Form No. 3377-563 Rev B

TORO®

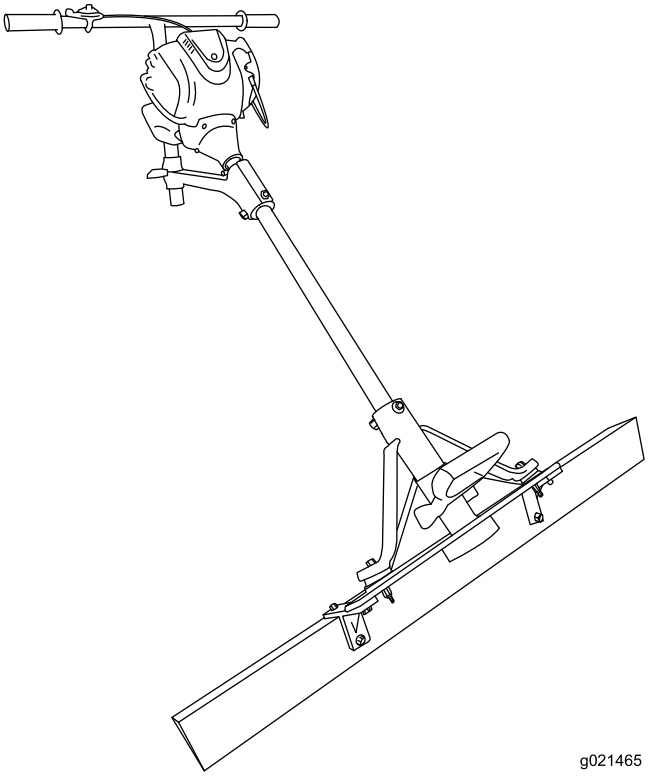
Count on it.

Operator's Manual

VS-70 and VS-80 Screed

Model No. 68054—Serial No. 313000001 and Up

Model No. 68055—Serial No. 313000001 and Up



g021465

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

3377-563 B

⚠ 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.

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 incorporated with the muffler assembly.

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

Important: This engine is equipped with a spark arrester muffler. 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.

This spark ignition system complies with Canadian ICES-002.

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

Introduction

This machine is a vibrating concrete screed intended for use in various concrete-forming work. The machine is designed to operate with aluminum screed boards.

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 machine 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 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

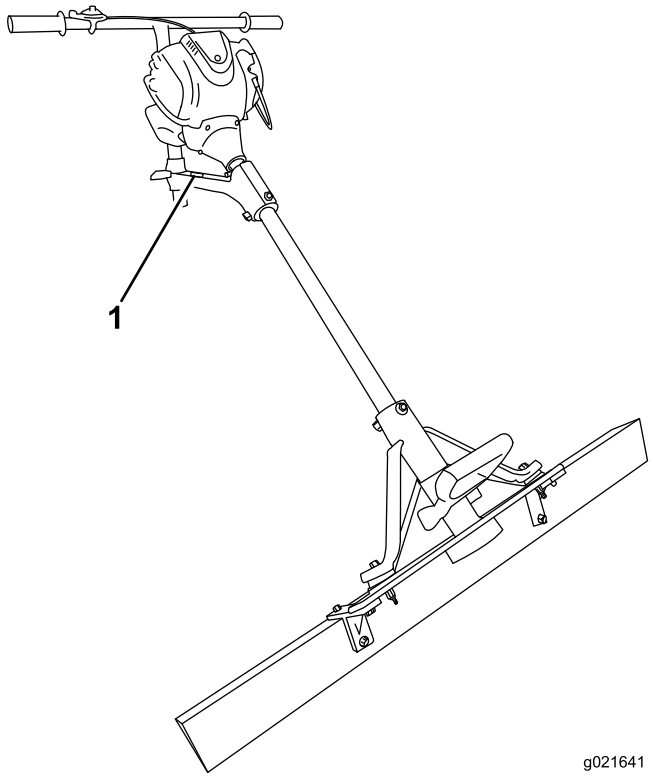


Figure 1

1. Model and serial number 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.

Figure 2

1. 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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Contact us at www.Toro.com.
Printed in the USA

Contents

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 ⚠, 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

⚠ 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) cannot read English, it is the owner's responsibility to explain this material to them.
- Become familiar with the safe operation of the machine, 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 machine. Local regulations may restrict the age of the operator.
- The owner/user can prevent and is responsible for accidents or injuries occurring to people, or damage to property.

Preparation

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

Operation

- Never run an engine in an enclosed area.
- Only operate the machine in good light.
- Only start the engine from the operator's position.
- Never operate with the covers not securely in place.
- Do not change the engine governor setting or overspeed the engine.
- Stop on level ground and shut off the engine before leaving the operator's position for any reason.
- Keep pets and bystanders away while operating the machine.
- 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.
- Move the engine controls in a smooth, steady motion.
- Watch for traffic when operating on or near 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. Only operate the unit in areas where there is sufficient clearance for the operator to safely maneuver the product.
- Do not place your feet under the screed boards.
- 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.

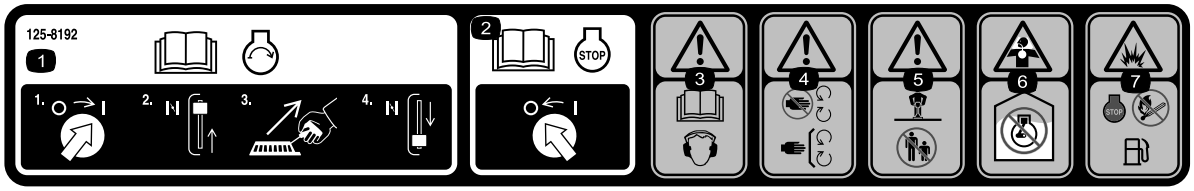
Maintenance and Storage

- Stop the engine and wait for all movement to stop before adjusting, cleaning, or repairing the machine.
- Clean debris from the muffler, spark arrester, and engine to help prevent fires.
- Let the engine cool before storing the machine, and do not store it near an open flame.
- Do not store fuel near flames or drain fuel from the machine indoors.
- Never allow untrained personnel to service the machine.
- Do not make adjustments with the engine running.
- Keep all parts in good working condition. Replace all worn or damaged decals.
- Keep all hardware of the machine tight. Keep the machine in good condition.
- Never tamper with safety devices.
- When present, clean up oil or fuel spillage.
- Use extra care when handling gasoline and other fuels. They are flammable and vapors are explosive.
- Store fuel in an approved container.
- Make any necessary repairs to the machine before starting.
- Use only genuine Toro replacement parts to ensure that original standards are maintained.

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.

117–2718



125–8192

1. Read the *Operator's Manual* for information on starting the engine—1) Turn the engine switch on; 2) Close the choke; 3) Pull the recoil start handle; 4) Open the choke.
2. Read the *Operator's Manual* for information on stopping the engine—turn the engine switch off.
3. Warning—read the *Operator's Manual*; wear hearing protection.
4. Warning—keep away from moving parts; keep all guards and shields in place.
5. Warning—keep bystanders away when operating the machine.
6. Choking hazard—do not run the engine indoors.
7. Explosion hazard—stop the engine and extinguish all flames before refueling.

Setup

1

Installing the Handlebar and Throttle Cable

No Parts Required

Procedure

1. Slide the handlebar into position (Figure 3).

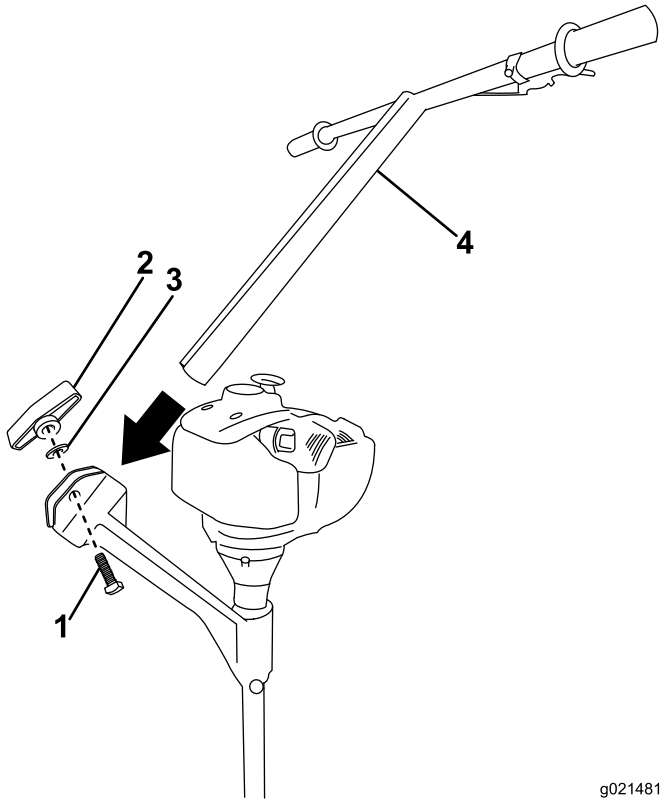


Figure 3

1. Bolt
2. Knob
3. Washer
4. Handlebar

2. Install the bolt, washer, and knob to secure the handlebar to the machine (Figure 3).
3. Remove the air cleaner cover; refer to Figure 24.
4. Attach the throttle cable by placing the cable into the cable anchor (Figure 4).

