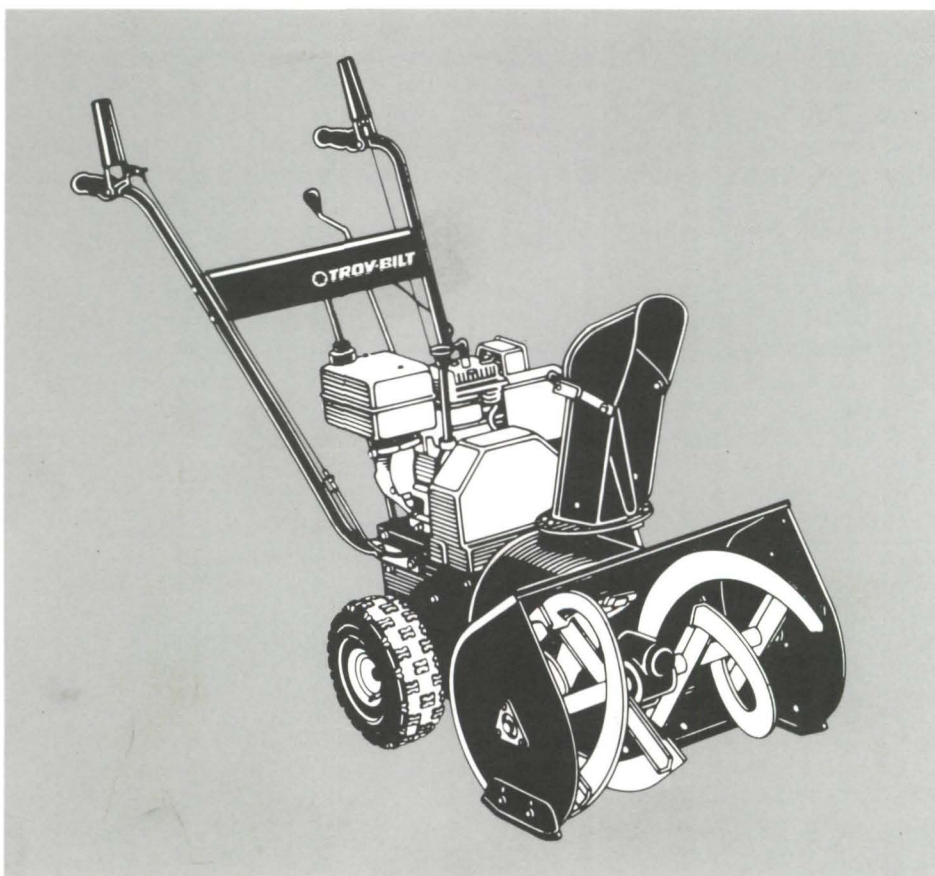




SNOWTHROWER

Model 5210R



Safety • Assembly • Controls • Operation • Maintenance

FEATURES AND CONTROLS

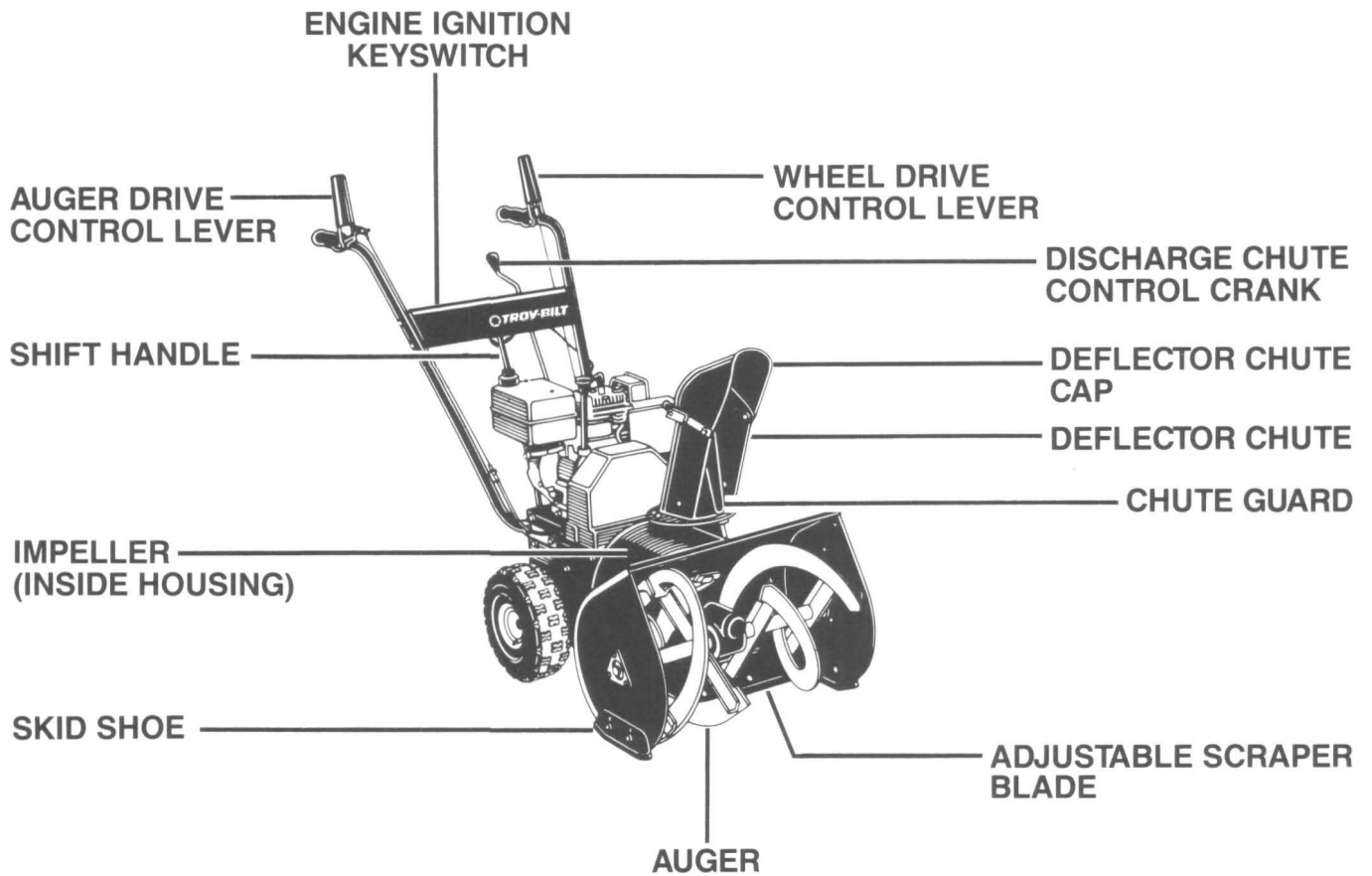


TABLE OF CONTENTS

	Page		Page
SECTION 1: Safety	4	SECTION 4: Operation	14
Training	4	Pre-Start Checklist	14
Preparation	4	Starting	14
Operation	5	Stopping	16
Maintenance and Storage	6	Moving the Snowthrower in Reverse ..	16
Decals	6	Changing Speeds	17
 		Snowthrowing Tips	17
SECTION 2: Easy Assembly	7	 	
 		SECTION 5: Engine and	
SECTION 3: Snowthrower and		Snowthrower	
Engine Controls	11	Maintenance	19
Snowthrower Controls	11	Engine Maintenance	19
Auger Drive Control Lever	11	Checking Engine Oil Level and	
Wheel Drive Control Lever	11	Adding Oil to Engine	19
Discharge Chute Control Crank	11	Changing the Engine Oil	19
Discharge Chute Deflector Cap	11	Engine Ignition System	20
Shift Handle	11	Spark Plug	20
Skid Shoes	12	Carburetor Adjustment	20
Scraper Blade	12	Snowthrower Maintenance	20
Engine Controls	12	Lubrication	20
Engine Ignition Keyswitch	12	Wheel Drive Cable Adjustment	21
Engine Control Lever	13	Wheel Drive Belt Removal and	
Engine Choke Knob	13	Installation	21
Pre-Starting Primer Button	13	Auger Drive Cable Adjustment	22
Engine Recoil Starter	13	Auger Drive Belt Removal and	
Fuel Shutoff Valve	13	Installation	23
120V Electric Starter (Optional)	13	Maintenance Schedule	24
		Troubleshooting	25
		Specifications	Inside Back Cover

Dear TROY-BILT Snowthrower™ Owner:

Congratulations! You now own one of the finest snowthrowers available today.

