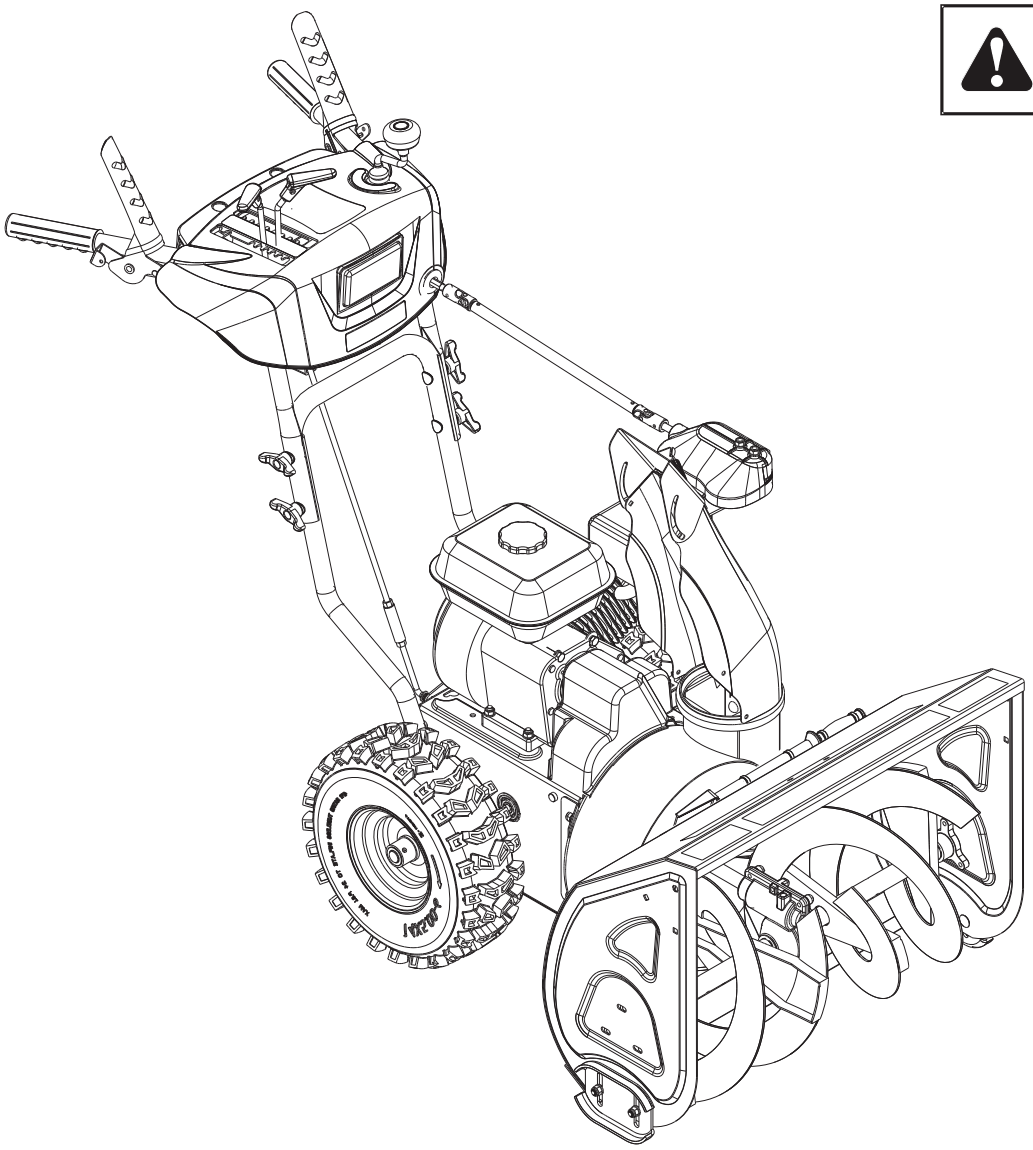
(en) ***Operator's Manual*** - Dual Stage Snowthrower

(es) ***Manual del operador*** - Lanzanieve de dos etapas

(fr) ***Manuel d'utilisation*** - Souffleuse à neige à deux phases



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Revision -

Products Covered by This Manual

The following products are covered by this manual: 1696614-00, 1696616-00, 1696619-00, 1696620-00.

Manual Contents

Operator Safety 2

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NOTE: Please refer to the Customer Contact Guide and Setup Instructions for additional information about this product.

The images in this document are representative. Your unit may vary from the images displayed. LEFT and RIGHT are as seen from the operator's position.

Operator Safety

Safety Alert Symbol and Signal Words

The safety alert symbol ⚠ is used to identify safety information about hazards that can result in personal injury. A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

⚠ **DANGER** indicates a hazard which, if not avoided, will result in death or serious injury.

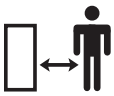
⚠ **WARNING** indicates a hazard which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** indicates a hazard which, if not avoided, could result in minor or moderate injury.

NOTICE indicates an action that could result in damage to the product.

Hazard Symbol Chart

Snowthrower Hazard Symbols

Symbol	Meaning	Symbol	Meaning
	Safety information about hazards that can result in personal injury.		Read and understand the operator's manual before operating or servicing the unit.
	Amputation hazard - rotating impeller.		Remove the key before performing service.
	Amputation hazard - rotating impeller.		Amputation hazard - rotating auger.
	Amputation hazard - do not touch moving parts.		Thrown objects hazard.
	Fire hazard.		Explosion hazard.
	Shock hazard.		Toxic fume hazard.
	Hot surface hazard.		Ear protection recommended for extended use.
	Keep a safe distance.		Wear safety glasses.
	Keep children away.		Kickback hazard.

Recycling Information

All packaging, used oil, and batteries should be recycled according to applicable government regulations.

Safety Messages

WARNING

U.S.A. Models: Certain components in this product and its related accessories contain chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm. Wash hands after handling.

WARNING

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

DANGER

- Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers.
- This snowthrower is capable of amputating hands and feet, and throwing objects. Read and observe all the safety instructions in this manual. Failure to do so could result in death or serious injury.

WARNING

Read, understand, and follow all the instructions on the snowthrower and in the operator's manual before operating this unit.

Failure to observe the safety instructions in this manual could result in death or serious injury.

