Form No. 3454-791 Rev A

TORO®

Count on it.

Operator's Manual

Front Tine Tiller/Cultivator

Model No. 58604—Serial No. 322006941 and Up

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

3454-791

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

⚠ WARNING

CALIFORNIA
Proposition 65 Warning

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

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

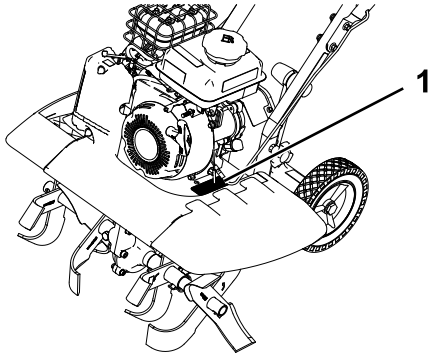
Introduction

This tiller is intended to be used by residential homeowners or professional, hired operators to break through hard soil conditions for planting and cultivating gardens. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.Toro.com for more information, including safety tips, training materials, accessory information, help finding a dealer, or to register your product.

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



g357999

Figure 1

1. Model and serial number location

Model No. _____

Serial No. _____

This manual identifies potential hazards and has safety messages identified by the safety-alert symbol (Figure 2), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



g000502

Figure 2

Safety-alert symbol

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

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Safety

This machine has been designed in accordance with ANSI B71.8-2016.

⚠ DANGER

There may be buried utility lines in the work area. Digging into them may cause a shock or an explosion.

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 US, call 811 for the nationwide marking service).

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 or death.

- Read, understand, and follow the instructions and warnings in this *Operator's Manual* and on the machine and attachments before starting the engine.
- Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the machine and disengage the controls quickly.
- Do not put your hands, feet, other body parts, or clothing near or under the rotating tines or other moving parts of the machine.
- Do not operate the machine without all proper shields, guards, and other safety protective devices in place and functioning properly on the machine.
- Keep bystanders, especially small children, and pets out of the operating area.
- 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.
- Shut off the machine and wait for all moving parts to stop before you leave the operator's position. Disconnect the spark-plug wire, keep it away from the plug to prevent accidental starting, and allow the machine to cool before adjusting, fueling, unclogging, servicing, cleaning, or storing the machine.

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

instruction. Failure to comply with these instructions may result in personal injury or death.

Safety and Instructional Decals

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



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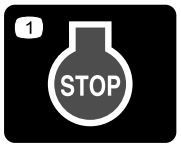
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decal144-4848

144-4848

1. Squeeze the throttle to engage the tines.



decal144-4853

144-4853

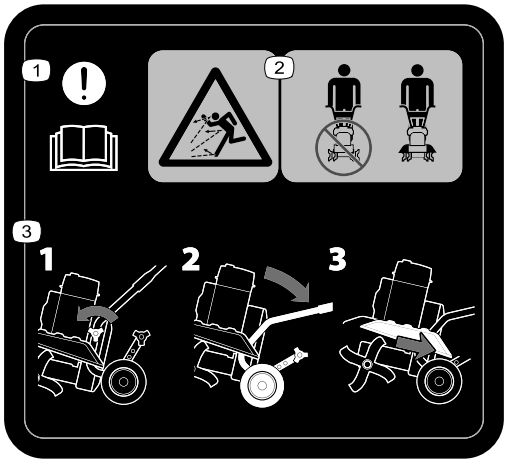
1. Engine—shut off



decal144-4872

144-4872

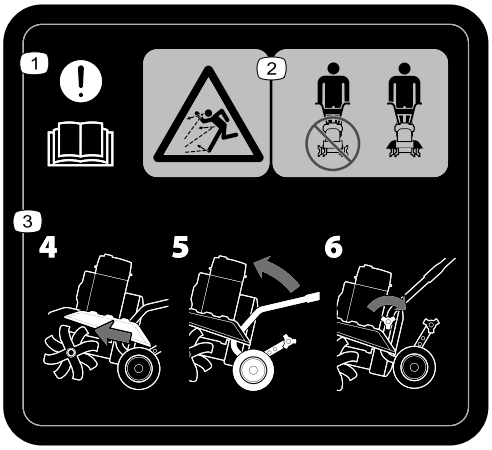
1. To start the machine, move the switch to the ON position, engage the choke, place one hand on the machine and pull the recoil handle, and move the choke lever to the RUN position.



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144-4873

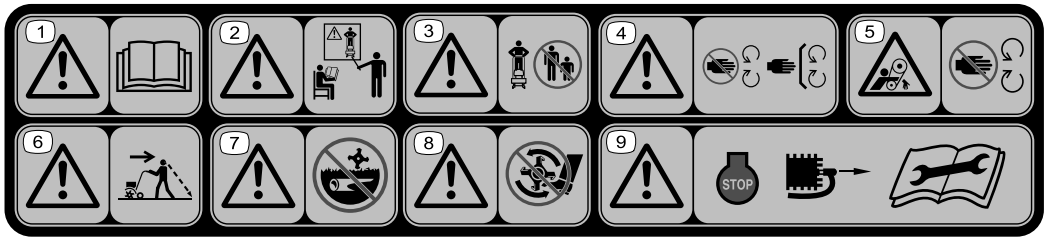
1. Warning—read the *Operator's Manual*.
2. Thrown object hazard—keep shields in place when outer tines are installed.
3. Removing the shields—remove the hand knobs, rotate the handlebars back, and remove the side shields.



decal144-4874

144-4874

1. Warning—read the *Operator's Manual*.
2. Thrown object hazard—keep shields in place when outer tines are installed.
3. Installing the shields—slide the side shield on, raise the handlebars, and install the hand knob.



decal148-4868

148-4868

1. Warning—read the *Operator's Manual*.
2. Warning—all operators should be trained before operating the machine.
3. Warning—keep bystanders away.
4. Warning—stay away from moving parts; keep all guards in place.
5. Entanglement hazard, belt—stay away from moving parts.
6. Warning—look behind you when operating the machine in reverse.
7. Warning—do not operate over buried lines.
8. Warning—keep feet away from moving parts.
9. Warning—shut off the engine and disconnect the spark plug and read the *Operator's Manual* before performing maintenance.

Setup

Loose Parts

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

Procedure	Description	Qty.	Use
1	Left outer tine set Right outer tine set Tine shaft sleeve Locknut (M10) Lock washer Bolt (M10 x 45 mm)	1 1 2 2 2 2	Install the tines and shields.
2	Locknut (M8) Washer Hex bolt (M8 x 40 mm) Left side shield Right side shield Pulley box cover	2 2 2 1 1 1	Install the lower handlebar assembly and shields.
3	Bolt (M8 x 40 mm) Bolt (M6 x 40 mm) Washer Locknut (M8) Locknut (M6) Left handlebar Middle dash panel Right handlebar	4 4 4 4 4 1 1 1	Assemble the machine.
4	Lock pin Drag stake	1 1	Install the drag stake.
5	No parts required	–	Connect the engine switch cable.
6	Engine oil	1	Adding oil to the engine.

1

Installing the Tines

Parts needed for this procedure:

1	Left outer tine set
1	Right outer tine set
2	Tine shaft sleeve
2	Locknut (M10)
2	Lock washer
2	Bolt (M10 x 45 mm)

Procedure

⚠ WARNING

When the outer tines are installed, operating the machine without the side shields could expose you or others to tine contact, causing injury or death.

- **Always install the side shields whenever the outer tines are installed.**
- **Never put your hands or feet under the machine.**

1. Remove the hand knob bolts from both sides of the tiller. Cut the cable ties from the lower handlebar assembly and separate it from the pulley box.

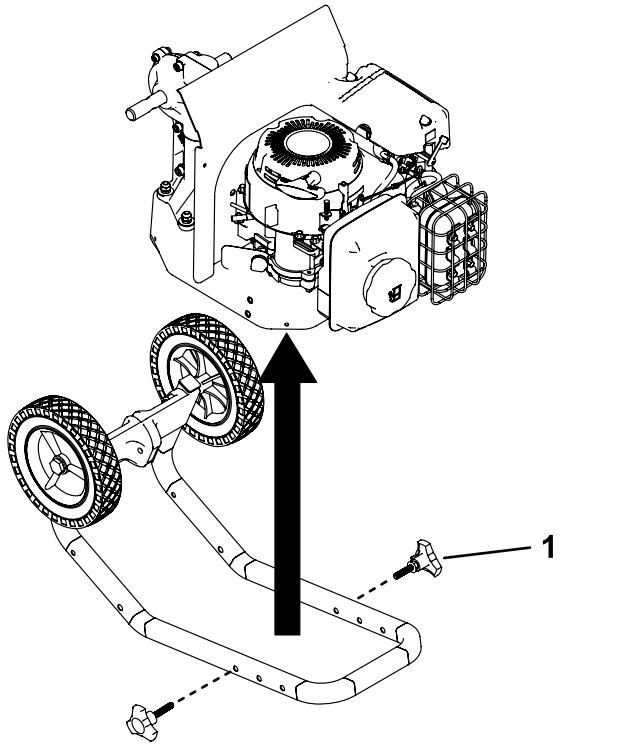


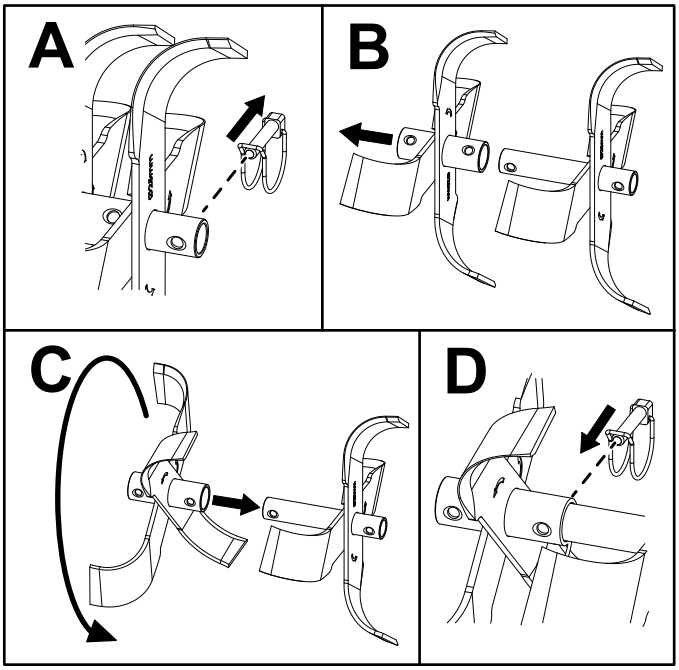
Figure 3

1. Hand knob

2. Remove the lock pin from 1 tine set and slide off the outer tine. Rotate it and slide it on to align with the second hole of the inner tine. Secure it with the lock pin.

