Actual voltage varies with load.	

Battery Charger

Model	**88605**
Type	60V MAX Lithium-Ion Battery Rapid Charger
Input	120V AC ~5.0A, 60Hz
Output	60V DC ⎓ 5.5A MAX

Appropriate Temperature Ranges

Charge battery pack at	5°C (41°F) to 40°C (104°F)*
Use battery pack at	-30°C (-22°F) to 49°C (120°F)
Store battery pack/charger at	5°C (41°F) to 40°C (104°F)*

*Charging time will increase if you do not charge the battery within this range.

Store the tool, battery pack, and battery charger in an enclosed clean, dry area.

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

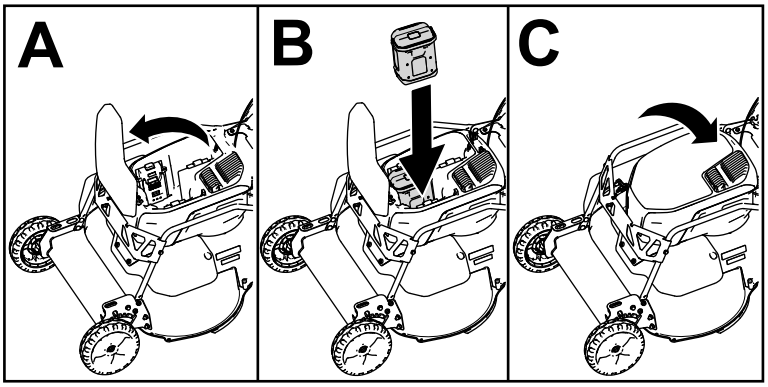
Before Operation

Installing the Battery Pack

Important: **Use the battery pack only in temperatures that are within the appropriate range; refer to Specifications (page 11)**

1. Make sure that the vents on the battery are clear of any dust and debris.
2. Lift up the battery-compartment lid (A of Figure 10).
3. Line up the cavity in the battery pack with the tongue on the machine and slide the battery pack into the compartment until it locks into place (B of Figure 10).
4. Close the battery-compartment lid (C of Figure 10).

   Note: If the battery-compartment lid does not close completely, the battery is not fully installed.

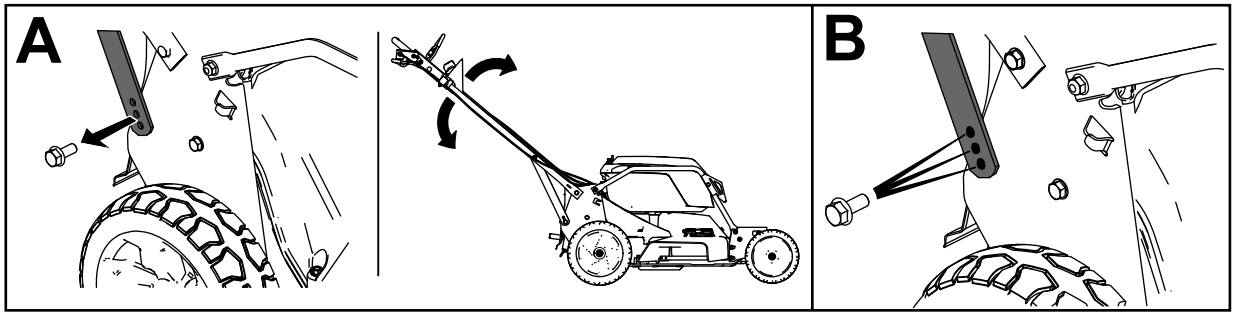


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Figure 10

Adjusting the Handle Height

You can raise or lower the handle to 1 of 3 positions that is most comfortable to you (Figure 11).



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Figure 11

1. Remove both handle bolts and the corresponding nuts.
2. Move the handle to the desired height position.
3. Secure the handle with the previously removed bolts and corresponding nuts.

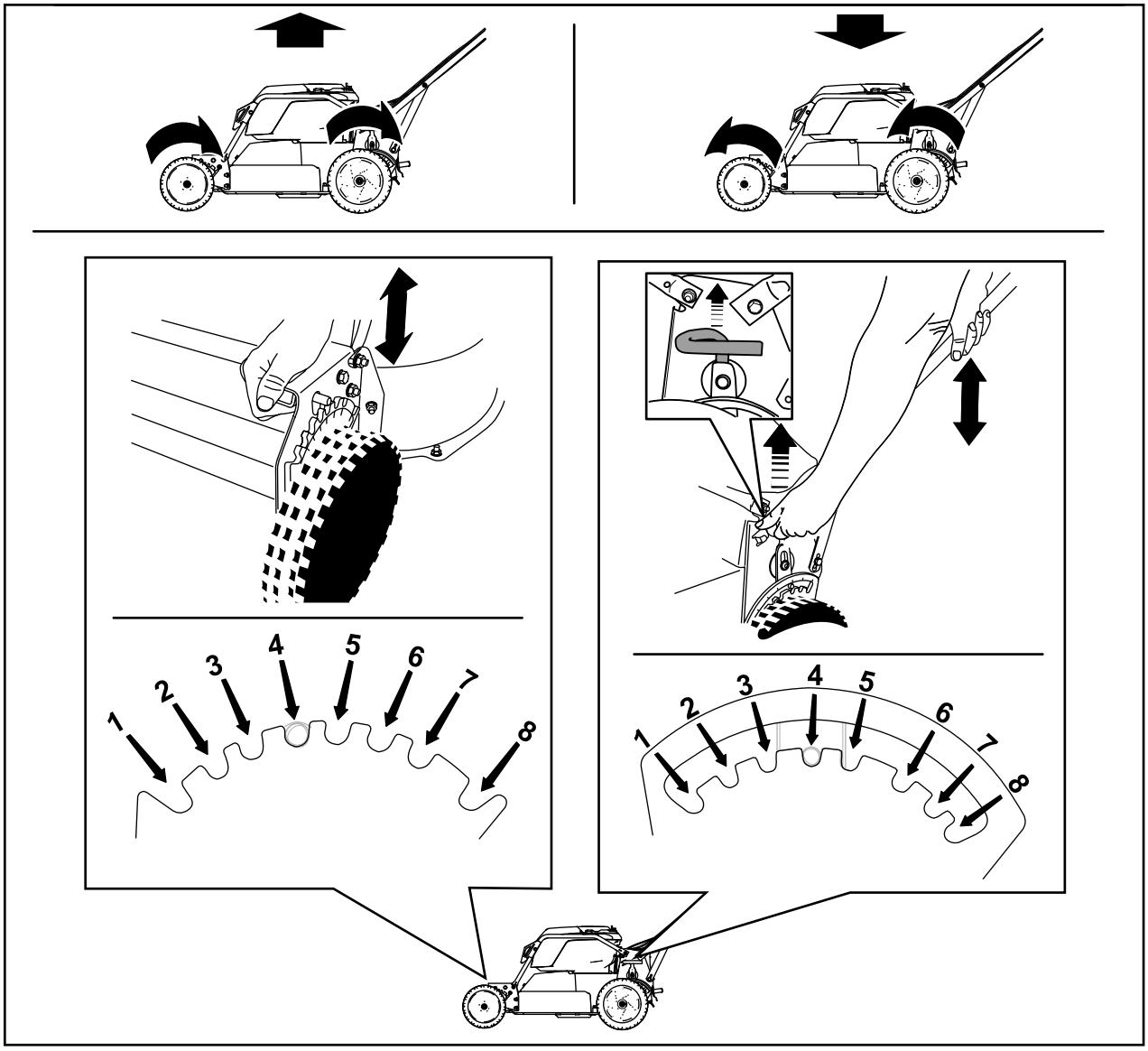
Adjusting the Cutting Height

⚠ DANGER

Adjusting the height-of-cut could bring your hands into contact with a moving blade and result in serious injury.

- **Shut off the motor, remove the battery, and wait for all moving parts to stop before adjusting the cutting height.**
- **Do not put your fingers under the housing when adjusting the cutting height.**

The cutting height is controlled with a front lever and a rear lever, both on the left side of the machine. To raise or lower the machine, engage the lever, raise or lower the machine, and then disengage the lever.



