

OPERATOR'S MANUAL

SNOWTHROWERS

ST7526



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Rev. 00 (5/21/07)
TP 100-4612-00-IS-T

FRONTIER
EQUIPMENT™

INTRODUCTION

Congratulations on your purchase of a Frontier Snowthrower. It has been designed, engineered and manufactured to give you the best possible dependability and performance. However, like all mechanical products, your machine will occasionally require adjustment and maintenance. This handbook should be read before operating or performing any adjustments on your machine.

The instructions in this Operator's Manual are written for a person with some mechanical ability. Like most service books, not all the steps are described. Steps on how to loosen or tighten fasteners are steps anyone can follow with some mechanical ability. Read and follow these instructions before you use the unit.

Know your product: If you understand the unit and how the unit operates, you will get the best performance. As you read this manual, compare the illustrations to the unit. Learn the location and the function of the controls. To help prevent an accident, follow the operating instructions and the safety rules. Keep this manual for future reference.

IMPORTANT: Many units are not assembled and are sold in cartons. It is the responsibility of the owner to make sure the assembly instructions in this manual are exactly followed. Other units are purchased in an assembled condition. On assembled units, it is the responsibility of the owner to make sure the unit is correctly assembled. The owner must carefully check the unit according to the instructions in this manual before it is first used.

The warranty, found in this manual, details the coverage and limitations of this product. **Registration of the warranty is necessary and must be preformed by the dealer within sixty (60) days from the date of retail sale or delivery.** The Warranty Registration Form is located on the Frontier website.

RESPONSIBILITY OF THE OWNER

The responsibility of the owner is to follow the instructions below.



1. Carefully read and follow the rules for safe operation.
2. Follow all the assembly instructions.
3. Inspect the unit.
4. Make sure that the operator of the unit knows how to correctly use all standard and accessory equipment.
5. Operate the unit only with guards, shields, and other safety items in place and working correctly.
6. Correctly adjust the unit.
7. Service the unit only with authorized or approved replacement parts.
8. Complete all maintenance on the unit.

PRODUCT INFORMATION

The owner must be certain that all the product information is included with this unit. This information includes the *INSTRUCTION BOOKS*, the *REPLACEMENT PARTS* and the *WARRANTIES*. This information must be included to make sure state laws and other laws are followed.

**Read And Keep This Book For
Future Reference. This Book Contains Important Information On:
*SAFETY, ASSEMBLY, OPERATION AND MAINTENANCE.***


RULES FOR SAFE OPERATION


  This manual contains safety information to make you aware of the hazards and risks associated with snowthrowers, and how to avoid them. The snowthrower is designed and intended for removal of snow, and should not be used for any other purpose. It is important that you read and understand these instructions, and anyone operating the equipment read and understand these instructions.


WARNING

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

A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

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

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

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

CAUTION, when used **without** the alert symbol, indicates a situation that **could result in damage to the equipment**.













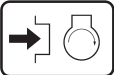

















Hazard Symbols and their Meanings

These symbols are used on your equipment and defined in your operating manual. Review and understand the meanings. The use of one of these symbols combined with a signal word will alert you to potential hazards and how to avoid them.



	Safety Alert – Identifies safety information about hazards that can result in personal injury.	
	Operator's Manual – Read and understand before performing any activity or running equipment.	
	Rotating auger	 Fire
	Rotating impeller	 Explosion
	Toxic fumes	 Shock
	Rotating gears	 Hot surface
	Thrown objects	 Never reach into rotating parts.
	Keep a safe distance from the equipment.	 Recommended ear protection for extended use.
	Shut off engine and remove spark plug connector before performing maintenance or repair work.	

Operating Symbols and their Meanings

These symbols are used on your equipment and defined in your operating manual. It is important that you review and understand the meanings. Failure to understand the symbols might result in harm to you.

	Oil		Forward
	Fuel		Neutral
	On Off		Reverse
	Primer bulb		Throttle
	Choke off		
	Choke on		Ignition Off
	Stop		Ignition Key
	Slow		Push to engage electric start
	Fast		Electric Start
	Engage		Engine Start
	Traction		Engine Run
	Auger Collector		Engine Off
	Auger Clutch		Engage
	Drive Clutch		Disengage
	Heated Grips		
Discharge Chute		Chute Deflector	
	LEFT		UP
	RIGHT		DOWN

RULES FOR SAFE OPERATION

 **WARNING:** This machine is capable of amputating hands and feet and throwing objects. Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of unit, severe personal injury or death to you, or bystanders, or damage to property or equipment. The triangle  in text signifies important cautions or warnings which must be followed.

Safe Operation Practices for Snowthrowers As Recommended By: American National Standards Institute (ANSI)

IMPORTANT: Safety standards require operator presence control to minimize the risk of injury. Your snowthrower is equipped with such controls. Do not attempt to defeat the function of the operator presence control under any circumstances.

Training

1. Read, understand, and follow all instructions on the machine and in the manuals before operating this unit. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instruction.
3. Keep the area of operation clear of all persons, particularly small children, and pets.
4. Exercise caution to avoid slipping or falling especially when operating in reverse.

Preparation

1. Thoroughly inspect the area where the equipment is to be used and remove all doormats, sleds, boards, wires, and other foreign objects.
2. Disengage all clutches and shift into neutral before starting the engine (motor).
3. Do not operate the equipment without wearing adequate winter outer garments. Wear footwear that will improve footing on slippery surfaces. Avoid loose fitting clothing that can get caught in moving parts.
4. Handle fuel with care; it is highly flammable.
 - a. Use an approved fuel container.
 - b. Never add fuel to a running engine or hot engine.
 - c. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors. Replace fuel cap securely and wipe up spilled fuel.
 - d. Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground, away from your vehicle, before filling.
 - e. When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
 - f. Keep nozzle in contact with the rim of the fuel tank or container opening at all times, until refueling is complete. Do not use a nozzle lock-open device.
 - g. Replace gasoline cap securely and wipe up spilled fuel.
 - h. If fuel is spilled on clothing, change clothing immediately.
5. Use extension cords and receptacles as specified by the manufacturer for all units with electric drive motors or electric starting motors.
6. Adjust the collector housing height to clear gravel or crushed rock surfaces.

7. Never attempt to make any adjustments while the engine (motor) is running (except when specifically recommended by manufacturer).
8. Let engine (motor) and snowthrower adjust to outdoor temperatures before starting to clear snow.
9. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair to protect eyes from foreign objects that may be thrown from the machine.

Operation

1. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
2. Exercise extreme caution when operating on or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic.
3. After striking a foreign object, stop the engine (motor), remove the wire from the spark plug, disconnect the cord on electric motors, thoroughly inspect snowthrower for any damage, and repair the damage before restarting and operating the snowthrower.
4. If the unit should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning of trouble.
5. Stop the engine (motor) whenever you leave the operating position, before unclogging the collector/impeller housing or discharge chute and when making any repairs, adjustments, or inspections.
6. When cleaning, repairing, or inspecting, make certain the collector/impeller and all moving parts have stopped. Disconnect the spark plug wire and keep the wire away from the spark plug to prevent accidental starting.
7. Do not run the engine indoors, except when starting the engine and for transporting the snowthrower in or out of the building. Open the outside doors; exhaust fumes are dangerous (containing CARBON MONOXIDE, an ODORLESS and DEADLY GAS).
8. Exercise extreme caution when operating on slopes. Do not attempt to clear steep slopes.
9. Never operate the snowthrower without proper guards, plates, or other safety protective devices in place and working.
10. Never direct the discharge toward people or areas where property damage can occur. Keep children and others away.
11. Do not overload the machine capacity by attempting to clear snow at too fast a rate.
12. Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when operating in reverse.
13. Disengage power to the collector/impeller when snowthrower is transported or not in use.
14. Use only attachments and accessories approved by the manufacturer of the snowthrower (such as cabs, tire chains, etc.).
15. 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.
16. Never touch a hot engine or muffler.

RULES FOR SAFE OPERATION

- Never operate the snowthrower near glass enclosures, automobiles, window wells, drop-offs, and the like without proper adjustment of the snow discharge angle.
- Never direct discharge at bystanders or allow anyone in front of the unit.
- Never leave a running unit unattended. Always disengage the auger and traction controls, stop engine, and remove keys.
- Do not operate the unit while under the influence of alcohol or drugs.
- Keep in mind the operator is responsible for accidents occurring to other people or property.
- Data indicates that operators, age 60 years and above, are involved in a large percentage of power equipment-related injuries. These operators should evaluate their ability to operate the unit safely enough to protect themselves and others from injury.
- DO NOT wear long scarves or loose clothing that could become entangled in moving parts.
- Snow can hide obstacles. Make sure to remove all obstacles from the area to be cleared.

Children

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

- Keep children out of the area and under the watchful care of another responsible adult.
- Be alert and turn off if children enter the area.
- Never allow children to operate the unit.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

Clearing A Clogged Discharge Chute

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

To clear the chute:

- SHUT OFF THE ENGINE.
- Wait 10 seconds to be sure the impeller blades have stopped rotating.
- Always use a clean-out tool, not your hands.

Service, Maintenance And Storage

- Check shear bolts and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.
- Never store the machine with fuel in the tank inside a building where ignition sources are present such as hot water and space heaters, or clothes dryers. Allow the engine to cool before storing in any enclosure.
- Always refer to operator's manual for important details if the snowthrower is to be stored for an extended period.

- Maintain or replace safety and instruction labels as necessary.
- Run the machine a few minutes after throwing snow to prevent freeze-up of the collector/impeller.
- If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
- Always observe safe refueling and fuel handling practices when refueling the unit after transportation or storage.
- Always follow the engine manual instructions for storage preparations before storing the unit for both short and long term periods.
- Always follow the engine manual instructions for proper start-up procedures when returning the unit to service.
- Maintain or replace safety and instruction labels as necessary.
- Keep nuts and bolts tight and keep equipment in good condition.
- Never tamper with safety devices. Check their proper operation regularly and make necessary repairs if they are not functioning properly.
- Components are subject to wear, damage, and deterioration. Frequently check components and replace with manufacturer's recommended parts, when necessary.
- Check control operation frequently. Adjust and service as required.
- Use only factory authorized replacement parts when making repairs.
- Always comply with factory specifications on all settings and adjustments.
- Only authorized service locations should be utilized for major service and repair requirements.
- Never attempt to make major repairs on this unit unless you have been properly trained. Improper service procedures can result in hazardous operation, equipment damage and voiding of manufacturer's warranty.
- Check shear bolts (pins) and other bolts at frequent intervals for proper tightness to be sure the equipment is in safe working condition.

Emissions

- Engine exhaust from this product contains chemicals known, in certain quantities, to cause cancer, birth defects, or reproductive harm.
- If available, look for the relevant Emissions Durability Period and Air Index information on the engine emissions label.

Ignition System

- This spark ignition system complies with Canadian ICES-002.

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SAFETY DECALS

WARNING: If safety decals are damaged or missing, replace immediately.

Look for this symbol to indicate important safety precautions. This symbol indicates: "Attention! Become Alert! Your Safety Is At Risk."

Before operation of your snowthrower, read the safety decals as shown on your snowthrower. The cautions and warnings are for your safety. To avoid a personal injury or damage to your snowthrower, understand and follow all safety decals. If you have any questions regarding the meaning or how to comply with the instructions, do not operate until you understand the purpose for the warning or danger given in the safety decal. If you do not understand the meaning, then thoroughly read all safety and operation instructions in this OPERATOR'S MANUAL or contact your local dealer.

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

Identifying Your Snowthrower

The snowthrower has two (2) identifying numbers: (1) unit model number: (2) unit serial number. The two preceding numbers are required to insure that the proper replacement parts are obtained when required. If you have any questions concerning parts, service, or technical data, contact the dealer where the unit was purchased. For complete warranty information refer to the warranty in the OWNER'S INFORMATION section of this manual.

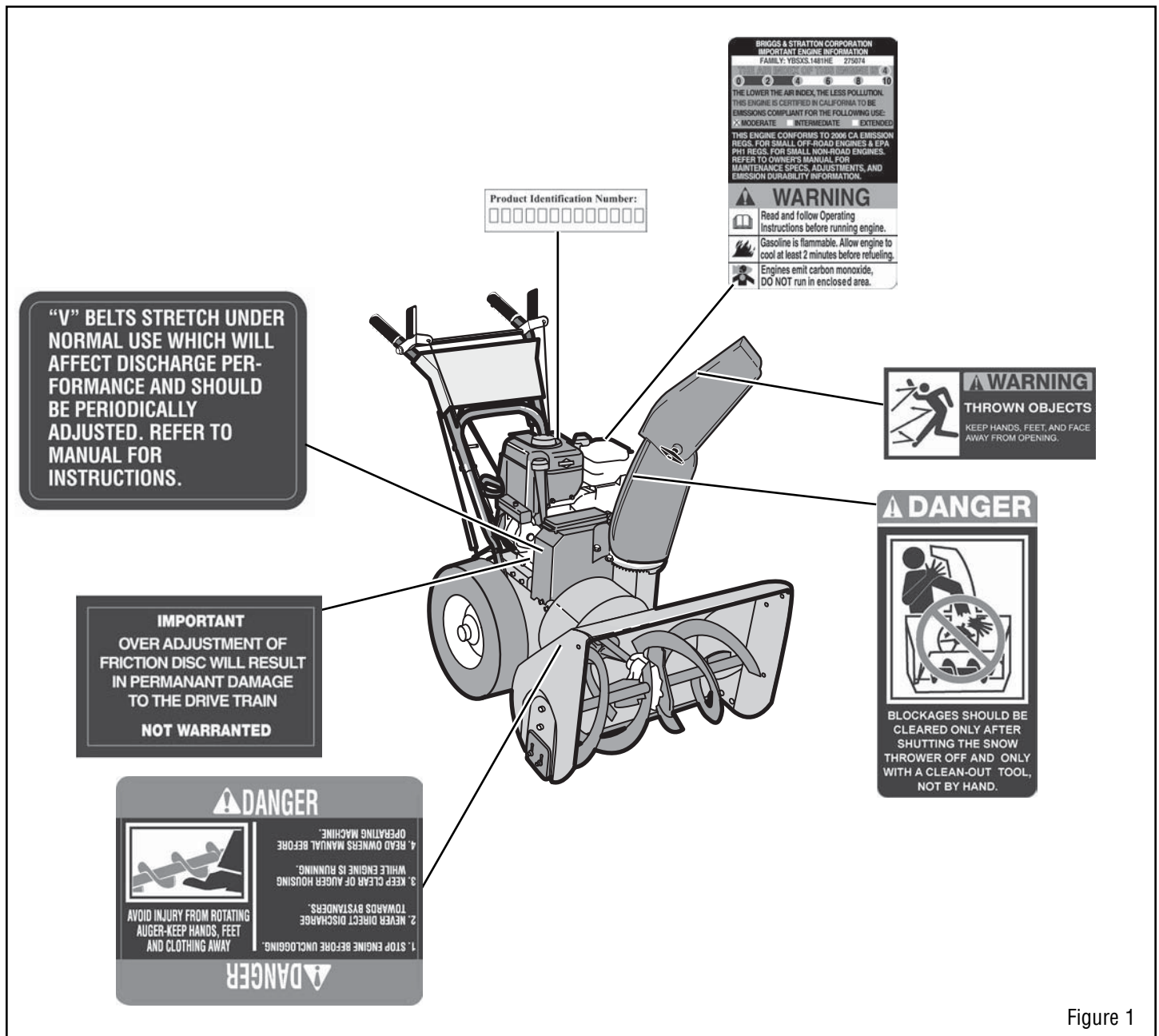


Figure 1

OWNER'S INFORMATION

FRONTIER EQUIPMENT LIMITED WARRANTY POLICY

Effective June 1, 2006

What is covered:

Briggs & Stratton Power Products warrants to the original purchaser that each new product or service replacement part is free from defects in material and workmanship, under normal residential use and service, for the periods listed. The warranty period begins at the purchase date and is subject to the conditions provided in this policy. Subject to the terms noted in this Limited Warranty Policy Briggs & Stratton will, at its option, repair or replace at no cost to the original purchaser any part covered by this Limited Warranty Policy during the applicable warranty period. Electrical components and normal wear components are warranted to be free of material and workmanship defects at the time of sale. This warranty covers the cost of the part only. However, if the part was installed by an authorized John Deere/Frontier service center, the cost of the part as well as the labor to install will be covered.

What is not covered:

This warranty does not cover normal wear items. Normal wear items are defined as drive belts, drive discs, shear pins, tires, and headlights. These parts are warranted to be free from defects in materials and workmanship as delivered with the product, or as sold as over the counter service replacement parts. Any claim for repair or replacement of normal wear parts must be made within 30 days of the date of purchase. No claims involving damage from material use, abuse, or misuse will be honored. This warranty does not cover third party produced accessories or components (such as electric starters, engines, etc.) that are warranted through the original manufacturer except as noted in the chart below. These third party items are warranted and serviced through the manufacturer's own authorized field service outlets. Consult the manufacturer's warranty documentation for coverage related to these particular items. If you are uncertain whether your unit contains one or more of these parts, consult your dealer prior to purchase.

This warranty does not cover transportation of the unit to or from a repair center. It does not cover the cost of non-Briggs service parts or damages resulting from their use. This warranty does not apply to any unit that has been tampered with, altered, misused, abused, or used for rental or commercial/professional uses. The duration for rental or commercial/professional use is noted below. The warranty does not cover minor mechanical adjustments which are not due to any defect in material or workmanship. For assistance in making adjustments, refer to the operator's manual.

Terms & Conditions

To make a claim under this warranty, return the unit along with your proof of purchase to an authorized John Deere/Frontier dealer (Briggs & Stratton authorized). If you return the entire unit, the service center will repair the unit. Contingent on receipt of prior authorization, you may return the defective part only for repair or replacement of the defective part. To locate the nearest John Deere/Frontier dealer, check your local yellow page listings or go to www.johndeere.com.

No other warranty or implied warranty by the manufacturer exists except where required by law.

Briggs & Stratton's liability arising out of warranties, representations, instructions, or defects from any cause shall be limited exclusively to repair or replacing parts under the conditions in this warranty, and in no event will Briggs & Stratton be liable for incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights that vary from state to state.