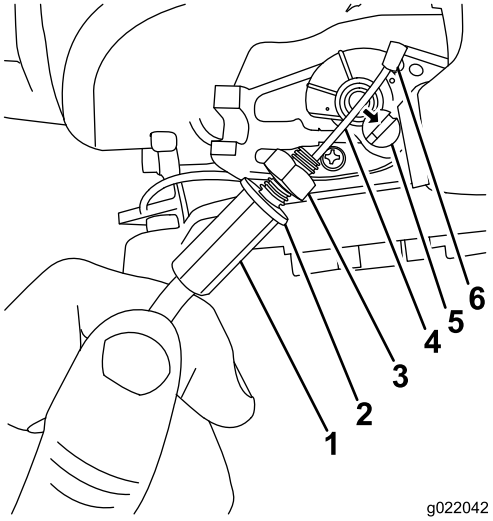


Figure 4

1. Cable fitting
2. Washer
3. Nut
4. Cable
5. Cable anchor
6. Cable stop

5. Move the assembly into place, let the cable stop slide into place, and tighten the cable fitting and nut; refer to Figure 5.

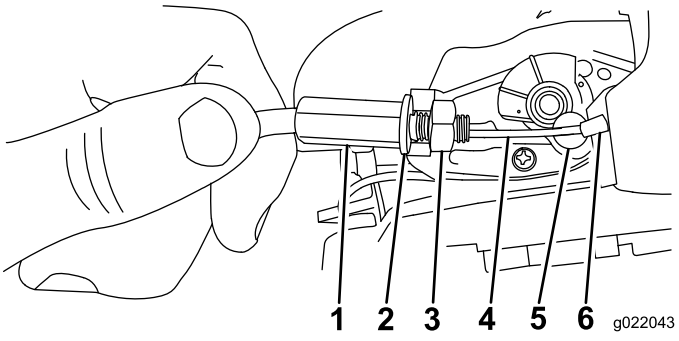


Figure 5

1. Cable fitting
2. Washer
3. Nut
4. Cable
5. Cable anchor
6. Cable stop

2

Adding Oil to the Engine

No Parts Required

Procedure

This machine does not come with oil. When the machine is being used for the first time, fill with oil. Refer to Filling the Engine Crankcase with Oil (page 19).

Product Overview

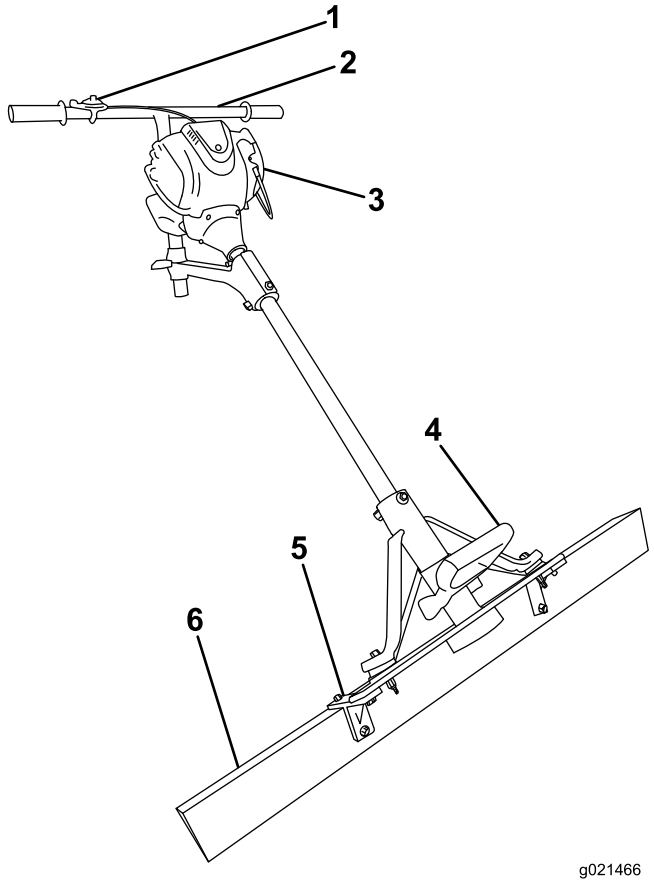


Figure 6

1. Throttle lever
2. handle bar
3. Engine
4. Lift handle
5. Board clamp
6. Aluminum board

Controls

Become familiar with all the engine controls before you start and operate the machine.

Engine Controls

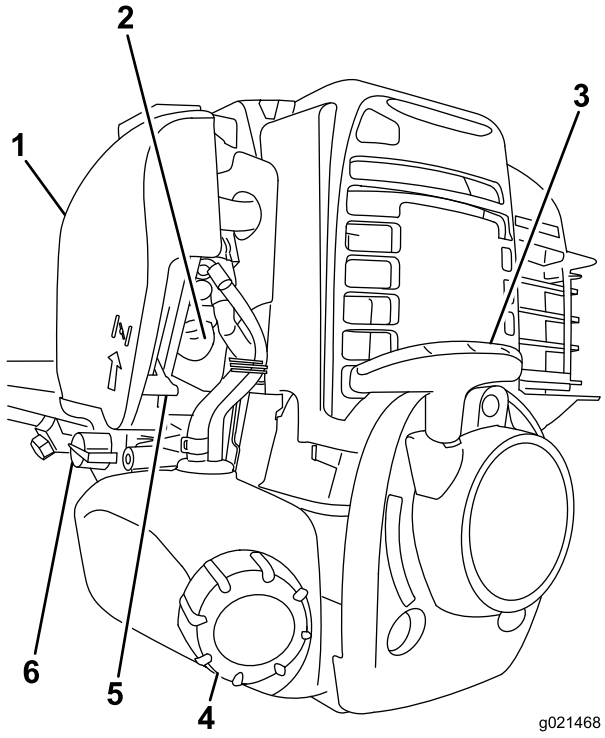


Figure 7

1. Air cleaner cover
2. Priming bulb
3. Recoil starter
4. Fuel cap
5. Choke lever
6. On/Off switch

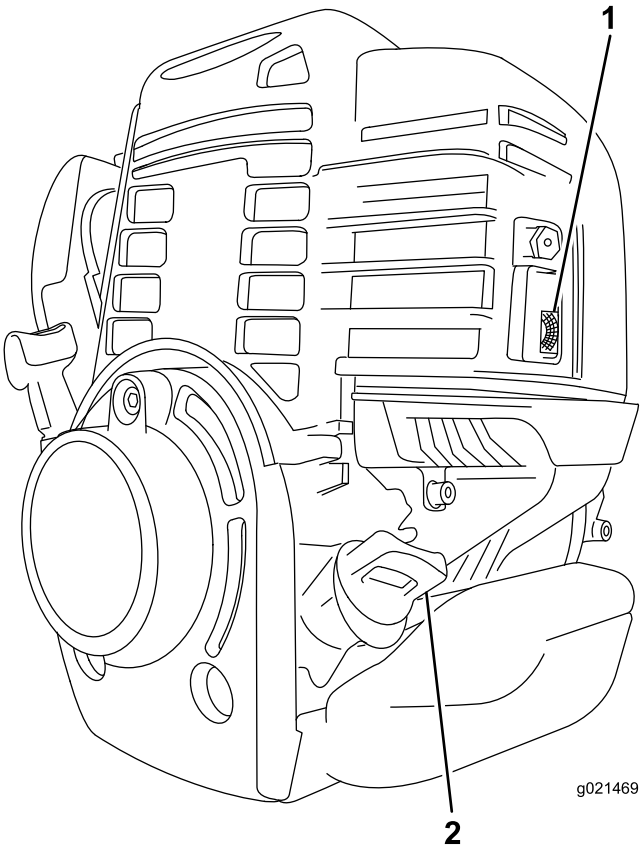


Figure 8

1. Spark arrestor
2. Oil cap

Priming bulb

The priming bulb (Figure 9) is located above the fuel cap.

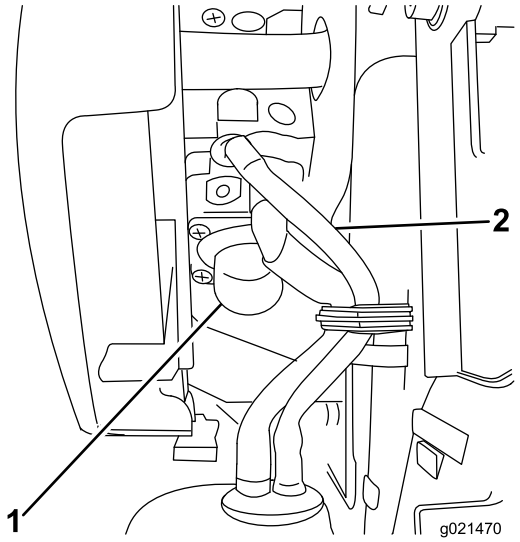


Figure 9

1. Priming bulb
2. Fuel return pump

Choke Lever

The choke lever (Figure 10) is required when starting a cold engine. Before pulling on the recoil-start handle, move the choke lever to the closed position. Once the engine is running, move the choke lever to the open position. Do not use the choke if the engine is already warmed up or the air temperature is high.

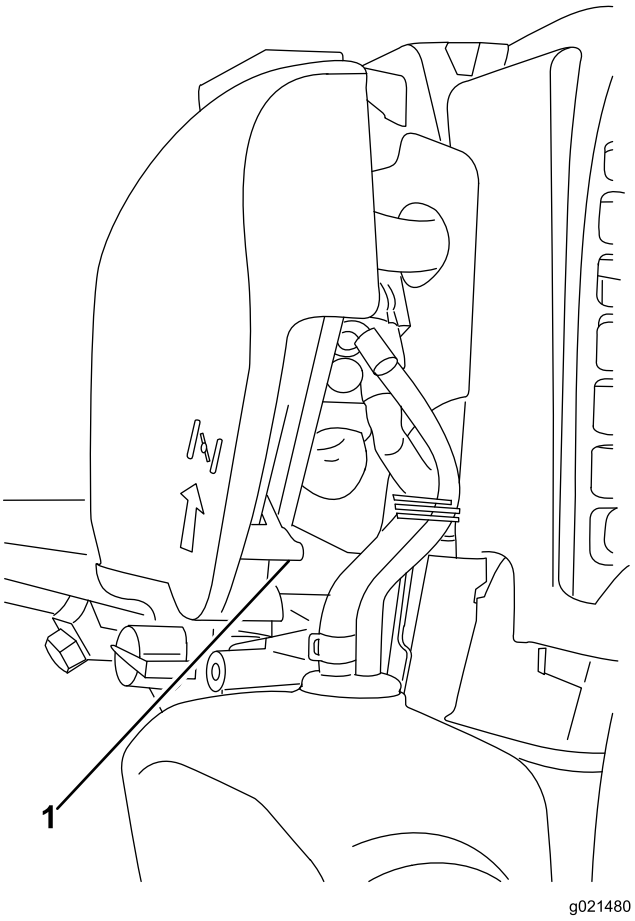


Figure 10

1. Choke lever in open position

Throttle Lever

The throttle lever (Figure 11) controls the speed (rpm) of the engine. It is located on the handlebar. Move it towards the maximum position as shown in Figure 11 to increase the throttle.