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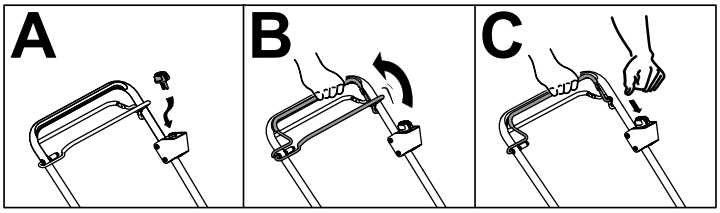
Figure 12

1. 38 mm (1–½ inches)
2. 51 mm (2 inches)
3. 64 mm (2–½ inches)
4. 76 mm (3 inches)
5. 89 mm (3–½ inches)
6. 102 mm (4 inches)
7. 114 mm (4–½ inches)
8. 127 mm (5 inches)

During Operation

Starting the Machine

1. Ensure that the battery pack(s) are installed in the machine; refer to Installing the Battery Pack (page 13).
2. Insert the electric-start button into the electric-start switch (A of Figure 13).
3. Squeeze the blade-control bar and hold it to the handle for 2 seconds (B of Figure 13).
4. Press the electric-start button and keep it pressed until the motor starts (C of Figure 13).

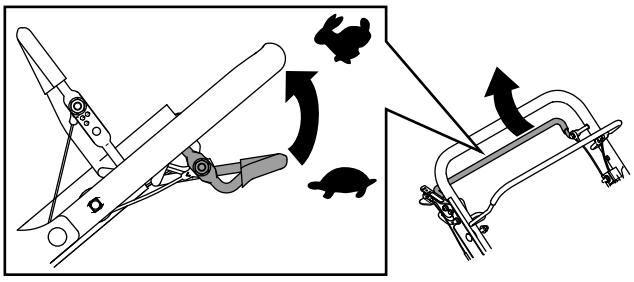


g426569

Figure 13

Operating the Self-Propel Drive and Engaging the Blades

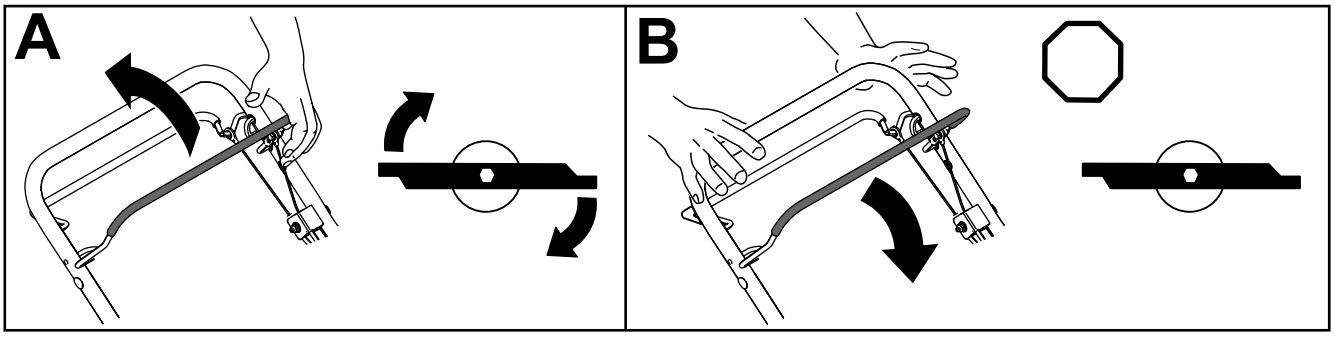
To operate the self-propel drive, pull and hold the drive bar to the handle (Figure 14).



g426534

Figure 14

- To engage the blades, pull the blade-control bar to the handle (Figure 15).
- To disengage the blades, release the blade-control bar (Figure 15.



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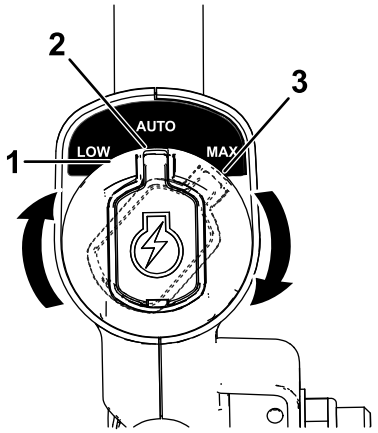
Figure 15

Adjusting the Blade Speed

This machine has 3 blade-speed settings: AUTO, MAX, and LOW.

- When set to the AUTO position, the blade speed is adjusted automatically for greater efficiency; changes in cutting conditions are detected and the blade speed increases when necessary to maintain quality of cut.
- When set to the MAX position, the blade speed remains at the highest speed at all times. The traction speed of the machine also increases.
- When set to the LOW position, the blade speed remains at the lowest speed at all times. The traction speed of the machine also decreases.

Turn the electric-start button in the electric-start switch to adjust the blade speed setting (Figure 16).



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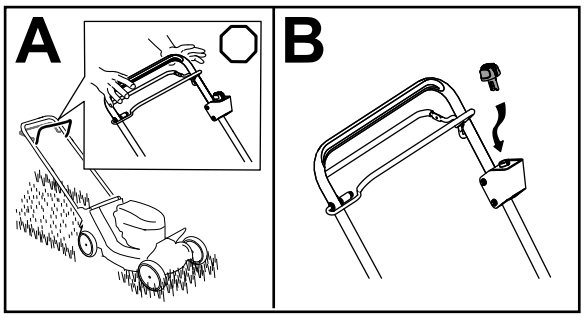
Figure 16

1. LOW position
2. AUTO position
3. MAX position

Shutting Off the Machine

1. Release the blade-control bar (A of Figure 17).
2. Remove the electric-start button from the electric-start switch (B of Figure 17).
3. Remove the battery pack; refer to Removing the Battery Pack from the Machine (page 20).

   Note: Whenever you are not using the machine, remove the battery pack.

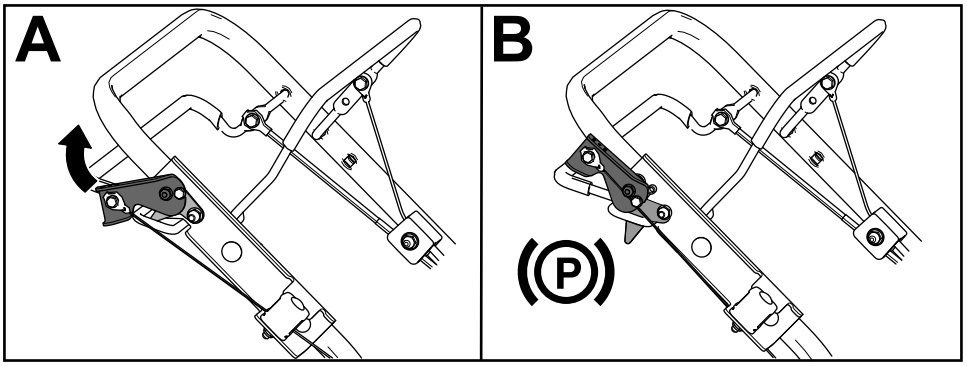


g427664

Figure 17

Engaging the Parking Brake

Engage the parking brake by pulling the brake lever up toward the handle (Figure 18).

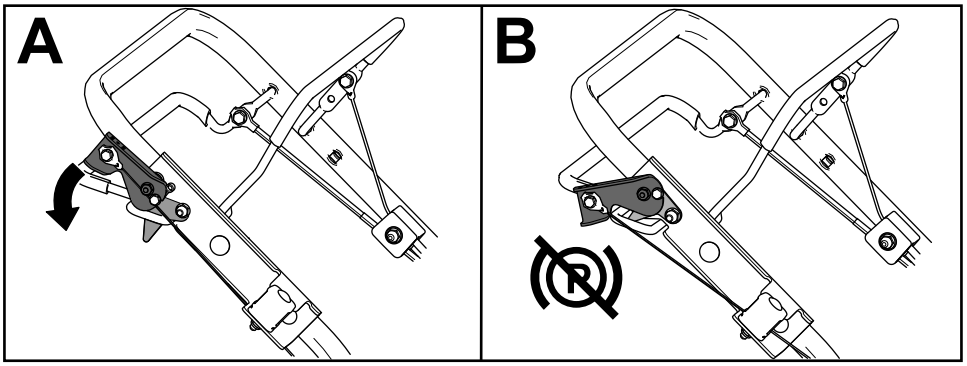


g426580

Figure 18

Disengaging the Parking Brake

Disengage the parking brake by pushing the brake lever down away from the handle (Figure 19).