FRONTIER BRANDED PRODUCT WARRANTY COVERAGE (Consumer Use Only)		
Category	Warranty Administrator	Coverage
WALK-BEHIND SNOWTHROWERS BSPP Produced with Briggs & Stratton Engine	Chassis – Frontier Engine – Frontier/Briggs & Stratton	Chassis – 3 Years Engine – 3 Years
WALK-BEHIND SNOWTHROWERS BSPP Produced with Tecumseh Engine	Chassis – Frontier Engine – Frontier/Tecumseh Products Co.	Chassis – 3 Years Engine – 2 Years

FRONTIER BRANDED PRODUCT WARRANTY COVERAGE (Commercial/professional use)		
Category	Warranty Administrator	Coverage
WALK-BEHIND SNOWTHROWERS BSPP Produced with Briggs & Stratton Engine	Chassis – Frontier Engine – Frontier/Briggs & Stratton	Chassis – 90 Days Engine – 90 Days
WALK-BEHIND SNOWTHROWERS BSPP Produced with Tecumseh Engine	Chassis – Frontier Engine – Frontier/Tecumseh Products Co.	Chassis – 90 Days Engine – 90 Days

FOR YOUR RECORDS

DATE PURCHASED: _____
 MODEL NO: _____
 SERIAL NO: _____
 STORE WHERE PURCHASED: _____
 ADDRESS: _____
 CITY: _____ STATE: _____
 TELEPHONE: _____

Record this information about your unit so that you will be able to provide it in case of loss or theft.

ASSEMBLY

TOOLS REQUIRED FOR ASSEMBLY

- 1 – Knife
- 2 – 1/2" wrenches (or adjustable wrenches)
- 2 – 9/16" wrenches (or adjustable wrenches)
- 2 – 3/4" wrenches (or adjustable wrenches)
- 1 – 3/8" wrenches (or adjustable wrenches)
- 1 – Pair pliers or screw driver (to spread cotter pin)

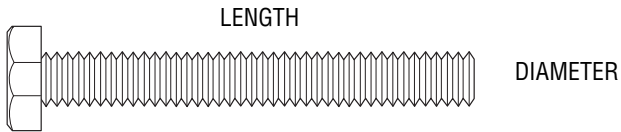
CONTENTS OF SHIPPING CARTON

- 1 – Snowthrower
- 1 – Container of Fuel Stabilizer (Located in Parts Bag)
- 1 – Snow Chute Assembly
- 1 – Crank Assembly
- 1 – Parts Bag

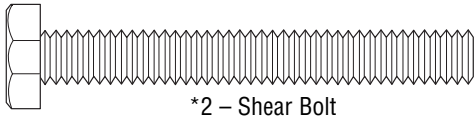


WARNING: Always wear safety glasses or eye shields while assembling snowthrower.

HOW TO MEASURE SCREW SIZE



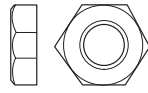
PARTS BAGS CONTENTS:



*2 – Shear Bolt



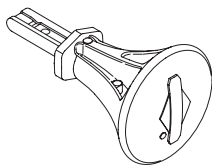
*2 – Spacer



*2 – Nut



1 – Shift Lever Knob
(not actual size)



1 – Ignition Key

* Non Assembly parts are found in toolbox located on top of belt cover.

ASSEMBLY

Figure 2 shows the snowthrower in the shipping position.

Figure 3 shows the snowthrower completely assembled.

Reference to right and left hand side of the snowthrower is from the operator's position at the handle.

UNPACKING

1. Locate the two tear tabs at the bottom of the carton.
2. Pull the tear tape no more than twelve inches (30.48 cm) at a time. Regrasp tape next to the carton and pull again. Repeat until all the tape is torn off.
3. After the tape has been completely removed from the carton, remove the carton from the base. Cut all four corners and fold the sides toward the center for easy disposal.
4. Remove the plastic bag that covers the unit.
5. Locate and remove the parts bag.

NOTE: Set the fuel stabilizer aside until adding gasoline to the fuel tank. We recommend that fuel stabilizer is added to the fuel each time that gasoline is added to the fuel tank.

6. For shipping purposes, the **height adjust skids** are attached to the pallet. Remove the **screw** that secures each **height adjust skid** to the pallet (see Figure 3).
7. Roll the snowthrower off the carton by pulling on the lower handle.

CAUTION: DO NOT back over cables.

8. Remove the packing material from the handle assembly.
9. Cut ties securing the clutch control cables to the lower handle.

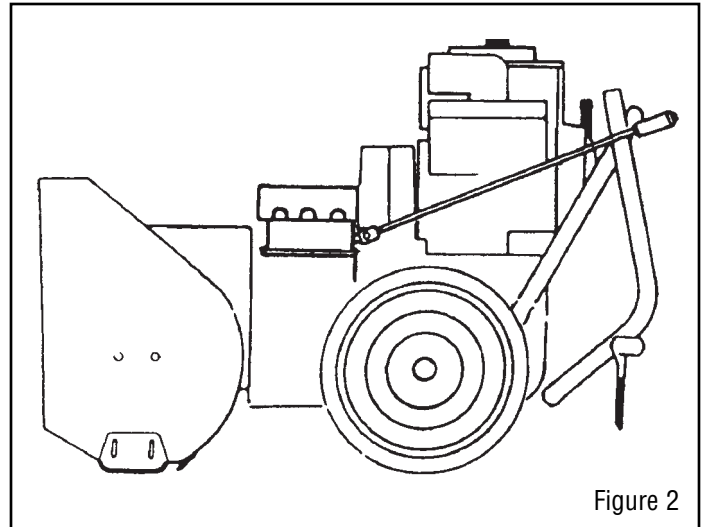


Figure 2

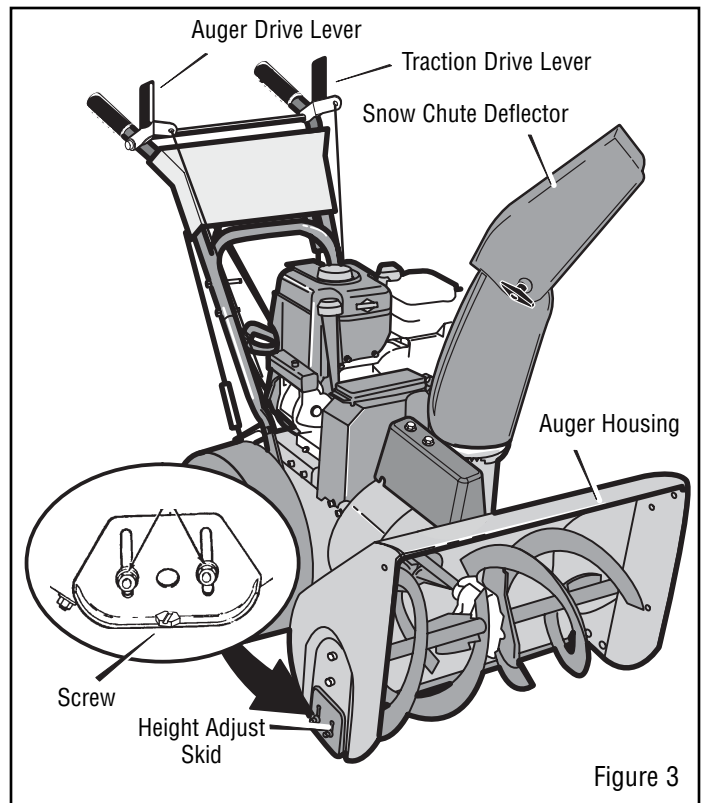


Figure 3

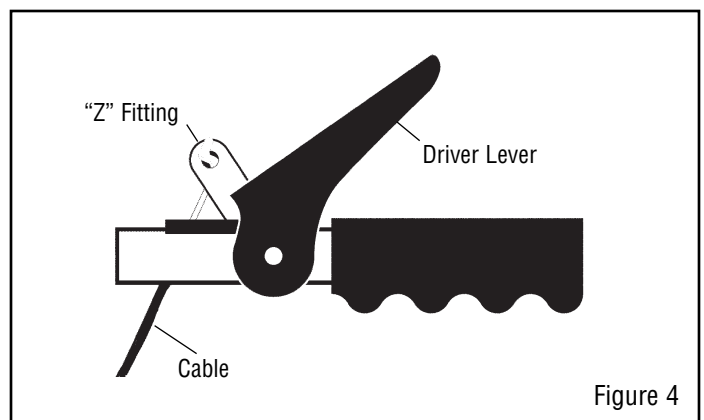


Figure 4

ASSEMBLY

UPPER HANDLE AND CRANK ASSEMBLY

1. Loosen, but do not remove the screws, flatwashers, lockwashers and hex nuts in the upper holes of the lower handle.
2. Remove the fasteners and the crank assembly eyebolt from the lower holes of the lower handle.
3. Raise upper handle into operating position. Upper handle should be to the outside of the lower handle.

NOTE: Make sure the cables are not caught between the upper and lower handle.

4. Install the fasteners and the crank assembly eyebolt that were removed in step 2. DO NOT tighten until all fasteners are in place.
5. Attach the crank rod to the universal joint assembly with the hair pin (see Figure 6).
6. Tighten nut on eye bolt. Make sure eye bolt is properly aligned and the crank can freely rotate.
7. Tighten all handle bolts.

NOTE: Make sure crank does not touch carburetor cover.

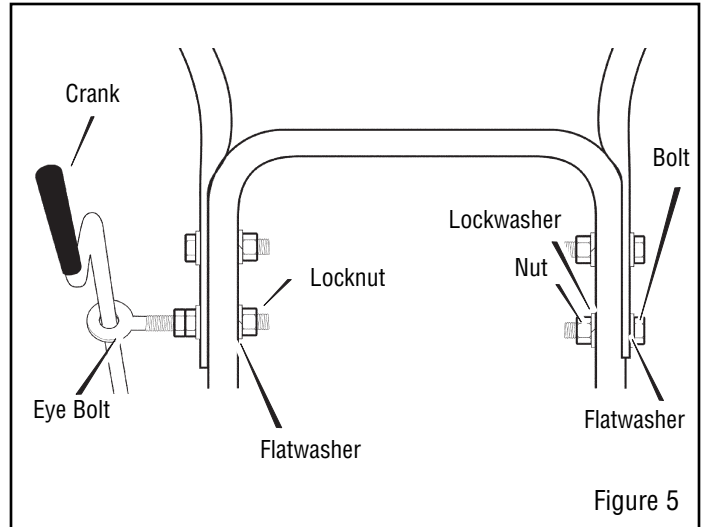


Figure 5

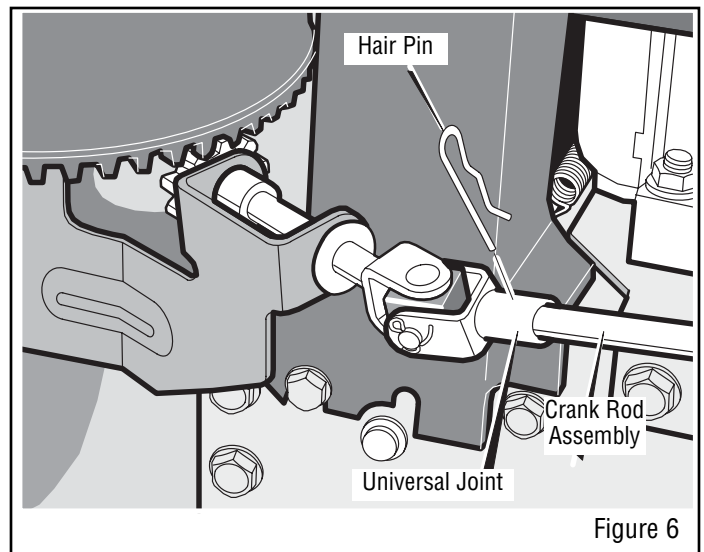


Figure 6

CHECK THE CABLES

1. If control cables have become unattached from motor mount frame, reconnect cables as shown in Figure 7.
2. For cable adjustments, see "How To Check And Adjust The Cables" in the MAINTENANCE section.

HOW TO SET THE LENGTH OF THE CABLES

The cables were adjusted at the factory and no adjustments should be necessary. However, after the handles are put in the operating position, the cables can be too tight or too loose. If an adjustment is necessary, see "How To Check And Adjust The Cables" in the MAINTENANCE section.

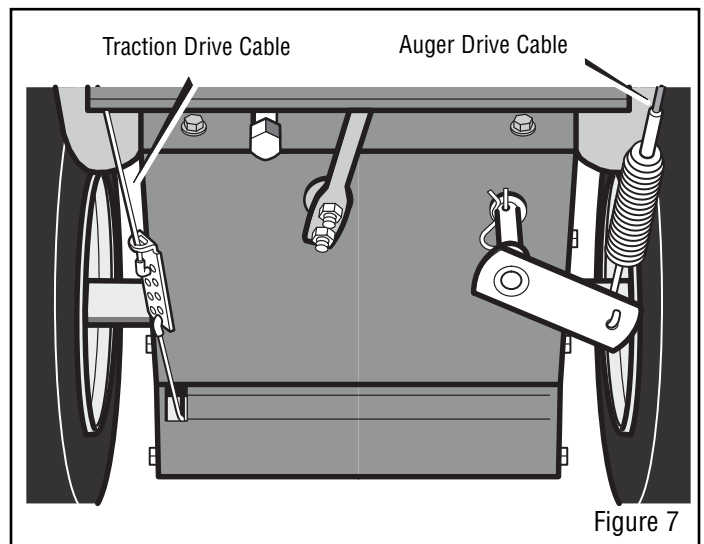


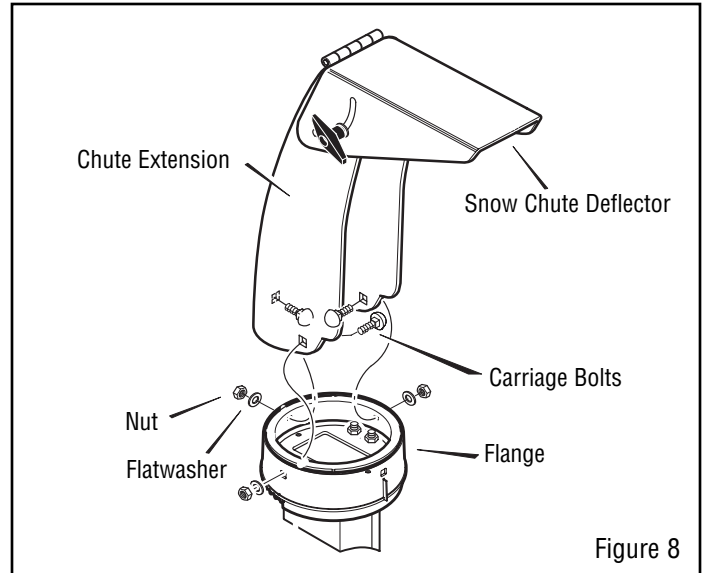
Figure 7

ASSEMBLY

SNOW CHUTE ASSEMBLY

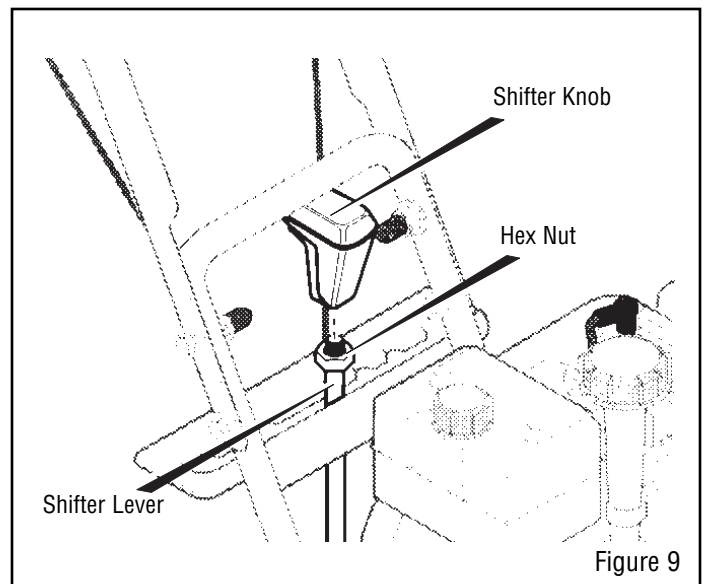
1. Position the snow chute to the **INSIDE** of the snow chute flange. Align the three holes in the snow chute with holes in snow chute flange (see Figure 8).
2. Place three 5/16–18 carriage bolts from inside of chute as shown in Figure 8 (hardware is found in parts bag).
3. Place three 5/16–18 flatwashers and three 5/16–18 nuts on outside of flange.
4. First, tighten the rear carriage bolt. Then, tighten the remaining two carriage bolts. Make sure all carriage bolts are tight.

NOTE: DO NOT over tighten carriage bolts.



SHIFTER LEVER KNOB ASSEMBLY

1. Thread the **shifter knob** onto the threaded end of the shifter lever until it is snug against the hex nut and the lip is pointed away from the engine (see Figure 9). On some models, the **shifter knob** is attached.
2. Tighten hex nut against the bottom of the shifter lever knob.



CHECK THE TIRES

The tires were over inflated for shipment. Check the air pressure in the tires. See the sidewall of the tire for the proper inflation.

IMPORTANT! BEFORE YOU START OPERATING

- Check the fasteners. Make sure all fasteners are tight.**
- On electric start models, the unit was shipped with the starter cord plugged into the engine. Before operating, unplug the starter cord from the engine.**

NOTE: This snowthrower was shipped WITH OIL in the engine. See “Before Starting Engine” instructions in the Operation section of this manual before starting engine.

OPERATION

READ THIS OPERATOR'S MANUAL AND SAFETY RULES BEFORE OPERATING YOUR SNOWTHROWER. Compare the illustrations with your SNOWTHROWER to familiarize yourself with the location of various controls and adjustments. Save this manual for future reference.

