



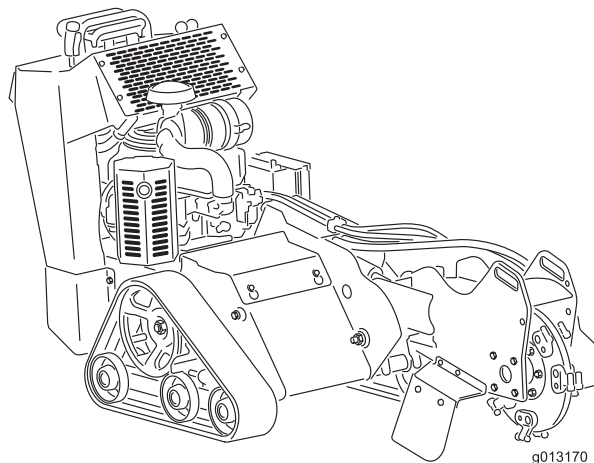
Count on it.

Operator's Manual

STX-26 Stump Grinder

Model No. 23210—Serial No. 310000001 and Up

Model No. 23210G—Serial No. 310000001 and Up



WARNING

CALIFORNIA Proposition 65 Warning

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

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

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

maintenance, and warranty. Replacements may be ordered through the engine manufacturer.

▲ DANGER

There may be buried power, gas, and/or telephone lines in the work area. Shock or explosion may occur if you dig into them.

Have the property or work area marked for buried lines and do not dig in marked areas. Contact your local marking service or utility company to have the property marked (for example, in the United States, call 811 for the nationwide marking service).

This spark ignition system complies with Canadian ICES-002.

Because in some areas there are local, state, or federal regulations requiring that a spark arrester be used on the engine of this machine, a spark arrester is available as an option. If you require a spark arrestor, contact your Authorized Toro Service Dealer.

Genuine Toro spark arresters are approved by the USDA Forestry Service.

Important: It is a violation of California Public Resource Code Section 4442 to use or operate the engine on any forest-covered, brush-covered, or grass-covered land without a spark arrester muffler maintained in working order, or the engine constricted, equipped, and maintained for the prevention of fire. Other states or federal areas may have similar laws.

The enclosed *Engine Owner's Manual* is supplied for information regarding the US Environmental Protection Agency (EPA) and the California Emission Control Regulation of emission systems,

Introduction

This machine is designed to grind and remove tree stumps and surface roots. It is not intended to cut rock or any other material other than wood and the soil around a stump.

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.

You may contact Toro directly at www.Toro.com for product and accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. Figure 1 illustrates the location of the model and serial numbers on the product. Write the numbers in the space provided.

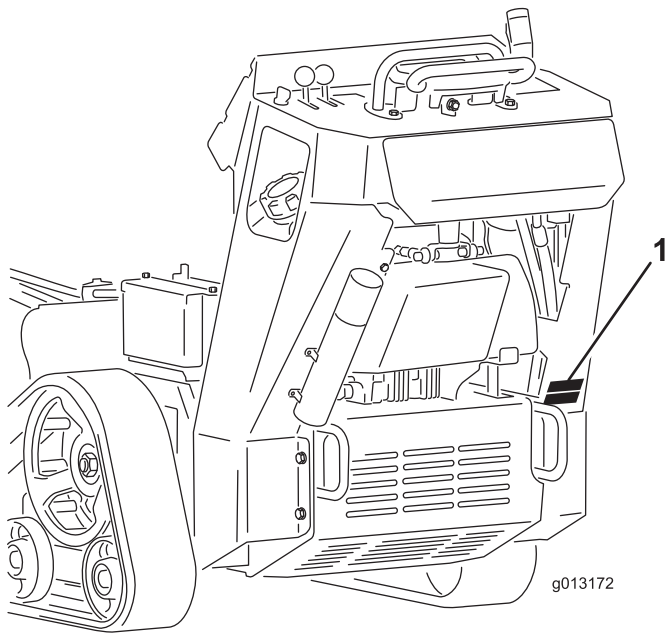


Figure 1

1. Model and serial number plate

Model No. _____
Serial No. _____

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 2), which signals a hazard that may cause serious injury

or death if you do not follow the recommended precautions.



Figure 2

1. Safety alert symbol

This manual uses 2 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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Safety

Improper use or maintenance by the operator or owner can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety alert symbol **A**, which means: **Caution, Warning, or Danger**—personal safety instruction. Failure to comply with the instruction may result in personal injury or death.

Safe Operating Practices

This product is capable of amputating hands and feet. Always follow all safety instructions to avoid serious injury or death.

A WARNING

Engine exhaust contains carbon monoxide, an odorless, deadly poison that can kill you.

Do not run the engine indoors or in an enclosed area.

Training

- Read the *Operator's Manual* and other training material. If the operator(s) or mechanic(s) can not read English, it is the owner's responsibility to explain this material to them.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- All operators and mechanics should be trained. The owner is responsible for training the users.
- Never let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.
- The owner/user can prevent and is responsible for accidents or injuries occurring to himself or herself, other people or property.

Preparation

- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.
- Wear appropriate clothing including hard hat, safety glasses, long pants, safety shoes, and hearing protection. Long hair, loose clothing or jewelry may get tangled in moving parts.
- Inspect the area where the equipment is to be used and remove all objects such as rocks, toys, and wire which can be thrown by the machine.

- Use extra care when handling gasoline and other fuels. They are flammable and vapors are explosive.
 - Use only an approved container
 - Never remove the gas cap or add fuel with the engine running. Allow the engine to cool before refueling. Do not smoke.
 - Never refuel or drain the machine indoors.
- Check that the operator presence controls, safety switches, and shields are attached and functioning properly. Do not operate unless they are functioning properly.

Operation

- Never run an engine in an enclosed area.
- Only operate in good light, keeping away from holes and hidden hazards.
- Be sure all drives are in neutral before starting the engine. Only start the engine from the operator's position.
- Slow down and use extra care on hillsides. Be sure to travel in the recommended direction on hillsides. Turf conditions can affect the machine's stability.
- Slow down and use caution when making turns and when changing directions on slopes.
- Never operate with the guards not securely in place. Be sure all interlocks are attached, adjusted properly, and functioning properly.
- Do not change the engine governor setting or overspeed the engine.
- Stop on level ground, lower the grinder, disengage the hydraulics, and shut off the engine before leaving the operator's position for any reason.
- Keep hands and feet away from the moving grinder wheel and teeth.
- Look behind and down before backing up to be sure of a clear path.
- Never carry passengers and keep pets and bystanders away.
- Slow down and use caution when making turns and crossing roads and sidewalks.
- Do not operate the machine under the influence of alcohol or drugs.
- Use care when loading or unloading the machine into a trailer or truck.
- Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.
- Ensure that the area is clear of other people before operating the machine. Stop the machine if anyone enters the area.