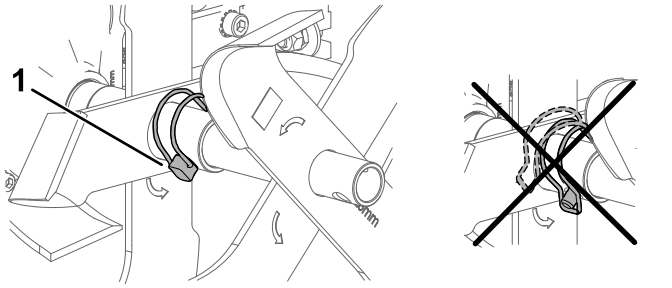
   Repeat this step for the other tine set.

   Important: **Install the lock pin from the front of the tiller so that the wire hinges over the top of the tine pipe and latches to the pin on the rear of the tine, as shown in Figure 5.**



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Figure 4



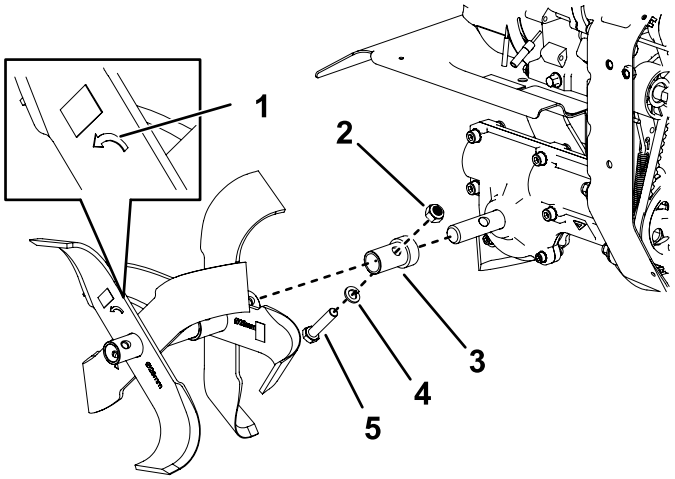
g358135

Figure 5

1. Wire hinge point

3. Ensure that the arrows on the left tine set follow forward rotation and slide the set over the tine shaft sleeve. Align the mounting holes and secure the tine set to the machine.

   Repeat this step for the right tine set.



g395576

Figure 6

1. Arrow following forward rotation
2. Locknut (M10)
3. Tine shaft sleeve
4. Lock washer
5. Bolt (M10 x 45 mm)

2

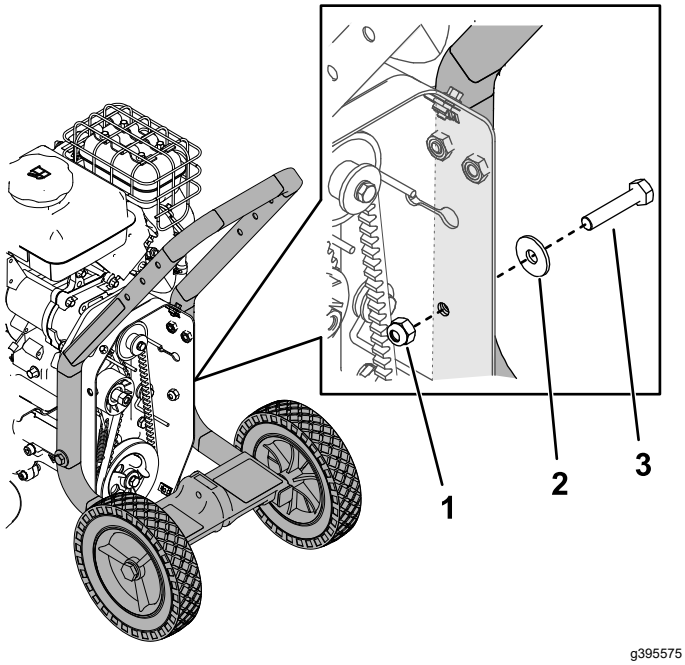
Installing the Lower Handlebar Assembly and Shields

Parts needed for this procedure:

2	Locknut (M8)
2	Washer
2	Hex bolt (M8 x 40 mm)
1	Left side shield
1	Right side shield
1	Pulley box cover

Procedure

1. Align the lower handlebar assembly mount holes with the lower mount holes on the pulley box and secure both sides of the assembly as shown.

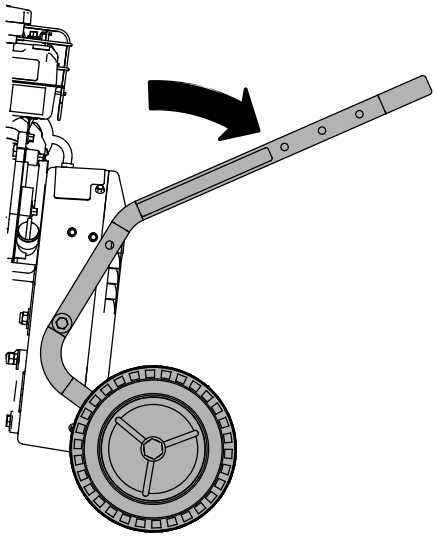


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Figure 7

1. Locknut—M8 (2)
2. Washer (2)
3. Hex bolt—M8 x 40 mm (2)

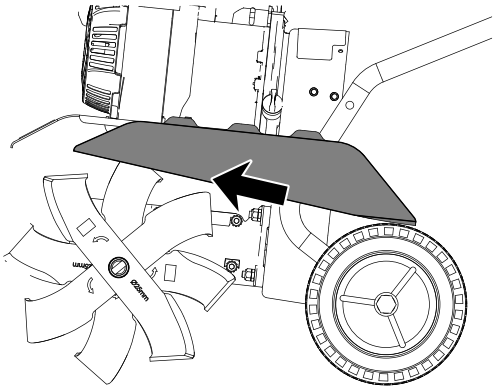
2. Rotate the lower handlebar assembly away from the engine.



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Figure 8

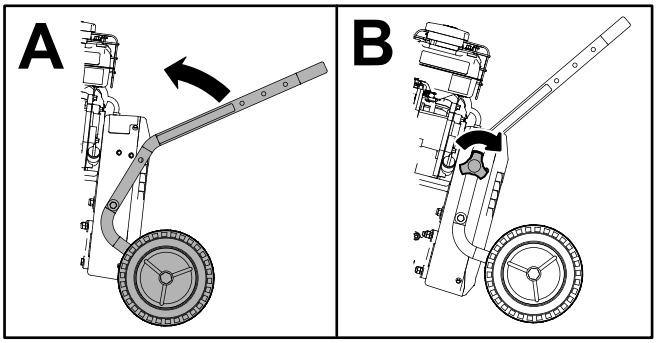
3. For each side shield, align the shield grooves with the center tine shield, slide the side shield onto the center tine shield, and push it until you hear/feel it click into place. Ensure that the shield is secure.



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Figure 9

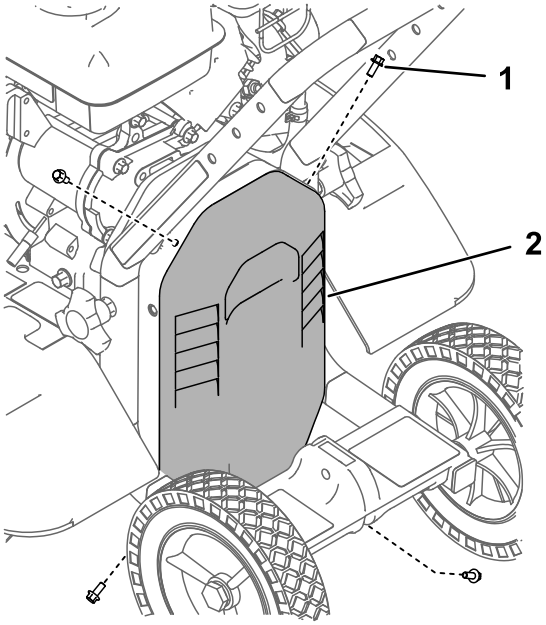
4. Rotate the lower handlebar assembly toward the engine to the desired position and install the hand knobs through the mount holes and tighten them.



