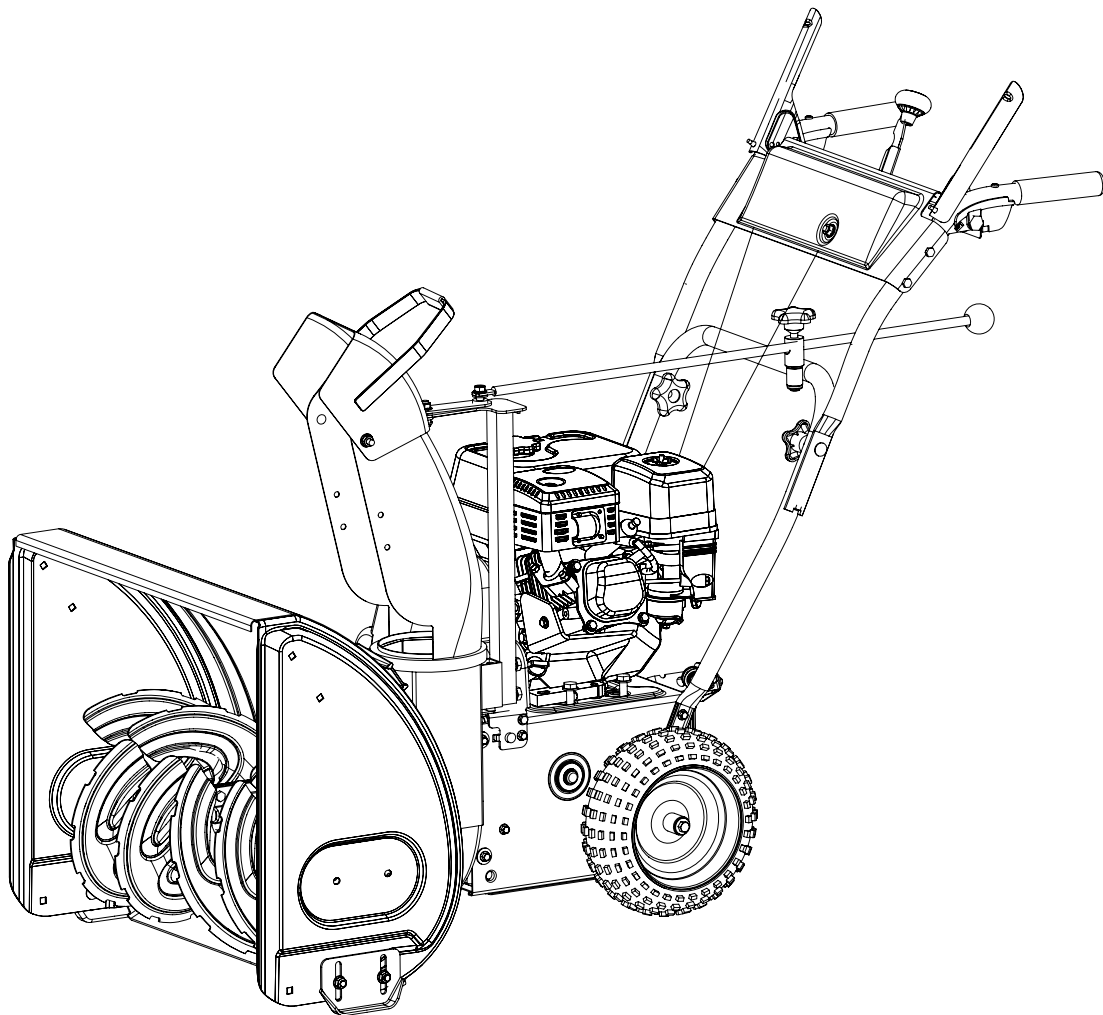


GASOLINE SNOW THROWER

ST24/ST32

Owner's Manual



This manual provides information regarding the operation and maintenance of these products. We have made every effort to ensure the accuracy of the information in this manual. We reserve the right to change this product at any time without prior notice.

Please keep this manual available to all users during the entire life of the snow thrower.

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SECTION 1: IMPORTANT SAFE OPERATION PRACTICES



WARNING: Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



DANGER: This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

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Training

1. Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
3. Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.
4. Never allow adults to operate this machine without proper instruction.
5. Thrown objects can cause serious personal injury. Plan your snow-throwing pattern to avoid discharge of material toward roads, bystanders and the like.
6. Keep bystanders, helpers, pets and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
7. Exercise caution to avoid slipping or falling, especially when operating in reverse.
4. Use a grounded three-wire extension cord and receptacle for all units with electric start engines.
5. Adjust collector housing height to clear gravel or crushed rock surfaces.
6. Disengage all control levers before starting the engine.
7. Never attempt to make any adjustments while engine is running, except where specifically recommended in the operator's manual.
8. Let engine and machine adjust to outdoor temperature before starting to clear snow.
9. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes, which can ignite. Wash your skin and change clothes immediately.
 - a. Use only an approved gasoline container.
 - b. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
 - c. Never fuel machine indoors.
 - d. Never remove gas cap or add fuel while the engine is hot or running.
 - e. Allow engine to cool at least two minutes before refueling.
 - f. Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to provide space for fuel expansion.
 - g. Replace gasoline cap and tighten securely.
 - h. If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area. Wait 5 minutes before starting the engine.
 - i. Never store the machine or fuel container inside where there is an open flame, spark or pilot light (e.g. furnace, water heater, space heater, clothes dryer etc.).
 - j. Allow machine to cool at least 5 minutes before storing.

Preparation

1. Thoroughly inspect the area where the equipment is to be used. Remove all doormats, newspapers, sleds, boards, wires and other foreign objects, which could be tripped over or thrown by the auger/impeller.
2. Always wear safety glasses or eye shields during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
3. Do not operate without wearing adequate winter outer garments. Do not wear jewelry, long scarves or other loose clothing, which could become entangled in moving parts. Wear footwear which will improve footing on slippery surfaces.

Operation

1. Do not put hands or feet near rotating parts, in the auger/impeller housing or chute assembly. Contact with the rotating parts can amputate hands and feet.
2. The auger/impeller control lever is a safety device. Never bypass its operation. Doing so makes the machine unsafe and may cause personal injury.
3. The control levers must operate easily in both directions and automatically return to the disengaged position when released.
4. Never operate with a missing or damaged chute assembly. Keep all safety devices in place and working.
5. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
6. Do not operate machine while under the influence of alcohol or drugs.
7. Muffler and engine become hot and can cause a burn. Do not touch.
8. Exercise extreme caution when operating on or crossing gravel surfaces. Stay alert for hidden hazards or traffic.
9. Exercise caution when changing direction and while operating on slopes.
10. Plan your snow-throwing pattern to avoid discharge towards windows, walls, cars etc. Thus, avoiding possible property damage or personal injury caused by a ricochet.
11. Never direct discharge at children, bystanders and pets or allow anyone in front of the machine.
12. Do not overload machine capacity by attempting to clear snow at too fast of a rate.
13. Never operate this machine without good visibility or light. Always be sure of your footing and keep a firm hold on the handles. Walk, never run.
14. Disengage power to the auger/impeller when transporting or not in use.
15. Never operate machine at high transport speeds on slippery surfaces. Look down and behind and use care when backing up.
16. If the machine should start to vibrate abnormally, stop the engine, disconnect the spark plug wire and ground it against the engine. Inspect thoroughly for damage. Repair any damage before starting and operating.
17. Disengage all control levers and stop engine before you leave the operating position (behind the handles). Wait until the auger/impeller comes to a complete stop before unclogging the chute assembly, making any adjustments, or inspections.
18. Never put your hand in the discharge or collector openings. Always use the clean-out tool provided to unclog the discharge opening. Do not unclog chute assembly while engine is running. Shut off engine and remain behind handles until all moving parts have stopped before unclogging.
19. Use only attachments and accessories approved by the manufacturer (e.g. wheel weights, tire chains, cabs etc.).
20. If situations occur which are not covered in this manual, use care and good judgment. Contact your dealer.

Maintenance & Storage

1. Never tamper with safety devices. Check their proper operation regularly. Refer to the maintenance and adjustment sections of this manual.
2. Before cleaning, repairing, or inspecting machine disengage all control levers and stop the engine. Wait until the auger/impeller come to a complete stop. Disconnect the spark plug wire and ground against the engine to prevent unintended starting.
3. Check bolts and screws for proper tightness at frequent intervals to keep the machine in safe working condition. Also, visually inspect machine for any damage.
4. Do not change the engine governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
5. Snow thrower shave plates and skid shoes are subject to wear and damage. For your safety protection, frequently check all components and replace with original equipment manufacturer's (OEM) parts only. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
6. Check controls periodically to verify they engage and disengage properly and adjust, if necessary. Refer to the adjustment section in this operator's manual for instructions.
7. Maintain or replace safety and instruction labels, as necessary.
8. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.
9. Prior to storing, run machine a few minutes to clear snow from machine and prevent freeze up of auger/impeller.
10. Never store the machine or fuel container inside where there is an open flame, spark or pilot light such as a water heater, furnace, clothes dryer etc.
11. Always refer to the operator's manual for proper instructions on off-season storage.

YOUR RESPONSIBILITY

Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

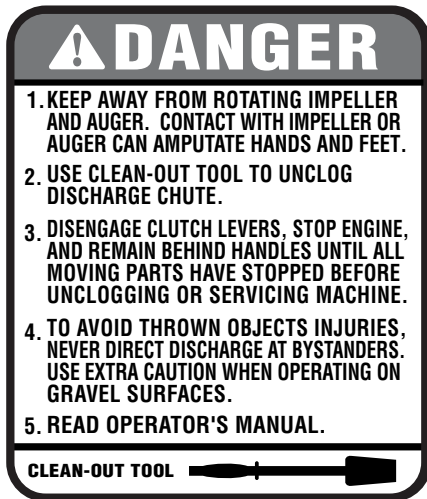
Do not modify engine

To avoid serious injury or death, do not modify engine in any way. Tampering with the governor setting can lead to a runaway engine and cause it to operate at unsafe speeds. Never tamper with factory setting of engine governor.

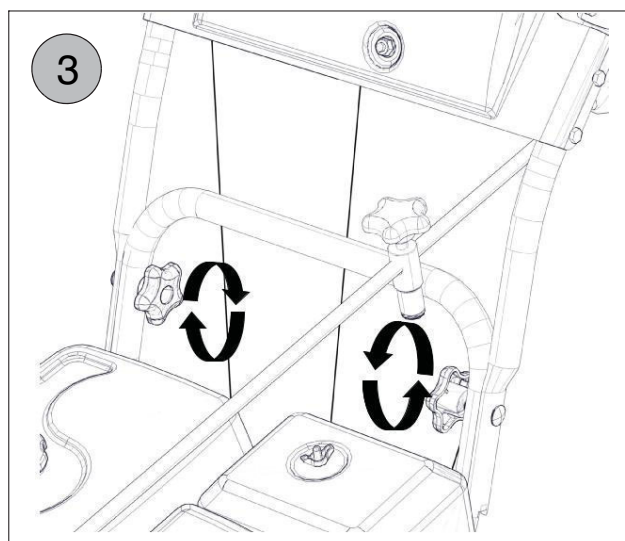
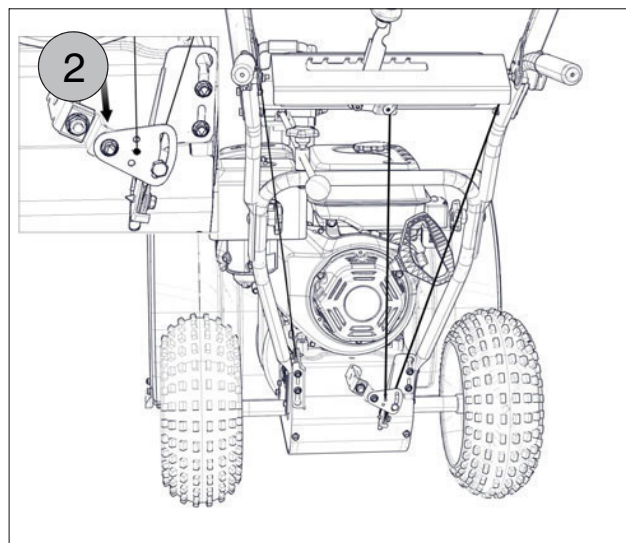
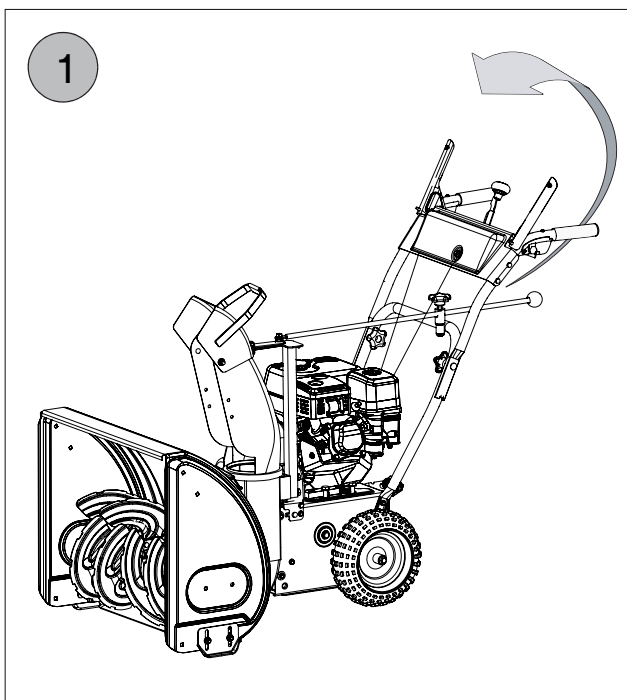
Notice regarding Emissions

Engines which are certified to comply with California and federal EPA emission regulations for SORE (Small Off Road Equipment) are certified to operate on regular unleaded gasoline, and may include the following emission control systems: Engine Modification (EM) and Three Way Catalyst (TWC) if so equipped.