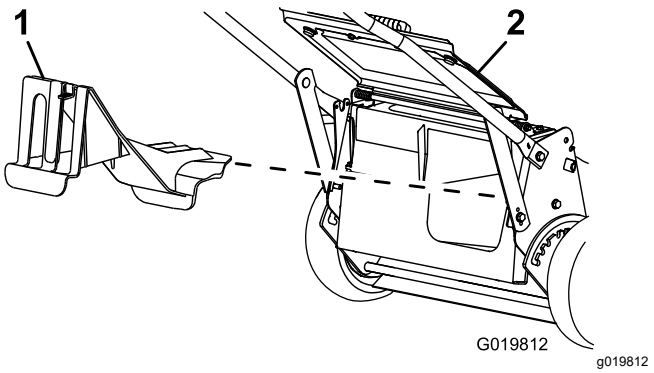
g426581

Figure 19

Recycling the Clippings

This machine comes from the factory ready to recycle grass and leaf clippings back into the lawn. To prepare the machine to recycle:

- If the side-discharge chute is on the machine, remove it and install the side-discharge deflector; refer to Removing the Side-Discharge Chute (page 19).
- If the grass bag is on the machine, remove it; refer to Removing the Grass Bag (page 18).
- If the rear-discharge plug is not installed, grip it by the handle, raise the rear deflector, and insert it into the rear-discharge chute until the latch locks into place; refer to Figure 20.



g019812

Figure 20

1. Rear-discharge plug
2. Rear deflector

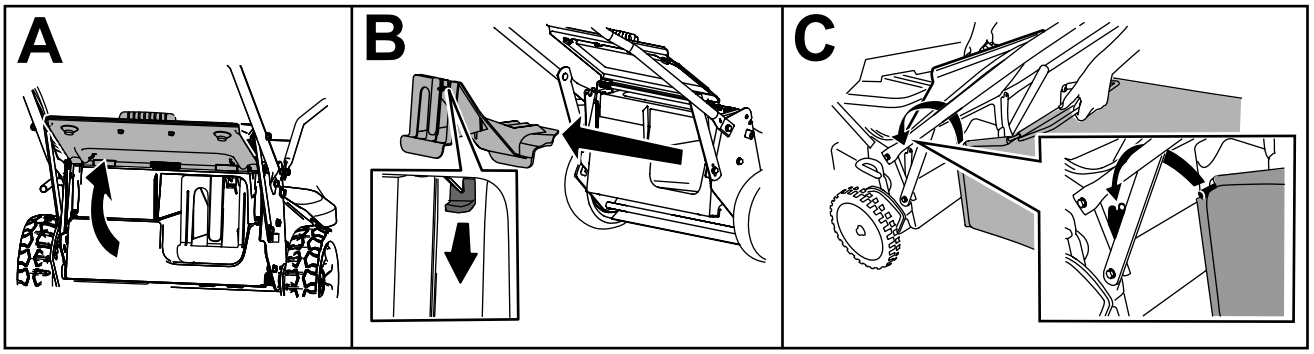
Bagging the Clippings

Use the grass bag when you want to collect grass and leaf clippings from the lawn.

If the side-discharge chute is on the machine, remove it and install the side-discharge deflector before bagging the clippings; refer to Removing the Side-Discharge Chute (page 19).

Installing the Grass Bag

1. Raise and hold up the rear deflector (A of Figure 21).
2. Remove the rear-discharge plug by pulling down on the latch with your thumb and pulling the plug out from the machine (B of Figure 21).
3. Install the bag rod into the notches at the base of the handle, and rock the bag back and forth to ensure that the rod is seated at the bottom of both notches (C of Figure 21).
4. Lower the rear deflector until it rests on the grass bag.



g426556

Figure 21

Removing the Grass Bag

⚠ DANGER

The machine can throw grass clippings and other objects through an opening in the machine housing. Objects thrown with enough force could cause serious personal injury or death to you or to bystanders.

- **Never remove the grass bag and then start the machine without the discharge plug installed on the machine.**
- **Never open the rear deflector on the machine when the machine is running.**

To remove the bag, reverse the steps in Installing the Grass Bag (page 18).

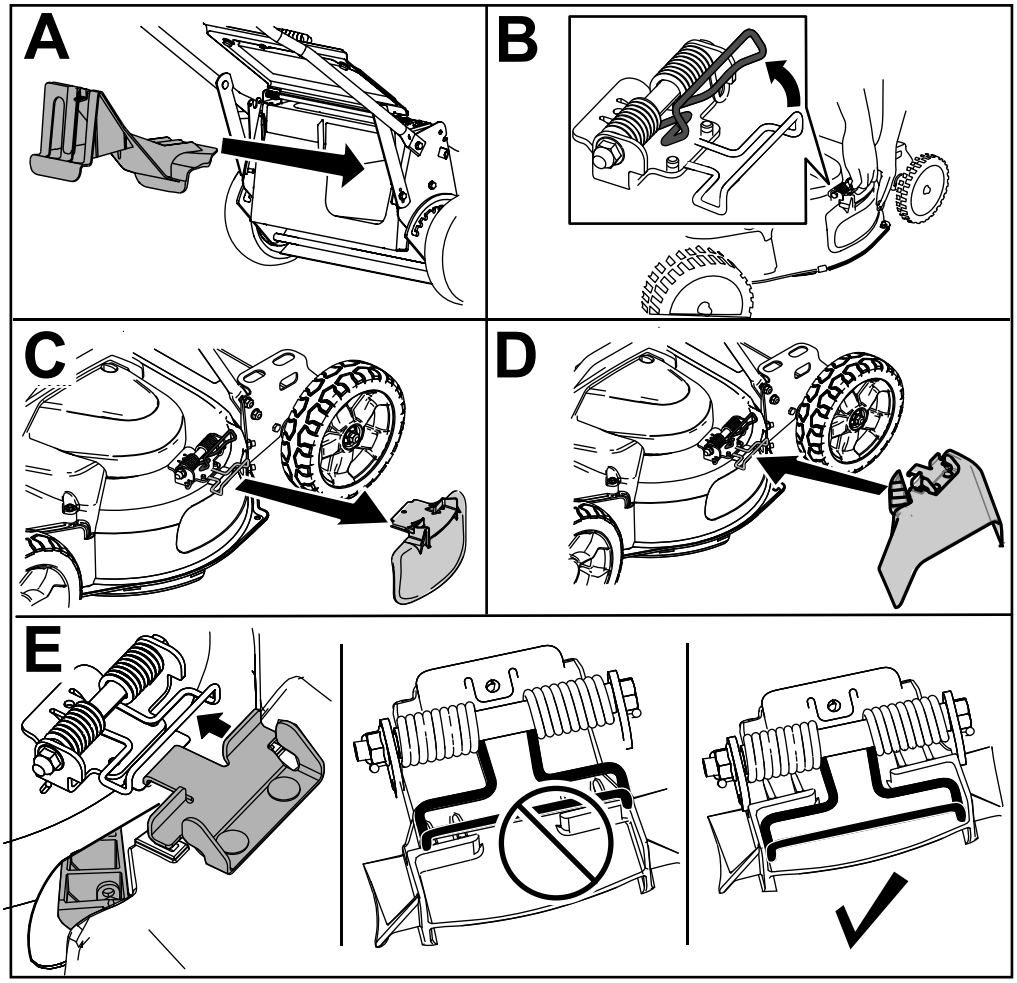
Side-Discharging the Clippings

Use the side discharge for cutting very tall grass.

Installing the Side-Discharge Chute

Important: **Ensure that the rear-discharge plug is in place before you recycle the clippings.**

1. Shut off the machine and wait for all moving parts to stop.
2. Remove the grass bag if it is installed on the machine; refer to Removing the Grass Bag (page 18).
3. Insert the rear-discharge plug (A of Figure 22).
4. Remove the side-discharge deflector by pulling up on the spring that holds the deflector in place and removing the deflector (B and C of Figure 22).
5. Install the side-discharge chute by pulling up on the spring, placing the chute over the opening, and lowering the spring over the tabs on top of the discharge chute (D and E of Figure 22).



g235903

Figure 22

Removing the Side-Discharge Chute

To remove the side-discharge chute, reverse the steps in Installing the Side-Discharge Chute (page 18).