g358169

Figure 10

5. Remove the 4 bolts from the pulley box cover. Place the cover onto the pulley box and secure it with the bolts.



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Figure 11

1. Bolts from pulley box cover (4)
2. Pulley box cover

3

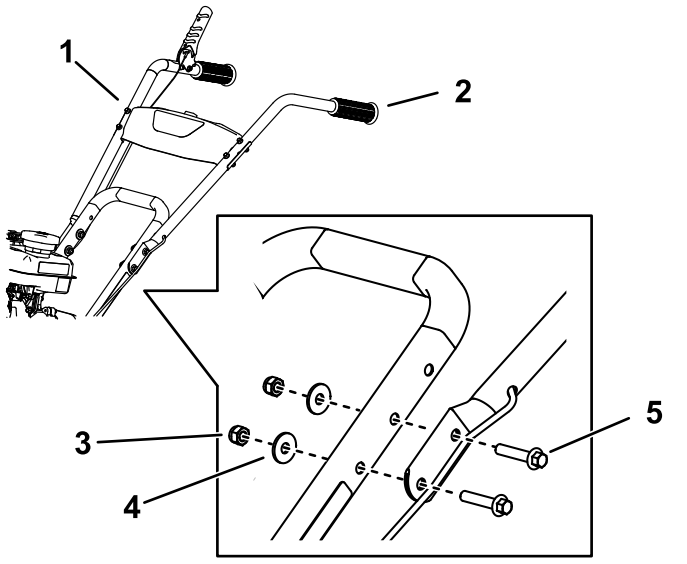
Installing the Upper Handlebars

Parts needed for this procedure:

4	Bolt (M8 x 40 mm)
4	Bolt (M6 x 40 mm)
4	Washer
4	Locknut (M8)
4	Locknut (M6)
1	Left handlebar
1	Middle dash panel
1	Right handlebar

Procedure

1. Align the 2 right handlebar mount holes with the lower handlebar mount holes at the desired height and secure it as shown. Repeat for the left handlebar.

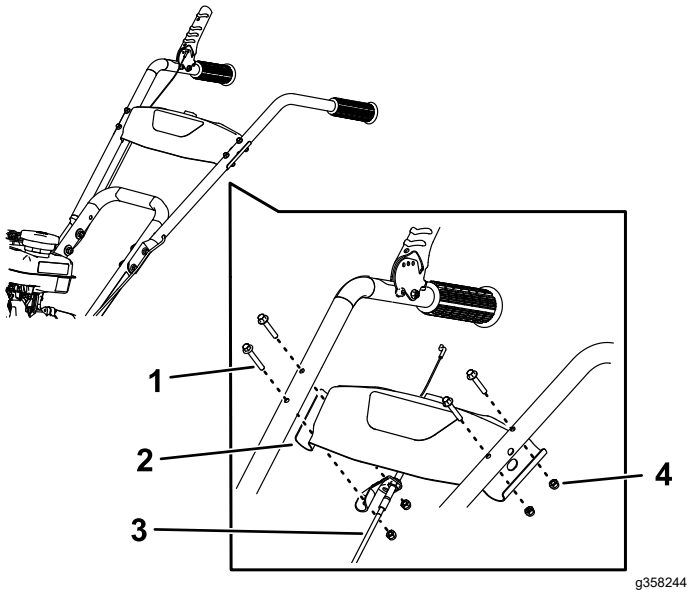


g358243

Figure 12

1. Right handlebar
2. Left handlebar
3. Nut—M8 (2)
4. Washer
5. Bolt—M8 x 40 mm (2)

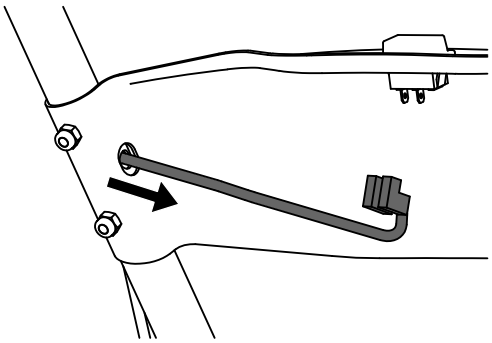
2. Install the middle dash panel. Route the engine switch cable through the hole on the left side of the panel as shown in Figure 14.



g358244

Figure 13

1. Bolt—M6 x 40 mm (4)
2. Middle dash panel
3. Drive cable
4. Nut—M6 (4)



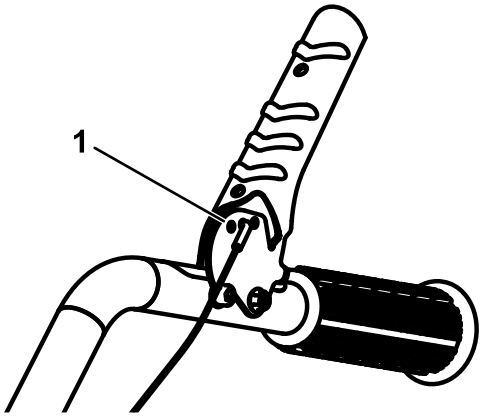
g361564

Figure 14

3. Tighten all fasteners.
4. If desired, secure the drive cable using a cable tie.

5. Insert the Z-bend end of the drive cable into the middle hole of the drive-control lever.

   Note: Ensure that there is no excess slack in the cable and that the lever remains in the full up position.



g358470

Figure 15

1. Drive-control lever holes

4

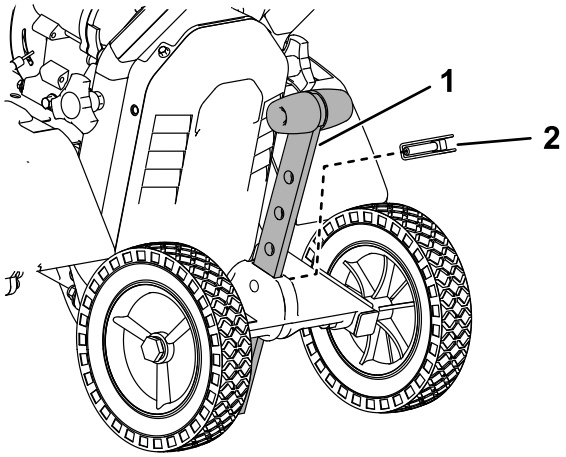
Installing the Drag Stake

Parts needed for this procedure:

1	Lock pin
1	Drag stake

Procedure

Install the drag stake at the desired height; refer to Adjusting the Drag Stake (page 19).



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Figure 16

1. Drag stake
2. Lock pin

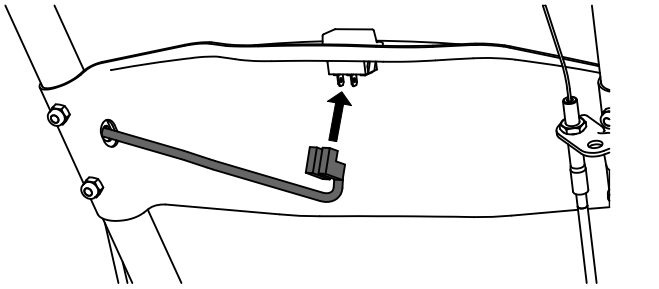
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Connecting the Engine Switch Cable

No Parts Required

Procedure

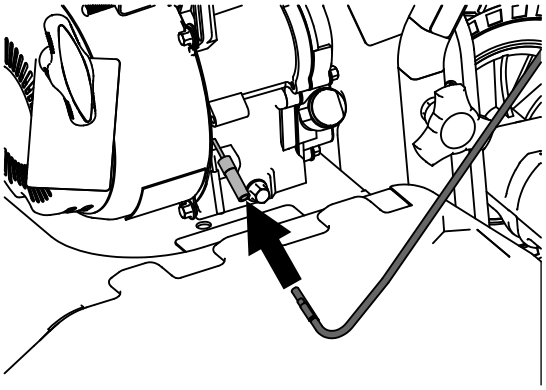
1. Plug the engine switch cable into the engine on/off switch.



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Figure 17

2. Plug the other end of the cable into the connector on the engine.



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Figure 18

6

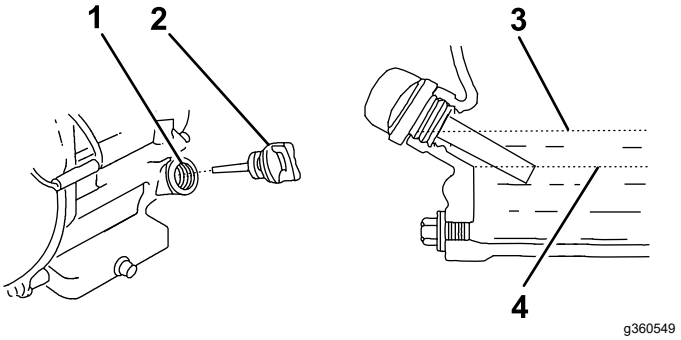
Adding Oil to the Engine

Parts needed for this procedure:

1	Engine oil

Procedure

1. Move the machine to a level surface.
2. Remove the dipstick.



g360549

Figure 19

1. Filler tube
2. Dipstick
3. Upper limit
4. Lower limit

3. Slowly add oil into the filler tube until the level is at the top thread of the tube.
4. Insert the dipstick into the oil-fill tube and tighten it.