- Never leave a running machine unattended. Always lower the grinder, stop the engine, and remove the key before leaving.
- Never jerk the controls; use a steady motion.
- Watch for traffic when operating near or crossing roadways.
- Do not touch parts which may be hot from operation. Allow them to cool before attempting to maintain, adjust, or service.
- Ensure that you operate the machine in areas where there are no obstacles in close proximity to the operator. Failure to maintain adequate distance from trees, walls, and other barriers may result in injury as the machine backs up during operation if the operator is not attentive to the surroundings. Only operate the unit in areas where there is sufficient clearance for the operator to safely maneuver the product.
- Before digging, have the area marked for underground utilities, and do not dig in marked areas.
- Locate the pinch point areas marked on the machine and keep hands and feet away from these areas.
- Lightning can cause severe injury or death. If lightning is seen or thunder is heard in the area, do not operate the machine; seek shelter.

Slope Operation

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra caution.

- Do not operate the machine on hillsides or slopes exceeding the angles recommended in the following table.

Front Facing Uphill	Rear Facing Uphill	Side Facing Uphill
12°	18°	16°

Note: See also the Slope Indicator (page 7).

- **Operate up and down slopes with the front end of the machine uphill.**
- Remove obstacles such as rocks, tree limbs, etc. from the work area. Watch for holes, ruts, or bumps, as uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Use only Toro-approved accessories. Accessories can change the stability and the operating characteristics of the machine. Warranty may be voided if used with unapproved accessories.
- Keep all movements on slopes slow and gradual. Do not make sudden changes in speed or direction.

- Avoid starting or stopping on a slope. If the machine loses traction, proceed slowly, straight down the slope.
- Avoid turning on slopes. If you must turn, turn slowly and keep the heavy end of the machine uphill.
- Do not operate near drop-offs, ditches, or embankments. The machine could suddenly turn over if a track goes over the edge of a cliff or ditch, or if an edge caves in.
- Do not operate on wet grass. Reduced traction could cause sliding.
- Do not park the machine on a hillside or slope without lowering the grinder to the ground and chocking the tracks.
- Use extra care when handling gasoline and other fuels. They are flammable and vapors are explosive.
 - Use only an approved container.
 - Never remove the gas cap or add fuel when the engine is running. Allow the engine to cool before refueling. Do not smoke.
 - Never refuel the machine indoors.
 - Never store the machine or fuel container inside where there is an open flame, such as near a water heater or furnace.
 - Never fill a container while it is inside a vehicle, trunk, pick-up bed, or any surface other than the ground.
 - Keep container nozzle in contact with the tank during filling.

Maintenance and Storage

- Disengage the hydraulics, lower the grinder, stop the engine, and remove the key. Wait for all movement to stop before adjusting, cleaning, or repairing.
- Clean debris from the grinder, drives, mufflers, and engine to help prevent fires. Clean up oil or fuel spillage.
- Let the engine cool before storing and do not store near flame.
- Do not store fuel near flames or drain indoors.
- Park the machine on level ground. Never allow untrained personnel to service the machine.
- Use jack stands to support components when required.
- Carefully release pressure from components with stored energy.
- Disconnect the battery or remove the spark plug wires before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.
- Keep hands and feet away from moving parts. If possible, do not make adjustments with the engine running.
- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
- Keep nuts and bolts tight. Keep equipment in good condition.
- Never tamper with safety devices.
- Keep the machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage. Allow the machine to cool before storing.
- Stop and inspect the equipment if you strike an object. Make any necessary repairs before restarting.
- Use only genuine Toro replacement parts to ensure that original standards are maintained.
- Battery safety:
 - Charge batteries in an open, well ventilated area, away from spark and flames. Unplug the charger before connecting or disconnecting it from the battery. Wear protective clothing and use insulated tools.
 - Battery acid is poisonous and can cause burns. Avoid contact with skin, eyes, and clothing. Protect your face, eyes, and clothing when working with a battery.
 - Battery gases can explode. Keep cigarettes, sparks and flames away from the battery.
- Keep your body and hands away from pin hole leaks or nozzles that eject high pressure hydraulic fluid. Use cardboard or paper to find hydraulic leaks; never use your hands. Hydraulic fluid escaping under pressure can penetrate skin and cause injury requiring surgery within a few hours by a qualified surgeon or gangrene may result.