Operating Tips

General Tips

- Review the safety instructions and read this manual carefully before operating the machine.
- Clear the area of sticks, stones, wire, branches, and other debris that the blades could hit and throw.
- Keep everyone, especially children and pets, away from the area of operation.
- Avoid striking trees, walls, curbs, or other solid objects. Never deliberately mow over any object.
- If the machine strikes an object or starts to vibrate, immediately shut off the machine, wait for all moving parts to stop, remove the battery pack from the machine, and examine the machine for damage.
- Maintain sharp blades throughout the cutting season. Periodically file down nicks on the blades.
- Replace the blades when necessary with original Toro replacement blades.
- Mow only dry grass or leaves. Wet grass and leaves tend to clump on the yard and can cause the machine to plug or the motor to stall.
- Clean the underside of the machine deck after each mowing. Refer to Cleaning under the Machine (page 21).

Cutting Grass

- Grass grows at different rates at different times of the year. In the summer heat, it is best to cut grass at the 51 mm (2 inch), 64 mm (2-1/2 inch), or 83 mm (3 inch) cutting-height settings. Cut only about a third of the grass blade at a time. Do not

cut below the 51 mm (2 inch) setting unless the grass is sparse or it is late fall when grass growth begins to slow down.

- When cutting grass over 15 cm (6 inches) tall, first mow at the highest cutting-height setting and walk slower; then mow again at a lower setting for the best lawn appearance. If the grass is too long, the machine may plug and cause the motor to stall.
- Be aware of a potential fire hazard in very dry conditions, follow all local fire warnings, and keep the machine free of dry grass and leaf debris.
- Alternate the mowing direction. This helps disperse the clippings over the lawn for even fertilization.

If the finished lawn appearance is unsatisfactory, try 1 or more of the following:

- Replace the blade or have it sharpened.
- Walk at a slower pace while mowing.
- Raise the cutting height on your machine.
- Cut the grass more frequently.
- Overlap cutting swaths instead of cutting a full swath with each pass.

Cutting Leaves

- After cutting the lawn, ensure that half of the lawn shows through the cut leaf cover. You may need to make more than a single pass over the leaves.
- For light leaf coverage, set all the wheels at the same cutting-height setting.
- If there are more than 13 cm (5 inches) of leaves on the lawn, mow at a higher cutting height and then again at the desired cutting height.
- Slow down your mowing speed if the machine does not cut the leaves finely enough.

After Operation

Removing the Battery Pack from the Machine

1. Lift up the battery-compartment lid.
2. Press the battery-pack latch to release the battery pack and remove the battery pack.
3. Close the battery-compartment lid.

Charging the Battery Pack

Important: **The battery pack is not fully charged when you purchase it. Before using the tool for the first time, place the battery pack in the charger and charge it until the LED display indicates the battery pack is fully charged. Read all safety precautions.**

Important: **Charge the battery pack only in temperatures that are within the appropriate range; refer to Specifications (page 11).**

Note: At any time, press the battery-charge-indicator button on the battery pack to display the current charge (LED indicators).

1. Ensure that the vents on the battery and charger are clear of any dust and debris.

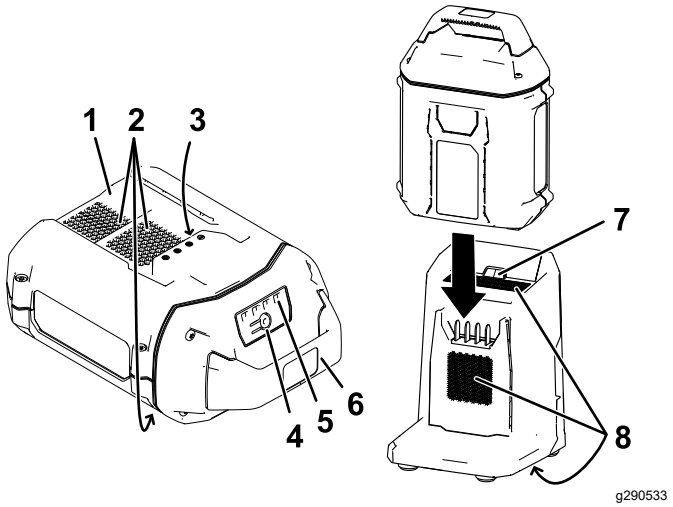


Figure 23

1. Battery pack cavity
2. Battery pack venting areas
3. Battery pack terminals
4. Battery-charge-indicator button
5. LED indicators (current charge)
6. Handle
7. Charger LED indicator light
8. Charger venting areas

2. Line up the cavity in the battery pack (Figure 23) with the tongue on the charger.

3. Slide the battery pack into the charger until it is fully seated (Figure 23).
4. To remove the battery pack, slide the battery backward out of the charger.
5. Refer to the following table to interpret the LED indicator light on the battery charger.

Indicator light	Indicates
Off	No battery pack inserted
Green blinking	Battery pack is charging
Green	Battery pack is charged
Red	Battery pack and/or battery charger is over or under the appropriate temperature range
Red blinking	Battery pack charging fault*

*Refer to Specifications (page 11) for more information.

Important: **The battery can be left on the charger for short periods between uses.**

If the battery will not be used for longer periods, remove the battery from the charger; refer to Storage (page 31).

Cleaning under the Machine

For optimal cutting performance, keep the underside of the machine housing clean. You may either wash or scrape the clippings away from under the machine housing.

⚠ WARNING

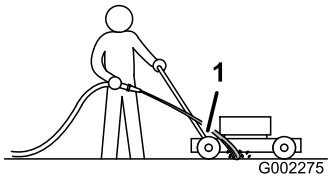
The machine may dislodge material from under the machine.

- **Wear eye protection.**
- **Stay in the operating position (behind the handle) when the motor is running.**
- **Do not allow bystanders in the area.**

Washing under the Machine

Service Interval: After each use—Clean under the machine housing.

1. Position the machine on a flat concrete or asphalt surface near a garden hose.
2. Start the machine.
3. Hold the running garden hose at handle level and direct the water to flow on the ground just in front of the right rear wheel (Figure 24).



g002275

Figure 24

1. Right rear wheel

Note: The blades will draw in water and wash out clippings. Let the water run until you no longer see clippings being washed out from under the machine.

4. Shut off the machine and wait for all moving parts to stop.
5. Turn off the water.
6. Start the machine and let it run for a few minutes to dry out the moisture on the machine and its components.

Scraping Method

If washing does not remove all debris from under the machine, scrape it clean.

1. Shut off the machine and wait for all moving parts to stop.
2. Remove the electric-start button and the battery from the machine.
3. Tip the machine onto its side.
4. Remove the dirt and grass clippings with a scraper. Avoid contacting any burrs or sharp edges.
5. Return the machine to the operating position.

Cleaning the Wheels

Service Interval: Every 40 hours

1. Remove the rear wheels and clean any debris from the wheel-gear area.

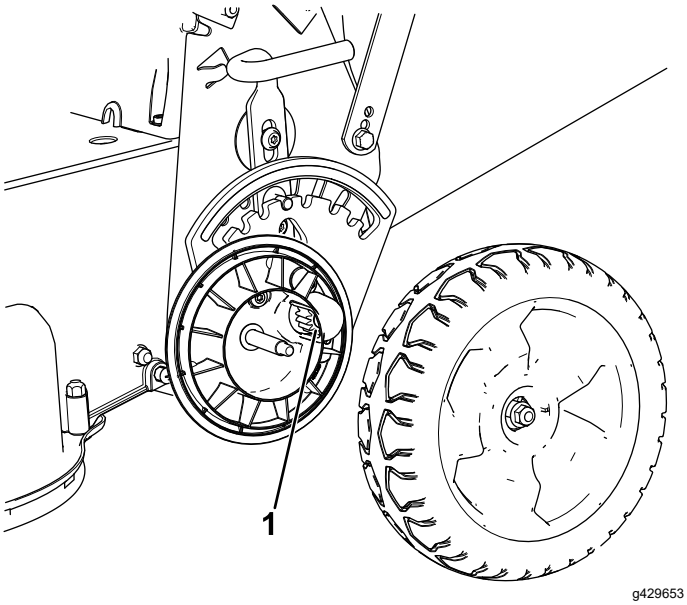


Figure 25

1. Gears

2. After cleaning, apply a small amount of anti-seize to the gears.

   Note: If you are operating the machine in extreme conditions, cleaning the wheels more frequently than recommended will result in increased gear life.