Product Overview

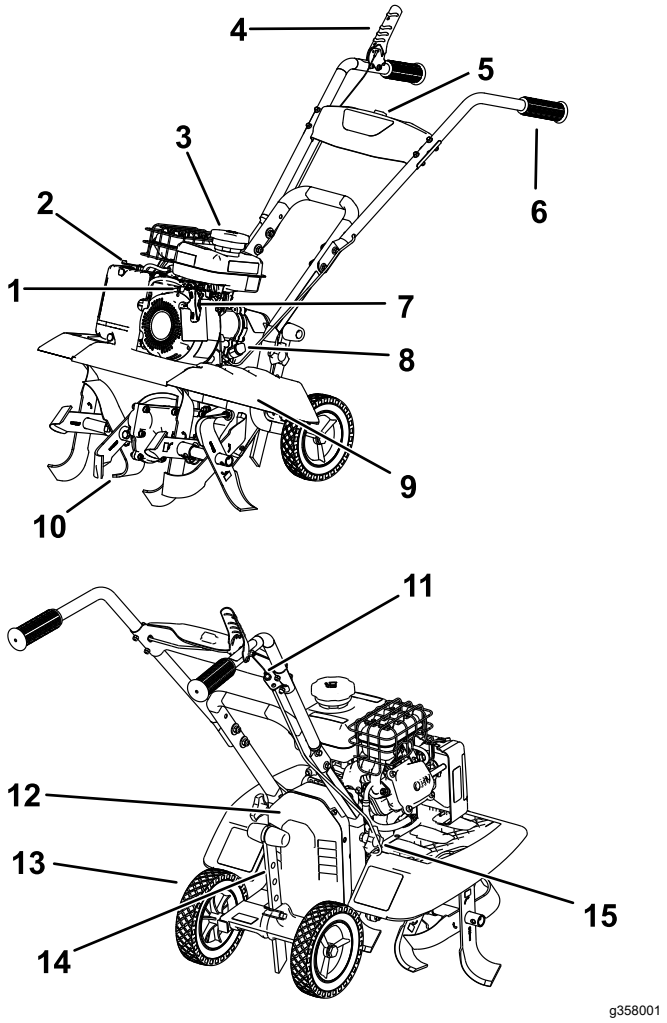


Figure 20

1. Throttle control
2. Choke lever
3. Fuel cap
4. Drive-control lever
5. Engine on/off switch
6. Hand grip
7. Recoil handle
8. Oil-fill cap
9. Removable side shield
10. Tines
11. Adjustable cable
12. Pulley box
13. Wheel
14. Drag stake
15. Handlebar-adjustment knob

Controls

Engine On/Off Switch

Use the engine On/Off switch to shut the engine off. Ensure that the switch is in the ON position before starting the engine.

Throttle Control

The throttle controls the engine speed, and it has a continuous-variable setting.

Operate the machine using full throttle for best performance.

Choke Lever

Move the choke lever on the engine to the CHOKE position when initially starting a cold engine, then move it into the RUN position once started.

Drive-Control Lever

Squeeze the drive-control lever to the hand grip to engage the tines. Release it to disengage the tines.

Specifications

Specifications and design are subject to change without notice.

Height	95 cm (37.3 inches)
Length	127 cm (50.0 inches)
Width	61 cm (24.0 inches)
Weight	35.4 kg (78 lb)
Tilling width	28, 41, or 53 cm (11, 16, or 21 inches)
Tilling depth	28 cm (11 inches)

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

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

Before Operation

Before Operation Safety

General Safety

- Do not allow children or untrained adults to operate or service the machine. Local regulations may restrict the age of the operator.
- Using this machine is strenuous. You must be in good physical condition and mentally alert. If you have any condition that might be aggravated by strenuous work, check with your doctor before operating the machine.
- Shut off the machine and wait for all moving parts to stop before you leave the operator's position. Disconnect the spark-plug wire, keep it away from the plug to prevent accidental starting, and allow the machine to cool before adjusting, fueling, unclogging, servicing, cleaning, or storing the machine.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- Check that all guards and safety devices, such as deflectors, are in place and functioning properly. Do not operate the machine unless they are functioning properly.
- Know how to shut off the engine quickly.
- Keep bystanders, especially small children, and pets out of the operating area.
- Thoroughly 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.

Fuel Safety

- Use extreme care in handling fuel. It is extremely flammable and its vapors are explosive.
- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only an approved fuel container.
- Do not remove the fuel cap or add fuel to the tank while the engine is running or hot.
- Allow the engine to cool before filling the fuel tank.
- Do not fill the fuel tank indoors.
- Do not overfill the fuel tank. Replace the fuel cap and tighten it securely after fueling. Clean up spilled fuel before starting the engine.
- Do not fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground, away from the vehicle before filling.
- Remove the machine from the truck or trailer before filling the fuel tank. If this is not possible, then add fuel from a portable container rather than from a fuel-dispenser nozzle.
- Keep the fuel-dispenser nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
- If you spill fuel on your clothing, change your clothing immediately.
- If you spill fuel, do not attempt to start the engine; move the machine away from the spill and avoid creating a source of ignition until the fuel vapors have dissipated.
- If you must drain the fuel tank, do it outdoors.
- Store fuel in a fuel container and keep it out of the reach of children.
- Do not store the machine with fuel in the fuel tank or fuel container where there is an open flame, spark, or pilot light, such as on a water heater or other appliance. Allow the engine to cool before storing the machine in any enclosure.
- 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.

Adding Fuel

Fuel Specifications

Type	Unleaded gasoline
Minimum octane rating	87 (US) or 91 (research octane; outside the US)
Ethanol	No more than 10% by volume
Methanol	None
MTBE (methyl tertiary butyl ether)	Less than 15% by volume
Oil	Do not add to the fuel

Use only clean, fresh (no more than 30 days old), fuel from a reputable source.

Using Stabilizer/Conditioner

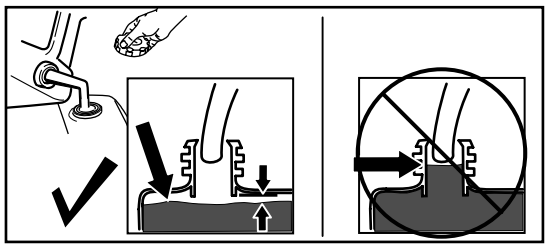
Use fuel stabilizer/conditioner in the machine to keep the fuel fresh longer when used as directed by the fuel-stabilizer manufacturer.

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

Add the amount of fuel stabilizer/conditioner to fresh fuel as directed by the fuel-stabilizer manufacturer.

Filling the Fuel Tank

Fill the fuel tank as shown in Figure 21.



g230458

Figure 21

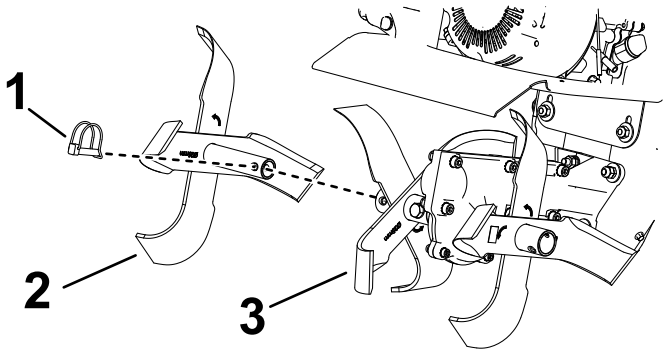
Changing the Tine Configuration

⚠ WARNING

When the outer tines are installed, operating the machine without the side shields could expose you or others to tine contact, causing injury or death.

- **Always install the side shields whenever the outer tines are installed.**
- **Never put your hands or feet under the machine.**

1. Move the machine to a level surface, shut off the engine, and wait for all moving parts to stop.
2. Remove the lock pins from both sides of the machine.

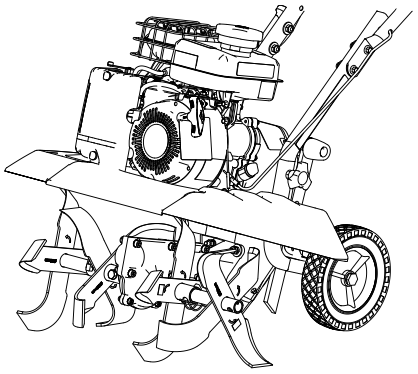


g358136

Figure 22

1. Lock pin
2. Outer tine
3. Inner tine

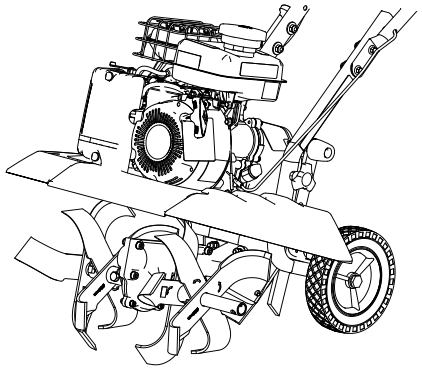
3. Install the outer tines per desired configuration:
   - Wide tilling—53 cm (21 inch) width



g358252

Figure 23

- Narrow tilling—41 cm (16 inch) width

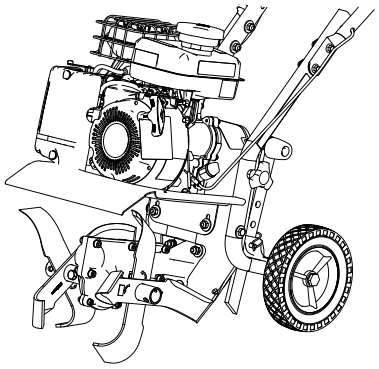


g358251

Figure 24

- Narrow cultivating—28 cm (11 inch) width

  Note: The side shields may be removed for this configuration. Remove the hand knobs and rotate the handlebars back to remove the side shields.