SAFETY LABELS FOUND ON YOUR SNOW THROWER



SECTION 2: ASSEMBLING YOUR SNOW THROWER



NOTE: References to right or left side of the snow thrower are determined from behind the unit in the operating position (standing directly behind the snow thrower, facing the handle panel).

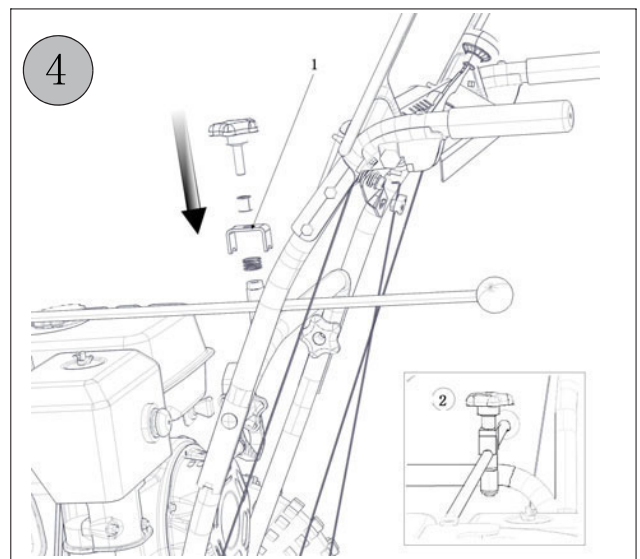
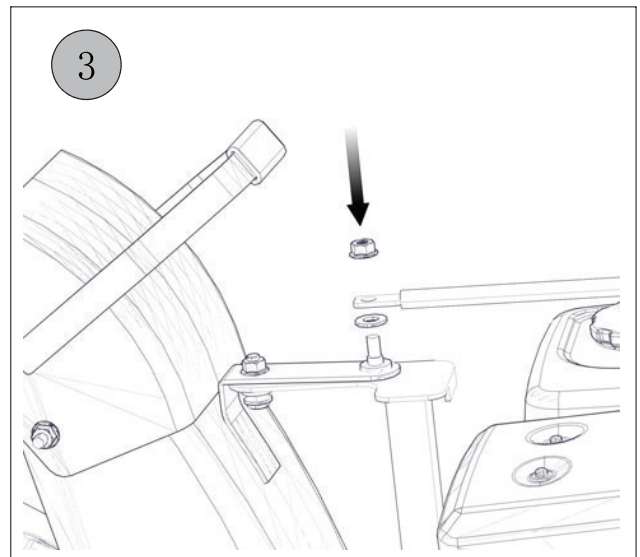
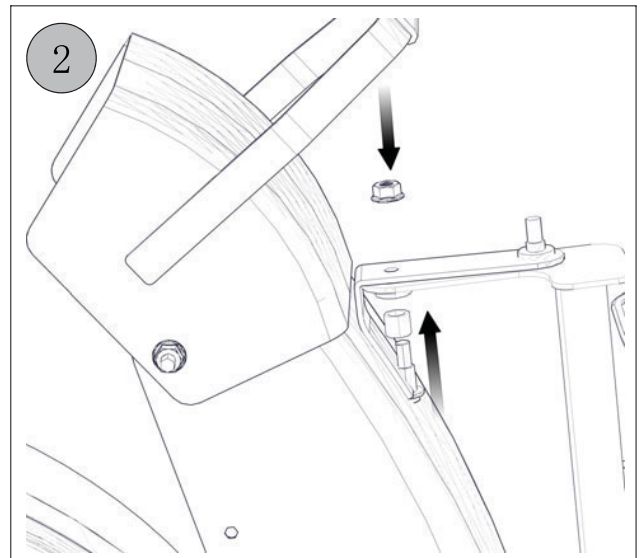
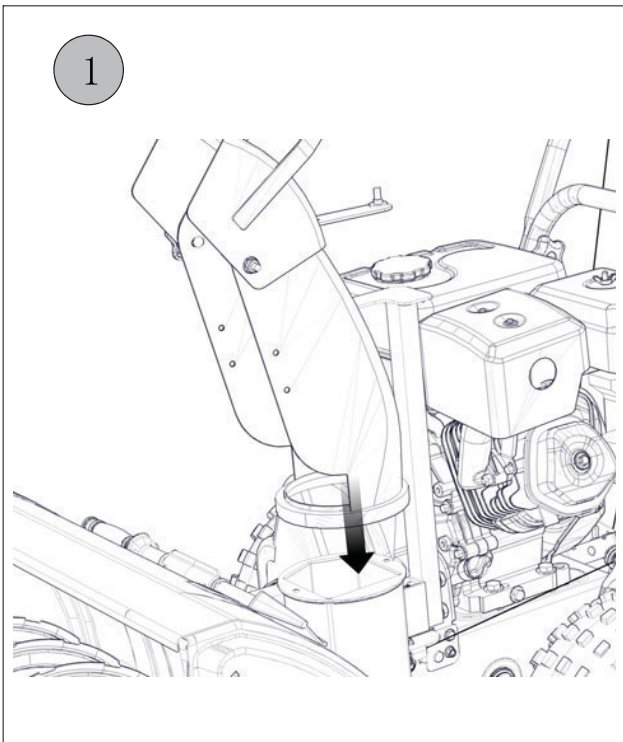
NOTE: This Operator's Manual covers several models. **Snow thrower features vary by model.** Not all features referenced and pictured in this manual are applicable to all snow thrower models.



CAUTION: Prior to operating your snow thrower, refer to Auger Control Test. Read and follow all instructions carefully and perform all adjustments to verify your snow thrower is operating safely and properly.

Securing the Handle

Based on the strength of the travelling cable, insert the travelling cable and snow throwing cable to the proper plugs, and check if machine works properly.



Attaching the Chute Assembly and Directional Control

1. Install the chute to the correct holes of outer shell's back.
2. Use the bolt and nut to fix the chute and bearing to the support base of chute.
3. After install the chute direction control, then make it drill through rotary shaft, let the chute direction control install to the chute. Use nut to fix the chute direction control to the chute, and install one gasket to the chute raised step.
4. Install the plum-plastic-head bolt, locked equipment bush, locked equipment stress block and spring to the throwing snow-rotating-shaft. Screw down the plum-plastic-head bolt, make the locked equipment stress block and regulating-rod of chute tightness combined, and press the throwing snow-rotating-shaft.

NOTE: If necessary, the lower bracket can be adjusted. Refer to Chute Bracket Adjustment



CAUTION: Prior to operating your snow thrower, refer to Auger Control Test. Read and follow all instructions carefully and perform all adjustments to verify your snow thrower is operating safely and properly.

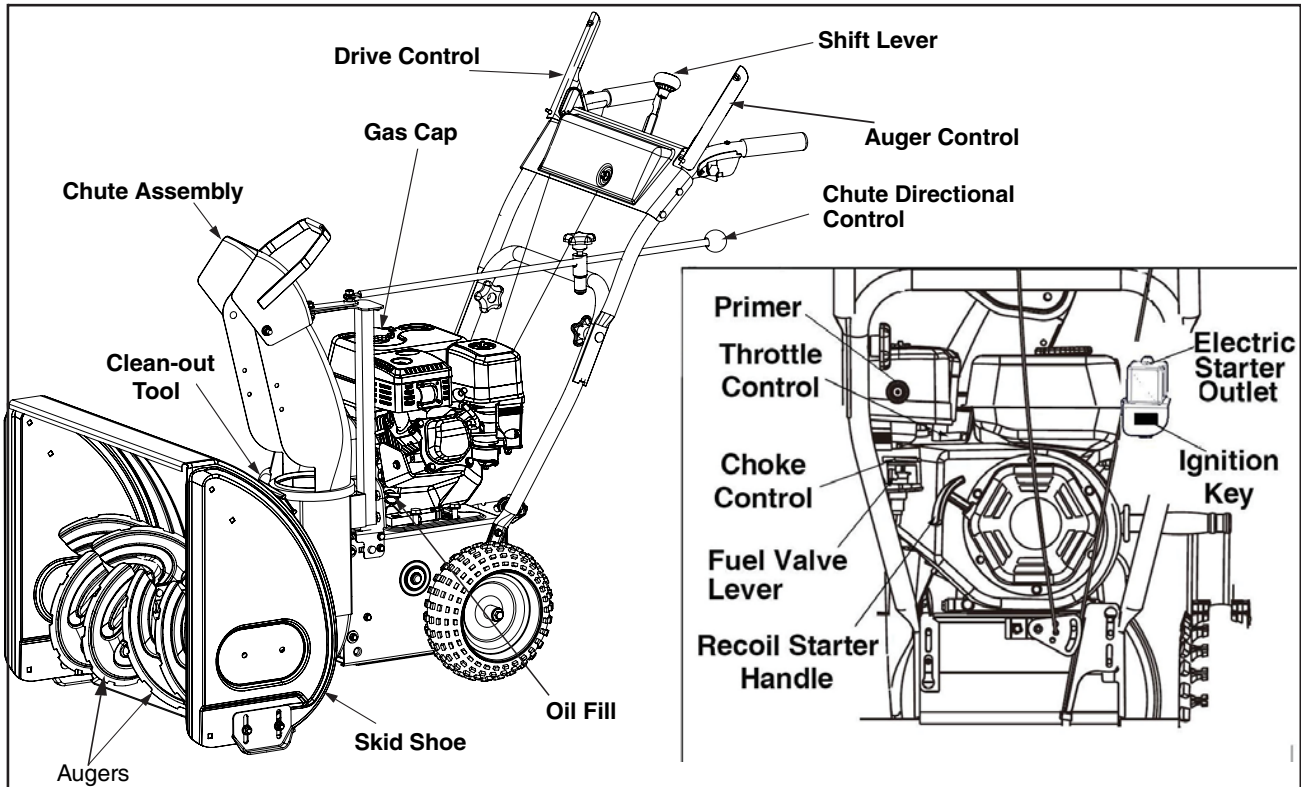
Tire Pressure

- Before operating, check tire pressure and reduce pressure in both tires to between 15 psi and 20 psi.

NOTE: If the tire pressure is not equal in both tires, the unit may not travel in a straight path and the shave plate may wear unevenly.

NOTE: The detailed instruction is attached in User's Manual.

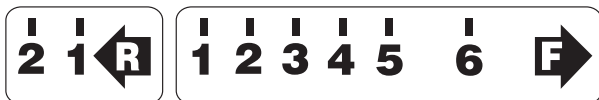
SECTION 3: KNOW YOUR SNOW THROWER



WARNING: Read, understand, and follow all instructions and warnings on the machine and in this manual before operating.

NOTE: For detailed starting instructions and more information on all engine controls, refer to the *Engines* manual packed separately and Starting The Engine on this manual.

Shift Lever



The shift lever is located in the center of the handle panel. Place the shift lever into any of eight positions to control the direction of travel and ground speed.

