

that the High Altitude Kit has been installed so that the engine meets CARB/EPA emission regulations. The High Altitude Kit increases engine performance while preventing spark-plug fouling, hard starting, and increased emissions. Once you have installed the kit, attach the high-altitude label next to the serial decal on the machine. Contact any Authorized Toro Service Dealer to obtain the proper High Altitude Kit and high-altitude label for your machine. To locate a dealer convenient to you, access our website at www.Toro.com or contact our Toro Customer Care Department at the number(s) listed in your Emission Control Warranty Statement.

Remove the kit from the engine and restore the engine to its original factory configuration when running the engine under 1500 m (5,000 ft). Do not operate an engine that has been converted for high-altitude use at lower altitudes; otherwise, you could overheat and damage the engine.

If you are unsure whether or not your machine has been converted for high-altitude use, look for the following label:

127-9363

NOTE: THE ENGINE ON THIS PRODUCT HAS BEEN MODIFIED FOR USE AT ABOVE 5,000 FEET ELEVATION. IF USING BELOW 5,000 FEET, IT MUST BE REVISED BACK TO ORIGINAL SPECIFICATIONS.

decal127-9363

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Safety

This machine has been designed in accordance with ANSI B71.1-2012.

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, understand, and follow the instructions and warnings in this *Operator's Manual* and on the machine and attachments before starting the engine.
- Do not put your hands or feet near moving parts of or under the machine. Keep clear of any discharge opening.
- Do not operate the machine without all guards and other safety protective devices in place and working on the machine.
- Keep bystanders and children a safe distance away from the machine. Do not allow children to operate the machine. Allow only people who are responsible, trained, familiar with the instructions, and physically capable to operate the machine.
- Stop the machine, shut off the engine, remove the electric-start button (if equipped), and wait for all moving parts to stop before servicing, fueling, or unclogging the machine.

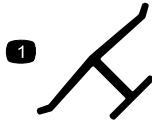
Improperly using or maintaining this machine can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety-alert symbol, which means Caution, Warning, or Danger—personal safety instruction. Failure to comply with these instructions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



decaloemmark

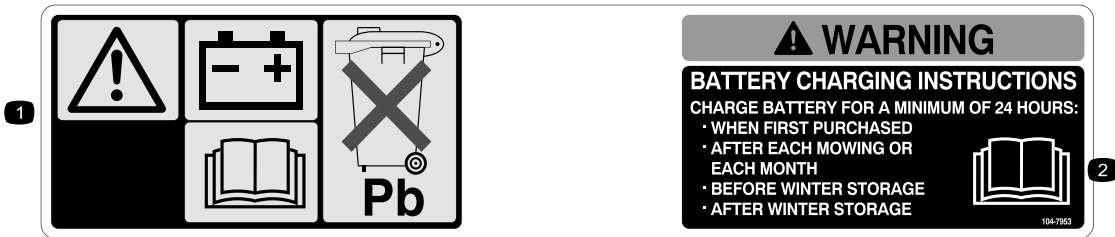
Manufacturer's Mark

1. This mark indicates that the blade is identified as a part from the original machine manufacturer.



decal94-8072

94-8072



decal104-7953

104-7953

Electric-Start Model Only

1. Warning—read the *Operator's Manual* for information on charging the battery; contains lead; do not discard.
2. Read the *Operator's Manual*.

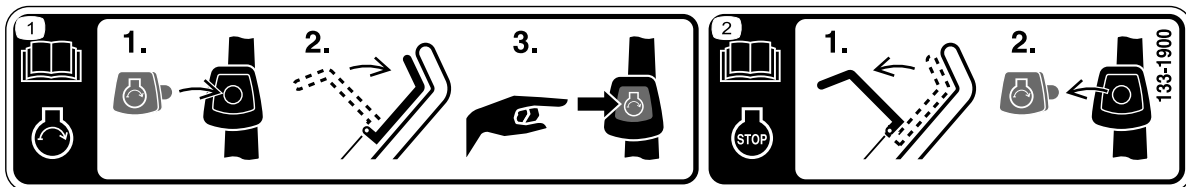
CALIFORNIA SPARK ARRESTER WARNING

Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrester may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

117-2718

decal117-2718

117-2718

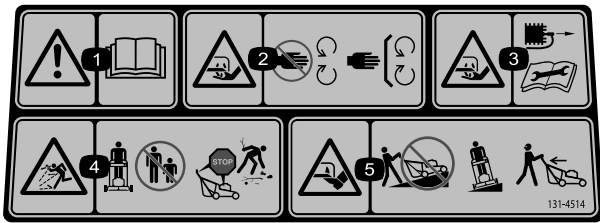


decal133-1900

133-1900

Electric-Start Model Only

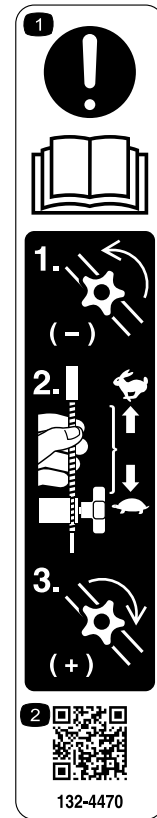
1. Read the *Operator's Manual* for more information on starting the engine—1) Insert the electric-start button into the ignition; 2) Engage the blade-control bar; 3) Push the electric-start button to start the engine.
2. Read the *Operator's Manual* for more information on stopping the engine—1) Release the blade-control bar; 2) Remove the electric-start button from the ignition.



decal131-4514b

131-4514

1. Warning—read the *Operator's Manual*.
2. Cutting/dismemberment hazard of hand, mower blade—stay away from moving parts; keep all guards and shields in place.
3. Cutting/dismemberment hazard of hand, mower blade—disconnect the spark-plug wire and read the instructions before servicing or performing maintenance.
4. Thrown object hazard—keep bystanders a safe distance away from the machine; shut off the engine before leaving the operating position; pick up any debris before mowing.
5. Cutting/dismemberment hazard of foot, mower blade—do not operate up and down slopes; operate side to side on slopes; look behind you when backing up.



132-4470

decal132-4470

132-4470

Traction Adjustment

1. Attention; read the *Operator's Manual*—1) Loosen the knob by turning it counterclockwise; 2) Pull the cable(s) away from the engine to decrease the traction, or push the cable(s) toward the engine to increase the traction; 3) Tighten the knob by turning it clockwise.
2. Scan the QR code for more information on traction adjustment.

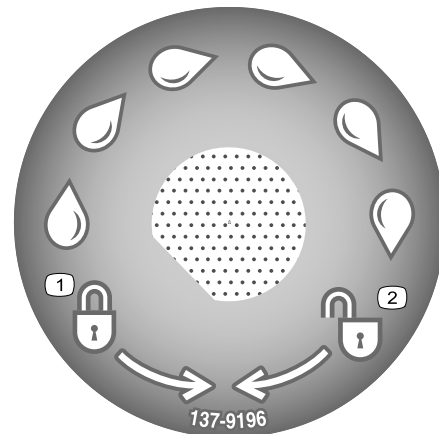


125-5026

decal125-5026

125-5026

1. Recycling mode
2. Bagging mode



137-9196

decal137-9196

137-9196

1. Lock
2. Unlock

Setup

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

Important: To prevent accidental starting, do not insert the electric-start button into the electric-start ignition until you are ready to start the engine (electric-start model only).

1

Assembling and Unfolding the Handle

No Parts Required

Procedure

Note: Ensure that the cables are routed on the outside of the handle and are not pinched (D of [Figure 4](#)).