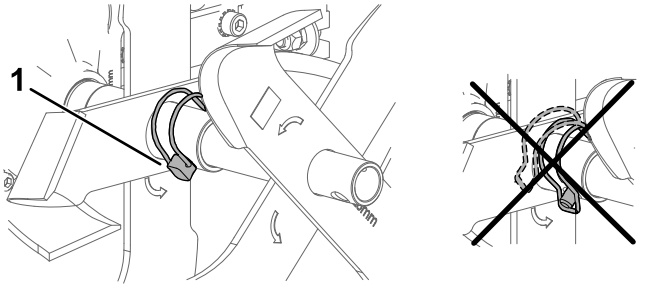
g358250

Figure 25

4. For narrow and wide tilling configurations, continue as follows:

   A. Install the lock pins.

   Important: **Install the lock pin from the front of the tiller so that the wire hinges over the top of the tine pipe and latches to the pin on the rear of the tine. The tines could inadvertently detach during tilling if the lock pins are installed incorrectly.**



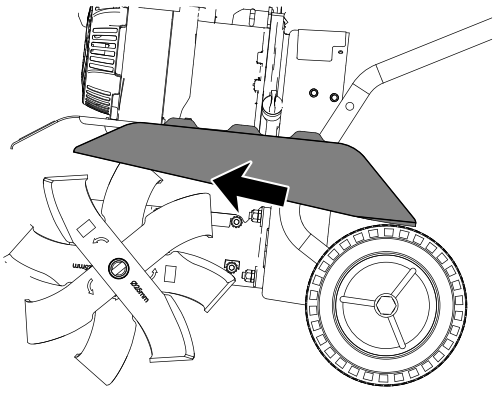
g358135

Figure 26

1. Wire hinge point

   B. Ensure that the side shields are securely installed.

   Note: You will hear or feel the shield click into place when you install it.



g358168

Figure 27

Adjusting the Handlebars

You can adjust the handlebar height 2 ways.

- Remove the fasteners from the left and right handlebars, align the holes at the desired height, and secure the handlebars.

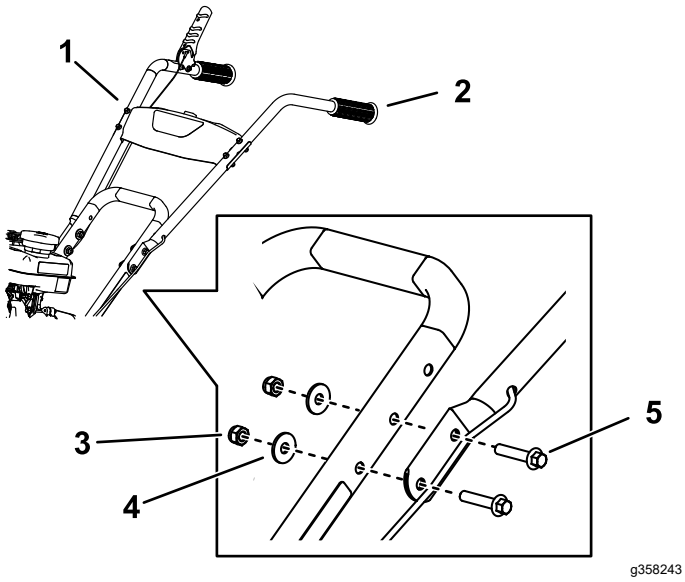


Figure 28

1. Right handlebar
2. Left handlebar
3. Nut—M8 (2)
4. Washer
5. Bolt—M8 x 40 mm (2)

- Remove the hand knobs from the lower handlebar assembly, rotate the handlebars to the desired position, and install the hand knobs.

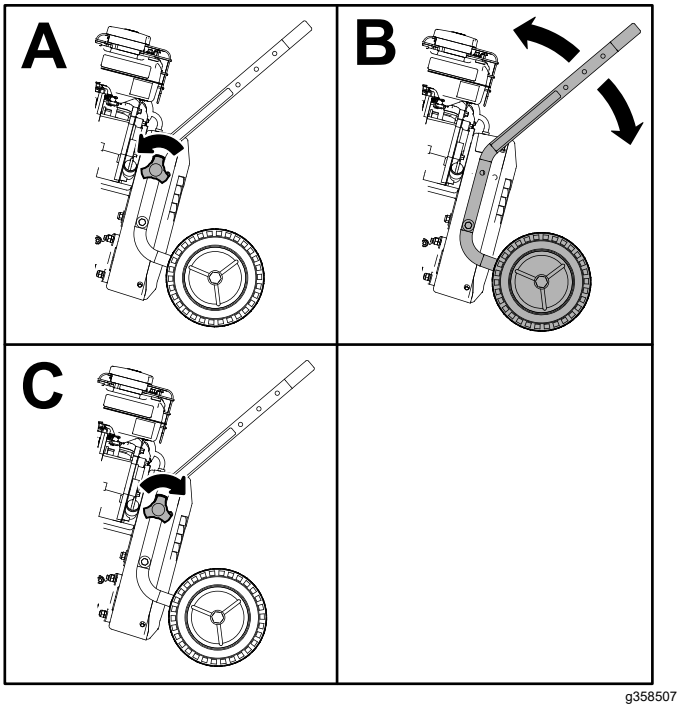


Figure 29

Performing Daily Maintenance

Before starting the machine each day, perform the Each Use/Daily procedures listed in Maintenance (page 20).

During Operation

During Operation Safety

General Safety

- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- Wear appropriate clothing, including eye protection; long pants; substantial, slip-resistant footwear; hearing protection; and gloves. Tie back long hair and do not wear loose clothing or loose jewelry.
- Keep your hands, feet, other body parts, and clothing away from rotating tines and moving parts of the machine. The tines begin rotating when you start the engine and may continue to rotate momentarily after you shut off the engine.
- Start the engine carefully according to instructions in this *Operator's Manual* and with your feet well away from the tines.
- Use extreme caution when reversing or pulling the machine toward you. To avoid getting pinned against a structure, allow enough distance to reverse direction near a wall or fence.
- Keep bystanders out of the operating area. Keep small children out of the operating area and under the watchful care of a responsible adult who is not operating the machine. Stop the machine if anyone enters the area.
- Before you start the engine, ensure that all drives are in neutral and you are in the operating position.
- Operate the machine only in good visibility and appropriate weather conditions. Do not operate the machine when there is the risk of lightning.
- Do not attempt to adjust the machine while the engine is running.
- If the machine strikes an object or starts to vibrate abnormally, immediately shut off the engine, wait

for all moving parts to stop, and disconnect the wire from the spark plug before examining the machine for damage. Vibration is often a warning sign of trouble. Make all necessary repairs before resuming operation.

- Do not operate the machine at high transport speeds on hard or slippery surfaces.
- Look behind and down and use care when reversing.
- Do not overload the machine capacity by attempting to till or cultivate too deep and at too fast a rate.
- Do not pick up or carry a machine while the engine is running.
- Exercise caution and be sure of your footing, especially when backing up, to avoid slipping or falling.
- Be careful when operating the machine in hard ground. The tines can catch in the ground and propel the machine forward. If this occurs, let go of the machine; do not try to restrain it.
- Exercise extreme caution when crossing gravel surfaces. Stay alert for hidden hazards or traffic.
- Do not leave a running machine unattended.
- Shut off the machine and wait for all moving parts to stop before you leave the operator's position. Disconnect the spark-plug wire, keep it away from the plug to prevent accidental starting, and allow the machine to cool before adjusting, fueling, unclogging, servicing, cleaning, or storing the machine.
- Operate the engine only in well-ventilated areas. Exhaust gases contain carbon monoxide, which is an odorless, deadly poison.
- Use only accessories and attachments approved by The Toro® Company.
- Do not change the engine governor settings or overspeed the engine.
- Always be sure of your footing; keep a firm hold on the handle and walk, never run.
- Allow the muffler and engine area to cool before touching them.
- The tines should not rotate when the engine is idling; if they do rotate, contact your Authorized Service Dealer.
- If an object becomes lodged in the tines, shut off the engine, disconnect the wire from the spark plug, and allow the engine to cool before removing the object.
- Do not operate the machine on steep slopes. To prevent overturning, operate the machine up and down the slope.

Starting the Machine

1. Move the engine on/off switch to the ON position.
2. Move the choke lever to the CHOKE position.

   Note: A warm or hot engine may not require choking.
3. Move the throttle lever halfway between the SLOW and FAST positions.
4. Pull the starter handle lightly until you feel resistance, then pull the handle briskly. Return the starter handle gently.
5. After the engine starts, gradually move the choke lever to the RUN position and the throttle lever to the FAST position.

Shutting Off the Engine

1. Release the drive-control lever.
2. Move the engine on/off switch to the OFF position.
3. Wait for all moving parts to stop before leaving the operating position.

Adjusting the Drag Stake

The drag stake helps regulate tilling depth and prevents the tiller from jerking forward during operation. Set the drag stake in the lowest position to increase resistance to forward motion and to dig deeper; raise the drag stake for transport.

1. Move the machine to a level surface, shut off the engine, and wait for all moving parts to stop.
2. Remove the lock pin.

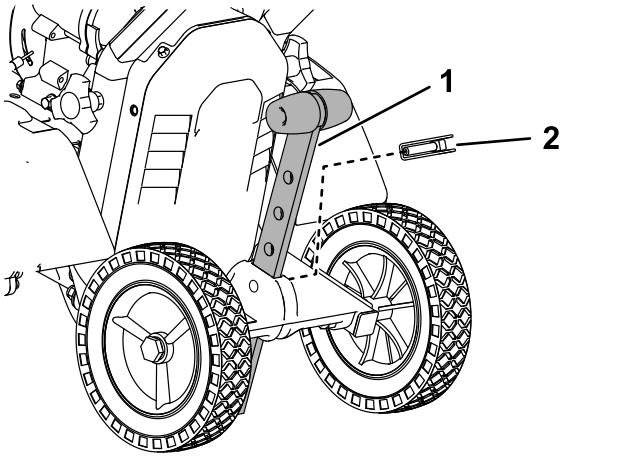


Figure 30

1. Drag stake
2. Lock pin

3. Position the drag stake to the desired depth.

   Note: Adjust the drag stake 1 hole at a time and test the tiller operation after each adjustment. Raising the drag stake too high can result in loss of control of the tiller.