To help you safely and efficiently assemble, operate, and service your snowthrower, we've prepared this Owner/Operator Manual for you. This Manual gives you important information you need to safely operate and service your snowthrower.

Before assembling your new snowthrower, please read "Section 2: Easy Assembly" all the way through. These assembly instructions will tell you how to assemble your new snowthrower with a minimum of tools, time, and fuss.

Before starting or operating the snowthrower, read "Section 1: Safety", "Section 3: Snow Thrower and Engine Controls", and "Section 4: Operation". Make sure that you know how to safely operate the snowthrower. If you lend the snowthrower to another person, be sure he or she reads, understands, and follows the safety and operating instructions given in this Manual.

Of course, if you should have any questions about your snowthrower, we are never farther away than your telephone. Our telephone numbers and business hours are on Page 3 and on the back cover of this Manual.

If you should ever need replacement parts for your snowthrower, you can either stop by your local dealer or order the part directly from us.

Please remember, we are here to help you.

TROY-BILT Manufacturing Company



This TROY-BILT Snowthrower™ has passed the safety standards of the Outdoor Power Equipment Institute and an individual testing laboratory.

FOR SERVICE OR PARTS

For service questions, operating questions, or replacement parts, you can either contact us at the factory or see your local servicing dealer. Our factory

addresses, hours, and telephone numbers are listed below for your convenience.

ADDRESS	HOURS	TELEPHONE NUMBERS
In the U.S.A. TROY-BILT MFG. CO. 102nd St. & 9th Ave. Troy, NY 12180	M-F 8 a.m. to 7 p.m. Sat. 9 a.m. to 4 p.m.	(Toll-free) 1-800-833-6990
In Canada GARDEN WAY CANADA, INC. 1515 Matheson Blvd., Unit B11 Mississauga, Ontario L4W 2P5	M-F 8 a.m. to 5 p.m.	Local (416 area code): 624-8423 From Ontario & Quebec: (Toll-free) 1-800-387-3351 From western Canada & the Maritime Provinces: (Toll-free) 1-800-387-3316

When you contact the factory or local servicing dealer for parts or service information, please provide the following information:

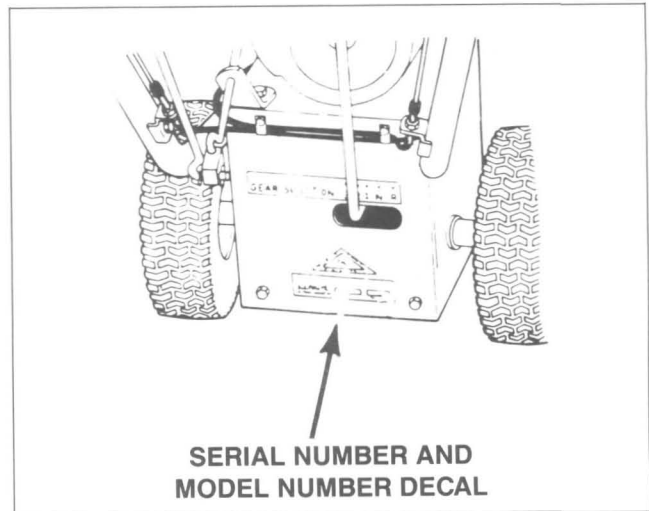
Snowthrower Serial Number:
 (See Figure at right) _____

Snowthrower Model
 Number: _____

Date of Delivery: _____

Engine Manufacturer: _____

Engine Model/
 Serial Number*: _____



*For the location of the engine model/serial number, please refer to the engine owner's manual which was included in the literature package.

IMPORTANT

All references to left, right, front, and rear in this Manual are determined from the operator's position — standing behind the handlebars and facing the direction of forward travel.

SECTION 1: SAFETY

IMPORTANT

Safe Practices for Walk-Behind Snowthrowers.



This is a safety alert symbol. It is used in this Manual and on snowthrower decals to alert you to potential hazards. Whenever you see this

symbol, read and obey the safety message that follows it. Failure to obey the safety message could result in personal injury or property damage.

TRAINING

1. Very carefully read this Owner/Operator Manual and any other literature you receive. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the snowthrower and disengage its controls quickly.
2. Never allow children to operate the snowthrower. Never allow uninstructed or irresponsible adults to operate the snowthrower.
3. Keep the area of operation clear of all persons, particularly small children, and pets.

PREPARATION

1. Thoroughly inspect the area where the snowthrower will be used. Remove all doormats, sleds, boards, wires, and other foreign objects.
2. Disengage all clutches and shift into neutral before starting the engine.
3. Do not operate the snowthrower without wearing adequate winter outer garments. Wear footwear that will improve footing on slippery surfaces.
4. Handle gasoline with care; it is highly flammable and its vapors are explosive.
5. Adjust the collector housing height to clear gravel or crushed rock surfaces.
6. Never attempt to make any adjustments while the snowthrower is running (unless otherwise specified in this Manual).
7. Let the engine and snowthrower adjust to outdoor temperatures before starting to clear snow.
8. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair to protect your eyes from objects that may be thrown from the machine.
9. Check the engine oil level before starting the engine.
10. Check the gas level in the gas tank before starting the engine. Don't fill the gas tank when the

snowthrower is indoors or when the engine is running or hot. Allow the engine to cool for several minutes before filling the gas tank. Use an approved fuel container. Use a funnel or spout to prevent spillage. After filling, securely reinstall the gas tank and fuel container caps. Wipe up any spilled gasoline before starting the engine.

11. Do not fill the gas tank all the way up to the top of the filler neck. Fill the tank up only to within 1/2-inch of the bottom of the filler neck.
12. Before starting the engine, check the auger and discharge chute to make sure that they are free of ice.
13. Do not operate the snowthrower without guards or safety devices in place. Do not attempt to defeat the purpose of these safety devices.
14. Before starting the engine, check the snowthrower for loose or missing fasteners (nuts, screws, & bolts).
15. Keep smoking materials, sparks, and flame away from the gas tank and fuel container.
16. For electric starting snowthrowers:
 - A. Use a 3-pronged properly rated and approved electrical cord. Make sure that you plug this electrical cord into a properly grounded 3-pronged outlet.
 - B. Before use, inspect the electrical cord to make sure that it is not damaged.
 - C. When connecting or disconnecting the electrical cord, stand on dry ground — do not stand in puddles or on wet ground. Make sure that your hands (or gloves) are not wet. Do not use the electric starter if it is raining.
 - D. When connecting the electrical cord, first connect the cord to the electric starting switchbox (on top of the engine). Then connect the electrical cord to a properly grounded 120V wall outlet. This will help prevent any sparks from occurring near the engine.

To prevent a shock hazard, use the electric starting system only with an electrical cord rated for outdoor use. Be sure this electrical cord is of a sufficient gauge.

F. Do not abuse the electrical cord. Never pull the snowthrower by the cord. Never yank the cord to disconnect it from the outlet. Keep the cord away from oil, sharp edges, and excessive heat.