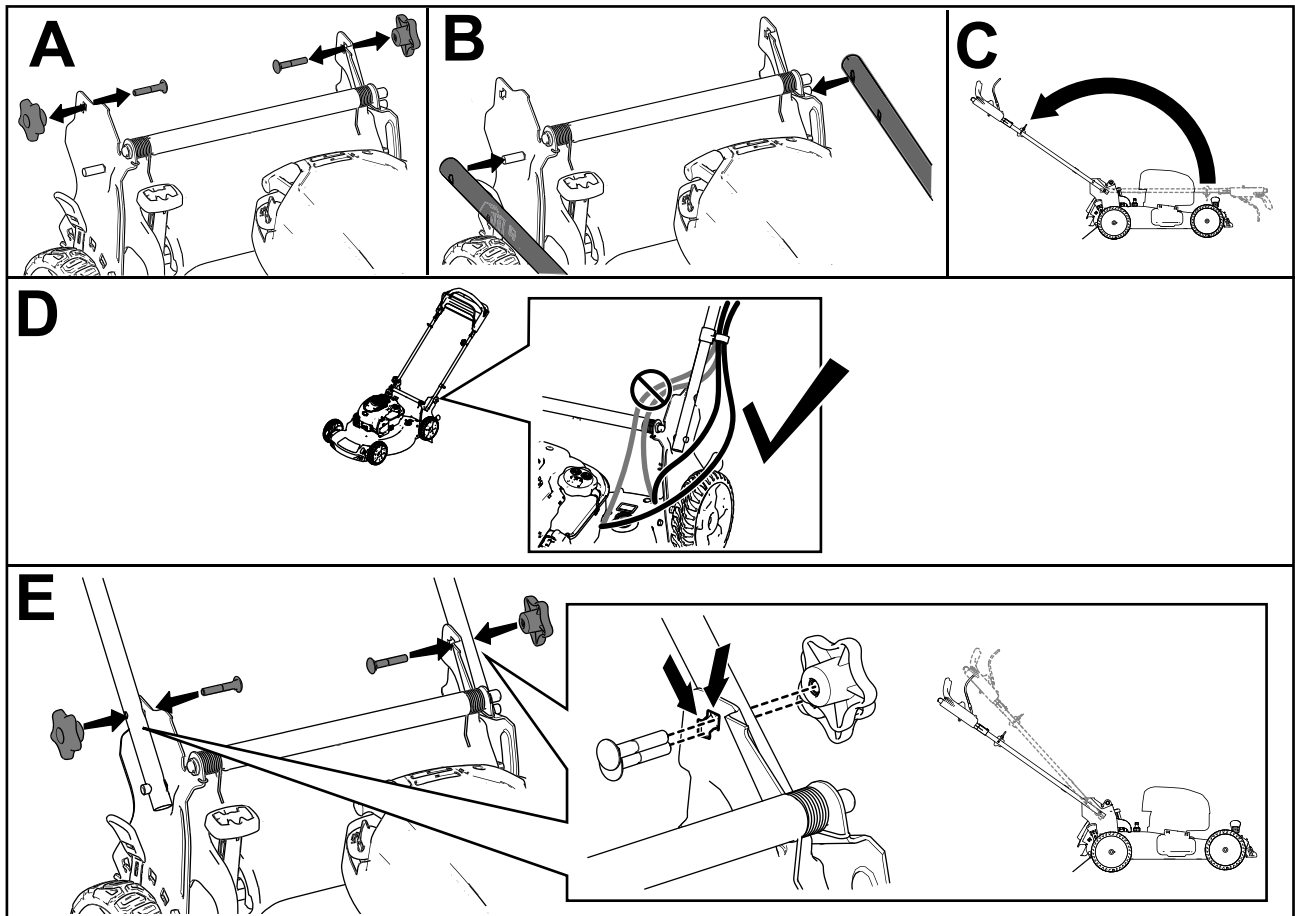


Figure 4

g236451

2

Installing the Recoil-Starter Rope in the Rope Guide

No Parts Required

Procedure

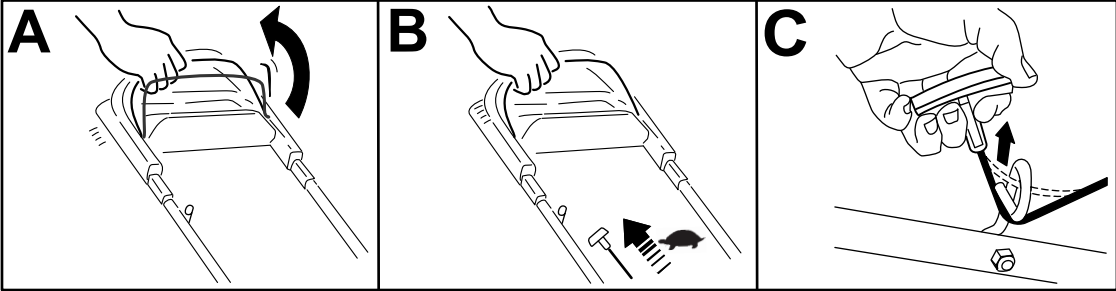


Figure 5

g230719

3

Filling the Engine with Oil

No Parts Required

Procedure

Important: Your machine does not come with oil in the engine, but it does come with a bottle of oil. Before starting the engine, fill the engine with oil.

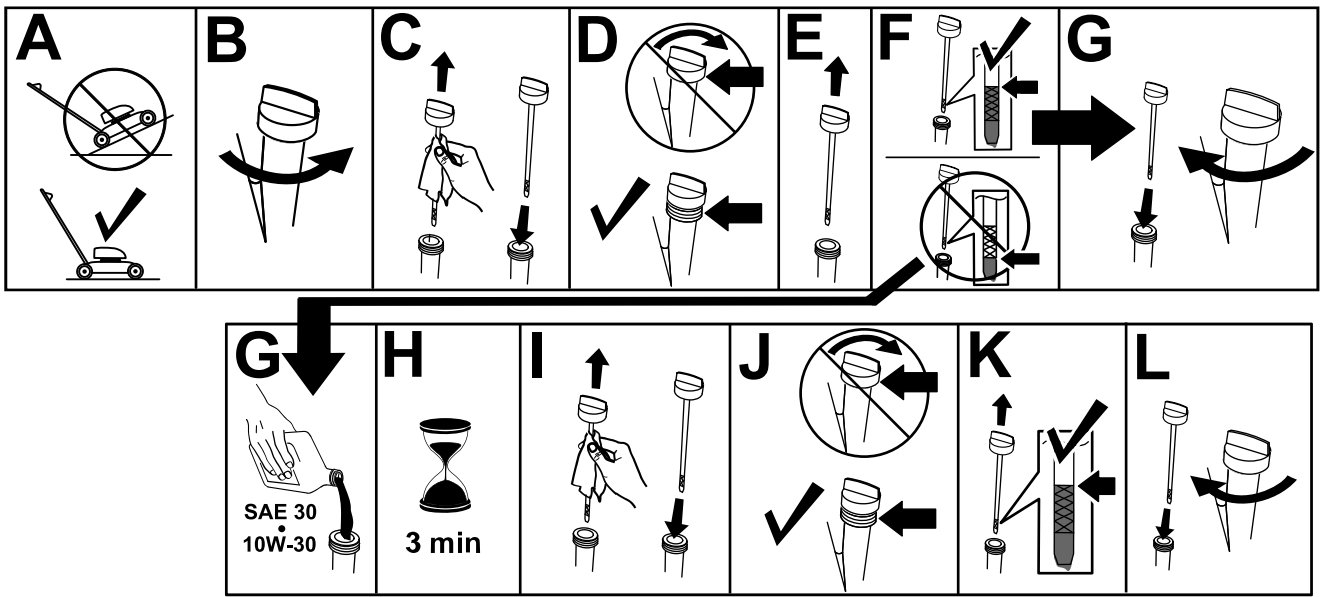


Figure 6

g235721

4

Assembling the Grass Bag

No Parts Required

Procedure

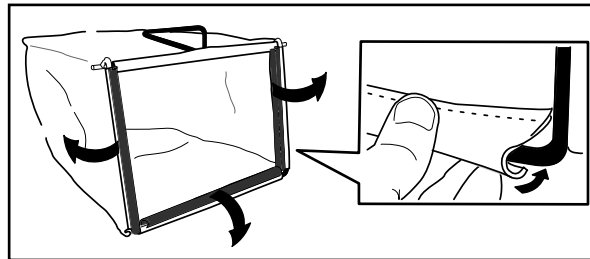


Figure 7

g230447

5

Charging the Battery

No Parts Required

Procedure

Electric-Start Model Only

Refer to [Charging the Battery](#) (page 22).

Product Overview

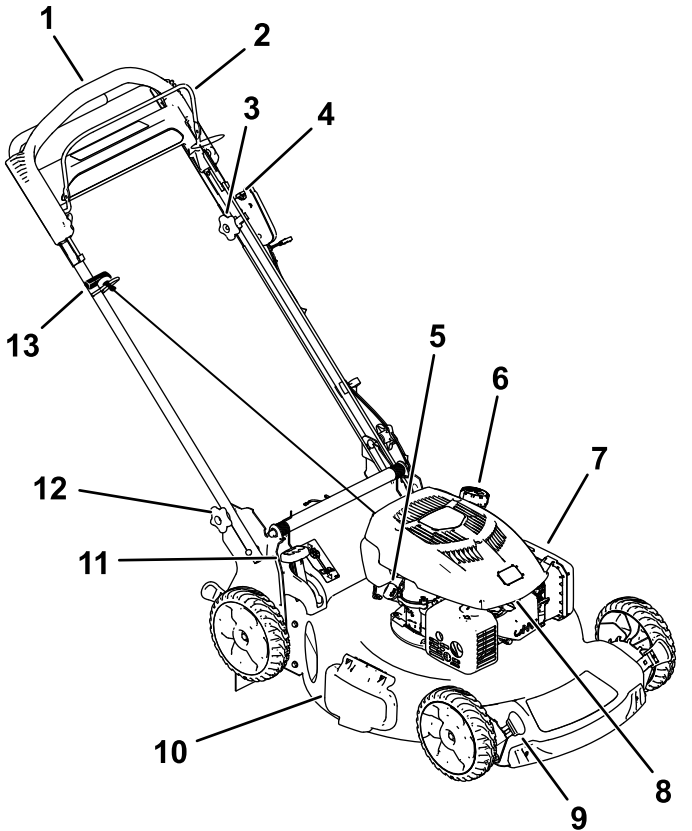
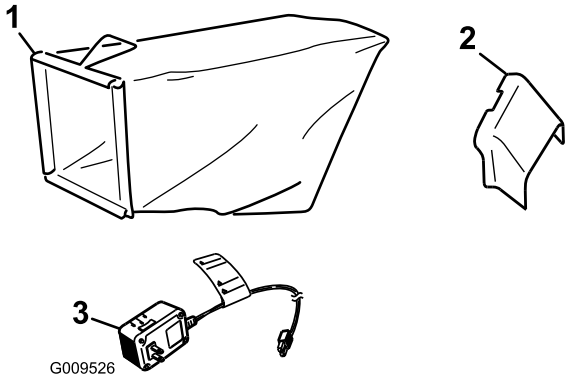


Figure 8

g194643

- 1. Handle
- 2. Blade-control bar
- 3. Adjustment knob for the self-propel drive
- 4. Electric-start button (electric-start model only)
- 5. Oil fill/dipstick
- 6. Fuel-tank cap
- 7. Air filter
- 8. Spark plug
- 9. Cutting-height lever (4)
- 10. Side-discharge deflector
- 11. Bag-on-demand lever
- 12. Handle knob (2)
- 13. Recoil-start handle



g009526

Figure 9

- 1. Grass bag
- 2. Side-discharge chute
- 3. Battery charger (electric-start model only)

Operation

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

Before Operation

Before Operation Safety

General Safety

- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- Check that all guards and safety devices, such as deflectors and/or grass catcher, are in place and working properly.
- Always inspect the machine to ensure that the blades, blade bolts, and cutting assembly are not worn or damaged.
- 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.
- Adjusting the cutting height may bring you into contact with the moving blade, causing serious injury.
 - Shut off the engine, remove the electric-start button (electric-start model only), and wait for all moving parts to stop.
 - Do not put your fingers under the housing when adjusting the cutting height.