Forward

There are six forward (F) speeds. Position one (1) is the slowest and position six (6) is the fastest.

Reverse

There are two reverse (R) speeds. One (1) is the slower and two (2) is the faster.

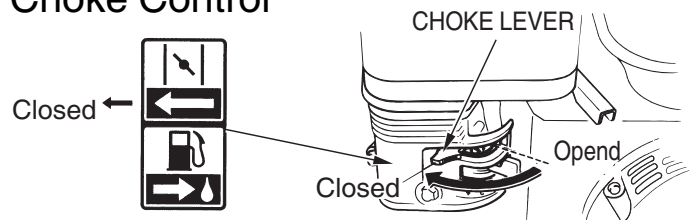
Gas Cap

Unthread the gas cap to add gasoline to the fuel tank.

Oil Fill

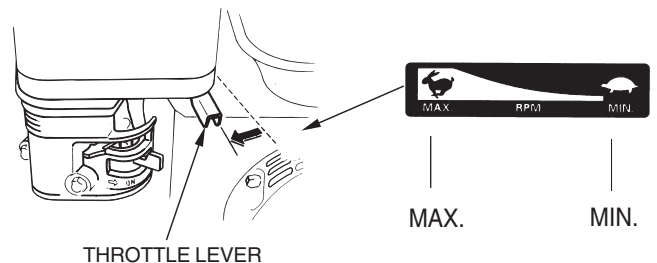
Engine oil level can be checked and oil added through the oil fill.

Choke Control



The choke control is found on the rear of the engine and is activated by rotating the knob clockwise. Activating the choke control closes the choke plate on the carburetor and aids in starting the engine.

Throttle Control

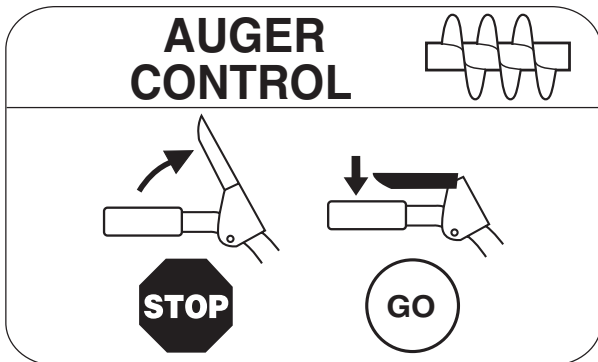


The throttle controls is located on the engine. It regulates the speed of the engine

Primer

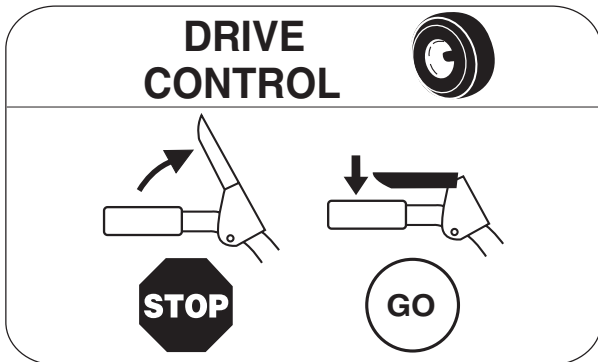
Depressing the primer forces fuel directly into the engine's carburetor to aid in cold-weather starting.

Auger Control



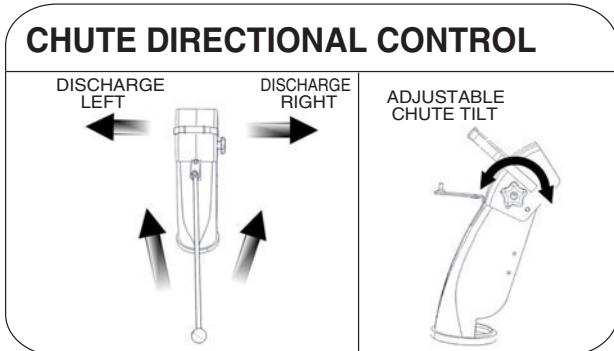
The auger control is located on the **left** handle. Squeeze the control grip against the handle to engage the augers and start snow throwing action. Release to stop.

Drive Control



The drive control is located on the **right** handle. Squeeze the control grip against the handle to engage the wheel drive. Release to stop.

Chute Directional Control



Regulate the plum-plastic-head nut to the rightside of the direction cover, can regulate the height of direction cover through loosening nut.

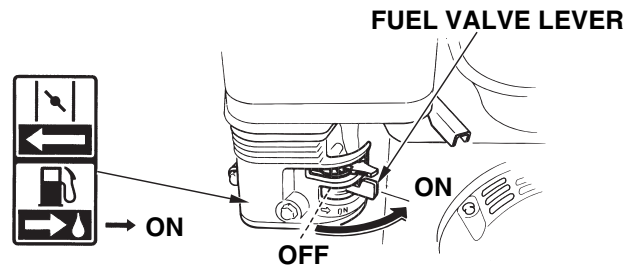
To adjust the chute in the middle, push the shaft toward north and then turn left (See diagram 1) if more the shaft toward northwest, the chute will turn to the right.

Chute Assembly

Snow drawn into the auger housing is discharged out the chute assembly.

Fuel Valve Lever

Fuel valve- Allows fuel to enter engine.



Clean-Out Tool



WARNING: Never use your hands to clear a clogged chute assembly. Shut off engine and remain behind handles until all moving parts have stopped before unclogging.

The chute clean-out tool is fastened to the top of the auger housing with a mounting clip. The tool is designed to clear a clogged chute assembly. Refer to **Operating Your Snow Thrower** section for more detailed information regarding the chute clean-out tool.

NOTE: This item is fastened with a cable tie to the rear of the auger housing at the factory. Cut the cable tie before operating the snow thrower.

Skid Shoes

Position the skid shoes based on surface conditions. Adjust upward for hard-packed snow. Adjust downward when operating on gravel or crushed rock surfaces.

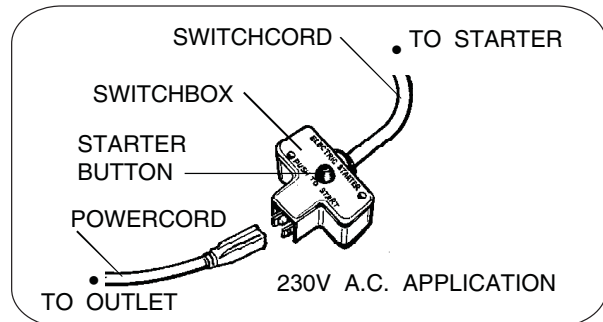
Recoil Starter Handle

The recoil starter handle is used to manually start the engine.

Electric Starter Button (If so equipped) Pressing the electric starter button engages the engine's electric starter when plugged into a 230V power source.

Electric Starter Outlet

(If so equipped) Requires use of a three-prong outdoor extension cord (packed with the snow thrower) and a 230V power source/wall outlet.



Augers

When engaged, the augers rotate and draw snow into the housing.

SECTION 4: OPERATING YOUR SNOW THROWER

Before Starting



WARNING: Read, understand, and follow all instructions and warnings on the machine and in this manual before operating.

Gas & Oil Fill-Up

Service the engine with gasoline and oil as instructed in the *Engines* manual packed separately with your snow thrower. **Read instructions carefully.**



WARNING: Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel the machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes and other sources of ignition.

- A small plastic cup may be located inside the fuel fill opening beneath the gas cap. Remove and discard this cup before filling up the tank.

Starting The Engine

- Attach spark plug wire to spark plug. Make certain the metal loop on the end of the spark plug wire (inside the boot) is fastened securely over the metal tip on the spark plug.
- Make certain both the auger control and drive control are in the disengaged (released) position.
- Move throttle control up to **MAX.** position. Insert ignition key into slot. Make sure it snaps into place. **Do not attempt to turn the key.**
- Move the fuel valve lever to the ON position.

NOTE: *The engine cannot start unless the key is inserted into ignition switch.*

Electric Starter (on models so equipped)

- Determine that your home's wiring is a three-wire grounded system. Ask a licensed electrician if you are not certain.



CAUTION: If your home's wiring system is not a three-wire grounded system, do not use this electric starter under any conditions.



WARNING: The optional electric starter is equipped with a grounded three-wire power cord and plug, and is designed to operate on 120 volt AC household current. It must be used with a properly grounded three-prong receptacle at all times to avoid the possibility of electric shock. Follow all instructions carefully prior to operating the electric starter.



WARNING: If your home electrical system is grounded, but a three-hole receptacle is not available, do not use your snow thrower's electric starter.

If you have a grounded three-prong receptacle, proceed as follows:

- Plug the extension cord into the outlet located on the engine's surface. Plug the other end of extension cord into a three-prong 120-volt, grounded, AC outlet in a well-ventilated area.
- Rotate choke control to **CLOSED** choke position (cold engine start).

NOTE: *If the engine is already warm, place choke control in the **OPEND** position instead of **CLOSED**.*

- Push the primer two or three times for cold engine start, making sure to cover vent hole in the center of the primer when pushing.

NOTE: *DO NOT use primer to restart a warm engine after a short shutdown.*

- Push starter button to start engine.
- Once the engine starts, immediately release starter button.
- As the engine warms, slowly rotate the choke control to the **OPEND** position. If the engine falters, quickly rotate the choke control back to **CLOSED** and then slowly into the **OPEND** position again.
- When disconnecting the extension cord, always unplug the end at the three-prong wall outlet before unplugging the opposite end from the snow thrower.

Recoil Starter

- Rotate choke control to **CLOSED** choke position (cold engine start).

NOTE: *If the engine is already warm, place choke control in the **OPEND** position instead of **CLOSED**.*

- Push the primer two or three times for cold engine start, making sure to cover vent hole in the center of the primer when pushing.

NOTE: *DO NOT use primer to restart a warm engine after a short shutdown.*

NOTE: *Additional priming may be necessary if the temperature is below 15° Fahrenheit.*

- Grasp the recoil starter handle and slowly pull the rope out. At the point where it becomes slightly harder to pull the rope, slowly allow the rope to recoil.

- Pull the starter handle with a firm, rapid stroke.

IMPORTANT: Do not release the handle and allow it to snap back. Keep a firm hold on the starter handle and allow it to slowly recoil.

- As the engine warms, slowly rotate the choke control to the OPEN position. If the engine falters, quickly rotate the choke control back to the CLOSED position and then slowly into the OPEN position again.

Stopping The Engine

- Run engine for a few minutes before stopping to help dry off any moisture on the engine.
- To help prevent possible starter freeze-up, proceed as follows:

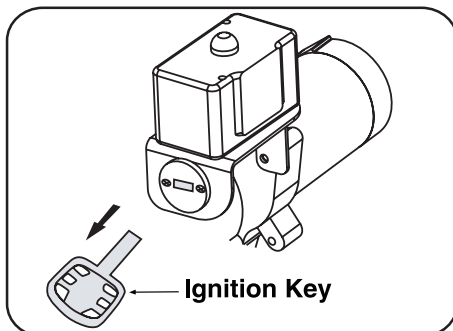
Electric Starter (on models so equipped)

1. Connect extension cord to the electric starter outlet on the engine, then to 120 volt AC outlet.
2. With the engine running, push the starter button and allow the starter for spin for several seconds. The noise made by the starter is normal. The engine's starter is not being harmed.
3. When disconnecting the extension cord, always unplug the end at the three-prong wall outlet before unplugging the opposite end from the snow thrower.
4. Move throttle control to MIN position.
5. Turn the fuel valve lever to the OFF position.
6. Remove the ignition key.
7. Wipe all snow and moisture from the carburetor cover in the area of the drive control and auger control. Also, engage and release the controls several times.

NOTE: Keep the key in a safe place. The engine cannot start without the ignition key.

Recoil Starter

1. With engine running, pull starter rope with a rapid, continuous full arm stroke three or four times. Pulling the starter rope will produce a loud clattering sound, which is not harmful to engine.
2. Move throttle control to MIN position.
3. Remove the ignition key.
4. Turn the fuel valve lever to the OFF position.
5. Wipe all snow and moisture from the carburetor cover in the area of the drive control and auger control. Also, engage and release the controls several times.



To Engage Drive

- With the throttle control in the Fast (rabbit) position, move shift lever into one of the six forward (F) positions or two reverse (R) positions. Select a speed appropriate for the snow conditions and a pace you're comfortable with.

IMPORTANT: Use the slower speeds until you are comfortable and familiar with the operation of the snow thrower.