OPERATION

1. Before each use, check the operation of the snowthrower's controls. Do not operate the snowthrower unless all controls are functioning properly.
2. Do not put hands or feet near or under rotating parts. Keep clear of the intake and discharge openings at all times.
3. Exercise extreme caution when operating or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
4. After striking a foreign object, stop the engine, disconnect the spark plug wire from the spark plug, and thoroughly inspect the snowthrower for any damage. Repair any damage before restarting and operating the snowthrower.
5. If the snowthrower should start to vibrate abnormally, stop the engine, disconnect the spark plug wire and check immediately for the cause. Vibration is generally a warning of trouble.
6. Stop the engine and disconnect the spark plug wire whenever you leave the operating position, before unclogging the auger/impeller housing or discharge chute, and when making any repairs, adjustments, or inspections.
7. When clearing, repairing, or inspecting, make sure that the auger/impeller and all other moving parts have stopped. Stop the engine, disconnect the spark plug wire and keep it away from the spark plug to prevent accidental starting.
8. Do not run the engine indoors, except when starting the engine and transporting the snowthrower into or out of the building. Open the building's outside doors — exhaust fumes contain carbon monoxide, a deadly poison that is odorless and colorless.
9. Do not clear snow across the face of slopes. Exercise extreme caution when changing direction on slopes. Do not attempt to clean steep slopes.
10. Never operate the snowthrower without proper guards, plates, or other safety protective devices in place.
11. Never operate the snowthrower near buildings, glass enclosures, automobiles, window wells, drop-offs, etc. without proper adjustment of the snow discharge angle and direction. Keep children and pets away.
12. Do not overload the snowthrower capacity by attempting to clear snow at too fast a rate.
13. Never operate the machine at high transport speeds on slippery surfaces. Look behind and use care when backing.
14. Never direct discharge at bystanders. Never allow anyone in front of the snowthrower.
15. Disengage power to the auger when the snowthrower is transported or not in use.
16. Use only attachments and accessories that are recommended by Troy-Bilt Manufacturing Company.
17. 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.
18. If the auger/impeller or discharge chute should clog with snow, **NEVER** use your hands or feet to remove the snow. Shut the engine off and disconnect the spark plug wire. Then use a long stick (at least 3-feet long) to clear the blockage.
19. Do not change the engine governor setting or overspeed the engine.
20. Stop both the wheel drive and the auger drive if you are approached by any child, inattentive adult, or pet.
21. Do not touch engine parts which may be hot from operation. Allow the engine to cool before inspecting, cleaning, or repairing it.
22. If you have to pull the snowthrower rearward, release both handlebar levers. Always check behind you for hazards.
23. Do not operate the snowthrower while under the influence of alcohol or drugs.
24. Never attempt to carry children on the snowthrower. They could fall off and be seriously injured or they could interfere with the safe operation of the snowthrower.
25. Use extra care when using the snowthrower near blind corners, shrubs, trees, and any other objects that may obscure vision.
26. Keep children out of the area of operation. Keep children under the watchful eye of an adult other than the person operating the snowthrower. Never assume that children will remain where you last saw them.

SAFETY

27. Do not use the snowthrower near drop-offs, ditches, or embankments. If the snowthrower's wheel should go over the edge, or if the edge would cave in, the snowthrower could suddenly overturn.
28. Do not wear loose clothing such as scarves that could get caught in the rotating parts of the snowthrower.
29. Exercise caution to avoid slipping or falling, especially when operating in (R) Reverse.

MAINTENANCE AND STORAGE

1. Never perform any maintenance while the engine is running or when the spark plug wire is connected to the spark plug, except when specifically instructed to do so in this Manual.
2. Check shear bolts and other fasteners at frequent intervals for proper tightness to be sure the snowthrower is in safe working condition.
3. Never store the snowthrower with gas in its gas tank inside a building where ignition sources (such as hot water heaters, space heaters, clothes dryers, etc.) are present. Allow the engine to cool before storing the snowthrower in any enclosure.
4. Refer to "Storage" in this Manual and to the Engine Owner's Manual for important details if the snowthrower is to be stored for an extended period.
5. Maintain or replace safety and instructional labels as necessary. (See the Snowthrower Parts Catalog for location of labels.)

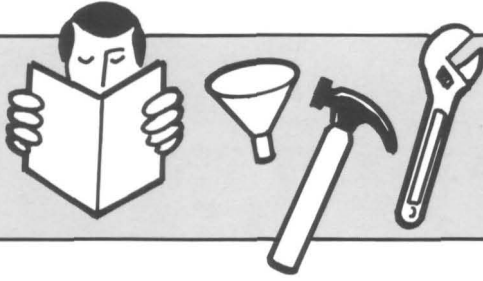
6. Run the snowthrower a few minutes after you've finished throwing snow to prevent freeze-up of the auger. Brush off snow build-up on the snowthrower.
7. Remember, the end of the winter is a good time to inspect your snowthrower and order any replacement parts.
8. Use only genuine Troy-Bilt replacement parts. Replacement parts manufactured by others could present safety hazards even though they may fit on this snowthrower.
9. Store gasoline in a cool, well-ventilated area, safely away from any sparks or flame producing equipment. Store gasoline in an approved container, safely out of the reach of children.
10. Touch up scratches, unpainted or rusted areas with paint.

DECALS

For your personal safety and the safety of others, a number of safety message decals have been affixed to your snowthrower. Keep them clean and legible at all times. Contact your local servicing dealer or the factory for replacements if any of these decals is missing or becomes illegible.

Refer to the separate Snowthrower Parts Catalog for decal locations, part numbers, and ordering instructions.

SECTION 2: EASY ASSEMBLY



Before you begin assembly, read this Section all the way through to familiarize yourself with the assembly steps. Then gather the tools you'll need.

To assemble your snowthrower, you'll need:

1. One quart of clean, high quality engine oil. (Refer to "Specifications" on the inside back cover for the recommended types and viscosities.)
2. Two 7/16-inch wrenches.*
3. Two 1/2-inch wrenches (one of these should be an open-end wrench).*
4. One 3/8-inch wrench.
5. A small amount of multipurpose automotive grease.
6. One 5/16-inch wrench.*
7. One automotive-type tire pressure gauge.
8. One 9/16-inch wrench.*
9. A clean funnel.
10. A hammer and block of wood to tap the roll pin into the plastic universal joint.

*You can substitute adjustable wrench(es).

Compare the parts you received in the shipping carton with the list below to make sure you received everything. If you are missing any parts, please contact your local servicing dealer or call the factory for replacements.

Your shipping carton should contain:

1. The snowthrower/engine/auger assembly.
2. The handlebar assembly.
3. The discharge chute assembly.
4. The hardware package, which consists of:
 - A. One roll pin.
 - B. Two #10-24 x 7/8 hex screws.
 - C. Two #10 flat washers.
 - D. Two #10-24 locknuts.
 - E. Two ignition keys.
 - F. One tie strap.
 - G. Two cable brackets.
 - H. Six locknuts, 5/16-18.
 - I. Two spacers.
 - J. Two extra 5/16-18 shear bolts (for auger).
 - K. Four 5/16-18 x 3/4 hex flange screws.