Fuel Safety

- Fuel is extremely flammable and highly explosive. A fire or explosion from fuel can burn you and others and can damage property.
 - To prevent a static charge from igniting the fuel, place the container and/or machine directly on the ground before filling, not in a vehicle or on an object.
 - Fill the fuel tank outdoors, in an open area, when the engine is cold. Wipe up any fuel that spills.
 - Do not handle fuel when smoking or around an open flame or sparks.
 - Do not remove the fuel cap or add fuel to the tank while the engine is running or hot.
 - If you spill fuel, do not attempt to start the engine. Avoid creating a source of ignition until the fuel vapors have dissipated.

- Store fuel in an approved container and keep it out of the reach of children.
- 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 hands and face away from the nozzle and the fuel-tank opening.
 - Keep fuel away from your eyes and skin.

Filling the Fuel Tank

- For best results, use only clean, fresh, unleaded gasoline with an octane rating of 87 or higher ((R+M)/2 rating method).
- Oxygenated fuel with up to 10% ethanol or 15% MTBE by volume is acceptable.
- **Do not** use ethanol blends of gasoline, such as E15 or E85, with more than 10% ethanol by volume. Performance problems and/or engine damage may result, which may not be covered under warranty.
- **Do not** use gasoline containing methanol.
- **Do not** store fuel either in the fuel tank or in fuel containers over the winter unless fuel stabilizer has been added to the fuel.
- **Do not** add oil to gasoline.

Fill the fuel tank with fresh unleaded regular gasoline from a major name-brand service station (Figure 10).

Important: To reduce starting problems, add fuel stabilizer to the gasoline all season. Mix the stabilizer with gasoline less than 30 days old.

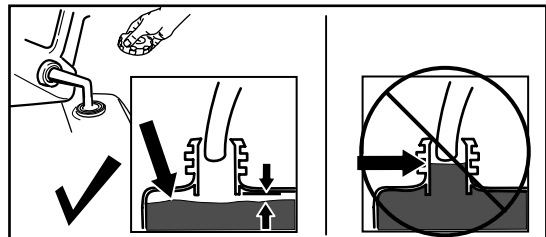


Figure 10

g230458

Checking the Engine-Oil Level

Service Interval: Before each use or daily

Important: If the oil level in the engine is too low or too high and you run the engine, you may damage the engine.

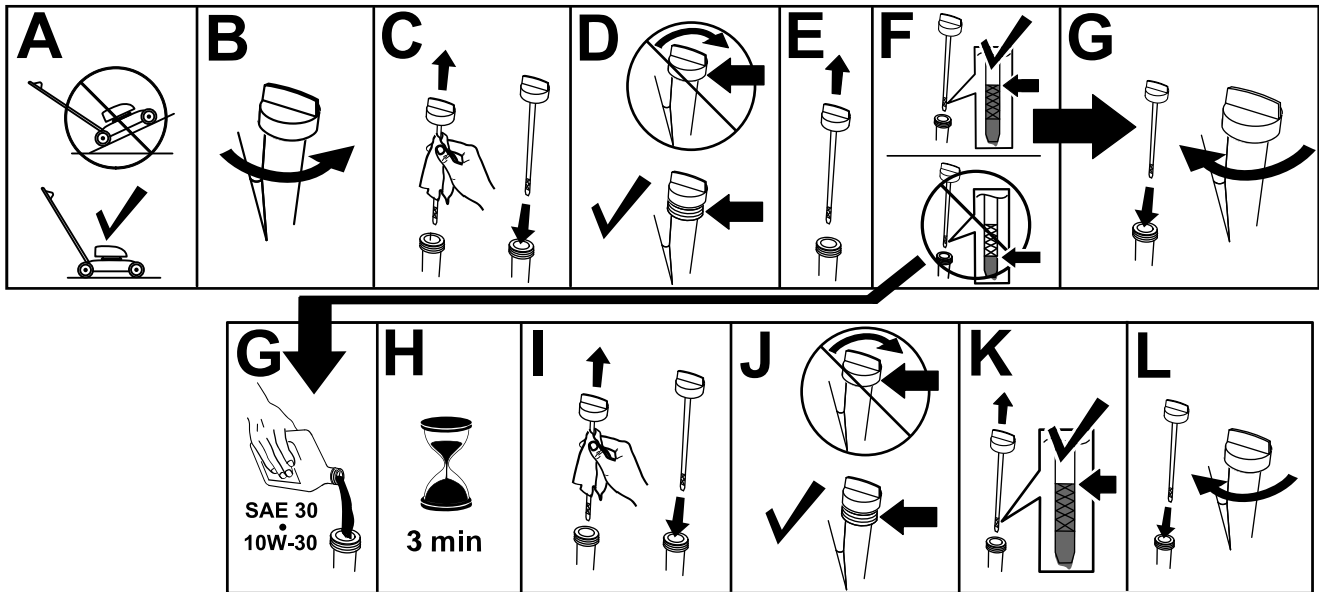


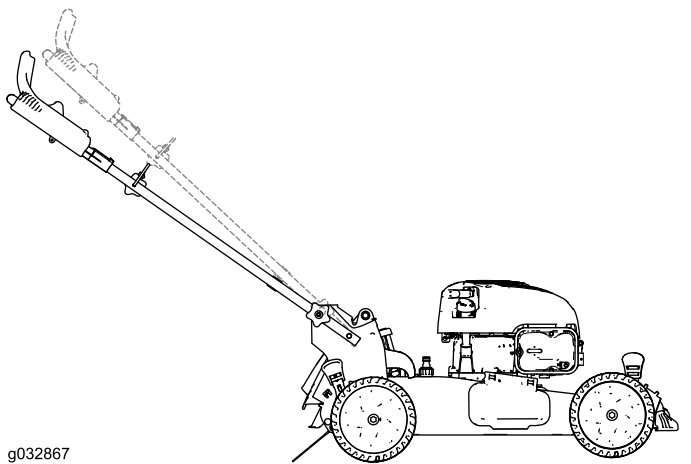
Figure 11

g235721

Adjusting the Handle Height

You can raise or lower the handle in 1 of 2 positions that is more comfortable for you (Figure 12).

3. Move the handle to the upper or lower height position.
4. Pull the knobs until the square edges of each carriage bolt fits into its related square hole.
5. Tighten the handle knobs as tight as you can.



g032867

g032867

Figure 12

1. Loosen both handle knobs until you can push the square edges of the carriage bolts out of the square holes in the handle brackets.
2. Push the knobs until they are loose.

Adjusting the Cutting Height

⚠ WARNING

Adjusting the cutting height may bring you into contact with the moving blade, causing serious injury.

- Shut off the engine and wait for all moving parts to stop.
- Do not put your fingers under the housing when adjusting the cutting height.

⚠ CAUTION

If the engine has been running, the muffler will be hot and can severely burn you.

Keep away from the hot muffler.

Adjust the cutting height as desired. Set all the wheels to the same height; refer to [Figure 13](#).