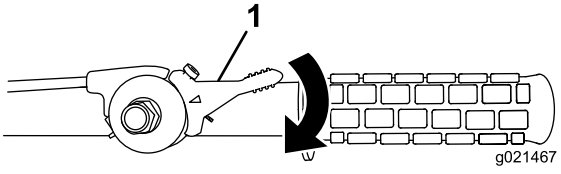


Figure 11

1. Throttle lever in minimum position

Recoil-start Handle

To start the engine, pull the recoil-start handle (Figure 7).

Engine On/Off Switch

The On/Off switch (Figure 12) allows the operator of the machine to start and stop the engine. This switch is located on the front of the engine. It is marked l (On) and O (Off). Rotate the On/Off switch to the On position to start and run the engine. Rotate the On/Off switch to the Off position to stop the engine.

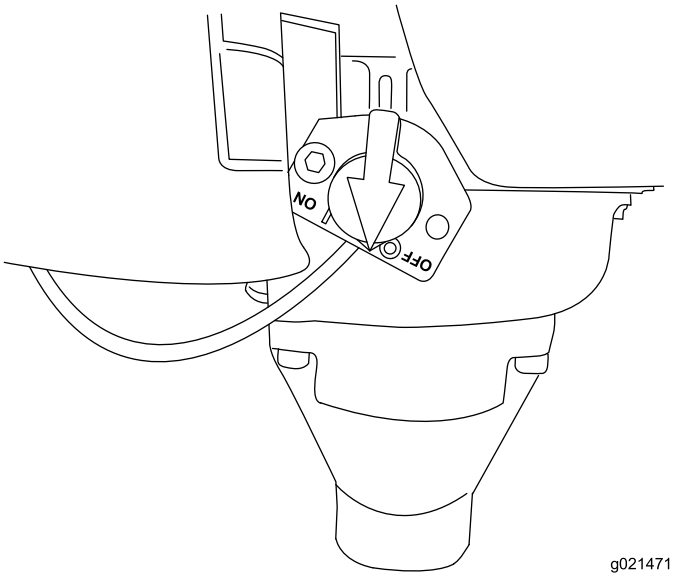


Figure 12

Specifications

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

	VS-70	**VS-80**
Width (without screed board)	70.0 cm (27.5 inch)	89.0 cm (35.0 inch)
Length	119.4 cm (47.0 inch)	56.0 cm (22.0 inch)
Height (without screed board)	73.7 cm (29.0 inch)	122.0 cm (48.0 inch)
Weight (without screed board)	11.3 kg (25.0 lb)	14.5 kg (32.0 lb)
Maximum screed board width	3.7 m (12.0 ft)	4.9 m (16.0 ft)

Operation

Important: Before operating the machine, check the fuel and oil levels, and remove debris from the machine.

Preparing to Use the Machine

- Review all of the safety decals on the machine.
- Use a hard hat, hearing protection, tight-fitting gloves without drawstrings or loose cuffs, and eye protection. A mesh visor alone does not provide sufficient eye protection; supplement with protective glasses.
- Ensure that you are familiar with safety regulations and the shutdown procedures described in the *Operator's Manual* and the *Engine Manual*.
- Ensure that all guards are in place and in good condition.
- Ensure that the screed board is in good condition, aligned correctly and secured to the machine.
- Check the fuel and oil levels of the engine.

Operator Positions

You must be familiar with three positions when using the machine.

- Use the operating position (Figure 13) when running the machine to screed concrete.

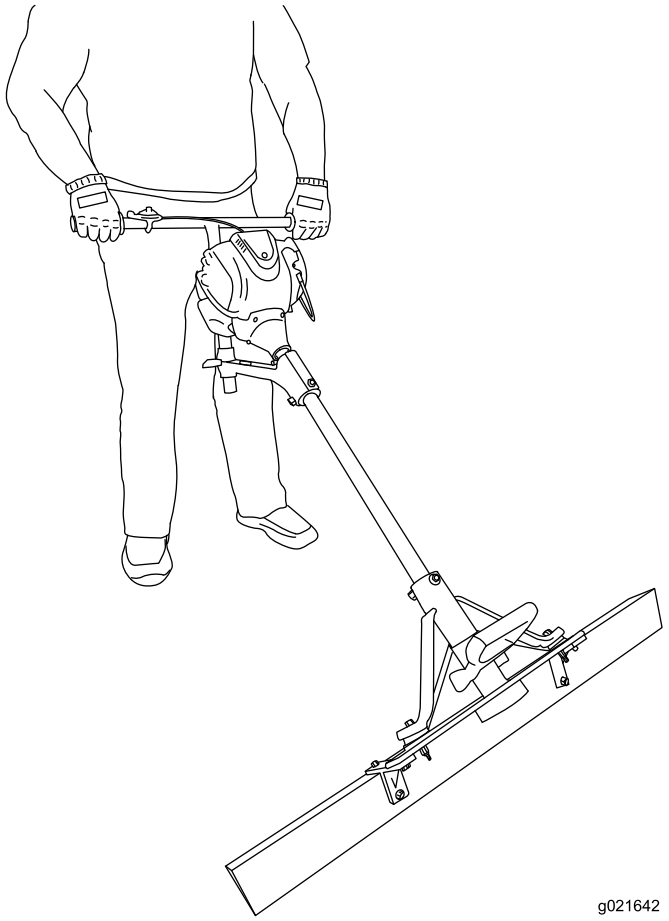


Figure 13

- Use the resting position when leaving the machine. (Figure 14). Never leave the engine running while the machine is in the rest position. Always set the machine on a flat surface.

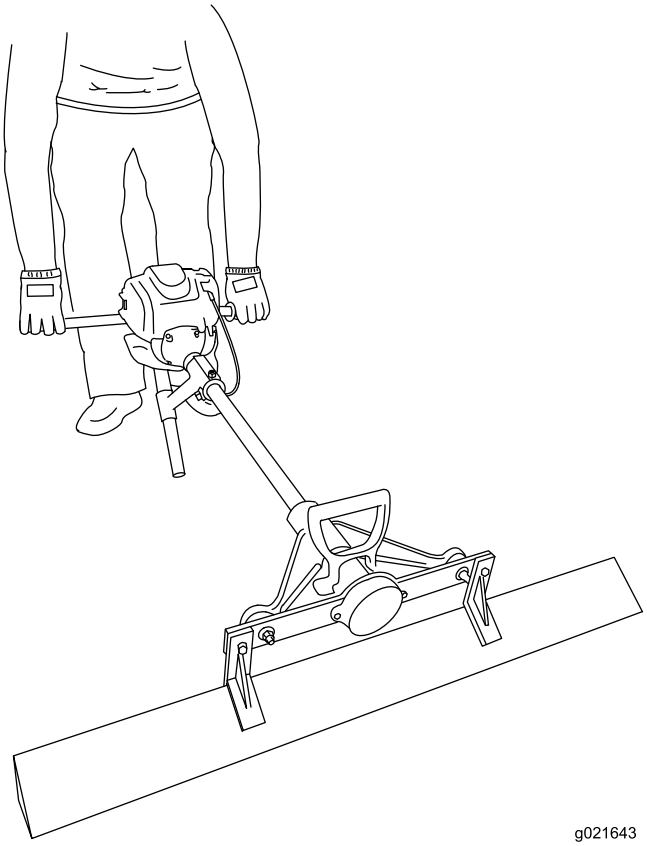


Figure 14

- Use the gas-filling position whenever you fill the gas tank (Figure 15). With a firm hand on the shaft of the machine and a gas can next to the operator, unscrew the gas cap, pickup the gas can, and fill up the gas tank on the machine.

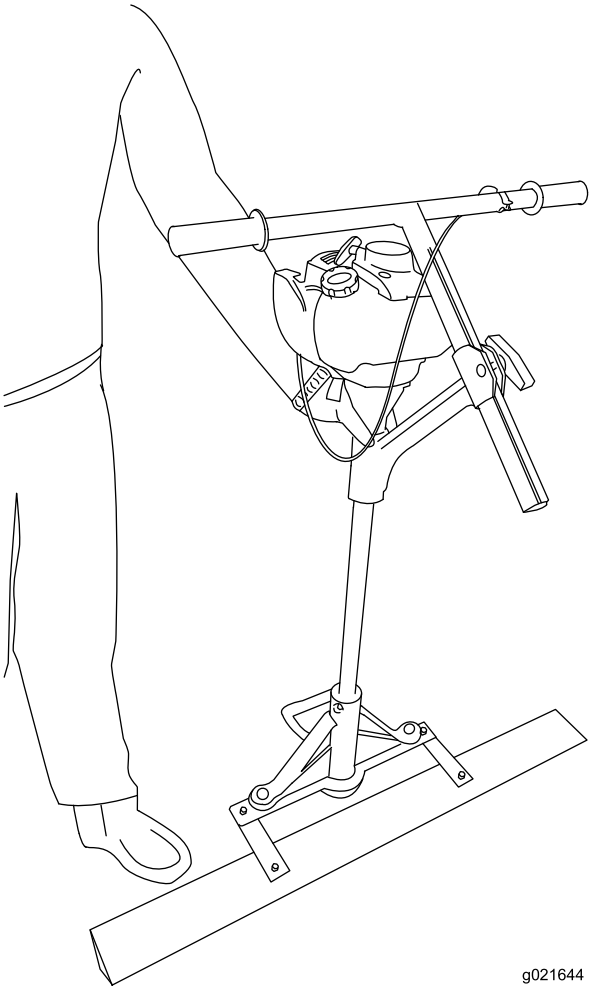


Figure 15

Adding Fuel

- Oxygenated fuel with up to 10% ethanol or 15% MTBE by volume is acceptable.
- Do not use ethanol blends of gasoline (such as E15 or E85) with more than 10% ethanol by volume. Performance problems and/or engine damage may result which may not be covered under warranty.
- Do not use gasoline containing methanol.
- Do not store fuel either in the fuel tank or fuel containers over the winter unless you use a fuel stabilizer.
- Do not add oil to the fuel.