   Note: To prevent damage to the bearing seals, do not use a high-pressure water sprayer on the bearings.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 5 hours	• Service the blade-drive system.
Before each use or daily	• Check the blades and service them, if necessary. • Inspect the blades. • Check the parking-brake function.
After each use	• Clean under the machine housing.
Every 40 hours	• Clean the wheels and gears.
Every 50 hours	• Check the condition of the belts. • Remove debris from under the belt cover. • Service the blade-drive system.
Every 250 hours	• Change the transmission belt.

Lubricating the Machine

You do not need to lubricate the machine; all the bearings have been lubricated at the factory for the life of the machine.

Adjusting the Self-Propel Drive

Whenever you install a new self-propel cable or if the self-propel drive is out of adjustment, adjust the self-propel drive.

1. Turn the adjustment nut counterclockwise to loosen the cable adjustment (Figure 26).

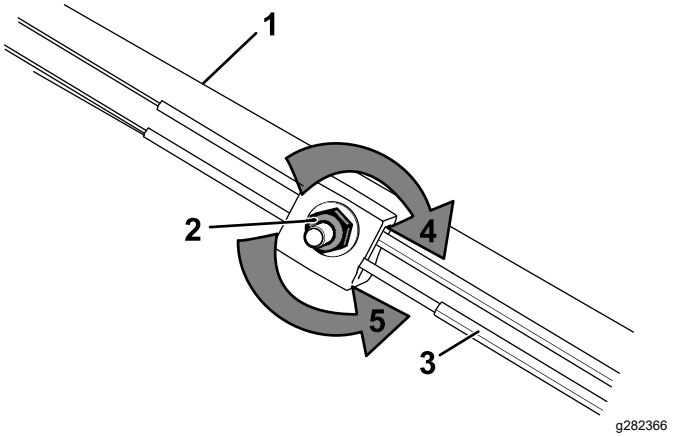


Figure 26

1. Handle (left side)
2. Adjustment nut
3. Self-propel-drive cable
4. Turn the nut clockwise to tighten the adjustment.
5. Turn the nut counterclockwise to loosen the adjustment.

2. Adjust the tension on the cable (Figure 26) by pulling it back or pushing it forward and holding that position.

   Note: Push the cable toward the motor to increase the traction; pull the cable away from the motor to decrease the traction.

3. Turn the adjustment nut clockwise to tighten the cable adjustment.

   Note: Tighten the nut firmly with a socket or wrench.

Checking the Condition of the Belts

Service Interval: Every 50 hours

1. Remove the belt cover (Figure 6) by removing the 4 bolts that hold it to the machine housing.
2. Check the belts for any cracks, frayed edges, burn marks, or any other damage.
3. Replace all damaged belts.
4. If you replace the blade-drive belt, you must adjust it. Refer to Servicing the Blade-Drive System (page 24).
5. Install the belt cover with the 4 bolts that you removed in step 1.

Servicing the Blade-Drive System

Service Interval: After the first 5 hours

Every 50 hours—Remove debris from under the belt cover.

Every 50 hours—Service the blade-drive system.

1. Loosen the 2 quarter-turn fasteners on the belt-cover-access panel and remove the panel (Figure 27).

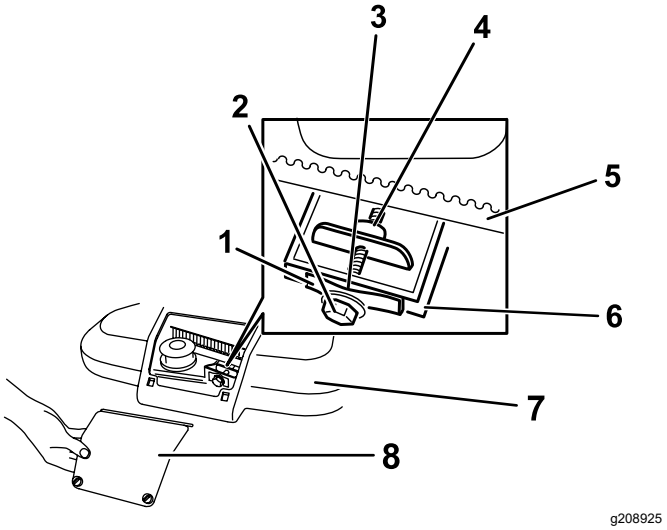


Figure 27

1. Belt-tension spring
2. Adjusting bolt
3. Gap
4. Adjusting nut
5. Blade-drive belt
6. Wall
7. Belt cover
8. Belt-cover-access panel

2. Brush or blow out debris from the inside of the belt cover and around all the parts.
3. Hold a feeler gauge set between 0.13 and 0.76 mm (0.005 and 0.03 inches) against the wall and slide it down behind the belt tension spring; refer to Figure 28.

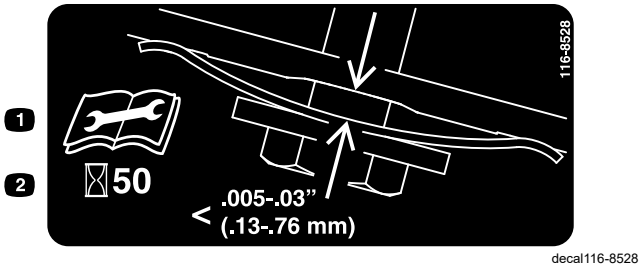


Figure 28

1. Read the *Operator's Manual* before performing any maintenance.
2. Check belt tension every 50 hours.

Note: If there is a visible gap between the gauge and the spring, tighten the adjusting bolt and the nut until the feeler gauge barely slides freely in and out of the gap (Figure 27).

Important: **Do not overtighten the adjusting bolt. This could damage the blade-drive belt.**

4. Install the belt-cover-access panel.

Servicing the Blades

Service Interval: Before each use or daily

Important: You will need a torque wrench to install the blades properly. **If you do not have a torque wrench or are uncomfortable performing this procedure, contact an authorized Toro distributor.**

Examine the blades for sharpness and any wear or damage whenever you run out of fuel; refer to Inspecting the Blades (page 25). If the blade edge is dull or nicked, have it sharpened or replace it. If the blades are worn, bent, damaged or cracked, replace them immediately with genuine Toro replacement blades.

⚠ DANGER

A worn or damaged blade can break, and a piece of the blade could be thrown toward you or bystanders, resulting in serious personal injury or death.

- **Inspect the blades periodically for wear or damage.**
- **Replace worn or damaged blades.**

Note: Maintain sharp blades throughout the cutting season, because sharp blades cut cleanly without tearing or shredding the grass blades. Tearing and shredding turns grass brown at the edges, which slows growth and increases the chance of disease.

Preparing to Service the Cutting Blades

Tip the machine onto its side, with the left side of the machine up in the air, until the upper handle rests on the ground.

⚠ WARNING

When servicing the blade, the blade can still move even though the power source is off. The blade is sharp; contacting the blade can result in serious personal injury.

- **Keep your hands and feet away from a moving blade.**
- **Wear gloves when servicing the blade.**

Inspecting the Blades

Service Interval: Before each use or daily

1. Inspect the cutting edges (Figure 29). If the edges are not sharp or have nicks, remove the blades and have them sharpened or replace them.

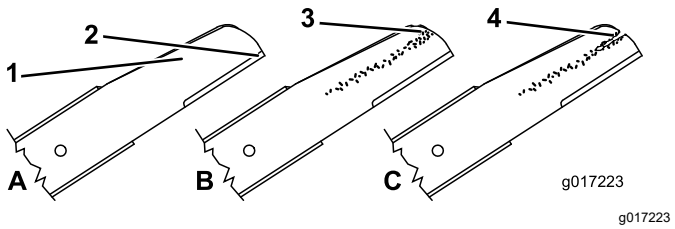


Figure 29

1. Curved area
2. Cutting edge
3. Wear/slot forming
4. Crack

2. Inspect the blades themselves, especially the curved area (Figure 29). If you notice any damage, wear, or a slot forming in this area, immediately replace them with new blades.