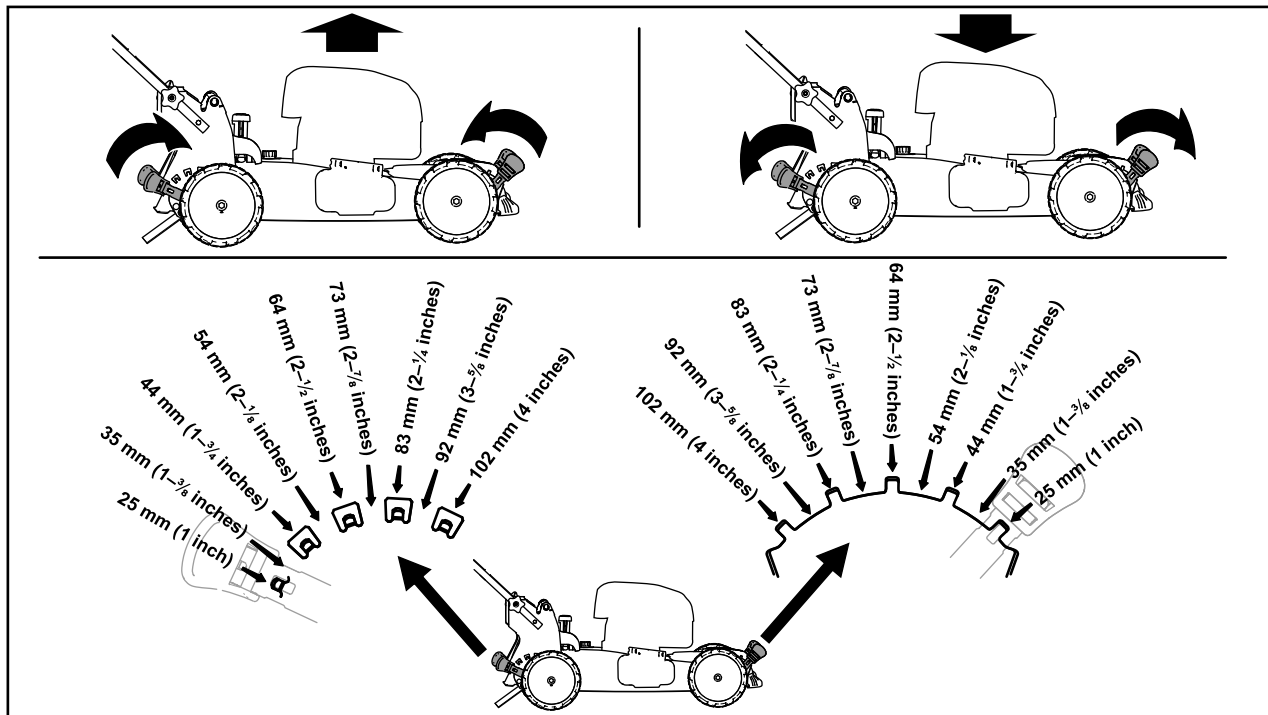


Figure 13

g223084

During Operation

During Operation Safety

General Safety

- 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.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- The blade is sharp; contacting the blade can result in serious personal injury. Shut off the engine, remove the electric-start button (electric-start model only), and wait for all moving parts to stop before leaving the operating position.
- When you release the blade-control bar, the engine should shut off and the blade should stop within 3 seconds. If not, stop using your machine immediately and contact an Authorized Service Dealer.
- Keep bystanders, especially small children, out of the operating area. Stop the machine if anyone enters the area.
- Always look down and behind you before moving the machine in reverse.
- Operate the machine only in good visibility and appropriate weather conditions. Do not operate the machine when there is the risk of lightning.
- Wet grass or leaves can cause serious injury if you slip and contact the blade. Avoid mowing in wet conditions.
- Use extreme care when approaching blind corners, shrubs, trees, or other objects that may block your view.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could cause the machine to overturn or cause you to lose your balance or footing.
- If the machine strikes an object or starts to vibrate, immediately shut off the engine, remove the electric-start button (if equipped), wait for all moving parts to stop, and disconnect the wire from the spark plug before examining the machine for damage. Make all necessary repairs before resuming operation.
- Before leaving the operating position, shut off the engine, remove the electric-start button (electric-start model only), and wait for all moving parts to stop.

- If the engine has been running the muffler will be hot and can severely burn you. Keep away from the hot muffler.
- Check the grass catcher components and the discharge chute frequently for any wear or deterioration and replace them with the manufacturer's recommended parts when necessary.
- Use accessories and attachments approved by The Toro® Company only.

Slope Safety

- Mow across the face of slopes; never up and down. Use extreme caution when changing direction on slopes.
- Do not mow on excessively steep slopes. Poor footing could cause a slip-and-fall accident.
- Mow with caution near drop-offs, ditches, or embankments.

Starting the Engine

You can start the engine using either the electric-start button (if equipped) or the recoil-start handle.

Starting the Engine Using the Electric-Start Button

For Electric-Start Models

1. Hold the blade-control bar against the handle (A of [Figure 14](#)).
Note: If the electric-start button has been removed, insert it in the electric starter (B of [Figure 14](#)).
2. Push the electric-start button until the engine starts (C of [Figure 14](#)).
Note: If the machine does not start after several attempts, contact an Authorized Service Dealer.

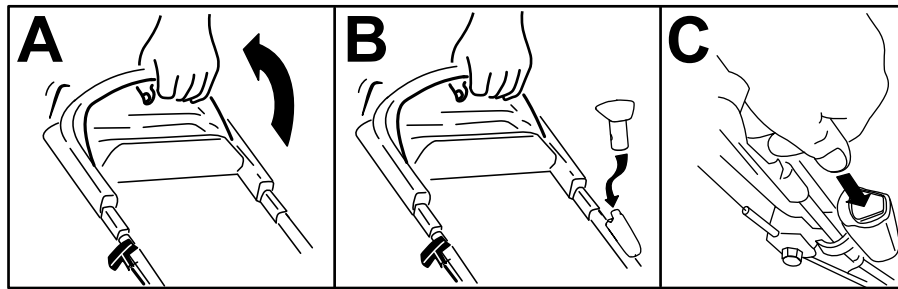


Figure 14

g239637

Starting the Engine Using the Recoil-Start Handle

1. Hold the blade-control bar against the handle ([Figure 15](#)).
 2. Pull the recoil-start handle ([Figure 15](#)).
Note: When you pull the recoil-start handle, pull it lightly until you feel resistance, then pull it sharply ([Figure 15](#)). Allow the rope to return to the handle slowly.
- Note:** If the machine does not start after several attempts, contact an Authorized Service Dealer.

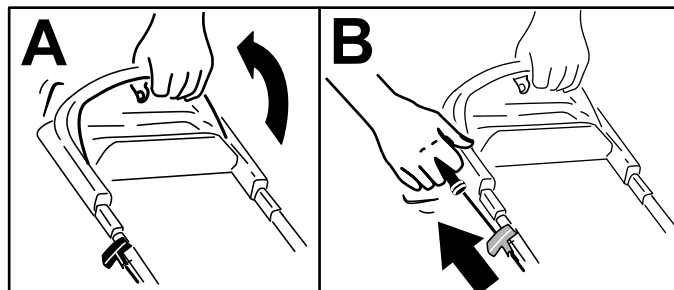


Figure 15

g233422

Using the Self-Propel Drive

To operate the self-propel drive, simply walk with your hands on the upper handle and your elbows at your sides, and the machine will automatically keep pace with you ([Figure 16](#)).

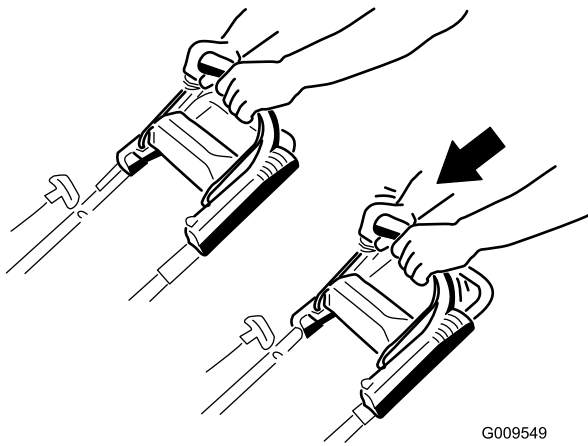


Figure 16

G009549

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Shutting Off the Engine

Service Interval: Before each use or daily

To shut off the engine, release the blade-control bar.

Note: Remove the electric-start button (if equipped) whenever you leave the machine.

Important: When you release the blade-control bar, the engine should shut off and the blade should stop within 3 seconds. If they do not, stop using your machine immediately and contact an Authorized Service Dealer.

Recycling the Clippings

Your machine comes from the factory ready to recycle the grass and leaf clippings back into the lawn.

If the grass bag is on the machine and the bag-on-demand lever is in the bagging position, move the lever to the recycling position; refer to [Operating the Bag-on-Demand Lever \(page 16\)](#). If the side-discharge chute is on the machine, remove it; refer to [Removing the Side-Discharge Chute \(page 17\)](#).

Note: If the machine does not freely roll backward after self-propelling, stop walking, hold your hands in place, and allow the machine to roll a couple of centimeters (inches) forward to disengage the wheel drive. You can also try reaching just under the upper handle to the metal handle and pushing the machine forward a couple of centimeters (inches). If the machine still does not roll backward easily, contact an Authorized Service Dealer.

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; refer to [Removing the Side-Discharge Chute \(page 17\)](#). If the bag-on-demand lever is in the recycling position, move it to the bagging position; refer to [Operating the Bag-on-Demand Lever \(page 16\)](#).

Installing the Grass Bag

1. Raise and hold up the rear deflector (A of [Figure 17](#)).
2. Install the grass bag, ensuring that the pins on the bag rest in the notches on the handle (B of [Figure 17](#)).
3. Lower the rear deflector.