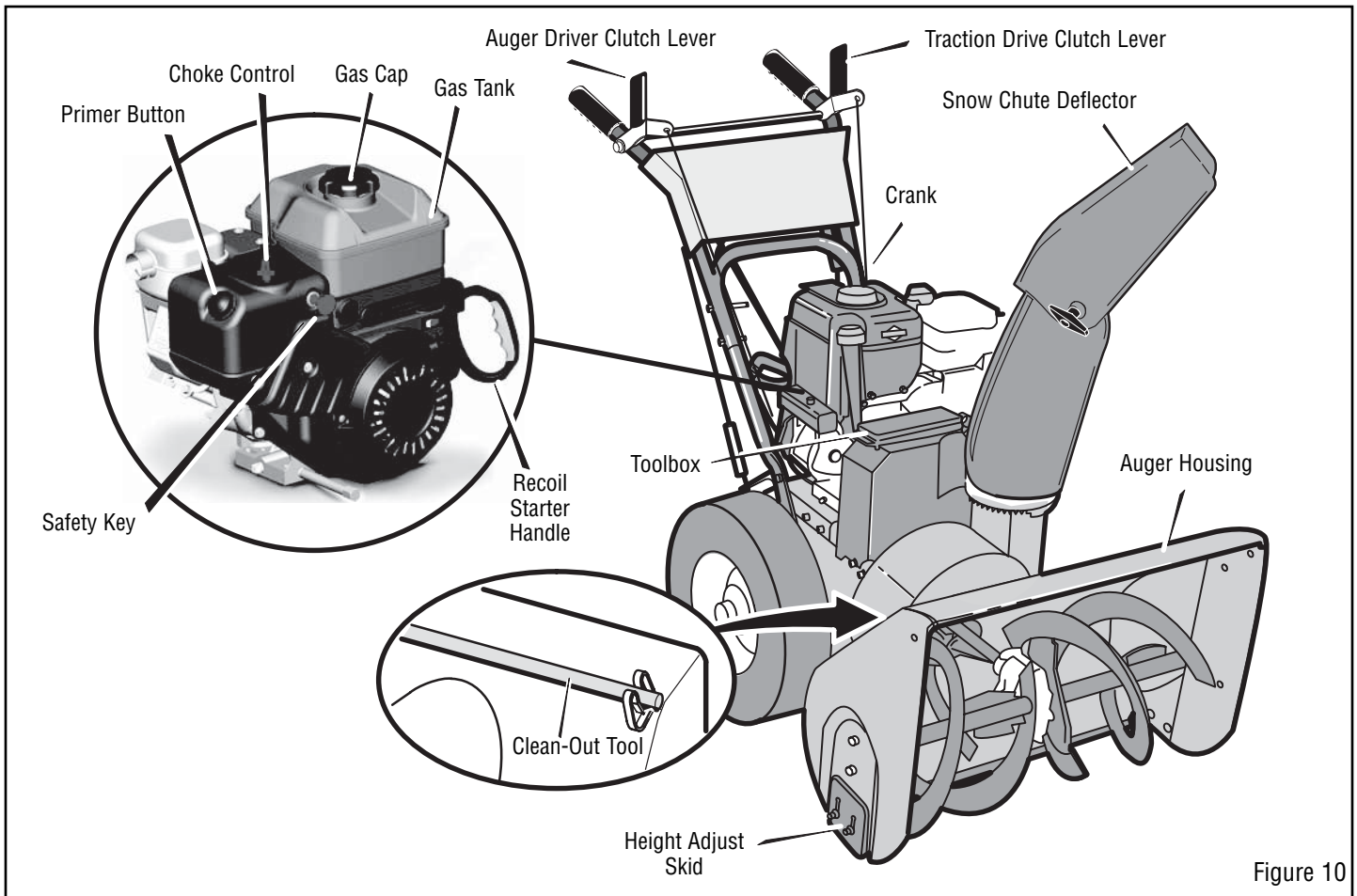


Figure 10

ENGINE AND SNOWTHROWER CONTROLS

ENGINE CONTROLS

Choke Control – Used to start a cold engine.

Electric Start Button – Used to start the engine using the 120 volt electric starter.

Primer Button – Used to inject fuel directly into carburetor manifold to insure fast starts in cool weather.

Safety Key – Must be inserted to start engine. Pull out to stop. Do not turn safety key.

Starter Handle – Starts the engine manually.

SNOWTHROWER CONTROLS

Speed Select Lever – Allows the operator to use one of six (6) forward and two (2) reverse speeds. To shift, move speed select lever to desired position.

NOTE: Do not move speed select lever while Traction Drive Clutch is engaged. This may result in severe damage to drive system.

Auger Drive Clutch Lever – Used to engage and disengage the auger and impeller. To engage push down, to disengage release.

Traction Drive Clutch Lever – Used to propel snowthrower forward or reverse. Push down to engage, release to disengage.

Snow Chute Deflector – Changes the direction the snow is thrown.

Crank – Used to change direction of the snow discharge. Turn handle clockwise to turn chute to right. Turn handle counter clockwise to turn chute to left.

Height Adjust Skid – Used to adjust ground clearance of auger housing.

Toolbox – Spare shear bolts and spacers are located in toolbox.

Clean-Out Tool – Use the clean-out tool to remove snow and debris from the discharge chute and the auger housing.

Drift Cutters – Cuts a path through snow higher than the auger housing.

OPERATION



The operation of any snowthrower can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields before beginning snowthrower Operation. We recommend standard safety glasses or Wide Vision Safety Mask for over spectacles.

SNOWTHROWER OPERATION

The most effective use of the snowthrower will be established by experience, taking into consideration the terrain, wind conditions and building location which will determine the direction of the discharge chute.

NOTE: Do not throw snow toward a building as hidden objects could be thrown with sufficient force to cause damage.

TO STOP YOUR SNOWTHROWER

1. To stop throwing snow, release the **auger drive lever** (see Figure 11).
2. To stop the wheels, release the **traction drive lever**.
3. To stop the engine, push the **throttle control lever** to off and pull out the **ignition key**.

TO CONTROL SNOW DISCHARGE

1. Rotate the **crank** to set the direction (left to right) of the discharge chute (see Figure 10).
2. Adjust the **snow chute deflector**. Loosen the **wing nut** on the side of the **snow chute deflector**. Raise the **snow chute deflector** for more distance or lower for less distance. Tighten **wing nut** (see Figure 12).

HOW TO MOVE FORWARD AND BACKWARD

1. Start the engine. See "To Start Engine" in this section.

NOTE: Always release the traction drive lever before moving the speed select lever.

2. Ground speed is determined by snow conditions. Set the **speed select lever** (see Figure 13) in one of the following positions.

- 1-2 Wet, Heavy, Slushy, Extra Deep
- 3 Moderate
- 4-5 Very Light
- 6 Transport Only

IMPORTANT: Before operating, make sure the area in front of snowthrower is clear of bystanders or obstacles.

3. Engage the **traction drive lever** (see Figure 11). As the snowthrower starts to move, maintain a firm hold on the handles and guide the snowthrower along the cutting path. Do not attempt to push the snowthrower.
4. To stop forward motion, release the **traction drive lever**.
5. To move the snowthrower backwards, move the **speed select lever** into either first or second reverse position and engage the **traction drive lever**.

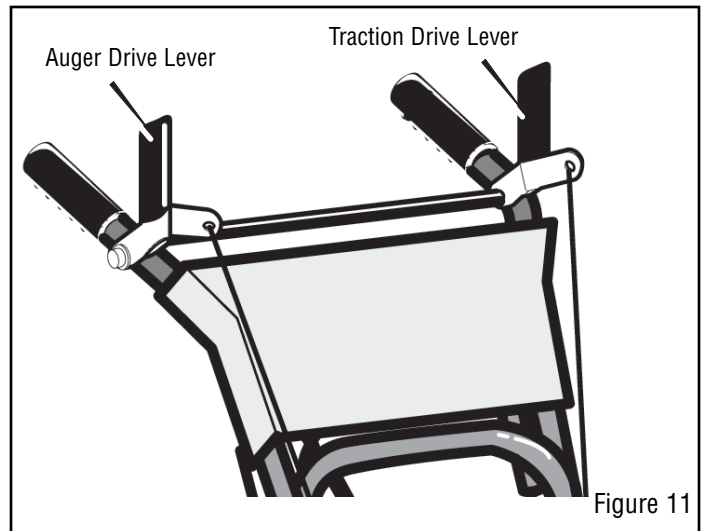


Figure 11

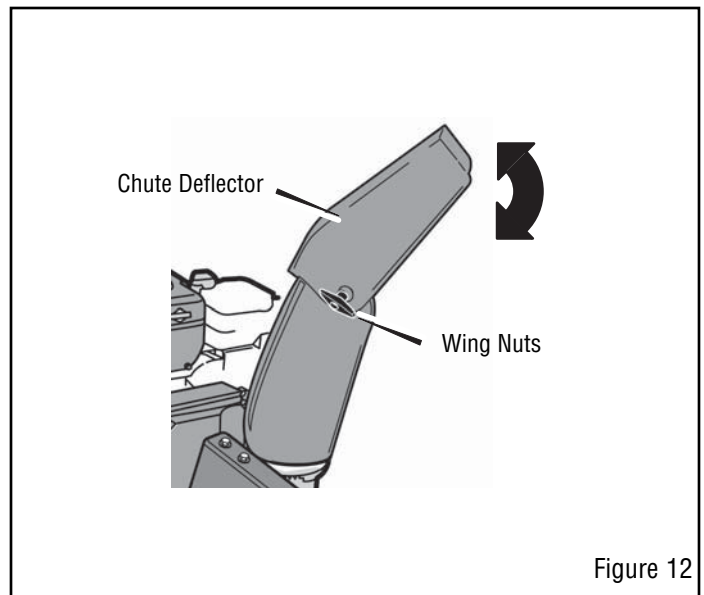


Figure 12

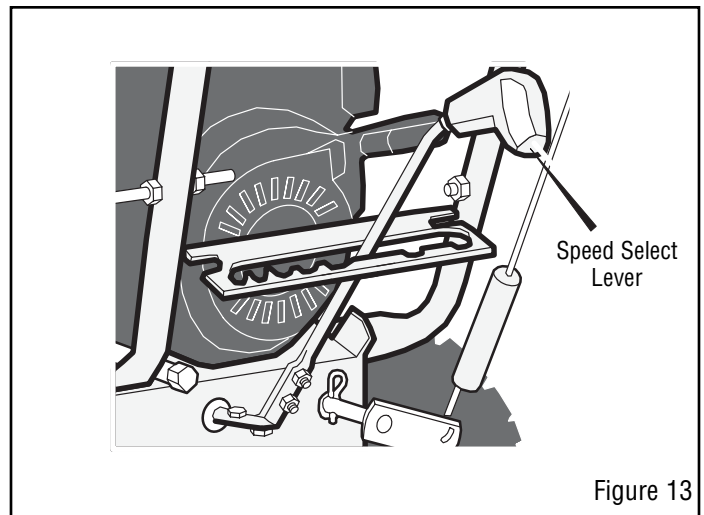


Figure 13

OPERATION

TO THROW SNOW

1. Push down the **auger driver lever (right hand)**. See Figure 11.
2. To stop throwing snow, release the **auger drive lever**.

NOTE: When clearing wet, heavy snow, it is recommended that the ground speed of the unit be reduced, maintain full throttle and do not attempt to clear the full width of the unit.

For additional operating instructions see "Operating Tips" in this section.

WARNING: Read Operator's Manual before operating machine. This machine can be dangerous if used carelessly.

Never operate the snowthrower without all guards, covers, and shields in place.

Never direct discharge towards windows or allow bystanders near machine while engine is running.

Stop the engine whenever leaving the operating position.

Disconnect spark plug before unclogging the impeller housing or the discharge chute and before making repairs or adjustments.

When leaving the machine, remove the ignition key. To reduce the risk of fire, keep the machine clean and free from spilled gas, oil and debris.

WARNING: Never run engine indoors or in an enclosed, poor ventilated area. Engine exhaust contains **CARBON MONOXIDE**, an **ORDERLESS** and **DEADLY GAS**.

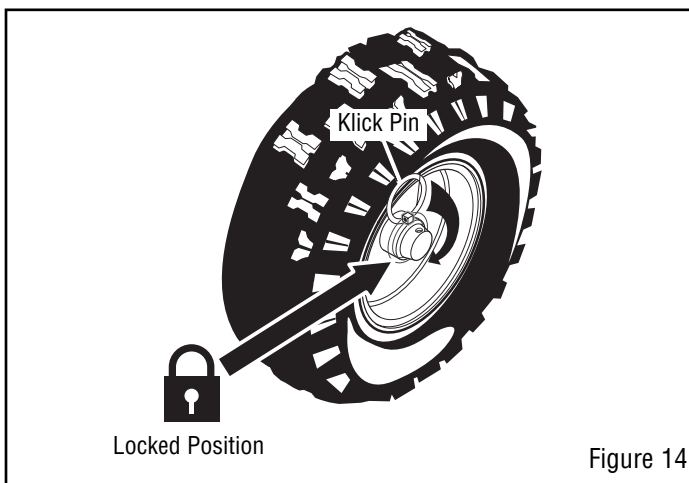
Keep hands, feet, hair and loose clothing away from any moving parts on engine and snowthrower.

Temperature of muffler and nearby areas can exceed 150°F (66°C). Avoid these areas.

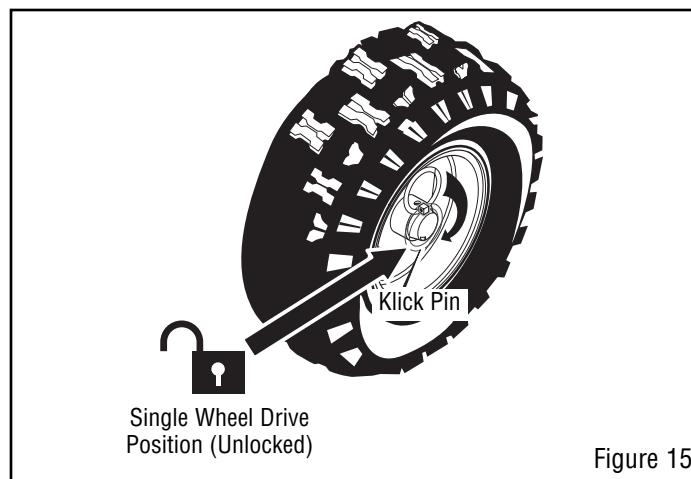
DO NOT allow children or young teenagers to operate or be near snowthrower while it is operating.

WHEEL LOCK OUT PIN

1. The right wheel is secured to the axle with a klick pin. This unit was shipped with this klick pin in the locked position (Figure 14).



2. For ease of maneuverability when lighter conditions prevail, remove klick pin from wheel locked position and insert into single wheel drive (unlocked) position (Figure 15). Make sure that the klick pin is in the single wheel drive position of the axle only and not through the locked position.



NOTE: Check tire pressure. See side of tire for maximum inflation. Do not exceed listed maximum pressure.

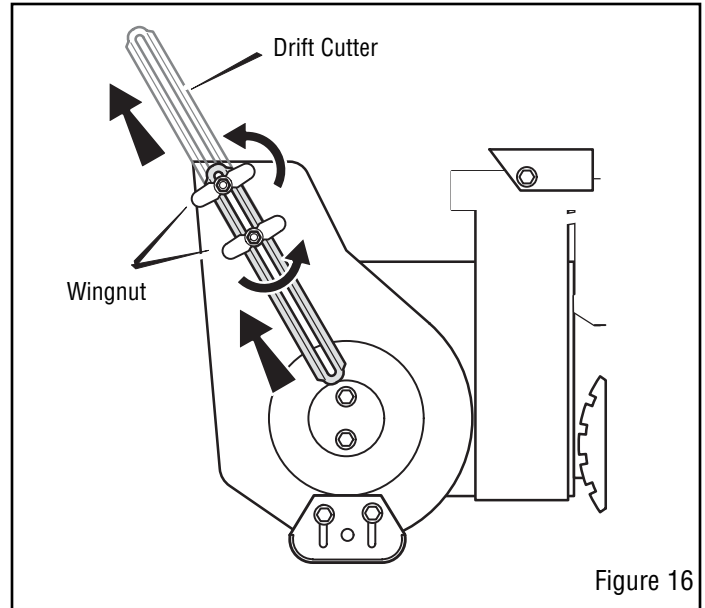
OPERATION

HOW TO SET THE DRIFT CUTTERS

(OPTIONAL ACCESSORY ON SOME MODELS)

Drift cutters are used to cut a path through snow deeper than the auger housing.

1. Loosen the **wingnuts** that secure the **drift cutters** to the auger housing (see Figure 16).
2. Raise the **drift cutters** to the desired height.
3. Tighten the **wingnuts**.



OPERATION

BEFORE STARTING ENGINE

CHECK THE ENGINE

NOTE: The engine was shipped from the factory filled with oil. Check the level of the oil. Add oil as needed.

1. Make sure the unit is level. Use a high quality detergent oil classified "For Service SG, SH, SJ, SL, or higher".
2. Remove the oil fill cap/dipstick and wipe with a clean cloth (see Figure 17).
3. Insert the oil fill cap/dipstick and turn clockwise to tighten.
4. Remove the oil fill cap/dipstick and check the oil.

NOTE: Do not check the level of the oil while the engine runs.

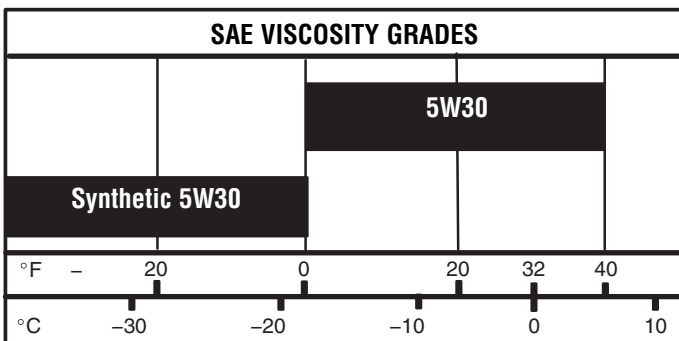
5. If necessary, add oil until the oil reaches the FULL mark on the oil fill cap/dipstick (see Figure 17). Do not add too much oil.
6. Tighten the fill cap/dipstick securely each time you check the oil level.

NOTE: For extreme cold operating conditions of 0°F (-18°C) and below, use a synthetic 5W30 motor oil for easier starting.