- Be thoroughly familiar with the controls and the proper use of the snowthrower.
- Make sure you are properly trained before operating the snowthrower.
- Know how to stop the unit and disengage the controls quickly.
- Never allow anyone to operate the snowthrower without proper instruction.
- Always follow the instructions in the operator's manual, if the snowthrower will be stored for an extended period.
- Maintain or replace safety and instruction labels as necessary.
- Never attempt to make major repairs on the snowthrower unless you have been properly trained. Improper servicing of the snowthrower can result in hazardous operation, equipment damage, and voiding of the product warranty.

DANGER

The discharge chute contains a rotating impeller to throw snow. Never clear or unclog the discharge chute with your hands. Fingers can quickly become caught in the impeller. Always use a clean-out tool.

Failure to observe these safety instructions will result in traumatic amputation or severe laceration.

DANGER

Keep hands, feet, and clothing away from rotating parts. Rotating parts can contact or entangle hands, feet, hair, clothing, or accessories.

Failure to observe these safety instructions will result in traumatic amputation or severe laceration.

- Whenever cleaning, repairing, or inspecting the snowthrower, make sure the engine is OFF, spark plug wire is disconnected, and all moving parts have stopped.
- Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
- Never operate the snowthrower without proper guards, and other safety devices in place and working.
- Never leave the snowthrower unattended while engine is running. Always disengage the auger and traction controls, stop engine, and remove keys.
- Keep all loose clothing away from the front of the snowthrower and auger. Scarves, mittens, dangling drawstrings, loose clothes, and pants can quickly become caught in the rotating device and amputation will occur. Tie up long hair and remove jewelry.
- Run the machine a few minutes after discharging snow to prevent freeze-up of the collector/impeller.
- Disengage power to the collector/impeller when snowthrower is transported or not in use.

WARNING 

Objects can be picked up by the auger and thrown from the chute. Never discharge snow toward bystanders or allow anyone in front of the snowthrower. Failure to observe these safety instructions will result in death or serious injury.

- Always wear safety glasses or eye shields during operation, and while performing an adjustment or repair.
- Always be aware of the direction the snow is being thrown. Nearby pedestrians, pets, or property may be harmed by objects being thrown.
- Be aware of your environment while operating the snowthrower. Don't run over items such as gravel, doormats, newspapers, toys, and rocks hidden under snow, as they can all be thrown from the chute or jam in the auger.
- Use extreme caution when operating on or crossing gravel drives, walks, or roads.
- Adjust the collector housing height to clear gravel or crushed rock surface.
- Never operate the snowthrower near glass enclosures, automobiles, window wells, drop-offs, and the like without proper adjustment of the discharge chute angle.
- Familiarize yourself with the area in which you plan to operate the snowthrower. Mark off boundaries of walkways and driveways.

WARNING 

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the unit and the operating activity. Never assume that children will remain where you last saw them.

- Keep children out of the area during operation. Children are often attracted to the equipment. Be mindful of all persons present.
- Be alert and turn the unit off if children enter the area.
- Never allow children to operate the unit.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision. Children may be present.

WARNING 

Engines give off carbon monoxide, an odorless, colorless, poison gas. Breathing carbon monoxide can cause nausea, fainting, or death.

- Start and run the engine outdoors.
- Do not run the engine in an enclosed area, even if doors and windows are open.

WARNING 

Fuel and its vapors are extremely flammable and explosive. Always handle fuel with extreme care.

Failure to observe these safety instructions can cause a fire or explosion which will result in severe burns or death.

When Adding Fuel

- Turn off engine and let cool at least 2 minutes before removing the fuel cap and adding fuel.
- Fill fuel tank outdoors or in a well ventilated area.
- Do not overfill the fuel tank. To allow for the expansion of gasoline, do not fill above the bottom of the fuel tank neck.
- Keep fuel away from sparks, open flames, pilot lights, heat, and other ignition sources.
- Check fuel lines, cap, and fittings frequently for cracks or leaks. Replace if necessary.
- Use an approved fuel container.
- If fuel spills, wait until it evaporates before starting engine.

When Starting Engine

- Ensure that spark plug, muffler, fuel cap, and air cleaner (if equipped) are in place and secured.
- Do not crank the engine with the spark plug removed.
- If fuel is spilled, do not attempt to start the engine, but move the snowthrower away from the area of the spill, and avoid creating any source of ignition, until the fuel vapors have dissipated.
- Do not over-prime the engine. Follow the engine starting instructions in this manual.
- If the engine floods, set choke (if equipped) to OPEN/RUN position, move throttle (if equipped) to FAST position and crank until engine starts.

When Operating Equipment

- Do not tip the snowthrower at an angle which causes the fuel to spill.
- Do not choke the carburetor to stop the engine.
- Never run the engine with the air cleaner assembly (if equipped) or the air filter (if equipped) removed.

When Changing Oil

- If you drain the oil from the top oil fill tube, the fuel tank must be empty or fuel can leak out and result in a fire or explosion.

When Transporting Equipment

- Transport with fuel tank EMPTY, or with fuel shut-off valve OFF.

When Storing Gasoline or Equipment With Fuel in Tank

- Store away from furnaces, stoves, water heaters, or other appliances that have pilot light or other ignition source because they can ignite fuel vapors.

WARNING 

Safe operation of the snowthrower requires the proper care and maintenance of the engine.

- Disengage all clutches and shift into neutral before starting the engine.
- Let the engine adjust to outdoor temperatures before starting to clear snow.
- Use a grounded three-wire plug for all snowthrowers equipped with electric drive motors or electric starting motors.

WARNING 

Starting the engine creates sparking.

Sparking can ignite nearby flammable gases.

Explosion and fire could result.

- If there is natural gas or LP gas leakage in the area, do not start the engine.
- Do not use pressurize starting fluids because their vapors are flammable.

WARNING 

Running the engine produces heat. Engine parts, especially the muffler, become extremely hot.

Failure to observe these safety instructions could result in severe thermal burns on contact.

- Never touch a hot engine or muffler. Allow muffler, engine cylinder, and fins to cool before touching.
- Remove debris from muffler area and cylinder area.
- Install and maintain in working order a spark arrester before using equipment on forest-covered, grass-covered, or brush-covered unimproved land.
- **U.S.A. Models:** 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 unless the exhaust system is equipped with a spark arrester, as defined in Section 4442, maintained in effective working order. Other states or federal jurisdictions may have similar laws. Contact the original equipment manufacturer, retailer, or dealer to obtain a spark arrester designed for the exhaust system installed on this engine.