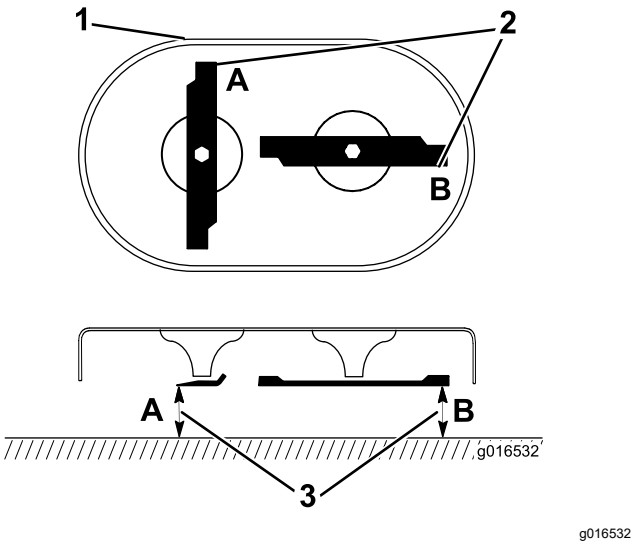
⚠ WARNING

If you allow a blade to wear, a slot will form between the sail and flat part of the blade. Eventually a piece of the blade may break off and be thrown from under the housing, possibly resulting in serious injury to you or bystanders.

- **Inspect the blade periodically for wear or damage.**
- **Never try to straighten a blade that is bent or weld a broken or cracked blade.**
- **Replace a worn or damaged blade.**

Checking for Bent Blades

1. Rotate the blades until they are positioned as shown in Figure 30.



g016532

Figure 30

1. Front of cutting deck
2. Measure at locations A and B
3. Measure from the cutting edge to a smooth, level surface

2. Measure from a level surface to the cutting edges at locations **A** and **B**, (Figure 30), and record both dimensions.
3. Rotate the blades so that their opposite ends are at locations **A** and **B**.
4. Repeat the measurements in step 2 and record them.

   Note: If the difference between dimensions **A** and **B** obtained in steps 2 and 4 exceeds 1/8 inch, replace the blades; refer to Removing the Blades (page 26).

⚠ WARNING

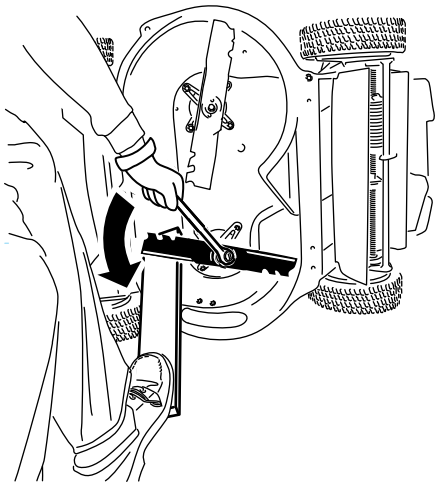
A blade that is bent or damaged could break apart and could seriously injure or kill you or bystanders.

- **Always replace a bent or damaged blade with a new blade.**
- **Never file or create sharp notches in the edges or surfaces of a blade.**

Removing the Blades

Replace the blades when they strike a solid object, are out of balance, bent, or worn. Use only genuine Toro replacement blades.

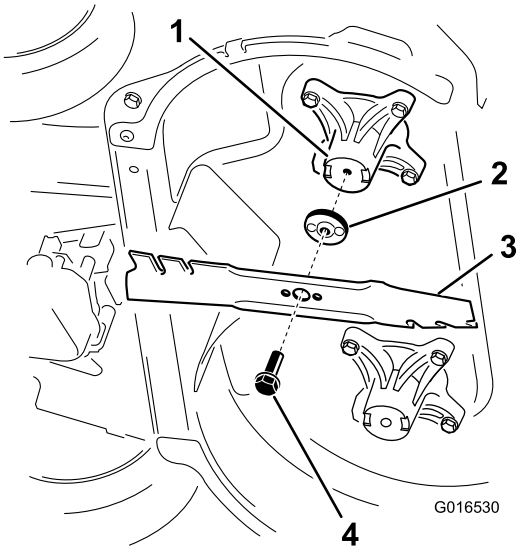
1. Use a block of wood to hold each blade steady and turn the blade bolt counterclockwise as shown in Figure 31.



g232790

Figure 31

2. Remove each blade as shown in Figure 32.



g016530

Figure 32

1. Spindle (2)
2. Blade driver (2)
3. Blade (2)
4. Blade bolt (2)

3. Inspect the pins on the blade drivers for wear and damage.

Installing the Blades

⚠ WARNING

Incorrectly installing the blades could damage the machine or cause an injury to you or bystanders.

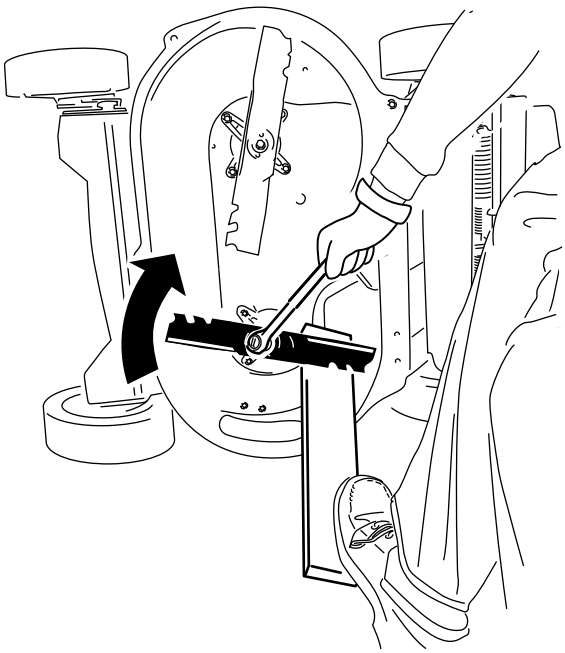
Install the blades according to the instructions.

1. Install the first blade so that it is horizontal, along with all mounting hardware as shown in Figure 32.

   Note: Tighten the bolt with your fingers.

   Important: **Position the curved ends of the blades to point toward the machine housing. Be sure to nest the raised areas on each blade driver with the recesses in the head of its corresponding spindle, and the pins on the other side of each blade driver with the holes in its corresponding blade.**

2. Steady each blade with a board and turn the blade bolt clockwise with a torque wrench as shown in Figure 33; torque each blade bolt to 82 N·m (60 ft-lb).

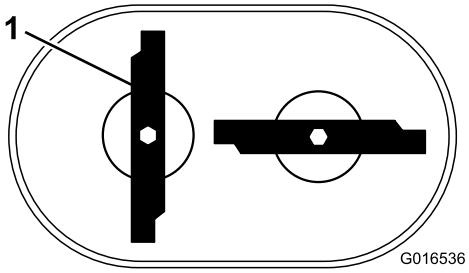


g232801

Figure 33

3. Rotate the installed blade 1/4 turn until it is vertical, and install the other blade in the same manner as the first (refer to step 1).

   Note: The blades should be perpendicular, forming an inverted “T” as shown in Figure 34.



g016536

Figure 34

1. Blade (2)

4. Tighten the second blade; refer to step 2.
5. Rotate the blades by hand a full 360° turn to ensure that they do not touch.

   Note: If the blades touch each other, they are not mounted correctly. Repeat steps 1 through 3 until the blades no longer touch each other.

Changing the Blade-Drive Belt

Change the blade-drive belt as needed.

1. Remove the belt cover (Figure 6) by removing the 4 bolts that hold it to the machine housing.

   Note: Save the bolts for installing the belt cover to the machine housing.

2. Remove any debris from under the belt cover.
3. Loosen the adjusting bolt (Figure 28).
4. Remove the blade-drive belt.
5. Align the holes in the right and left sprockets with the holes in the housing as shown in Figure 35.

   Note: Hold the sprockets in place with a rod or a screwdriver.

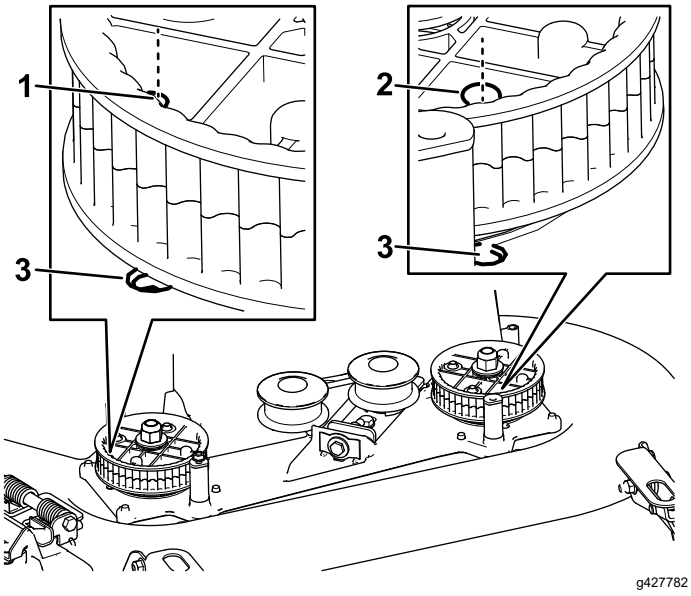


Figure 35

1. Right sprocket hole
2. Left sprocket hole
3. Hole in the housing

6. When you have locked the sprockets in place, install the blade-drive belt.

   Note: Ensure that the teeth are engaged in the sprockets.