NOTE: S.A.E. 5W30 motor oil may be used to make starting easier in areas where the temperature is 20°F (-7°C) to 0°F (-18°C). Synthetic 5W30 is acceptable for all temperatures. DO NOT mix oil with gasoline.

NOTE: SEE CHART FOR OIL RECOMMENDATION.

TEMPERATURE	TYPE OF OIL
0°F (-18°C) and above	S.A.E. 5W30
0°F (-18°C) and below	synthetic 5W30



FILL GAS

This engine is certified to operate on gasoline. Exhaust Emission Control System: EM (Engine Modifications)

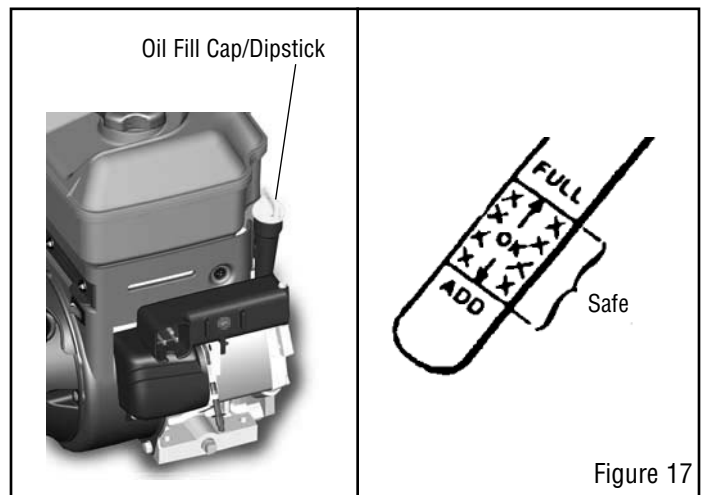
1. Fill the fuel tank with fresh, clean, unleaded regular, unleaded premium, or reformulated automotive gasoline with a minimum of 85 octane along with a fuel stabilizer (follow instructions on fuel stabilizer package). **DO NOT** use leaded gasoline. We recommend that fuel stabilizer be added to the fuel each time that gasoline is added to the fuel tank.

NOTE: Winter grade gasoline has higher volatility to improve starting. Be certain container is clean and free from rust or other foreign particles. Never use gasoline that may be stale from long periods of storage in the container.

CAUTION: DO NOT use gasoline containing any amount of alcohol as it can cause serious damage to the engine or significantly reduce the performance.

WARNING: Gasoline is flammable. Always use caution when handling or storing gasoline. Turn engine off and let engine cool at least two minutes before removing the gas cap. Do not add gasoline to the fuel tank while snowthrower is running, hot, or when snowthrower is in an enclosed area. Keep away from open flame, electrical sparks and **DO NOT SMOKE** while filling the fuel tank. Never fill the fuel tank completely; but fill the fuel tank to within 1-1/2 inches (3.8 mm) from the top to provide space for the expansion of the fuel. Always fill fuel tank outdoors and use a funnel or spout to prevent spilling. Make sure to wipe up any spilled fuel before starting the engine.

Store gasoline in a clean, approved container, and keep the cap in place on the container. Keep gasoline in a cool well ventilated place; never in the house. Never buy more than a 30 day supply of gasoline to assure volatility. Gasoline is intended to be used as a fuel for internal combustion engines; therefore, do not use gasoline for any other purpose. Since many children like the smell of gasoline, keep it out of their reach because the fumes are dangerous to inhale, as well as being explosive.



OPERATION

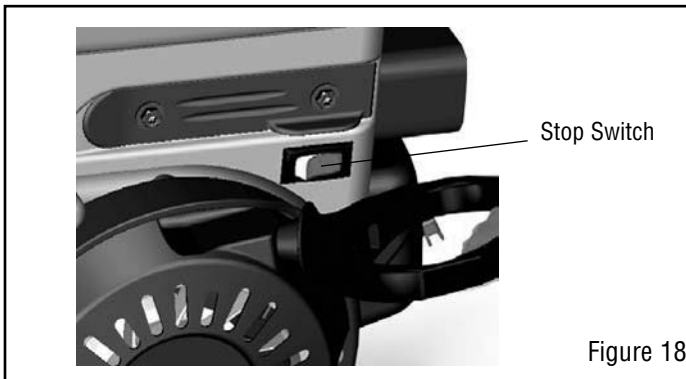
BEFORE STOPPING THE ENGINE

Run the engine for a few minutes to help dry off any moisture on the engine.

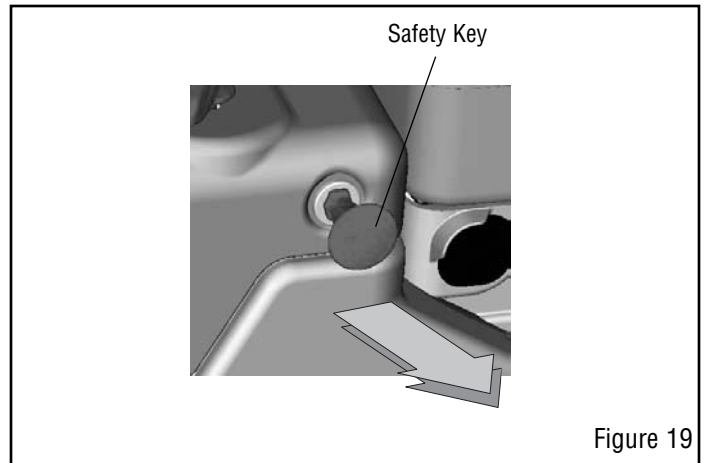
TO STOP ENGINE

CAUTION: To stop the engine, do not move the choke control to **CHOKE** position. Backfire or engine damage can occur.

1. Push the **stop switch** to the OFF position.



2. Pull out the **safety key**.



TO START ENGINE

Be sure that engine oil is at FULL mark on the oil fill cap/dipstick. The snowthrower engine is equipped with a 120 volt AC electric starter and recoil starter. Before starting the engine, be certain that you have read the following information.

If engine floods, set the choke to the OPEN/RUN position and crank until the engine starts.

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

- When starting the engine, slowly pull the starter cord until resistance is felt. Then, rapidly pull the starter cord.
- Make sure components; such as impellers, pulleys or sprockets, are securely attached.

WARNING: The electric starter is equipped with a three-wire power cord and plug designed to operate on 120 volt AC household current. The power cord must be properly grounded at all times to avoid the possibility of electric shock which can cause injury to the operator. Follow all instructions carefully as set forth below:

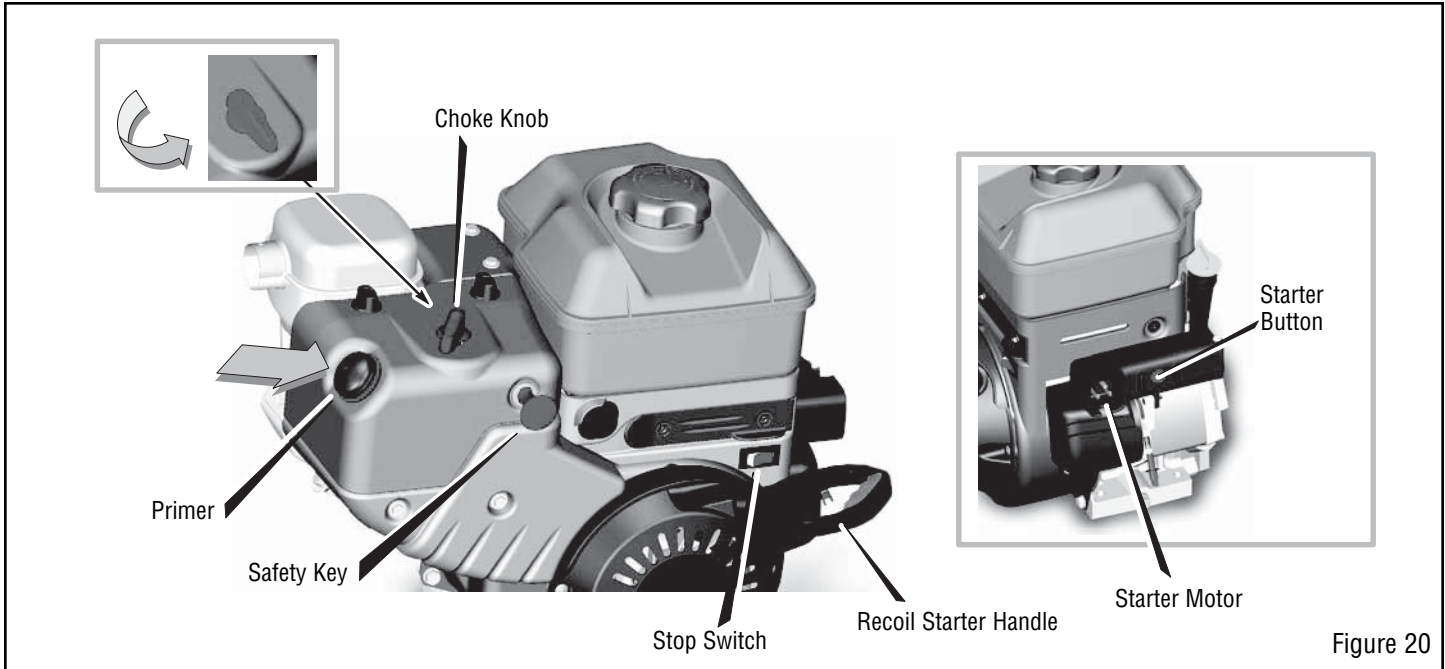
Make sure your house has a three-wire grounded system. If you are not sure, ask a licensed electrician. If your house does not have a three-wire grounded system, do not use this electric starter under any condition.

If your house has a three-wire grounded system but a three-hole receptacle is not available to connect the electric starter, have a three-hole receptacle installed by a licensed electrician.

WARNING: To connect a 120 volt power cord, always connect the power cord first to the switch box located on the engine and then plug the other end into a three-hole grounded receptacle.

WARNING: To disconnect the power cord, always unplug the end connected to the three-hole grounded receptacle first.

OPERATION



How To Start A Cold Engine

1. Be sure auger drive and traction drive levers are in the disengaged (**RELEASED**) position.
2. Push the **stop switch** to the ON position (see Figure 20).
3. Push in the **safety key**.
4. Rotate the **choke knob** to the CHOKE position.
5. **(Electric Start)** Plug the power cord into the **starter motor** on the engine. Plug the other end of power cord into a three-hole, grounded 120 volt, AC receptacle.
6. Push the **primer button** as specified below. Remove finger from primer button between pushes.
 - Push two times if temperature is 15° F (-9° C) or higher.
 - Push four times if temperature is below 15° F (-9° C).
7. **(Electric Start)** Connect the power cord to the engine and depress the starter button. To prolong the life of the starter, do not crank for more than 5 seconds at a time. Wait one minute between starts to allow the starter motor to cool.
8. **(Recoil Start)** Slowly pull the **recoil starter handle** until resistance is felt and then pull rapidly to start the engine. Do not allow the **recoil starter handle** to snap back. Slowly return the **recoil starter handle**.
9. If the engine does not start in 5 or 6 tries, see Difficult Starting in the TROUBLE SHOOTING CHART.

10. Allow the engine to warm up for several minutes. As the engine warms up, adjust the **choke knob** toward the RUN position. Wait until the engine runs smoothly before each choke adjustment.

11. **(Electric Start)** First disconnect power cord from receptacle. Then, disconnect the power cord from the **switch box**.

If after following the preceding instructions, your engine fails to start, have the engine checked by a John Deere/Frontier dealer.

NOTE: Do not lose the safety/ignition key. Keep the safety/ignition key in a safe place. The engine will not start without the safety/ignition key.

How To Start A Warm Engine

If restarting a warm engine after a short shutdown, leave the choke lever in the off position and do not push the primer button. If the engine fails to start, follow the Cold Start instructions.

OPERATION

FROZEN STARTER

If the starter is frozen and will not turn engine:

1. Pull as much rope out of the starter as possible.
2. Release the starter handle and let it snap back against the starter. Repeat until the engine starts.

Warm engines will cause condensation in cold weather. To help prevent possible freeze-up of recoil starter and engine controls, proceed as follows after each snow removal job.

1. With engine off, allow engine to cool for several minutes.
2. Pull starter rope very slowly until resistance is felt, then stop. Allow the starter rope to recoil. Repeat three times.
3. With the engine not running, wipe all snow and moisture from the carburetor cover in area of control levers. Also move choke knob and starter handle several times.

WARNING: Never run engine indoors or in enclosed, poorly ventilated areas. Engine exhaust contains **CARBON MONOXIDE, AN ODORLESS AND DEADLY GAS**. Keep hands, feet, hair and loose clothing away from any moving parts on engine and snowthrower.

- Engine parts, especially the muffler, become extremely hot. Severe thermal burns can occur on contact. Allow the engine to cool before touching.
- Never allow children to operate the snowthrower. Never allow adults to operate the snowthrower without proper instruction.
- Keep the area of operation clear of all persons, particularly small children, and pets.
- Never leave the snowthrower unattended while the engine is running. Anyone operating the engine or equipment must carefully read and understand the operating instructions.

IMPORTANT: After each use of the snowthrower, stop the engine, remove the safety/ignition key, remove all accumulated snow from the snowthrower and wipe clean. Store the snowthrower in a protected area.

NOTE: Never cover snowthrower while engine and exhaust area are still warm.

HOW TO CLEAR A CLOGGED DISCHARGE CHUTE

WARNING: Hand contact with the rotating impeller inside the discharge chute is the most common cause of injury associated with snowthrowers. **NEVER USE YOUR HAND TO CLEAN OUT THE DISCHARGE CHUTE.**

To Clear The Chute:

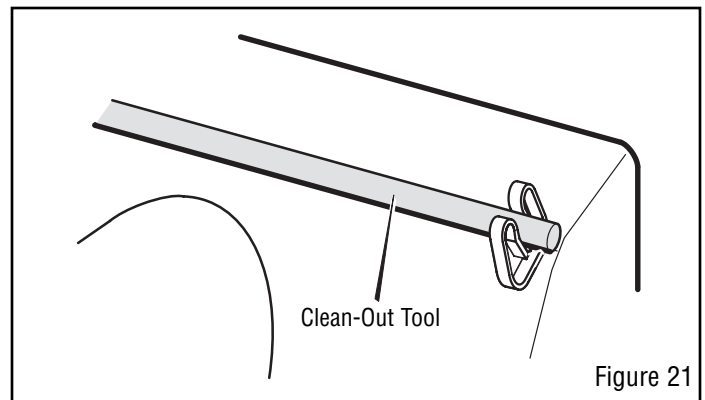
- **SHUT OFF THE ENGINE!**
- Wait 10 seconds to be sure that the impeller blades have stopped rotating.
- Always use a clean-out tool, not your hands.

A clean-out tool is attached to either the handle or the top of the auger housing (see Figure 21). Use the clean-out tool to remove snow from the auger housing.

HOW TO USE CLEAN-OUT TOOL

- Release the auger drive lever.
- Pull out the safety key.
- Disconnect spark plug wire.
- Do not place your hands in the auger or discharge chute. Use a clean-out tool to remove snow or debris.

WARNING: Blockage must be cleared only after shutting off the snowthrower and only with a clean-out tool, not by hand.



OPERATION

OPERATING TIPS

1. Most efficient snowthrowing is accomplished when snow is removed immediately after it falls.
2. For complete snow removal, slightly overlap each swath previously taken.
3. Snow should be discharged downwind whenever possible.
4. For normal usage, set the skids 1/8 inch (3 mm) below the scraper bar. For extremely hard-packed snow surfaces, the skids may be adjusted upward to insure cleaning efficiency.
5. On gravel or crushed rock surfaces, the skids should be set at 1-1/4 inch (32 mm) below the scraper bar (see "To Adjust Skid Height", in the MAINTENANCE section in this manual). Rocks and gravel must not be picked up and thrown by the machine.
6. After the snowthrowing job has been completed, allow the engine to idle for a few minutes, to melt snow and ice accumulated on the engine.
7. Clean the snowthrower thoroughly after each use.
8. Remove ice and snow accumulation and all debris from the entire snowthrower, and flush with water (if possible) to remove all salt or other chemicals. Wipe snowthrower dry.
9. Before starting snowthrower, always inspect augers and impeller for ice accumulation and/or debris, which could result in snowthrower damage.
10. Check oil level before every start. Make sure the oil is at the FULL mark on the oil fill cap/dipstick.

SERVICE RECOMMENDATIONS

SERVICE RECOMMENDATIONS									
PROCEDURE		FIRST 2 HOURS	BEFORE EACH USE	OFTEN	EVERY 5 HOURS	EVERY 10 HOURS	EVERY 25 HOURS	BEGINNING EACH SEASON	BEFORE STORAGE
SNOWTHROWER	Tighten all screws and nuts	✓		✓				✓	
	Check Traction Clutch Cable Adjustment (See Cable Adjustment)	✓						✓	
	Check Auger Clutch Cable Adjustment (See Cable Adjustment)	✓						✓	✓
	Lubricate Chains and Hex Shaft							✓	
ENGINE	Oil, Check		✓		✓			✓	
	Oil, Change	✓					✓	✓	

The warranty on this snowthrower does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, operator must maintain snowthrower as instructed in this manual. The above **Service Recommendations** are supplied to assist operator to properly maintain snowthrower. This is a check list only. Adjustment referred to will be found in the MAINTENANCE section of this manual.

AFTER EACH USE

1. Check for any loose or damaged parts.
2. Tighten any loose fasteners.
3. Check and maintain the auger.
4. After each use, remove all snow and slush off the snowthrower to prevent freezing of auger or controls.
5. Check controls to make sure they are functioning properly.
6. If any parts are worn or damaged, replace immediately.

MAINTENANCE

Some adjustments will need to be made periodically to properly maintain your snowthrower.

All adjustments in this section of this manual should be checked at least once each season.

SNOWTHROWER

Auger and Traction Drive Belts should be adjusted after the first 2 to 4 hours of use, again about midseason and twice each season thereafter (see “To Adjust Belts” paragraph in this section).