Slope Indicator

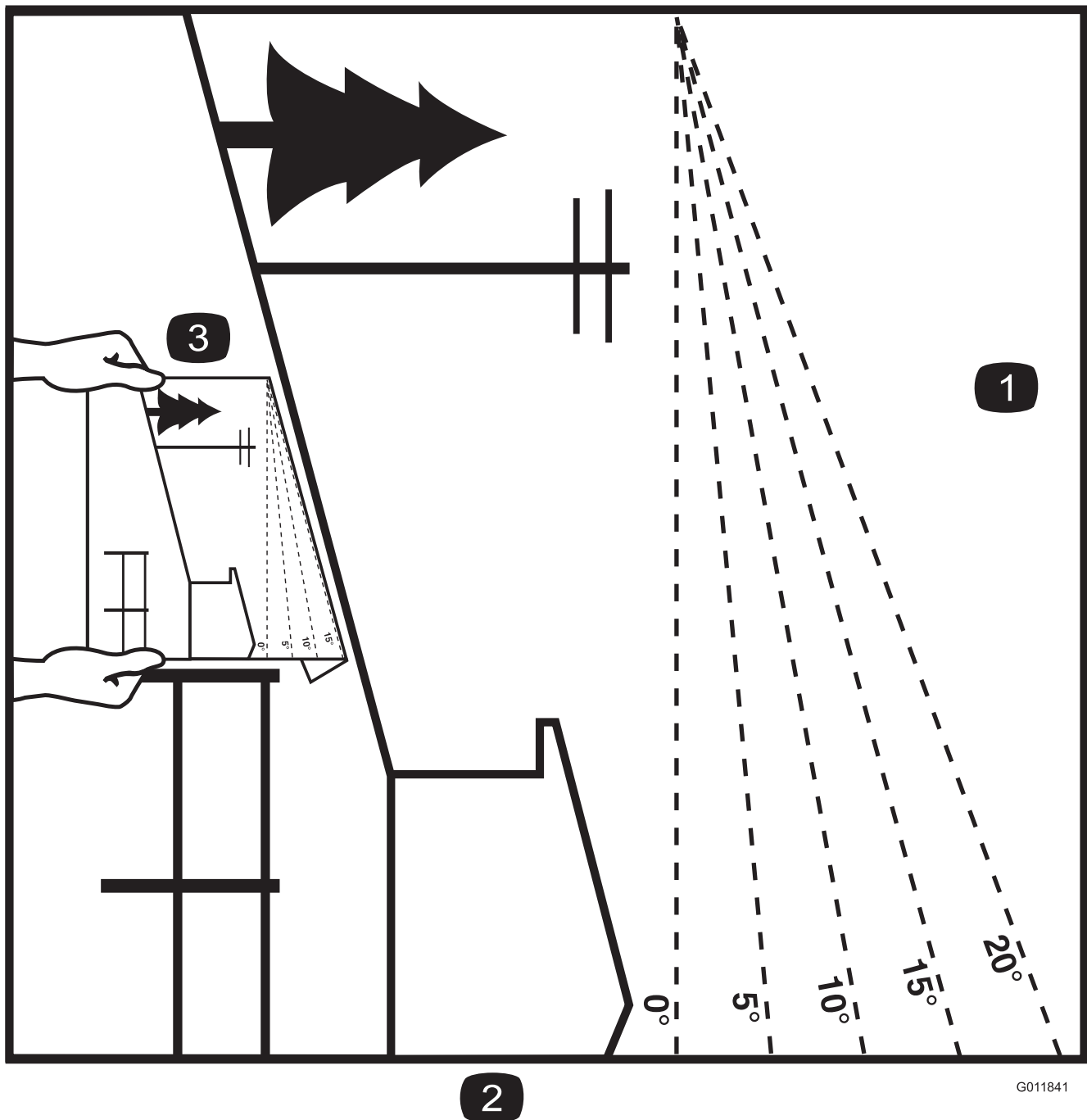


Figure 3

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1. To determine the maximum slope you can safely operate the machine on, refer to **Slope Operation (page 5)**. Use the slope indicator to determine the degree of slope of hills before operating. **Do not operate this machine on a slope greater than that specified in Slope Operation (page 5)**. Fold along the appropriate line to match the recommended slope.
2. Align this edge with a vertical surface, a tree, building, fence pole, etc.
3. Example of how to compare slope with folded edge.

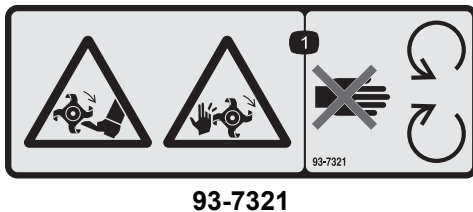
Safety and Instructional Decals



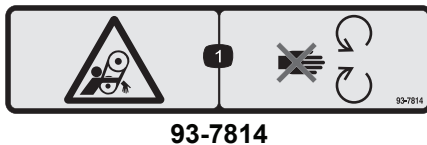
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



1. Hydraulic oil
2. Read the *Operator's Manual*.



1. Cutting/dismemberment hazard of hands and feet, rotating knives/blades—stay away from moving parts.



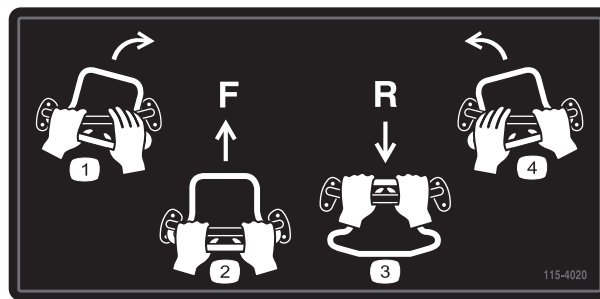
1. Entanglement hazard, belt—stay away from moving parts.



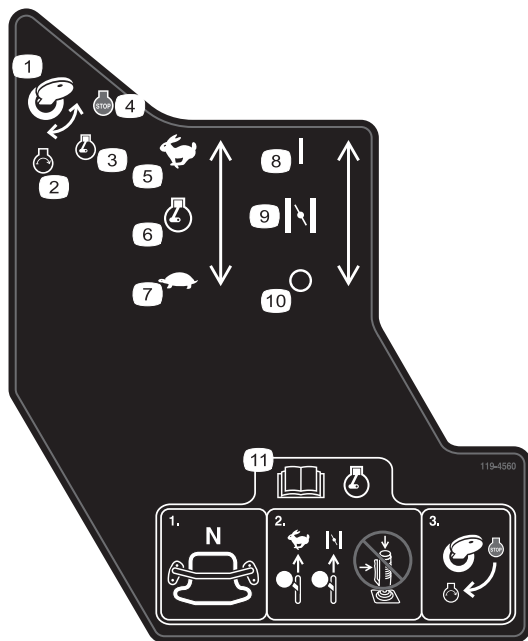
1. Crushing hazard of hand—keep bystanders a safe distance from the machine.
2. Crushing hazard of foot—keep bystanders a safe distance from the machine.



1. Thrown object hazard—keep bystanders a safe distance from the machine.

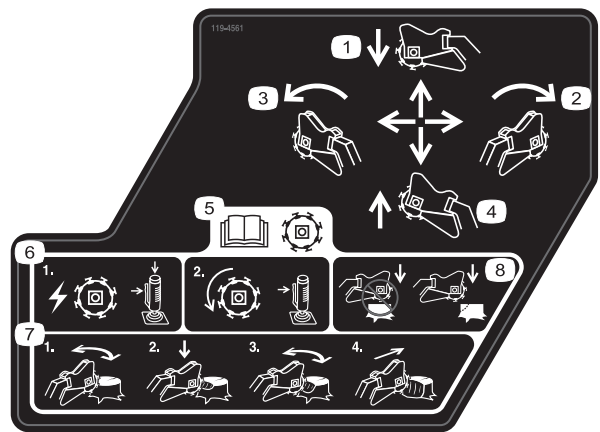


1. Turn right
2. Forward
3. Reverse
4. Turn left



119-4560

1. Ignition key
2. Engine—start
3. Engine—run
4. Engine—stop
5. Fast
6. Engine speed
7. Slow
8. On/Closed
9. Choke
10. Off/Open
11. Read the *Operator's Manual* before starting the engine; place the traction control in Neutral, move the engine speed to Fast and the choke to On/Closed, turn the ignition key to run.