⚠ 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 no higher than the screen on the filter in the fuel tank. 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 the machine 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 the 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 machine 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.**

⚠ WARNING

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

- **Avoid prolonged breathing of vapors.**
- **Keep face away from nozzle and gas tank or fuel-container opening.**
- **Keep gas away from eyes and skin.**

Important: Do not mix oil with the fuel.

Recommended Fuel

Unleaded Gasoline	
U.S.	Pump octane rating 86 or higher
Except U.S.	Research octane rating 91 or higher Pump octane rating 86 or higher

Using Fuel Stabilizer/Conditioner

Use a fuel stabilizer/conditioner in the machine to keep the fuel fresh during storage.

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

Add the correct amount of fuel stabilizer/conditioner to the fuel, and follow the directions of the manufacturer of the stabilizer.

Note: 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

Fuel tank capacity: 0.65L (0.172 US gallon)

Important: The unused space in the tank allows the gasoline to expand with changes in temperature. Do not fill the fuel tank completely full.

1. Stop the engine; refer to Stopping the Engine (page 14), move the machine to a level surface, and allow the engine to cool.
2. Place a can of unleaded gasoline next to your machine.
3. Move the machine to the gas-filling position (Figure 15).
4. Clean around the fuel cap and remove it (Figure 16).

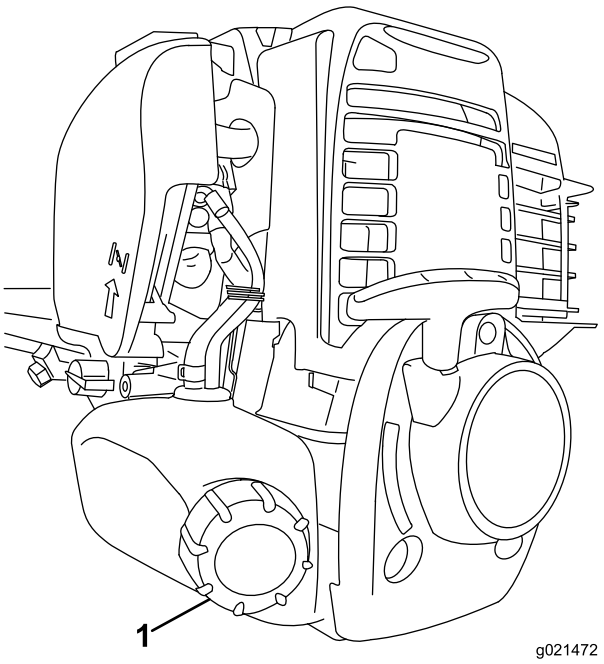


Figure 16

1. Fuel cap

5. Pick up the can and add unleaded gasoline to the fuel tank as shown in Figure 17.

   Note: Watch the tank as it fills with gasoline and stop pouring before the tank is full. This will allow for the gas to expand in the tank.

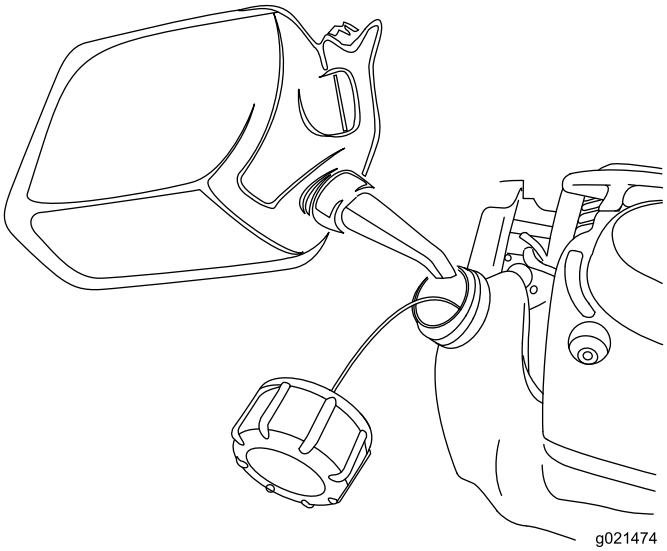


Figure 17

6. Install the fuel cap securely (Figure 16).
7. Wipe up any spilled gasoline.

Checking the Engine Oil Level

Service Interval: Before each use or daily

Important: Use 4-cycle motor oil that meets or exceeds the requirements for API service category *SJ or later* (or equivalent). Always check the API service label on the oil container to be sure it includes the SJ or later (or equivalent) rating.

Do not overfill the crankcase with oil because the engine may be damaged.

Running the engine with a low oil level can cause engine damage. This type of damage is not covered by the warranty.

Note: SAE 10W-30 is recommended for general use. The other oil viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

Crankcase capacity: 0.10 L (0.11 US qt)

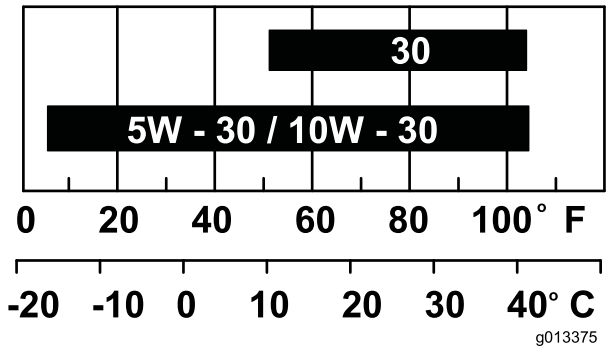


Figure 18

Note: Toro Premium Engine Oil is available from your Authorized Toro Dealer.

1. Move the machine on a flat, level surface, and stop the engine.
2. Allow the engine to cool.
3. Clean around the oil dipstick.
4. Remove the oil cap/dipstick and wipe the end clean (Figure 19).

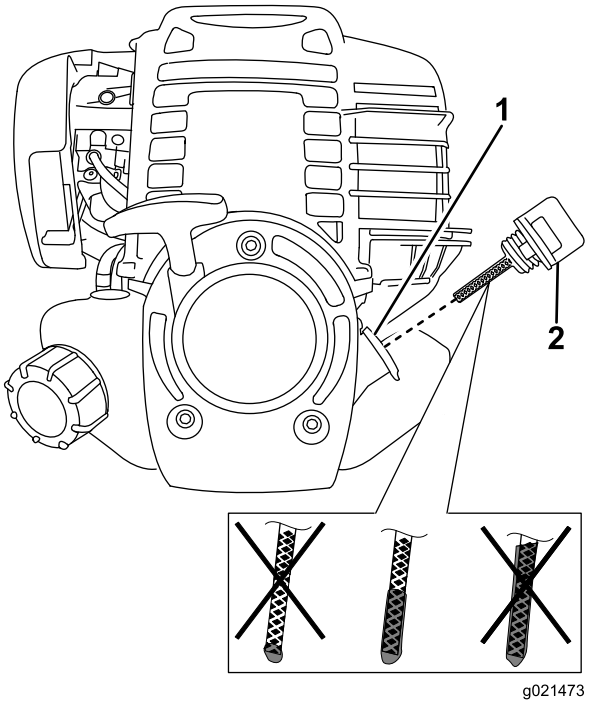


Figure 19

1. Fill port
2. Oil cap/dipstick

5. Slide the dipstick fully into the fill port without threading it into the port (Figure 19).
6. Remove the dipstick and look at the end. If the engine oil level is low, slowly pour only enough oil into the fill port to raise the level to the Full mark on the dipstick (Figure 19).
7. Replace and secure the dipstick (Figure 19).

Starting and Stopping the Engine

Starting the Engine

1. Ensure the throttle is at its lowest setting (Figure 11).
2. To start a cold engine, move the choke lever to the closed position. To restart a warm engine, leave the choke lever in the open position (Figure 10).
3. Press the priming bulb repeatedly until fuel can be seen in the priming bulb (Figure 9).
4. Turn the engine switch to the On position.

5. Pull the recoil-start handle lightly until you feel resistance, then pull the handle briskly (Figure 20).

   Note: Return the recoil-start handle gently.