WARNING 

This snowthrower must be properly maintained to ensure safe operation and performance. Failure to observe the safety instructions in this manual could result in death or serious injury.

- When performing any maintenance or repairs on the snowthrower, shut OFF the engine, disconnect spark plug wire, and keep the wire away from the plug to prevent someone from accidently starting the engine.
- Check shear bolts and other hardware at frequent intervals for proper tightness.
- Keep nuts and bolts tight and keep snowthrower in good condition.
- Never tamper with safety devices. Check their proper operation regularly and make necessary repairs if they are not functioning properly.
- Components are subject to wear, damage, and deterioration. Frequently check components and replace with recommended parts, when necessary.
- Check control operation frequently. Adjust and service as required.
- Use only factory authorized replacement parts, or like, parts when making repairs.
- Always comply with factory specifications on all settings and adjustments.
- Use only factory authorized, or like, attachments and accessories such as wheel weights, counterweights, or cabs.
- Never attempt to make any adjustments while the engine is running (except when specifically recommended by the factory).

WARNING

This snowthrower is only as safe as the operator. If it is misused, or not properly maintained, it can be dangerous. Remember you are responsible for your safety and those around you.

- Keep the area of operation clear of all persons, particularly small children and pets.
- Thoroughly inspect the area where the snowthrower will be used and remove all doormats, sleds, boards, wires, and other foreign objects.
- Do not operate the snowthrower without wearing adequate winter clothing.
- Wear footwear that will improve footing on slippery surfaces.
- Use caution to avoid slipping or falling especially when operating the snowthrower in reverse.
- Never operate the snowthrower without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles.
- Do not clear snow across the face of slopes. Use extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.
- Do not overload the machine capacity by attempting to clear snow too quickly.
- Never operate the snowthrower at high transport speeds on slippery surfaces. Look behind the snowthrower and use care when operating in reverse.
- Do not use the snowthrower on surfaces above ground level such as roofs of residences, garages, porches, or other such structures or buildings.
- Operators should evaluate their ability to operate the snowthrower safely enough to protect themselves and others from injury.
- The snowthrower is intended to remove snow only. Do not use the snowthrower for any other purpose.
- Do not carry passengers.
- After striking a foreign object, shut OFF the engine, disconnect the cord on electric motors, thoroughly inspect the snowthrower for any damage, and repair the damage before restarting and operating the snowthrower.
- If the snowthrower vibrates abnormally, shut OFF the engine. Vibration is generally a warning of trouble. See an authorized dealer if necessary for repairs.
- For models equipped with electric starting motors, disconnect the power cord after the engine starts.

WARNING

Damaged or ungrounded power cords could cause electric shock.

Electric shock could cause severe burns or death.

When Using the Electric Starter

- The power cord must be properly grounded at all times.
- Use only a three-conductor power cord properly grounded to the power source.
- If the power cord is damaged, it must be replaced by a qualified person to avoid a hazard.

WARNING

Rapid retraction of the starter cord (kickback) will pull your hand and arm toward the engine faster than you can let go.

Broken bones, fractures, bruises, or sprains could result.

When starting the engine

- Pull the starter cord slowly until resistance is felt and then pull rapidly to avoid kickback.

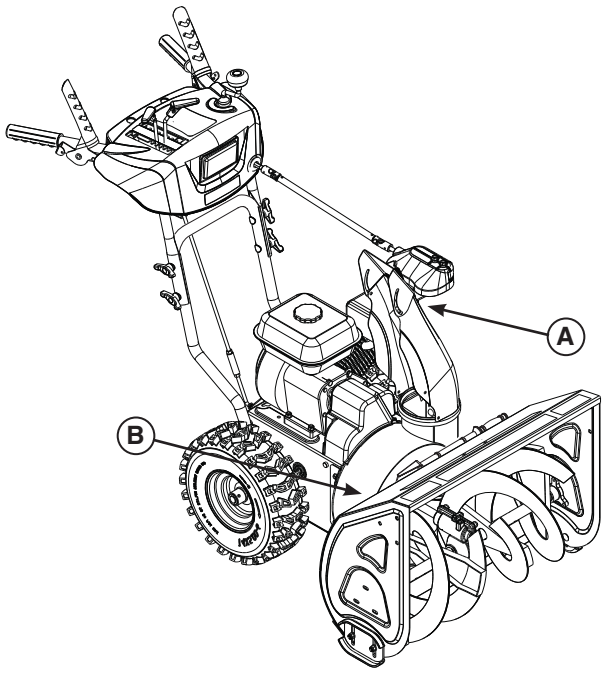
Safety Decals

Before operating your unit, read the safety decals. Compare Figure 1 with the table below. The cautions and warnings are for your safety. To avoid personal injury or damage to the unit, understand and follow all the safety decals.

WARNING

If any safety decals become worn or damaged, and cannot be read, order replacement decals from your local dealer.

1



A	Chute Danger Decal (P/N 1737865)	
B	Auger Danger Decal (large-frame models) (P/N 1737866)	

Safety System Tests

DANGER

Amputation hazard

This snowthrower is equipped with several mechanical safety systems designed to keep the operator safe while using the unit. Check the operation of these systems regularly using the safety system tests listed. If the unit fails to operate as described, DO NOT operate it. See your authorized dealer for service immediately.

