

5554-048

BENCHMARK™

BS7680





This product is supported by **Midland Power**. Contact us directly for assistance and warranty help. Do not return this product to store.

You must register online for your warranty to be valid. It only takes a minute, do it now while you still have your purchase receipt.

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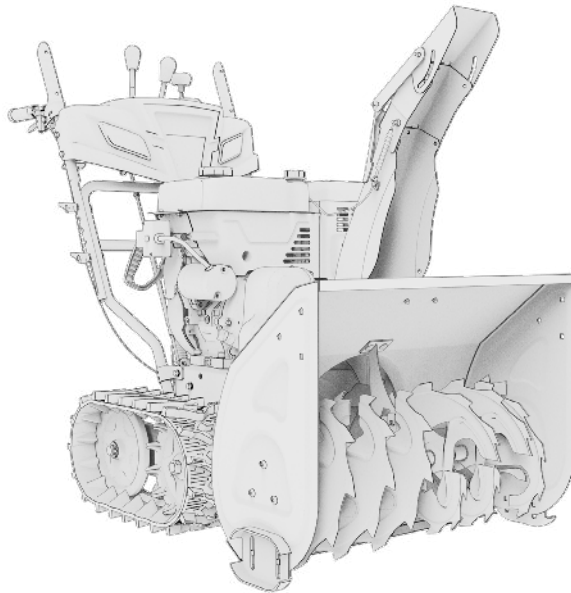
Or call us anytime at **1-877-528-3772**.

Thanks for choosing the BS7680!

You're excited to get started, we'll keep this brief.

READ THIS ENTIRE GUIDE BEFORE USING THIS PRODUCT AND SAVE FOR LATER USE.

This user guide contains important instructions including safety, setup, operation, and maintenance that must be followed. All information in this guide is based on information available at the time of print. This guide or revised editions can be found on our website for download. No part of this publication may be reproduced without written permission.



THIS PRODUCT MEETS ALL CERTIFICATION REQUIREMENTS FROM:



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

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BS7680_Manual_EN_2024-05-29

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A note from our designer:

When I was a child in Kingston Ontario, my family lived beside a retired fellow named Basil. I remember one day, Basil got down on one knee to clean out his clogged snowblower, reaching deep into the machine to remove the buildup of hard snow and ice. Once the blockage was clear, the augers quickly sprang back to life, he had forgotten to shut off the engine! For the rest of his life, Basil only had two fingers on that hand because he'd left his snowblower running. Don't be like my kind neighbour Basil, be careful and stay safe!

1. SAFETY

WARNING!

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.

1.1 SNOWTHROWER SAFETY

The snowthrower is designed and intended only for clearing of snow from hard-surface ground-level walkways and driveways and is not intended for any other purpose.

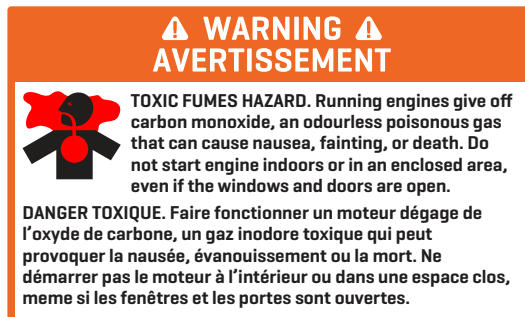
Only allow operators who are responsible, trained, familiar with these instructions, and physically capable operate the machine. If it is misused or not properly maintained, it can be dangerous. Remember you are responsible for your safety and those around you.

This snowthrower is capable of amputating hands and feet, and throwing objects. Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers.

- This machine is capable of throwing objects that could injure bystanders or cause damage to buildings.
- When leaving the operating position always disengage the auger, turn off the engine, and remove the key. Never leave a running machine unattended.

- Never operate the snowthrower without proper guards, and other safety protective devices in place and working.
- Be careful when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
- Never operate the snowthrower without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk; never run.
- Be careful to avoid slipping or falling, especially when operating the snowthrower in reverse.
- Be careful when operating on slopes.
- After striking a foreign object, stop the engine, remove the wire from the spark plug, thoroughly inspect the snowthrower for any damage, and repair the damage before restarting and operating the snowthrower.
- Do not operate the equipment without wearing adequate winter garments. Avoid loose fitting clothing that can get caught in moving parts. Wear footwear that will improve footing on slippery surfaces.
- Never touch a hot muffler or engine. Allow muffler and engine cylinder to cool before touching.

1.2 ENGINE SAFETY



⚠ WARNING!

- Always perform an oil and fuel check before starting the engine.
- Properly clean and maintain the equipment.
- Before operating, read the user guide carefully. Otherwise, personal injuries or equipment damage may result.
- Pay attention to the warning labels. The engine exhaust system will become heated during operation and remain hot immediately after the engine is stopped.
- Gasoline is a highly flammable and explosive liquid. Refuel in a well ventilated area with the engine stopped.

- Use of gasoline with an ethanol content greater than 10% can damage the engine and fuel system and will void the manufacturer's warranty.
- When refueling, keep it away from cigarettes, open flames, smoke and/or sparks.
- Do not touch the spark plug while the engine is operating or shortly after the engine has been shut down.
- Know how to stop the engine quickly and understand operation of all the controls. Never permit anyone to operate the engine without proper instructions.
- Do not operate in rain or snow.
- To avoid breathing in poisonous carbon monoxide from the exhaust gases, adequate ventilation should be provided if running in a partially enclosed space.
- If stored outdoors, check all electrical components before each use. Moisture can damage the electronics and can lead to an electric shock.
- Do not connect an extension to the exhaust pipe.
- If you start to feel sick, dizzy, or weak after the engine has been running, move to fresh air RIGHT AWAY. See a doctor. You could have carbon monoxide poisoning.

1.3 AC SAFETY

⚠ WARNING!

Before connecting the snowthrower to an electrical device or power cord:

- Make sure that everything is in proper working order. Faulty devices or power cords can lead to an electrical shock.
- Turn off immediately if the device begins to operate abnormally. Then disconnect and investigate the problem.
- Use only a three-conductor power cord properly grounded to the power source.
- Use a tough rubber sheathed flexible cable (according to IEC245 or equivalent standards). The maximum length of the extension cable: 196 feet (60 meters) for cable of 15.5 gauge (1.5mm²); 328 feet (100 meters) for cable of 13.25 gauge (2.5mm²).

1.4 MAINTENANCE SAFETY

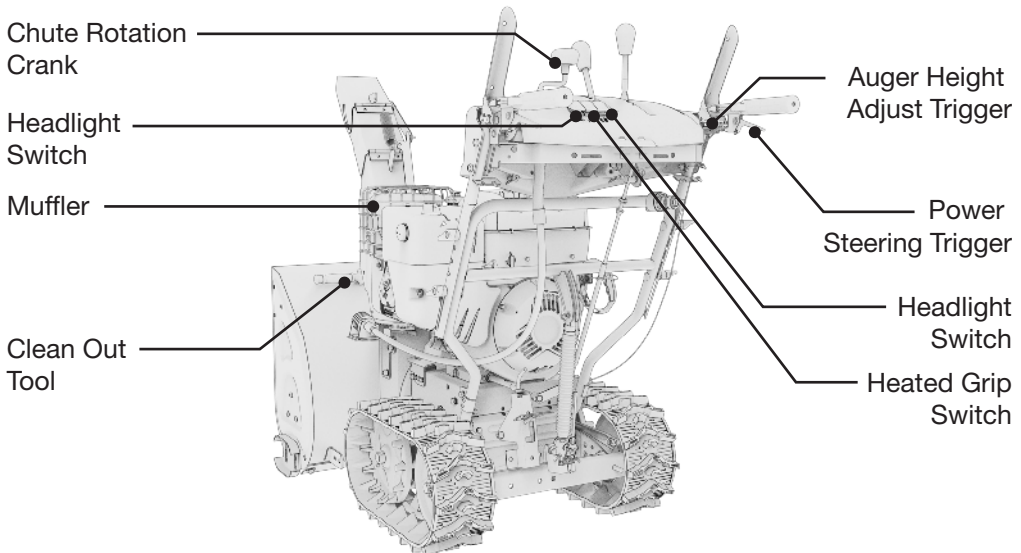
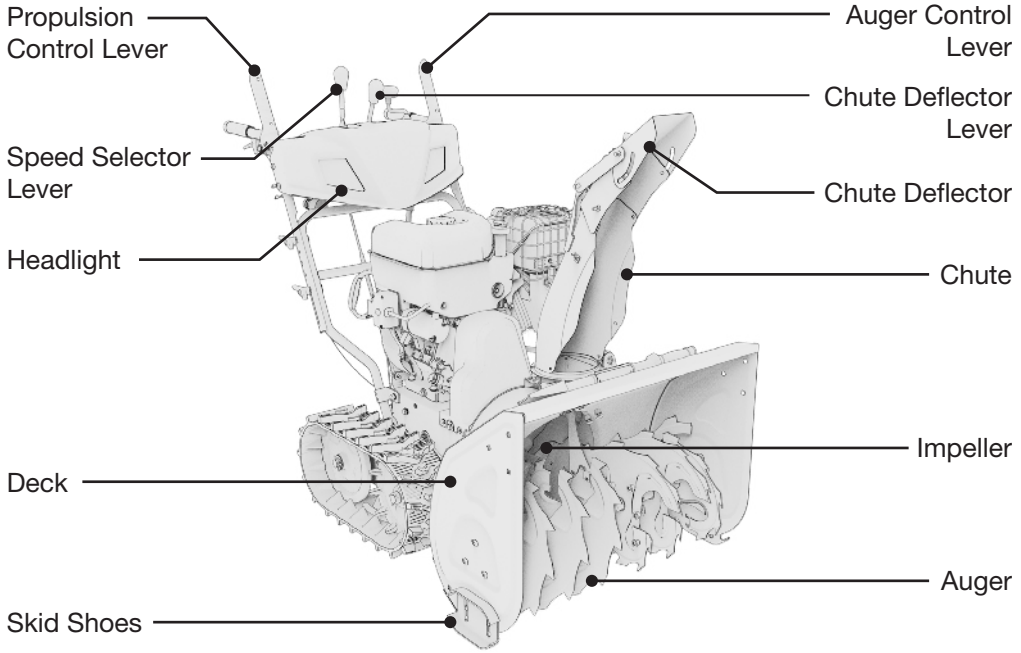
WARNING!

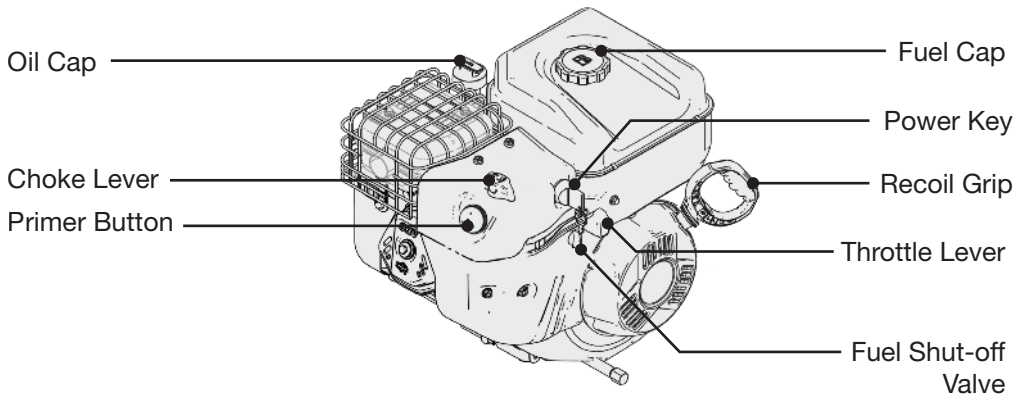
- After any maintenance is performed, wash immediately using soap and clean water because repeated exposure to lubricant may cause skin irritation.
- Allow the engine to cool down and turn off the engine before performing any maintenance. Failure to do so can cause severe personal injury or death.
- Do not clean with a pressure washer.
- Use rubber gloves when coming into contact with engine oil.
- Always stop the engine before removing the oil filler cap.
- Only qualified maintenance personnel with knowledge of fuels, electricity, and machinery hazards should perform maintenance procedures.

2. LEARN ABOUT YOUR SNOWTHROWER

This section will show you how to identify key parts of your snowthrower. Going over the terminology below will make sure we're on the same page.

2.1 COMPONENT IDENTIFICATION





2.2 CONTROL FUNCTIONS

Auger Control Lever

- Augers and impeller will activate when lever is engaged.

Clean Out Tool

- NEVER clean a clogged impeller or chute with your hands, always use a clean out tool.

Electric Start Module

- Connect a 15A extension cord from a wall receptacle to this module to enable electric starting.

Power Steering Trigger

- Pull the trigger underneath the left grip to turn left, and right grip to turn right.

Primer Button

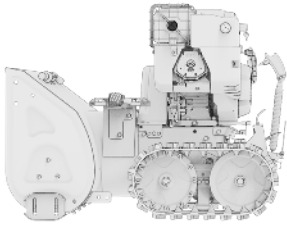
- Press 2 times before starting. Do not press if engine is warm.