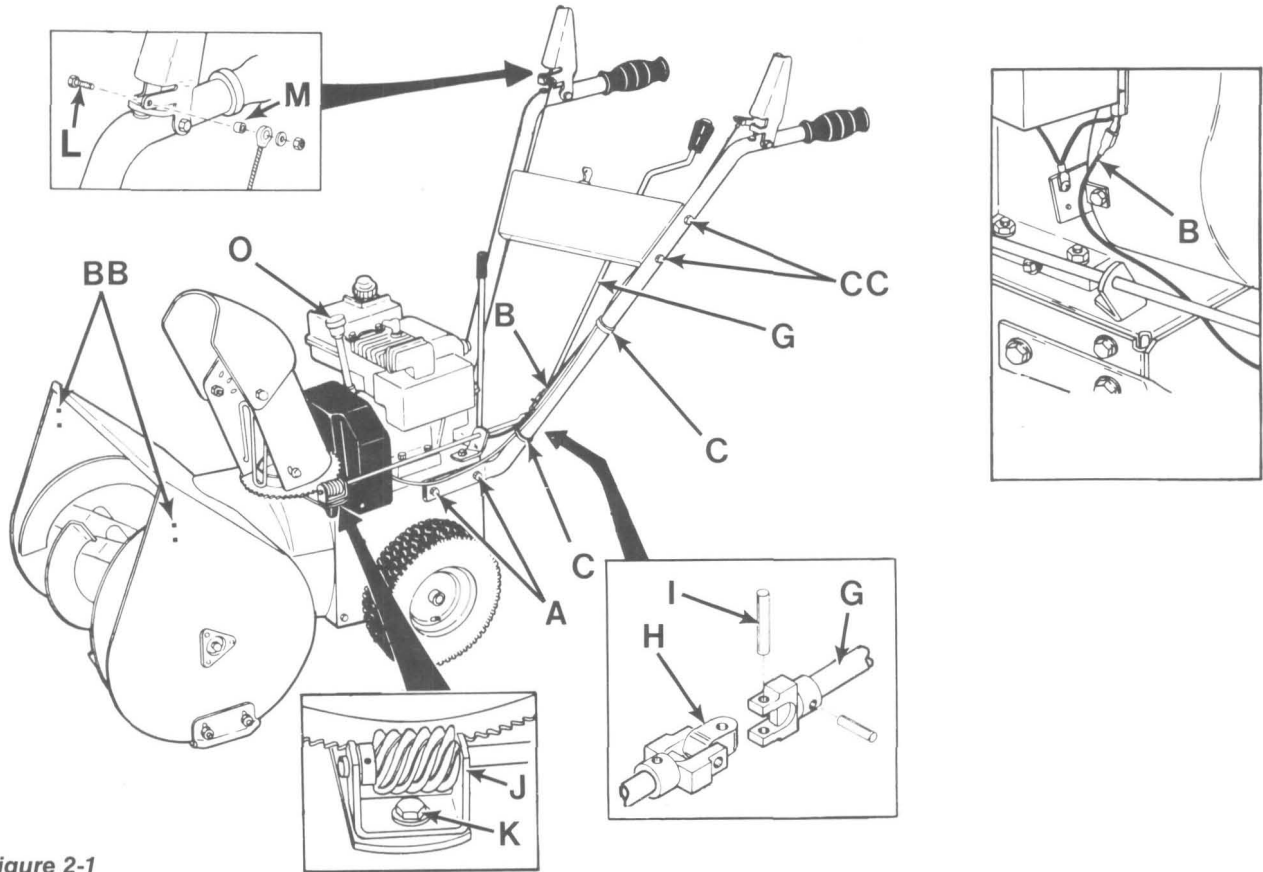


Figure 2-1

Step 1: Attach the Handlebars.

1. Remove the four loosely installed 5/16-18 x 7/8 flange screws from holes A.
2. Place the lower ends of the handlebar assembly on the outside of the upper rear corner of the frame as shown in Figure 2-1 (Item A). Align the two holes in the left side of the lower end of the handlebars with the two holes in the left side of the frame.
3. Loosely install a 5/16-18 x 3/4 hex flange screw into each of these holes.
4. Repeat the previous two steps for the right side of the lower handlebars.
5. Evenly tighten all four screws.
6. Use the two 7/16-inch wrenches to check the four handlebar control panel mounting screws (Figure 2-1, Item CC) for tightness.

Step 2: Connect the Ignition Ground Wires

1. Run the black ignition ground wire down the left-hand handlebar tube as shown in Figure 2-1 and 2-2 (Item B).
2. Plug the connector at the lower end of the black ignition ground wire into the terminal beneath the Engine Control Lever. See Figure 2-1 (Item B).
3. Attach the black ground wire to the lower left handlebar with the two tie straps. See Figure 2-1 and 2-2 (Item C).

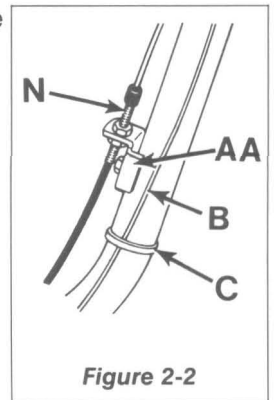
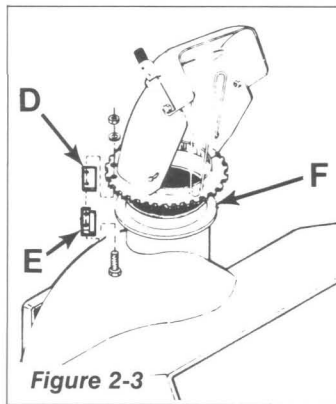


Figure 2-2

Step 3: Attach the Deflector Chute Assembly.

- Use a 3/8-inch wrench and a 5/16-inch wrench to remove two of the three sets of shims and clips (Figure 2-3, Items D & E) from the lower, rear part of the deflector chute assembly. Don't remove the shim and clip that is in front of the chute opening.
- Apply multipurpose automotive grease all around the surface of the deflector chute flange (Figure 2-3, Item F).
- Place the deflector chute onto the flange as shown in Figure 2-3.
- Reinstall the two sets of shims and clips you previously removed. Make sure that the shims (Figure 2-3, Item D) are above the deflector chute flange (Figure 2-3, Item F).
- Connect the chute crank (Figure 2-1, Item G) to the plastic universal joint (Figure 2-1, Item H) by using the hammer and block of wood to gently tap the roll pin into the universal joint and chute crank.
- Move the discharge chute deflector cap (Fig. 2-3) upward.
- Rotate the chute control crank at the handlebar console to make sure that the deflector chute turns without binding. If the deflector chute binds, readjust bracket (Figure 2-1, Item J) as follows:
 - Loosen screw (Figure 2-1, Item K).
 - Adjust bracket (Figure 2-1, Item J) by moving it inward or outward as necessary.
 - Retighten screw (Figure 2-1, Item K).
 - Repeat Step 7.



- Attach the cable brackets to the lower inner side of the handlebar tubes as follows:
 - Remove a 1/4-20 x 3/4 screw from the inside bottom of the handlebar and insert it into one of the cable brackets (Figure 2-2, Item AA).
 - Place the legs of the bracket and screw on the lower inside of the handlebar tube. See Figure 2-2. Use a 3/8-inch wrench to securely tighten the screw. Make sure that the bracket is positioned as shown in Figure 2-2 — with the horizontal leg of the bracket above the screw head.
 - Repeat Steps 4-A and 4-B for the remaining bracket and screw.
- Secure the adjustment section (Figure 2-2, Item N) of the cable to the cable bracket as follows:
 - Pull downward on the cable and insert the adjustment section of the cable into the slot in the cable bracket. The horizontal leg of the cable bracket should fit between the two nuts that are on the threaded portion of the cable's adjustment section.
 - Loosely tighten the adjustment section's two nuts to prevent the cable from pulling free of the adjustment section. You'll tighten these nuts later, after you've checked the cable tension.
 - Repeat Steps 5-A and 5-B for the remaining cable bracket and cable.
- Check the tautness of the cables. The cables should just barely be taut when the handlebar levers are not engaged. If the cables have to be adjusted, proceed as follows.
 - Unscrew the upper nut on the adjustment section several turns.
 - If the cable tension is too loose, screw the lower adjustment section nut counterclockwise (as viewed from above) until the cable is taut. If the cable is too taut, screw the lower adjustment section nut clockwise (as viewed from above) until the cable is just taut.
 - Use a 1/2-inch open-end wrench to hold the lower nut in place. Screw the upper nut clockwise until it touches the cable bracket. Use another 1/2-inch open end wrench to securely tighten the adjustment section's upper nut tight against the cable bracket.
 - Again check the tension of the cable to make sure that the tightening procedure did not upset the cable's adjustment.

Step 4: Attach Cables to Control Levers.

- Place one of the hex screws (Figure 2-1, Item L) through the hole in the right-hand handlebar lever. Hold the screw in place and put a spacer (Figure 2-1, Item M) over the threaded end of the hex screw. Run the auger drive cable from the right-hand side of the snowthrower, upward beneath the handlebar control panel, and place the upper end of the cable over the spacer.
- Place a flat washer and nut onto the threaded end of the hex screw. Use a 5/16-inch and a 3/8-inch wrench to securely tighten the nut and hex screw.
- Repeat Steps 4-1 and 4-2 for the left-hand handlebar lever and wheel drive cable.

EASY ASSEMBLY

Step 5: Check the Tires' Air Pressure.

