Operation

Think Safety First

Carefully read all safety instructions and symbols in this manual, on the product decals, and other media supplied with the product. Knowing this information could help you or bystanders avoid injury.

Know how to quickly shut down the machine in an emergency.

Use a hard-hat, hearing protection, a shirt with long sleeves that are tight at the wrists, tight-fitting gloves without drawstrings or loose cuffs, eye protection, and a dust mask or respirator. A mesh visor alone does not provide sufficient eye protection; supplement with protective glasses.

⚠ CAUTION

This machine produces sound levels that can cause hearing loss through extended periods of exposure.

Wear hearing protection when operating this machine.

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Figure 13

1. Wear hearing protection.

Towing the Machine

Before towing the machine, read all the information and perform all the applicable procedures to in this section to ensure safe and proper towing.

⚠ WARNING

Towing the machine at high speed increases the risk of a hitch malfunction and tire failure. Higher speeds also increase the momentum of the machine and braking distance. If the machine detaches from the tow vehicle at high speed, it could cause damage to property, or injury or death to bystanders.

Do not exceed 88 km/h (55 mph) when towing the machine. For poor road conditions or inclement weather, reduce speed accordingly.

⚠ WARNING

Towing the machine with material in the drum increases the risk of a hitch malfunction and tire failure. In addition, material could bounce out of the drum and hit other vehicles and/or people. Material in the drum increases the weight, which affects momentum and braking distance.

Do not tow the machine with material in the drum.

- Review and understand the Safe Operating Practices (page 4).
- Test the brakes of the tow vehicle before towing.
- Avoid sudden starts and stops while towing the machine.

Tow Vehicle Requirements

Before connecting the machine to your tow vehicle, ensure that your vehicle is prepared as follows:

- Ensure that your tow vehicle has towing capacity for the weight of the machine; refer to Specifications (page 15).
- Use a Class 2 or larger receiver.
- Ensure that your tow vehicle has the appropriate hitch to tow the machine; options include a 50 mm (2 inch) ball hitch or a pintle hitch.
- If the machine is equipped with a trailer-light kit, ensure that the electrical connector of the tow vehicle is compatible with the electrical connector of the machine. The machine uses a standard 4-pin, flat plug. If your tow vehicle has a different type of plug, obtain an adapter from an automotive parts store.

Preparing the Machine for Towing

1. Shut off the engine and fuel valve.
2. Empty the drum.
3. Position the drum in the mix position (upright) and lock it.
4. Close the engine cowl and secure the cowl latches (Figure 14).

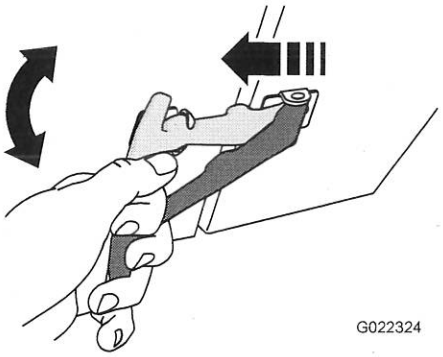

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Figure 14

5. If you have adjusted the axle to the narrow position (if equipped on your model), extend the axle; refer to Adjusting the Axle Width (page 19).
6. Inspect the tires; refer to Inspecting the Tires (page 39).

Hitching the Machine to a Tow Vehicle

Your machine is equipped with 1 of the following hitch types; hitch it as described in the appropriate procedure:

- Stamped-ball coupler— Hitching a Stamped-Ball Coupler (page 17)
- Forged-ball coupler— Hitching a Forged-Ball Coupler (page 17)
- Pintle-hitch coupler— Hitching a Pintle-Hitch Coupler (page 18)

Hitching a Stamped-Ball Coupler

1. Apply chassis grease to the socket of the coupler and the area of the clamp that contacts the ball.
2. Oil the pivot points and sliding surfaces of the coupler with SAE 30 motor oil.
3. Hitch the machine as shown in Figure 15.