119-4561

1. Read the *Operator's Manual* before operating the cutter; engage the side lever and top button of the joystick to start the cutter blade; continue engaging the side lever to maintain cutter rotation.
2. Lower the cutter head
3. Pivot the cutter head to the right
4. Raise the cutter head
5. Pivot the cutter head to the left



Battery Symbols

Some or all of these symbols are on your battery

1. Explosion hazard
2. No fire, open flame, or smoking.
3. Caustic liquid/chemical burn hazard
4. Wear eye protection
5. Read the *Operator's Manual*.
6. Keep bystanders a safe distance from the battery.
7. Wear eye protection; explosive gases can cause blindness and other injuries
8. Battery acid can cause blindness or severe burns.
9. Flush eyes immediately with water and get medical help fast.
10. Contains lead; do not discard.



119-4606

1. Warning—read the *Operator's Manual*.
2. Cutting/dismemberment hazard; cutter—keep bystanders a safe distance from the machine; do not operate the cutter head while transporting the machine.
3. Warning—stay away from moving parts; wait for all moving parts to stop.
4. Warning—do not operate this machine unless you are trained.
5. Explosion and electric shock hazard—do not dig in areas with buried utility lines; contact local power organizations before digging.
6. Tipping/crushing hazard—lower the cutter head when operating on slopes.
7. Explosion hazard, fueling—stop the engine and extinguish all flames when fueling.
8. Warning—lower the cutter head, set the parking brake (if applicable), stop the engine, remove the ignition key before leaving the machine.

Setup

Loose Parts

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

Procedure	Description	Qty.	Use
1	Grinder control lever	1	Install the grinder control lever.
	Jam nut	1	
2	No parts required	–	Check the fluid levels.
3	No parts required	–	Charge the battery.

1

Installing the Grinder Control Lever

Parts needed for this procedure:

1	Grinder control lever
1	Jam nut

Procedure

1. Thread the jam nut onto the grinder control lever (Figure 4).

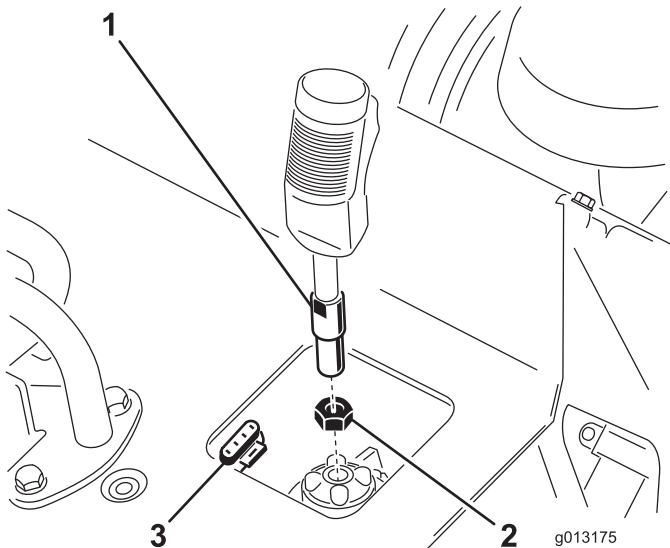


Figure 4

1. Grinder control lever
2. Jam nut
3. 4-pin connector

2. Thread the grinder control lever into the receptacle on the control panel (Figure 4).

3. With the trigger oriented forward, tighten the jam nut against the receptacle to secure the lever in place (Figure 4).
4. Connect the wire on the lever to the 4-pin connector under the control panel (Figure 4).

2

Checking Fluid Levels

No Parts Required

Procedure

Before starting the engine for the first time, check the engine oil and hydraulic fluid levels; refer to Checking the Engine Oil Level (page 16) and Checking the Hydraulic Fluid Level (page 16) for more information.

3

Charging the Battery

No Parts Required

Procedure

Charge the battery; refer to Charging the Battery (page 29) for more information.

Product Overview

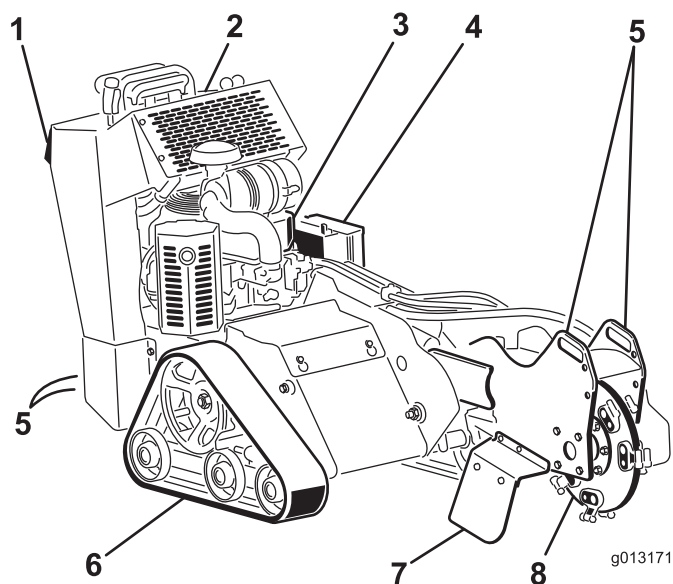


Figure 5

- | | | | |
|-------------------------|------------|------------------------|----------------|
| 1. Reverse safety plate | 3. Engine | 5. Tie-down/lift point | 7. Chip shield |
| 2. Control panel | 4. Battery | 6. Track | 8. Grinder |

Controls

Become familiar with all the controls (Figure 6) before you start the engine and operate the machine.

Figure 6

- | | |
|-------------------|--------------------------|
| 1. Key switch | 5. Traction control |
| 2. Throttle lever | 6. Reference bar |
| 3. Choke lever | 7. Grinder control lever |
| 4. Hour meter | |

Key Switch

The key switch has three positions: off, run, and start.

To start the engine, rotate the key to the start position. Release the key when engine starts and it will move automatically to the run position.

To stop the engine, rotate the key to the off position.

Throttle Lever

Move the control forward to increase the engine speed and rearward to decrease speed.

Choke Lever

Before starting a cold engine, move the choke lever forward. After the engine starts, regulate the choke to keep the engine running smoothly. As soon as possible, move the choke lever all the way rearward.

Note: A warm engine requires little or no choking.

Hour Meter

When the engine is off, the hour meter displays the number of hours of operation that have been logged on the machine.

Reference Bar

When driving the machine, use the reference bar as a handle and a leverage point for controlling the traction control. To ensure smooth, controlled operation, do not take both hands off of the reference bar while operating the machine.

Traction Control

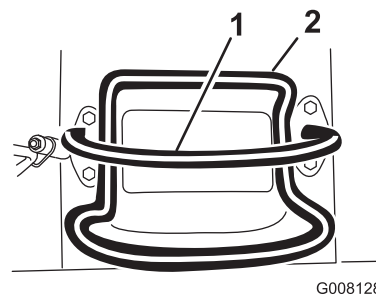


Figure 7

1. Reference bar (does not move to give you a reference point and a fixed handle to hold while operating the traction unit)
2. Traction control (moves to control the machine)

- To move forward, move the traction control forward (Figure 8).