- Squeeze the auger control against the handle and the augers will turn. Release it and the augers will stop.
- Squeeze the drive control against the handle the snow thrower will move. Release it and drive motion will stop.

IMPORTANT: NEVER reposition the shift lever (change speeds or direction of travel) without first releasing the drive control and bringing the snow thrower to a complete stop. Doing so will result in premature wear to the snow thrower's drive system.

To Engage Augers

- To engage the augers and start throwing snow, squeeze the auger control against the left handle. Release to stop the augers.

Auger Control Test

IMPORTANT: Perform the following test before operating your snow thrower for the first time and at the start of each winter season.

Check the adjustment of the auger control as follows:

- When the auger control is released and in the disengaged "up" position, the cable should have very little slack. It should NOT be tight.
- In a well-ventilated area, start the snow thrower engine as instructed earlier in this section under the heading Starting the Engine. Make sure the throttle is set in the FAST position.
- While standing in the operator's position (behind the snow thrower), engage the auger.
- Allow the auger to remain engaged for approximately ten (10) seconds before releasing the auger control. Repeat this several times.
- With the throttle control in the FAST (rabbit) position and the auger control in the disengaged "up" position, walk to the front of the machine.
- Confirm that the auger has completely stopped rotating and shows NO signs of motion.

IMPORTANT: If the auger shows ANY signs of rotating, immediately return to the operator's position and shut off the engine. Wait for ALL moving parts to stop before re-adjusting the auger control.

Chute Clean-Out Tool

The chute clean-out tool is conveniently fastened to the rear of the auger housing with a mounting clip. Should snow and ice become lodged in the chute assembly during operation, proceed as follows to safely clean the chute assembly and chute opening:

- Release both the Auger Control and the Drive Control.
- Stop the engine by removing the ignition key.
- Remove the clean-out tool from the clip which secures it to the rear of the auger housing.
- Use the shovel-shaped end of the clean-out tool to dislodge and scoop any snow and ice which has formed in and near the chute assembly.



WARNING: Never use your hands to clean snow and ice from the chute assembly or auger housing

- Refasten the clean-out tool to the mounting clip on the rear of the auger housing, reinsert the ignition key and start the snow thrower's engine.
- While standing in the operator's position (behind the snow thrower), engage the auger control for a few seconds to clear any remaining snow and ice from the chute assembly.

Drift Cutters(on models so equipped)

Drift cutters should be used when operating the snow thrower in heavy drift conditions.

On models so equipped, drift cutters are assembled to the auger housing inverted. Remove the carriage bolts by unthreading the hex nuts which secure them, and reinstall the drift cutters in their proper position before operating the snow thrower. See Figure 2.

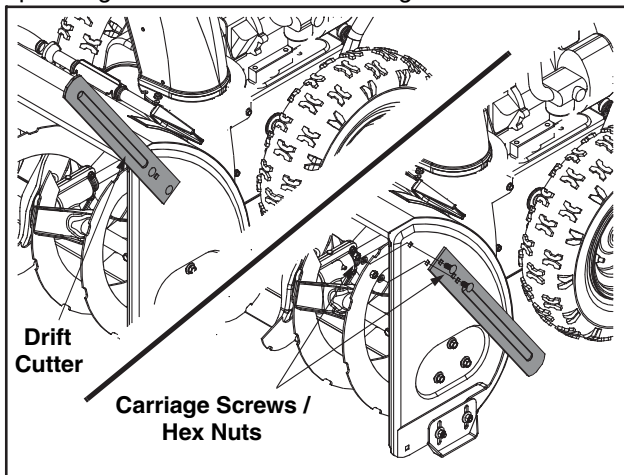


Figure 2

If your unit is not equipped with drift cutters, contact Customer Support as instructed for information regarding price and availability.

Tire Chains(on models so equipped)

Tire chains should be used whenever extra traction is needed. If your unit is not equipped with tire chains, contact Customer Support as instructed for information regarding price and availability.

Operating Tips

NOTE: Allow the engine to warm up for a few minutes after starting. The engine will not develop full power until it reaches operating temperature.



WARNING: The muffler, engine and surrounding areas become hot and can cause a burn. Do not touch.

- Discharge snow downwind whenever possible.
- Slightly overlap each previous swath.
- Set the skid shoes 1/4" below the scraper bar for normal usage. The skid shoes may be adjusted upward for hard-packed snow. Adjust downward when using on gravel or crushed rock.
- Avoid possible starter freeze-up. Clean the snow thrower thoroughly after each use.

NOTE: It will damage the belt if snow thrower is working in the idle situation for a while.

SECTION 5: MAKING ADJUSTMENTS



WARNING: Never attempt to make any adjustments while the engine is running, except where specified in operator's manual.

Shift Cable Adjustment

If the full range of speeds (forward and reverse) cannot be achieved, refer to the figures to the right and adjust the shift rod as follows:

1. Rotate the shift arm clockwise as far as it will go.
2. Thread the ferrule up or down the shift rod until it aligns with the hole in the shift lever behind the handle panel.

Regulate the speed through the 3 holes' position of the regulating piece. When the regulating cable connect with the first hole, the walking speed is fastest. connect with the second hole, the walking speed is more slowly. connect with the third hole, the walking speed is the most slowly.

Tire Pressure

- Before operating, check tire pressure and reduce pressure to between 15 psi and 20 psi.

NOTE: If the tire pressure is not equal in both tires, the unit may pull to one side or the other.

Chute Assembly

The distance snow is thrown can be adjusted by changing the angle of the chute assembly. To do so, stop the engine by removing the ignition key and loosen the plastic wing knob found on the left side of the chute assembly. Pivot the chute upward or downward before re-tightening the wing knob. See Figure 3.

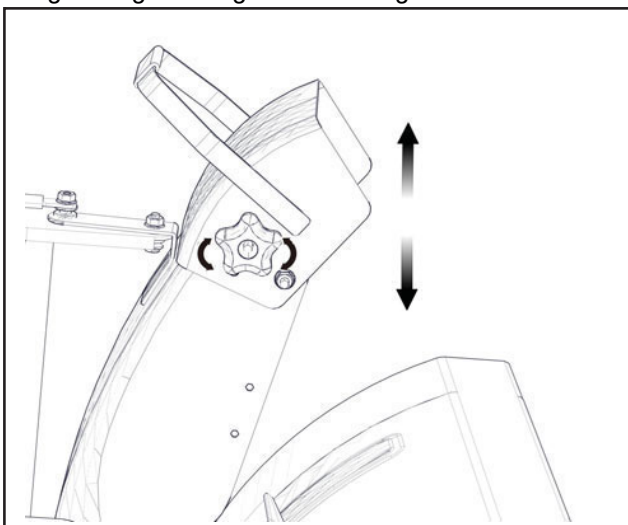
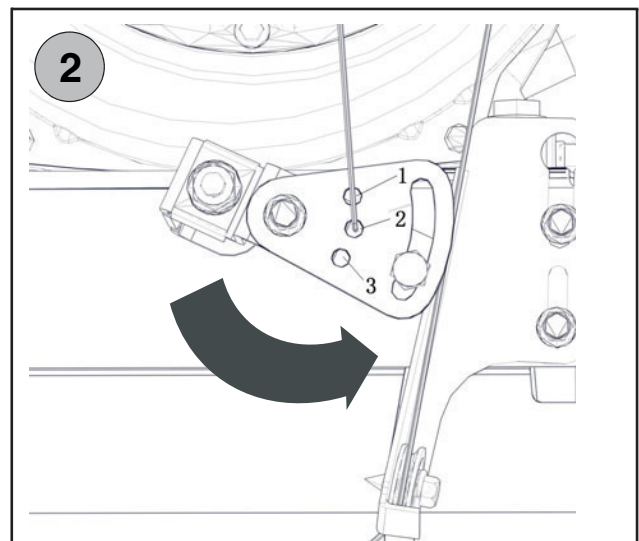
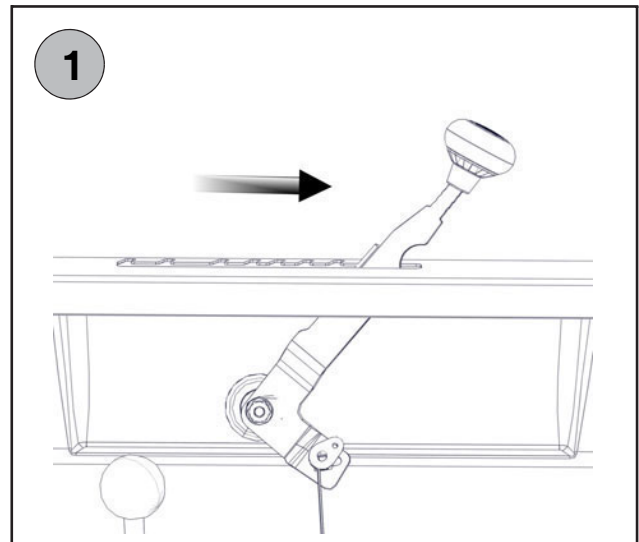


Figure 3



Drive Control

When the drive control is released and in the disengaged “up” position, the cable should have very little slack. It should NOT be tight.

Check the adjustment of the drive control as follows:

1. With the drive control released, push the snow thrower gently forward. The unit should roll freely.
2. Engage the drive control and gently attempt to push the snow thrower forward. The wheels should not turn. The unit should **not** roll freely.
3. With the drive control released, move the shift lever back and forth between the R2 position and the F6 position several times. There should be **no** resistance in the shift lever.

Auger Control

Refer to **Auger Control Test** on Page 11 to adjust the auger control.

Skid Shoes

The space between the skid shoes and the ground can be adjusted. See Figure 5.

- For close snow removal on a smooth surface, raise skid shoes higher on the auger housing.
- Use a middle or lower position when the area to be cleared is uneven, such as a gravel driveway.



CAUTION: Loose gravel can be picked up and thrown by the auger, causing injury to the operator and bystanders and/or damage to the snow thrower and surrounding property.

- Adjust skid shoes by loosening the four hex nuts (two on each side) and carriage bolts. Move skid shoes to desired position.
- Make certain the entire bottom surface of skid shoe is against the ground to avoid uneven wear on the skid shoes. Retighten nuts and bolts securely.

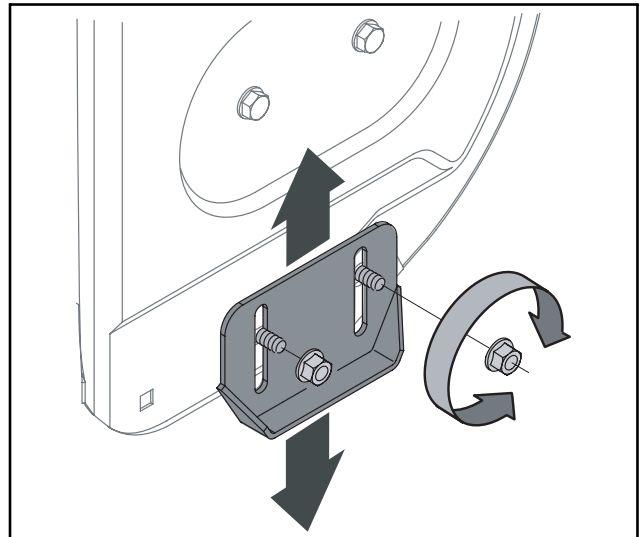


Figure 5

SECTION 6: MAINTAINING AND SERVICING YOUR SNOW THROWER



WARNING: Before lubricating, repairing, or inspecting, disengage all controls and stop engine. Wait until all moving parts have come to a complete stop.

Engine

Refer to the separate POWERLAND *Engines* manual packed with your unit for all engine maintenance.

Lubrication

Engine

Refer to the separate POWERLAND *Engines* manual packed with your unit for all engine lubrication instructions.

Gear Shaft

The gear (hex) shaft should be lubricated at least once a season or after every 25 hours of operation.

- Remove the lower frame cover by removing the two screws which secure it.
- Apply a light coating of an all-weather multi-purpose grease to the hex shaft. See Figure 7.