AS REQUIRED

Auger Gear Box

The auger gear box is lubricated at the factory and should not require additional lubrication.

If for some reason the lubricant should leak out, or if the auger gear box has been serviced, add Lubriplate GR132 Grease or equivalent. Maximum 3-1/4 ounces, (92 grams) should be used.

Remove filler plug (Figure 22), once a year. If grease is visible, do not add. If grease is not visible, use a piece of fine wire, like a dipstick to check if there is grease in the gear box. Mobilux EP1 and Shell Aldania EP1 are suitable equivalents.

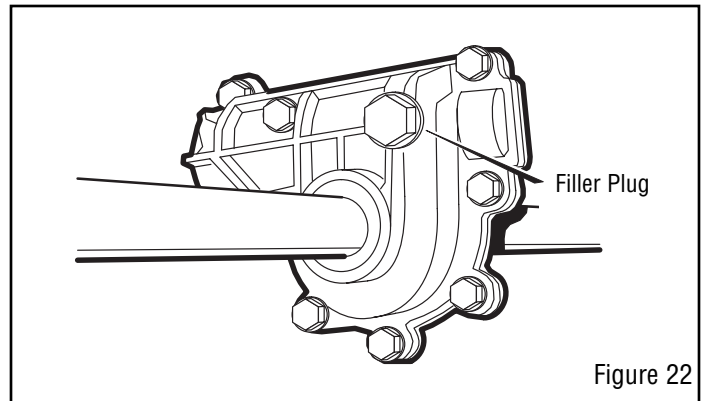


Figure 22

LUBRICATION AT STORAGE

Bearings and Bushings

All bearings and bushings are lifetime lubricated and require no maintenance.

Hex Shaft and Chains

For storage, the hex shaft should be wiped with a cloth lightly moistened with motor oil to prevent rusting (see Figure 24).

For storage, the chains should be lubricated with a chain type lube (see Figure 24).

NOTE: Any greasing or oiling of the above mentioned components can cause contamination of the rubber friction wheel. If the disc drive plate or friction wheel come in contact with grease or oil damage to rubber friction wheel will result.

If grease or oil comes into contact with the disc drive plate or friction wheel, make sure to clean plate and wheel thoroughly with an alcohol base solvent.

MAINTENANCE

LUBRICATION – EVERY 25 HOURS

Chute Rotation Gear

Lubricate the **chute rotation gear** with automotive type oil (see Figure 23).

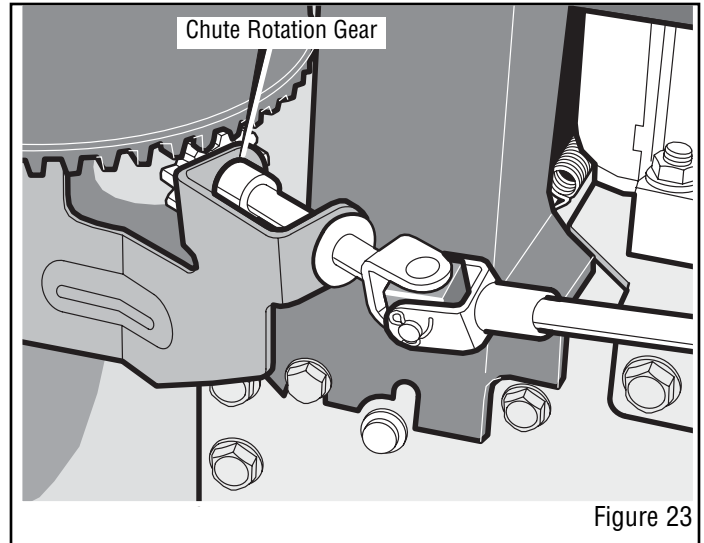


Figure 23

Chains

1. Position speed selector lever in first (1) forward gear.
2. Stand the snowthrower up on the auger housing end.

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

3. Remove the bottom panel.

4. Lubricate the **chains** with a chain type lubricant.

5. Wipe the **hexshaft** and **sprockets** with 5W30 motor oil.

NOTE: Clean all excess grease or oil found on the rubber friction wheel or the disc drive plate.

CAUTION: Do not allow grease or oil to contact the rubber friction wheel or the disc drive plate.

6. Install the bottom panel.

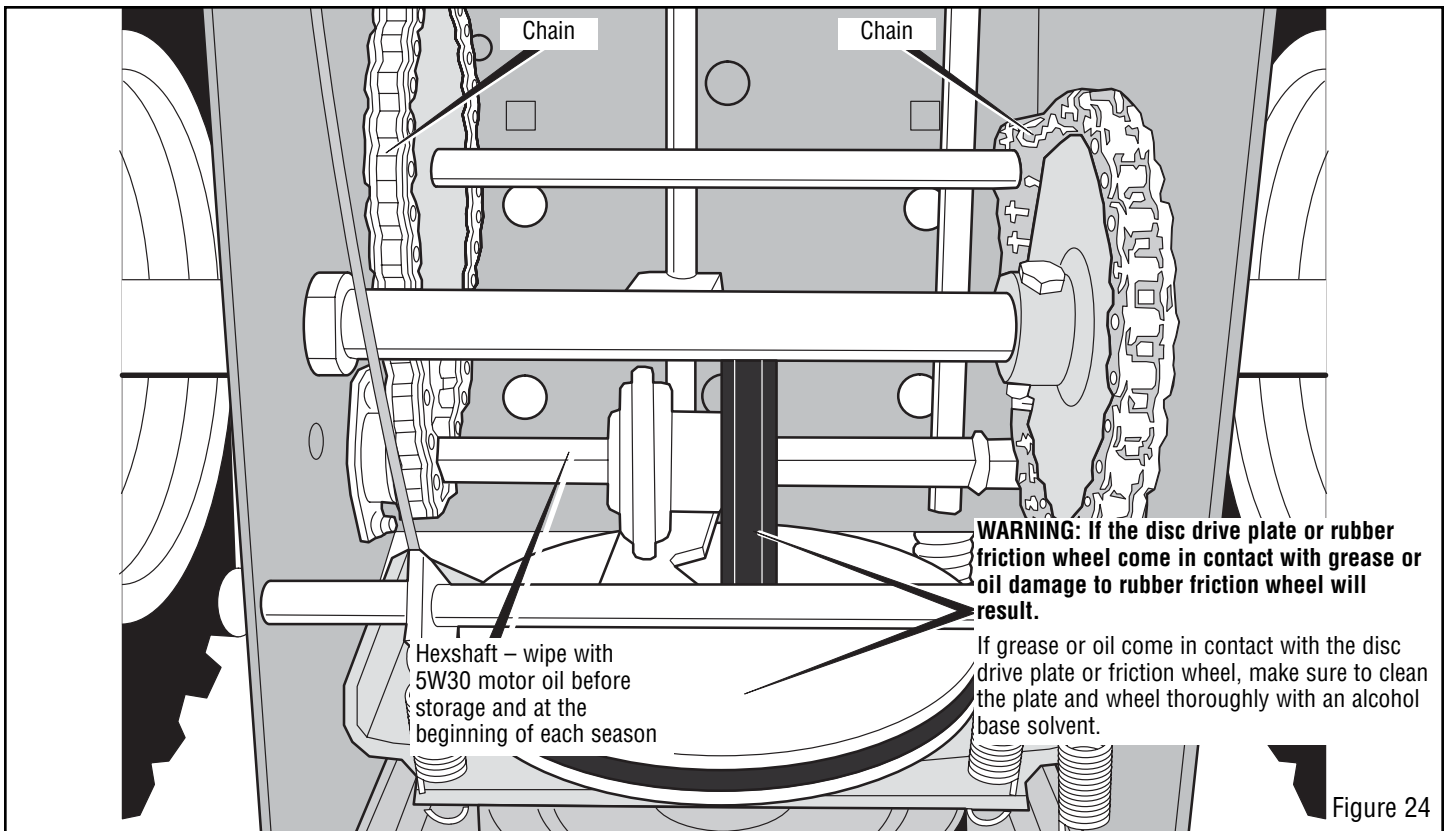


Figure 24

MAINTENANCE

ENGINE

POWER RATINGS

The power ratings for an individual engine model are initially developed by starting with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure) (Revision 2002-05). Given both the wide array of products on which our engines are placed, and the variety of environmental issues applicable to operating the equipment, it may be that the engine you have purchased will not develop the rated horsepower when used in a piece of power equipment (actual “on-site” power). This difference is due to a variety of factors including, but not limited to, the following: differences in altitude, temperature, barometric pressure, humidity, fuel, engine lubrication, maximum governed engine speed, individual engine to engine variability, design of the particular piece of power equipment, the manner in which the engine is operated, engine run-in to reduce friction and clean out of combustion chambers, adjustments to the valves and carburetor, and other factors. The power ratings may also be adjusted based on comparisons to other similar engines utilized in similar applications, and will therefore not necessarily match the values derived using the foregoing codes.

Check Crankcase Oil Level before starting engine and after each 8 hours of continuous use (see Figure 25). Add the recommended motor oil as required.

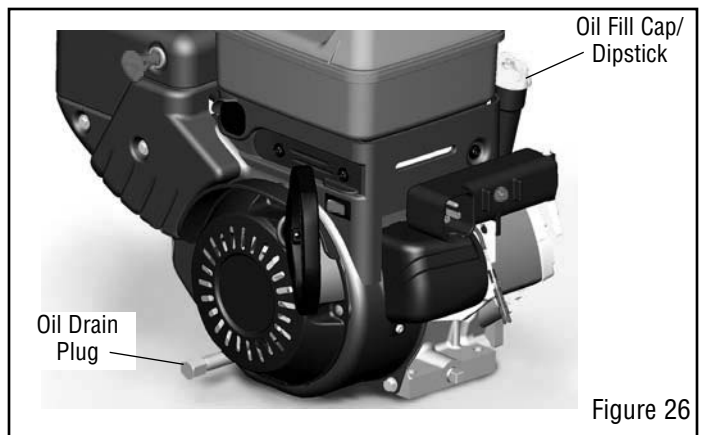
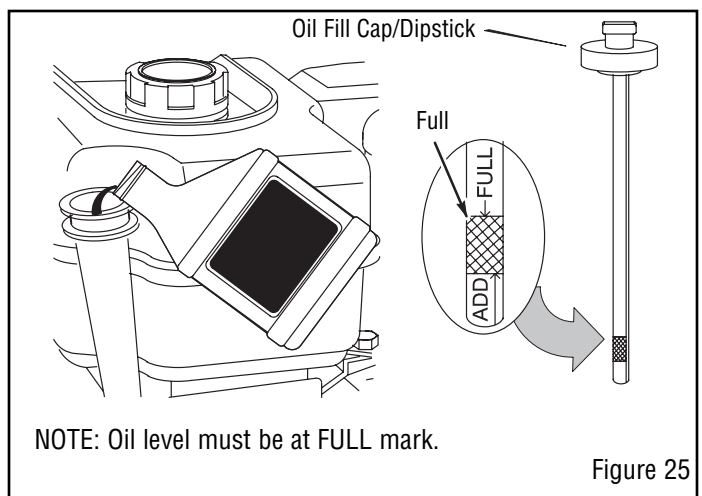
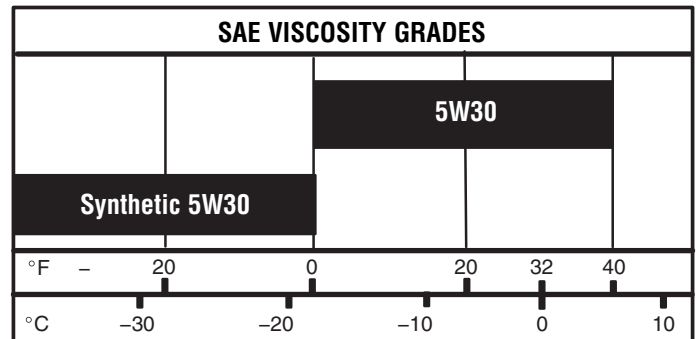
NOTE: Overfilling the engine can affect performance. Tighten the oil fill cap securely to prevent leakage.

Change Oil every 50 hours of operation or at least once a year, even if the snowthrower is not used for fifty hours. Use a clean, high quality detergent oil. Fill the crank case to FULL line on dipstick (see Figure 25). Be sure original container is marked: A.P.I. service “SF” or higher. Do not use SAE10W40 oil (as it may not provide proper lubrication). See Chart for oil recommendations.

To Drain Oil – Position snowthrower so that the oil drain plug is lowest point on engine. When the engine is warm, remove oil drain plug and oil fill cap and drain oil into a suitable container (Figure 26).

Replace oil drain plug and tighten securely. Refill crank case with the recommended motor oil.

TEMPERATURE	TYPE OF OIL
0°F (-18°C) and above	S.A.E. 5W30
0°F (-18°C) and below	synthetic 5W30



MAINTENANCE

HOW TO REMOVE THE SNOW HOOD

To access the spark plug, the snow hood must be removed as follows:

1. Remove the choke control knob (see Figure 27).
2. Remove the **safety key**.
3. Remove the **mounting screws** (see Figure 28).
4. Slowly remove the snow hood. Make sure that the **primer button hose** and the **ignition wire** are not disconnected.
5. The **spark plug** can now be accessed.
6. To install the snow hood, first make sure that the primer button hose and the ignition wire are connected.
7. Mount the snow hood to the engine and secure with the mounting screws (see Figure 28).
8. Connect the choke control knob with the choke shaft on the carburetor (see Figure 29 and Figure 30). Make sure the choke control knob is properly installed. If the choke control knob is not installed correctly, the choke will not operate.
9. Install the **safety key**.

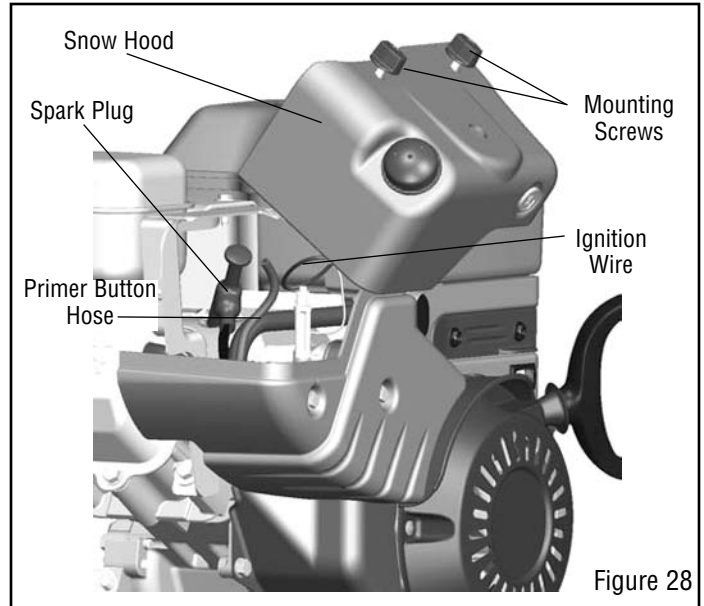


Figure 28

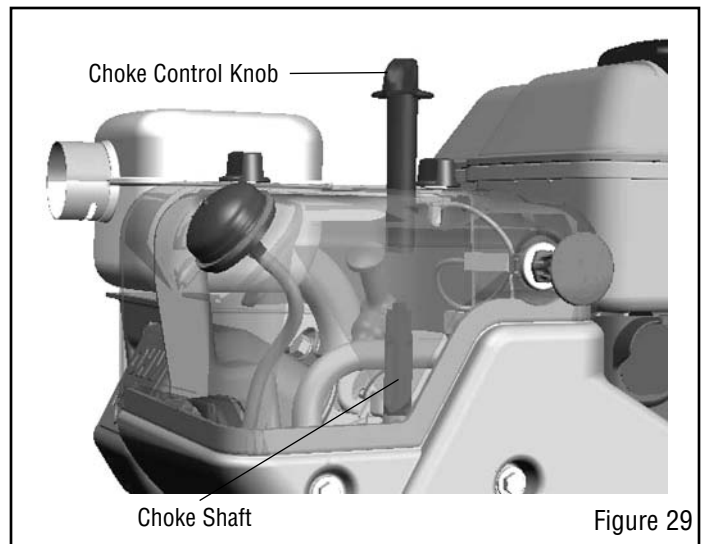


Figure 29

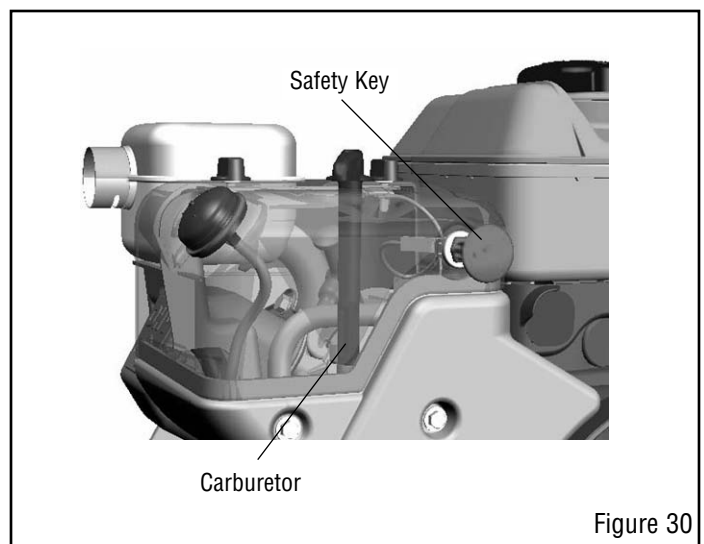


Figure 30

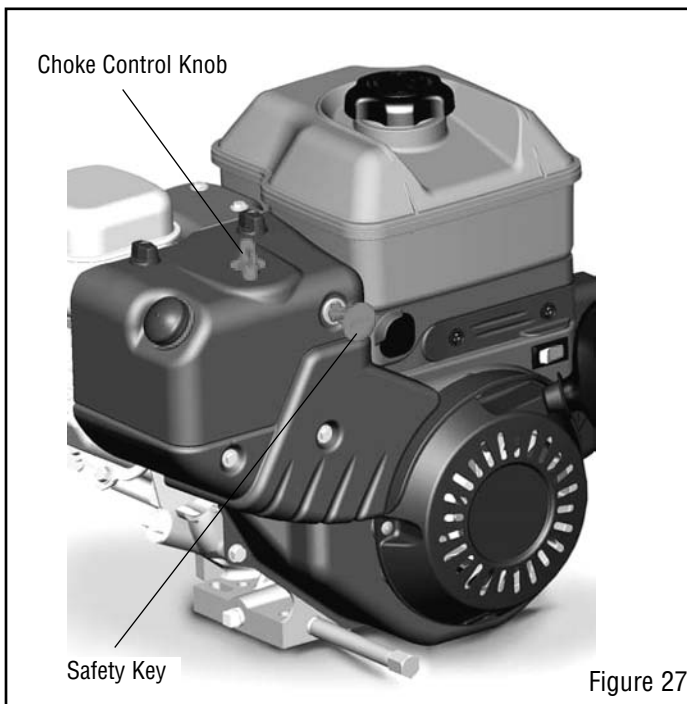


Figure 27

MAINTENANCE

⚠ WARNING: Always turn unit off, remove ignition key and disconnect the spark plug wire before making any repairs or adjustments.