4. Secure the drag stake with the lock pin.

Tilling Soil

1. Adjust the drag stake to the desired depth; refer to Adjusting the Drag Stake (page 19).
2. Start the engine and move the throttle control to the FAST position.
3. Squeeze the drive-control lever to engage the tines.
4. Till soil as required.
5. Release the drive-control lever to disengage the tines.

After Operation

After Operation Safety

General Safety

- Shut off the machine and wait for all moving parts to stop before you leave the operator's position. Disconnect the spark-plug wire, keep it away from the plug to prevent accidental starting, and allow the machine to cool before adjusting, fueling, unclogging, servicing, cleaning, or storing the machine.
- Clean debris from the machine to help prevent fires. Clean up oil or fuel spills.

Hauling Safety

- Disconnect the wire from the spark plug before loading the machine for hauling.
- Use care when loading or unloading the machine.

Maintenance

Maintenance Safety

- Inspect the machine frequently to ensure that it is in safe working condition and that shear bolts, engine-mounting bolts, and other fasteners are properly tightened.
- Shut off the machine and wait for all moving parts to stop before you leave the operator's position. Disconnect the spark-plug wire, keep it away from the plug to prevent accidental starting, and allow the machine to cool before adjusting, fueling, unclogging, servicing, cleaning, or storing the machine.
- Wear gloves and eye protection when servicing the machine.
- Never tamper with safety devices. Check their proper operation regularly.
- To ensure optimum performance 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.
- Replace tines that are bent, damaged, or loose; do not repair or alter them.
- Keep the machine, attachments, and accessories in safe working condition.
- Do not attempt to repair the machine unless you have the proper tools and instructions for disassembling, assembling, and repairing the machine.

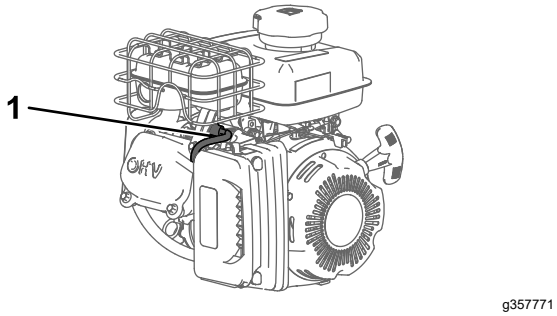
Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 20 hours	• Change the engine oil.
Before each use or daily	• Check the engine-oil level. • Clean debris from cooling fins, air inlets and linkages.
Every 10 hours	• Check the belt tension. • Clean the tine axle shaft.
Every 25 hours	• Service the air cleaner (more often in extremely dusty conditions). • Change the engine oil when operating in high temperatures or under heavy loads.
Every 50 hours	• Change the engine oil. • Check the spark plug. • Replace the drive belt.

Pre-Maintenance Procedures

Preparing for Maintenance

1. Move the machine to a level surface, shut off the engine, and wait for all moving parts to stop.
2. Disconnect the spark-plug wire from the spark plug.



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Figure 31

1. Spark-plug wire

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

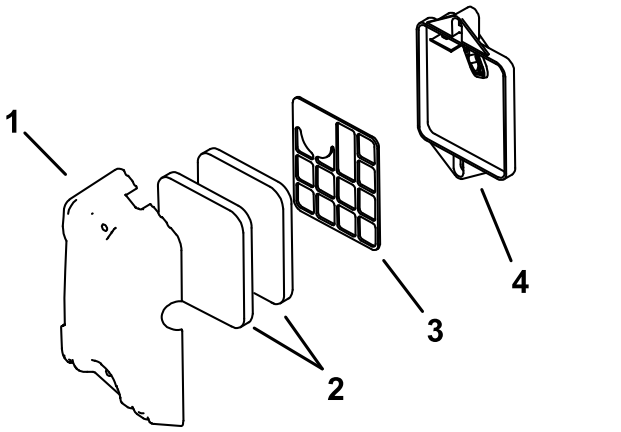
   Important: **Before tipping the machine to replace the blade, allow the fuel tank to run dry through normal usage. If you must tip the machine prior to running out of fuel, use a hand fuel pump to remove the fuel.**

Engine Maintenance

Servicing the Air Cleaner

Service Interval: Every 25 hours

1. Refer to Preparing for Maintenance (page 21).
2. Remove the air-cleaner cover.



g360561

Figure 32

1. Air-cleaner cover
2. Air-cleaner element (2)
3. Air-cleaner screen
4. Air-cleaner base

3. Remove and inspect the air-cleaner elements.
4. Inspect the air-cleaner elements.
5. Replace any torn or worn element. Otherwise, clean each element as follows:
   A. Wash the element with warm water and a mild detergent.

      Important: **Press the element when washing it; do not twist it.**

   B. Dry the element by pressing it in a clean cloth.
   C. Thoroughly oil the foam element using new engine oil and press out any excess oil.
6. Install the elements, screen, and air-cleaner cover to the base.

Servicing the Engine Oil

Engine-Oil Specifications

Engine oil capacity	0.35 L (11.8 fl oz)
Oil viscosity	Refer to the chart below.
API service classification	SJ or higher

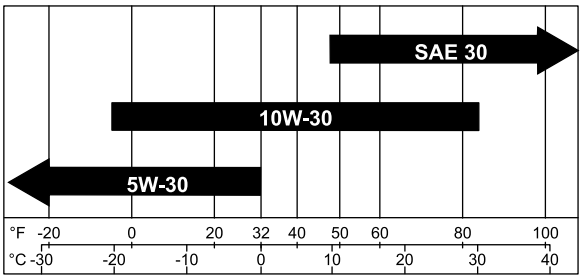


Figure 33

Important: **Do not use SAE 10W-40 Motor Oil.**

Checking the Engine-Oil Level

Service Interval: Before each use or daily

1. Move the machine to a level surface.
2. Remove the dipstick.

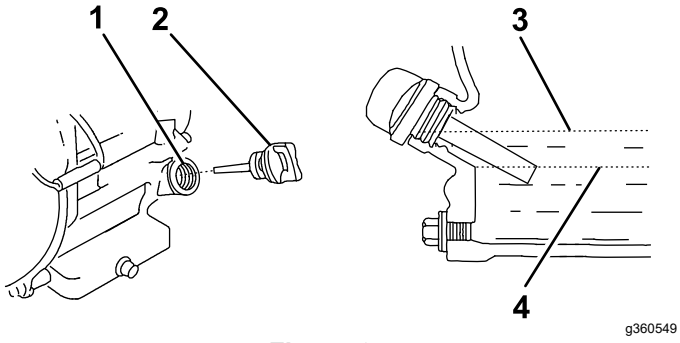


Figure 34

1. Filler tube
2. Dipstick
3. Upper limit
4. Lower limit

3. Wipe the dipstick clean with a clean cloth.
4. Insert the dipstick into the oil-fill tube and tighten it.
5. Remove the dipstick and check the engine-oil level.
6. If the oil level is low, slowly add oil into the filler tube until the level is at the top thread of the tube.
7. Insert the dipstick into the oil-fill tube and tighten it.

Changing the Engine Oil

Service Interval: After the first 20 hours/After the first month (whichever comes first)—Change the engine oil.

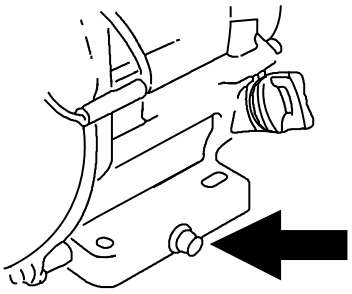
Every 25 hours—Change the engine oil when operating in high temperatures or under heavy loads.

Every 50 hours—Change the engine oil.

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

1. Move the machine to a level surface.
2. Refer to Preparing for Maintenance (page 21).
3. Place a pan under the drain plug to catch the oil.
4. Remove the oil-fill plug and allow the oil to drain.

   Note: Dispose of the used oil at a certified recycling center.



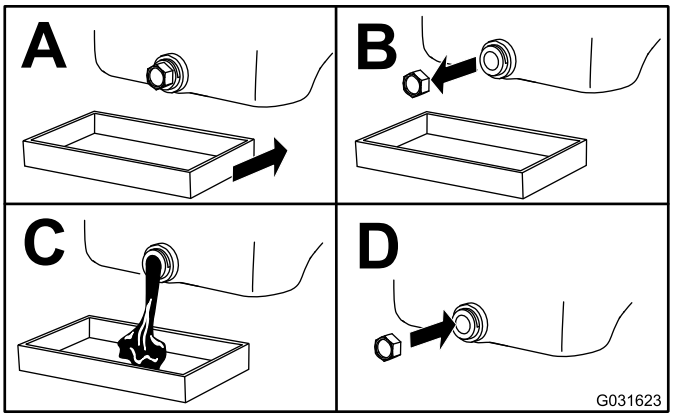


Figure 35

5. Install the oil-fill plug.
6. Slowly pour oil into the oil-fill hole until the oil is at the correct level; refer to Engine-Oil Specifications (page 22).
7. Ensure that the oil is at the correct level on the dipstick; refer to Checking the Engine-Oil Level (page 22).
8. Wipe up any spilled oil.

Servicing the Spark Plug

Service Interval: Every 50 hours

Ensure that the air gap between the center and side electrodes is correct before installing the spark plug.