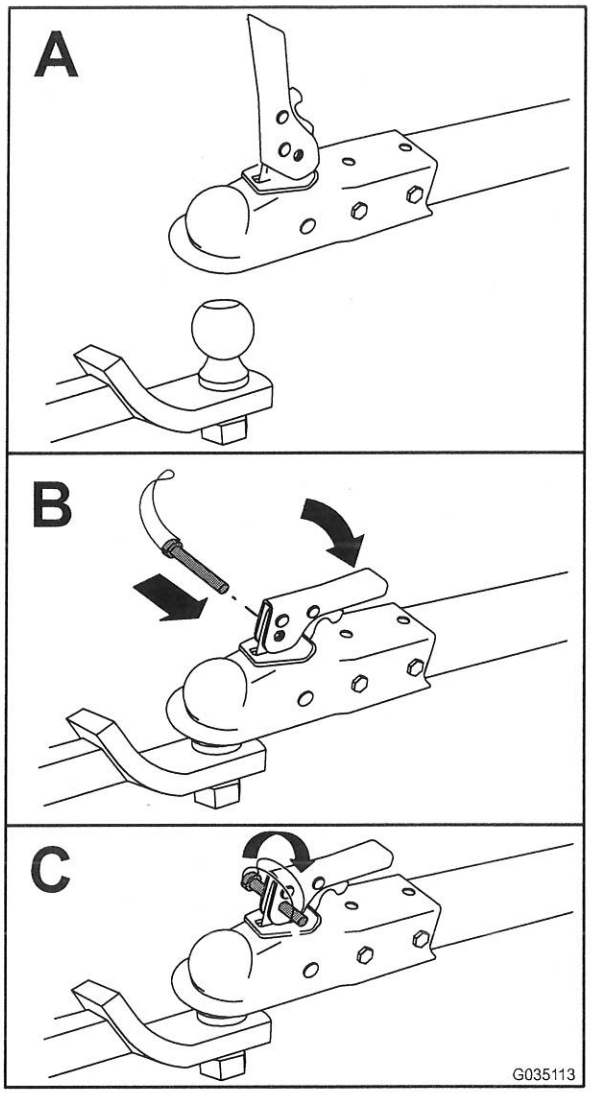

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Figure 15

Hitching a Forged-Ball Coupler

1. Apply removable thread-locking compound to the threads of the coupler bolt to prevent the coupler handle from coming loose.

   Important: **Apply thread-locking compound as needed in the future.**
2. Apply chassis grease to the socket of the coupler and the area of the clamp that contacts the ball.
3. Hitch the machine as shown in Figure 16.

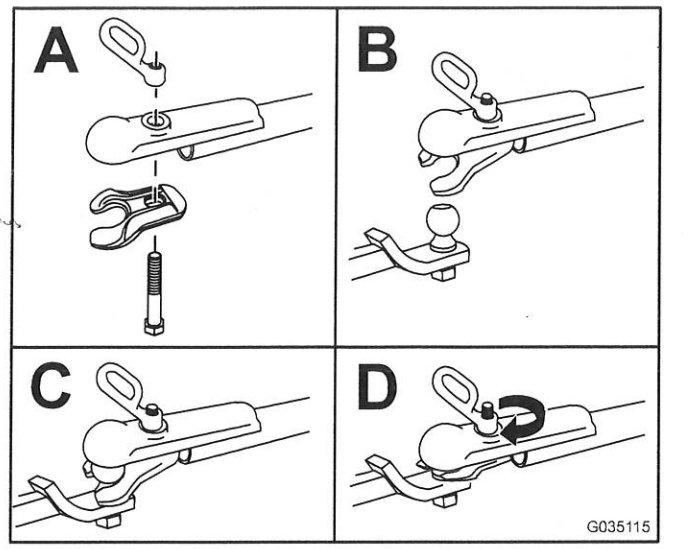

Figure 16

Note: Use a wrench to keep the bolt from spinning.