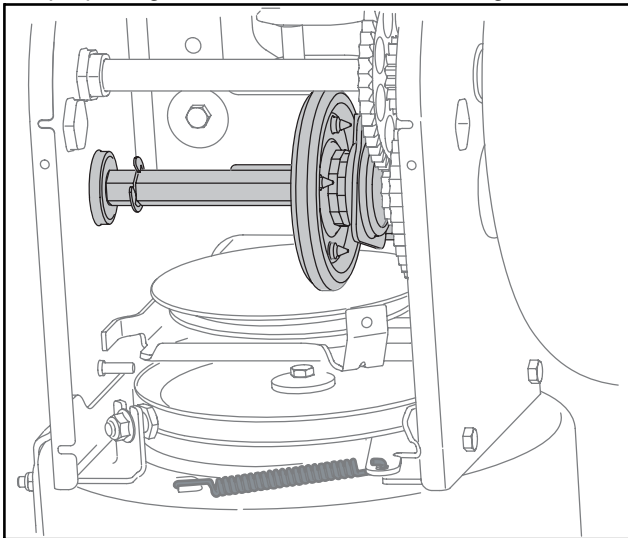


Figure 7

IMPORTANT: Keep lubricant off the friction wheel and drive plate.

Wheels

- At least once a season, remove both wheels. Clean and coat the axles with a multipurpose automotive grease before reinstalling wheels.

Chute Directional Control

- Once a season, the spiral end on the chute directional control should be greased with multipurpose automotive grease.

Auger Shaft

- At least once a season, remove the shear pins on auger shaft. Spray lubricant inside shaft, around the spacers. Also lubricate the flange bearings found at either end of the shaft. See Figure 8.

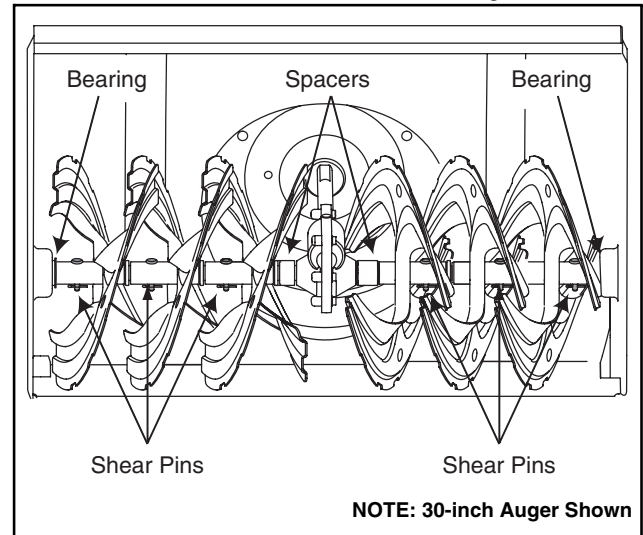


Figure 8

Gear Case

The auger gear case has been filled with grease at the factory. If disassembled for any reason, lubricate with two ounces of grease (Part Number 737-0168).

IMPORTANT: Do not overfill the gear case. Damage to the seals could result. Be sure the vent plug is free of grease in order to relieve pressure.



WARNING: Before servicing, repairing, or inspecting, disengage all controls and stop engine. Wait until all moving parts have come to a complete stop.

Shave Plate and Skid Shoes

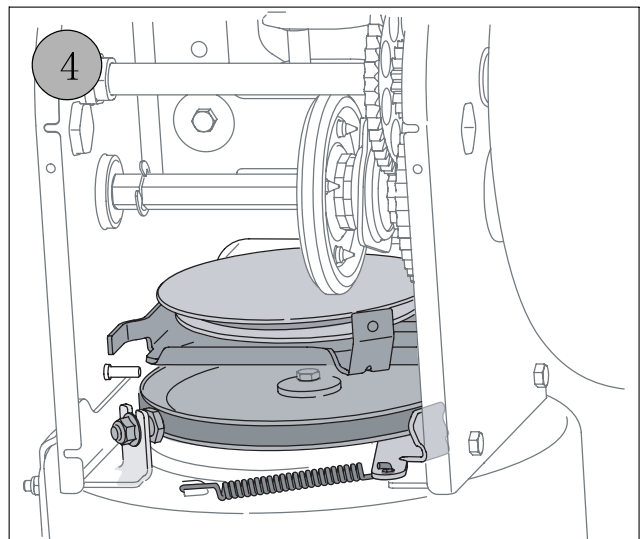
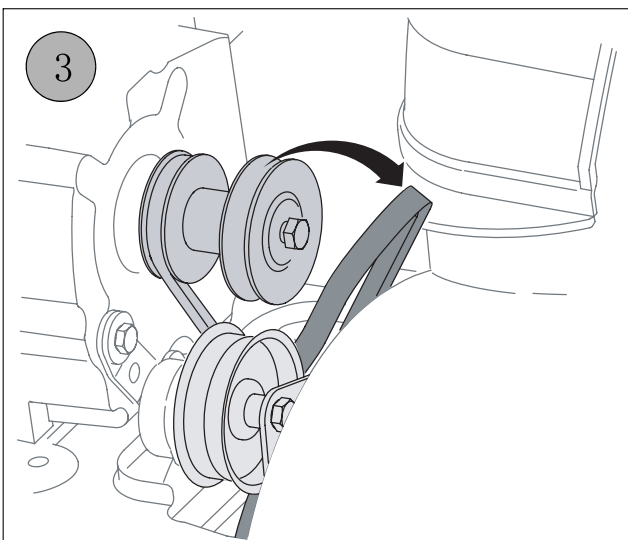
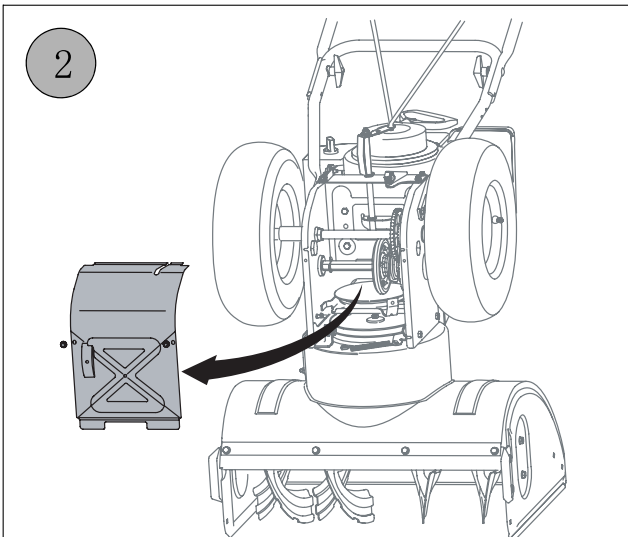
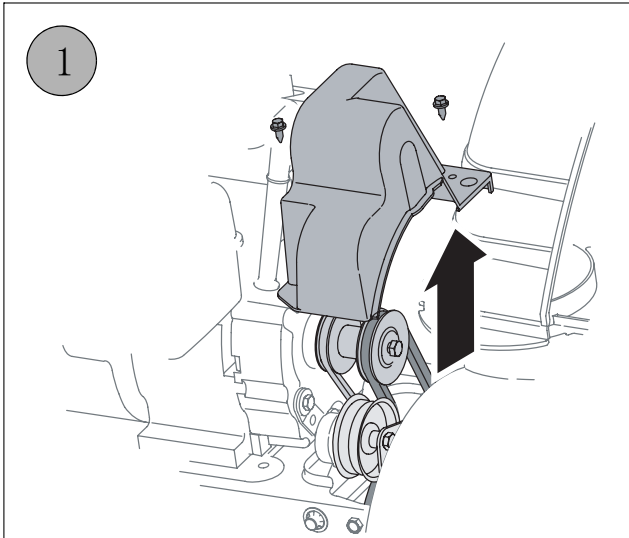
- The shave plate and skid shoes on the bottom of the snow thrower are subject to wear. They should be checked periodically and replaced when necessary.
- To remove skid shoes, remove the four carriage bolts and hex flange nuts which secure them to the snow thrower. Reassemble new skid shoes with the four carriage bolts (two on each side) and hex flange nuts. Refer to Figure 5.
- To remove shave plate, remove the carriage bolts and hex nuts which attach it to the snow thrower housing. Reassemble new shave plate, making sure heads of carriage bolts are to the inside of housing. Tighten securely.

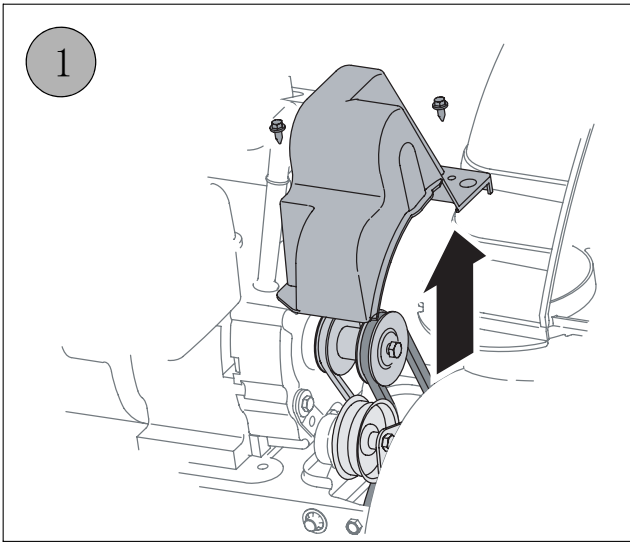
Auger Belt Replacement

To remove and replace your snow thrower's auger belt, proceed as follows:

1. Remove the plastic belt cover on the front of the engine by removing the two self-tapping screws.
 - Drain the gasoline from the snow thrower, or place a piece of plastic under the gas cap.
 - Carefully pivot the snow thrower up and forward so that it rests on the auger housing.
2. Remove the frame cover from the underside of the snow thrower by removing four self-tapping screws which secure it.
3. Roll the auger belt off the engine pulley.
4. Unhook the support bracket spring from the frame.
 - Loosen and remove the shoulder screw which acts as a belt keeper.
 - Remove the belt from around the auger pulley, and slip the belt between the support bracket and the auger pulley
 - Reassemble auger belt by following instructions in reverse order.

IMPORTANT: Do NOT forget to reinstall the shoulder screw and reconnect the spring to the frame after installing a replacement auger belt.

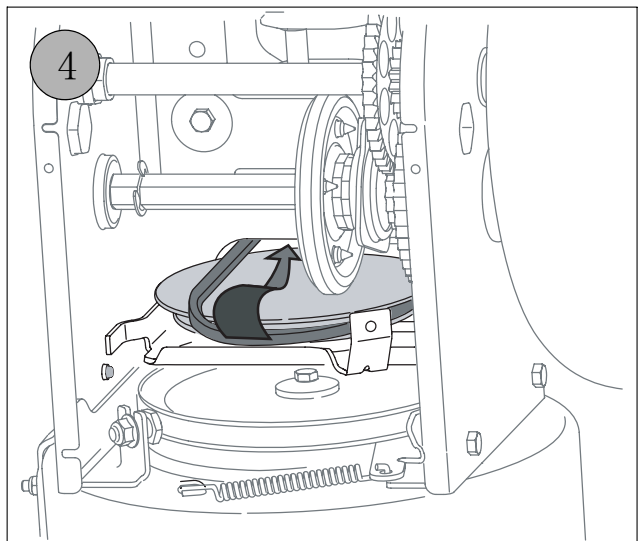
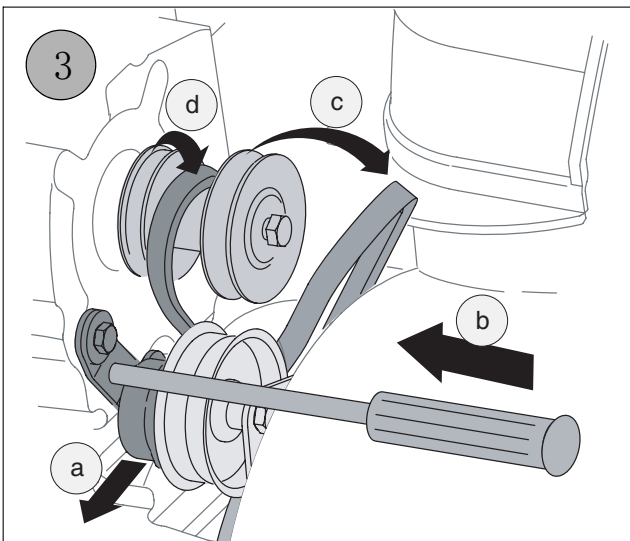
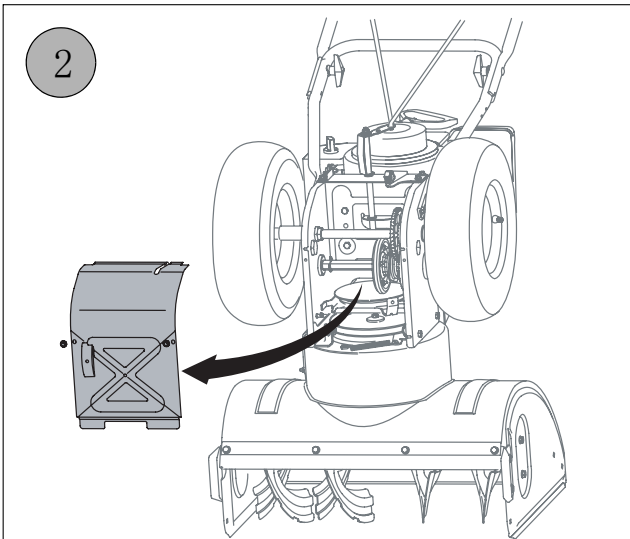




Drive Belt Replacement

To remove and replace your snow thrower's auger belt, proceed as follows:

1. Remove the plastic belt cover on the front of the engine by removing the two self-tapping screws.
 - Drain the gasoline from the snow thrower, or place a piece of plastic under the gas cap.
 - Carefully pivot the snow thrower up and forward so that it rests on the auger housing.
2. Remove the frame cover from the underside of the snow thrower by removing four self-tapping screws which secure it.
3.
 - a. Grasp the idler pulley and pivot it toward the right.
 - b. Insert a screw driver through aligning holes in both the idler bracket and the engine.
 - c. Roll the auger belt off the engine pulley.
 - d. Lift the drive belt off engine pulley.
4. Slip the drive belt off the pulley and between friction wheel and friction wheel disc.
 - Remove and replace belt in the reverse order.