AUGER HOUSING HEIGHT ADJUSTMENT

TO ADJUST SCRAPER BAR

After considerable use, the metal scraper bar will have a definite wear pattern. The scraper bar in conjunction with the skids should always be adjusted to allow 1/8 inch (3 mm) between the scraper bar and the sidewalk or area to be cleaned.

To adjust the scraper bar, proceed as follows:

1. Position the snowthrower on a level surface.
2. Loosen the carriage bolts and nuts securing the scraper bar to the auger housing.
3. Adjust the scraper bar to the proper position. Tighten the carriage bolts and nuts, insuring that the scraper bar is parallel with the working surface.
4. For extended operation, the scraper bar may be reversed. If the scraper bar must be replaced because of wear, remove the carriage bolts and nuts and install a new scraper bar.

TO ADJUST SKID HEIGHT

This snowthrower is equipped with two height adjust skids, secured to the outside of the auger housing. These elevate the front of the snowthrower.

When removing snow from a hard surface area such as a paved driveway or walk, adjust the skids up to bring the front of the snowthrower down.

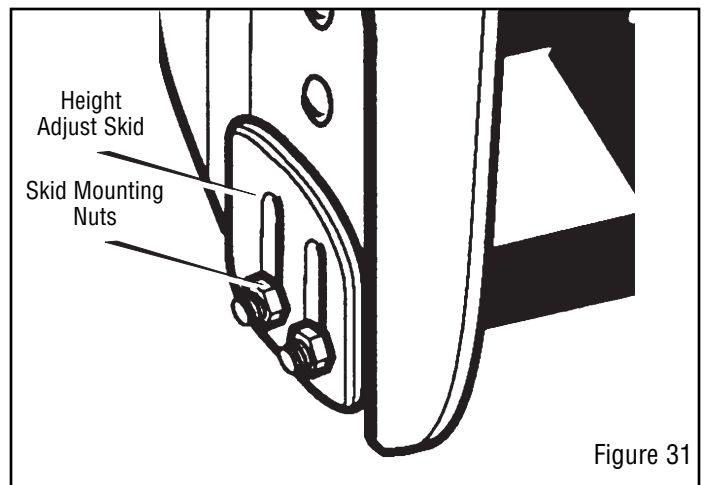
When removing snow from rock or uneven construction, raise the front of the snowthrower by moving the skids down. This will help to prevent rocks and other debris from being picked up and thrown by the augers.

To adjust skids, proceed as follows:

1. Place a block (equal to height from ground desired) under scraper bar near but not under skid.
2. Loosen skid mounting nuts (Figure 31) and push the skid down until it touches the ground. Retighten mounting nuts.
3. Set skid on other side at same height.

NOTE: Make sure that snowthrower is set at same height on both sides.

⚠ WARNING: Be certain to maintain proper ground clearance for your particular area to be cleared. Objects such as gravel, rocks or other debris, if struck by the impeller, may be thrown with sufficient force to cause personal injury, property damage or damage to the snowthrower.



MAINTENANCE

BELT ADJUSTMENT

Traction Drive Belt

The traction drive belt has constant spring pressure and does not require an adjustment. If the traction drive belt is slipping, replace the belt. See “How To Replace The Belts” in this section.

Auger Drive Belt

If your snowthrower will not discharge snow, check the control cable adjustment. If it is correct, then check the condition of the auger drive belt. If it is damaged or loose, replace it (see “Belt Replacement” in this section of the manual).

1. Disconnect spark plug wire.
2. Remove **screw** from **belt cover**. Remove **belt cover** (see Figure 32).
3. Loosen nut on auger idler pulley and move auger idler pulley towards belt about 1/8 inch (3 mm) (see Figure 36).
4. Tighten nut.
5. Have someone engage auger drive clutch. Check tension on belt (opposite idler pulley). Belt should deflect about 1/2 inch (12.5 mm) with moderate pressure (Figure 33). You may have to move idler pulley more than once to obtain the correct tension.
6. Reinstall belt cover.
7. Whenever belts are adjusted or replaced, the cables will need to be adjusted. (See “Cable Adjustment” in this section of the manual).
8. Attach the spark plug wire.

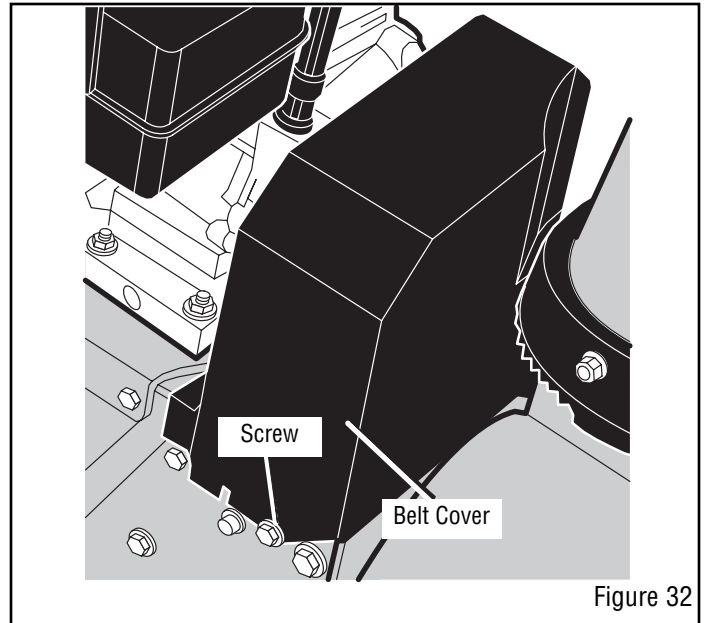


Figure 32

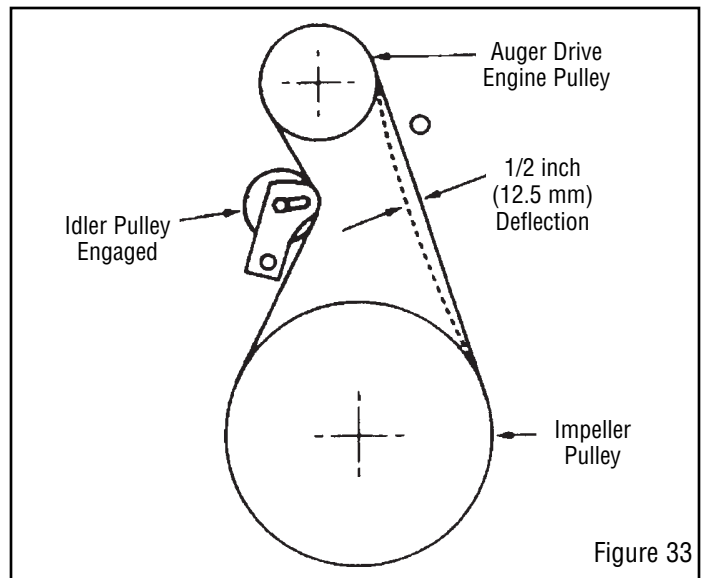


Figure 33

MAINTENANCE

HOW TO REPLACE THE BELTS

The drive belts are of special construction and must be replaced with original factory replacement belts available from your nearest authorized service center.

Some steps require the assistance of a second person.

How To Remove the Auger Drive Belt

If the auger drive belt is damaged, the snowthrower will not discharge snow. Replace the damaged belt as follows.

1. Disconnect the spark plug wire.
2. Loosen the **bolts** on each side of the **bottom panel** (see Figure 34).
3. Remove the **bottom panel**.
4. Remove **screw** from **belt cover**. Remove the **belt cover** (see Figure 32).
5. Loosen the **belt guide**. Pull the **belt guide** away from the **auger drive pulley** (see Figure 36).
6. Pull the **idler pulley** away from the **auger drive belt** and slip the **auger drive belt** off of the **idler pulley**.
7. Remove the **auger drive belt** from the **engine pulley**. To remove the **auger drive belt**, the **engine pulley** may have to be partially rotated.
8. Remove the top four **bolts** that hold together the **auger housing** and the **motor box**. Loosen the bottom two **bolts**. The **auger housing** and the **motor box** can now be split apart for removal of the belt (see Figure 35).
9. Remove the old **auger drive belt** from the **auger drive pulley**. Replace the **auger drive belt** with an original factory replacement belt available from an authorized service center (see Figure 36).
10. Install the new **auger drive belt** onto the **auger drive pulley**.
NOTE: To assemble the auger housing to the motor box, have someone hold the auger clutch lever in the ENGAGED position. This will move the idler arm and pulley enough to allow the auger drive pulley to move back into position.
11. Assemble the **auger housing** to the **motor box** with the four **bolts** that were removed in step 8. Tighten the bottom two **bolts**.
12. Install the **auger drive belt** onto the **engine pulley**.
13. Slip the **auger drive belt** under the **idler pulley**.
14. Adjust the **auger drive belt**. See “How To Adjust The Auger Drive Belt” in this section.
15. Adjust the **belt guide**. See “How To Adjust The Belt Guide” in this section.

16. Install the **belt cover**. Tighten **screw** (see Figure 32).
17. Check the adjustment of the cables. See “How To Check And Adjust The Cables” in this section.
18. Install the **bottom panel** (see Figure 34).
19. Tighten the **bolts** on each side of the **bottom panel**.
20. Connect the spark plug wire.

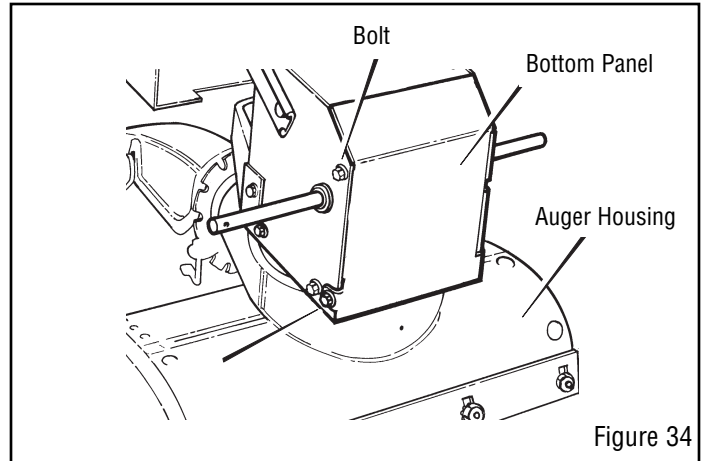


Figure 34

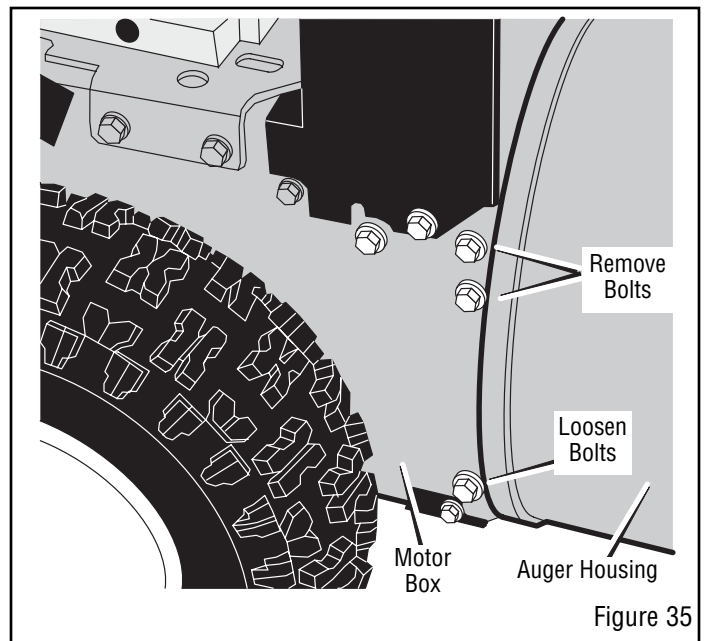


Figure 35

MAINTENANCE

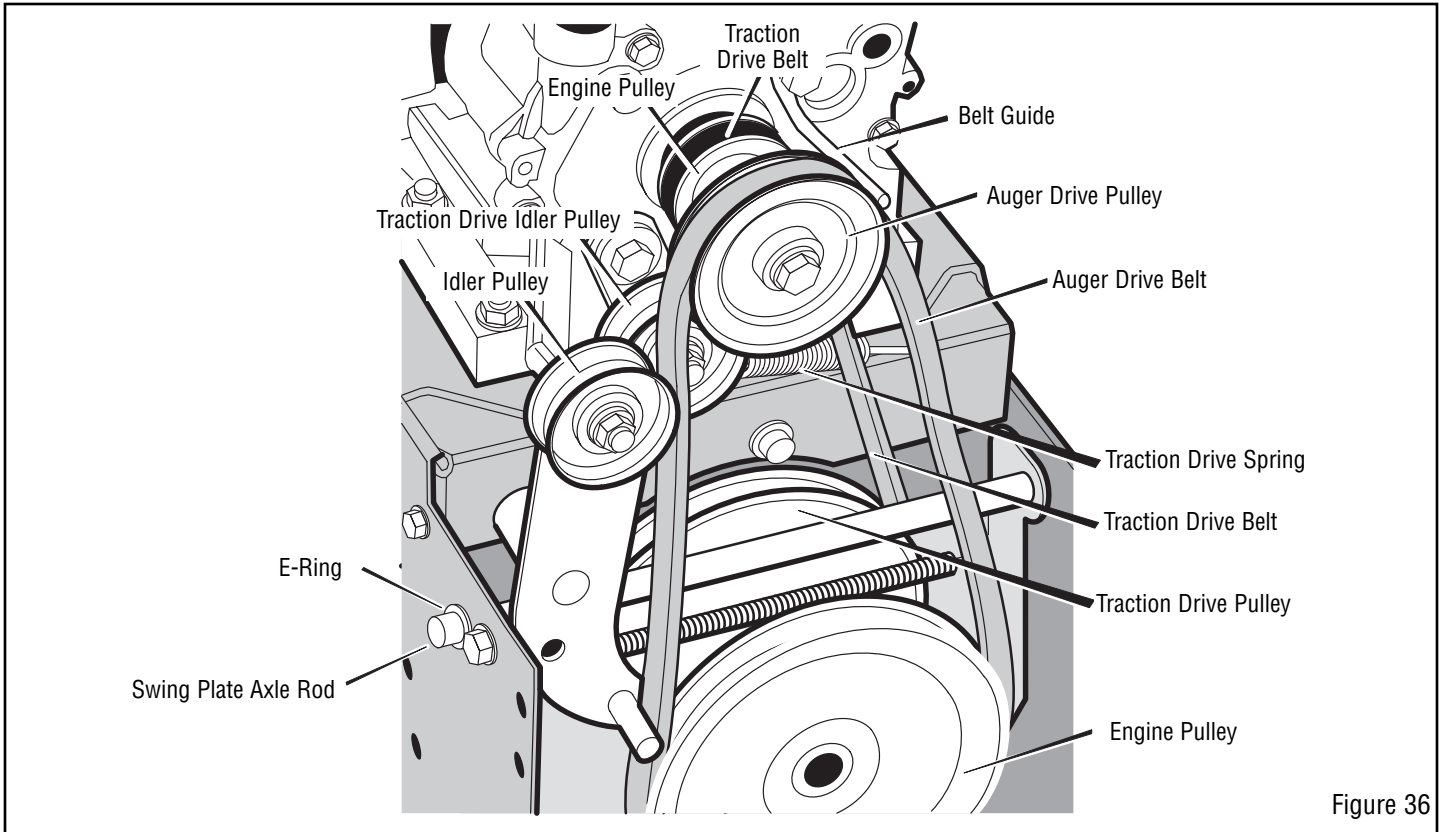


Figure 36

MAINTENANCE

How To Remove the Traction Drive Belt

If the snowthrower will not move forward, check the traction drive belt for wear or damage. If the traction drive belt is worn or damaged, replace the belt as follows.

1. Disconnect the spark plug wire.
2. Remove the auger drive belt. See “How To Remove The Auger Drive Belt” in this section.
3. Remove the **e-ring** from one end of the **swing plate axle rod**. Remove the **swing plate axle rod** to allow the swing plate to pivot forward (see Figure 36).
4. Remove the **traction drive spring**.
5. Remove the old **traction drive belt** from the **traction drive pulley** and from the **engine pulley**. Replace the **traction drive belt** with an original factory replacement belt available from an authorized service center.
6. Install the new **traction drive belt** onto the **traction drive pulley** and onto **engine pulley**.
7. Make sure the **traction drive idler pulley** is properly aligned with the **traction drive belt**.
8. Attach the **traction drive spring**.
9. Install the **swing plate axle rod** and secure with the **e-ring** removed earlier.
10. The bottom of the **swing plate** must be positioned between the **alignment tabs**. Make sure the **swing plate** is properly secured (see Figure 37).

NOTE: If the drive will not engage after the traction drive belt has been replaced, then check to make sure that the swing plate is positioned between the alignment tabs.

11. Install and adjust the **auger drive belt**. See “How To Remove The Auger Drive Belt” in this section.
12. Adjust the **belt guide**. See “How To Adjust The Belt Guide” in this section.
13. Install the **bottom panel** (see Figure 34).
14. Tighten the **bolts** on each side of the **bottom panel**.
15. Install the **belt cover**. Tighten **screw** (see Figure 32).
16. Check the adjustment of the cables. See “How To Check And Adjust The Cables” in this section.
17. Connect the spark plug wire.