7. Tighten the belt tension to the recommended settings; refer to Servicing the Blade-Drive System (page 24).
8. Remove the rod or screwdriver from the sprockets.
9. Ensure that the blades under the housing are properly aligned; refer to Inspecting the Blades (page 25).
10. Install the belt cover using the 4 bolts that you removed in step 1.
11. Check the operation of the control bar.

Changing the Transmission Belt

Service Interval: Every 250 hours

Removing the Transmission Belt

Note: Retain all hardware removed in this procedure, except the old transmission belt, for installation in Installing the Transmission Belt (page 29).

1. Remove the 4 bolts that hold the belt cover to the machine housing.
2. Remove the belt cover.
3. Remove any debris from under the belt cover.
4. If the grass bag is on the machine, remove it. Refer to Removing the Grass Bag (page 18).
5. Raise and hold up the rear deflector.
6. Remove the rear-viewing window, located under the rear-discharge deflector, by removing the bolt holding it in place (Figure 36).

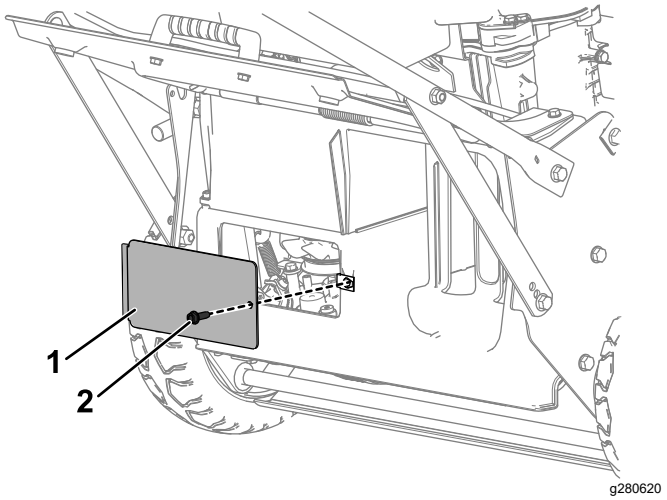


Figure 36

1. Rear-viewing window
2. Rear-viewing-window bolt

7. Remove the trailing shield by removing the 2 bolts holding it in place (Figure 37).

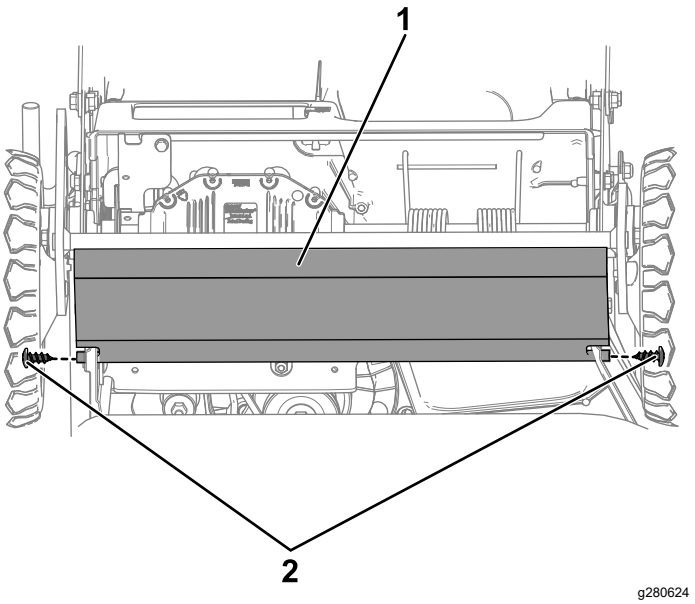


Figure 37

1. Trailing shield
2. Trailing-shield bolts

8. Rotate the idler pulley over the access hole on the transmission by using a socket wrench to turn the idler-pulley nut clockwise.

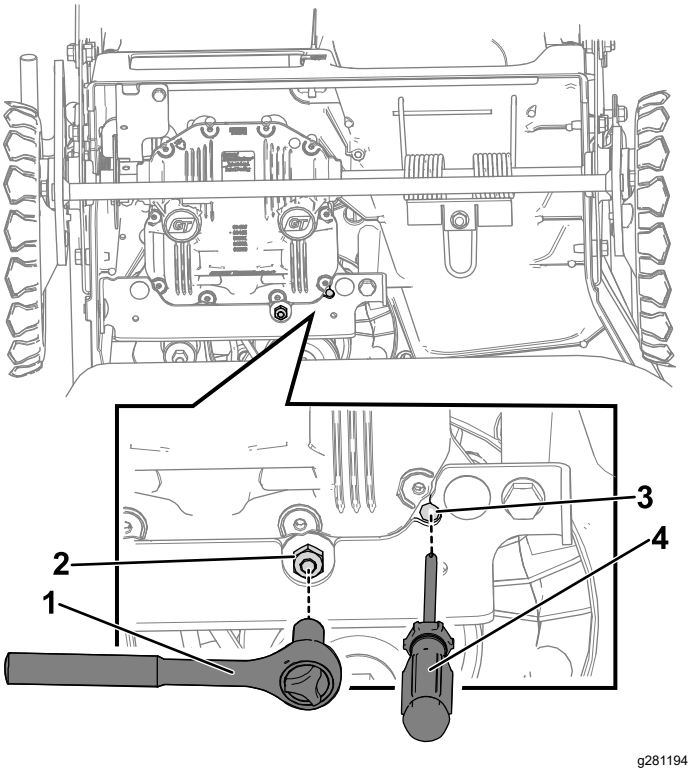


Figure 38

1. Socket wrench
2. Idler-pulley nut
3. Access hole
4. Screwdriver

9. While you are holding the idler pulley over the access hole on the transmission, insert a screwdriver through the access hole to catch a rib on the idler pulley.

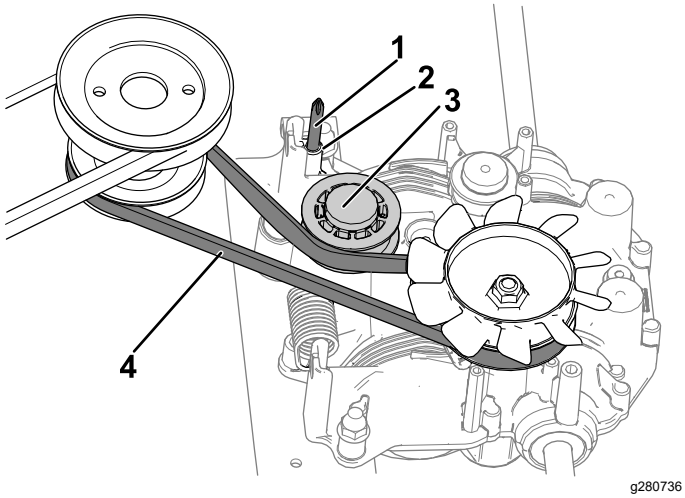


Figure 39

1. Screwdriver through access hole
2. Access hole
3. Idler pulley
4. Transmission belt

10. Use the screwdriver to hold the idler pulley out of the way until you are done installing the new transmission belt.

11. From the front of the machine, remove the belt from the motor pulley and then remove from the transmission pulley.

Installing the Transmission Belt

1. While the idler pulley is pulled out of the way, install the new transmission belt placing the belt over the transmission pulley first and then over the motor pulley.
2. Remove the screwdriver from the access hole in the transmission to return the idler pulley to its tensioned position.
3. Use the rear-viewing window, located under the rear-discharge deflector, to ensure that the new transmission belt is positioned correctly.
4. Install the trailing shield using the 2 trailing-shield bolts removed in Step 7 of Removing the Transmission Belt (page 28).
5. Install the rear-viewing window, located under the rear-discharge deflector, using the corresponding bolt removed in 6 of Removing the Transmission Belt (page 28).