1. Use an automotive-type tire pressure gauge to check the air pressure in the tires.
2. Make sure that both tires are evenly inflated — or else the snowthrower could pull to one side. The correct tire pressure is 15 to 20 PSI (Pounds per Square Inch).

Step 6: Add Oil to the Engine.

1. Unscrew the dipstick/oil filler cap (Figure 2-1, Item O).
2. Insert a clean funnel into the oil filler tube.
3. Slowly pour engine oil into the oil fill tube. The engine should hold approximately 21 ounces of oil. While pouring, pause frequently to check the oil level by reinstalling the dipstick (firmly screw it in place), and then removing it. Don't over-fill the engine with oil — stop adding oil when it reaches the "F" mark on the dipstick.

Step 7: Check the Transmission Gear Oil Level.

Although we filled your snowthrower's transmission with the correct SAE 90 weight gear oil at the factory, be sure to double-check the gear oil's level. Please refer to "Lubrication" on Page 20 of this Manual for instructions.

Step 8: Attach the drift slicers to the snowthrower's auger housing.

Use four 5/16–18 x 3/4 flange screws and lock nuts to secure the drift slicers to the outside of the snowthrower's auger housing. Use bolt holes (Figure 2-1, Item BB) when attaching the drift slicers.

You've now finished assembling your snowthrower. Please read "Section 1: Safety", "Section 3: Controls", and "Section 4: Operation" before you start the snowthrower's engine.

Note: Store the two extra shear bolts and nuts in an easily remembered location. If an auger shaft bolt should break, simply replace it with one of these bolts.

SECTION 3: SNOW THROWER AND ENGINE CONTROLS

This Section describes the location and function of the various controls you will need to use when operating the snowthrower. For complete step-by-step operating instructions, please refer to "Section 4: Operation".

SNOW THROWER CONTROLS

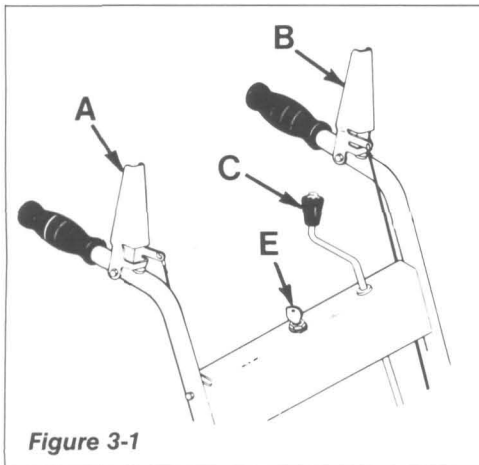


Figure 3-1

Auger Drive Control Lever (Figure 3-1, Item A)

This lever is located on the top of the right-hand handlebar tube in front of the grip. It is used to engage and disengage drive to the auger.

Moving this lever down and holding it against the handlebar will make the auger rotate. To stop the auger, simply release the lever.

Wheel Drive Control Lever (Figure 3-1, Item B)

This lever is located on the top of the left-hand handlebar tube in front of the grip. It is used to engage or disengage drive to the wheels.

Moving this lever down and holding it against the handlebar will make the wheels turn [when the shift handle is not in (N) Neutral]. To stop the wheels from turning, simply release the lever.

Discharge Chute Control Crank (Figure 3-1, Item C)

The discharge chute control crank is located on the left-hand side of the rear lip of the handlebar control panel.

Turning the discharge chute control crank clockwise will turn the discharge chute to the right. Turning the discharge chute control crank counterclockwise will turn the discharge chute to the left. It will take approximately 8½ turns of the discharge chute con-

trol crank to move the discharge chute from full left to full right.

When throwing snow, turn the discharge chute so that it throws the snow downwind (as long as downwind is in a safe direction).

When you begin a turn (while throwing snow), remember to move the discharge chute so that the snow is always being discharged downwind.

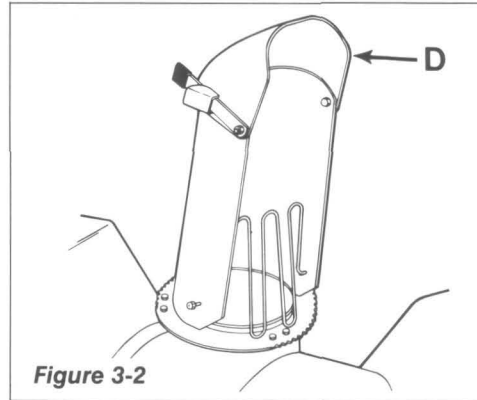


Figure 3-2

Discharge Chute Deflector Cap (Figure 3-2, Item D)

This control is used to direct the vertical angle of snow discharge. This angle is adjusted by moving the lever on the side of the deflector cap outward, moving the deflector cap up or down as required, and then releasing the lever.

Usually keep the angle of snow discharge low (especially in windy conditions).

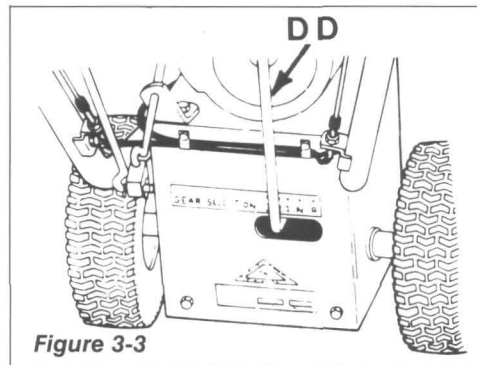


Figure 3-3

Shift Handle (Figure 3-3, Item DD)

The shift handle is located on the right-hand side of the rear of the chassis. It is used to select one of three forward speeds [(3) High, (2) Medium, or (1) Low], (N) Neutral, or (R) Reverse. In the (N) Neutral position, the wheels are free to turn and you can easily push the snowthrower. However, you can push the

SNOW THROWER AND ENGINE CONTROLS

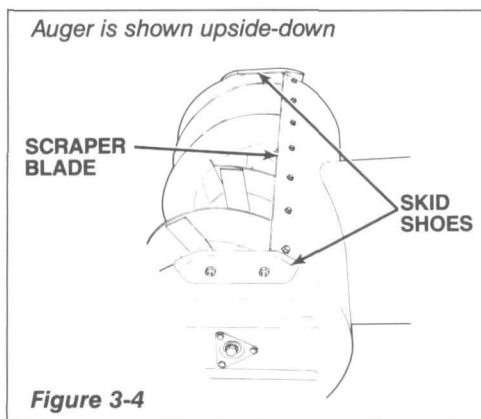
snowthrower when the shift handle is in any of the forward or reverse gears. It will take increased effort because you are also turning the wheel drive system by way of the wheels.

When the top of the shift handle is moved all the way to the right, the snowthrower will be in (R) Reverse. When the top of the shift handle is moved all the way to the left, the snowthrower will be in (3) High speed. There is a detent (a stop) for each of the speeds between (R) Reverse and (3) High speed. As you slowly move the shift handle sideways, you can feel these detents.

These speeds refer only to the wheel speed, not the auger speed.

To use the shift handle, release the wheel drive handlebar control lever. Allow all forward (or reverse) motion of the snowthrower to stop. Move the shift handle into the desired speed and re-engage the wheel drive handlebar control lever.

When familiarizing yourself with the various speeds, or when moving the snowthrower near obstacles, use (1) Low or (2) Medium speed.



Skid Shoes (Figure 3-4)

A skid shoe is located at the bottom of each side of the auger housing. These skid shoes are used to raise or lower the height of the auger housing.

This allows you to lower the auger housing when throwing snow off smooth surfaces so you can get a cleaner path. If you're throwing snow from clear, level ground, adjust the skid shoes so that the scraper blade clears the ground by approximately 1/8-inch.

When throwing snow from rough surfaces (such as those covered by gravel), the skid shoes allow you to raise the auger housing so that the scraper blade clears the gravel and doesn't pick it up and throw it. If you're throwing snow from a gravel covered area, adjust the skid shoes so that the scraper is above the gravel.