Test 1 - Auger/Impeller Control

With the engine running:

- Press down on the auger control lever. (The auger/impeller should rotate)
- Release the auger control lever. (The auger/impeller must stop within 5 seconds)

Test 2 - Traction Drive Control

With the engine running and speed control in 1st gear:

- Press down on the traction control lever. (The unit should move forward)
- Release the traction control lever. (The unit must stop)

Test 3 - Free Hand Control

With the engine running:

- Engage the auger and traction control levers, then release the auger control lever. (Both controls should remain engaged)
- Next, release the traction control lever. (Both controls must release)

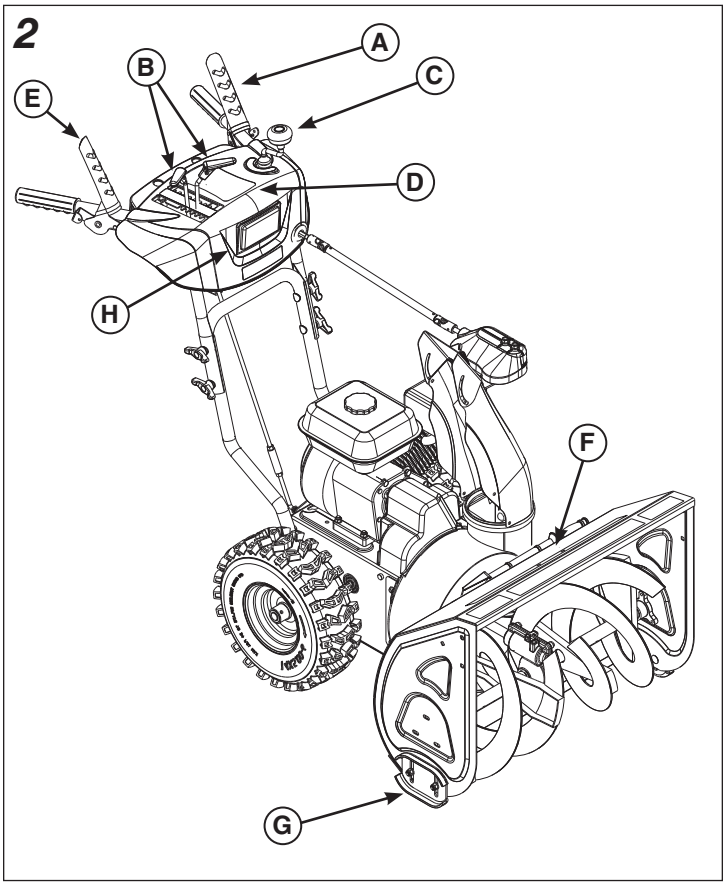
Features and Controls

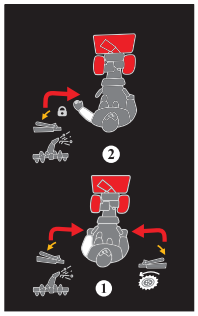
Engine Features and Controls

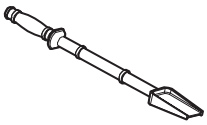
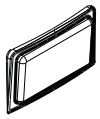
Please refer to the engine operator's manual for engine features and controls

Snowthrower Features and Controls

Compare Figure 2 with the table below.



A		**Auger Control Lever** - Used to engage and disengage the auger and impeller.
B		**Speed Select Lever** - Allows the operator to select forward and reverse speeds. **NOTICE: Do not move speed select lever while Traction Control is engaged. This may result in severe damage to the drive system.**
		Deflector Control - In-Dash - Used to control the angle of the deflector (up or down).
C		**Chute Rotation Crank - In-Dash** - Used to rotate the discharge chute to the left or right.
D		**Free Hand™ Control** - After engaging the traction control (right hand) and auger control (left hand), allows the operator to release the auger control lever to use other controls.
E		**Traction Control Lever** - Used to propel snowthrower forward or reverse. See also, "Free-Hand Control".

F		**Clean-Out Tool** - Used to remove snow and debris from the discharge chute and the auger housing.
G		**Skid Shoes** - Used to adjust the ground clearance of the auger housing.
H		**Headlight** - Illuminates the area in front of the snowthrower. NOTE: Headlight design varies according to model.

Operation

Before Operating the Snowthrower

WARNING

Read the operator's manual before operating the machine. This machine can be dangerous if used carelessly.

- Never operate the snowthrower without all guards, covers, and shields in place.
- Stop the engine whenever leaving the operating position.
- Remove the key before unclogging the impeller housing or discharge chute, and before making repairs or adjustments.
- When leaving the machine, remove the key.
- To reduce the risk of fire, keep the machine clean and free from spilled fuel, oil, and debris.
- On electric start models, disconnect the extension cord before operating.
- Be sure to check the engine oil level before starting the engine. See the engine operator's manual for oil recommendations.

Operating the Snowthrower

DANGER

Amputation hazard

The discharge chute contains a rotating impeller to throw snow. Fingers can quickly become caught in the impeller. Never clear or unclog the discharge chute with your hands. Always use a clean-out tool.

Failure to observe these safety instructions will result in traumatic amputation or severe laceration.

Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers. Never use your hands to clean out the discharge chute.

To safely clear a clogged discharge chute, follow these instructions:

1. Shut OFF the engine.
2. Wait 10 seconds to be sure the impeller blades have stopped rotating.
3. Always use a clean-out tool, not your hands.

WARNING

Toxic fume hazard

Engines give off carbon monoxide, an odorless, colorless, poison gas.

Breathing carbon monoxide can cause nausea, fainting, or death.

- Start and run the engine outdoors.
- Do not run the engine in an enclosed area, even if doors and windows are open.

WARNING

Thrown objects hazard

This machine is capable of throwing objects that could injure bystanders, or cause damage to buildings.

Be sure the operating area is clear of bystanders. Never direct the discharge toward anyone, or toward buildings or cars.

1. Start the engine. Please refer to the engine operator's manual for engine instructions.

NOTE: Always set engine speed to FAST (full throttle).

2. Rotate the chute rotation crank (C, Figure 2) to set the direction of the discharge chute.
3. Use the deflector control lever (F) to move the deflector up or down. Raise the deflector to throw snow further.
4. Use the speed select lever (B) to select the forward or reverse drive speed. Use lower speeds when clearing wet, heavy snow. Use higher speeds for light snow or transporting.

NOTE: Always release the traction control lever before changing speeds.

5. Fully press the auger control lever (A) to engage the auger. Release the lever to stop the auger.
6. Fully press and hold the traction control lever/Free Hand control (A, E) to engage the traction drive and propel the snowthrower. Release the lever to stop the snowthrower.
7. On models equipped with Free Hand controls, when both the auger (A) and traction control levers (E) are pressed, the Free Hand control is activated. This allows you to release the auger control lever (A) to use other controls. The auger will continue to rotate until the traction control lever/Free Hand control lever is released.
8. This model is equipped with a headlight (I) to help illuminate the area in front of the snowthrower. The headlight is operational whenever the snowthrower is running.