Propulsion Control Lever

- Engages the self-propelled wheels to run at the speed set by the speed selector lever.
- With one-hand control feature, the propulsion control lever locks the auger control lever in an engaged state, so you can release the auger control lever to reach other controls without stopping the unit.

2.3 MAKE SURE YOU HAVE EVERYTHING

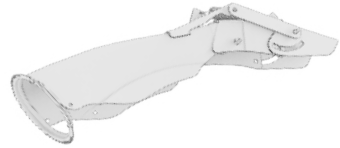
Make sure your snowthrower has everything listed in the table below.



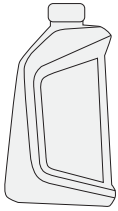
Snowthrower



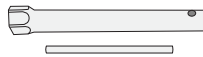
Chute Clamps
(Pre-installed)



Chute



Oil Bottle



Spark Plug Wrench



Ignition keys



Extra Shear Bolts



Extra Bow-tie Locking
Cotter Pins



Chute Rotation
Crank



Speed Selector
Knob



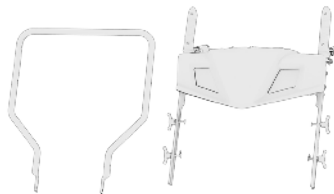
Chute Deflector
Knob



Speed Selection Rod



Skid Shoes



Handle

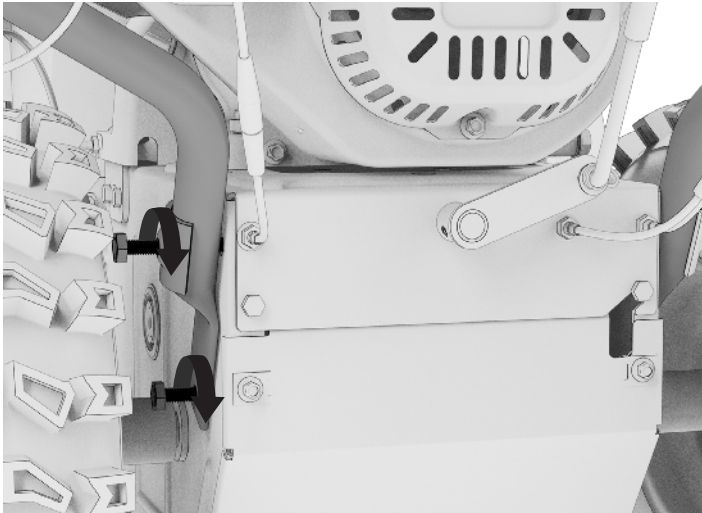
3. ASSEMBLY INSTRUCTIONS

3.1 INSTALLING THE HANDLE

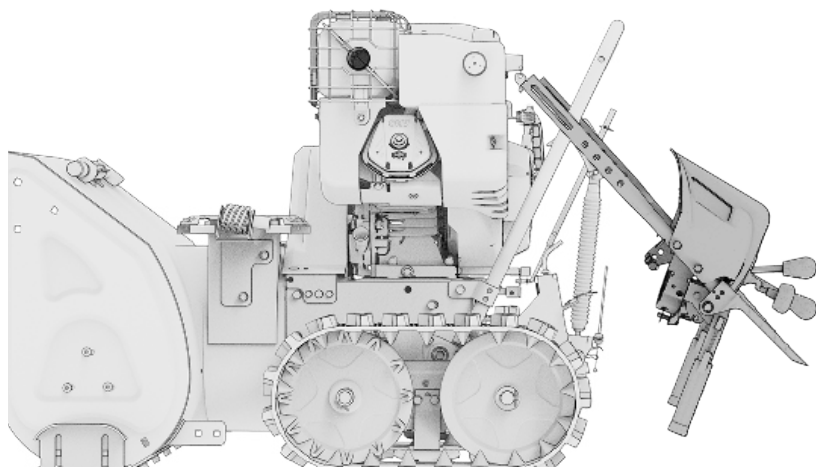
1. The handle mounting bolts are pre-installed in the correct location. Note the location, then loosen and remove.



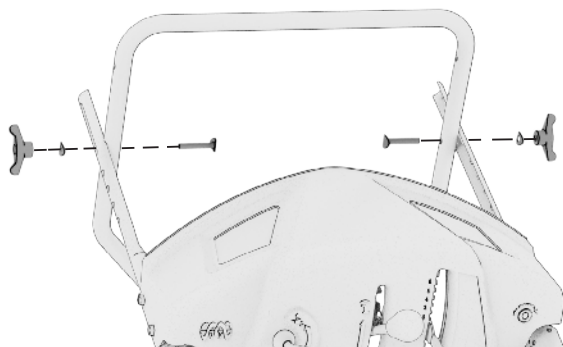
2. Thread the bolts through the handle and re-screw into the snowthrower body.



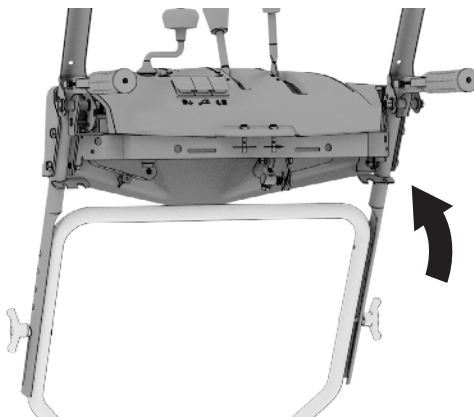
3. Resting the handle grips on the ground behind the snowthrower, pivot the mounting end of the handle upwards. Align the mounting holes of the handle with the height position of your choice.



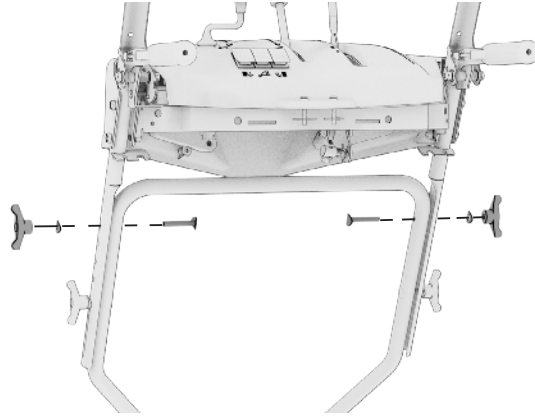
4. On each side of handle as seen from operator's point of view, insert the bolt and secure with washer and handle knob.



5. Pivot handle grips upwards until aligned with second set of holes in handle.

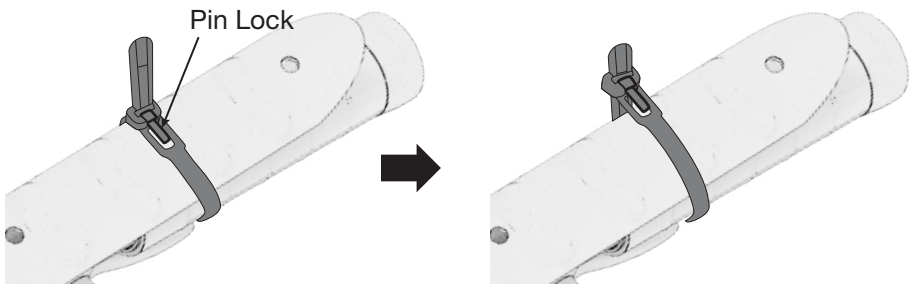


6. Insert the bolt and secure with washer and handle knob.



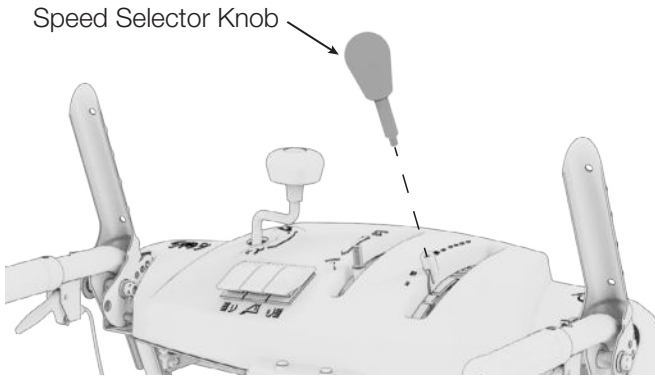
NOTE

- Remove the reusable zip tie on the propulsion control lever and auger control lever by pressing the pin lock and pulling the head to remove.

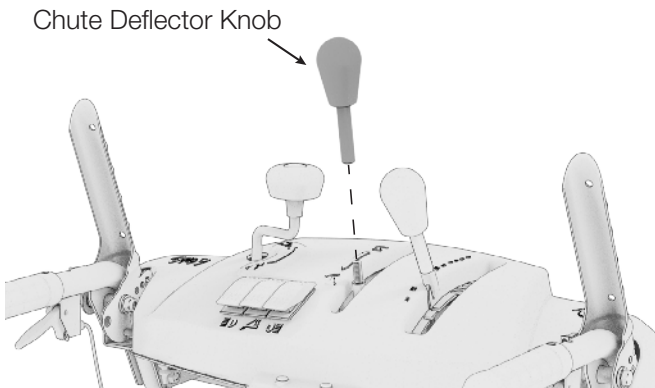


3.2 INSTALLING THE SPEED SELECTOR AND CHUTE DEFLECTOR LEVER

Screw the speed selection lever into the top panel.



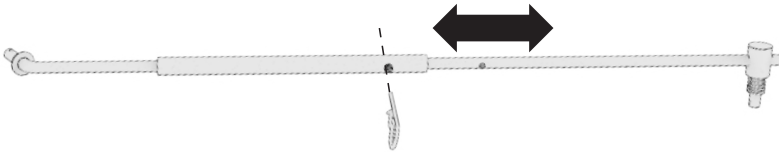
Screw the chute deflector lever into the top panel.



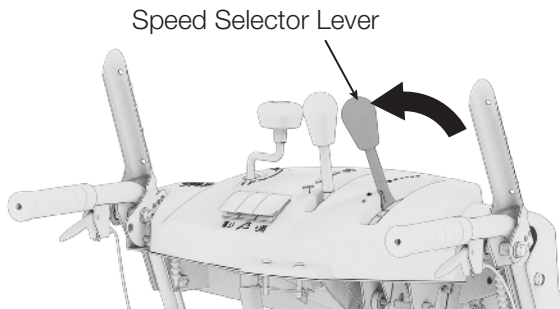
3.3 INSTALLING THE SPEED SELECTION ROD

The speed selection rod needs to match the height of your handle. There are 4 length positions on the speed selection rod that match the 4 height positions of the handles. For example, if you assembled your handles at the tallest position choose the longest length of the speed selector rod. If you assembled your handles at the shortest position choose the shortest length of the speed selector rod.

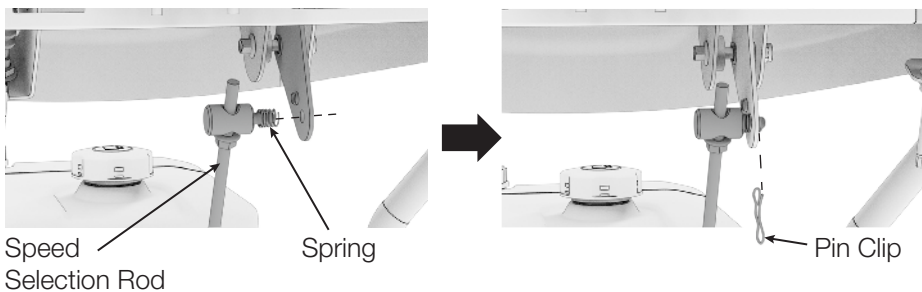
1. Assemble the two parts of the speed selection rod and adjust the height (1, 2, 3 or 4). Align the holes and secure with pin clip.



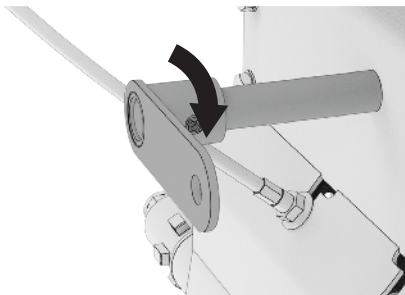
2. Move the speed selection lever to lowest position, Reverse-2 on most models.



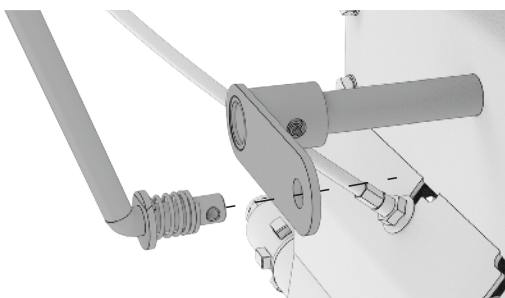
3. Add spring and washer to angled end of speed selection rod. Push rod through bracket on bottom casing, secure with pin clip.