Adjusting the Parking-Brake Cable

Whenever you install a new parking-brake cable or if the parking brake is out of adjustment, adjust the parking-brake cable.

1. Disengage the parking brake; refer to Disengaging the Parking Brake (page 17).
2. Turn the adjustment nut counterclockwise to loosen the cable adjustment (Figure 40).

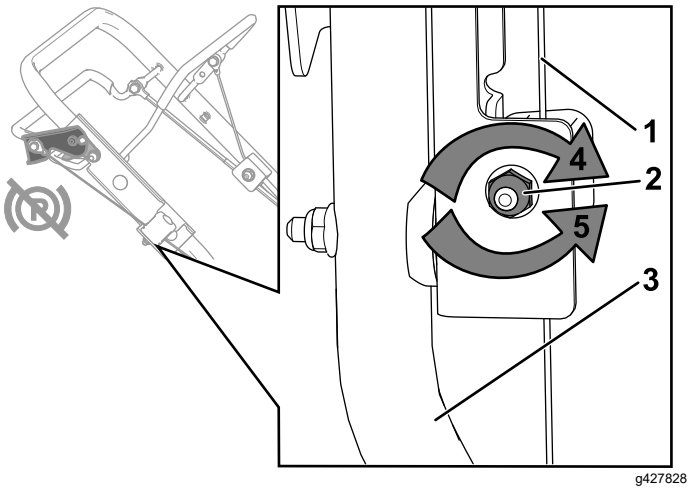


Figure 40

1. Parking-brake cable
2. Adjustment nut
3. Handle (right side)
4. Turn the nut clockwise to tighten the adjustment.
5. Turn the nut counterclockwise to loosen the adjustment.

3. Adjust the tension on the cable (Figure 40) by pulling or pushing the cable jacket and holding that position.

   Note: Pull the cable jacket toward the motor to increase tension (also increases brake clamp load); push the cable jacket away from the motor to decrease tension (also decreases brake clamp load).

   Important: **Adjust the cable jacket in small increments to avoid over tensioning. Over tensioning may cause the machine to not roll free even when the parking brake is disengaged. Correct tensioning allows the machine to roll free when the parking brake is disengaged and to hold position when the parking brake is engaged.**

4. Turn the adjustment nut clockwise to tighten the cable adjustment.

   Note: Tighten the nut firmly with a socket or wrench.

Preparing the Battery Pack for Recycling

Important: **Upon removal, cover the terminals of the battery pack with heavy-duty adhesive tape. Do not attempt to destroy or disassemble the battery pack or remove any of its components.**

RECYCLE RBRC Li-ion 1.800.822.8837	Lithium-ion battery packs labeled with the Call2Recycle seal can be recycled at any participating retailer or battery recycling facility in the Call2Recycle program (US and Canada only). To locate a participating retailer or facility closest to you, please call 1-800-822-8837 or visit www.call2recycle.org. If you cannot locate a participating retailer or facility nearby, or if your rechargeable battery is not labeled with the Call2Recycle seal, please contact your local municipality for more information on how to responsibly recycle the battery. If you are located outside of the US and Canada, please contact your authorized Toro distributor.

Storage

Important: **Store the machine, battery pack, and charger only in temperatures that are within the appropriate range; refer to Specifications (page 11).**

Important: **If you are storing the battery pack for the off-season, charge it until 2 or 3 LED indicators turn green on the battery. Do not store a fully charged or fully depleted battery. When you are ready to use the machine again, charge the battery pack until the left indicator light turns green on the charger or all 4 LED indicators turn green on the battery.**

- Disconnect the product from the power supply (i.e., remove the battery pack and electric-start button) and check for damage after use.
- Do not store the machine or charger with the battery pack installed.
- Clean all foreign material from the product.
- When not in use, store the machine, electric-start button, battery pack, and battery charger out of the reach of children.
- Keep the machine, battery pack, and battery charger away from corrosive agents, such as garden chemicals and de-icing salts.
- To reduce the risk of serious personal injury, do not store the battery pack outside or in vehicles.
- Store the machine, battery pack, and battery charger in an enclosed clean, dry area.

Troubleshooting

Perform only the steps described in these instructions. All further inspection, maintenance, and repair work must be performed by an authorized service center or a similarly qualified specialist if you cannot solve the problem yourself.

Problem	Possible Cause	Corrective Action
The machine does not start.	1. The battery is not fully installed in the machine. 2. The battery pack is not charged. 3. The battery pack is damaged. 4. There is another electrical problem with the machine.	1. Remove and then replace the battery into the machine, making sure that it is fully installed and latched. 2. Remove the battery pack from the machine and charge it. 3. Replace the battery pack. 4. Contact your authorized Toro distributor.
The machine does not run or does not run continuously.	1. There is moisture on the leads of the battery pack. 2. The battery is not fully installed into the tool.	1. Allow the battery pack to dry or wipe it dry. 2. Remove and then replace the battery into the tool making sure that it is fully installed and latched.
The machine does not reach full power.	1. The battery pack charge capacity is too low. 2. The battery air vents are blocked.	1. Remove the battery pack from the machine and fully charge the battery pack. 2. Clean the air vents.
The battery pack loses charge quickly.	1. The battery pack is over or under the appropriate temperature range. 2. The machine is overloaded	1. Move the battery pack to a place where it is dry and the temperature is between 5°C (41°F) and 40°C (104°F). 2. Cut the grass at a higher height of cut or walk at a slower pace while mowing.
The battery charger is not working.	1. The battery charger is over or under the appropriate temperature range. 2. The outlet that the battery charger is plugged into does not have power.	1. Unplug the battery charger and move it to a place where it is dry and the temperature is between 5°C (41°F) and 40°C (104°F). 2. Contact your licensed electrician to repair the outlet.
The machine does not self-propel.	1. The self-propel drive cable is out of adjustment or is damaged.	1. Adjust the self-propel drive cable. Replace the cable if necessary.
The LED indicator light on the battery charger is red.	1. The battery charger and/or battery pack is over or under the appropriate temperature range.	1. Unplug the battery charger and move the battery charger and battery pack to a place where it is dry and the temperature is between 5°C (41°F) and 40°C (104°F).

Problem	Possible Cause	Corrective Action
The LED indicator light on the battery charger is blinking red.	1. There is an error in the communication between the battery pack and the charger.	1. Remove the battery pack from the battery charger, unplug the battery charger from the outlet, and wait 10 seconds. Plug the battery charger into the outlet again and place the battery pack on the battery charger. If the LED indicator light on the battery charger is still blinking red, repeat this procedure again. If the LED indicator light on the battery charger is still blinking red after 2 attempts, properly dispose of the battery pack at a battery recycling facility.
	2. The battery pack is weak.	2. Contact your authorized Toro distributor if the battery is in warranty, or properly dispose of the battery pack at a battery recycling facility.
The machine is producing a beeping sound.	1. The battery pack is not charged.	1. Remove the battery pack from the machine and charge it.
	2. The machine is in an unsafe position for operation.	2. Ensure that the machine is not at an extreme angle while operating.
	3. The machine is overloaded.	3. Cut the grass at a higher height of cut or walk at a slower pace while mowing.
	4. There is another electrical problem with the machine.	4. Attempt the other troubleshooting actions, if the alarm still sounds, contact your authorized Toro distributor.
The quality of cut is decreased or unsatisfactory.	1. The blade is dull.	1. Have the blade sharpened or replaced.
	2. The cutting deck has debris buildup.	2. Clean under the machine.
The bagging is decreased or unsatisfactory.	1. The machine is overloaded.	1. Cut the grass at a higher height of cut.
	2. The bag has debris buildup.	2. Clean the inside of the bag of any dust or debris.
The machine is cutting unevenly.	1. The blade is dull.	1. Have the blade sharpened or replaced.
	2. The cutting deck is damaged.	2. Contact your authorized Toro distributor.
The machine is vibrating.	1. The blade is bent or damaged.	1. Inspect the blade and replace if necessary.

Notes:

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 do we include this warning?

Our company 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. We provide 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 our products may be negligible or well within the "no significant risk" range, out of an abundance of caution, we have elected to provide the Prop 65 warnings. Moreover, if we do 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.



Count on it.