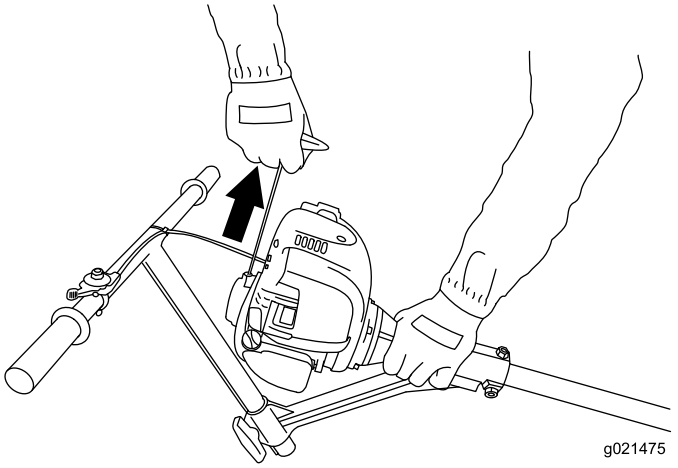


Figure 20

6. If the choke lever is set to the Closed position to start the engine, gradually move the choke lever back toward the Open position as the engine warms up. If the engine stalls or hesitates, move the choke lever back toward the Closed position until the engine runs smooth. Allow the engine to warm up, then move the choke lever to the Open position; refer to (Figure 10).
7. Allow the engine to warm up for 2 to 5 minutes.

Stopping the Engine

⚠ WARNING

In an emergency situation, stop the engine immediately.

Important: During normal operation, if the engine has been working hard or is hot, let it idle for a minute before stopping the engine. This helps to cool the engine before stopping.

1. Move the throttle lever to the minimum position (Figure 11).
2. Rotate the engine switch to the Off position (Figure 12).

Screeding a Concrete Surface

Installing the Aluminum Screed Board

Note: Only use equilateral triangle aluminum screed boards designed for this machine.

Screed board widths:

	VS-70	VS-80
1.2 meters (4 feet)	x	x
1.8 meters (6 feet)	x	x
2.4 meters (8 feet)	x	x
3.0 meters (10 feet)	x	x
3.7 meters (12 feet)		x
4.3 meters (14 feet)		x
4.9 meters (16 feet)		x

1. Install the board clamp to the frame of the machine using square bolts and split-lock washers (Figure 21).

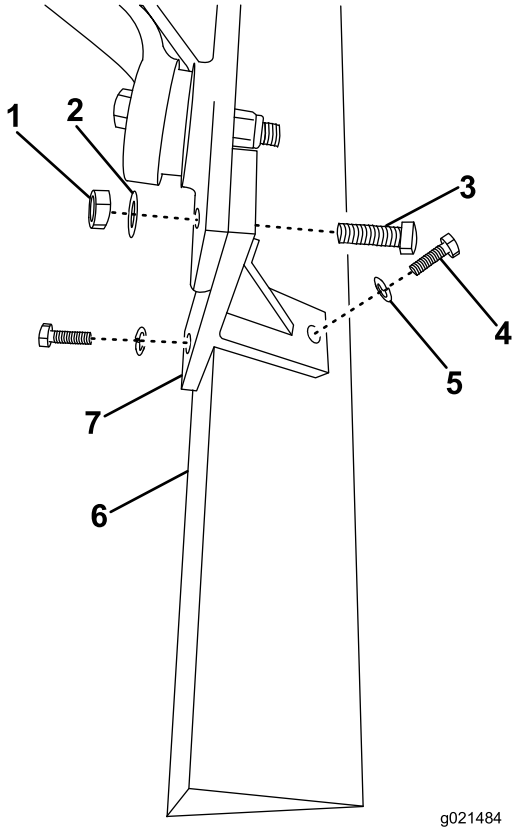


Figure 21

1. Nut
2. Split-lock washer
3. Square bolt
4. Hex bolt
5. Split-lock washer
6. Aluminum board
7. Board clamp

2. Install the aluminum board to the board clamp using hex bolts and split-lock washers (Figure 21).

Note: To remove the screed board, reverse the steps of this procedure.

Leveling the Concrete Surface

This machine can float over wet concrete with or without the aid of forms.

1. Apply a concrete deactivator to the surface of the aluminum screed board and any other part of the machine that may come in contact with concrete.

   Note: Do not put concrete deactivator on the engine.

2. Lift the screed onto the concrete.
3. Start the engine; refer to Starting the Engine (page 13).
4. Move the throttle lever to the maximum position; refer to Figure 11.

   Note: Always operate the engine at full throttle when smoothing material.

5. Pull the screed in a slow, steady motion along the concrete while walking backward. Raise the leading edge of screed board to allow for compaction; refer to Figure 22.

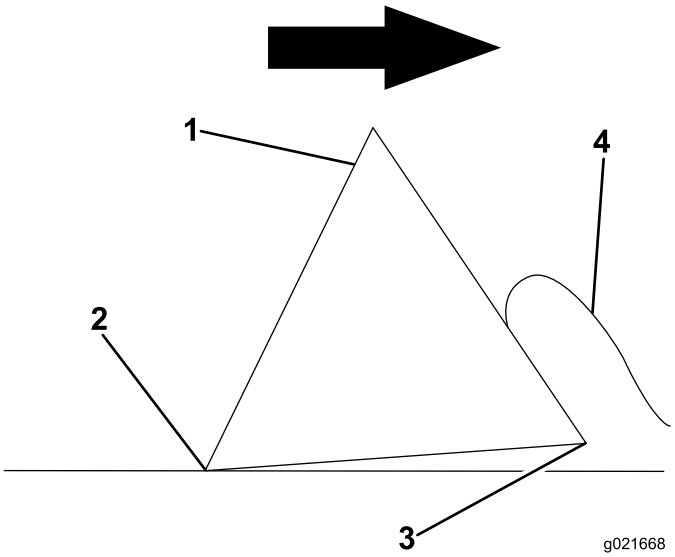


Figure 22

1. Aluminum screed board
2. Trailing edge at grade
3. Leading edge
4. Concrete buildup

Note: Make sure the area behind the operator is clear. Have someone guide the operator as they move backwards.

Note: Ensure that an adequate amount of concrete is loaded ahead of the leading edge of the screed board for the entire screeding pass.

6. Allow for about 2.5 cm (1 inch) of concrete to buildup in front of screed board; refer to Figure 22. This is very important as it keeps the trailing edge on grade.

   Note: You will have to have at least one other person to constantly keep concrete buildup on the bar.

7. At the end of the screed pass, move the engine throttle to the idle position and allow the engine to idle for 1 minute.
8. Stop the engine and move the screed off the cement; refer to Stopping the Engine (page 14).
9. Clean the screed of cement, sand, and aggregate after each pass with water and a soft-bristle brush.

Transporting the Machine

When transporting the machine, make sure to;

1. Empty the gas tank; refer to Figure 33.
2. Remove the square bolts securing the machine to the board clamps (Figure 21).
3. Remove the handlebar (Figure 3)
4. Place the machine and screed board securely in your vehicle.

Maintenance

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

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 50 hours	• Change the oil.
Before each use or daily	• Check the engine oil level. • Inspect the air cleaner elements. • Check for loose fasteners.
After each use	• Clean the machine.
Every 25 hours	• Change the oil when operated under heavy loads or in high temperatures.
Every 50 hours	• Clean the air filter elements. Clean them more frequently in dusty operating conditions.
Every 100 hours	• Change the oil. • Check the spark plug. • Clean the fuel filter.
Every 300 hours	• Replace the paper air cleaner element. Replace it more frequently in dusty operating conditions. • Replace the spark plug.
Yearly or before storage	• Change the oil. • Touch up chipped paint.

Important: **Refer to your *Engine Operator's Manual* for additional maintenance procedures.**

⚠ CAUTION

Disconnect the wire from the spark plug before you do any maintenance. Set the wire aside so that it does not accidentally contact the spark plug.

Premaintenance Procedures

Preparing the Machine for Maintenance

1. Turn the machine off, move it to a level surface, and set it down in the rest position.
2. Ensure that the engine and muffler are cool.
3. Remove the top cover and the spark-plug wire.
4. Remove the screed boards from the machine.

Disconnecting the Spark-plug Wire

1. Remove the top cover.

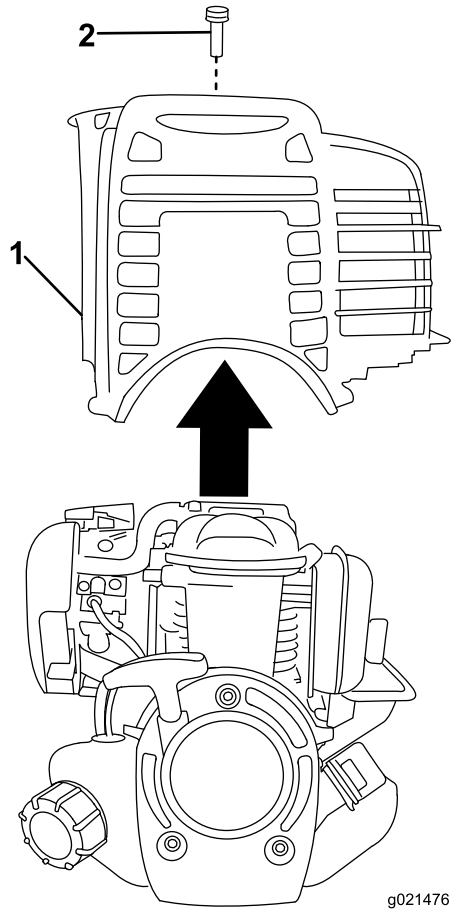


Figure 23

1. Top cover
2. Hex bolt

2. Pull the spark-plug wire off the terminal of the spark plug (Figure 24).

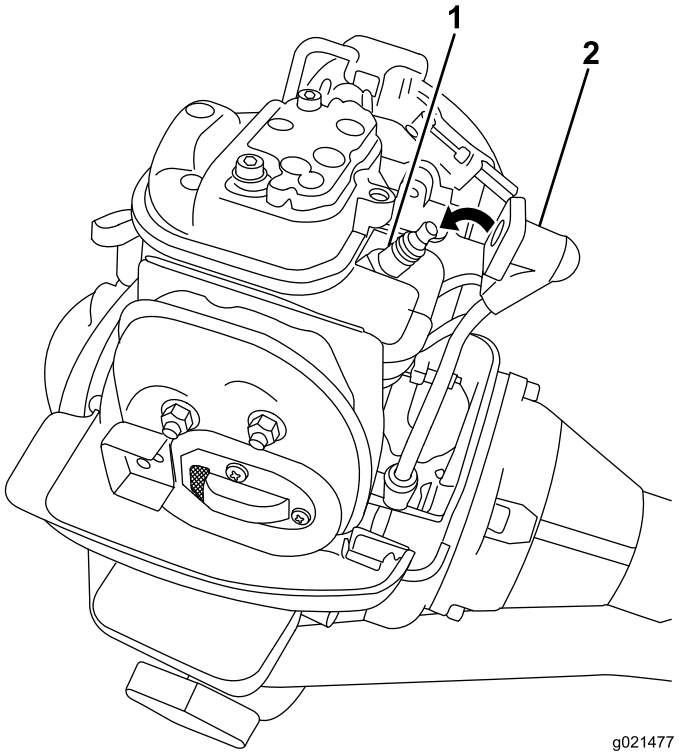


Figure 24

1. Spark plug
2. Spark-plug wire

Engine Maintenance

Servicing the Air Cleaner

Service Interval: Before each use or daily—Inspect the air cleaner elements.