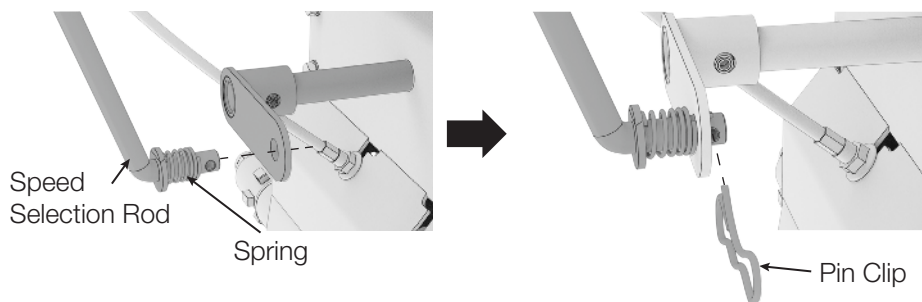
4. Move the bracket on bottom casing to the lowest position, ensure it stays here until the end of this section.



5. Thread right angle bracket down threaded end of speed selection rod until it aligns with bottom bracket of speed selection lever.

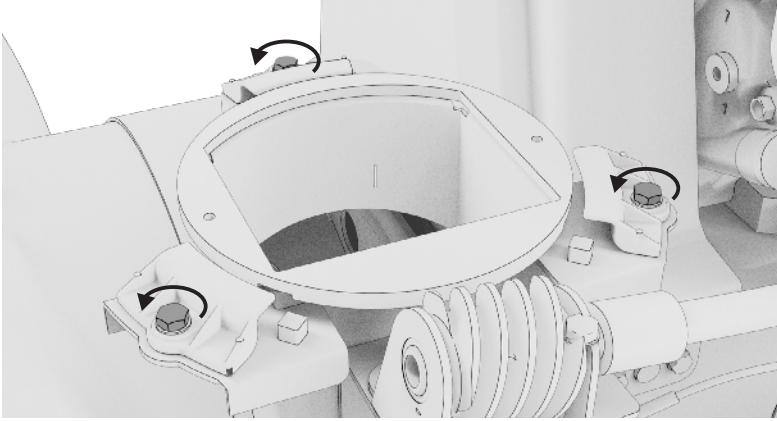


6. Add spring and washer to right angle bracket. Push right angle bracket through bottom bracket of speed selection lever, secure with pin clip.

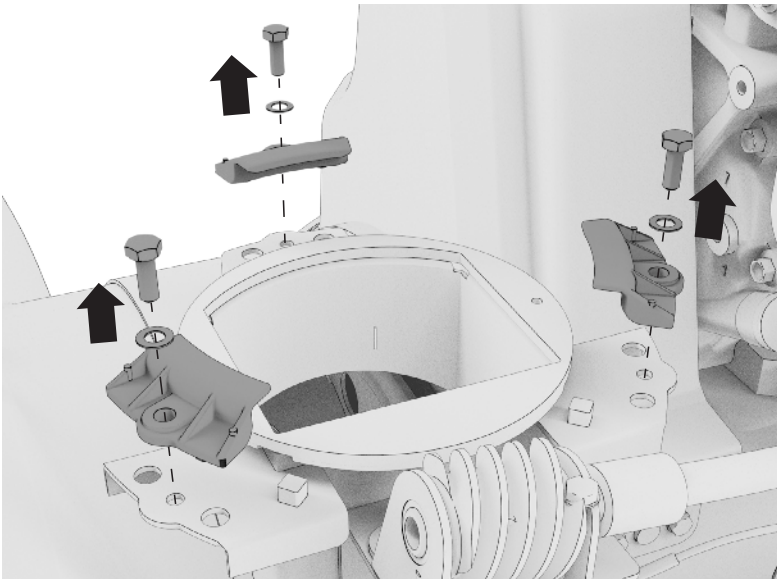


3.4 INSTALLING THE CHUTE

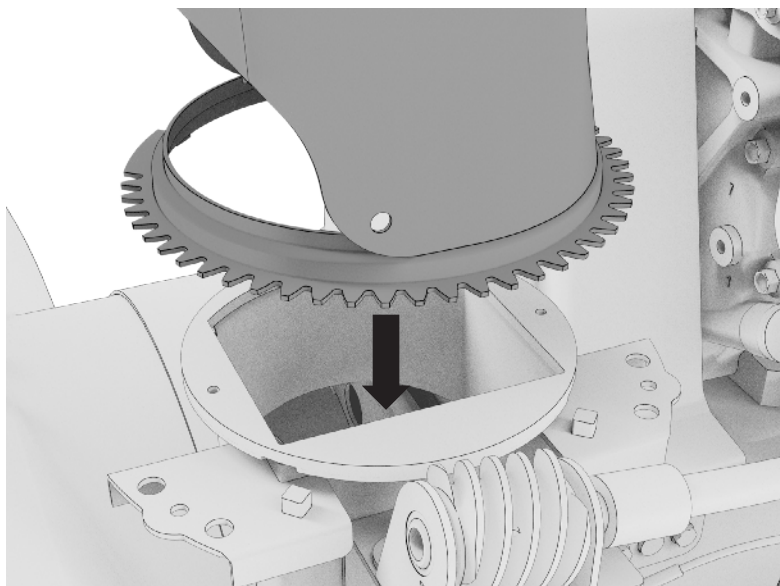
1. The chute mounting bolts are pre-installed in the correct location. Note the location, then loosen the bolts.



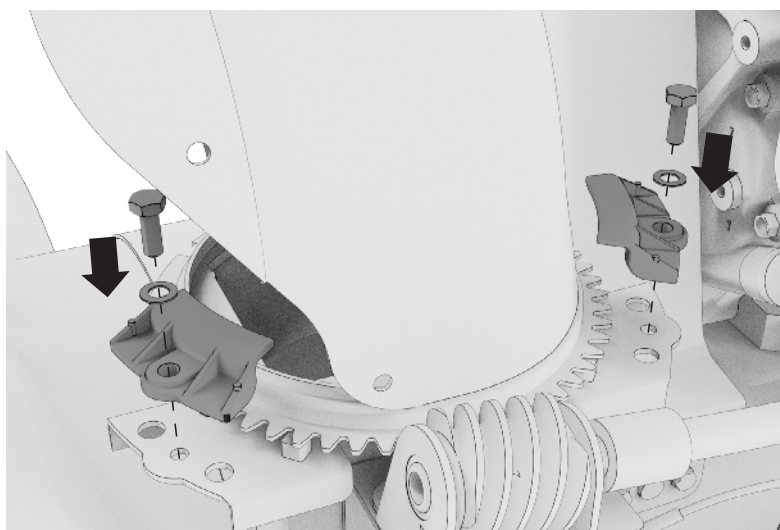
2. Remove the bolts, washers and chute clamps.



3. Place chute over, ensuring chute gear teeth mate with worm gear.

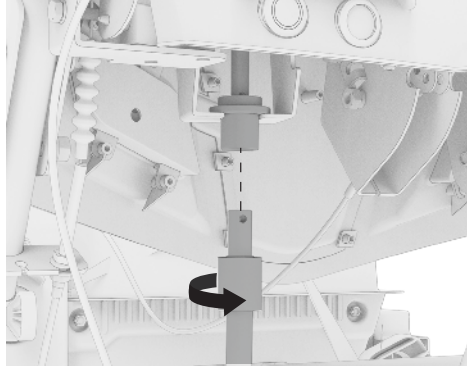


4. Fasten the three clamps to chute with washers and bolts.



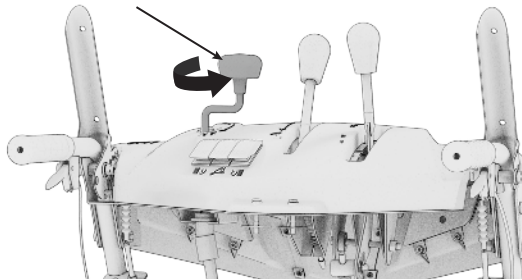
3.5 INSTALLING THE CHUTE ROTATION CRANK

1. Route the cable under the dashboard and secure it to the chute rotation crank handle.

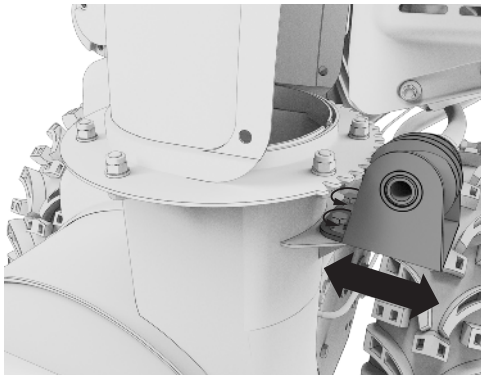


2. Ensure crank can easily rotate chute with little effort.

Chute Rotation Crank

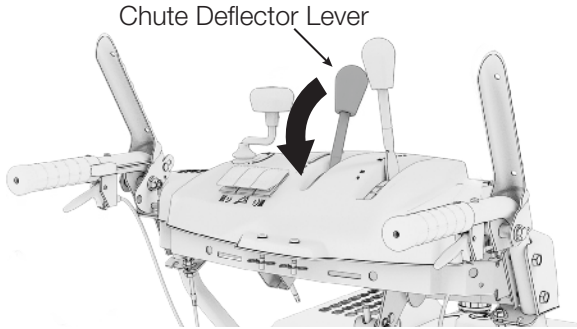


3. If needed, adjust the worm gear position by loosening, adjusting, and re-tightening the worm gear mounting bolts.

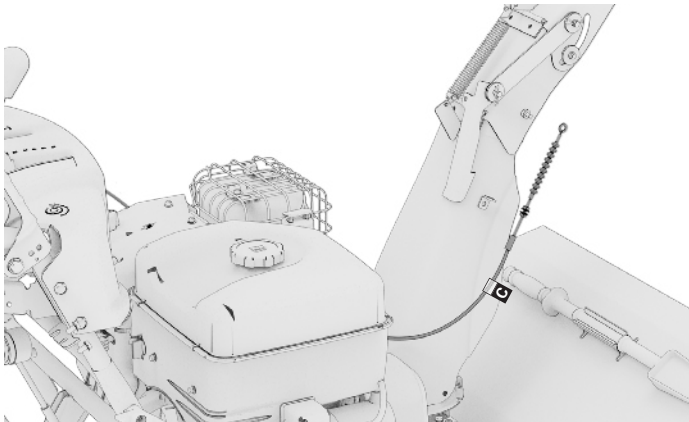


3.6 INSTALLING THE CHUTE DEFLECTION CABLE

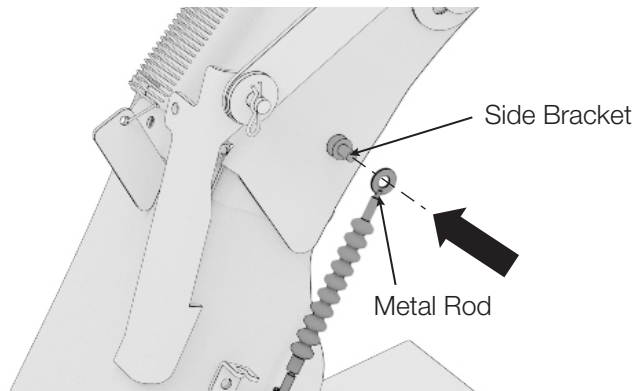
1. Move the chute deflector lever to lowest position on the control panel.



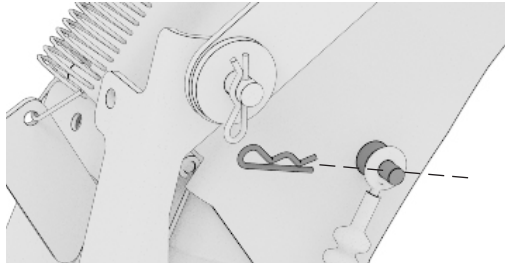
2. Find the cable marked C and ensure the cable is loose and not tangled in other cables.



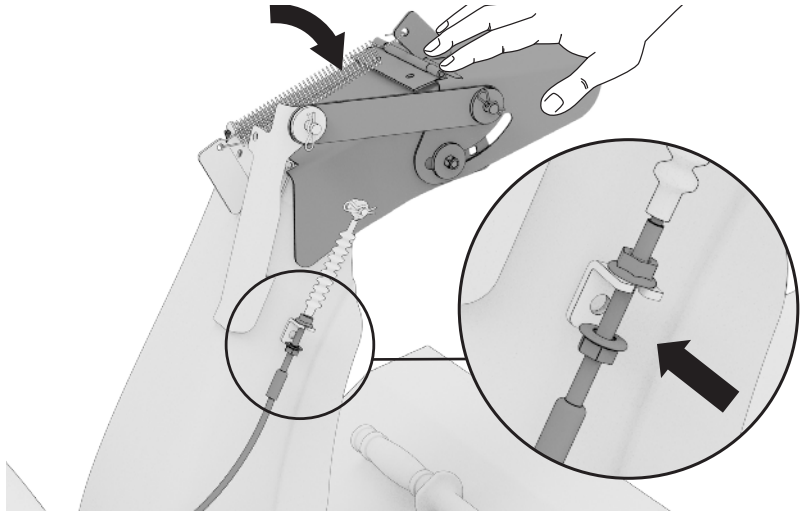
3. Insert the metal rod affixed to the end of the cable into the side bracket of the chute deflector.