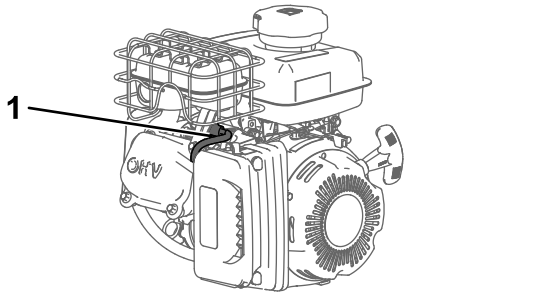
Use a spark plug wrench for removing and installing the spark plug(s) and a gapping tool/feeler gauge to check and adjust the air gap. Install a new spark plug(s) if necessary.

Type: LG E5RTC

Air gap: 0.75 mm (0.03 inch)

Removing the Spark Plug

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



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Figure 36

1. Spark-plug wire

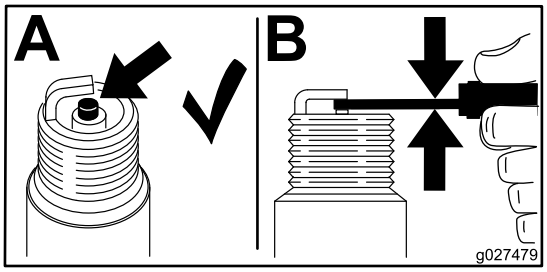
2. Clean around the spark plugs to prevent dirt from entering the engine and potentially causing damage.
3. Remove the spark plug.

Checking the Spark Plug

Important: **Do not clean the spark plug(s). Always replace the spark plug(s) when it has a black coating, worn electrodes, an oily film, or cracks.**

If you see light brown or gray on the insulator, the engine is operating properly. A black coating on the insulator usually means the air cleaner is dirty.

Set the gap to 0.75 mm (0.03 inch).



g027479

Figure 37

Installing the Spark Plug

1. Thread the spark plug clockwise into the spark-plug hole by hand.
2. Rotate the spark plug clockwise using a spark-plug wrench until the plug and sealing washer are seated.
3. Tighten the spark plug as follows:
   - When installing the original spark plug, tighten the plug an additional 1/2 turn.
   - When installing a new spark plug, tighten the plug an additional 1/8 to 1/4 turn.

   Important: **A loose spark plug may cause the cylinder to overheat. An over-tight spark plug may damage the threads in the cylinder head.**
4. Connect the spark-plug wire to the spark plug.

Fuel System Maintenance

⚠ DANGER

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

Refer to Fuel Safety (page 14) for a complete list of fuel related precautions.

Servicing the Fuel Filter

1. Refer to Preparing for Maintenance (page 21).
2. Drain fuel from the fuel tank.
3. Remove the 2 nuts securing the muffler to the engine and remove the muffler.
4. Remove the 3 bolts securing the fuel-tank assembly to the engine.
5. Gently lift the fuel tank off the engine. Loosen the hose clamp and disconnect the hose from the filter.

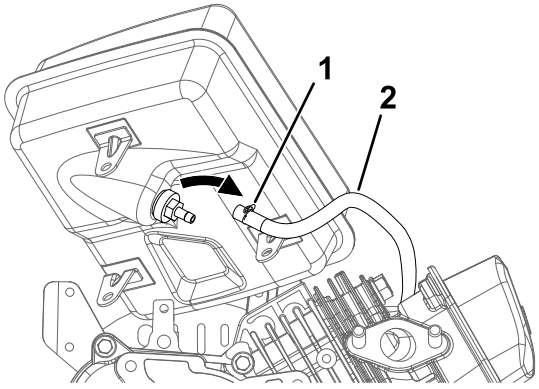


Figure 38

1. Hose clamp
2. Hose

6. Remove the filter by using a socket to turn it counterclockwise.

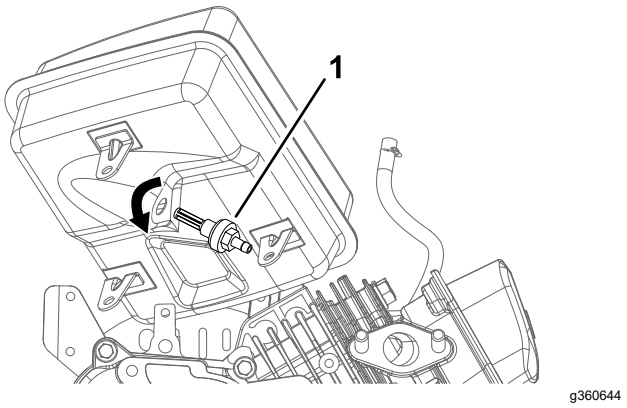


Figure 39

1. Fuel filter

7. Clean the filter using kerosene or a similar solvent.

   Note: Replace the filter if it is extremely dirty or torn.
8. Install the filter by using a socket to turn it clockwise.
9. Connect the hose to the filter and secure it using the hose clamp.
10. Install the fuel tank and secure it using the 3 bolts previously removed.
11. Install the muffler and secure it using the 2 bolts previously removed.
12. Add fresh fuel to the engine. Check for leaks before starting the engine.

Belt Maintenance

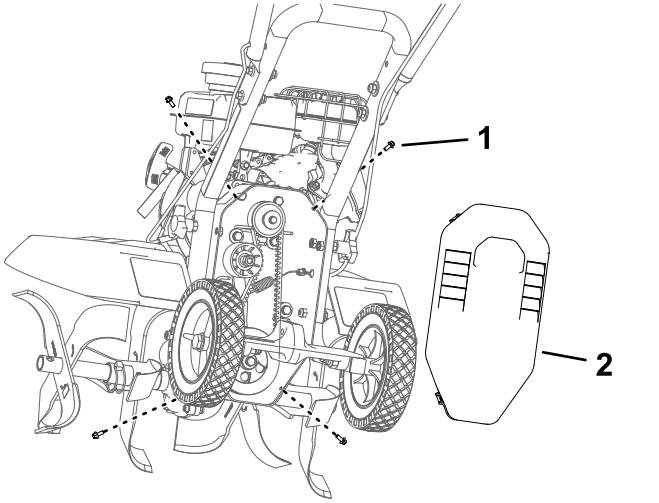
Checking and Adjusting the Belt Tension

Service Interval: Every 10 hours

The belt tension may decrease over time. You may need to adjust the belt within the first half hour of operation.

Important: **Check the belt tension regularly. Improper belt tension may cause premature belt wear.**

1. Remove the pulley cover.

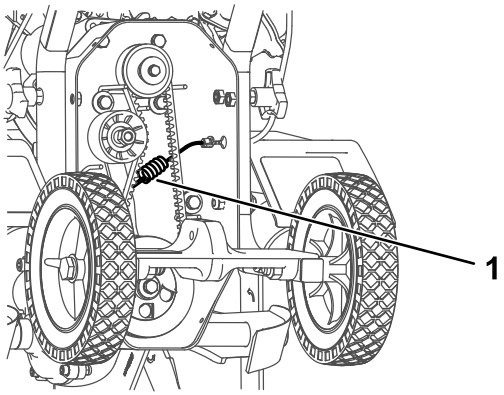


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Figure 40

1. Bolt—M6 x 35 mm (4)
2. Pulley cover

2. With the drive-control lever in the neutral position, measure the length of the relaxed cable spring.



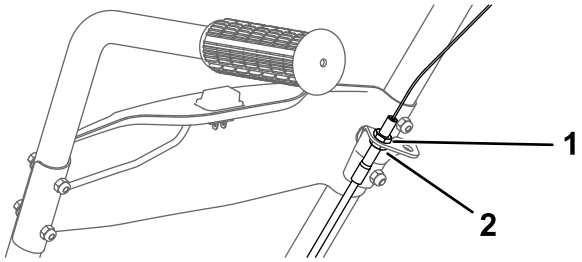
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Figure 41

1. Cable spring

3. Pull down the drive-control lever and measure the length of the extended cable spring. The difference should be 0.32 to 0.6 cm (1/8 to 1/4 inch).
4. If the belt needs adjustment, hold the lower jam nut in place and adjust the upper jam nut in 0.32 cm (1/8 inch) increments. Check the tension again, and repeat as necessary.

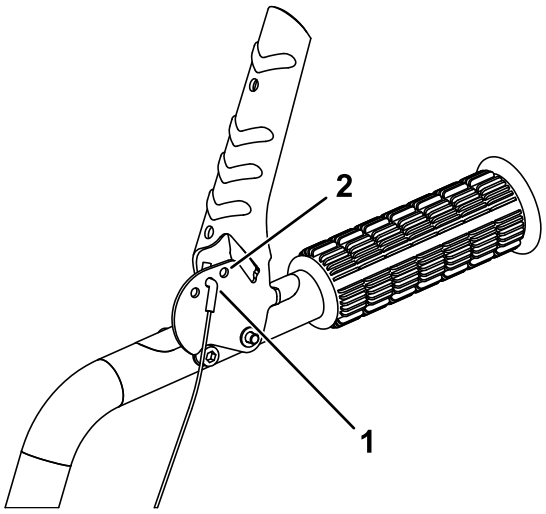
   Note: If the tension is incorrect and you cannot adjust the jam nuts further, move the Z-bend end of the cable to the next hole in the drive-control lever as shown in Figure 41. If the tension is still incorrect, replace the belt.