To adjust the skid shoes:

1. Move the snowthrower to a level area.
2. Shut the snowthrower's engine off. Disconnect the spark plug wire and prevent it from touching the spark plug
3. Use a 9/16-inch wrench to loosen the two bolts that secure the skid shoe to the side of the auger housing.
4. Move the skid shoe up or down as necessary to obtain the desired gap between the scraper blade and the ground.
5. Repeat Steps 3 and 4 for the other skid shoe. Be sure to adjust this skid shoe the same amount or else you'll get a sloping cut when you throw snow.

Scraper Blade (Figure 3-4)

The scraper blade is located at the lower rear of the auger housing. It is attached to the auger housing by 5 bolts and nuts. The scraper blade is adjustable for height and is replaceable (in case it becomes worn out or damaged).

Since the scraper blade will contact the ground, it will gradually wear and will be subject to damage. At the beginning and end of each season, check the scraper blade for excessive wear and damage.

You can adjust the scraper blade by loosening the 5 nuts that attach it to the auger housing. The nuts are located in the lower inner surface of the auger housing. When all the nuts are loose, move the scraper blade up or down as necessary. Hold the scraper blade in this position and re-tighten the nuts.

ENGINE CONTROLS

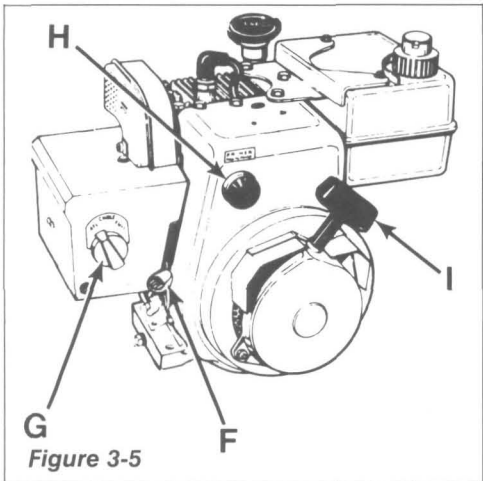
Engine Ignition Keyswitch (Figure 3-1, Item E)

The keyswitch is located in the center of the lip on the rear of the handlebar control panel.

There are two positions of this keyswitch: RUN and STOP.

Turning the key to the RUN position allows you to start the engine with the recoil starter or optional electric starting motor. Turning the key to STOP will shut the engine off.

Always remove the engine ignition key when storing, cleaning, or performing any maintenance on the snowthrower.



Engine Control Lever (Figure 3-5, Item F)

This lever is located on the rear of the left-hand side of the engine.

It is used to increase or decrease the engine speed. This lever also will effect the speed of the wheels and auger when those handlebar control levers are engaged.

Moving the engine control lever upward increases engine speed. Moving the lever downward decreases engine speed.

Engine Choke Knob (Figure 3-5, Item G)

The engine choke knob is located on the left rear side of the engine on the carburetor's heat box. The choke knob is used to enrich the gasoline mixture when starting. This makes starting easier when the engine is cold.

Before starting a cold engine, rotate the choke knob clockwise to its FULL CHOKE position. After the engine starts, gradually rotate the choke knob counterclockwise to its CHOKE OFF position.

If the engine is still warm from a previous run, you may not have to move the choke knob all the way to its FULL CHOKE position. You may only have to move the choke knob to a partial choke position between CHOKE OFF and FULL CHOKE positions. Or you may not have to move the choke knob away from its CHOKE OFF position.

Pre-Starting Primer Button (Figure 3-5, Item H)

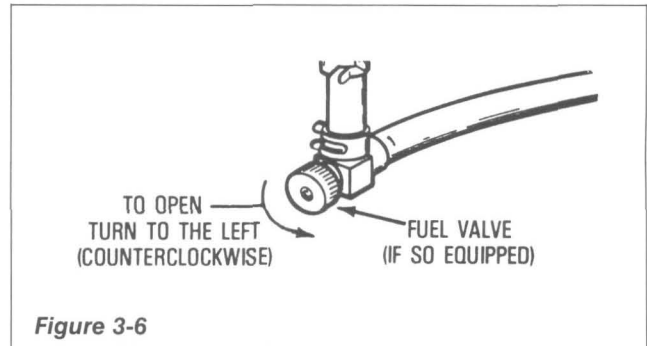
The pre-starting primer button is located on the upper left-hand side of the rear of the engine.

Pressing this button pumps small amounts of gasoline into the engine to improve cold weather starting. Make sure that your finger covers the small hole in the center of the button when you press it.

Engine Recoil Starter (Figure 3-5, Item I)

The recoil starter is located on the rear of the engine. It is used to "pull-start" the engine.

To use the recoil starter, slowly pull the recoil starter's black plastic handle until you feel some resistance from engine compression. Look behind you to make sure there are no obstacles in the way, and then rapidly pull the handle. Allow the rope to slowly be pulled back into the recoil starter mechanism. Repeat as necessary until the engine starts.



Fuel Shutoff Valve (Figure 3-6)

The fuel shutoff valve is located beneath the gas tank. It is located in the fuel line between the gas tank and the carburetor. Turning the fuel shutoff valve clockwise will shut off the fuel flow to the carburetor. Turning the fuel shutoff valve counterclockwise will allow fuel to flow between the gas tank and the carburetor.

After shutting the engine off, turn the fuel shutoff valve off. Before starting, make sure that you turn the fuel shutoff valve on, or else the engine will stop and you will not be able to re-start it until you turn the fuel shutoff valve back on.

120V Electric Starter (Optional)

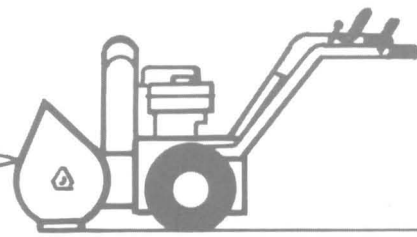
The 120V electric starter switch is mounted on top of the engine.

To function, the electric starter must first be connected to a 120V wall outlet. After this connection is made, you simply push the starter button (on top of the electric starter switch) to start the engine. As soon as the engine starts, release the starter button.

The electric starter is thermally protected. If overheated, it will automatically stop. Allow the starter to cool before attempting to use the electric starter.

Be sure to review the operating instructions that come with the electric start kit.

SECTION 4: OPERATION



Pre-start Checklist:

1. Review "Section 1: Safety" and "Section 3: Controls".
2. Check the snowthrower for any loose or missing hardware.
3. Check the engine oil level.
4. Check the level of the gas in the gas tank.
5. Check the skid shoe (Figure 4-1, Item A) adjustment. See "Skid Shoes" in Section 3.
6. Check the scraper blade (Figure 4-1, Item B) for wear and adjustment.
7. Check the discharge chute crank (Figure 3-1, Item C) for freedom of movement. Then adjust the discharge chute and deflector cap (Figure 4-2, Item C) to the desired direction and angle of discharge.
8. Make sure that the chute guard (Figure 4-2, Item D) is installed.
9. Check the handlebar control levers (Figure 3-1, Items A & B) for freedom of movement.
10. Check the tire pressure. Make sure both tires are inflated equally. Correct tire pressure is 15 to 20 PSI.

HINT: To help prevent snow from sticking to the inside of the deflector, discharge chute, and auger-impeller housing, spray these areas with a silicone spray.

(Snowthrower viewed upside down)

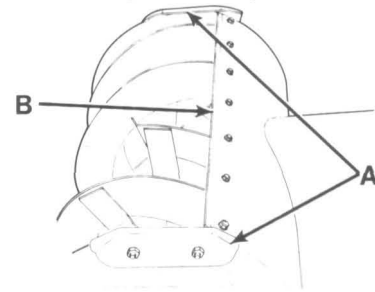


Figure 4-1

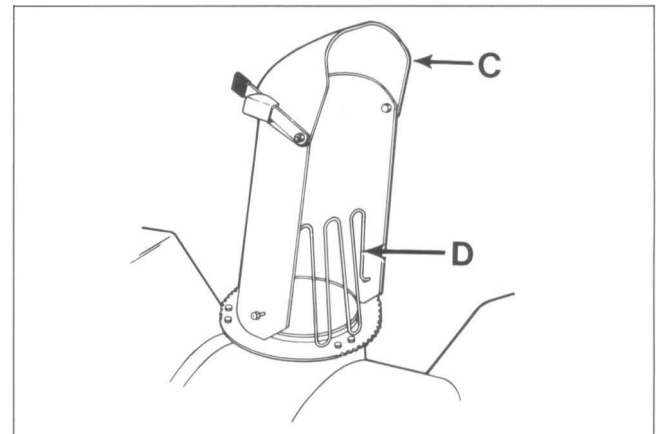


Figure 4-2

Starting

1. Fill the snowthrower's gas tank as follows:



DANGER Gasoline is highly flammable and its vapors are explosive.