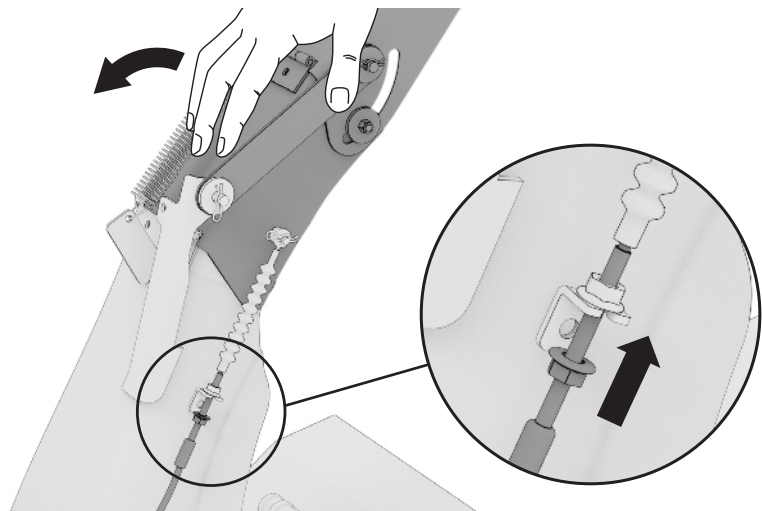
- Secure the metal rod into the bracket with the pin clip.



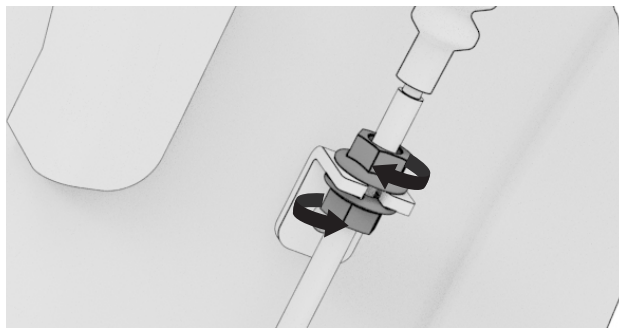
- Push down the chute deflector with one hand so that you can thread the thin interior cable into the side bracket of the chute. The two threaded nuts should be on opposite sides of the bracket.



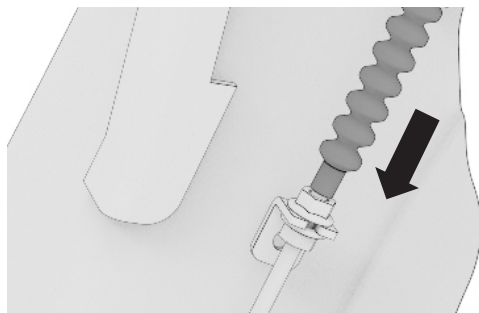
- Bring the threaded rod of the cable up through the bracket as you release the chute deflector.



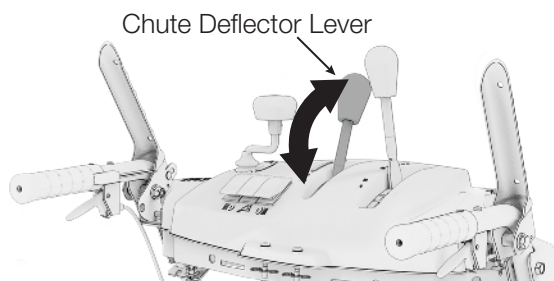
7. Lightly pull on the cable to keep it straight, then tighten the two nuts on either side of the bracket with a wrench.



8. Slide the rubber part over the bolt end to prevent water from entering.

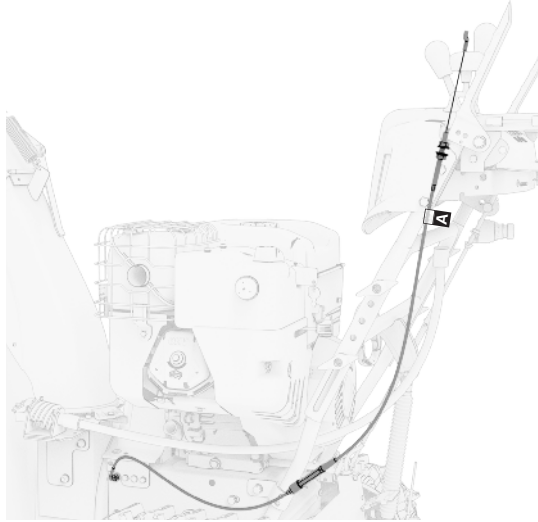


9. Test the chute deflector by operating the chute deflector lever. Adjust position of the two nuts as needed.

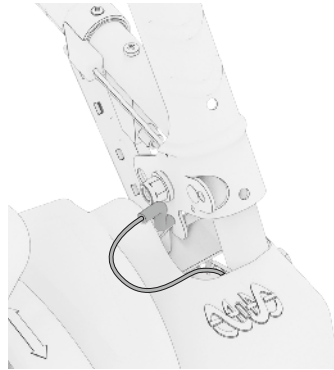


3.7 INSTALLING THE AUGER AND PROPULSION CABLES

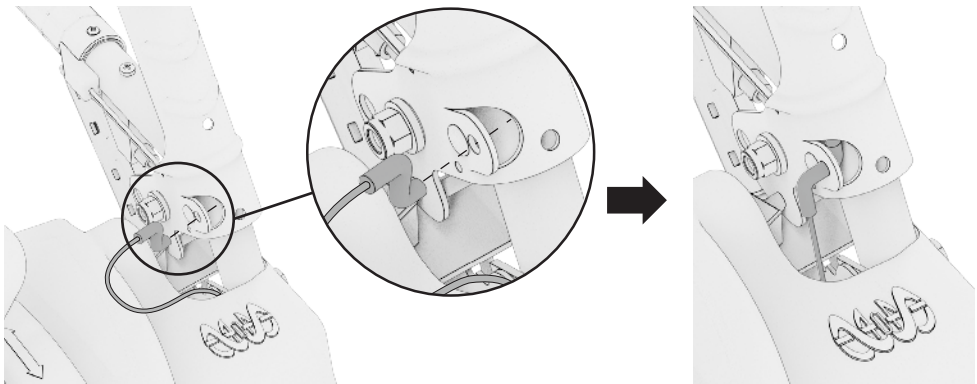
1. Find the cable marked A and ensure the cable is loose and not tangled in other cables.



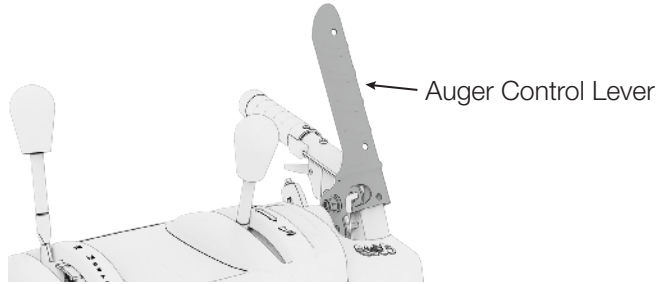
2. Thread cable straight up through the panel, to the inside of the control lever.



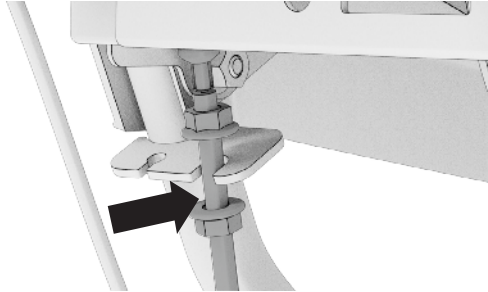
3. Thread metal end of cable through hole on side of lever. Let cable rest so it hangs straight down.



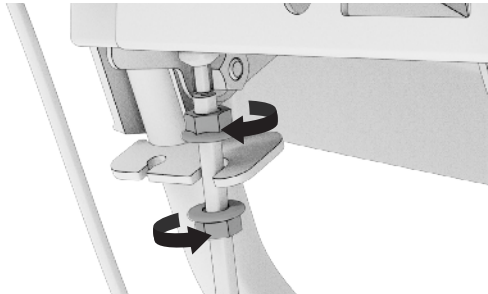
4. Control lever should be up, in the non-engaged position.



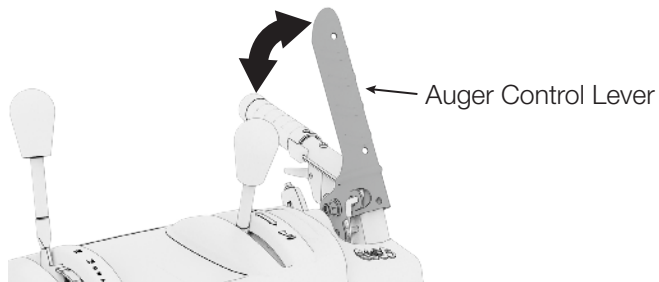
5. Align the threaded rod of the cable inside the bracket below the control lever.



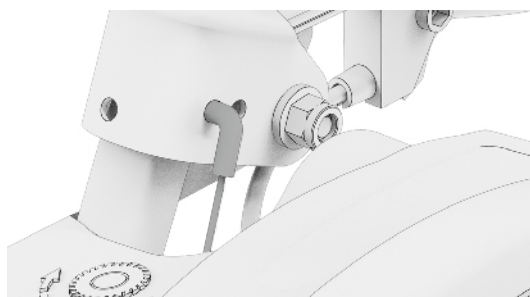
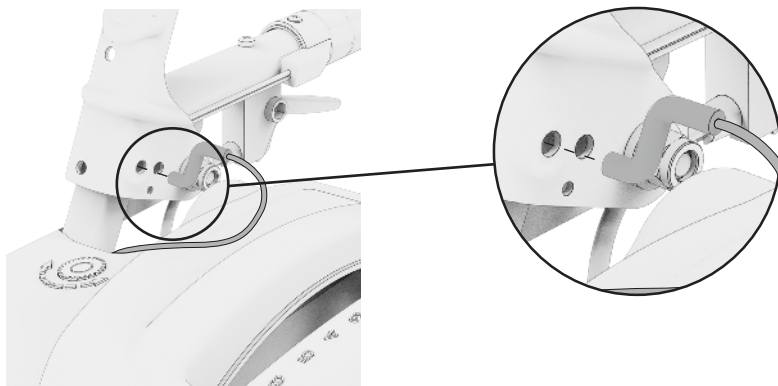
6. Lightly pull on the cable to keep it straight, then tighten the two nuts on either side of the bracket.



7. Test the control lever by pushing it into the handle grip. Adjust position of the two nuts as needed.

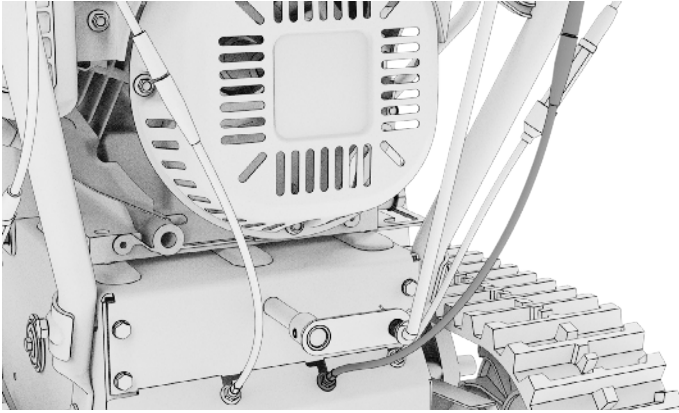


8. Repeat for the other control lever using the propulsion cable marked B.

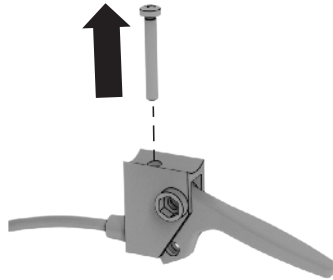


3.8 INSTALLING THE POWER STEERING CABLES

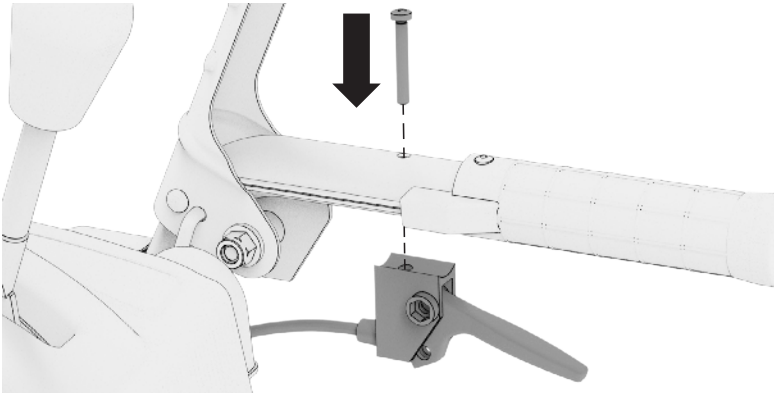
1. Find the cable marked E and ensure the cable is loose and not tangled in other cables.