Hitching a Pintle-Hitch Coupler

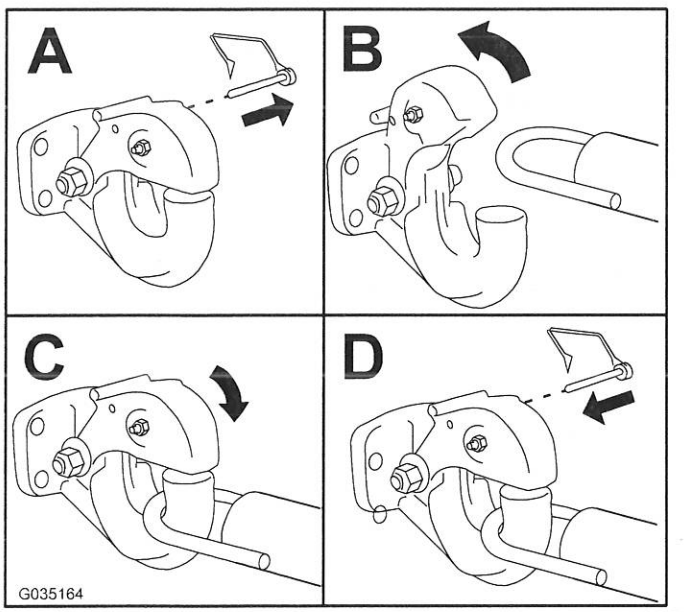

Figure 17

Connecting the Safety Chains to the Tow Vehicle

1. Pull the safety chain through the slots in the keyholes, so that the lengths on each side are equal.
2. Cross both lengths of chain **under** the tow pole.

   Note: Crossing the chains decreases the chances of the front of the machine dropping to the ground if the hitch does not hold the connection.

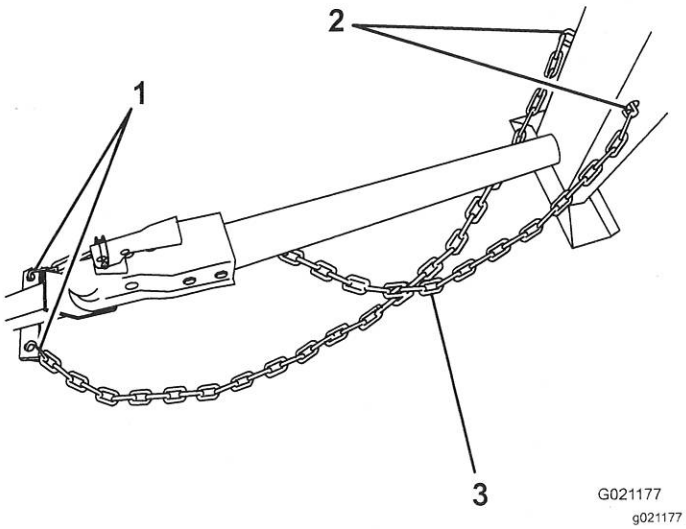

Figure 18

1. Connecting links
2. Keyholes in front post
3. Chain crossed under tow pole

3. Connect each length of chain to the safety chain mounting point on the tow vehicle with the connecting links (Figure 19).

   Important: **Ensure that the chain has enough slack for turning around corners when towing the machine.**

   Note: Stow the excess chain inside the bottom of the front post by pushing it into the keyholes and latching the appropriate links into the keyhole slots.

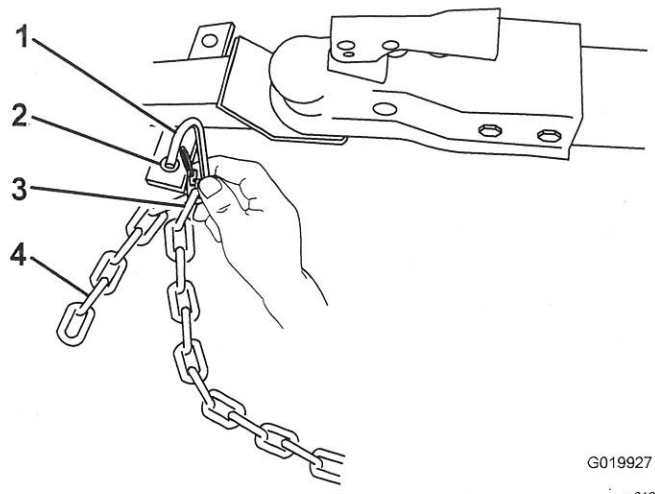

Figure 19

1. Connecting link
2. Safety chain mounting point on tow vehicle
3. Chain link
4. Chain

Connecting and Checking the Lights

Machines Equipped with a Light Kit Only

1. Connect the electrical plug of the machine with the electrical plug of the tow vehicle (Figure 22).

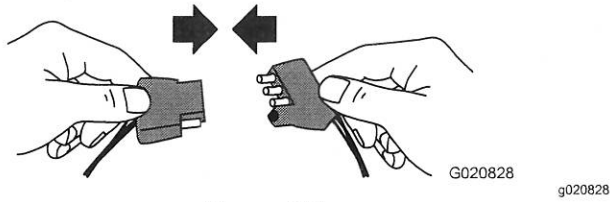

Figure 20

Note: The machine uses a standard 4-pin, flat plug. If your tow vehicle has a different type of plug, obtain an adapter from an automotive parts store.