Every 50 hours—Clean the air filter elements. Clean them more frequently in dusty operating conditions.

Every 300 hours/Yearly (whichever comes first)—Replace the paper air cleaner element. Replace it more frequently in dusty operating conditions.

Important: Do not operate the engine without the air filter assembly; extreme engine damage will occur.

1. Stop the engine and wait for the engine to cool down.
2. Disconnect the wire from the spark plug; refer to Removing the Spark Plug (page 20).
3. Unclip and remove the air cleaner cover (Figure 25).

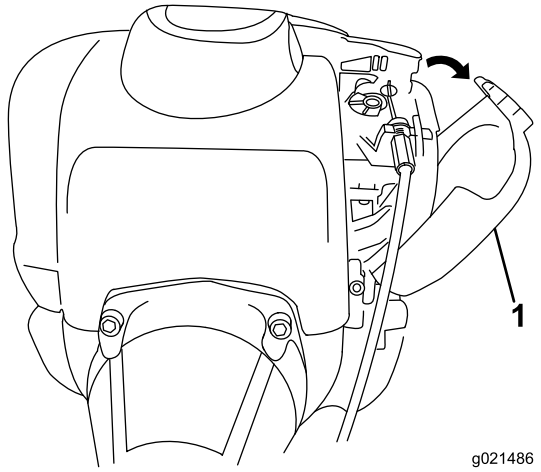


Figure 25

1. Air cleaner cover

Note: Be careful to prevent dirt and debris from falling into the base.

4. Remove the foam element from the base.
5. Inspect the foam element, and replace it if damaged or excessively dirty.
6. Clean the foam element in warm, soapy water or in a **nonflammable** solvent.

   Note: Do not use gasoline to clean the foam element because it could create a risk of fire or explosion.
7. Rinse and dry the foam element thoroughly.
8. Dip the foam element in clean engine oil, then squeeze out the excess oil.

   Note: Excess oil in the foam element restricts the air flow through the element and may reach the paper filter and clog it.
9. Wipe dirt from the base and the cover with a moist rag.

   Note: Be careful to prevent dirt and debris from entering the air duct leading to the carburetor.
10. Install the foam elements and ensure that it is properly positioned.
11. Securely install the air cleaner cover.
12. Reconnect the spark-plug wire.
13. Install the top cover and secure with bolt.

Changing the Engine Oil

Service Interval: After the first 50 hours/Monthly (whichever comes first)—Change the oil.

Every 100 hours/Every 6 months (whichever comes first)—Change the oil.

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

Yearly or before storage—Change the oil.

Draining the Engine Oil

1. Start the engine and let it run 5 minutes Starting the Engine (page 13) then turn it off.

   Note: This warms the oil so it drains better.

2. Remove screed boards if they are attached.
3. Place a drain pan, with a 1.9 L (2 US qt) capacity or greater on the ground
4. Remove the oil cap.
5. With a firm grip on the handlebars and the shaft of the machine, pour the oil into the pan (Figure 26).

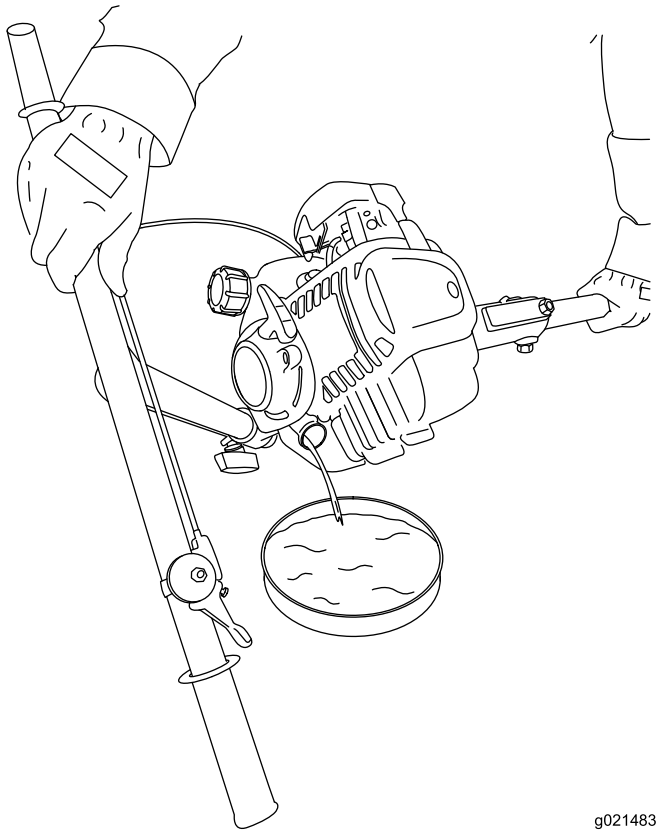


Figure 26

6. When the oil has drained completely, install the oil cap, and wipe up any spilled oil (Figure 26).

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

Filling the Engine Crankcase with Oil

Important: Use 4-stroke motor oil that meets or exceeds the requirements for API service category *SJ or later* (or equivalent). Always check the API service label on the oil container to be sure it includes the SJ or later (or equivalent).

Running the engine with a low oil level can cause engine damage. This type of damage is not covered by warranty.

Do not overfill the crankcase with oil because the engine may be damaged.

Note: SAE 10W-30 is recommended for general use. Other viscosities shown in the chart may be used when the average temperature in your area is within the indicated range.

Crankcase oil capacity: 0.10 L (0.11 US qt)

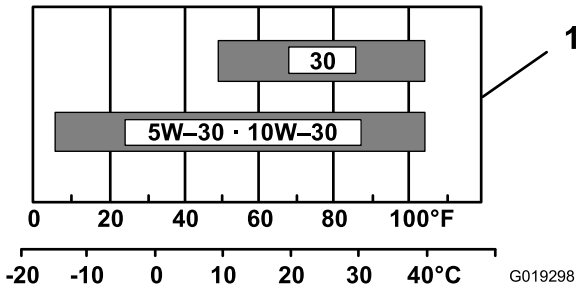


Figure 27

1. Oil viscosity range for ambient operating temperatures

Note: Toro Premium Engine Oil is available from your Authorized Toro Dealer.

1. Remove the oil cap/dipstick (Figure 28).

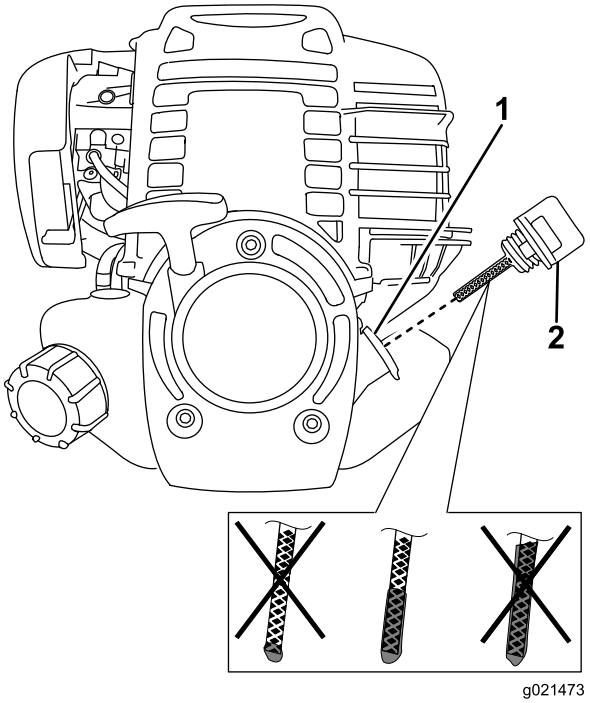


Figure 28

1. Fill port
2. Oil cap/dipstick

2. Slowly pour approximately 80% of the specified amount of oil into the fill port (Figure 28).
3. Add additional oil to bring the oil level to the proper fill amount; refer to (Figure 28).
4. Install the oil cap/dipstick (Figure 28).

Servicing the Spark Plug

Service Interval: Every 100 hours/Every 6 months (whichever comes first)—Check the spark plug.

Every 300 hours/Yearly (whichever comes first)—Replace the spark plug.

Note: Use a 5/8 inch spark plug wrench for removing and installing the spark plug.

Removing the Spark Plug

1. Turn off the engine Stopping the Engine (page 14)and place the machine in the resting position (Figure 14).
2. Ensure that the machine surfaces are cool.
3. Remove the top cover.
4. Pull the spark-plug wire off the terminal of the spark plug (Figure 29).