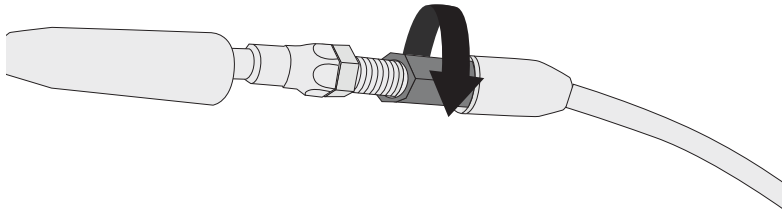
2. Remove the mounting screw from the power steering trigger.



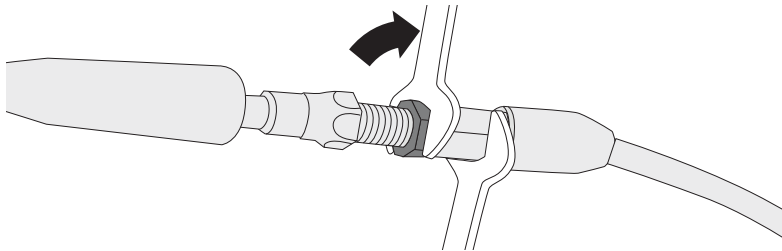
3. Position the trigger underneath the right handle. Thread the mounting screw from the top of the handle down into the trigger housing and tighten to ensure the trigger is snug against the handle.



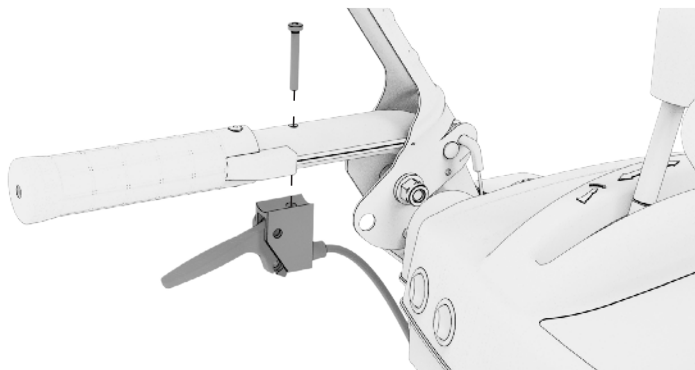
4. Loosen the adjustment nut and adjust the length of the power steering cable until the trigger rests fully open.



5. Tighten the adjustment nut using two wrenches to set the length.

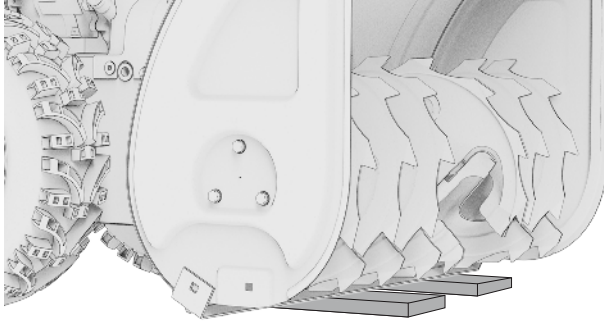


6. Repeat steps 1-6 on the left handle with the trigger marked D.



3.9 INSTALLING THE SKID SHOES

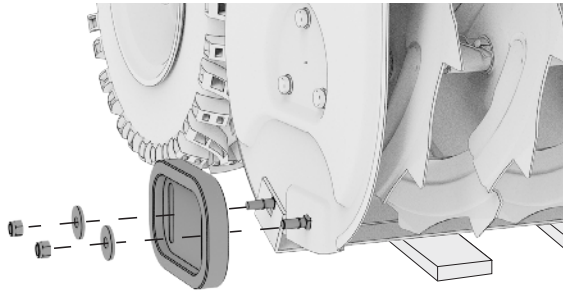
1. Place the unit on a level surface. Lift auger housing and place a support of desired thickness underneath the scraper bar.



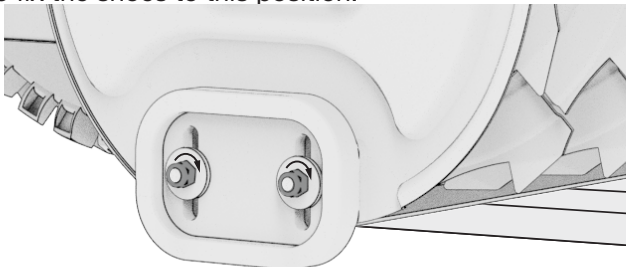
- a. If removing snow from a hard surface such as a paved driveway or walk, use a thin support to keep the scraper bar close to the ground.
- b. If removing snow from gravel-covered or uneven surfaces, use a thicker support to keep the scraper bar further from the surface. This will help prevent rocks and other debris from being picked up and thrown by the impeller.

Condition	Imperial	Metric
Ordinary Snow Conditions	5/32 - 5/16 in	4 - 8 mm
Smooth, Ice-covered Surfaces	0 - 3/16 in	0 - 5 mm
Rough or Uneven Surfaces	1 - 1 3/16 in	25 - 30 mm

2. Thread the skid shoe mounting bolts through the auger housing and skid shoes, loosely attach the nuts.

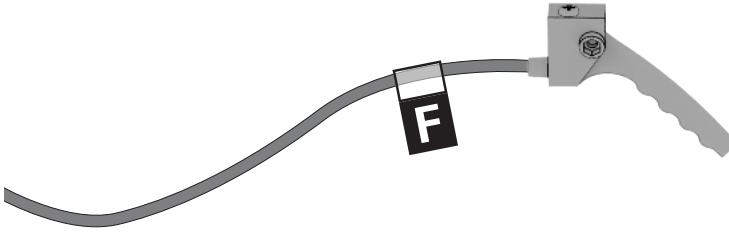


3. Allow each loose skid shoe to rest on the ground. Tighten the mounting nuts to fix the shoes to this position.

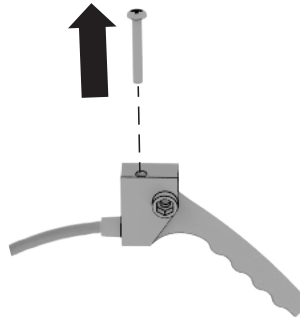


3.10 INSTALLING THE AUGER HEIGHT ADJUST CABLE

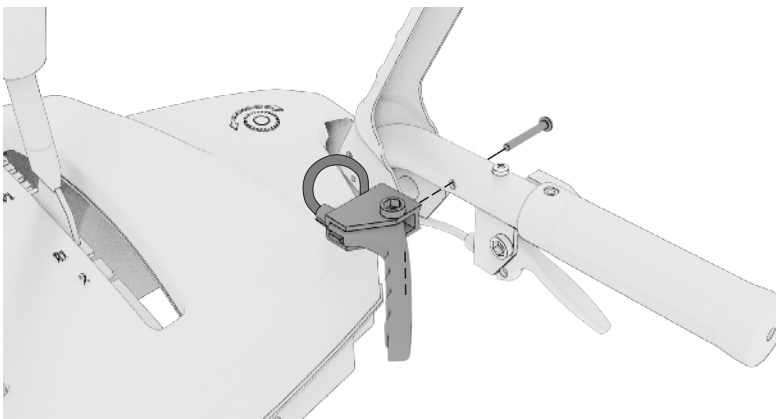
1. Find the cable marked F and ensure the cable is loose and not tangled in other cables.



2. Remove the mounting screw from the auger housing trigger.



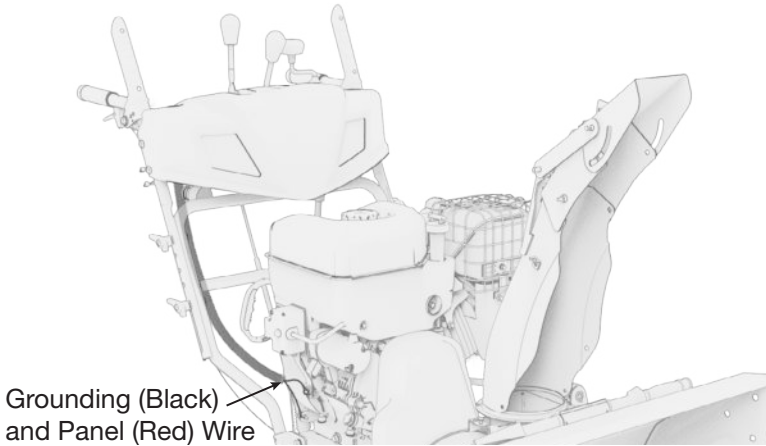
3. Position the trigger on the right handle. Thread the mounting screw from the side of the handle into the trigger housing and tighten to ensure the trigger is snug against the handle.



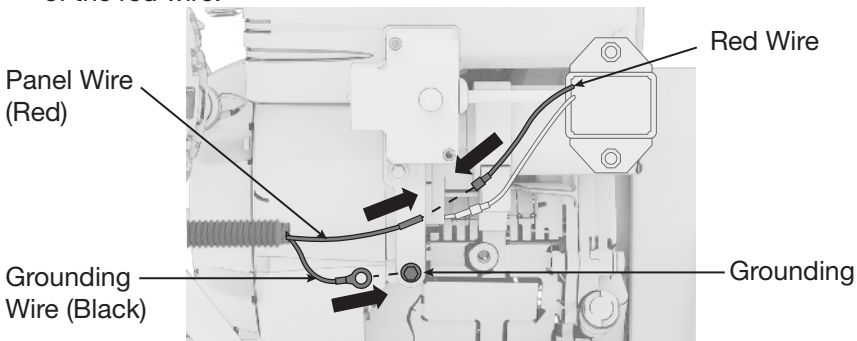
3.11 CONNECTING THE GROUNDING AND PANEL WIRES

The grounding (black) and panel (red) wires are disconnected to avoid damage during shipping. Follow the steps below to connect them:

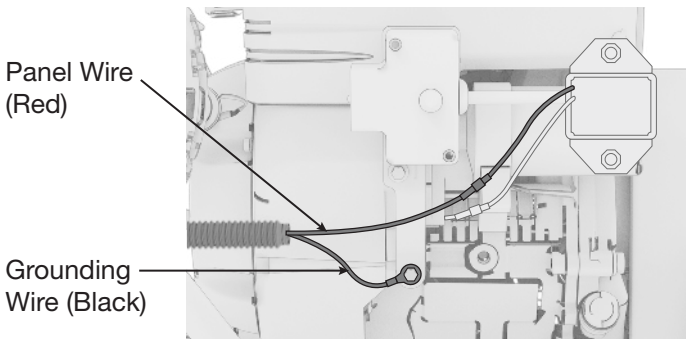
1. Find the cable with the grounding (black) and panel (red) wires.



2. On the right side of the engine, locate the grounding pin and the other end of the red wire.



3. Connect the black wire to the grounding pin and the panel wire to the other end of the red wire.



4. PRE-OPERATION CHECK

The engine was shipped from the factory without oil. Before you start the engine, ensure that you add oil according to the instructions in this manual. If you start the engine without oil, it will be damaged beyond repair and will not be covered under the warranty.

4.1 ADD OIL

Refer to Briggs and Stratton engine owner's manual.

4.2 ADD FUEL

Refer to Briggs and Stratton engine owner's manual.

4.3 SURVEY YOUR AREA

1. Familiarize yourself with the area in which you plan to operate the snowthrower. Mark off all boundaries of walkways and driveways.
2. Ensure the area to be cleared is free of debris or objects that could be picked up by the auger and thrown from the chute.
3. Ensure the operating area is clear of bystanders, especially children. Be alert and turn the unit off if bystanders enter the area. Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

5. STARTING THE ENGINE

Refer to Briggs and Stratton engine owner's manual.

6. STOPPING THE ENGINE

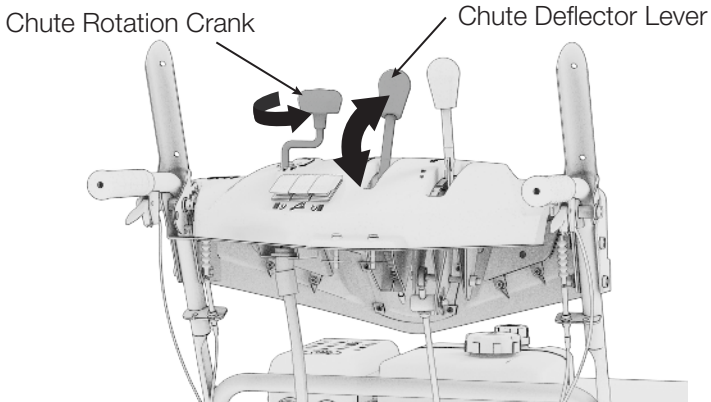
Refer to Briggs and Stratton engine owner's manual.