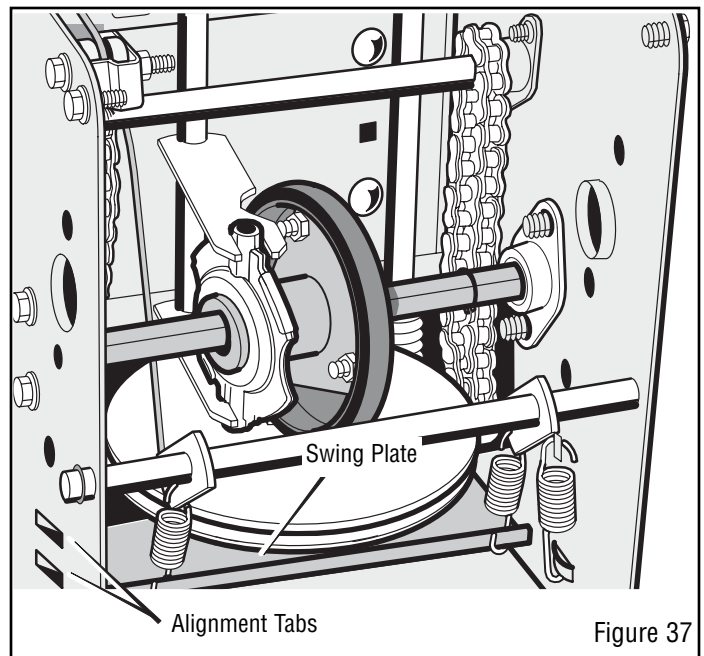


Figure 37

MAINTENANCE

BELT GUIDE ADJUSTMENT

1. Remove spark plug wire.
2. Have someone engage auger drive.
3. Measure the distance between the belt guide and belt. The distance should be 1/8 inch (3 mm) for guide. See Figure 38.
4. If adjustment is necessary, loosen belt guide mounting bolt. Move belt guide to the correct position. Tighten mounting bolt.
5. Reinstall belt cover.
6. Reconnect spark plug wire.

HOW TO CHECK AND ADJUST THE CABLES

The cables are adjusted at the factory and no adjustment should be necessary. If the cables have become stretched or are sagging, adjustment will be necessary.

Whenever belts are adjusted or replaced, the cables will need to be adjusted.

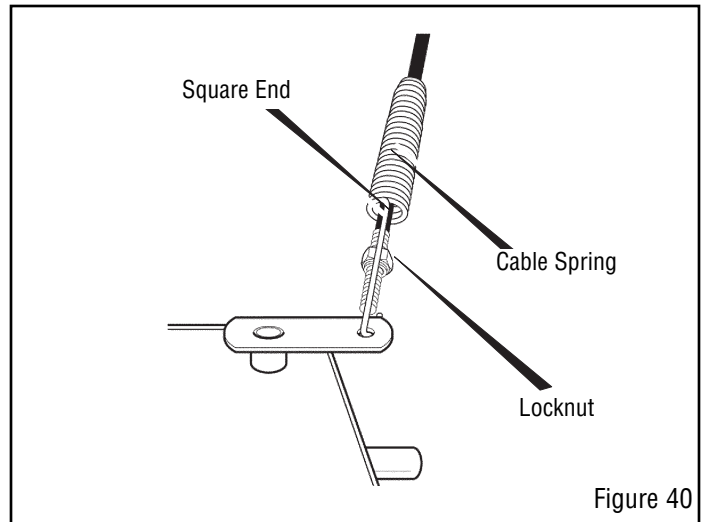
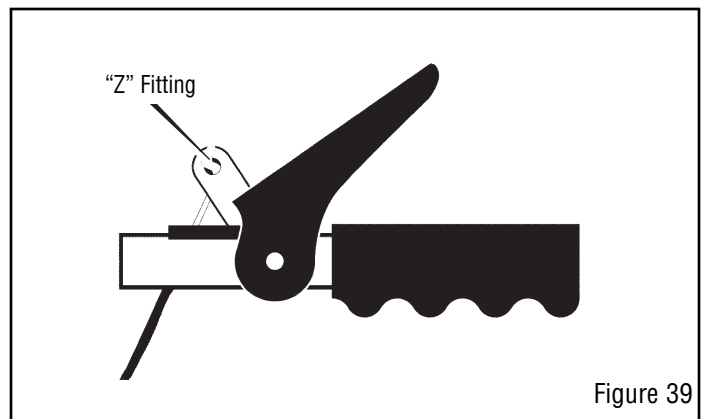
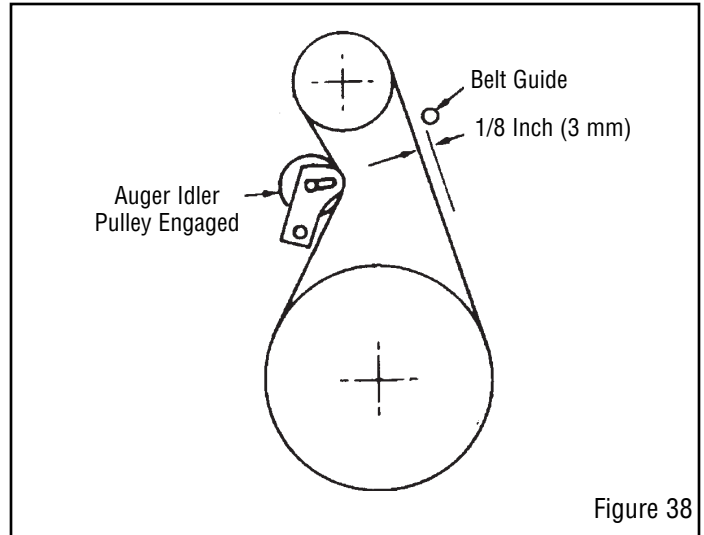
To check for correct adjustment, unhook "Z" fitting at clutch lever (see Figure 39).

1. Move clutch lever to the full forward position (just contacting plastic bumper). Holding cable tight, note position of fitting to hole in clutch lever.
2. The center of the "Z" fitting should be between the center and top of the hole in the clutch lever. Adjust either the auger drive cable or the traction drive cable as follows.

Auger Drive Cable Adjustment

WARNING: Drain the gasoline outdoors, away from fire or flame.

1. Remove the gas from the gas tank. Stand the snowthrower up on the front end of the auger housing.
2. Push cable through spring to expose the threaded portion of the cable (see Figure 40).
3. Hold square end of threaded portion with pliers and adjust locknut in or out until correct adjustment is reached. Pull cable back through spring and connect cable.



MAINTENANCE

TRACTION DRIVE CABLE ADJUSTMENT

⚠ WARNING: Drain the gasoline outdoors, away from fire or flame.

1. Remove the gas from the gas tank. Stand the snowthrower up on the front end of the auger housing.
2. Loosen the **bolts** on each side of the **bottom panel** (see Figure 41).
3. Remove the **bottom panel**.
4. Disconnect the “**Z**” fitting from the **drive lever** (see Figure 39).
5. Slide the **cable boot** off the **cable adjustment bracket** (see Figure 42).
6. Push the bottom of the **traction drive cable** through the **cable adjustment bracket** until the “**Z**” hook can be removed.
7. Remove the “**Z**” hook from the **cable adjustment bracket**. Move the “**Z**” hook down to the next adjustment hole.
8. Pull the **traction drive cable** up through the **cable adjustment bracket**.
9. Put the **cable boot** over the **cable adjustment bracket**.
10. Install the “**Z**” hook to the **traction drive lever** (see Figure 39).
11. To check the adjustment, depress the drive lever and check the length of the **drive spring** (see Figure 43). In correct adjustment, the length of the **drive spring** is minimum 3 inches (76 mm) maximum 3-3/8 inches (85 mm).
12. Install the **bottom panel** (see Figure 41).
13. Tighten the **bolts** on each side of the **bottom panel**.

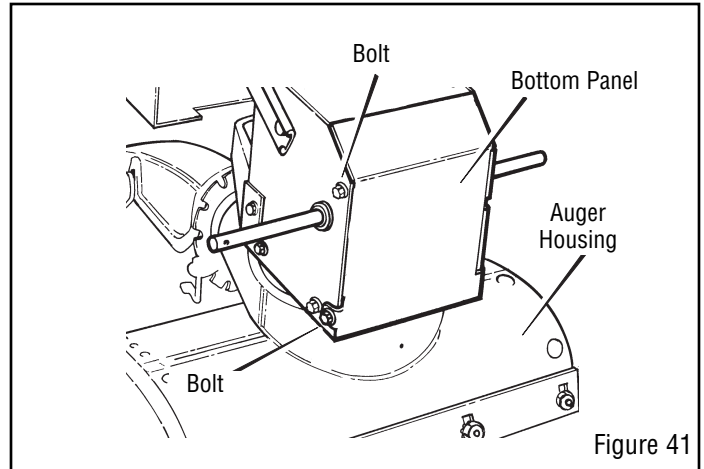


Figure 41

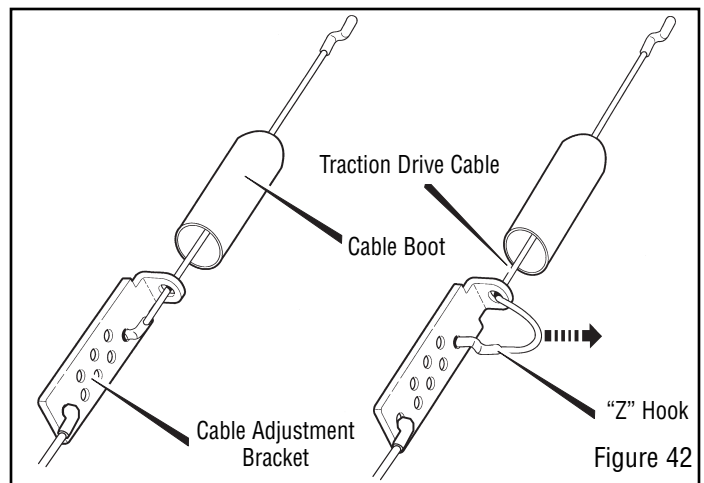


Figure 42

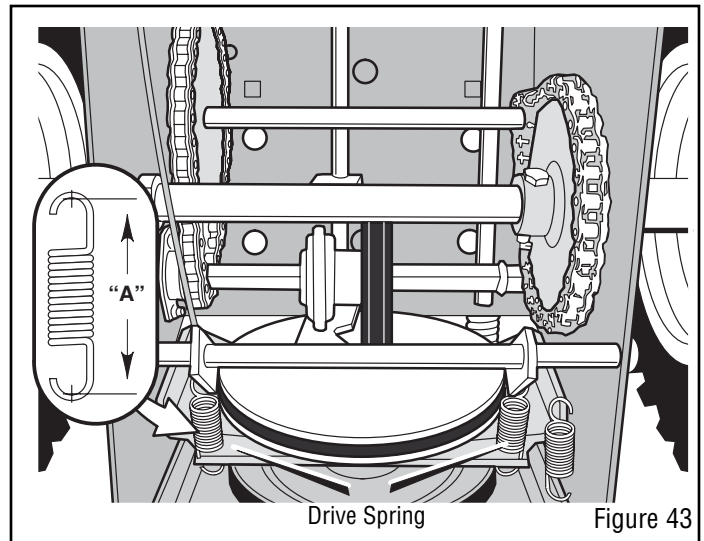


Figure 43

MAINTENANCE

HOW TO ADJUST OR REPLACE THE FRICTION WHEEL

How To Check The Friction Wheel

If the snowthrower will not move forward, check the traction drive belt, the traction drive cable or the friction wheel. If the friction wheel is worn or damaged, it must be replaced. See “How To Replace the Friction Wheel” in this section. If the friction wheel is not worn or damaged, check as follows.

1. Remove the gas from the gas tank. Stand the snowthrower up on the front end of the **auger housing** (see Figure 44).

WARNING: Drain the gasoline outdoors, away from fire or flame.

2. Disconnect the spark plug wire.
3. Loosen the **bolts** on each side of the **bottom panel** (see Figure 44).
4. Remove the **bottom panel**.
5. Position the **shift speed lever** in the lowest forward speed.
6. Note the position of the **friction wheel** (see Figure 45). The correct distance “A” from the right side of the **friction wheel** to the outside of the motorbox is as follows:

Tire Size	Distance “A”
12 and 13 inch	4-1/8" (10.5 cm)
16 inch	4-5/16" (10.95 cm)

If the **friction wheel** is not in the correct position, adjust as follows.

How To Adjust The Friction Wheel

1. Position the **shift speed lever** in the lowest forward speed.
2. Loosen the **bolts** on the **speed control rod** (see Figure 46).
3. Move the **friction wheel** to the correct position (see Figure 45).
4. Tighten the **bolts** on the **speed control rod** (see Figure 46).
5. Install the **bottom panel** (see Figure 44).
6. Tighten the **bolts** on each side of the **bottom panel**.

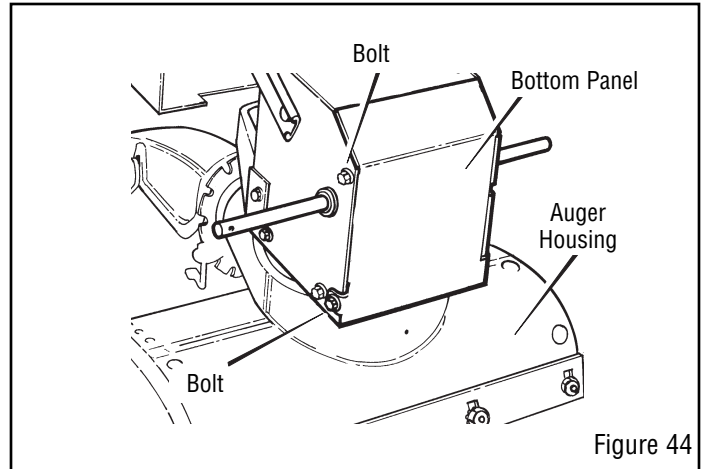


Figure 44

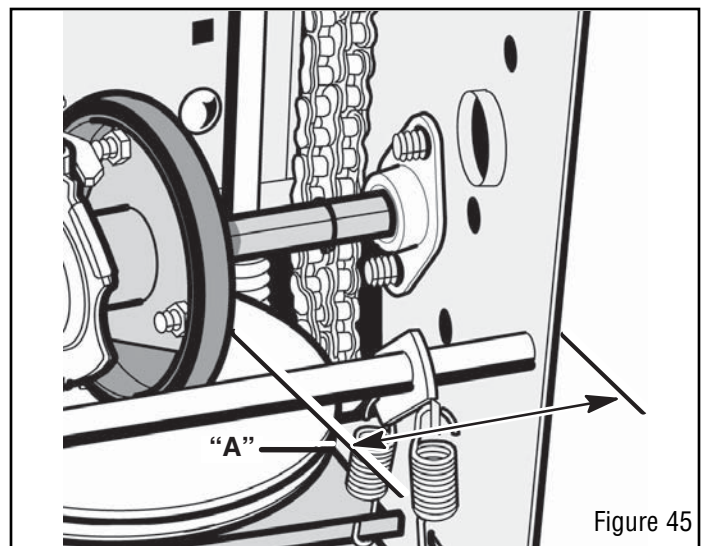


Figure 45

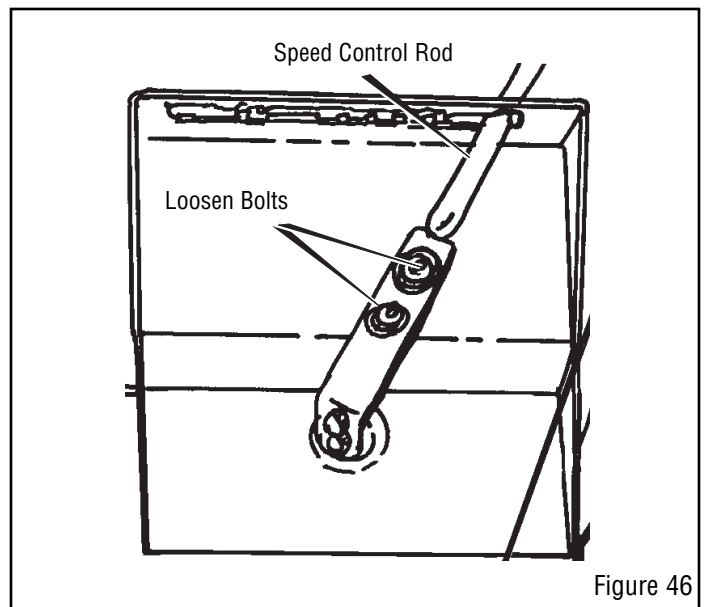


Figure 46

MAINTENANCE

How To Replace The Friction Wheel

If the friction wheel is worn or damaged, the snowthrower will not move forward. The friction wheel must be replaced as follows.

1. Remove the gas from the gas tank. Stand the snowthrower up on the front end of the **auger housing** (4) (see Figure 44).

WARNING: Drain the gasoline outdoors, away from fire or flame.

2. Disconnect the spark plug wire.
3. Remove the fasteners that secure the **left wheel**. Remove the **left wheel** from the **axle** (see Figure 47).
4. Loosen the **bolts** on each side of the **bottom panel**.
5. Remove the **bottom panel**.
6. Remove the fasteners that secure the **drive sprocket** to the **axle** (see Figure 48).
7. Remove the right wheel, **axle**, and **drive sprocket**.
8. Remove the four **bolts** that hold the **bearings** on each side of the **hex shaft** (see Figure 49).
9. Remove the **hex shaft** and **bearings**.

NOTE: Take special note of the position of the washers on the hex shaft.