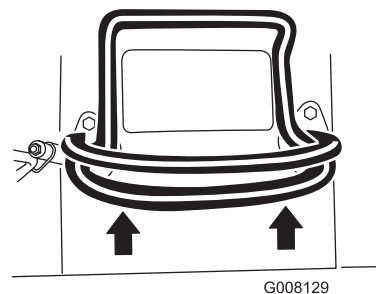


Figure 8

- To move rearward, move the traction control rearward (Figure 9). **When reversing, look behind for obstructions and keep your hands on the reference bar (Figure 7).**

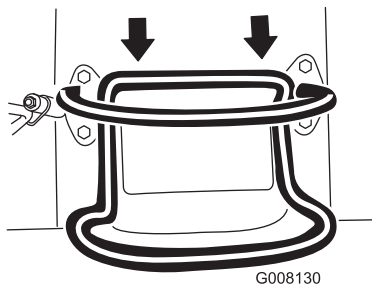


Figure 9

- To turn right, rotate the traction control clockwise (Figure 10).

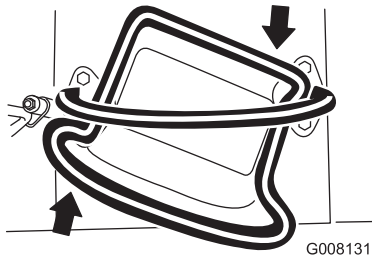


Figure 10

- To turn left, rotate the traction control counterclockwise (Figure 11).

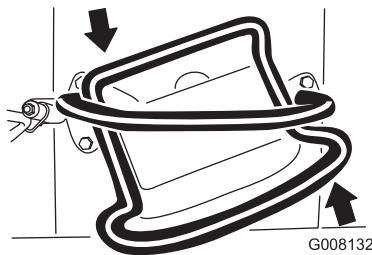


Figure 11

- To stop, release the traction control (Figure 7).

Note: The farther you move the traction control in any direction, the faster the machine will move in that direction.

Grinder Control Lever

Operate the grinder using the grinder control lever as follows:

- To start the grinder (Figure 12), press the red button on the top of the lever, then squeeze the trigger. Once the grinder has started, you can release the red button.
- To stop the grinder (Figure 12), release the trigger for more than a half second.

Note: If you are operating the grinder and momentarily release the trigger (i.e., less than a half second) the grinder will continue operation.

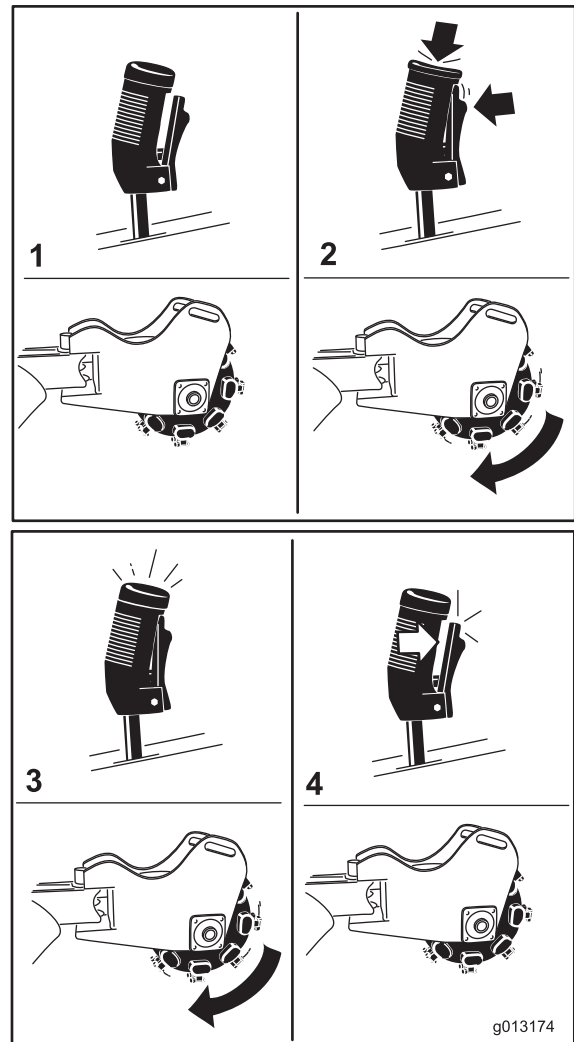


Figure 12

- | | |
|----------------------|---------------------|
| 1. Neutral | 3. Run the grinder |
| 2. Start the grinder | 4. Stop the grinder |

- To raise the grinder, pull back on the lever (Figure 13).

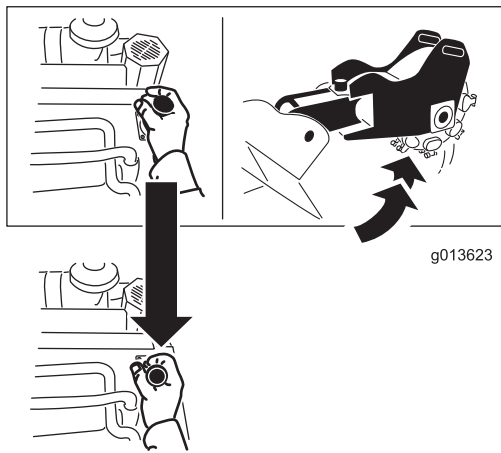


Figure 13

- To lower the grinder, push the lever forward (Figure 14).

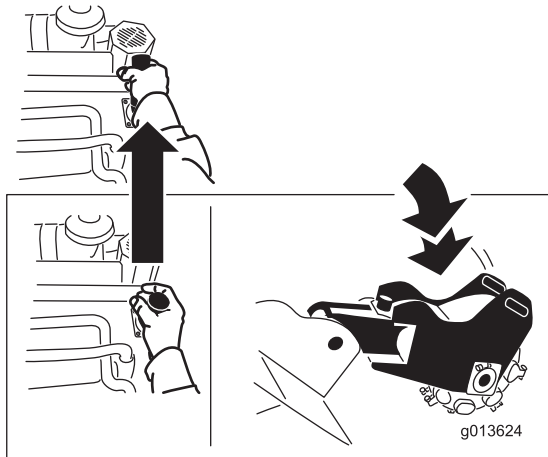


Figure 14

- To rotate the grinder to the right or left, move the lever in the desired direction.