- Never fill gas tank when engine is running or still hot from operation. Allow engine and muffler to cool at least 2 minutes before refueling.
- Do not allow open flames, sparks, matches, or smoking in the area.
- Fill fuel tank outdoors in a well-ventilated area.
- Wipe up any spills and move the snowthrower away from gasoline fumes before starting the engine.
- Use only an approved gasoline container. Store it safely out of the reach of children.
- Store gasoline in a well-ventilated area. Do not store where vapors may reach an open flame or spark, or where ignition sources (such as a hot water heater or space heater, furnaces, clothes dryers, stoves, electric motors, etc.) are present.
- Never refuel the gas tank when the electrical cord is connected to the snowthrower (on electric start models).
Failure to follow these instructions could result in personal injury or property damage.

- A. Unscrew the gas tank cap from the engine's gas tank.
 - B. Insert a clean funnel into the gas tank (or use a fuel container that has a flexible pour spout).
 - C. Pour the gas into the tank. Don't fill the tank all the way. Leave approximately ¼-inch of air space between the top of the fuel and the bottom of the gas tank's filler neck.
 - D. Wipe up any spilled gas. Securely reinstall the gas tank cap.
2. Move the shift handle (Figure 3-3, Item D) to its Neutral position (N).
 3. Turn the engine ignition key (Figure 3-1, Item E) to its RUN position.
 4. Move the choke knob (Figure 3-4, Item G) to its FULL CHOKE position if the engine is cold — or to a partial choke position if the engine is warm from a previous run.
 5. Push the pre-starting primer button (Figure 3-4, Item H) two or three times. Omit this step if you are using the 120V electric starter. If the engine is still warm from a previous run, push the pre-start primer button one time only. If the temperature is below 15°F, you may have to push the pre-starting primer button more than three times.
 6. Move the engine control lever to its FAST position.
 7. Make sure that both handlebar levers (Auger Drive and Wheel Drive) are released.



WARNING Engine exhaust contains carbon monoxide, an odorless and deadly poison. Do not run the engine indoors or in a poorly ventilated area. Failure to follow this instruction could result in personal injury.

8. To start the engine with the recoil starter:
 - A. Grasp the black plastic handle of the recoil starter rope (Figure 3-5, Item I). Look behind you to make sure there are no obstacles in the way. Place your other hand on the right-hand handlebar to stabilize the snowthrower when you pull the recoil starter rope.
 - B. Pull the recoil starter rope handle out slowly until you feel some resistance from engine compression.
 - C. Then pull the handle rapidly. Allow the starter rope to rewind slowly. Repeat as necessary until the engine starts.

- D. Gradually move the choke knob to its NO CHOKE position and allow the engine to warm up.
9. To start the engine with the (optional) 120V electric starter:



WARNING To prevent personal injury from electrical shocks:

- Do not use the 120V electric starter in the rain.
- Do not stand in puddles or on damp ground when using the electric starter or when connecting the electrical cord.

- A. Plug the electrical cord into the switchbox on top of the engine.
 - B. Plug the other end of the electrical cord into a properly grounded 120V wall outlet.
 - C. Push the starter button on top of the switchbox. As soon as the engine starts, release the button.
 - D. Gradually move the choke knob to its NO CHOKE position and allow the engine to warm up.
 - E. After the engine is warmed up, unplug the electrical cord from the 120V wall outlet. Then unplug the electrical cord from the switchbox on top of the engine.
10. Check operation of the Auger Drive Lever as follows:
 - A. Quickly squeeze and release the Auger Drive Lever.
 - B. The auger should begin spinning when you squeeze the lever. It should stop spinning when you release the lever.



WARNING If the auger spins *before* you squeeze the Auger Drive Lever, or if the auger continues to spin *after* you release the Auger Drive Lever, do not use the snowthrower. Shut the snowthrower's engine off, disconnect the spark plug wire and prevent it from touching the spark plug. Adjust or repair the auger drive mechanism. See "Auger Drive Cable Adjustment". Failure to follow this instruction could result in personal injury or property damage.

11. Check the operation of the Wheel Drive Lever as follows:

OPERATION

- A. Move the shift handle to its LOW position.
- B. Quickly squeeze and release the Wheel Drive Lever.
- C. The wheels should begin turning when you squeeze the lever. They should stop turning when you release the lever.



WARNING If the wheels turn before you squeeze the Wheel Drive Lever, or if the wheels continue to turn after you release the Wheel Drive Lever, do not use the snowthrower. Shut the snowthrower's engine off, disconnect the spark plug wire and prevent it from touching the spark plug. Adjust or repair the Wheel Drive Mechanism. See "Wheel Drive Cable Adjustment." Failure to follow this instruction could result in personal injury or property damage.

12. Move the shift handle into the desired speed range. (You do not have to start in 1-LOW. See "Changing Speeds.")
13. If both handlebar levers operate properly, re-engage the levers and begin operation.

NOTE: If you only want to move the snowthrower (but not throw snow), simply engage the Wheel Drive Lever. Leave the Auger Drive Lever disengaged (released).

Stopping

To quickly stop the snowthrower:

1. Release both handlebar levers.
2. Turn the engine ignition key to its OFF position.

To stop the snowthrower under normal conditions:

1. Release both handlebar levers.
2. Move the shift handle to its Neutral (N) position.
3. Move the engine control lever to its idle position. Allow the engine to run at idle for several minutes to melt any snow off the engine.
4. To help avoid possible freezing of starter when snowthrower is not being used:

For standard start engines: With engine running, pull recoil starter rope all the way out 3-4 times — the unusual sound made by the starter rope won't harm the engine or the starter.

For 120V electric start engines:

- A. Connect electrical cord to switchbox, then to a 120V wall outlet.

- B. While engine is running, push the starter button and spin the engine's starter for several seconds — the unusual sound made by the spinning starter won't harm the engine or starter.
- C. Disconnect the electrical cord from the 120V wall outlet. Then disconnect the electrical cord from the switchbox.

5. Turn the engine ignition key to its OFF position. Remove key.
6. Disconnect the spark plug wire and prevent it from touching the spark plug.
7. To help avoid possible freezing of the controls:
 - A. Wipe all snow and moisture from the engine in the vicinity of the engine control lever and the choke knob.
 - B. Move the engine control lever and the choke knob back and forth several times.
 - C. Move the choke knob to FULL and leave it in this position.
 - D. Move the engine control lever to the start position and leave it there.
 - E. Close the fuel valve (beneath the engine's gas tank).

Moving the Snowthrower in Reverse

1. Release both handlebar levers (Auger Drive and Wheel Drive). If the snowthrower was moving forward, allow its forward motion to stop.
2. Move the shift handle into (R) Reverse — the top of the shift handle will be all the way to the right.



CAUTION Before engaging the Wheel Drive Lever when the snowthrower is in Reverse (R), look behind you to make sure that there are no obstacles. Failure to follow this instruction could result in personal injury or property damage.

3. Slowly squeeze the Wheel Drive Lever and guide the snowthrower rearward.
4. Before shifting into one of the forward speeds, release the Wheel Drive Lever and let the rearward motion of the snowthrower stop.

Changing Speeds

You can engage the Wheel Drive Lever when the shift handle is in any of the speeds — (R) Reverse, (1) First, (2) Second, or (3) Third. You do not have to begin in (1) First and then shift up through (2) Second and then into (3) Third. You can begin in (3) Third if you wish.