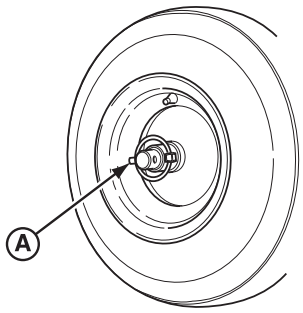
Stopping the Snowthrower

1. Release the auger control lever (A, Figure 2).
2. Release the traction control lever (E).
3. Stop the engine. Please refer to the engine operator's manual for engine instructions.

Wheel Release - Lock Pins

Wheels equipped with a traction lock pin (A, Figure 3) can be completely released by removing the pin and installing it in the outer axle hole. Reverse this process to engage the drive wheel.

3



Filling the Fuel Tank

Please refer to the engine operator's manual for instructions about filling the fuel tank, and for fuel recommendations.

Clearing a Clogged Discharge Chute

DANGER

Amputation hazard

The discharge chute contains a rotating impeller to throw snow. Fingers can quickly become caught in the impeller. Never clear or unclog the discharge chute with your hands. Always use a clean-out tool.

Failure to observe these safety instructions will result in traumatic amputation or severe laceration.

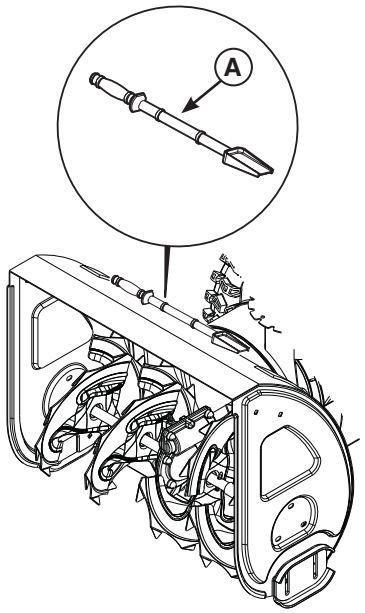
Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers. Never use your hands to clean out the discharge chute.

A clean-out tool (A, Figure 4) is provided with the unit.

To safely clear a clogged discharge chute, follow these instructions:

1. Shut OFF the engine.
2. Wait 10 seconds to be sure the impeller blades have stopped rotating.
3. Always use a clean-out tool, not your hands.

4



Skid Shoe Height Adjustment

DANGER

Amputation hazard

The discharge chute contains a rotating impeller to throw snow. Fingers can quickly become caught and traumatic amputation or severe laceration will result. Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers.

Turn the engine OFF, wait for all moving parts to stop, and remove the engine key before performing any maintenance or repairs.

WARNING

Thrown objects hazard

Objects such as gravel, rocks, or other debris, if struck by the impeller, may be thrown with sufficient force to cause personal injury, property damage, or damage to the snowthrower.

Be sure to set the skid shoes at the proper height to maintain ground clearance for the type of surface being cleared.

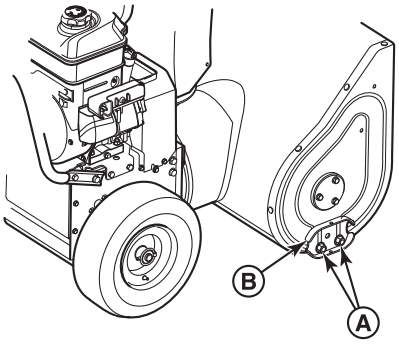
This snowthrower is equipped with two skid shoes secured to the outside of the auger housing. These adjust the height of of the front of the snowthrower.

When removing snow from a hard surface area such as a paved driveway or walk, raise the skid shoes to bring the front of the snowthrower down.

When removing snow from gravel-covered or uneven surfaces, lower the skid shoes to bring the front of the snowthrower up. This will help to prevent rocks and other debris from being picked up and thrown by the augers.

1. Determine the clearance needed between the scraper bar at the bottom of the auger housing and the ground.
2. Place a block with a thickness equal to the desired ground clearance under the scraper bar.
3. Loosen the skid shoe mounting nuts (A, Figure 5) and push the skid shoe (B) down until it touches the ground. Re-tighten mounting nuts.
4. Set the skid shoe on the other side at the same height.

5



Maintenance

Maintenance Schedule

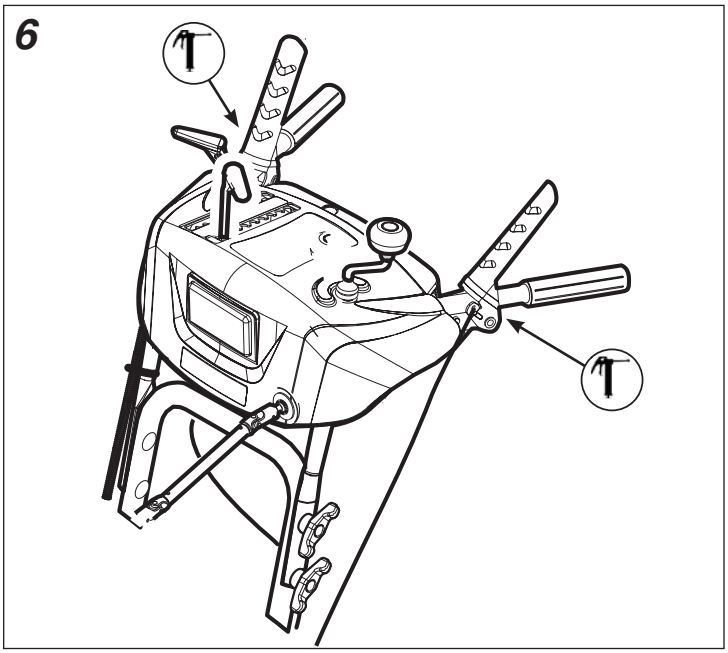
Before Each Use
• Check engine oil level
• Perform Safety System Tests
Every 8 Hours or Daily
• Check engine oil level
Every 25 Hours or Annually
• Lubricate control lever linkages
• Lubricate the auger assembly
• Lubricate the discharge chute rotation gear and deflector
• Lubricate the hex shaft and gears
Every 50 Hours or Annually
• Check muffler and spark arrester (if equipped)
• Check tire pressure

Engine Maintenance

Please refer to the engine operator's manual for engine maintenance schedules and procedures.