Friction Wheel Removal

If the snow thrower fails to drive with the drive control engaged, and performing the drive control cable adjustment on page 14 fails to correct the problem, the friction wheel may need to be replaced. Follow the instructions below. Examine the friction wheel for signs of wear or cracking and replace if necessary

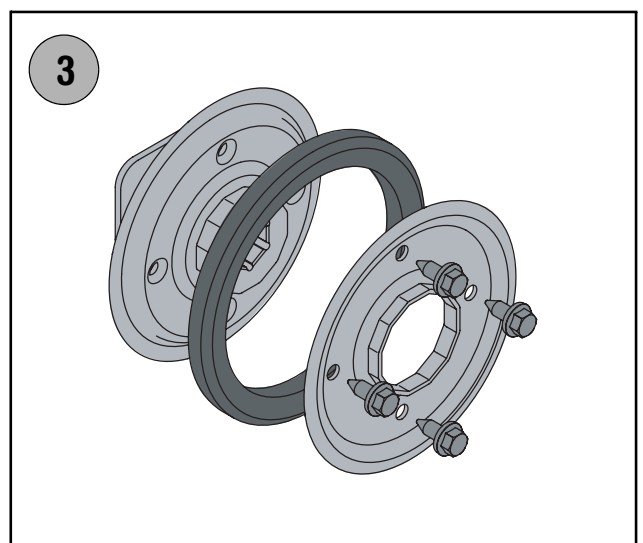
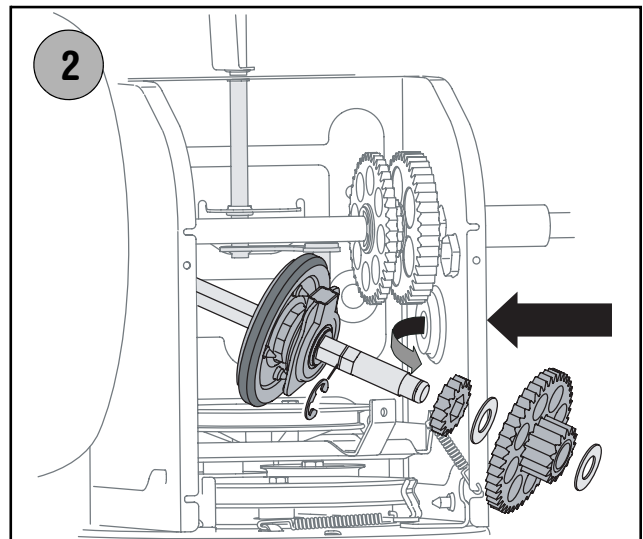
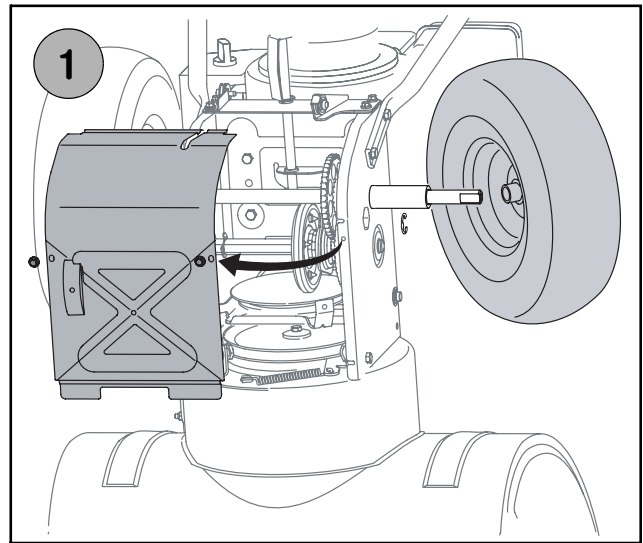
- Place the shift lever in third Forward (F3) position.
 - Drain the gasoline from the snow thrower, or place a piece of plastic under the gas cap.
 - Carefully pivot the snow thrower up and forward so that it rests on the auger housing.
1. a. Remove the frame cover from the underside of the snow thrower by removing four self-tapping screws which secure it.
b. Remove the right-hand wheel by removing the screw and bell washer which secure it to the axle.
c. Locate the hex shaft and E-ring on the right side of the snow thrower frame, about two inches from the wheel axle.
c. Using a suitable tool, carefully remove the outer E-ring which secures the hex shaft to the snow thrower frame and lightly tap the shaft's end to dislodge the ball bearing from the right side of the frame.
 2. a. Slide the hex shaft downward and to the left while carefully un-meshing the lower gears on the hex shaft from the upper gears on the wheel axle.
b. Set the hex shaft's gears aside.
c. Carefully remove the inner E-ring from the hex shaft and slide the friction wheel assembly off the hex shaft.

NOTE: If you're replacing the friction wheel assembly as a whole, discard the worn part and slide the new part onto the hex shaft. Follow the steps above in reverse order to reassemble components. If you're disassembling the friction wheel and replacing only the rubber ring, proceed as follows:

3. Remove the four screws which secure the friction wheel's side plates together.
 - Remove the rubber ring from between the plates.
 - Reassemble the side plates with a replacement rubber ring.

IMPORTANT: Tighten each screw only one rotation before turning the wheel clockwise and proceeding with the next screw. Repeat this process several times to ensure the plates are secured with equal force.

- Slide the friction wheel assembly back onto the hex shaft and follow the steps above in reverse order to reassemble components.



Augers

- The augers are secured to the spiral shaft with four shear pins and cotter pins. If the auger should strike a foreign object or ice jam, the snow thrower is designed so that the pins may shear. Refer to Figure 8.
- If the augers will not turn, check to see if the pins have sheared. When replacing pins, spray an oil lubricant into shaft before inserting new pins.

IMPORTANT: NEVER replace the auger shear pins with anything other than OEM Part No.738-04124 replacement shear pins. Any damage to the auger gearbox or other components as a result of failing to do so will NOT be covered by your snow thrower's warranty.

SECTION 7: OFF-SEASON STORAGE



WARNING: Never store the machine or fuel container indoors where there is an open flame, spark or pilot light such as on a water heater, furnace, clothes dryer or other gas appliances.



WARNING: Drain fuel into an approved container outdoors, away from open flame. Allow engine to cool. Extinguish cigarettes, cigars, pipes, and other sources of ignition prior to draining fuel. Fuel left in engine for extended period deteriorates and will cause serious starting problems.

If unit is to be stored over 30 days, prepare for storage as follows:

- Remove gasoline from carburetor and fuel tank to prevent gum deposits from forming on these parts and causing possible malfunction of engine.
- Run engine until fuel tank is empty and engine stops due to lack of fuel.

- Drain carburetor by pressing upward on bowl drain, located below the carburetor cover.

NOTE: Fuel stabilizers, such as STA-BIL®, are an acceptable alternative in minimizing the formation of fuel gum deposits during storage. Do not drain carburetor if using a fuel stabilizer.

- Wipe equipment with an oiled rag to prevent rust.
- Remove spark plug and pour one ounce of engine oil through spark plug hole into cylinder. Cover spark plug hole with rag. Crank engine several times to distribute oil. Replace spark plug.
- Follow the lubrication recommendations found in the Maintenance Section.
- Always store the snow thrower in a clean, dry area.

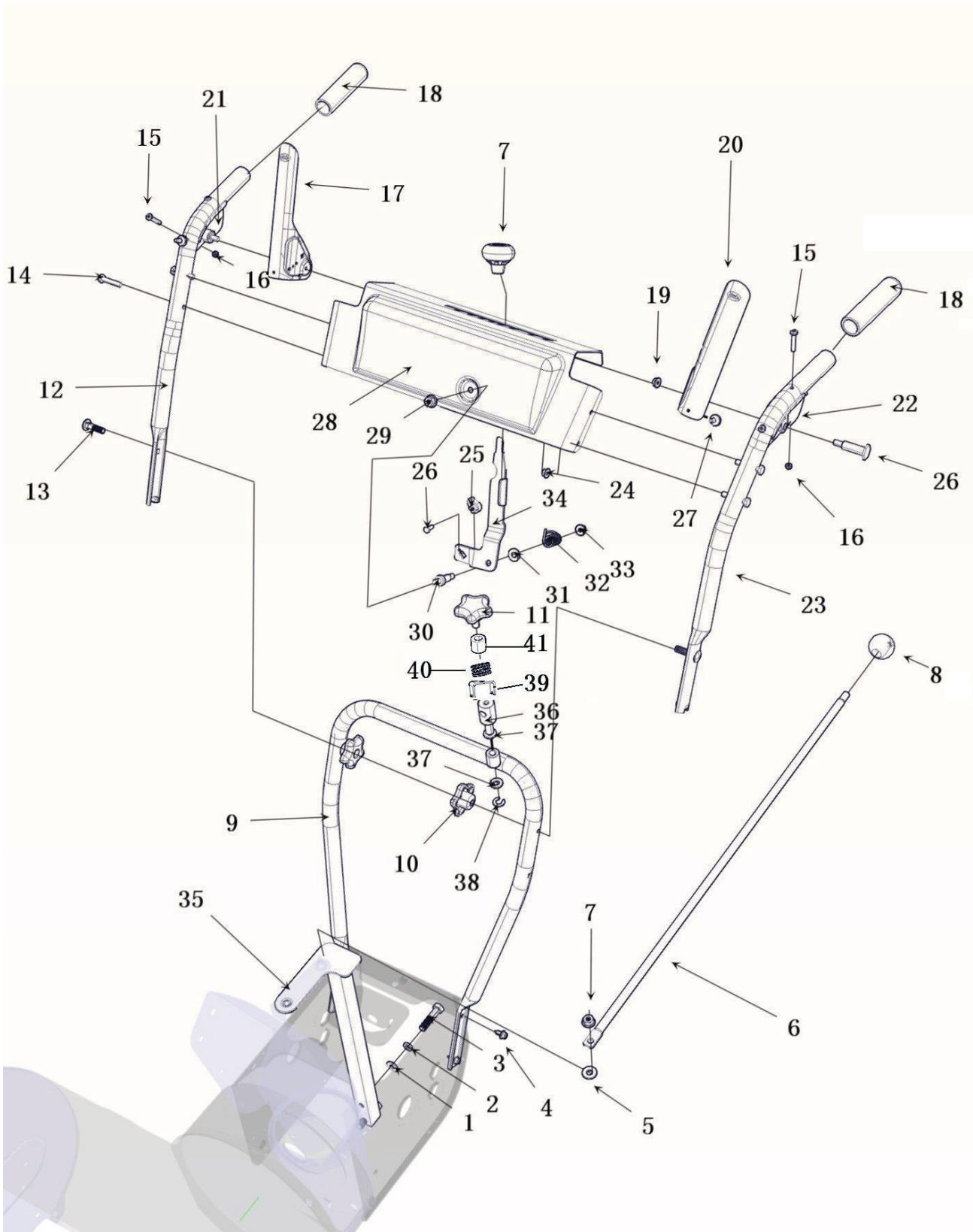
When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rust proof the equipment. Using a light oil or silicone, coat the equipment, especially any chains, springs, bearings and cables.