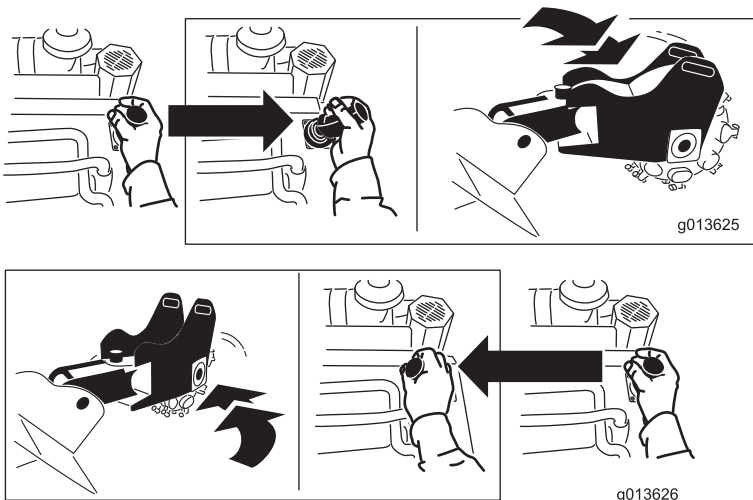


Figure 15

Specifications

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

Width	33.15 inches (84.2 cm)
Length	78.15 inches (198.5 cm)
Height	44.61 inches (113.3 cm)
Weight	1200 lb (544 Kg)

Attachments/Accessories

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

Operation

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

Important: Before operating, check the fuel and oil level, and remove debris from the machine. Also, ensure that the area is clear of people and debris. You should also know and have marked the locations of all utility lines.

Adding Fuel

Use unleaded gasoline (87 pump octane minimum). Leaded, regular gasoline may be used if unleaded is not available.

⚠ DANGER

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

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

⚠ DANGER

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

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

Important: Do not use methanol, gasoline containing methanol, or gasohol containing more than 10% ethanol because the fuel system could be damaged. Do not mix oil with gasoline.

Using Stabilizer/Conditioner

Use a fuel stabilizer/conditioner in the machine to provide the following benefits:

- Keeps gasoline fresh during storage of 90 days or less. For longer storage it is recommended that the fuel tank be drained.
- Cleans the engine while it runs
- Eliminates gum-like varnish buildup in the fuel system, which causes hard starting

Important: Do not use fuel additives containing methanol or ethanol.

Add the correct amount of gas stabilizer/conditioner to the gas.

Note: A fuel stabilizer/conditioner is most effective when mixed with fresh gasoline. To minimize the chance of varnish deposits in the fuel system, use fuel stabilizer at all times.

Filling the Fuel Tank

1. Park the machine on a level surface, lower the grinder, and stop the engine.
2. Remove the key and allow the engine to cool.
3. Clean around the fuel tank cap and remove it (Figure 16).

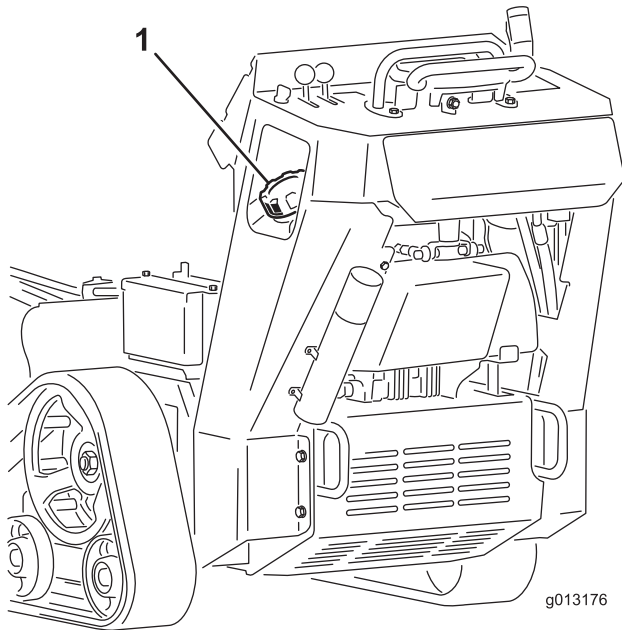


Figure 16

1. Fuel tank cap

4. Add unleaded gasoline to the fuel tank, until the level is 1/4 to 1/2 inch below the bottom of the filler neck.

Important: This space in the tank allows gasoline to expand. Do not fill the fuel tank completely full.

5. Install the fuel tank cap securely.
6. Wipe up any gasoline that may have spilled.

Checking the Engine Oil Level

Service Interval: Before each use or daily

1. Park the machine on a level surface, lower the grinder, and stop the engine.
2. Remove the key and allow the engine to cool.
3. Clean around the oil dipstick (Figure 17).

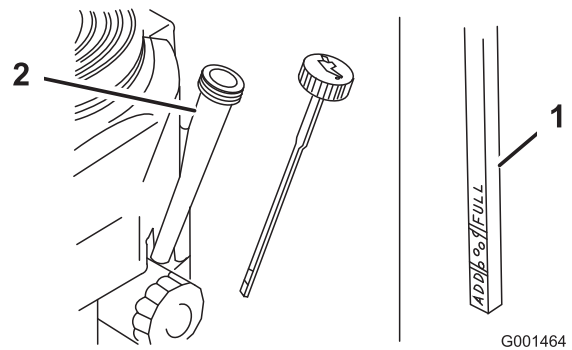


Figure 17

1. Oil filler hole
2. Oil dipstick
3. Full mark
4. Add mark

4. Remove the dipstick and wipe the end clean (Figure 17).
5. Slide the dipstick fully into the dipstick tube without threading it into the filler neck (Figure 17).
6. Pull the dipstick out and look at the end. The oil should be between the Add and Full marks (Figure 17).
7. If the oil is below the Add mark, add 10w30 engine oil to the filler hole, checking the level frequently with the dipstick, until the oil level reaches the Full mark.
8. Replace the dipstick.

Checking the Hydraulic Fluid Level

Service Interval: Every 25 hours

Hydraulic Tank Capacity: 6 US gallons (23 l)

Refer to Changing the Hydraulic Fluid (page 35) for hydraulic fluid specifications.

1. Park the machine on a level surface and lower the grinder.
2. Stop the engine, remove the key, and allow the engine to cool.
3. Look into the glass bubble on the right side of the machine. If you cannot see hydraulic fluid in the bubble, continue this procedure to add fluid.