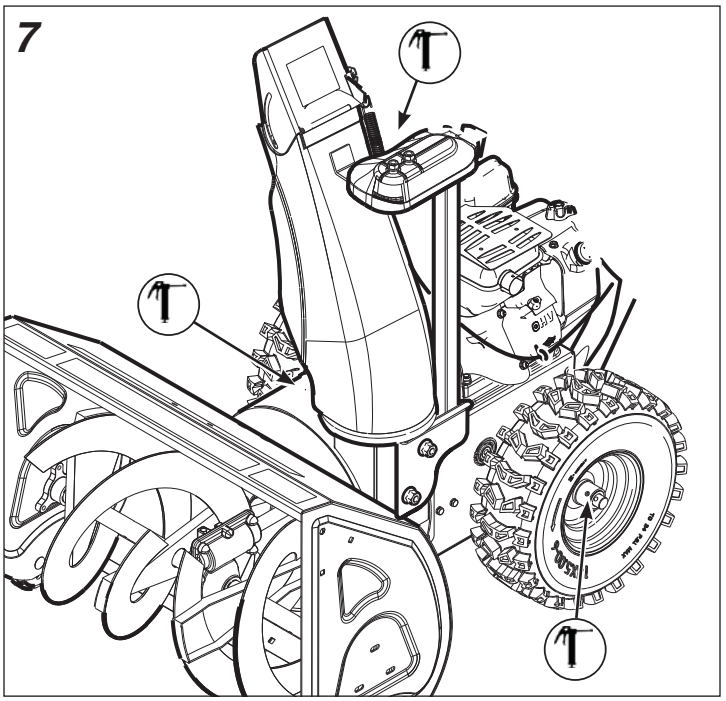
Lubricate Control Lever Linkage

Lubricate the control lever linkage at the locations shown in Figure 6.



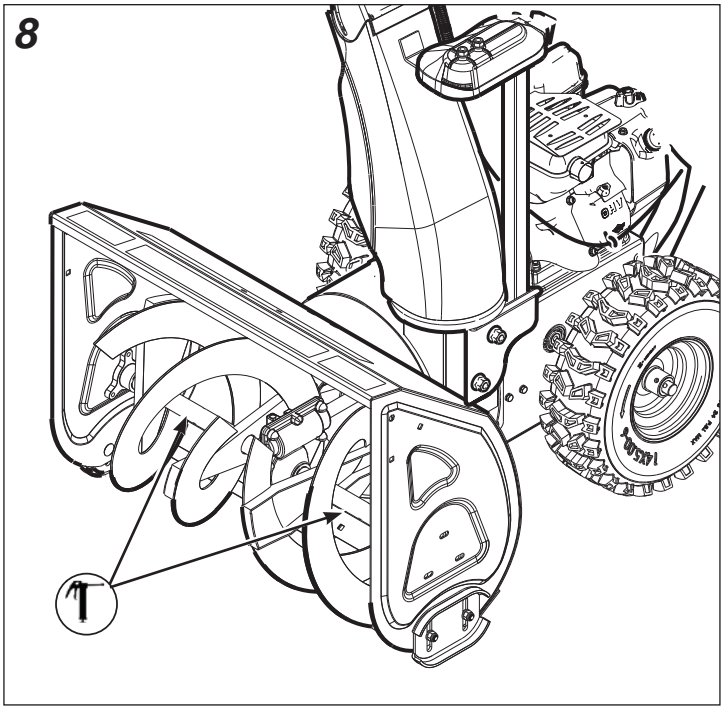
Lubricate Discharge Chute, Deflector, and Wheel Axle

Lubricate the discharge chute, deflector, and wheel axle at the locations shown in Figure 7.



Lubricate Auger Assembly

Lubricate the auger assembly at the location shown in Figure 8.



Hex Shaft and Gear Lubrication

NOTICE: Do not allow grease or oil to contact the rubber friction wheel or the disc drive plate. If grease or oil comes into contact with the friction wheel, replace it. Do not attempt to clean it. If grease or oil comes into contact with disc drive plate, clean it thoroughly with an alcohol based solvent.

1. Position speed select lever in the first forward gear.
2. Drain fuel to an approved container.

WARNING

Fire and explosion hazard

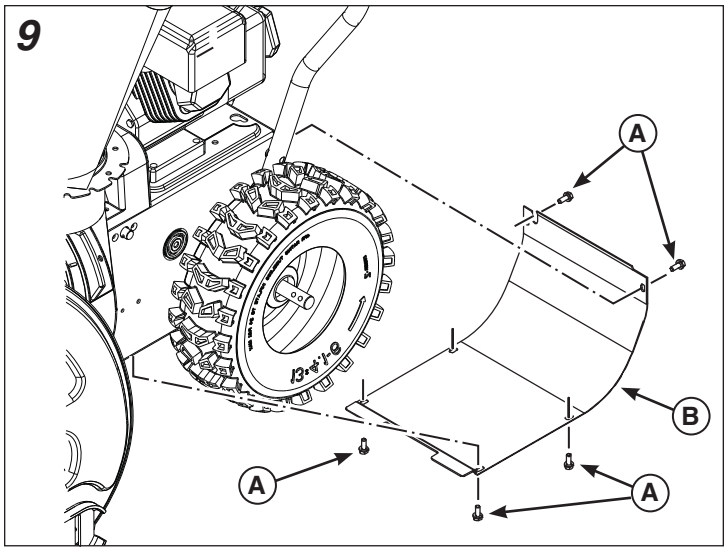
Gasoline is highly flammable and its vapors are explosive.

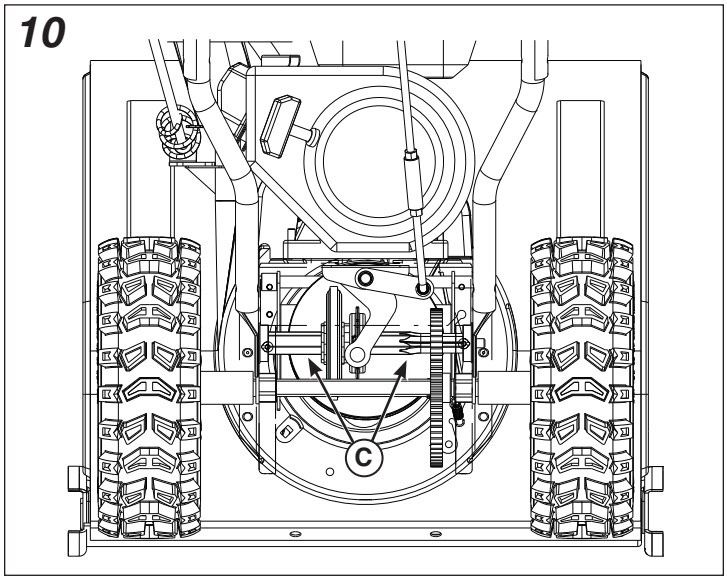
Drain gasoline outdoors, away from fire and other ignition sources. Wipe up any spills immediately. Do NOT allow open flame, smoking, or matches in the area.