2. Ensure that the tow vehicle is in the NEUTRAL position, engage the parking brake, and start the engine.
3. Test the lights as follows:
   A. Turn on the headlights of the tow vehicle.

      The tail lights of the machine should illuminate.

   B. Press the brake pedal of the tow vehicle.

      The brake lights of the machine should illuminate.

   C. Operate each turn signal of the tow vehicle in turn.

      The corresponding turn-signal lights of the machine should illuminate.

Adjusting the Axle Width

Models with Adjustable Axles Only

If your model is equipped with an adjustable axle (Figure 22), you can adjust the axle to the narrow position to move the machine through a narrow access point, such as the gate of a fence or the doorway of a building.

⚠ WARNING

The machine is not stable when towed with the axle in the narrow position.

Tow the machine with the axle in the wide position.

Important: **The machine is less stable with the axle in the narrow position. Only adjust it to the narrow position when necessary to move past an obstruction, then return it to the wide position before towing or operating the machine.**

1. Park the machine on a level surface and disconnect the machine from the tow vehicle.
2. Secure the machine from movement.
3. Empty the drum, move it to the upright position, and lock the drum.
4. Align a jack with an adequate lift height and weight capacity under the axle; refer to Specifications (page 15).
5. Lift the machine until the tires are off the ground.
6. Use a jack stand at each support point on the rear frame extension (Figure 21).

⚠ WARNING

Mechanical or hydraulic jacks may fail to support the machine and cause serious injury.

Use jack stands when supporting the machine.

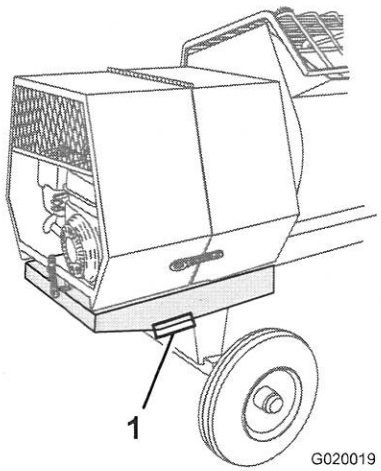

Figure 21

1. Support point (2)

7. Remove the bolts and nuts that secure the inner axle to the outer axle (Figure 22).

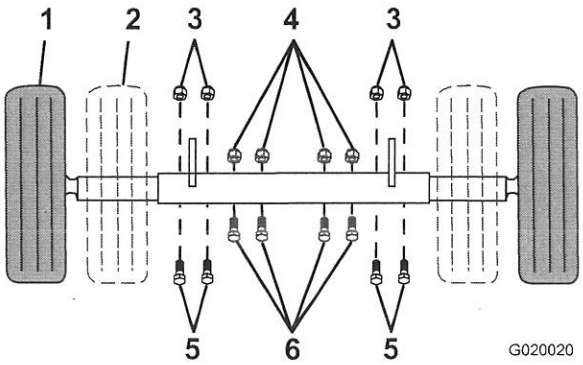

Figure 22

1. Wide position (towing)
2. Narrow position
3. Nut—wide position
4. Nut—narrow position
5. Bolt—wide position
6. Bolt—narrow position

8. Align the inner axle to the desired position as follows:
   - Slide each side of the axle inward to the narrow position (Figure 22).
   - Slide each side of the axle outward to the wide (tow) position (Figure 22).
9. Secure the axle with the bolts and nuts removed previously (Figure 22) and torque them to 87 N·m (64 ft-lb).

Preparing to Use the Machine

1. Park the machine on a level surface and disconnect the machine from the tow vehicle.
2. Ensure that all guards and paddles are in place and in good condition.
3. Perform all daily maintenance procedures prescribed in Maintenance (page 27).
4. Chock the front and back of the tires to prevent the machine from moving.
5. Move the drum to the upright position and lock it.