7. USING YOUR SNOWTHROWER

7.1 ADJUSTING THE CHUTE AND CHUTE DEFLECTOR

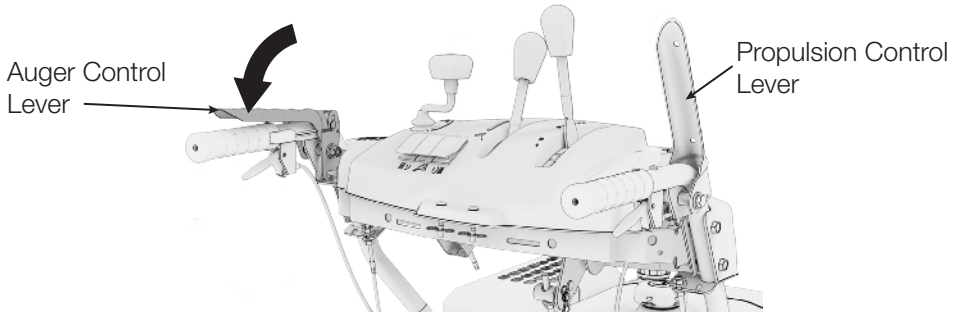
⚠ WARNING!

Ice, gravel, or other unintended objects can be picked up by the auger and thrown from the chute with force. Objects thrown from the chute could cause death, serious injury, or property damage.

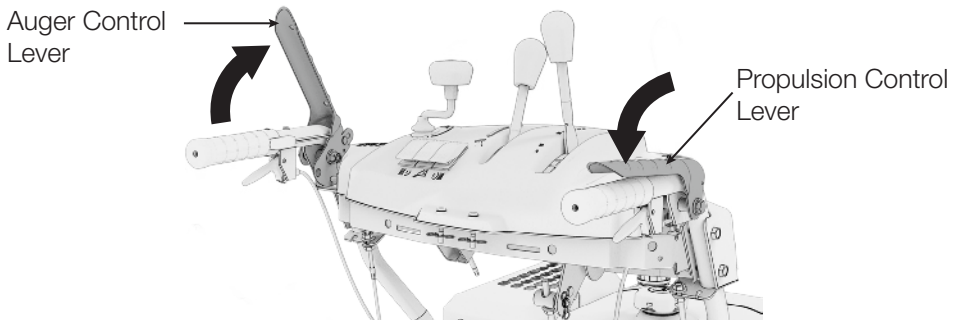


1. Rotate the chute rotation crank to set the direction of the discharge chute.
2. Use the chute deflector lever to move the deflector up or down. Raise the chute deflector lever to throw snow further.

7.2 ENGAGING THE AUGER AND IMPELLER



Fully press the auger control lever into the grip of the left handle to engage the auger and impeller.

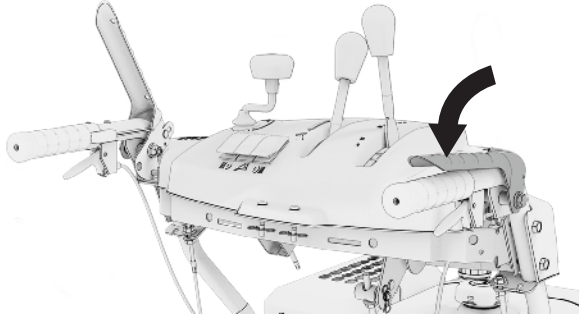


With one-hand control feature, if the propulsion control lever is engaged with your right hand you can release your left hand from the auger control lever to reach other controls without stopping the unit. The propulsion control lever must first be released to then release the auger control lever.

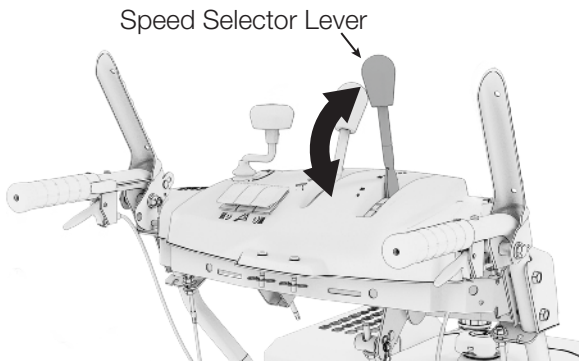
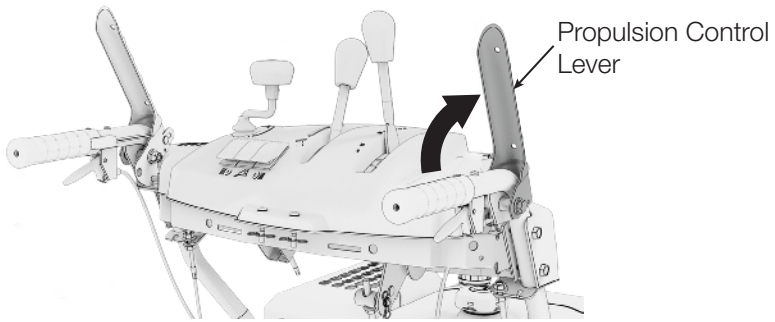
NOTE

- Adjust the control cable. See Adjusting the Auger and Traction Cable.

7.3 ENGAGING THE DRIVE WHEELS



To move, fully press the propulsion control lever into the grip of the right handle.



To change speed or reverse, release the propulsion control lever and shift the speed select lever into desired position. Reengage the propulsion control lever.

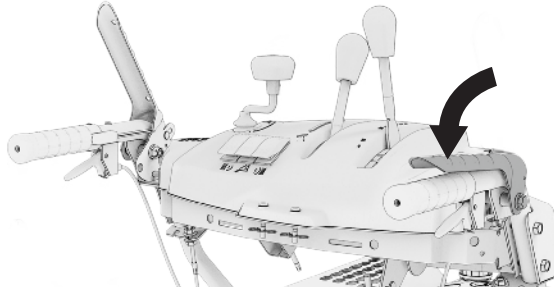
NOTE

- To stop, release the propulsion control lever. Unit must stop immediately. If it does not: Adjust the traction control cable. See Adjusting the Auger and Propulsion Cable.

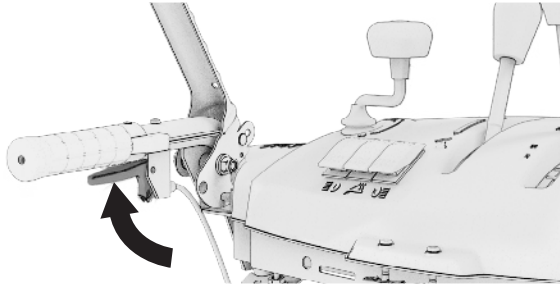
7.4 USING THE POWER STEERING TRIGGER

The model BS7680 is equipped with a power steering feature. A small trigger under each hand grip controls the steering of the machine.

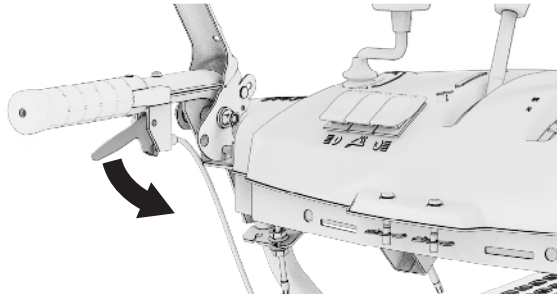
1. Engage the self propulsion lever to move the machine forward.



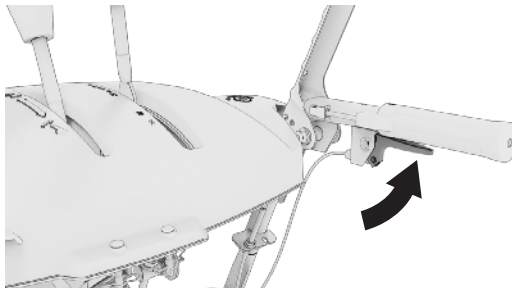
2. Pull up on the left trigger to turn left.



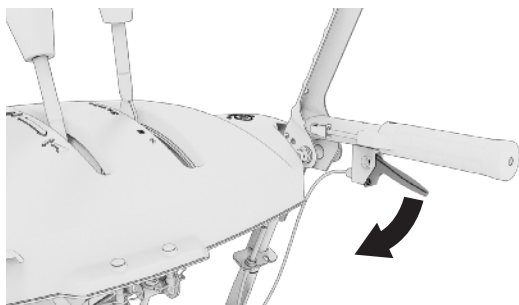
3. Release the left trigger to continue straight.



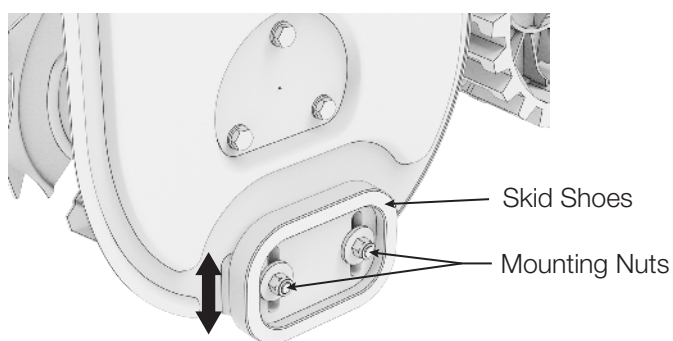
4. Pull up on the right trigger to turn right.



5. Release the right trigger to continue straight.



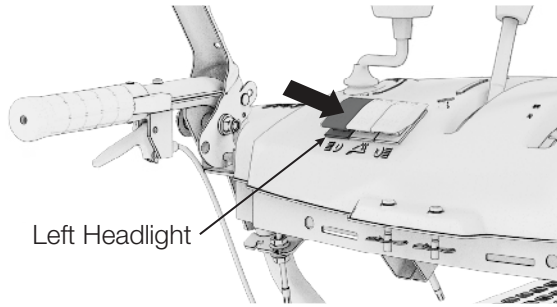
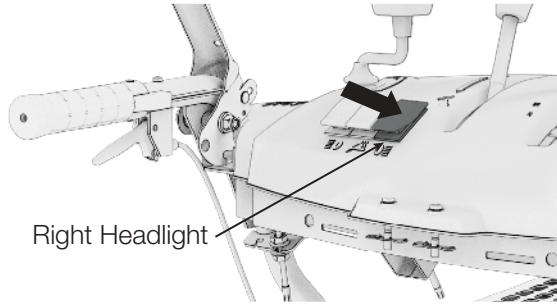
7.5 ADJUSTING THE SKID SHOE HEIGHT



1. Place the unit on a level surface, turn the fuel shut-off valve to CLOSED, and remove the POWER key.
 - a. If removing snow from a hard surface such as a paved driveway or walk, adjust the skids shoes higher on the auger housing to lower the scraper bar closer to the surface.
 - b. If removing snow from gravel-covered or uneven surfaces, adjust the skids shoes lower on the auger housing to raise the scraper bar further from the surface. This will help prevent rocks and other debris from being picked up and thrown by the auger and impeller.
2. Allow each loose skid shoe to rest on the ground's surface, then tighten the mounting nuts.

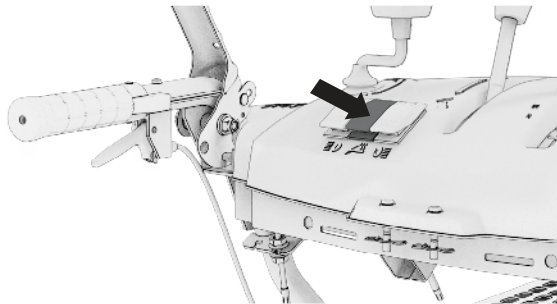
7.6 USING THE HEADLIGHT

To illuminate the area in front of the snowthrower, activate the headlight by turning the headlight switch to ON.



7.7 USING THE HEATED HAND GRIPS

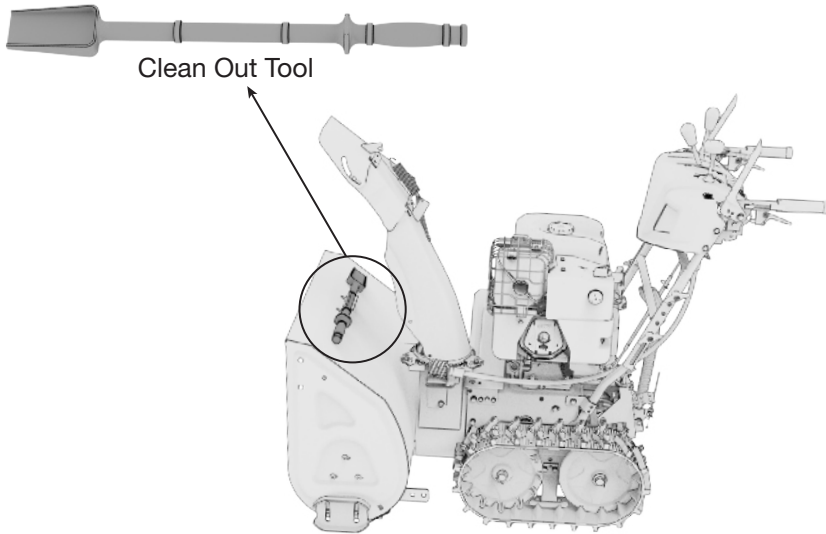
To keep your hands warm in cold weather, activate the heated hand grips by turning the heated grips switch to ON.