3. Stand the snowthrower up on the auger housing end.

NOTE: When the crankcase is filled with oil, do not leave the snowthrower standing up on the auger housing for an extended period of time.

4. Remove screws (A, Figure 9) and bottom panel (B).
5. Wipe the hex shaft (C, Figure 10) with 5W30 synthetic motor oil, before storage and at the beginning of each season.
6. Install the bottom panel (B, Figure 9) and screws (A).





Auger and Traction Cable Adjustment

WARNING

Amputation hazard

Over-tightening the auger cable may cause the auger drive to engage without depressing the auger drive control.

Follow the adjustment procedure to ensure the cable is not over-tightened.

NOTE: If the auger or traction cables become stretched or are sagging, adjustment is necessary.

1. Loosen finger nut (A, Figure 11).
2. Hold control cable (B) to keep it from rotating.

NOTE: The cable should not rotate while making adjustment.

3. Turn collar (C) to remove slack but do not over-tighten.
4. Tighten finger nut.
5. Perform snowthrower safety test to ensure proper operation. See ***Safety System Tests***. If necessary, make additional adjustments.

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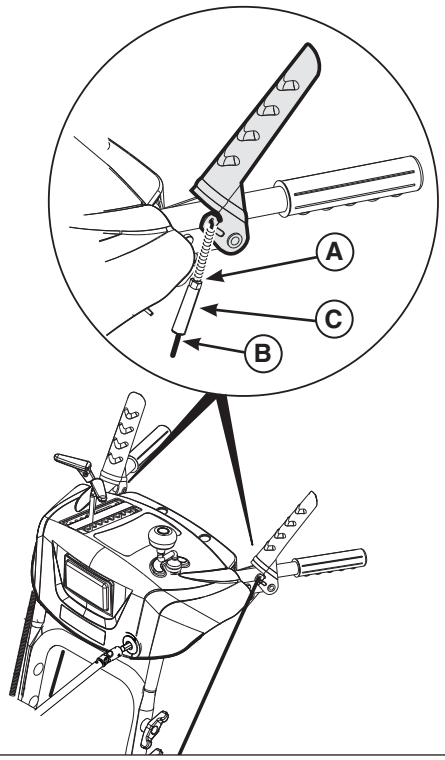


Speed Control Rod Adjustment

If the speed control rod requires adjustment, see an authorized dealer.

Checking Tire Pressure

WARNING

Explosion hazard

Over-inflation of tires may cause them to explode, which could result in serious injury.

Do not inflate the tires above the maximum pressure.

Tire pressure should be checked periodically. The maximum tire pressure is stamped on the sidewall of the tires. Do not exceed this pressure.

Auger Shear Bolt Replacement

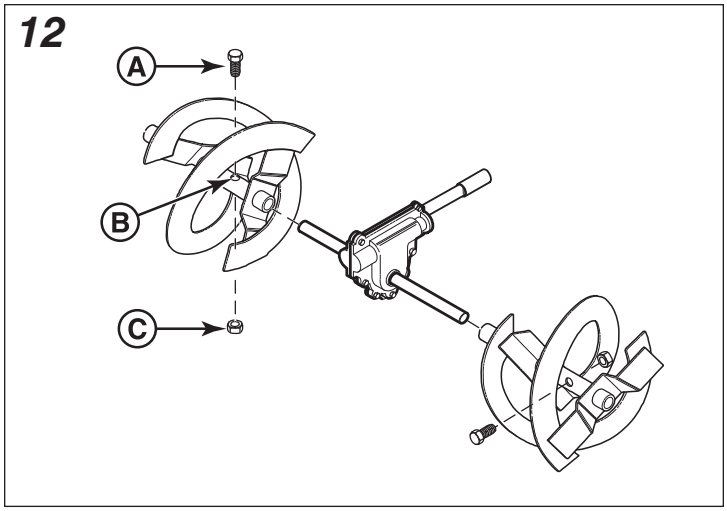
DANGER

Amputation hazard

The discharge chute contains a rotating impeller to throw snow. Fingers can quickly become caught and traumatic amputation or severe laceration will result. Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers.

Turn the engine OFF, wait for all moving parts to stop, and remove the engine key before performing any maintenance or repairs.

1. Turn the engine OFF, wait for all moving parts to stop, and remove the engine key.
2. Remove the existing shear bolt (A, Figure 12) and locknut (C) from auger shaft (B).
3. Align the bolt holes. Install the replacement shear bolt through the auger shaft. Secure with the locknut.



Gear Box Shear Bolt Replacement

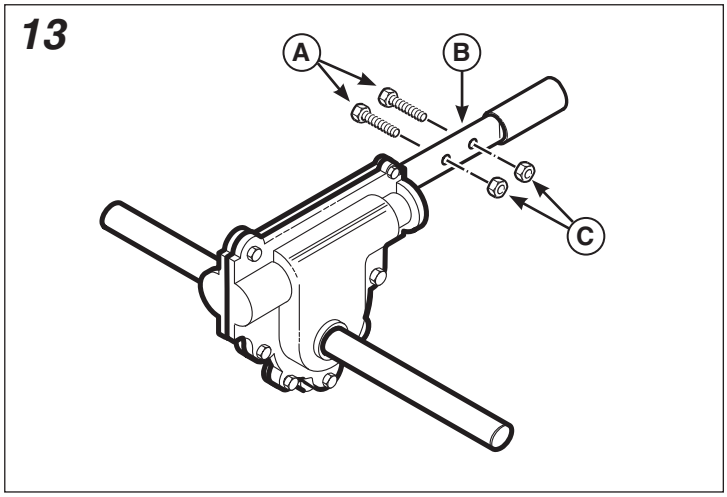
DANGER

Amputation hazard

The discharge chute contains a rotating impeller to throw snow. Fingers can quickly become caught and traumatic amputation or severe laceration will result. Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers.