Opening the Cowl

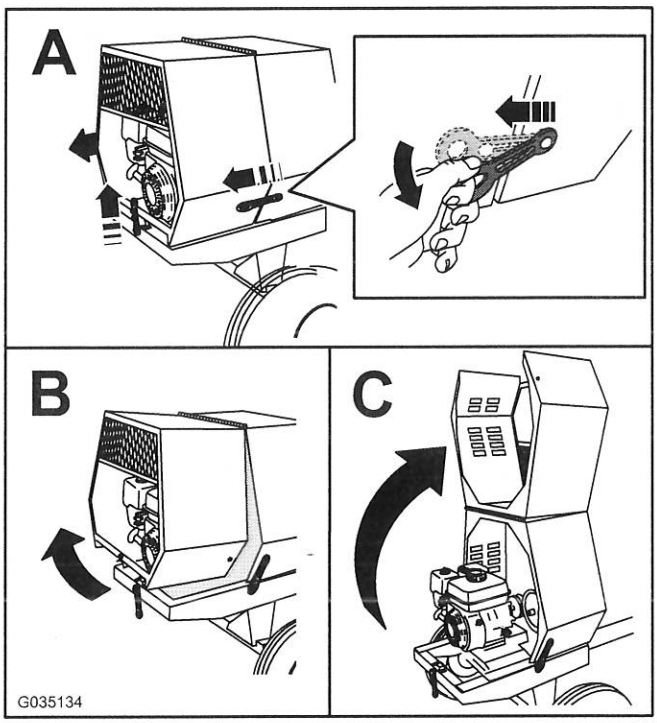

Figure 23

Opening and Closing the Cowl

Opening the Cowl

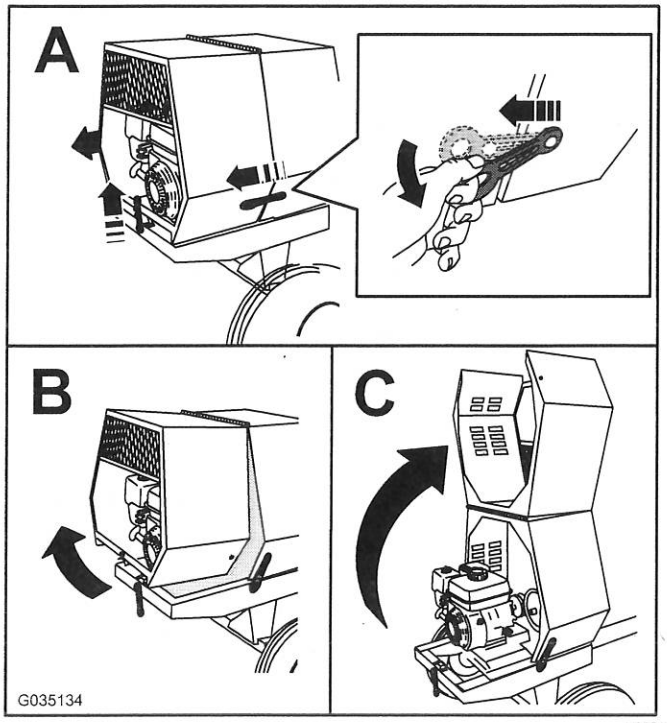

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Figure 24

Closing the Cowl

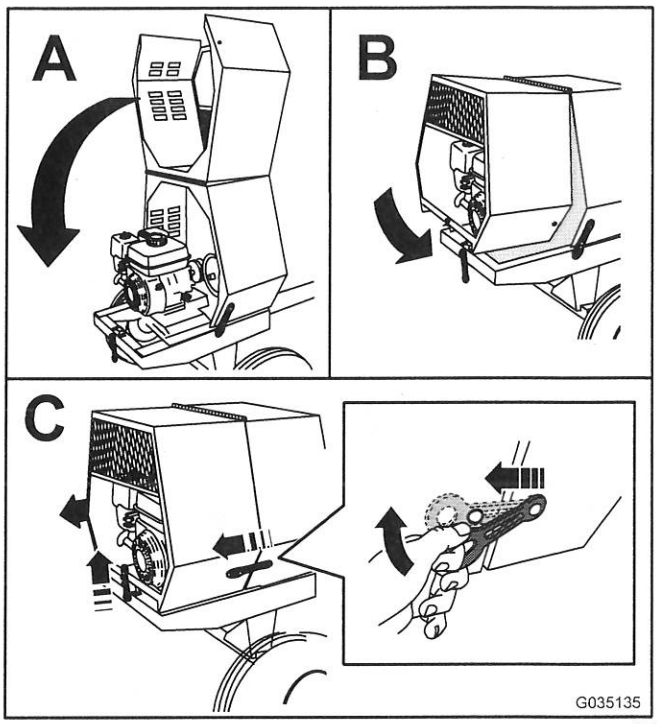

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Figure 25

Adding Fuel

⚠ 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.