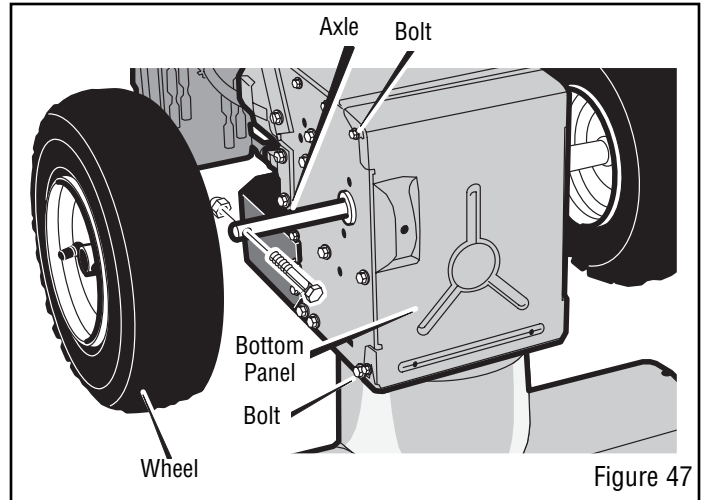


Figure 47

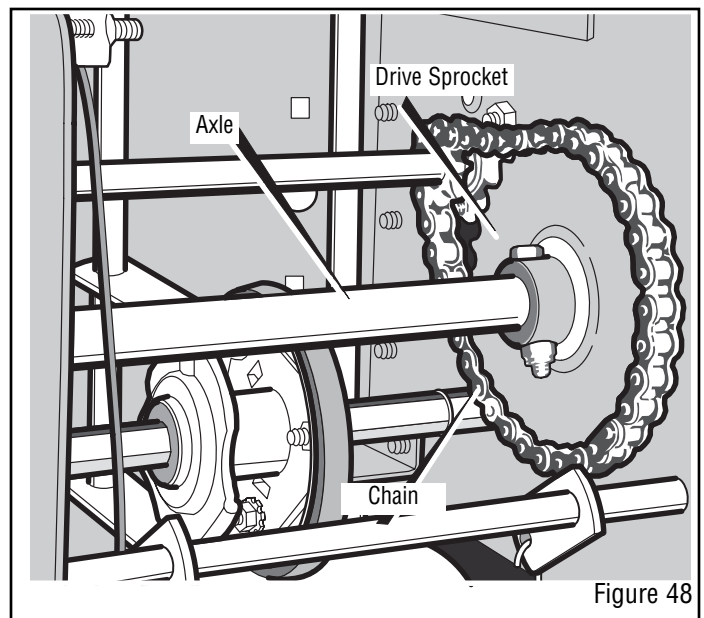


Figure 48

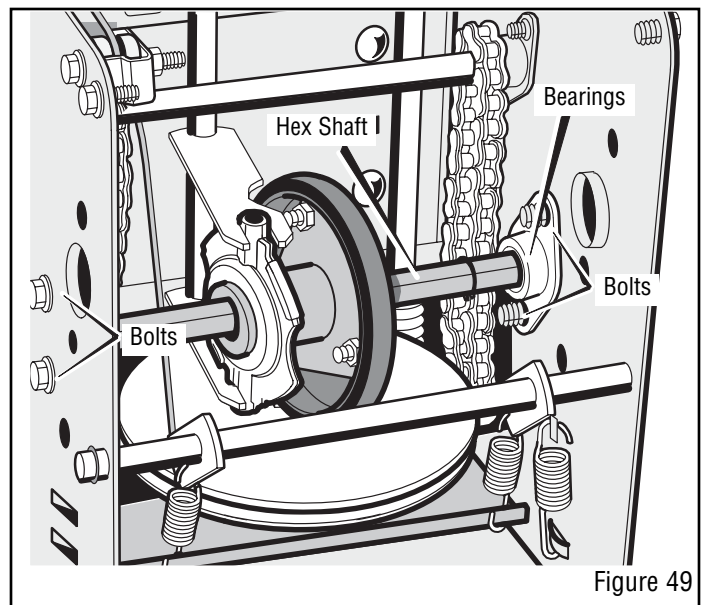


Figure 49

MAINTENANCE

10. Remove the three **fasteners** that hold the **friction wheel** to the **hub** (see Figure 50).
11. Remove the **friction wheel** from the **hub**. Slip the **friction wheel** off the **hex shaft**.
12. Assemble the new **friction wheel** onto **hub** with the fasteners removed earlier.
13. Install the **hex shaft** and **bearings** with the four bolts removed earlier (see Figure 51).

Make sure the washers are properly installed in the original position. Also, make sure the two washers are properly aligned with the actuator arms.

14. Make sure the **hex shaft** turns freely.
15. Install the right wheel, **axle**, and **drive sprocket** with the fasteners removed earlier. Install the **chain** onto the **drive sprocket** (see Figure 48).
16. Check the adjustment of the friction wheel. See “How To Adjust The Friction Wheel” in this section.
17. Make sure the friction wheel and the disc drive plate are free from grease or oil.
18. Install the **bottom panel** (see Figure 47).
19. Tighten the **bolts** on each side of the **bottom panel**.
20. Install the **left wheel** to the **axle** with the fasteners removed earlier.
21. Connect the spark plug wire.

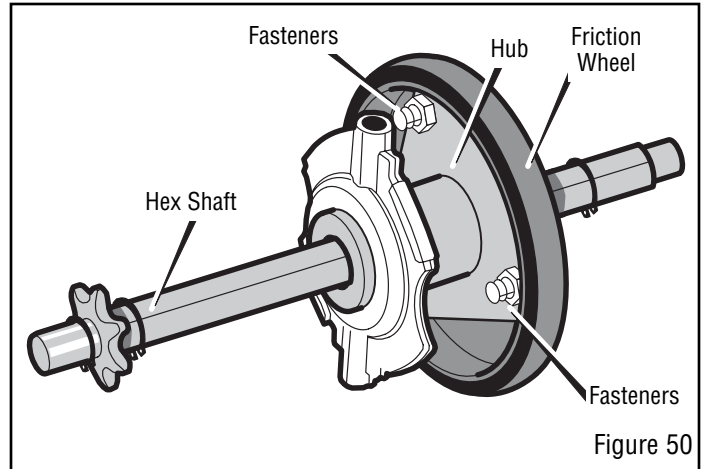


Figure 50

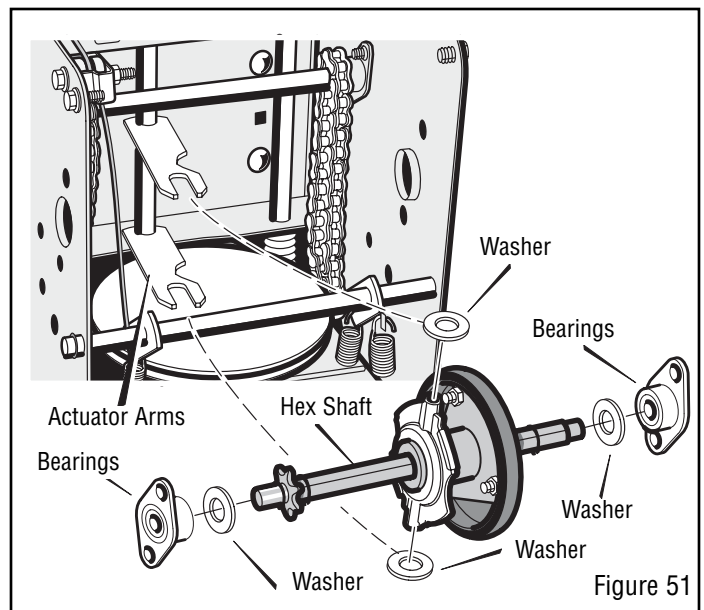


Figure 51

MAINTENANCE

AUGER SHEAR BOLT REPLACEMENT

The augers are secured to the auger shaft with special bolts that are designed to break if an object becomes lodged in the auger housing. Use of a harder bolt will reduce the protection provided by the shear bolt. To replace a broken shear bolt, proceed as follows:

WARNING: To insure safety and performance levels, only original replacement shear bolts should be used.

1. Stop the engine, disengage all controls, disconnect the spark plug lead wire, and make sure all moving parts have stopped.
2. Align the hole in the auger with the hole in the auger shaft. Install new shear bolt, spacer and locknut found in the toolbox located on the belt cover (see Figure 52).

NOTE: The spacer fits into the larger hole in the auger tube.

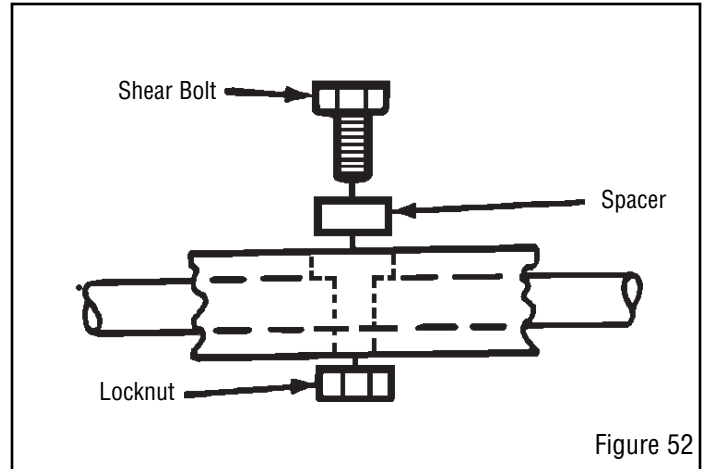


Figure 52

TO ADJUST OR REPLACE THE SPARK PLUG

Check the **spark plug** every twenty-five (25) hours. Replace the **spark plug** if the electrodes are pitted or burned or if the porcelain is cracked.

1. Clean spark plug and reset gap periodically.
2. Clean area around spark plug base before removal, to prevent dirt from entering engine.
3. Replace spark plug if electrodes are pitted or burned or if porcelain is cracked.
4. Clean spark plug by carefully scraping electrodes (do not sandblast or use wire brush).
5. Be sure spark plug is clean and free of foreign material. Check electrodes gap with a wire feeler gauge and reset gap to 0.030" (0.76 mm) if necessary. If a new spark plug is needed, refer to REPLACEMENT PARTS Parts section of this manual for proper replacement spark plug.
6. Before installing spark plug, coat threads lightly with graphite grease to insure easy removal.
7. Tighten plug firmly into engine. If torque wrench is available, torque plug to 18-23 ft-lbs. (24.2-31.2 Nm).

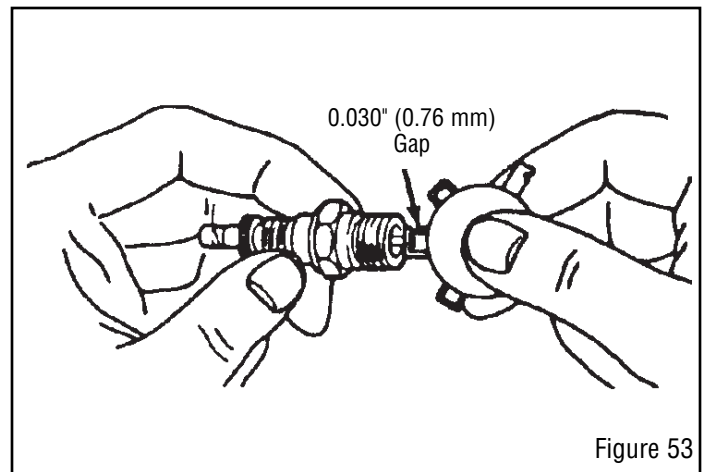



Figure 53

STORAGE

OFF SEASON STORAGE

 **WARNING:** Never store the engine, with fuel in the tank, indoors or in a poor ventilated enclosure where fuel fumes could reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, etc.

Handle gasoline carefully. It is highly flammable and careless use could result in serious fire damage to your person and/or property.

Drain fuel into approved containers outdoors, away from open flame.

If the snowthrower is to be stored for thirty (30) days or more at the end of the snow season, the following steps are recommended to prepare your snowthrower for storage.

NOTE: Gasoline must be removed or treated to prevent gum deposits from forming in the tank, filter, hose, and carburetor during storage.

1. To remove gasoline, run engine until tank is empty and engine stops.

If you do not want to remove the gasoline, add fuel stabilizer to any gasoline left in the tank to minimize gum deposits and acids. If the tank is almost empty, mix stabilizer with fresh gasoline in a separate container and add some to the tank. ALWAYS FOLLOW INSTRUCTIONS ON STABILIZER CONTAINER. THEN RUN ENGINE AT LEAST 10 MINUTES AFTER STABILIZER IS ADDED TO ALLOW MIXTURE TO REACH CARBURETOR. STORE SNOWTHROWER IN SAFE PLACE.

2. You can help keep your engine (4-cycles only) in good operating condition by changing oil before storage.
3. Lubricating the piston/cylinder area. This can be done by first removing the spark plug and squirting clean engine oil into the spark plug hole. Then cover the spark plug hole with a rag to absorb oil spray. Next, rotate the engine by pulling the starter two or three times. Finally, reinstall spark plug and attach spark plug wire.

4. Thoroughly clean the snowthrower.
5. Lubricate all lubrication points (see "Lubrication" in the MAINTENANCE section).
6. Insure that all nuts, bolts, and screws are securely fastened. Inspect all visible moving parts for damage, breakage, and wear. Replace if necessary.
7. Touch up all rusted or chipped paint surfaces; sand lightly before painting.
8. Cover the bare metal parts of the snowthrower housing auger, and the impeller with rust preventative.
9. If possible, store your snowthrower indoors and cover it to give protection from dust and dirt.
10. On models with folding handles, loosen the knobs that secure the upper handle. Rotate the upper handle back.
11. If the machine must be stored outdoors, block up the snowthrower and insure the entire machine is off the ground. Cover the snowthrower with a heavy tarpaulin.

REMOVING THE SNOWTHROWER FROM STORAGE

When removing the snowthrower from storage, follow the steps below.

1. Put the upper handle in the operating position, tighten the knobs that secure the upper handle.
2. Fill the fuel tank with a fresh fuel.
3. Check the spark plug. Make sure the gap is correct. If the spark plug is worn or damaged, replace before using.
4. Make sure all fasteners are tight.
5. Make sure all guards, shields, and covers are in place.
6. Make sure all adjustments are correct.

TROUBLE SHOOTING CHART

PROBLEM	LOOK FOR	REMEDY
Difficult starting	Defective spark plug.	Replace defective spark plug.
Engine runs erratically	Blocked fuel line.	Clean fuel line.
	Empty gas tank.	Check fuel supply.
	Stale gasoline.	Add fresh gasoline with fuel stabilizer.
	Water or dirt in fuel system.	Remove carburetor bowl to drain fuel tank. Refill with fresh fuel. CAUTION: Do not remove carburetor bowl when the engine is hot.
Engine stalls	Unit running on CHOKE.	Set choke lever to RUN position.
Loss of power	Gas cap vent hole is plugged.	Remove ice and snow from cap. Be sure vent hole is clear.
Excessive vibration	Loose parts or damaged impeller.	Stop engine immediately and remove spark plug wire. Tighten all bolts and make all necessary repairs. If vibration continues, have the unit serviced by a competent repairman.
Unit fails to propel itself	Drive belt loose or damaged.	Replace drive belt. Refer to "Drive Belt Replacement" in the MAINTENANCE section of this manual.
	Incorrect adjustment of traction drive cable.	Adjust traction drive cable. Refer to "Cable Adjustment" in the MAINTENANCE section of this manual.
	Worn or damaged friction disc.	Replace friction disc. Refer to "Friction Wheel Replacement" in the MAINTENANCE section of this manual.
Unit fails to discharge snow	Auger drive belt loose or damaged.	Replace or adjust auger drive belt. Refer to "Drive Belt Replacement" and "Drive Belt Adjustment" in the MAINTENANCE section of this manual.
	Auger control cable not adjusted correctly.	Adjust auger control cable. Refer to "Cable Adjustment" in the MAINTENANCE section of this manual.
	Broken shear bolt.	Replace shear bolt. Refer to "Auger Shear Bolt Replacement" in the MAINTENANCE section of this manual.
	Discharge chute clogged.	Stop engine immediately and disconnect spark plug wire. Refer to the first WARNING in "Snowthrower Operation" in the OPERATION section of this manual. Clean discharge chute and inside of auger housing.
	Foreign object lodged in auger.	Stop engine immediately and disconnect spark plug wire. Refer to the third WARNING in "Snowthrower Operation" in the OPERATION section of this manual. Remove object from auger.

Identifying Your Snowthrower

Your new Snowthrower has two (2) identifying numbers: (1) unit model number: (2) unit serial number. The two preceding numbers are required to insure that the proper replacement parts are obtained when required. If you have any questions concerning parts, service, or technical data, contact your nearest John Deere/Frontier dealer. For complete warranty information refer to the warranty in the OWNER'S INFORMATION section of this manual.

NOTES

NOTES

REPLACEMENT PARTS

WE RECOMMEND JOHN DEERE/FRONTIER quality parts and lubricants available at your John Deere/Frontier dealer.

PART NUMBERS MAY CHANGE. When you order replacement parts, use the part numbers listed below and in the Parts Manual. If a part number changes, your John Deere/Frontier dealer will have the latest part number.

WHEN YOU ORDER PARTS, your John Deere/Frontier dealer must have your snowthrower model and serial number and your engine model number. This is the model and serial number that you recorded in the OWNER'S INFORMATION section of this OPERATOR'S MANUAL.

QUICK REFERENCE PART NUMBERS

The following is a list of replacement parts that you may need for routine service and maintenance. If you do not see the replacement part you need in the following chart, see your dealer.

ITEM	PART NUMBER *
Belt, Drive	MT579932
Belt, Auger	MT37x120
Scraper Blade	MT581397E701
Skid Shoe	MT1502079E701
Spark Plug	Champion RC12YC

* Part Numbers are subject to change without notice.

SPECIFICATIONS ST6524

Engine	Briggs & Stratton
Horsepower	6.5 hp
Starter	Electric / Recoil
Fuel Capacity	3 quarts
Drive System	Friction Disc
Speeds	6 Forward / 2 Reverse
Tire Diameter	13"
Traction Control	Pin Lock
Clearing Width	24"
Housing Height	17.5"
Auger Diameter	10"
Auger Type	Steel / Notched
Impeller Diameter	9"
Chute Rotation	Remote
Chute Turning Radius	190°
Deflector Control	Manual
Weight	160 lbs
Warranty — Engine	3 years
Warranty — Machine	3 years