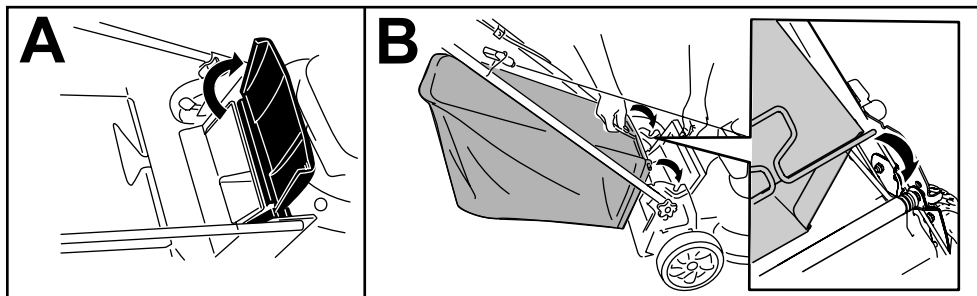


Figure 17

g233434

Removing the Grass Bag

To remove the bag, reverse the steps in [Installing the Grass Bag \(page 15\)](#).

Operating the Bag-on-Demand Lever

The bag-on-demand feature allows you to either collect or recycle grass and leaf clippings while the grass bag is attached to the machine.

- **To bag the grass and leaf clippings**, press the button on the bag-on-demand lever and move the lever forward until the button on the lever pops up (Figure 18).

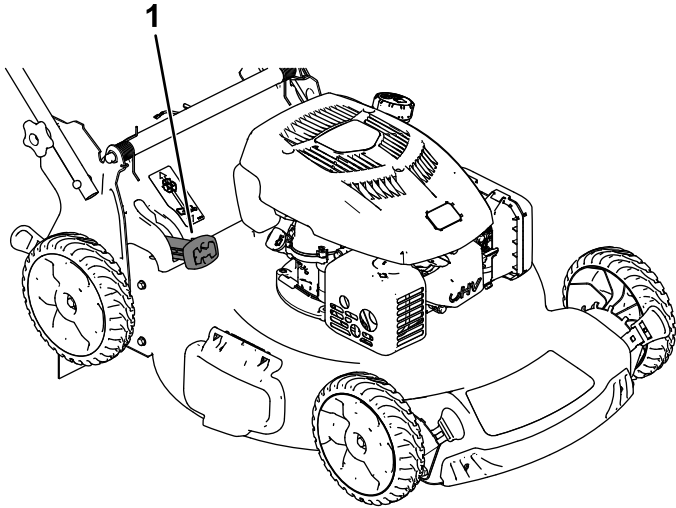


Figure 18

g194693

1. Bag-on-demand lever (in the bagging position)

move the lever rearward until the button on the lever pops up.

Important: For proper operation, shut off the engine, wait for all moving parts to stop, and then remove any grass clippings and debris from the bag-on-demand door and the surrounding opening (Figure 19) before you move the bag-on-demand lever from 1 position to another.

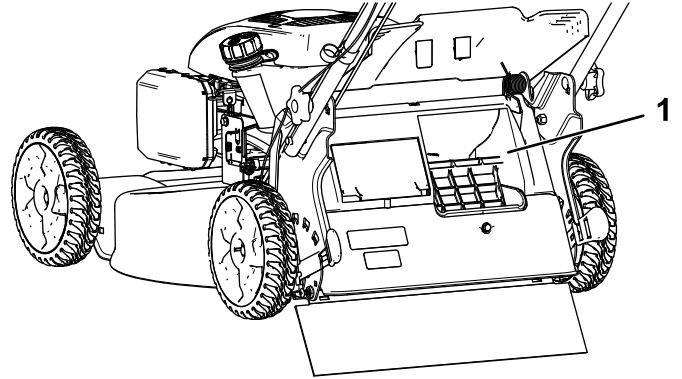


Figure 19

g194694

1. Clean here

- **To recycle or side-discharge the grass and leaf clippings**, press the button on the lever and

Side-Discharging the Clippings

Use side-discharging for cutting very tall grass.

If the grass bag is on the machine and the bag-on-demand lever is in the bagging position, move the lever to the recycling position; refer to [Operating the Bag-on-Demand Lever \(page 16\)](#).

Installing the Side-Discharge Chute

Unlatch and lift up the side deflector and install the side-discharge chute (A and B of Figure 20).

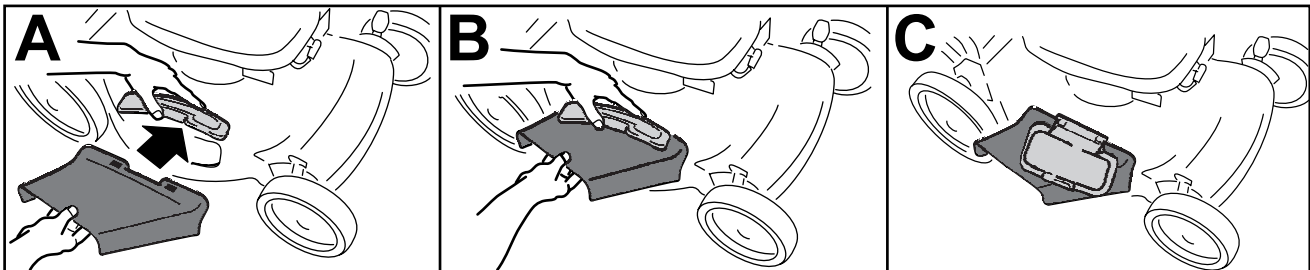


Figure 20

g233435

Removing the Side-Discharge Chute

To remove the side-discharge chute, lift up the side deflector, remove the side-discharge chute, and lower the side-discharge deflector until it latches securely.

Operating Tips

General Mowing Tips

- Inspect the area where you will use the machine and remove all objects that the machine could throw.
- Avoid striking solid objects with the blade. Never deliberately mow over any object.
- If the machine strikes an object or starts to vibrate, immediately shut off the engine, disconnect the wire from the spark plug, remove the electric-start button (if equipped), and examine the machine for damage.
- For best performance, install a new blade before the cutting season begins.
- Replace the blade when necessary with a Toro replacement blade.

Cutting Grass

- Cut only about a third of the grass blade at a time. Do not cut below 51 mm (2 inches) 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, 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 engine to stall.
- Wet grass and leaves tend to clump on the yard and can cause the machine to plug or the engine to stall. Avoid mowing in wet conditions.
- 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.
- 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

After Operation Safety

General Safety

- Clean grass and debris from the machine to help prevent fires. Clean up oil or fuel spills.
- Allow the engine to cool before storing the machine in any enclosure.
- 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.

Hauling Safety

- Remove the electric-start button (if equipped) before loading the machine for hauling.
- Use care when loading or unloading the machine.
- Secure the machine from rolling.

Cleaning under the Machine

Service Interval: Before each use or daily

For best results, clean the machine soon after you have completed mowing.

1. Move the machine onto a flat paved surface.
2. Shut off the engine and wait for all moving parts to stop before leaving the operating position.
3. Lower the machine to its lowest cutting-height setting. Refer to [Adjusting the Cutting Height](#) (page 12).
4. Wash out the area under the rear door where the clippings go from the underside of the machine to the grass bag.

Note: Wash out the area with the bag-on-demand (if equipped) in both the fully forward and fully rearward positions.

5. Attach a garden hose that is connected to a water supply to the washout port ([Figure 21](#)).

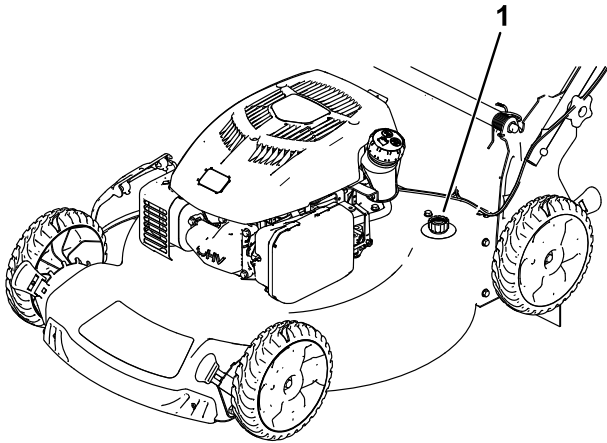


Figure 21

g194695

1. Washout port

-
6. Turn the water on.
 7. Start the engine and run it until the clippings no longer come out from under the machine.
 8. Shut off the engine.
 9. Shut off the water and disconnect the garden hose from the machine.
 10. Start the engine and run it for a few minutes to dry the underside of the machine to prevent it from rusting.
 11. Shut off the engine and allow it to cool before storing the machine in an enclosed area.

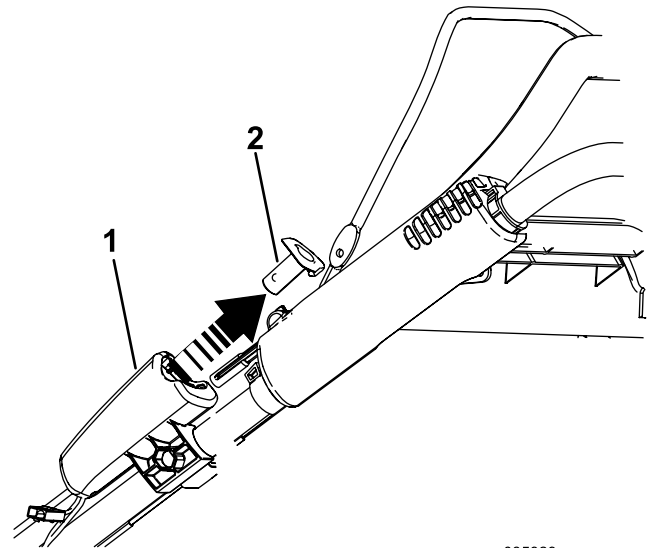
Folding the Handle

⚠ WARNING

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

- Do not damage the cables when folding or unfolding the handle.
- If a cable is damaged, contact an Authorized Service Dealer.