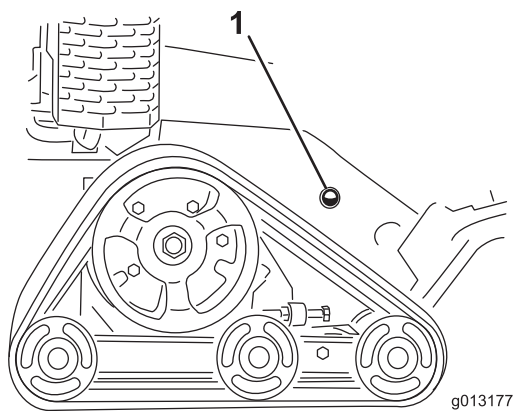


Figure 18

1. Hydraulic fluid check bubble

4. Remove the cover plate; refer to Removing the Cover Plate (page 22).
5. Clean the area around the filler neck of the hydraulic tank and remove the cap and filter from the filler neck using a socket (Figure 19).

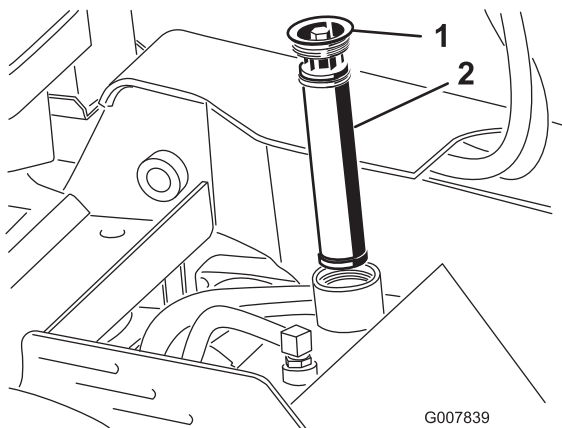


Figure 19

1. Filler neck cap
2. Hydraulic fluid filter

6. If the level is low, add fluid until it is visible in the glass bubble.
7. Install the cap and filter on the filler neck and torque bolt on top to 110 to 140 inch-lb (13 to 15.5 N-m).
8. Install the cover plate; refer to Installing the Cover Plate (page 22).

Starting and Stopping the Engine

Starting the Engine

1. Move the throttle lever midway between Slow and Fast positions (Figure 20).

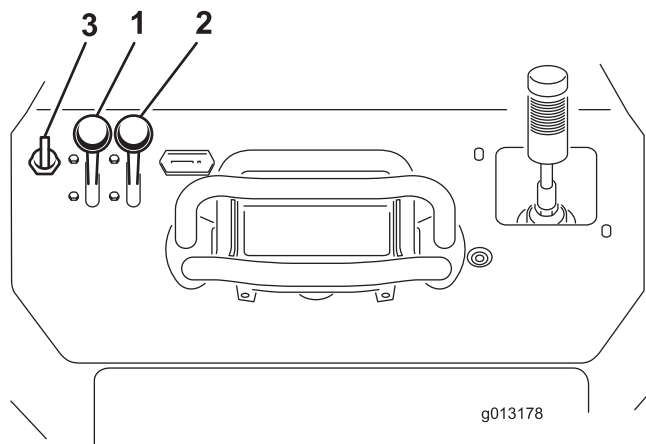


Figure 20

1. Throttle lever
2. Choke lever
3. Key

2. Move the choke lever to the On position (Figure 20).

Note: A warm or hot engine may not require choking.

3. Turn the key to the On position (Figure 20). When the engine starts, release the key.

Important: Do not engage the starter for more than 10 seconds at a time. If the engine fails to start, allow a 30 second cool-down period between attempts. Failure to follow these instructions can burn out the starter motor.

4. Gradually move the choke lever to the Off position (Figure 20). If the engine stalls or hesitates, engage the choke again until the engine warms up.
5. Move the throttle lever to the desired setting (Figure 20).

Important: If the engine is run at high speeds when the hydraulic system is cold (i.e., when the ambient air temperature is near freezing or lower), hydraulic system damage could occur. When starting the engine in cold conditions, allow the engine to run in the middle throttle position for 2 to 5 minutes before moving the throttle to fast (rabbit).

Note: If the outdoor temperature is below freezing, store the machine in a garage to keep it warmer and aid in starting.

Stopping the Engine

1. Stop the grinder and lower it to the ground.
2. Move the throttle lever to the Slow position (Figure 20).

3. Turn the key off (Figure 20).

Note: If the engine has been working hard or is hot, let it idle for a minute before turning the ignition key off. This helps cool the engine before it is stopped. In an emergency, the engine may be stopped immediately.

4. Remove the key.

Stopping the Machine

To stop the machine, release the traction control, move the throttle lever to slow (turtle), lower the grinder to the ground, stop the engine, and remove the key.

⚠ CAUTION

A child or untrained bystander could attempt to operate the machine and be injured.

Remove the key from the switch when leaving the machine, even if just for a few seconds.

Moving a Non-functioning Machine

Important: Do not tow or pull the machine without first opening the tow valves, or the hydraulic system will be damaged.

1. Stop the engine.
2. Remove the bottom shield.
3. Using a wrench, turn the tow valves on the hydraulic motors twice counter-clockwise (Figure 21).

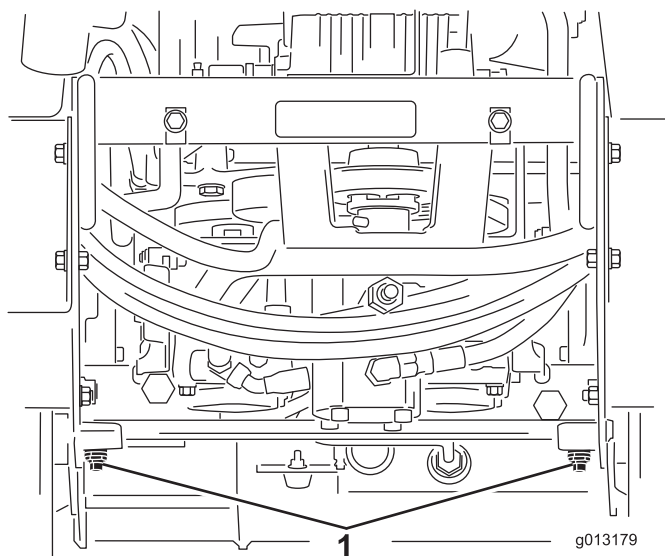


Figure 21

1. Tow valves

4. Install the bottom shield and tow the machine as required.
5. When the machine has been repaired, close the tow valves before operating it.

Grinding a Stump

⚠ DANGER

The grinder will cut and amputate hands and feet.

- Stay in the operator's position while the grinder is running and keep away from the grinder.
- Keep all bystanders a safe distance from the grinder.
- Stop the grinder immediately if any people or animals enter the work area.

⚠ WARNING

Grinding a stump will throw wood chips, soil, and other debris into the air which could injure you or bystanders.