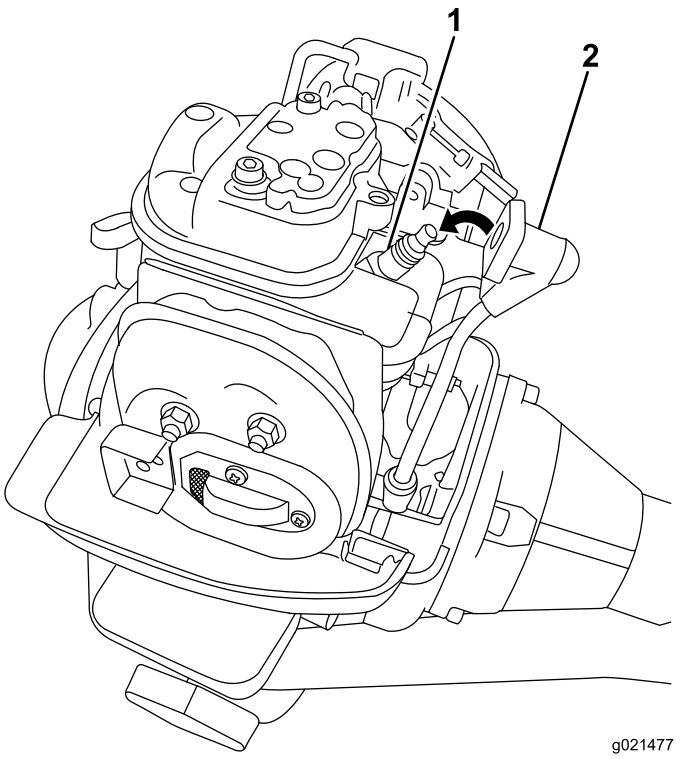


Figure 29

1. Spark plug
2. Wire

5. Clean around the spark plug.
6. Rotate the spark plug counterclockwise using a 5/8 inch spark-plug wrench to remove the plug and sealing washer.

Checking the Spark Plug

Note: Use a gapping tool/feeler gauge to check and adjust the air gap. Install a new spark plug if necessary.

Air Gap: 0.6 to 0.7 mm (0.024 to 0.028 inch)

Spark plug type: CM5H (NKG), CMR5H (NGK), or equivalent

1. Look at the center of the spark plug (Figure 30). If you see light brown or gray on the insulator, the engine is operating properly.

   Important: Never clean the spark plug. Always replace the spark plug when it has a black coating, worn electrodes, an oily film, or cracks.

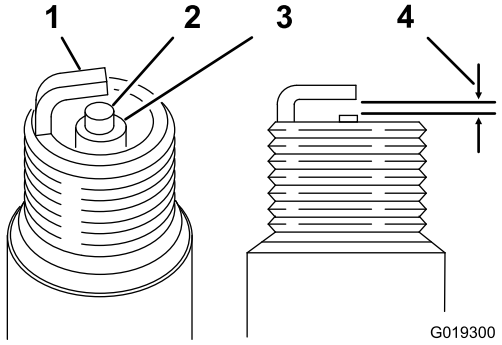


Figure 30

1. Side electrode
2. Center electrode
3. Insulator
4. 0.6 to 0.7 mm (0.024 to 0.028 inch) gap

2. Use a gapping tool for spark plugs or a feeler gauge to measure the gap between the side electrode and center electrode (Figure 30).
3. If the measured gap is not within the specified range, do the following:
   A. If the gap is **too small**, carefully bend the side electrode **away** from the center electrode until the gap between the electrodes is within the measured air gap range.
   B. If the gap is **too large**, carefully bend the side electrode **toward** from the center electrode until the gap between the electrodes is within the measured air gap range.

Installing the Spark Plug

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

1. Thread the spark plug clockwise into the spark-plug hole by hand.

   Note: Avoid cross threading the spark plug with the threads of the spark-plug hole.
2. Rotate spark plug clockwise using a 5/8 inch spark-plug wrench until the plug and sealing washer are seated.
3. Tighten the plug as follows:

- When installing an **in-service** spark plug, tighten the plug an additional 1/8 to 1/4 turn.
- When installing a **new** spark plug, tighten the plug an additional 1/2 turn.

4. Install the spark-plug wire pushing the wire onto the terminal of the plug (Figure 29).

Cleaning the Spark Arrester

1. Remove the top cover and spark plug wire.
2. Remove the spark arrester (Figure 31).

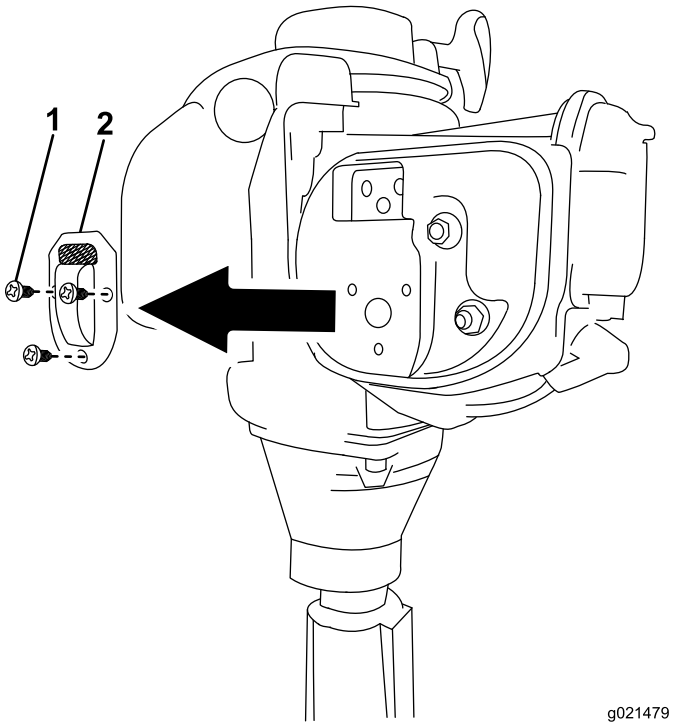


Figure 31

1. Screw
2. Spark arrestor

3. Use a brush to remove carbon deposits from the spark arrester screen (Figure 32).

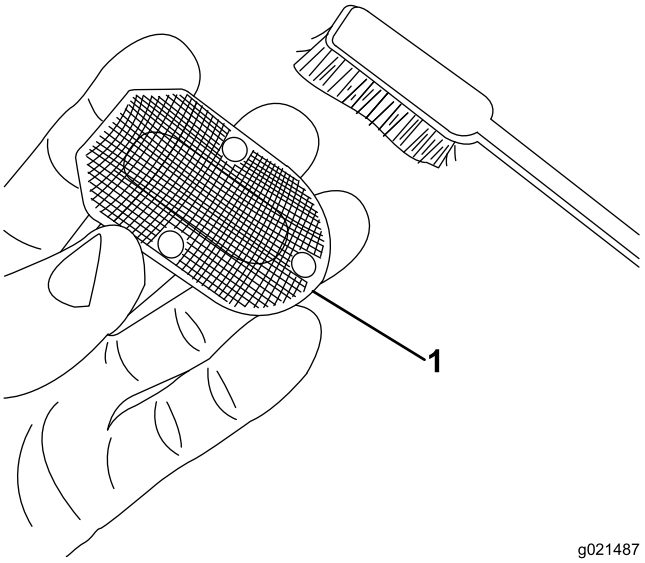


Figure 32

1. Spark arrestor

Fuel System Maintenance

Servicing the Fuel System

Cleaning the fuel filter

Service Interval: Every 100 hours/Yearly (whichever comes first)—Clean the fuel filter.

Inside the fuel tank is a fuel filter to catch dirt in the fuel.

1. Turn off the engine; refer to Stopping the Engine (page 14) and place the machine in the resting position (Figure 14).
2. Ensure that the engine and the exhaust system surfaces are cool.
3. Disconnect the wire from the spark plug; refer to Removing the Spark Plug (page 20).
4. Empty the fuel tank (Figure 33).