1. Remove the electric-start button as shown in [Figure 22](#) (electric-start model only).



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Figure 22

1. Electric starter
2. Electric-start button

-
2. Remove and save the 2 handle knobs and 2 carriage bolts from the handle brackets ([Figure 23](#)).

Important: Route the cables to the outside of the handle knobs as you fold the handle.

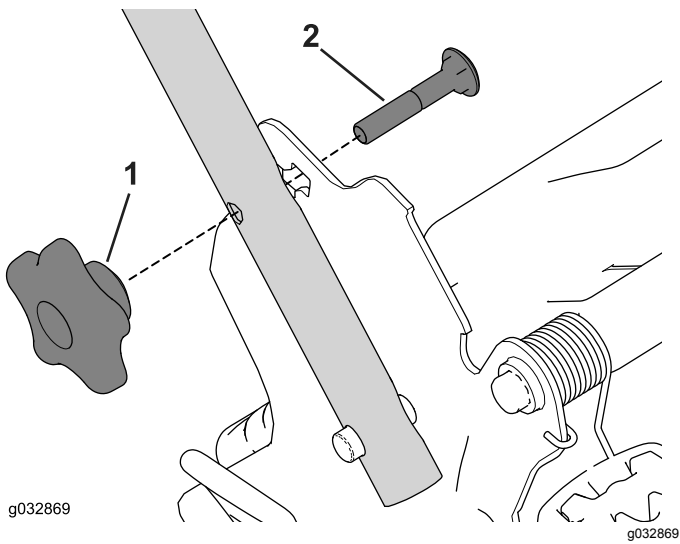


Figure 23

1. Handle knob (2) 2. Carriage bolt (2)

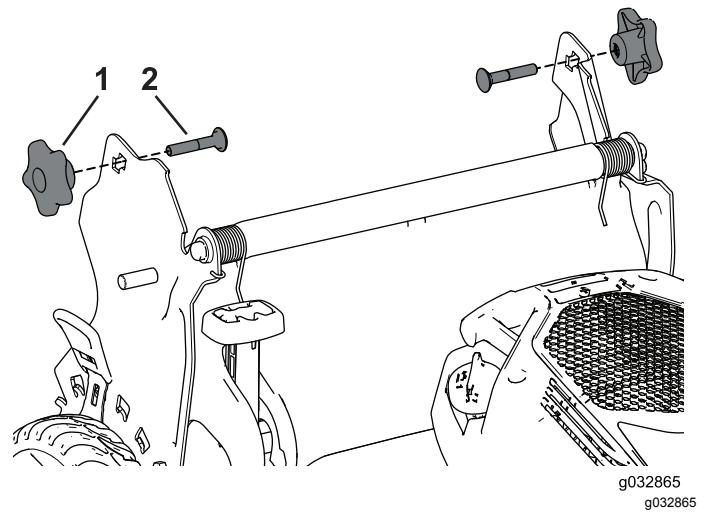


Figure 25

1. Handle knob (2) 2. Carriage bolt (2)

3. Fold the handle by rotating it forward ([Figure 24](#)).

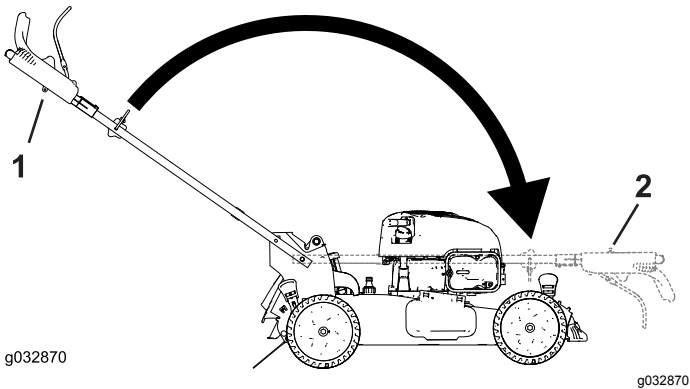


Figure 24

1. Operating position 2. Folded position

4. Insert the carriage bolt (with the bolt head toward the inside) through the handle bracket and the upper hole in the handle end. Ensure that the square edges of each carriage bolt fits into the upper or lower square hole in its related handle bracket ([Figure 25](#)).

5. Loosely install the handle knobs and carriage bolts on the handle brackets.
6. To unfold the handle, refer to [1 Assembling and Unfolding the Handle \(page 6\)](#).

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 5 hours	<ul style="list-style-type: none"> Change the engine oil.
Before each use or daily	<ul style="list-style-type: none"> Check the engine-oil level. Ensure that the engine shuts off within 3 seconds after releasing the blade-control bar. Clean grass clippings and dirt from under the machine.
Every 25 hours	<ul style="list-style-type: none"> Charge the battery (if equipped) for 24 hours.
Yearly	<ul style="list-style-type: none"> Service the air filter. Change the engine oil. Replace the blade or have it sharpened (more frequently if the edge dulls quickly). Clean the engine by removing dirt and debris from its top and sides; clean it more frequently in dusty operating conditions.
Yearly or before storage	<ul style="list-style-type: none"> Empty the fuel tank before repairs as directed and before yearly storage.

Maintenance Safety

- Disconnect the spark-plug wire from the spark plug and remove the electric-start button (electric-start model only) before performing any maintenance procedure.
- Wear gloves and eye protection when servicing the machine.
- The blade is sharp; contacting the blade can result in serious personal injury. Wear gloves when servicing the blade. Do not repair or alter the blade(s).
- Never tamper with safety devices. Check their proper operation regularly.
- Tipping the machine may cause the fuel to leak. Fuel is flammable and explosive, and can cause personal injury. Run the engine dry to remove the fuel with a hand pump; never siphon the fuel.
- 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.

Preparing for Maintenance

- Shut off the engine, remove the electric-start button (if equipped), and wait for all moving parts to stop.
- Disconnect the spark-plug wire from the spark plug (Figure 26).

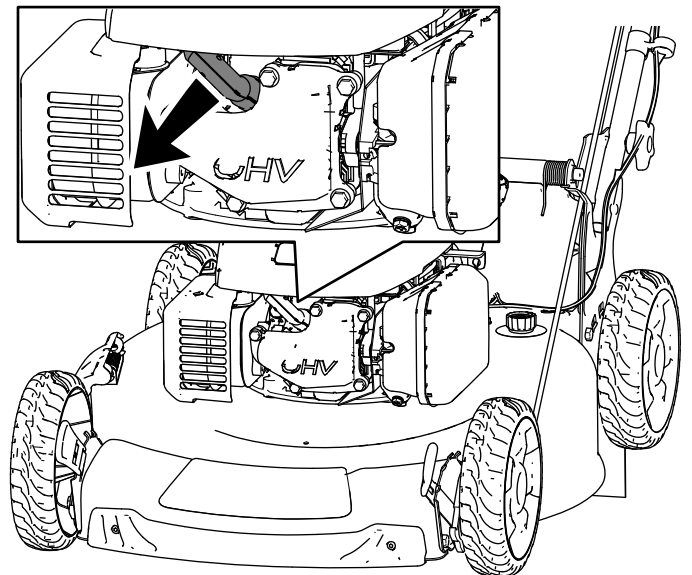


Figure 26

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- After performing the maintenance procedure(s), connect the spark-plug wire to the spark plug.

Important: Before tipping the machine to change the oil or replace the blade, allow the fuel tank to run dry through normal usage. If you must tip the machine prior to running out of fuel, use a hand fuel pump to remove the fuel. Always tip the machine onto its side, with the dipstick down.

Servicing the Air Filter

Service Interval: Yearly

1. Press down on the latch tabs on top of the air-filter cover (Figure 27).

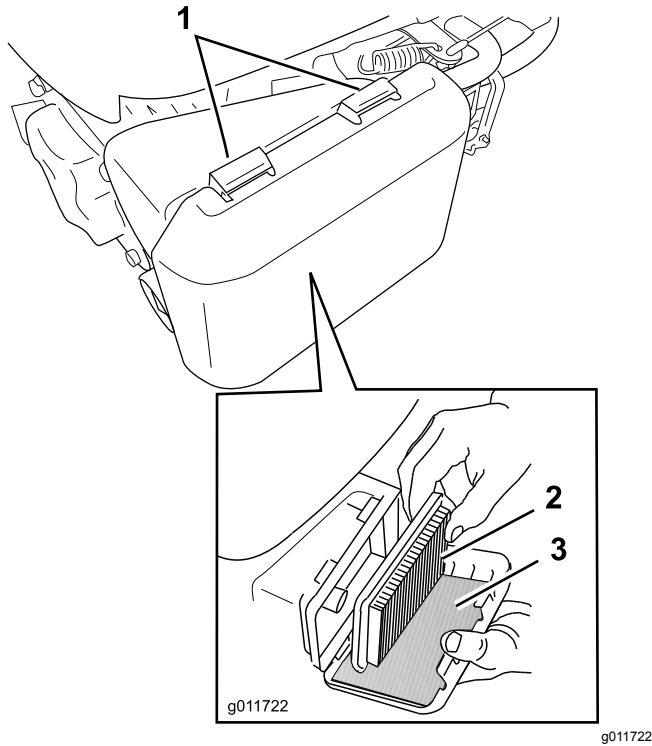


Figure 27

1. Latch tabs
2. Paper air filter
3. Foam pre-filter

2. Open the cover.
3. Remove the paper air filter and the foam pre-filter (Figure 27).
4. Inspect the foam pre-filter, and replace it if it is damaged or excessively dirty.
5. Inspect the paper air filter.
 - If the air filter is damaged or is wet with oil or fuel, replace it.
 - If the air filter is dirty, tap it on a hard surface several times or blow compressed air less than 207 kPa (30 psi) through the side of the filter that faces the engine.