- Always wear eye protection when using the grinder.
- Keep all bystanders a safe distance from the grinder.

⚠ WARNING

The grinder is very loud when cutting a stump and can damage your ears.

Always wear hearing protection when using the grinder.

1. Start the engine, raise the grinder, set the throttle lever to the Fast position, and move the machine to the stump to be ground.
2. Use the grinder control lever and the traction control to position the grinder to one side of the front of the stump, about an inch below the surface (Figure 22).

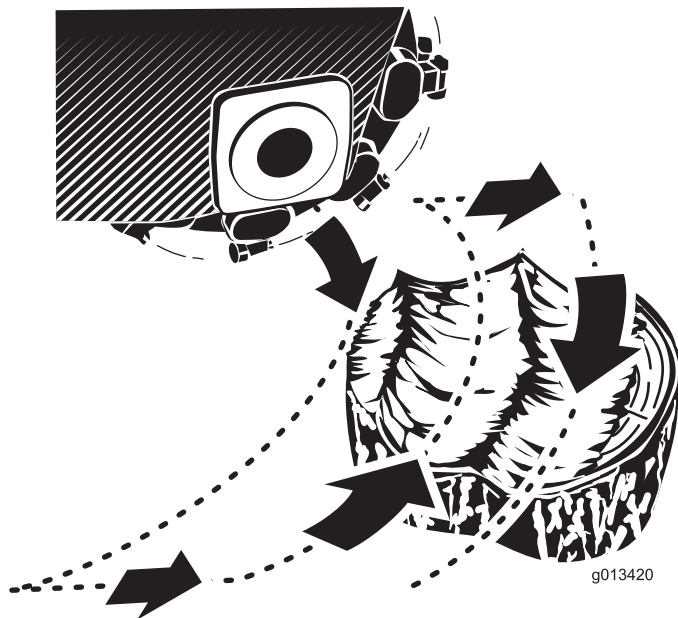


Figure 22

3. Start the grinder and wait for it to get up to full speed.
4. Use the grinder control lever to swing the grinder slowly across the face of the stump, cutting away a swath of chips (Figure 22).

Important: Do not force the grinder to move too fast. Instead allow it to cut through the wood without bogging down or losing speed.

5. Move the machine forward a few inches and repeat step 4 (Figure 22).
6. Repeat steps 4 through 5 until you have ground off the entire face of the stump (Figure 22).
7. Back up the machine, position the grinder to the side of the front of the stump, and lower it to about an inch below the surface.
8. Repeat steps 4 through 7 until the stump is ground away.
9. If there are any large roots to be ground, position the grinder over each root and use the traction control and grinder control to move the grinder along the root, grinding it away.

Securing the Machine for Transport

When transporting the machine on a trailer, always use the following procedure:

Important: Do not operate or drive the machine on roadways.

1. Stop the engine.

2. Lower the grinder.
3. Secure the machine to the trailer with chains or straps using the tie-down/lift loops at the front and rear of the machine (Figure 23 and Figure 24). Refer to your local ordinances for trailer and tie-down requirements.

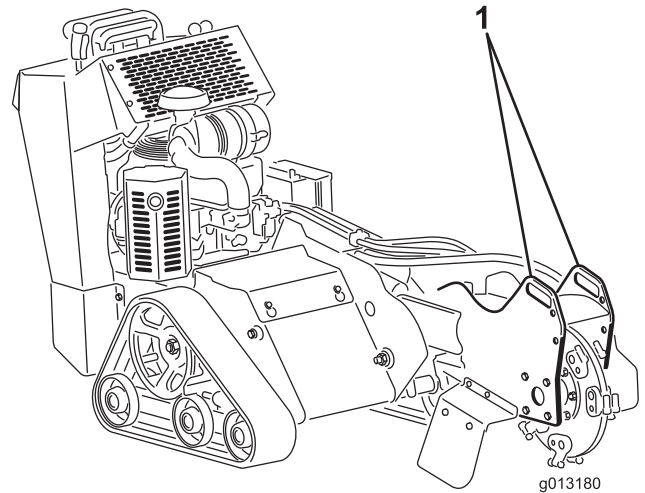


Figure 23

1. Front tie-down loop

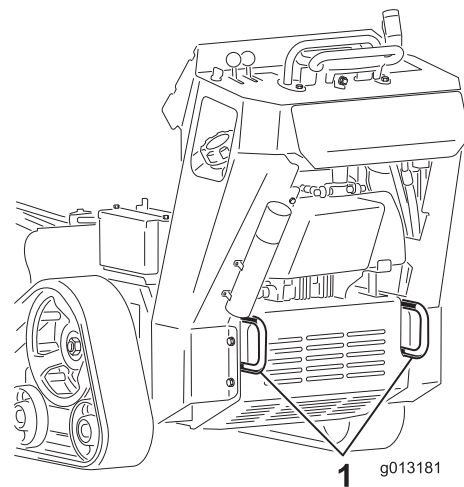


Figure 24

1. Rear tie-down loops

Lifting the Machine

You can lift the machine using the tie-down/lift loops as lift points (Figure 23 and Figure 24).

Operating Tips

- Clean the area of trash, branches and rocks before operating to prevent equipment damage.
- Always use full throttle (maximum engine speed) when grinding.

- Cut the edges of the stump for more efficient grinding. Once your cutting swath is close to 1/4 of the wheel diameter (), lift the grinder, move forward and begin cutting on the edge again.

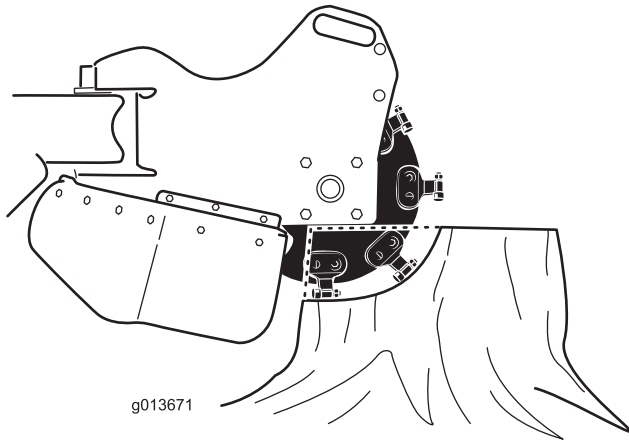


Figure 25

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- Listen to the engine and watch the grinder wheel speed to maintain the speed of the wheel. Slow down the head sweep by feathering the joystick as cutting becomes difficult.
 - As you grind from left to right, most of the debris will go to the left of the grinder wheel. When you grind from the right to left, the debris will go to the right.
 - You may also grind a stump from the side to lessen turf damage.