7.8 CLEARING A CLOGGED DISCHARGE CHUTE

⚠ DANGER! ⚠

Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers. The discharge chute contains a rotating impeller to throw snow. Fingers can quickly become caught in the impeller resulting in traumatic amputation or severe laceration. Never clear a clogged discharge chute with your hands. Always use a clean-out tool.



1. Place the unit on a level surface, turn the fuel shut-off valve to CLOSED, and remove the POWER key.
2. Ensure that the impeller has stopped rotating.
3. Use a clean-out tool to remove snow from the discharge chute. NEVER clear a clogged discharge chute with your hands!

7.9 USING THE AUGER HEIGHT ADJUST TRIGGER

The auger height adjust trigger is used to select the position of the auger housing to match the operating surface. Choose the right height for gravel driveways, asphalt, hard impacted snow, or lift up all the way for speedy travel.

High - Transport / Snow-covered Gravel

- Raises the auger housing so that the ground scraper leaves gravel undisturbed while clearing snow.

Middle - Normal Snow

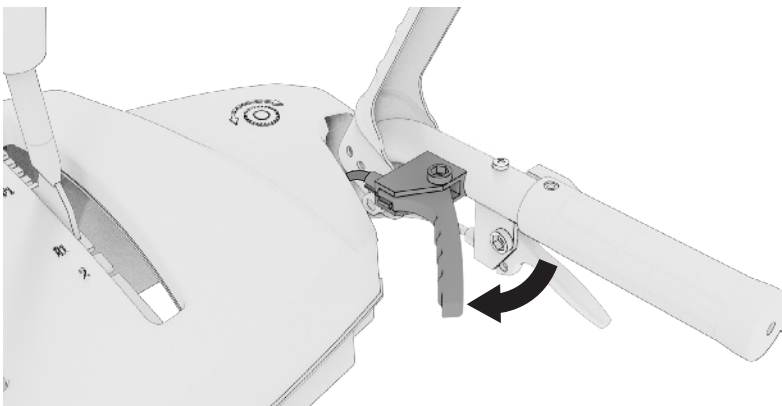
- Adjusts the tracks to be level, for full auger housing contact with the ground.

Low - Packed Snow

- Digs the auger housing down into the ground for hard packed snow or icy snow conditions.
1. Depress the auger height adjust trigger. While gripping both handles, raise or lower the auger.



2. Release the auger height adjust trigger to lock in your desired height.



8. MAINTENANCE

⚠ WARNING!

Fuel and its vapors are extremely flammable, which could cause burns or fire resulting in death or serious injury. When performing maintenance that requires the unit to be tipped, the fuel tank must be empty, or fuel can leak out and result in a fire or explosion.

Proper maintenance keeps your snowthrower in the best operating condition by ensuring safe, economical and trouble-free operation. Only use genuine parts and recommended fluids to replace the worn components. Improper maintenance may cause malfunction and can lead to serious injury. Contact customer support if you have any maintenance questions.

General Inspection Tips

- Look for fuel leaks around the fuel tank, fuel hose, and fuel valve. Close the fuel valve and repair leaks immediately.
- Look and listen for exhaust leaks while the engine is running. Have all the leaks repaired before continuing operation.
- Check for dirt and debris and clean as necessary .
- Check the engine oil level and add oil as necessary.

8.1 MAINTENANCE SCHEDULE

Refer to Briggs and Stratton engine owner's manual.

8.2 CHANGING THE ENGINE OIL

Refer to Briggs and Stratton engine owner's manual.

8.3 SPARK PLUG SERVICE

Refer to Briggs and Stratton engine owner's manual.

8.4 SPARK ARRESTER MAINTENANCE

Refer to Briggs and Stratton engine owner's manual.

8.5 FUEL FILTER MAINTENANCE

Refer to Briggs and Stratton engine owner's manual.

8.6 LUBRICATING THE SNOWTHROWER

Lubricate the following locations at least once per year, or every 25h of use.

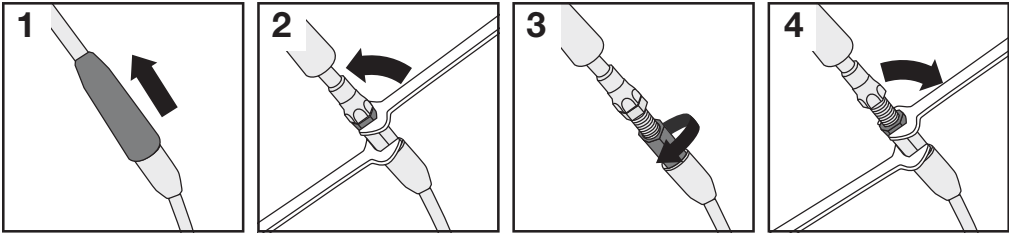
1. Place the unit on a level surface, turn the fuel shut-off valve to CLOSED, and remove the POWER key.
2. Position speed select lever in the first forward gear.
3. Lubricate the control lever linkage with fresh, clean **engine oil**.
4. Lubricate the chute deflector with fresh, clean **engine oil**.
5. Lubricate the discharge chute with **lithium grease**.
6. Lubricate both wheel axles with **lithium grease**.
7. Lubricate the auger shaft assembly with **grease**.
8. Place cardboard or a towel in front of the auger housing, then pivot the snowthrower up on the front of the auger housing.
9. Remove screws from bottom panel and remove the panel.
10. Taking great care not to allow grease or oil to contact the friction wheel or disc drive plate, pour a small amount of fresh, clean **engine oil** to a clean cloth and wipe oil onto the hex shaft.
11. Move the speed select lever to highest gear and wipe oil onto remaining half of hex shaft.
12. Lubricate the sprocket and chain with fresh, clean **engine oil**.

Reinstall bottom panel and pivot snowthrower down onto the wheels.

8.7 ADJUSTING THE AUGER AND PROPULSION CABLE

The augers should rotate only when the auger control lever is engaged and must stop within 5 seconds of the auger control lever being released. The wheels should only move when propulsion control lever is engaged and must stop immediately when the propulsion control lever is released. If the auger or wheels do not stop as described, adjust the control cable or contact an authorized service dealer to adjust the control cable.

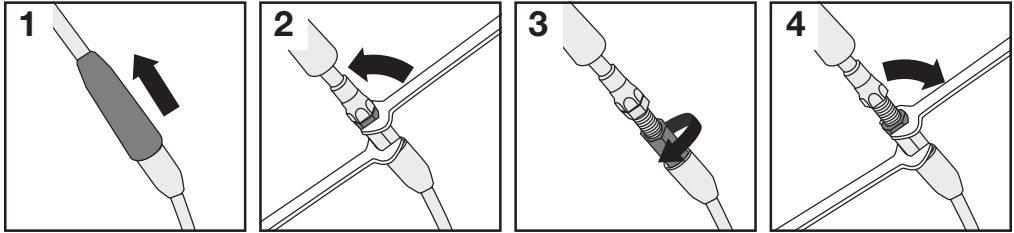
Over-tightening the auger or propulsion cables may cause the auger or wheels to rotate even if the control levers are not engaged. Follow the adjustment procedure to ensure the cables are not over-tightened.



1. Place the unit on a level surface, turn the fuel shut-off valve to CLOSED, and remove the POWER key.
2. Loosen jam nut.
3. Hold control cable to keep it from rotating, turn collar to remove slack, do not over-tighten.
4. Tighten jam nut.
5. Start the engine, then check operation using the tests below:
 - a. Test 1: Auger.
 - i. Press down on the auger control lever - The auger/impeller should rotate.
 - ii. Release the auger control lever - The auger/impeller must stop within 5 seconds.
 - b. Test 2: Propulsion. With the speed control lever in 1st gear:
 - i. Press down on the propulsion control lever - The unit should move forward.
 - ii. Release the propulsion control lever - The unit must stop immediately.
 - c. Test 3: One-Hand Feature.
 - i. Engage the auger and propulsion control levers, then release the auger control lever - Both controls should remain engaged.
 - ii. Release the propulsion control lever - Both controls must release.
6. If the unit does not operate as described, DO NOT use it. Contact customer support to have the unit inspected, adjusted, or repaired.

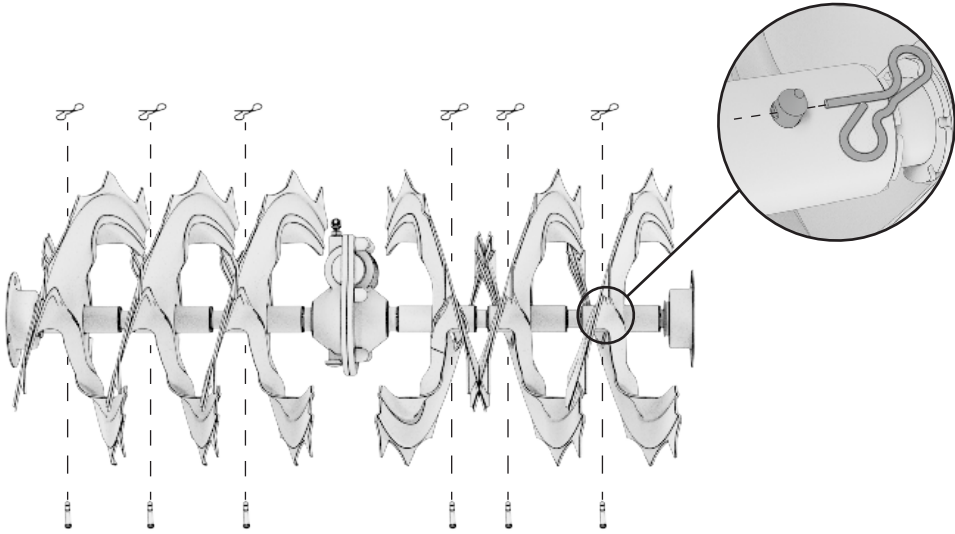
8.8 ADJUSTING THE POWER STEERING CABLES

The power steering cables may stretch after repeated usage during the first year of operation. If the cable has stretched, it may prevent the drive gears from disengaging when the control is activated.



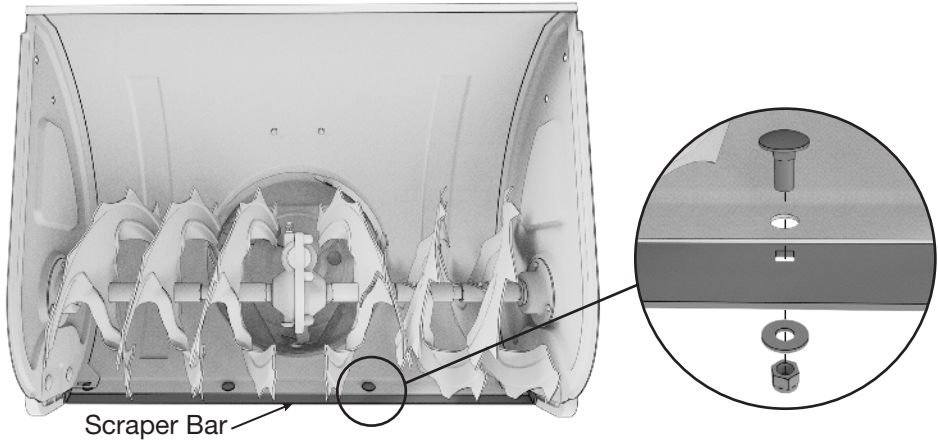
1. Place the unit on a level surface, turn the fuel shut-off valve to CLOSED, and remove the POWER key.
2. Use one wrench to hold the adjustment nut stationary while using another wrench to loosen the jam nut.
3. With the power steering trigger released, rotate the adjustment nut until slack is removed from the cable. Do not make the cable too tight or it will actuate the power steering feature even when the trigger is not engaged.
4. When adjustment is complete, hold the adjustment nut stationary while using another wrench to tighten the jam nut.

8.9 REPLACING THE AUGER SHEAR BOLT



1. Place the unit on a level surface, turn the fuel shut-off valve to CLOSED, and remove the POWER key.
2. Remove the existing shear bolt and pin clip.
3. Add grease to the auger shaft assembly. Spin the auger to lubricate the auger shaft.
4. Align the bolt holes. Install a new shear bolt through the auger shaft and secure with a pin clip.

8.10 REPLACING THE SCRAPER BAR



Over time the scraper bar will gradually wear and need replacement.

1. Place the unit on a level surface, turn the fuel shut-off valve to CLOSED, and remove the POWER key.
2. Loosen the retaining nuts and bolts and remove the scraper bar.
3. Align the holes in the new scraper bar with the holes in the auger housing.
4. Install the retaining nuts and bolts, tighten them securely.
5. Check the clearance between the scraper bar and the surface.
6. Adjust the skid shoes, if necessary, to maintain ground clearance for the type of surface being cleared. See Adjusting the Skid Shoe Height.