Note: Do not brush the dirt off the filter; brushing forces dirt into the fibers.

6. Remove the dirt from the air-filter body and the cover using a moist rag.

Important: Do not wipe dirt into the air duct.

7. Install the foam pre-filter and the paper air filter into the air filter.
8. Install the cover.

Changing the Engine Oil

Service Interval: After the first 5 hours

Yearly

Note: Run the engine a few minutes before changing the oil to warm it. Warm oil flows better and carries more contaminants.

Engine Oil Specifications

Engine oil capacity	0.55 L (18.6 fl oz)
Oil viscosity	SAE 30 or SAE 10W-30 detergent oil
API service classification	SJ or higher

1. Move the machine to a level surface.
2. Refer to [Preparing for Maintenance \(page 20\)](#).
3. Remove the dipstick by rotating the cap counterclockwise and pulling it out (Figure 28).

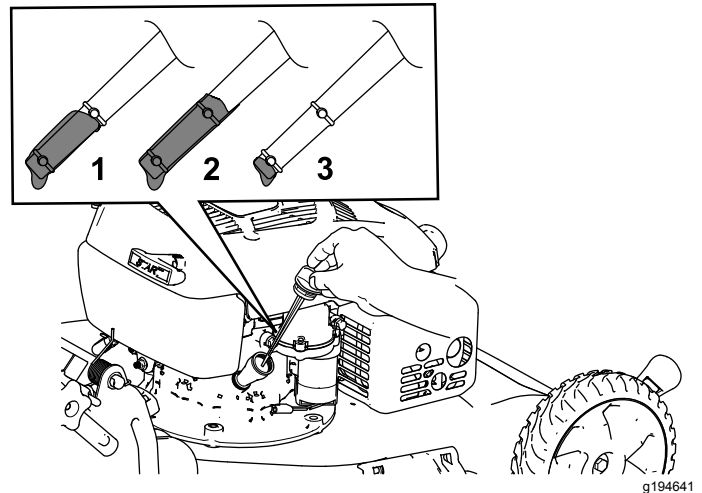


Figure 28

1. Full
2. High
3. Low

4. Tip the machine onto its side (so that the air filter is up) to drain the used oil from the oil-fill tube (Figure 29).

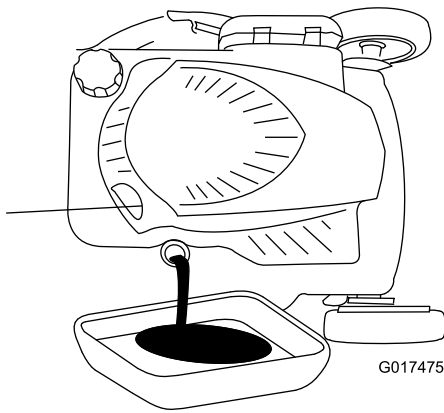


Figure 29

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Charging the Battery For Electric-Start Models

Service Interval: Every 25 hours

⚠ WARNING

**CALIFORNIA
Proposition 65 Warning**
Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

Charge the battery for 24 hours initially, then monthly (every 25 starts) or as needed. Always use the charger in a sheltered area and charge the battery at room temperature (22°C or 70°F) whenever possible.

1. Connect the charger to the wire harness located below the electric-start button (Figure 30).

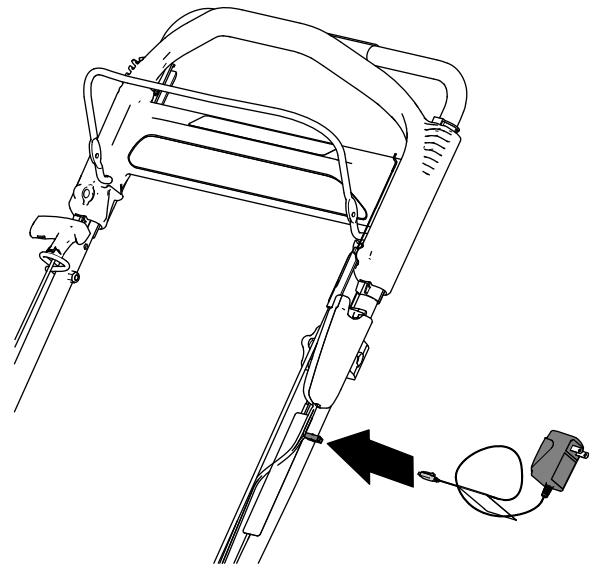


Figure 30

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5. After draining the used oil, return the machine to the operating position.
6. Carefully pour about 3/4 of the engine capacity of oil into the oil-fill tube.
7. Wait 3 minutes for the oil to settle in the engine.
8. Wipe the dipstick clean with a clean cloth.
9. Insert the dipstick into the oil-fill tube, **but do not screw it in**, then remove the dipstick.
10. Read the oil level on the dipstick ([Checking the Engine-Oil Level \(page 11\)](#)).
 - If the oil level on the dipstick is too low, carefully pour a small amount of oil into the oil-fill tube, wait 3 minutes, and repeat steps [8](#) through [10](#) until the oil level on the dipstick is correct.
 - If the oil level on the dipstick is too high, drain the excess oil until the oil level on the dipstick is correct.

Important: If the oil level in the engine is too low or too high and you run the engine, you may damage the engine.

11. Install the dipstick into the oil-fill tube securely.
12. Recycle the used oil properly.

2. Plug the charger into a wall outlet.

Note: When the battery no longer holds a charge, recycle or dispose of the lead-acid battery according to local codes.

Note: Your battery charger may have a 2-color LED display that indicates the following states of charging:

- A red light indicates that the charger is charging the battery.

- A green light indicates that the charger is fully charged or the charger is disconnected from the battery.
- A flashing light that alternates between red and green indicates that the battery is nearly fully charged. This state lasts only a few minutes until the battery is fully charged.

Replacing the Fuse

Electric-Start Model Only

If the battery does not charge or the engine does not run with the electric starter, the fuse may be blown. Replace it with a 40 A plug-in type fuse.

1. Refer to [Preparing for Maintenance \(page 20\)](#).
2. Raise the rear deflector and locate the battery compartment ([Figure 31](#)).

Note: There is an adhesive-backed covering that protects the battery compartment.

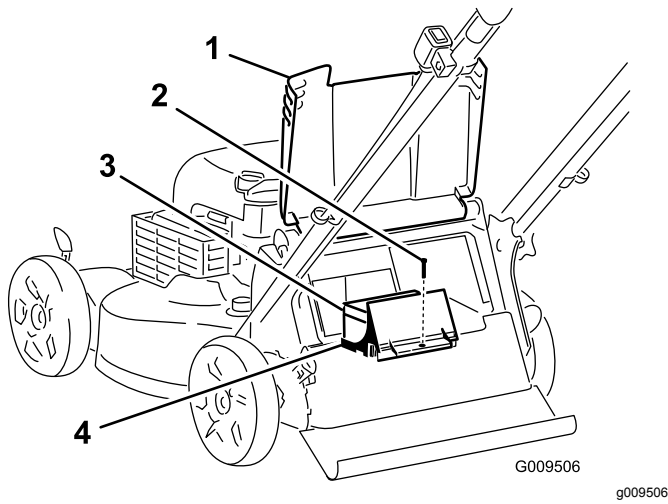


Figure 31

- | | |
|-------------------|------------------------|
| 1. Rear deflector | 3. Battery |
| 2. Screw | 4. Battery compartment |

3. Wipe away any debris in the battery compartment area and remove the adhesive-backed covering.
4. Remove the screw that secures the battery compartment, pull out the battery, and locate the fuse ([Figure 31](#) and [Figure 32](#)).