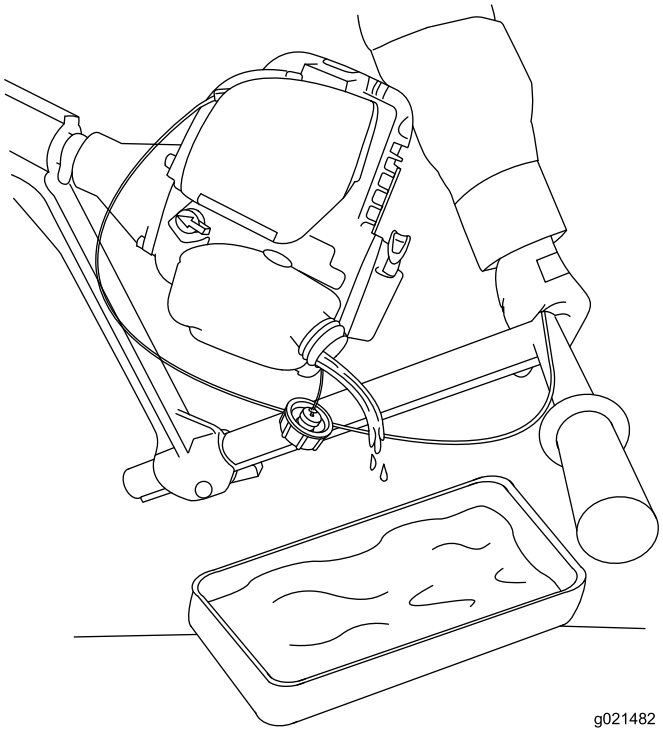


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Figure 33

5. Use a bent paper clip to carefully pull the fuel filter out of the fuel tank (Figure 34).

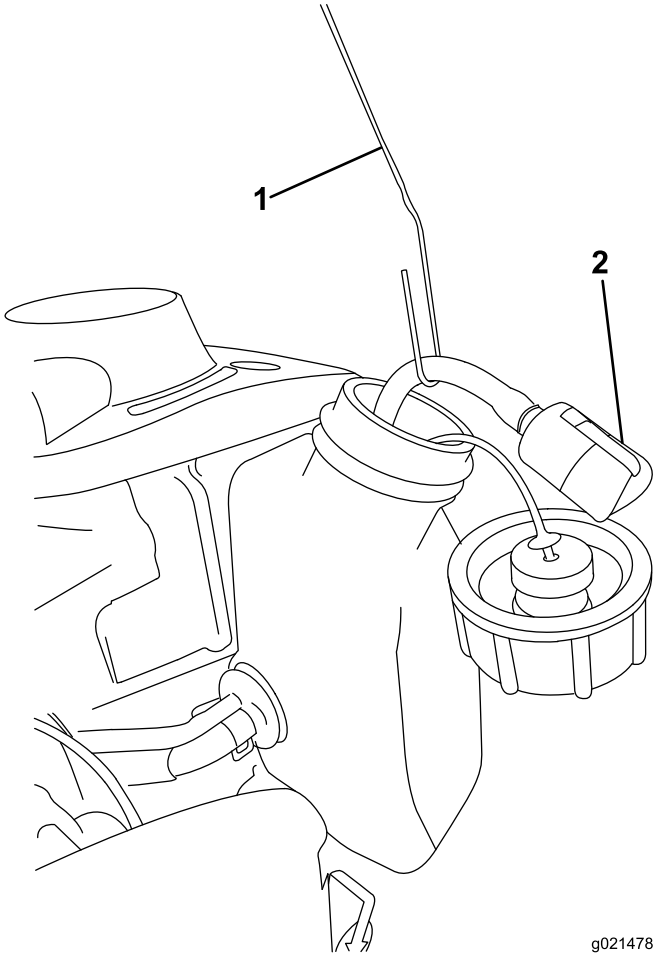

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Figure 34

1. Paper clip
2. Fuel filter

6. Clean the fuel filter by gently washing with a nonflammable solvent.

   Note: If the fuel filter is excessively dirty, replace it.

7. Insert the fuel filter into the fuel tank and tighten the fuel cap.

Cleaning

Cleaning the Machine

Regular cleaning and washing will increase the life span of the machine. Clean the machine after each use, before the cement dries.

Ensure that the fuel tank cap and oil cap/dipstick are secure to avoid getting water in the tank.

Use care when using a high-pressure sprayer, because it can damage warning decals, instruction signs, and the engine.

Clean the screed of cement, sand, and aggregate after each use with water and a soft-bristle brush.

Storage

Important: You can wash the machine with mild detergent and water. Do not pressure wash the engine.

1. Remove concrete, sand, and aggregate from the external parts of the machine, especially the engine. Clean dirt from the outside of the engine's cylinder head fins and housing.
2. Service the air cleaner; refer to Servicing the Air Cleaner (page 18).
3. Change the engine oil; refer to Changing the Engine Oil (page 19).
4. Remove the spark plug and check the condition of each; refer to Servicing the Spark Plug (page 20).
5. For storage over 30 days, condition the fuel system as follows:

   Important: Do not use an alcohol-based stabilizer (ethanol or methanol).

   Note: A fuel stabilizer/conditioner is most effective when mixed with fresh fuel and used at all times.

   Do not store stabilizer conditioned fuel for over 90 days.

   A. Add a petroleum based stabilizer/conditioner to fuel in the tank. Follow mixing instructions from stabilizer manufacturer.

   B. Start the engine and run it until it stops.

   C. Choke the engine.

   D. Start and run the engine until it will not start again.

   E. Dispose of fuel properly. Recycle as per local codes.
6. For storage over 90 days, condition the engine as follows:

   A. Remove the spark-plug wire from the spark plug

   B. Remove the spark plug from the engine and pour two tablespoons of engine oil into the spark plug hole.

   C. Place rags over the spark plug hole to catch any oil spray and then pull the recoil-start handle to distribute the oil inside the cylinder.

   D. Install the spark plug, but do not install the spark-plug wire.
7. Check and tighten all bolts, nuts, and screws. Repair or replace any part that is damaged or defective.
8. Paint all scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
9. Store the machine unit in a clean, dry garage or storage area.
10. Cover the machine to protect it and keep it clean.

Troubleshooting

Problem	Possible Cause	Corrective Action
The engine will not start.	1. The fuel-valve lever is in the Off position. 2. The choke is closed. 3. The choke is open. 4. The engine On/Off switch is in the Off position. 5. The fuel tank is empty. 6. The engine contains bad/old fuel. 7. The spark plug is fouled or improperly gapped. 8. The spark plug is wet with fuel (flooded engine). 9. The spark-plug wire is loose or disconnected.	1. Move the fuel-valve lever to the On position. 2. Open the choke when starting a hot engine. 3. Close the choke when starting a cold engine. 4. Rotate the switch to the On position. 5. Fill the fuel tank with fresh fuel. 6. Drain the fuel tank and carburetor. Fuel the machine with fresh gasoline. 7. Gap or replace the spark plug. 8. Remove the spark plug, dry it, and install the plug. Start the engine with the throttle in the Max position. 9. Remove the spark-plug wire, clean the spark-plug terminal and the terminal socket in the boot of the spark-plug wire, and reinstall the spark-plug wire.
The engine lacks power or runs rough.	1. The air filter is restricted. 2. The engine contains bad/old fuel. 3. There is water or contamination in the fuel. 4. The fuel line is restricted. 5. The choke is closed 6. The spark plug is worn or has buildup on the electrodes. 7. There is too much oil in the engine crankcase.	1. Clean or replace the air filter element(s). 2. Drain the fuel tank and carburetor. Refuel with fresh gasoline. 3. Drain the fuel tank and carburetor. Fuel the machine with fresh gasoline. 4. Clean the fuel filter and sediment cup. 5. Open the choke. 6. Check the electrode gap and adjust or replace the spark plug. 7. Drain the oil to the proper level.
The machine is not smoothing the concrete properly.	1. There is an excessive amount of concrete buildup along the edges of the board. 2. The operator is moving too slowly. 3. There is too much vibration for the type of concrete. 4. The concrete is too high or low on one side. 5. The board is not positioned correctly.	1. Remove excessive concrete from the board. 2. Move the screed at a faster pace. 3. Reduce engine speed and move the screed at a faster pace. 4. Have workers shape the concrete as close as possible to grade. Maintain about 1 inch of concrete across the front of the board at all times. 5. Reposition the board.

Notes:

Notes:

Notes:

Concrete, Masonry, and Compaction Equipment

The Toro Warranty

A limited warranty (see warranty periods below)

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Concrete, Masonry, and Compaction Equipment Products listed below to be free from defects in materials or workmanship.

This warranty covers the cost of parts and labor, but you must pay transportation costs.

The following time periods apply from the date of purchase:

Products	Warranty Period
Concrete Mixers	1 year
• Spindle Bearings	Lifetime* (original owner only)
Mortar Mixers	1 year
• Drum Bearings and Seals	Lifetime* (original owner only)
Forward Plate Compactors	2 years
Reversible Plates	1 year
Rammer Compactors	2 years
Mud Buggy	1 year
Vibrating Trench Roller	2 years
Concrete Saws	1 year
Masonry Saws	1 year
Power Trowels	1 year
Screeds	1 year
Concrete Vibrators	1 year

Where a warrantable condition exists, we will repair the Product at no cost to you including diagnosis, labor, and parts.

*Lifetime Warranty - If the bearing(s) or seal(s) on your mixer fail, it will be replaced under warranty, at no cost for parts or labor.

Instructions for Obtaining Warranty Service

If you think that your Toro Product contains a defect in materials or workmanship, follow this procedure**:

1. Contact any Authorized Servicing Outlet to arrange service at their dealership. To locate one convenient to you, access our website at www.Toro.com. Select “Where to Buy” and select “Contractor” under product type. You may also call our toll free number below.
2. Bring the product and your proof of purchase (sales receipt) to them.
3. If for any reason you are dissatisfied with the Service Outlet’s analysis or with the assistance provided, contact us at:

   SWS Customer Care Department
   Toro Warranty Company
   8111 Lyndale Avenue South
   Bloomington, MN 55420-1196
   Toll Free: 800-888-9926

**Toro Authorized Rental Customers who have purchased products directly from Toro and have signed the Toro Rental Customer Agreement have the ability to perform their own warranty work. Please visit Toro’s Rental Portal for electronic warranty clam filing procedures or call the toll free number above.

Owner Responsibilities

You must maintain your Toro Product by following the maintenance procedures described in the *Operator’s Manual*. Such routine maintenance, whether performed by a dealer or by you, is at your expense. Parts scheduled for replacement as required maintenance (“Maintenance Parts”), are warranted for the period of time up to the scheduled replacement time for that part. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This express warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, modified, or unapproved accessories
- Product failures which result from failure to perform required maintenance and/or adjustments
- Product failures which result from operating the Product in an abusive, negligent or reckless manner
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal product operation include, but are not limited to, belts, wipers, spark plugs, tires, filters, gaskets, wear plates, seals, O-rings, drive chains, clutches.
- Failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.
- Normal “wear and tear” items. Normal “wear and tear” includes, but is not limited to, worn painted surfaces, scratched decals, etc.
- Any component covered by a separate manufacturer’s warranty
- Pickup and delivery charges

General Conditions

Repair by an Authorized Servicing Outlet or Self-Service as an Authorized Rental Customer is your sole remedy under the warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty. Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Except for the engine warranty coverage and the Emissions warranty referenced below, if applicable, there is no other express warranty. The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) or the California Air Resources Board (CARB). Refer to the California Emission Control Warranty Statement supplied with your Product or contained in the engine manufacturer’s documentation for details.

Countries Other than the United States or Canada

Customers who have purchased Toro products outside the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.

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