8.11 EMISSION CONTROL SYSTEM

Emission Source

Exhaust gas contains carbon monoxide, nitrogen oxides (NOx) and hydrocarbons. It is very important to control the emissions of NOx and hydrocarbons as they are a major contributor to air pollution. Carbon monoxide is a poisonous gas. The emission of fuel vapors is a source of pollution as well. The engine utilizes a precise air-fuel ratio and emission control system to reduce the emissions of carbon monoxide, NOx, hydrocarbons and evaporative fuel emissions.

Regulation

Your engine has been designed to meet current Environmental Protection Agency (EPA) standards. The regulations dictate that the manufacturer provides operation and maintenance standards regarding the emission control systems. Tune up specifications are provided in the Specifications section and a description of the emission control system may be found in the appendix to this manual. Adherence to the following instruction will ensure your engine meets the emission control standards.

Modification

Modification of the emission control system may lead to increased emissions. Modification is defined as the following:

- Disassembling or modifying the function or parts of the intake, fuel or exhaust system.
- Modifying or destroying the speed governing function of the snowthrower.

Engine faults that may affect emission

Any of the following faults must be repaired immediately. Consult with your authorized service centre for diagnosis and repair:

- Hard starting or shut down after starting.
- Unstable idle speed.
- Shut down or backfire after applying an electrical load.
- Backfire or after fire.
- Black smoke and/or excessive fuel consumption.

Replacement parts and accessories

The parts making up the emission control system in your product's engine have been specifically approved and certified by the regulatory agencies. You can trust that the replacement parts supplied by customer service have been manufactured to the same production standard as the original parts. The use of replacement parts or accessories which are not designed by – may negatively affect the engine emission performance. Therefore only use replacements parts and accessories from a qualified service centre to guarantee that the replacement products will not adversely affect emission performance.

Replacement parts other than those from an authorized service centre will void the warranty.

8.12 CARBURETOR MODIFICATION FOR HIGH ALTITUDE OPERATION (Above 2000 feet)

Refer to Briggs and Stratton engine owner's manual.

NOTE

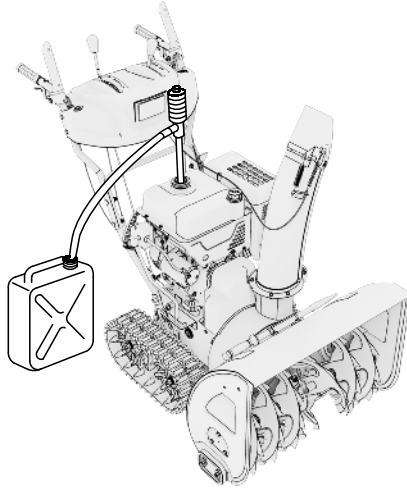
- This engine is equipped to run at altitudes below 2,000-ft.
- A high-altitude Main Jet is recommended when operated at 2,000 to 7,000-ft above sea level.
- At elevations above 7,000-ft the engine may experience decreased performance even with a high-altitude Main Jet.

At high altitudes the carburetor's air/fuel mixture becomes too rich, resulting in higher fuel consumption, lower performance, and carbon build-up on the spark plug. On the other hand, if the carburetor has been modified for high altitude operation and is operated below 2000-ft, the air/fuel mixture will then be too lean for low altitude use. Always use the correct Main Jet for your altitude.

The engine's carburetor, governor (if so equipped), and any other parts that control the air/fuel ratio will need to be adjusted by a qualified mechanic to allow efficient high-altitude use, and to prevent damage to the engine and any other devices used with this product. The fuel system on this engine may be influenced by operation at higher altitudes.

9. TRANSPORTATION & STORAGE

Draining the Fuel Tank



Drain the old gas and completely fill the tank with fresh gas. Add a fuel stabilizer according to the manufacturer's directions to keep your fuel fresh over long periods, we recommend B3C fuel additives. Run the engine for 2 minutes to circulate the fuel stabilizer.

Transporting the Snowthrower

1. Do not overfill the fuel tank (No residual fuel on the neck of tank).
2. Avoid exposing the snowthrower to prolonged direct sunlight while in an enclosed vehicle. The high temperature inside the vehicle could cause fuel to vaporize resulting in a possible explosion.
3. Drain the snowthrower of fuel and oil before being transported on rough roads.

Storage

Gasoline can oxidize in as little as 30 days, causing gum and varnish to build up in fuel system components.

NOTE

- Ensure that the storage area is free of excess humidity and dust.

Storage Duration	Preparation Required
Less than 1 Month	<ul style="list-style-type: none">■ No storage preparation required, simply store as is.
1 Month to 1 Year	<ul style="list-style-type: none">■ Drain the old gas and completely fill the tank with fresh gas before storage. Add fuel stabilizer according to the manufacturer's directions. Adding a quality fuel stabilizer can keep gas fresh for up to a year.
1 Year or More	<ul style="list-style-type: none">■ Drain off the gasoline from the fuel tank, and store in a suitable container. This will help prevent deposits from forming in the fuel system.■ Turn the fuel switch to OPEN and loosen the carburetor drain bolt. Take off the spark plug cap and revolve the engine 3 or 4 times, by pulling the recoil handle, to fully discharge the gasoline from the fuel lines.■ Turn the fuel switch to CLOSED and tighten the drain bolt of the carburetor.■ Change oil while engine is still warm from operation.■ Remove the spark plug, and pour a tablespoon of clean engine oil (10~20ml) into the cylinder. Revolve the engine several times by pulling on the recoil start to distribute the oil. Reinstall the spark plug. Pull the starter grip slowly until you feel resistance. At this point, the piston is coming up on its compression stroke and both the intake and exhaust valves are closed. This position helps to protect the engine from internal corrosion.

10. TROUBLESHOOTING

Problem	Look for	Solution
Auger does not stop within 5 seconds after auger control lever is released.	Auger control cable out of adjustment.	See Adjusting the Auger and Traction Cable.
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.	See Adjusting the Skid Shoe Height.
Unit does not propel itself.	Traction control cable out of adjustment.	See Adjusting the Auger and Traction Cable.
Engine does not start.	Key is in OFF position.	Turn 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 is hard to start or runs poorly.	Water in fuel, or old fuel.	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.	See Adjusting the Auger and Traction Cable.
Unit does not discharge snow.	Auger control cable out of adjustment.	See Adjusting the Auger and Traction Cable.
	Broken auger shear bolt.	See Replacing the Auger Shear Bolt.
	Broken impeller shear bolt.	See Replacing the Impeller Shear Bolt.
	Discharge chute clogged.	STOP THE ENGINE! Ensure that the auger and impeller have stopped rotating. Use a clean-out tool to remove snow from the discharge chute. Never clear a clogged discharge chute with your hands! See Clearing a Clogged Discharge Chute.
	Foreign object lodged in auger.	STOP THE ENGINE! Ensure that the auger and impeller have stopped rotating. Use a clean-out tool to remove foreign object. Never clear a lodged object with your hands! See Clearing a Clogged Discharge Chute.
Snowthrower does not turn when steering trigger is engaged.	Steering cable out of adjustment.	See Adjusting the Steering Feature Cable.

11. TECHNICAL SPECIFICATIONS

Refer to Briggs and Stratton engine owner's manual.

12. APPENDIX

The standard condition of rated power output:

Altitude: 0m

Ambient temperature: 77°F (25°C)

Relative humidity: 30%

Factor of Environment Correction:

Altitude (m)	Ambient Temperature°F (°C)				
	77° (25°)	86° (30°)	95° (35°)	104° (40°)	113 (45°)
0	1	0.98	0.96	0.93	0.90
500	0.93	0.91	0.89	0.87	0.84
1000	0.87	0.85	0.82	0.80	0.78
2000	0.75	0.73	0.71	0.69	0.66
3000	0.64	0.62	0.60	0.58	0.56
4000	0.54	0.52	0.50	0.48	0.46

NOTE:

Relative humidity 60% correction factor C-0.01

Relative humidity 80% correction factor C -0.02

Relative humidity 90% correction factor C-0.03

Relative humidity 100% correction factor C-0.04

Example:

Rated power (PN) 2.8kVA snowthrower (Altitude: 1000m) Ambient temperature: 35°C, Relative humidity: 80%

$$P=Pn*(C-0.02)=2.8*(0.82-0.02)=2.24kVA$$

13. LIMITED WARRANTY

This product is distributed by:
Midland Power Inc.
376 Magnetic Drive, Toronto, ON M3J 2C4, Canada

Warranty

Briggs and Stratton engine is warranted for a period of 2 years by Briggs and Stratton and is not covered by the below Midland Power Inc. Warranty. Contact Briggs and Stratton Canada at www.briggsandstratton.com for more information.

Beginning at the time of retail purchase and for the duration of the warranty period Midland Power Inc. (Midland) warrants that Equipment manufactured by it is warranted to be free from defects in material and workmanship. Midland will, at its sole discretion, replace or repair any part(s) which, upon evaluation and testing by Midland or an authorized service center, show a defect in workmanship or material. Valid proof of purchase must be submitted online for registration with Midland, or presented to Midland at time of claim, for warranty to be valid. This warranty is not transferable from the original owner.

Limited Warranty Period:

Non-commercial use:

- Year 1, 2 and 3 - Parts and Labour
- Year 4 and 5 - Parts

Commercial use:

- First 6 Months - Parts and Labour

Commercial use includes utilization of the purchased product for a business or non-profit organization, or to financially benefit an individual. This includes, but is not limited to, usage in the context of a financial transaction, usage on commercial or non-profit property, or usage for advertising or marketing purposes.

Replacement parts sold to a consumer or installed by an authorized service center are warranted for a period of 90 days from date of purchase. Labour must be performed by an authorized service center unless given Midland's prior written approval. Midland will not bear any transportation or shipping fees to or from an authorized service center. Service calls, travel charges, overtime, or weekend rates, are not covered.

This warranty does NOT cover:

- a. Any repairs required as a result of any parts not supplied by Midland, and this part is responsible for the failure or malfunction;

- b. Any Equipment modified, altered, disassembled or remodelled;
- c. Any repairs required as a result of a failure to install, maintain, store, transport, or operate the Equipment in accordance with standard practices set out in the user guide;
- d. Damage that occurred after receipt of equipment, not caused by defects in workmanship or material;
- e. Normal maintenance services, as outlined in the user guide and intended for a consumer to perform;
- f. Replacement of parts made in connection with normal maintenance services including oils, adhesives, additives, fuel, filters, brushes, belts, lubricants, spark plugs, gaskets, seals, fasteners, wires, tubes, pipes, fittings, wheels, batteries, and other expendables susceptible to natural wear;
- g. Any accessory or attachment.

Any battery supplied with this Equipment is considered a consumable item and is excluded from this warranty. Batteries can be damaged by shock, shorting terminals, heat, acid spillage, neglect, and other factors. It is the customer's responsibility to take great care when handling a battery so no spillage of acid occurs which may cause corrosion.

Midland disclaims any responsibility for loss of time or use of the product, transportation, or towing costs or any other indirect, incidental, or consequential damage, inconvenience or commercial loss.

This warranty is the entire and only warranty given by Midland for Midland products or equipment. No agent or employee is authorized to extend or enlarge this warranty on behalf of Midland by any written or verbal statement or advertisement.

Other States, U.S. territories, and Canada

In other areas of the United States and in Canada, your engine must be designed, built, and equipped to meet the U.S. EPA and Environment Canada emission standards for spark-ignited engines at or below 19 kilowatts.

All of the United States and Canada

Midland Power Inc. must warrant the emission control system on your power equipment engine for the period of time listed below, provided there has been no abuse, neglect, or improper maintenance of your power equipment engine. Where a warrantable condition exists, Midland Power Inc. will repair your power equipment engine at no cost to you including diagnosis, parts, and labor.

Your emission control system may include such parts as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be

hoses, connectors, and other emission-related assemblies.

Emission Control System Warranty Parts:

This list applies to parts supplied by Midland Power Inc. and does not cover parts supplied by the equipment manufacturer. Please see the original equipment manufacturer's emissions warranty for non-Midland Power Inc. parts.

Consumable parts are covered up to a maximum of 30 days.

SYSTEMS COVERED IN WARRANTY	PARTS DESCRIPTION
Fuel Metering	Carburetor assembly (includes starting enrichment system), Engine temperature sensor, Engine control module, Fuel regulator, Intake manifold
Evaporative	Fuel Tank, Fuel Cap, Fuel Hoses, Vapor Hoses, Carbon Canister, Canister Mounting Brackets, Fuel Strainer, Fuel cock, Fuel Pump, Fuel Hose Joint, Canister Purge Hose Joint
Exhaust	Catalyst, Exhaust Manifold
Air Induction	Air filter housing, Air filter element
Ignition	Flywheel magneto, Ignition pulse generator, Crankshaft position sensor, Power coil, Ignition coil assembly, Ignition control module, Spark plug cap, Spark plug
Crankcase Emission Control	Crankcase breather tube, Oil filler cap
Miscellaneous Parts	Tubing, fittings, seals, gaskets, and clamps associated with these listed systems



Customer Service

Online: www.benchmark.midlandpowerinc.com

E-mail: support@midlandpowerinc.com

Toll Free: 1-877-528-3772

Enjoy!

Be sure to check www.benchmark.midlandpowerinc.com for updates regarding your product.





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