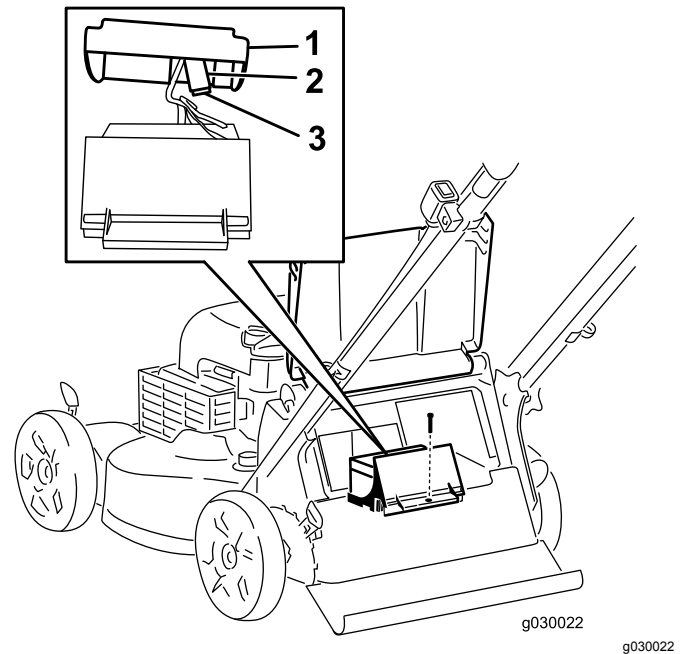


Figure 32

- | | |
|------------------|----------------|
| 1. Battery cover | 3. Fuse holder |
| 2. Fuse | |

5. Replace the fuse in the fuse holder ([Figure 32](#)).

Note: Your machine comes with a spare fuse attached to the battery-charger box ([Figure 37](#)).

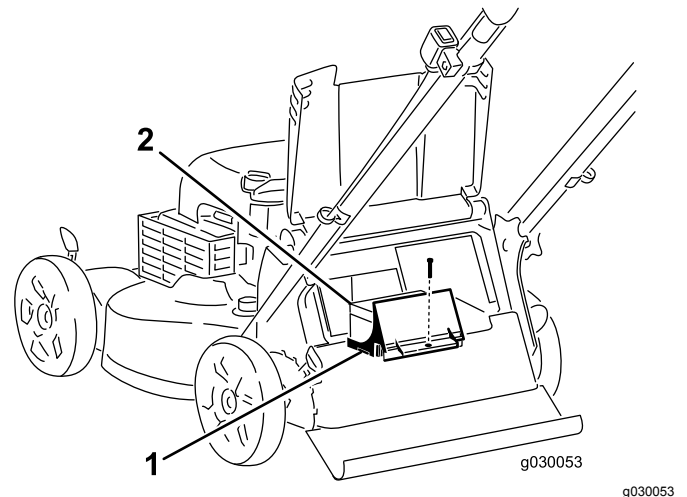


Figure 33

- | | |
|------------------------|------------------------|
| 1. Battery compartment | 2. Battery-charger box |
|------------------------|------------------------|

6. Install the battery compartment with the screw that you removed in step 4.
7. Install the covering over the battery compartment.
8. Lower the rear deflector.

Replacing the Blade

Service Interval: Yearly

Important: You will need a torque wrench to install the blade properly. If you do not have a torque wrench or are uncomfortable performing this procedure, contact an Authorized Service Dealer.

Examine the blade whenever you run out of fuel. If the blade is damaged or cracked, replace it immediately. If the blade edge is dull or nicked, have it sharpened and balanced, or replace it.

⚠ WARNING

The blade is sharp; contacting the blade can result in serious personal injury.

Wear gloves when servicing the blade.

1. Refer to [Preparing for Maintenance \(page 20\)](#).
2. Tip the machine onto its side with the air filter up.
3. Use a block of wood to hold the blade steady ([Figure 34](#)).

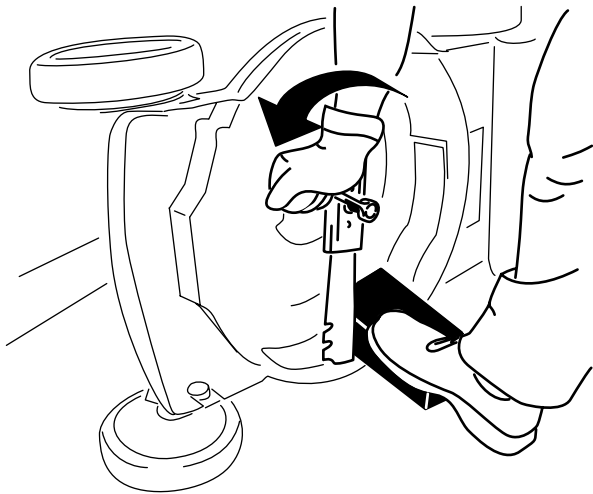


Figure 34

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4. Remove the blade, saving all mounting hardware ([Figure 34](#)).
5. Install the new blade and all mounting hardware ([Figure 35](#)).

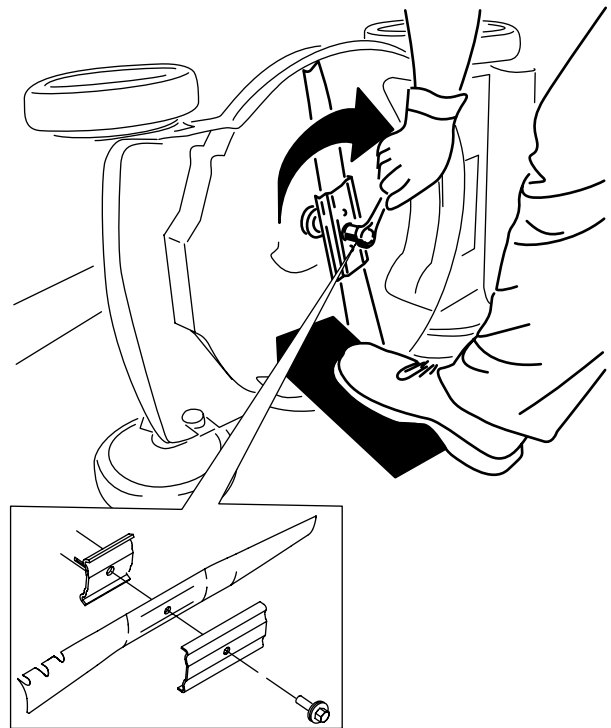


Figure 35

g231390

Important: Position the curved ends of the blade to point toward the machine housing.

6. Use a torque wrench to tighten the blade bolt to 82 N·m (60 ft-lb).

Important: A bolt torqued to 82 N·m (60 ft-lb) is very tight. While holding the blade with a block of wood, put your weight behind the ratchet or wrench and tighten the bolt securely. This bolt is very difficult to overtighten.

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 knob counterclockwise to loosen the cable adjustment (Figure 36).

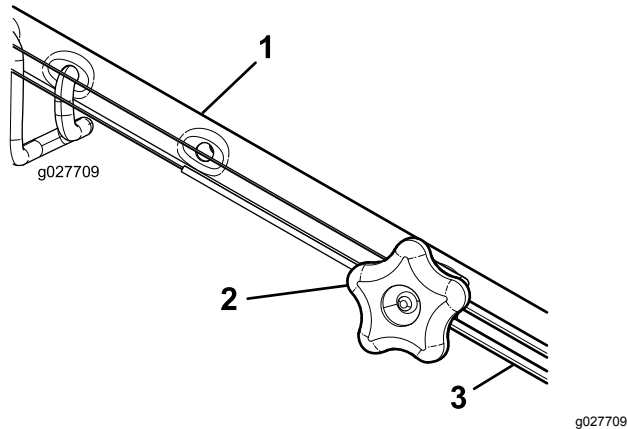


Figure 36

1. Handle (left side)
2. Adjustment knob
3. Self-propel-drive cable

-
2. Adjust the tension on the cable (Figure 36) by pulling it back or pushing it forward and holding that position.

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

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

Note: Tighten the knob firmly by hand.

Storage

Store the machine in a cool, clean, dry place.

Preparing the Machine for Storage

1. On the last refueling of the year, add fuel stabilizer (such as Toro Premium Fuel Treatment) to the fuel as directed on the label.
2. Dispose of any unused fuel properly. Recycle it according to local codes or use it in your automobile.
Note: Old fuel in the fuel tank is the leading cause of hard starting. Do not store fuel without fuel stabilizer more than 30 days, and do not store stabilized fuel more than 90 days.
3. Run the machine until the engine shuts off from running out of fuel.
4. Start the engine again and allow it to run until it shuts off. When you can no longer start the engine, it is sufficiently dry.
5. Disconnect the wire from the spark plug and connect the wire to the retaining post (if equipped) and remove the electric-start button (if equipped).
6. Remove the spark plug, add 30 ml (1 fl oz) of engine oil through the spark-plug hole, and pull the recoil-starter rope slowly several times to distribute oil throughout the cylinder to prevent cylinder corrosion during the off-season.
7. Loosely install the spark plug.
8. Tighten all nuts, bolts, and screws.
9. **Electric-start models only:** Charge the battery for 24 hours, then unplug the battery charger and store the machine in an unheated area. If you must store the machine in a heated area, you must charge the battery every 90 days. Refer to [Charging the Battery \(page 22\)](#).

4. Install the spark plug and tighten it with a torque wrench to 20 N·m (15 ft-lb).
5. Perform any maintenance procedures; refer to [Maintenance \(page 20\)](#).
6. Check the engine-oil level; refer to [Checking the Engine-Oil Level \(page 11\)](#).
7. Fill the fuel tank with fresh fuel; refer to [Filling the Fuel Tank \(page 10\)](#).
8. Connect the wire to the spark plug.

Removing the Machine from Storage

1. **Electric-start models only:** Charge the battery for 24 hours; refer to [Charging the Battery \(page 22\)](#).
2. Check and tighten all fasteners.
3. Remove the spark plug and spin the engine rapidly by pulling the recoil-start handle to blow the excess oil from the cylinder.

Notes:



Count on it.