SECTION 8: TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	Fuel tank empty, or stale fuel. Blocked fuel line. fuel valve not trun ON position Faulty spark plug. Ignition key not present. Spark plug wire disconnected. Engine not primed.	Fill tank with clean, fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is used. Clean fuel line. Turn the fuel valve lever to the On position. Clean, adjust gap or replace. Insert key into ignition switch. Connect spark plug wire. Refer to the <i>Tecumseh</i> engine manual or Starting the Engine page 10 of this manual for instructions on the engine primer.
Engine runs erratic	Unit running on CHOKE. Blocked fuel line or stale fuel. Water or dirt in fuel system. Carburetor out of adjustment.	Move choke control to OFF position. Clean fuel line; fill tank with clean fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is used. Drain fuel tank. Refill with fresh fuel. Refer to the <i>Tecumseh</i> engine manual.
Loss of power	Spark plug wire loose. Gas cap vent hole plugged. Exhaust port plugged.	Connect and tighten spark plug wire. Remove ice and snow from cap. Be certain vent hole is clear. Clean following the engine manual.
Engine overheats	Carburetor not adjusted properly.	Refer to the <i>Tecumseh</i> engine manual packed with your unit or have carburetor adjusted by an authorized service dealer.
Excessive vibration	Loose parts or damaged auger.	Stop engine immediately and disconnect spark plug wire. Tighten all bolts and nuts. Make all necessary repairs. If vibration continues, have unit serviced by an authorized service dealer.
Unit fails to propel itself	Incorrect adjustment of drive control cable. Drive belt loose or damaged.	Adjust drive control cable. Replace drive belt.
Unit fails to discharge snow	Chute assembly clogged. Foreign object lodged in auger. Incorrect adjustment of auger control cable. Drive belt loose or damaged.	Stop engine immediately. Clean chute assembly and inside of auger housing with chute clean-out tool Stop engine immediately. Remove object from auger. Adjust auger control cable. Replace drive belt.

NOTE: For repairs beyond the minor adjustments above, contact your local authorized service dealer.

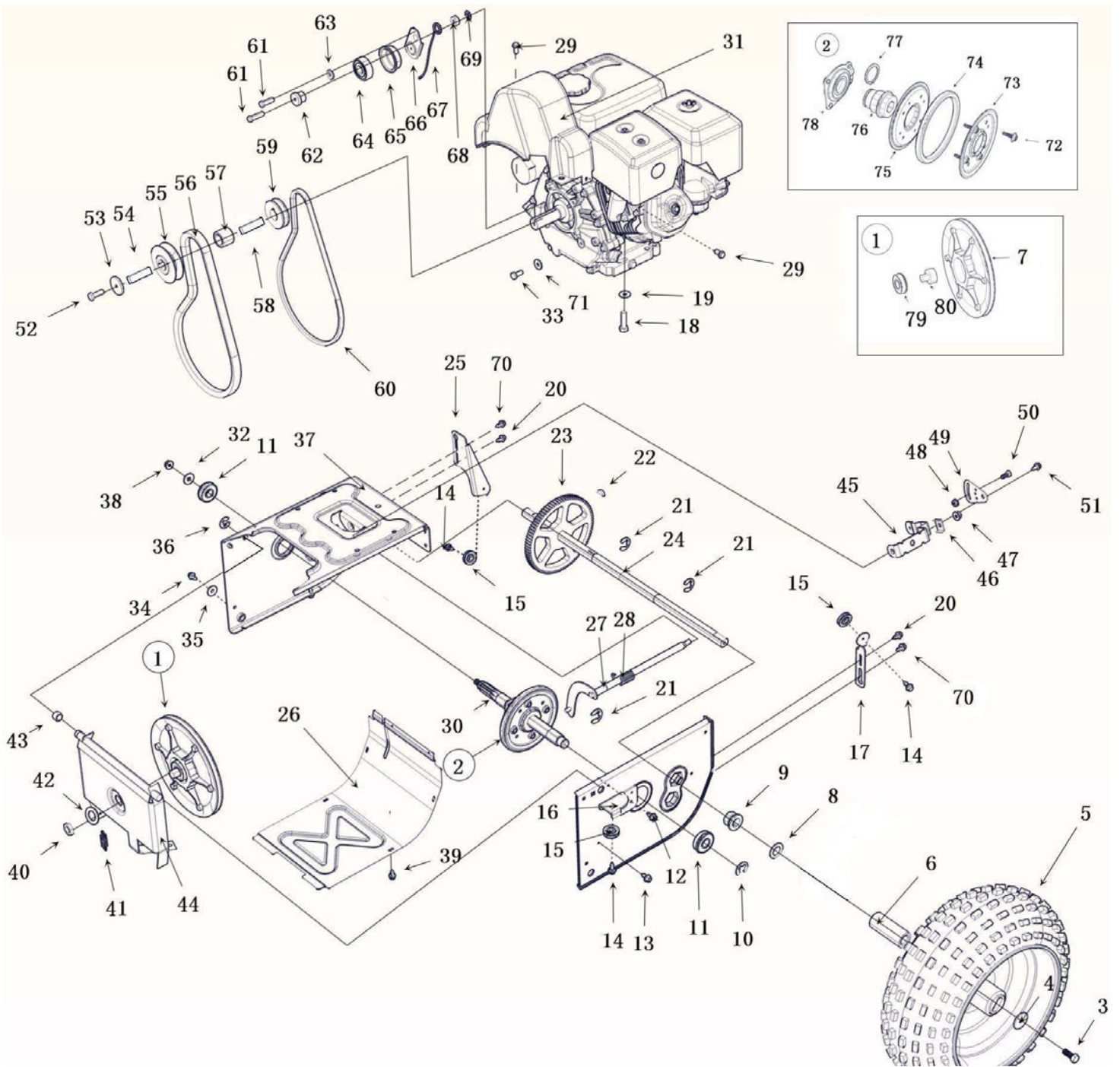
SECTION 9: PARTS LIST



1. Washer,Bell,φ20×φ10.5×2
2. Shells PadM10
3. Hex Screw,3/8-16×27 l=44 S=14
4. Screw,Self-tapping5/16-18×19 S=12.5
5. Washer,Bell,
6. Crank Assembly,Chute
7. Nut,Flange Locking Hexagon5/16-18 S=12.5
8. Plastic ball
9. Handle,Lower,Snow
10. Nut,Plum Plastic
11. Bolt,Plum,Plastic
12. Hand,Upper,RH
13. Screw,Carriage,5/16-18×51 dk=18
14. Screw,Self-tapping,1/4-20×20 l=38 S=11
15. Screw,Shoulder,10#-24×34 Dyke=φ9
16. Nut,Hex Look,10#-24 S=9.5
17. Handle,Upper,RH
18. Hand Gel
19. Nut,Flange Locking Hexagon,1/4-20 S=10
20. Handle,Upper,LH
21. Handle,Clutch Look,RH
22. Handle,Clutch Look,LH
23. Hand,Upper,LH
24. Nut,Flange Locking Hexagon,1/4-20 S=10
25. Connecting Block,Stall lines
26. Pin,Cotter,ST10#-14×13 S=8
27. Rubber Plug,Buffer
28. Significant Tailgate
29. Nut,Flange Locking Hexagon,5/16-18 S=12.5
30. Bolt,Shoulder
31. Flat Padφ20×φ10.5×2
32. Spring,Compressionφ2.7×φ20×20
33. Nut,Flange Lock,5/16-18 S=12.5
34. Lever,Shift,Speed
35. Supporter
36. Rotation Axis
37. Washer,Bellφ24×φ13×2
38. Ring E-Type,GB/T894.2 12
39. Locked-Washer,Saddle
40. Spring Compression,φ0.8×φ18.5×17
41. Bushing

NOTE: *Snow thrower features and components vary by model. NOT all parts listed above and pictured on the previous page are standard equipment.*