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Figure 42

1. Upper jam nut
2. Lower jam nut



g361541

Figure 43

1. Z-bend end of cable
2. Move cable to this hole.

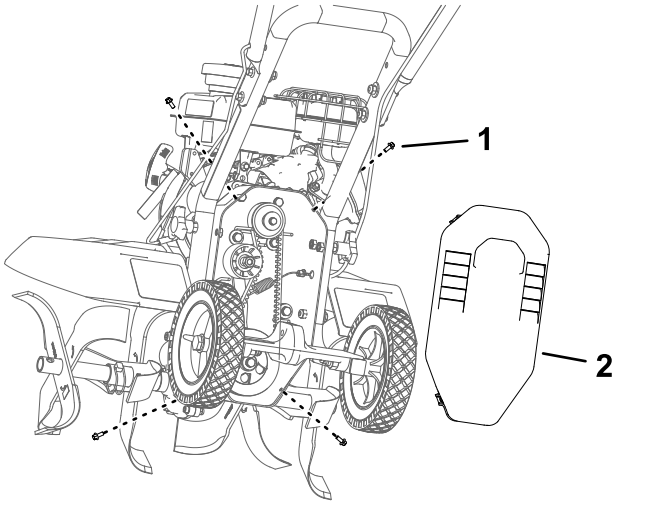
5. Tighten the lower jam nut.
6. Install the pulley cover.

Replacing the Drive Belt

Service Interval: Every 50 hours

Removing the Belt

1. Remove the pulley cover.

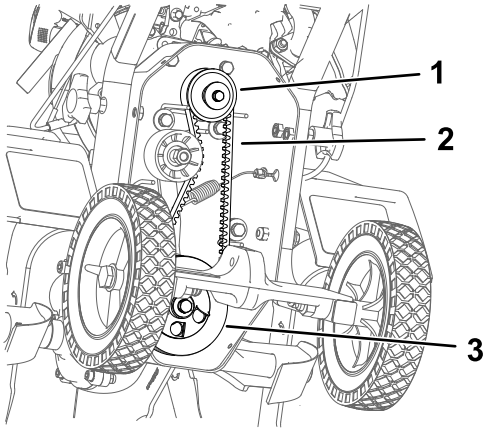


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Figure 44

1. Bolt—M6 x 35 mm (4)
2. Pulley cover

2. Gently pull the engine recoil rope to rotate the pulley.
3. While the pulley turns, force the belt out of the groove.



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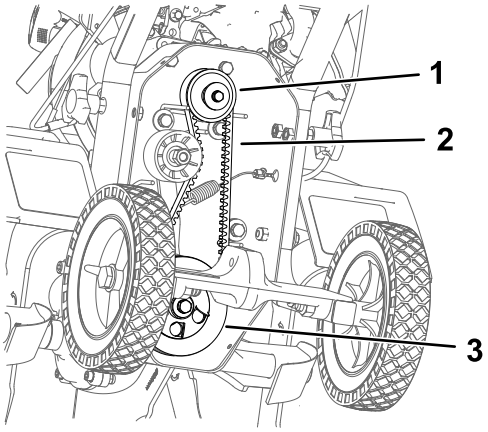
Figure 45

1. Engine pulley
2. Belt
3. Transmission pulley

4. Slide the belt off the engine pulley.
5. Pull the belt down and out of the way.
6. Push the belt down and away from the transmission pulley to remove it.

Installing the Belt

1. Place belt in the transmission pulley groove.

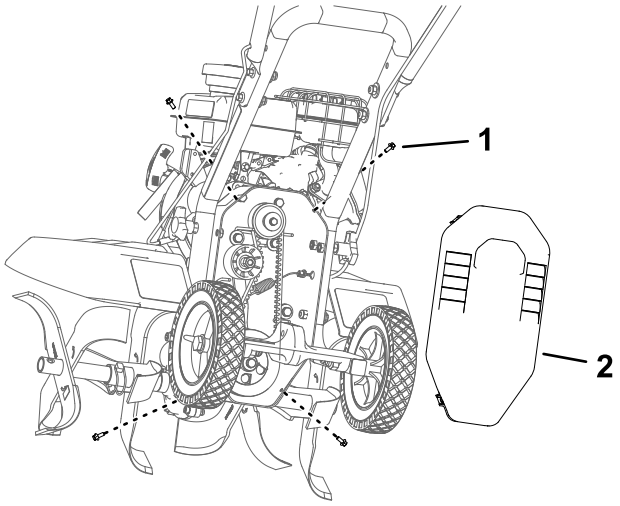


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Figure 46

1. Engine pulley
2. Belt
3. Transmission pulley

2. Gently pull the engine recoil rope to rotate the engine pulley while forcing the belt into the groove.
3. Check the belt tension; adjust it as necessary.
4. Install the pulley cover.



g358486

Figure 47

1. Bolt—M6 x 35 mm (4)
2. Pulley cover

Cleaning

Cleaning the Tine Axle Shaft

Service Interval: Every 10 hours

Remove all vegetation, string, wire, and other material that may have accumulated on the axle between the inner tines and the transmission housing.

Storage

Storage Safety

- Shut off the machine and wait for all moving parts to stop before you leave the operator's position. Disconnect the spark-plug wire, keep it away from the plug to prevent accidental starting, and allow the machine to cool before adjusting, fueling, unclogging, servicing, cleaning, or storing the machine.
- Run the engine dry or remove the fuel with a hand pump; never siphon the fuel. If you must drain the fuel tank, do it outdoors.
- Follow the instructions in this *Operator's Manual* to safely unload, transport, and store the machine.
- Do not store the machine with fuel in the fuel tank inside a building where ignition sources are present, such as hot water and space heaters and clothes dryers. Allow the engine to cool before storing the machine in an enclosure.
- Always refer to the *Operator's Manual* for important details if the machine is to be stored for an extended period.

Storing the Machine

1. Park the machine on a level surface, shut off the engine, and wait for all moving parts to stop before leaving the operating position.
2. Remove debris from the tines, axle, transmission housing, and engine.

   Important: **You can wash the machine with mild detergent and water. Do not pressure-wash the machine. Avoid excessive use of water, especially near the engine and transmission.**
3. Coat the axles lightly with axle grease.
4. Service the air cleaner; refer to Servicing the Air Cleaner (page 21).
5. Change the engine oil; refer to Changing the Engine Oil (page 22).
6. Prepare the machine for storage for over 30 days as follows:
   A. Add fuel stabilizer/conditioner to fresh fuel in the tank. Follow mixing instructions from the fuel stabilizer manufacturer. Do not use an alcohol-based stabilizer (ethanol or methanol).
   B. Run the engine to distribute conditioned fuel through the fuel system for 5 minutes.
   C. Shut off the engine, allow it to cool, and drain the fuel tank.

D. Start the engine and run it until it shuts off.

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

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

7. Remove and check the condition of the spark plug; refer to Servicing the Spark Plug (page 23). With the spark plug removed from the engine, pour 15 ml (1 tablespoon) of engine oil into the spark plug hole. Install the spark plug and pull the recoil rope 3 times to coat the cylinder with oil. Do not install the wire on the spark plug.
8. Check and tighten all fasteners. Repair or replace any part that is damaged.
9. Paint all scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
10. Store the machine in an upright position in a clean, dry garage or storage area. Keep it out of reach of children or other unauthorized users. Cover the machine to protect it and keep it clean.

Troubleshooting

Problem	Possible Cause	Corrective Action
The engine does not start.	1. The fuel tank is empty. 2. The spark-plug wire is loose or disconnected. 3. The engine switch is in the OFF position. 4. The choke lever is not in the CHOKE position during cold start.	1. Add fuel. 2. Install the wire on the spark plug. 3. Move the switch to the ON position. 4. Move the choke lever to the CHOKE position.
The engine runs rough or floods during operation.	1. The air filter is dirty.	1. Clean or replace the air filter.
The engine is difficult to start.	1. Stale fuel is in the fuel system. 2. The spark-plug wire is loose or disconnected. 3. The drive-control lever is engaged.	1. Drain the fuel tank and add fresh fuel. 2. Install the wire on the spark plug. 3. Release the drive-control lever.
The engine misses or lacks power.	1. The tilling depth is too deep. 2. The air cleaner is dirty or damaged. 3. The carburetor is out of adjustment. 4. The spark plug is wet, pitted, fouled, or the gap is incorrect. 5. Stale fuel is in the fuel system.	1. Raise the tines by raising the drag stake. 2. Clean or replace the air-cleaner element. 3. Contact an Authorized Service Dealer 4. Install a new, correctly gapped spark plug. 5. Drain the fuel tank and add fresh fuel.
The tiller moves forward during starting.	1. The drive-control lever is compressed. 2. The belt tension is incorrect.	1. Release the drive-control lever. 2. Check the belt tension and adjust it as necessary.
The tiller is difficult to control when tilling; the machine jumps or lurches forward.	1. The dirt is too compact. 2. The drag stake is set too high. 3. The tines are installed incorrectly.	1. Lower the engine speed. 2. Lower the drag stake for greater resistance and control of the machine. 3. Install the tines are installed with the edges forward.
Belts squeal during forward operation.	1. The belt tension is incorrect	1. Check the belt tension and adjust it as necessary.
There is a constant buzzing sound while the drive-control lever is compressed.	1. The drive-control lever is not fully compressed. 2. The wire belt guide is too close to the idler pulley. 3. The belt tension is incorrect 4. The belt is stretched.	1. Fully compress the drive-control lever. 2. Properly space the wire belt guide from the idler pulley to clear the belt. 3. Check the belt tension and adjust it as necessary. 4. Replace the belt.
Excessive heat builds up in the transmission/tine area during tilling.	1. Vegetation or debris is caught in the tines. 2. The transmission fluid is low.	1. Remove the vegetation or debris. 2. Check the transmission fluid and add fluid as necessary.

Notes:

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 does Toro include this warning?

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