Turn the engine OFF, wait for all moving parts to stop, and remove the engine key before performing any maintenance or repairs.

1. Turn the engine OFF, wait for all moving parts to stop, and remove the engine key.
2. Remove the existing shear bolt (A, Figure 13) and locknut (C) from impeller shaft (B).
3. Align the bolt holes. Install the replacement shear bolt through the impeller shaft. Secure with the locknut.



Storage

WARNING

Fire and explosion hazard

Gasoline is highly flammable and its vapors are explosive. Fumes may travel to a distant ignition source and an explosion and/or fire may result.

Handle gasoline carefully. Never store the unit, with fuel in the tank, indoors or in a poorly ventilated enclosure where fuel fumes could reach an open flame, spark, pilot light, such as a furnace, water heater, or clothes dryer.

Equipment

- Thoroughly clean the unit.
- Lubricate the hex shaft (see *Maintenance* section).
- Make sure all nuts, bolts, and screws are securely fastened. Inspect all visible moving parts for damage, breakage, and wear. Replace if necessary.
- Apply a rust preventative to any bare metal parts of the snowthrower auger and impeller.
- If possible, store the unit indoors and cover it to give protection from dust and dirt.
- If the machine must be stored outdoors, cover it with a heavy tarpaulin.

Fuel System

Fuel can become stale when stored over 30 days. Stale fuel causes acid and gum deposits to form in the fuel system or on essential carburetor parts. To keep fuel fresh, use **Briggs & Stratton® Advanced Formula Fuel Treatment & Stabilizer**, available wherever Briggs & Stratton genuine service parts are sold.

There is no need to drain gasoline from the engine if a fuel stabilizer is added according to instructions. Run the engine for 2 minutes to circulate the stabilizer throughout the fuel system before storage. If gasoline in the engine has not been treated with a fuel stabilizer, it must be drained into an approved container. Run the engine until it stops from lack of fuel. The use of a fuel stabilizer in the storage container is recommended to maintain freshness.

Engine Oil

While the engine is still warm, change the engine oil. See ***Changing the Oil*** in the engine operator's manual.

Before starting the unit after it has been stored:

- Check all fluid levels. Check all maintenance items.
- Perform all recommended checks and procedures found in this manual.
- Allow the engine to warm up for several minutes before use.

Troubleshooting

Troubleshooting the Snowthrower

Problem	Look for	Remedy
Auger does not stop within 5 seconds after auger control lever is released.	Auger control cable out of adjustment.	Adjust auger control cable. Refer to *Maintenance* section.
Discharge chute or deflector does not work	Discharge chute or deflector out of adjustment or needs lubrication.	Adjust and/or lubricate control linkage.
Scraper bar does not clean hard surface.	Skid shoes and scraper bar improperly adjusted.	Raise or lower skid shoes and scraper bar.
Unit does not propel itself.	Traction control cable out of adjustment.	Adjust traction control cable. Refer to *Maintenance* section.
Engine does not start.	Key is in OFF position.	Set key to ON position.
	Primer button not pressed (cold engine).	Press primer button twice and restart.
	Fuel shut-off valve (if equipped) is in CLOSED position.	Turn valve to OPEN position.
	Out of fuel.	Fill fuel tank.
	Choke turned to OPEN/RUN) cold engine).	Turn choke to CLOSED/START, set throttle to FAST.
	Engine flooded.	Move the choke to OPEN/RUN position, move throttle to FAST position, and crank until the engine starts.
Engine starts hard or runs poorly.	Water in fuel, or old fuel.	Drain tank. (Dispose of fuel at an authorized hazardous waste facility.) Fill with fresh fuel.
	Fuel cap vent is blocked.	Clear vent or replace fuel cap.
Excessive vibration.	Loose parts or damaged impeller.	Stop engine immediately. Tighten all hardware. If vibration continues, have the unit serviced by an authorized dealer.
Snowthrower does not stop when traction control lever is released.	Traction control cable out of adjustment.	Adjust traction control cable. Refer to *Maintenance* section.
Unit does not discharge snow.	Auger control cable out of adjustment.	Adjust auger control cable. Refer to *Maintenance* section.
	Broken auger shear bolt.	Replace auger shear bolt. Refer to *Maintenance* section.
	Broken gear box shear bolt.	Replace gear box shear bolt. Refer to *Maintenance* section.

Problem	Look for	Remedy
Unit does not discharge snow (continued).	Discharge chute clogged.	Stop engine immediately. Always use the clean-out tool to clear a clogged discharge chute, not your hands. Refer to *Discharge Chute Warning* in the *Operator Safety* section.
	Foreign object lodged in auger.	Stop engine immediately. Always use the clean-out tool to remove foreignh object, not your hands. Refer to WARNINGS in the *Operator Safety* section.

NOTE: For all other problems, contact an Authorized Service Dealer.

Specifications

Engine Brand	Briggs & Stratton
Engine Model Series	Snow Series
Engine Type	4-Cycle
Starting System	Recoil Start and Electric Start 110V 1-2-3 Start Package (if equipped)
Oil Capacity	20 oz (0,59 L)
Fuel Tank Capacity	3.2 qts (3,0 liters)
Sparkplug Gap	.030 in (0,76 mm)
Sparkplug Torque	180 lb-in (20 Nm)

The spark ignition system on this snowthrower complies with Canadian standard ICES-002.

Power Ratings

The gross power rating for individual gasoline engine models is labeled in accordance with SAE (Society of Automotive Engineers) code J1940 Small Engine Power & Torque Rating Procedure, and is rated in accordance with SAE J1995. Torque values are derived at 2600 RPM for those engines with “rpm” called out on the label and 3060 RPM for all others; horsepower values are derived at 3600 RPM. The gross power curves can be viewed at www.BRIGGSandSTRATTON.COM. Net power values are taken with exhaust and air cleaner installed whereas gross power values are collected without these attachments. Actual gross engine power will be higher than net engine power and is affected by, among other things, ambient operating conditions and engine-to-engine variability. Given the wide array of products on which engines are placed, the gasoline engine may not develop the rated gross power when used in a given piece of power equipment. This difference is due to a variety of factors including, but not limited to, the variety of engine components (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine-to-engine variability. Due to manufacturing and capacity limitations, Briggs & Stratton may substitute an engine of higher rated power for this engine.