- **Fill the fuel tanks outdoors, in an open area, when the engine is cold. Wipe up any fuel that spills.**
- **Never fill the fuel tanks inside an enclosed trailer.**
- **Never smoke when handling fuel and stay away from an open flame or where fuel fumes may be ignited by a spark.**
- **Store fuel in an approved container and keep it out of the reach of children. Never buy more than a 30-day supply of fuel.**
- **Do not operate without entire exhaust system in place and in proper working condition.**

⚠ DANGER

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

- **Always place fuel containers on the ground away from your vehicle before filling.**
- **Do not fill fuel 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 equipment from the truck or trailer and refuel the equipment with its wheels on the ground.**
- **If this is not possible, then refuel such equipment on a truck or trailer from a portable container rather than from a fuel-dispenser nozzle.**
- **If you must use a fuel-dispenser nozzle, keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete.**

⚠ WARNING

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 face away from the nozzle and fuel tank opening.**
- **Keep fuel away from your eyes and skin.**

Fuel Recommendations

- For best results, use only clean, fresh (less than 30 days old), unleaded gasoline with an octane rating of 87 or higher ((R+M)/2 rating method).
- **Ethanol**: Gasoline with up to 10% ethanol (gasohol) or 15% MTBE (methyl tertiary butyl ether) by volume is acceptable. Ethanol and MTBE are not the same. Gasoline with 15% ethanol (E15) by volume is not approved for use. **Never use gasoline that contains more than 10% ethanol by volume**, such as E15 (contains 15% ethanol), E20 (contains 20% ethanol), or E85 (contains up to 85% ethanol). Using unapproved gasoline may cause performance problems and/or engine damage which may not be covered under warranty.
- **Do not** use gasoline containing methanol.
- **Do not** store fuel either in the fuel tank or in fuel containers over the winter unless you use a fuel stabilizer.
- **Do not** add oil to gasoline.

Important: **To reduce starting problems, add fuel stabilizer to the fuel all season, mixing it with fuel less than 30 days old; run the machine dry before storing it for more than 30 days.**

Do not use fuel additives other than a fuel stabilizer/conditioner. Do not use fuel stabilizers with an alcohol base such as ethanol, methanol, or isopropanol.

Fuel Tank Capacity

Model	Fuel Tank Capacity
60213 and 60213C	3.1 L (0.82 US gallons)
60216, 60216C, 60220, and 60220C	5.3 L (1.40 US gallons)

Filling the Fuel Tank

1. Park the machine on a level surface, shut off the engine, and allow the engine to cool.
2. Clean around the fuel cap and remove it (Figure 26).

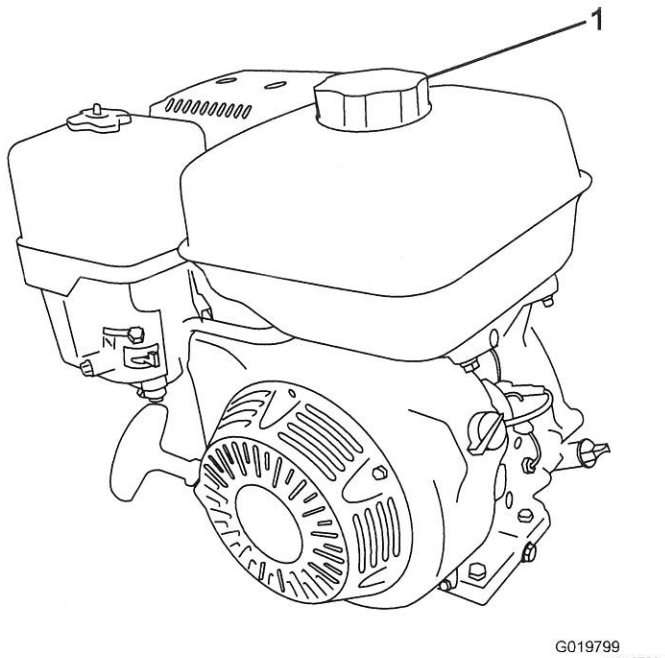

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Figure 26

1. Fuel cap

3. Add fuel to the fuel tank until the level is at the maximum fuel level (Figure 27).

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