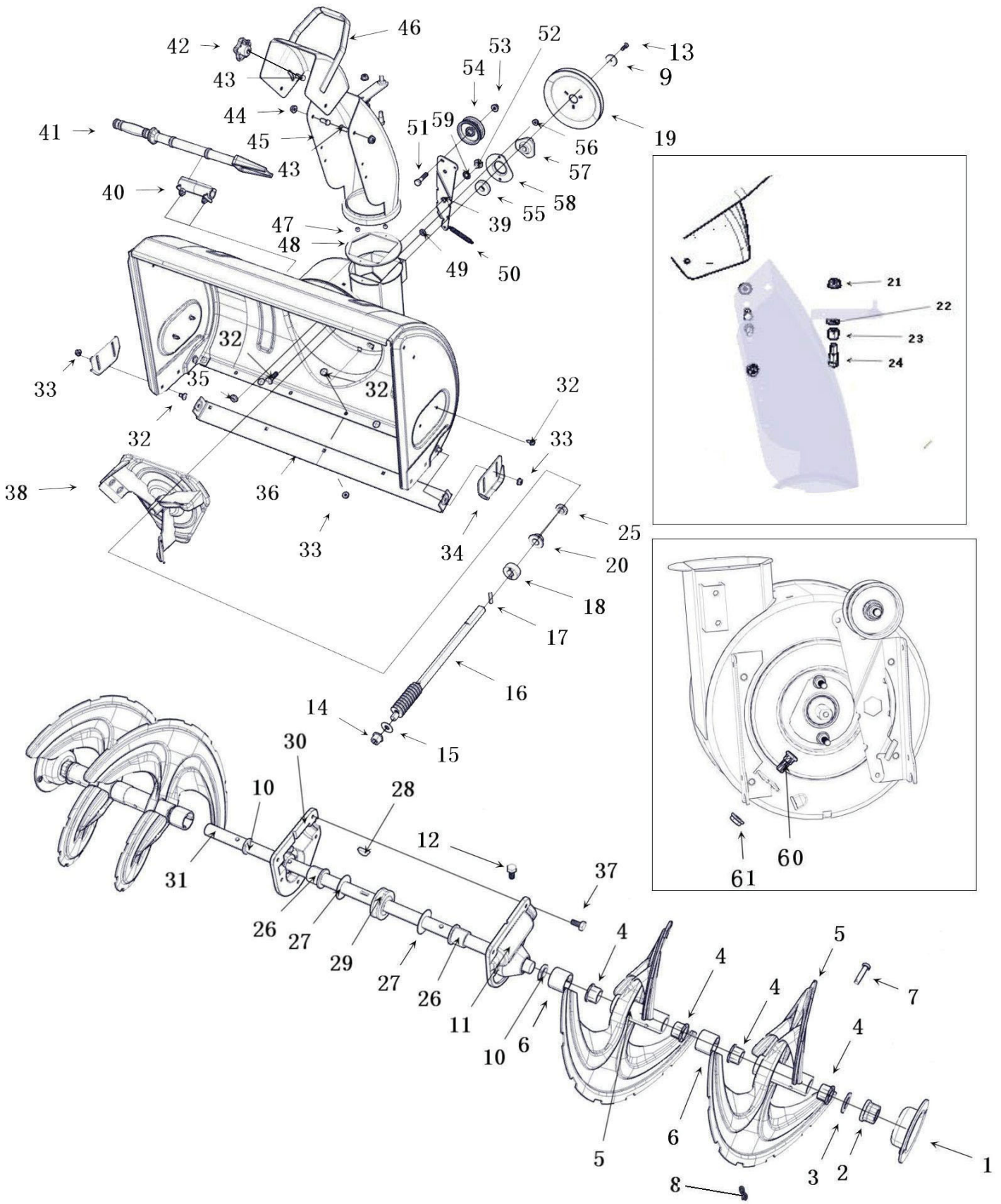
PARTS LIST



3. Hex Screw,5/16-24×19 S=12.5	42. Washer,Bell,φ30×φ16×1.6
4. Washer,Bellφ24×φ8×2	43. Spacer
5. Wheel,Assembly Complete	44. Support Bracket Ass'y,Friction Wheel
6. Spacer	45. Spring, Shift, Lever
7. Friction Disc,Wheel	46. U-Washer,Saddle
8. Hex Screwφ31×φ20×1.6	47. Nut,Hex Look,5/16-18 S=12.5
9. Friction Disc,Wheel	48. Nut,Hex Look,1/4-20 S=10
10. Ring E-Type,GB/T896-1986 15	49. Regulating-Position Flat
11. Bearing 6203 RSNRC 3	50. Screw,Self-Tapping,ST1/4-20×16-φ9.40×2.8-φ13.7×2 S=9.5
12. Screw,Self-Tapping,ST1/4-20×16- φ9.40×2.8-φ13.7×2 S=9.5	51. Screw,Self-Tapping,ST1/4-20×16 S=9.5
13. Screw,self-tapping,1/4-20×26 S=9.5	52. Nut,Hex Look,M8X25
14. Screw,self-tapping, ST1/4-20×16 S=9.5	53. Washer,Bell,φ38×φ8×4
15. Wheel,Rubber	54. Key Flat,8X7×18
16. Guide Bracket, Front, Auger Cable	55. Pulley,Half
17. Guide Bracket, Auger Cable	56. Pulley,Auger
18. Hex Screw,M10X40	57. Spacer
19. M10,Washer,Bell,	58. Key Flat,8X7×14
20. Screw,Self-tapping,ST1/4-20×16 S=9.5	59. Pulley,Half
21. Ring E-Type,GB/T896-1986 17	60. V-belt
22. Key,Hi-pro	61. Screw,Self-Tapping,3/8-16×27 l=44 S=14
23. Gear Assembly	62. Pulley Step Shaft
24. Drive Shaft,Hex	63. Gasket
25. Roller Bracket,Drive Cable	64. Bearing,6000-2RS
26. Frame Cover	65. Shell of Bearing
27. Rod Assembly,Shift	66. Pulley Arm
28. Spring,Tensileφ1.2×φ10×60	67. Spring,Reversion,φ2.2×φ27×7
29. Screw,Self-Tapping,ST1/4-20×16 S=9.5	68 Pulley Bush
30. Gear Shaft	69. Only Back-chip, Plum
31. Dynamic Guard	70. Screw,Self-Tapping,ST1/4-20×16-φ9.40×2.8-φ13.7×2 S=9.5
32. Washer,Bell	71. Gasket
33. Nut,Hex Look,M8×20	72. Screw,Self-Tapping,ST1/4-20×16 S=9.5
34. Screw,self-Tapping,5/16-18×19 S=12.5	73 Plate,Friction
35. Washer,Bellφ24×φ8×2	74. Friction Wheel Rubber
36. Ring E-Type	75. Plate,Friction,Extrs
37. Frame	76. Hub,Friction Wheel
38. Nut,Hex Look,3/8-16 S=14	77. Ring E-Type,GB/T 894.2 35
39. Screw,Self-tapping,ST1/4-20×16 S=9.5	78. Bearing Assembly,Friction Wheel
40. Nut,Hex Look,5/8-18 S=21	79. Gearing,6000-2RS
41. Spring,Tensileφ1.2×φ10×35	80. Pin,Friction Disc Bearing,5/8-18×15-φ30×13

NOTE: Snow thrower features and components vary by model. NOT all parts listed above and pictured on the previous page are standard equipment.

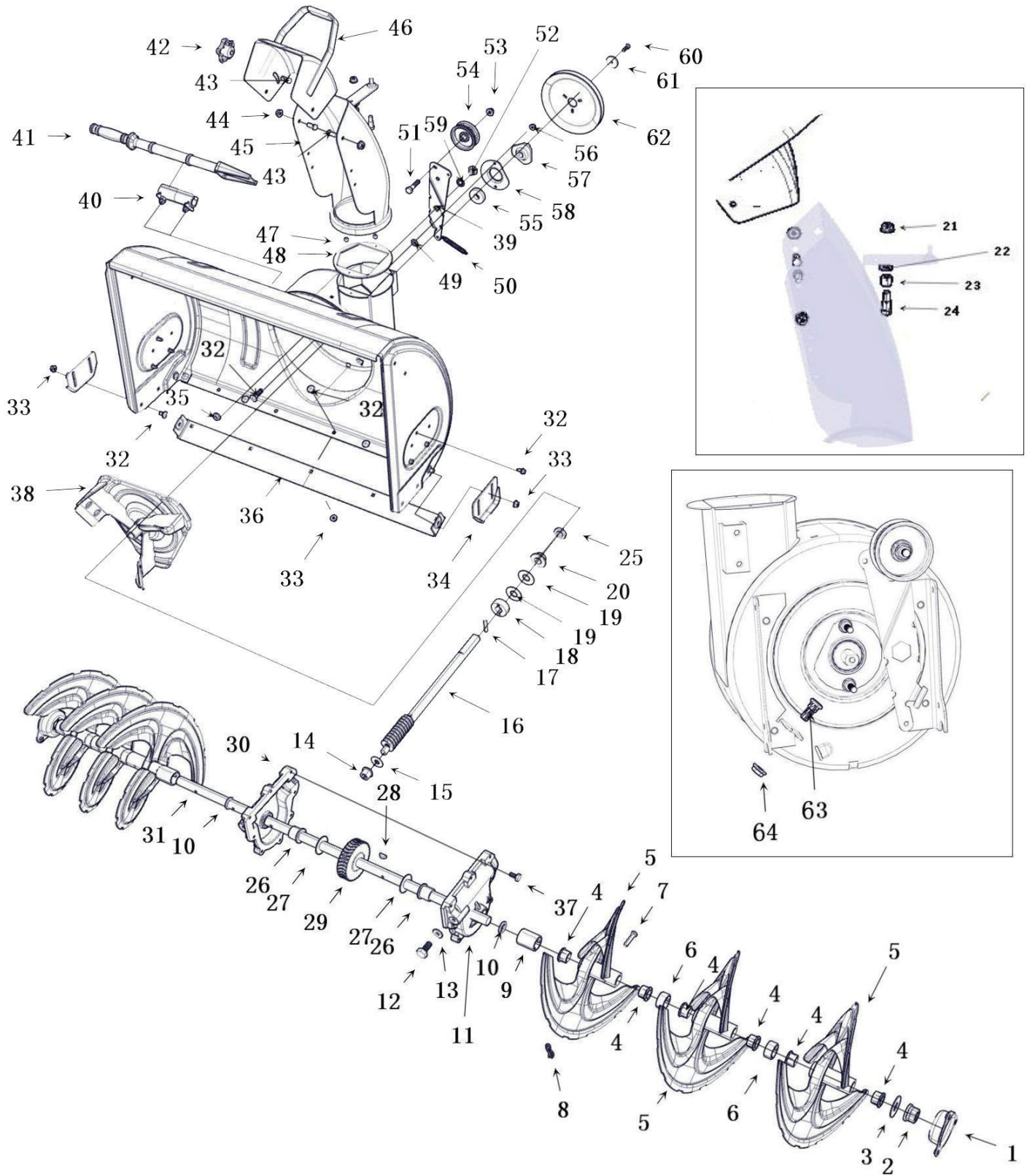
PARTS LIST(ST24)



1. Housing, Bearing	32. Bolt, Carriage, 5/16-18×13-8×8×4 dk=18
2. Bushing, Flange	33. Nut, Hex Look, 5/16-18 S=12.5
3. Washer, Bell, φ38×φ19.2×0.8	34. Shoe, Slide
4. Bushing, Flange	35. Nut, Hex Look, 3/8-16 S=14
5. Spiral Assembly, LH	36. Plate, Shave
6. Spacer	37. Screw, Self-Tapping 1/4-20×19 S=9.5
7. Shear Pin	38. Impeller Assembly
8. Pin, B-style	39. Arm, Tension
9. Washer, Bell, φ38×φ8×4	40. Mount, Clean Out Tool
10. Seal, Oil, Outside	41. Clean Out Tool
11. Housing, Auger, LH Reduced	42. Nut, Flange Lock, Plum
12. Seal, Oil	43. Bolt, Carriage 5/16-18×51 dk=18
13. Hex Screw, 5/16-24×22 S=12.5	44. Nut, Flange Lock, Non-Metallic Pieces 5/16-18 S=12.5
14. Bearing, Flange, Small	45. Chute, Lower
15. Washer, Flat φ28×φ13×1.5	46. Chute, Upper
16. Shaft, Worm	47. Rivet φ4x7
17. Pin, Dowel	48. Plastic Gasket, Chute, Lower
18. Collar, Thrust	49. Only Back-Chip, Plum
19. Pulley Assembly	50. Spring, Tensile φ1.2×φ10×60
20. Bearing, Flange, Big	51. Nut, Hex Look, 3/8-16×13-φ15.8×4.3 S=24
21. Nut, Hex Look, 5/16-18 S=12.5	52. Nut, Hex Look, 3/8-16×13-φ15.8×4.3 S=24
22. Washer, Bell, M8	53. Nut, Hex Look, 3/8-16 S=14
23. Bearing, HK1010	54. Ldler Pulley
24. Nut, Hex Look, 5/16-18×16-φ10×16.5 S=12.6	55. Bearing, 6204ABX-3/3
25. Seal, Oil	56. Nut, Hex Look, 5/16-18 S=12.5
26. Sliding Bearing, Knife Shaft	57. Pulley Adapter
27. Washer, Bell, φ38×φ19.2×0.8	58. Housing, Bearing
28. Key, Hi-pro	59. Gasket, Wave-Type, φ23×φ17×0.5
29. Worm	60. Nut, Hex Look, 3/8-16×16-φ12.5×8 S=19
30. Housing, Auger, RH Reduce	61. Nut, Hex Look, 3/8-16 S=14
31. Cutter Axis	

NOTE: Snow thrower features and components vary by model. NOT all parts listed above and pictured on the previous page are standard equipment.

PARTS LIST(ST32)



1. Housing, Bearing	33. Nut,Hex Look,5/16-18 S=12.5
2. Bushing, Flange	34. Shoe,Slide
3. Washer,Bell,φ38×φ19.2×0.8	35. Nut,Hex Look,3/8-16 S=14
4. Bushing, Flange	36. Plate,Shave
5. Spiral Assembly,LH	37. Screw,Self-Tapping1/4-20×19 S=9.5
6. Spacer,Short	38. Impeller Assembly
7. Shear Pin	39. Arm,Tension
8. Pin ,B-Style	40. Mount,Clean Out Tool
9. Spacer,Long	41. Clean Out Tool
10. Seal,Oil,Outside	42. Nut,Flange Lock, Plum
11. Housing.Auger,LH Reduced	43. Bolt,Carriage,5/16-18×51 dk=18
12. Hex Screw, 3/8-16×13-φ15.8×4.3 S=24	44. Nut,Flange Lock, Non-Metallic Pieces5/16-18 S=12.5
13. Gasket,Asbestos,M10	45. Chute,Lower
14. Bearing,Flange,Small	46. Chute,Upper
15. Washer,Flat,φ28×φ13×1.5	47. Rivetφ4x7
16. Shaft,Worm	48. Plastic Gasket, Chute,Lower
17. Pin,Dowel	49. Only Back-Chip, Plum
18. Collar,Thrust	50. Spring,Tensileφ1.2×φ10×60
19. Washer,Bell,φ38×φ19.2×0.8	51. Nut,Hex Look,3/8-16×13-φ15.8×4.3 S=24
20. Bearing,Flange,Big	52. Nut,Hex Look,3/8-16×13-φ15.8×4.3 S=24
21. Nut,Hex Look,5/16-18 S=12.5	53. Nut,Hex Look,3/8-16 S=14
22. Washer,Bell,M8	54. Ldler Pulley
23. Bearing,HK1010	55. Bearing,6204ABX-3/3
24. Nut,Hex Look,5/16-18×16-φ10×16.5 S=12.6	56. Nut,Hex Look,5/16-18 S=12.5
25. Seal,Oil	57. Pulley Adapter
26. Sliding bearing, Knife Shaft	58. Housring,Bearing
27. Washer,Bell,φ38×φ19.2×0.8	59. Gasket, Wave-type,φ23×φ17×0.5
28. Key,Hi-Pro	60. Nut,Hex Look,5/16-24×22 S=12.5
29. Worm	61. Washer,Bell,φ38×φ8×4
30. Housing,Auger,RH Reduce	62. Pulley,Assembly
31. Cutter Axis	63. Nut,Hex Look3/8-16×16-φ12.5×8 S=19
32. Bolt,Carriage,5/16-18×13-8×8×4 dk=18	64. Nut,Hex Look3/8-16 S=14

NOTE: *Snow thrower features and components vary by model. NOT all parts listed above and pictured on the previous page are standard equipment.*