In (2) Second or (3) Third, the snowthrower will move forward faster than in (1) First.

Before moving the shift handle to another speed, release the handlebar levers and let the forward (or rearward) motion of the snowthrower stop. Then move the shift handle to the desired speed and re-engage the Wheel Drive Lever.

Snow Throwing Tips

Use the pattern shown in Figure 4-3 when snow cannot be thrown to one side of the area being cleared. Begin throwing snow close to this side, making sure that the discharge chute directs the snow away from this side. When you turn the snowthrower

around at the end of each pass, you'll have to gradually crank the discharge chute so that it always throws the snow away from the area where no snow can be thrown.

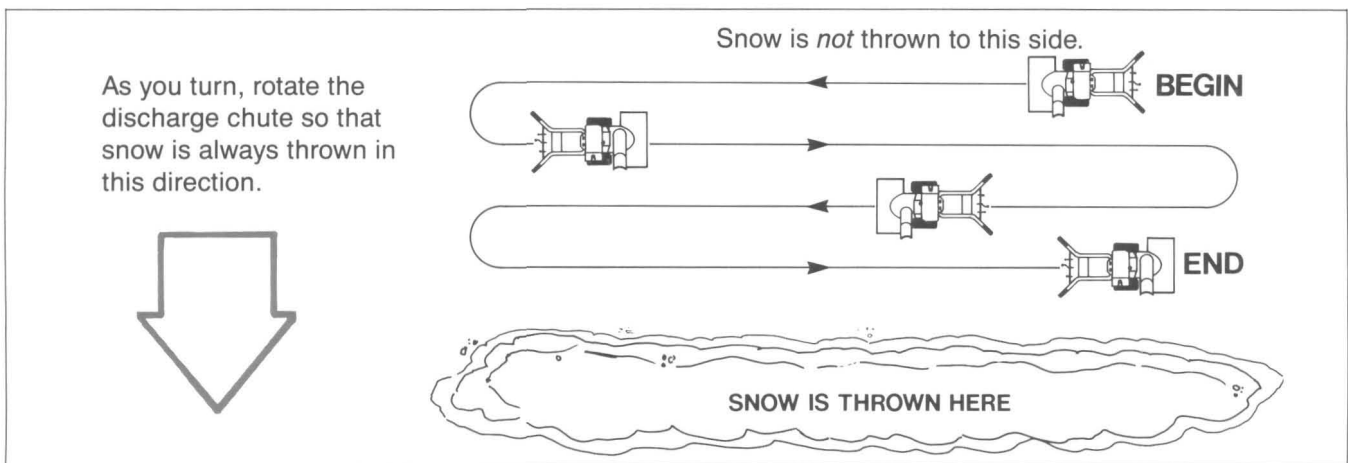


Figure 4-3: Snow throwing pattern when snow can only be thrown to one side.

Use the pattern shown in Figure 4-4 when you wish to throw snow to both the right and left sides of the area being cleared. When using this pattern, you

have to change the direction of the discharge chute only when making a turn at the end of a pass.

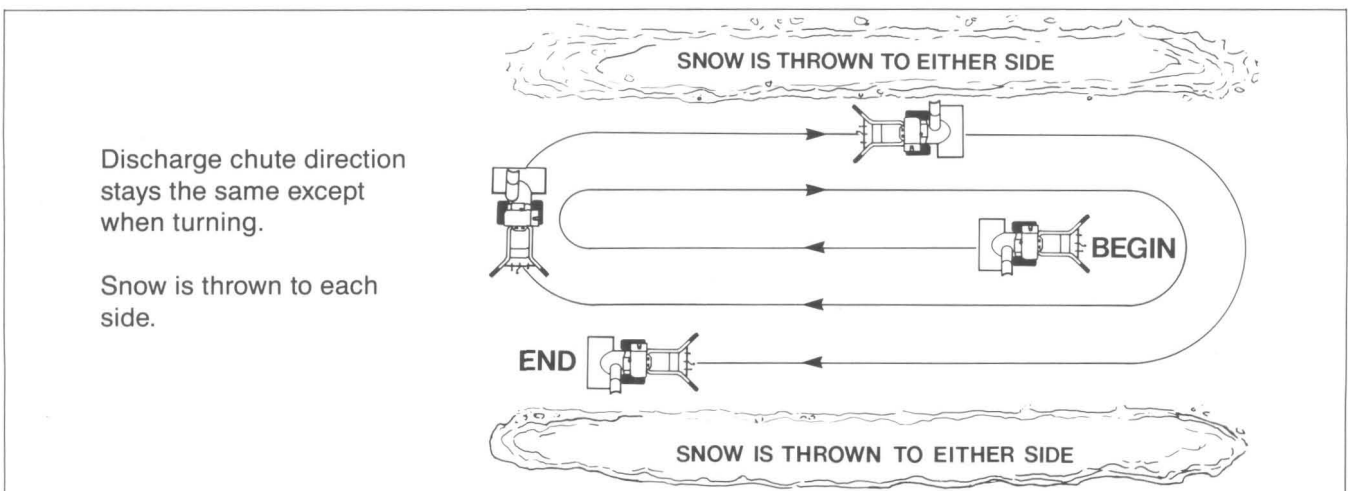


Figure 4-4: Throwing snow when snow can be thrown to either side of the area being cleared.

OPERATION

Run the engine at full throttle when throwing snow. Use a lower wheel speed in heavy wet snow.

Spray the auger, inside of auger housing, inside of discharge chute, and inside of deflector chute with silicone spray to prevent snow from sticking to these areas.

Before the first snowfall, inspect the area in which you'll be using the snowthrower. Remove any door-mats, sleds, boards, wires, and other foreign objects.

If snow should stick in the deflector chute or auger, DO NOT use your hands or feet to dislodge it. Shut the engine off, disconnect the spark plug wire, and prevent it from touching the spark plug. Then use a long stick (at least 3-feet long) to unclog these areas.

For best results, remove snow as soon as possible after it falls.

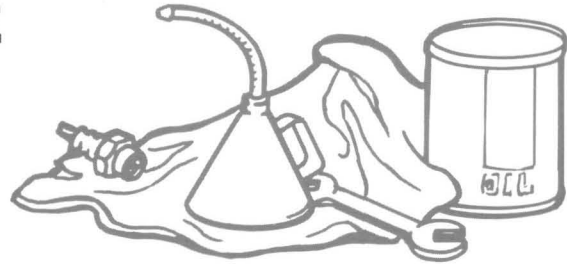
Always slightly overlap each pass to make sure that all snow is removed.

If possible, always try to throw snow downwind. If you try to throw snow upwind, it could be blown back on you, on the snowthrower, and on the area you're clearing.

If you're throwing snow from a smooth area, adjust the skid shoes so that the scraper blade is above the ground by approximately 1/8-inch.

If you're throwing snow from a gravel covered area, adjust the skid shoes so that the scraper blade clears the gravel.

SECTION 5: ENGINE AND SNOWTHROWER MAINTENANCE



ENGINE MAINTENANCE

Checking Engine Oil Level and Adding Oil to Engine

Before each use, check the engine oil level. Also, while using the snowthrower, stop the engine and check its oil level every five hours of operation.

To check the engine oil level:

1. Shut the engine off.
2. Unscrew the dipstick (Figure 5-1, Item A). Use a clean cloth to wipe the dipstick.
3. Re-insert the dipstick into the oil fill tube. Firmly screw the dipstick all the way back into the oil fill tube.
4. Unscrew the dipstick and check the oil level. It should be between the FULL and ADD marks on the dipstick.
5. If the oil level is low, add oil as follows:
 - A. Remove the dipstick.
 - B. Insert the clean funnel into the oil fill tube.
 - C. Slowly pour oil into the funnel. While pouring, stop frequently, remove the funnel, reinstall the dipstick, then remove it and check the oil level. Don't overfill the engine with oil.
 - D. When the engine oil level is correct, securely reinstall the dipstick.

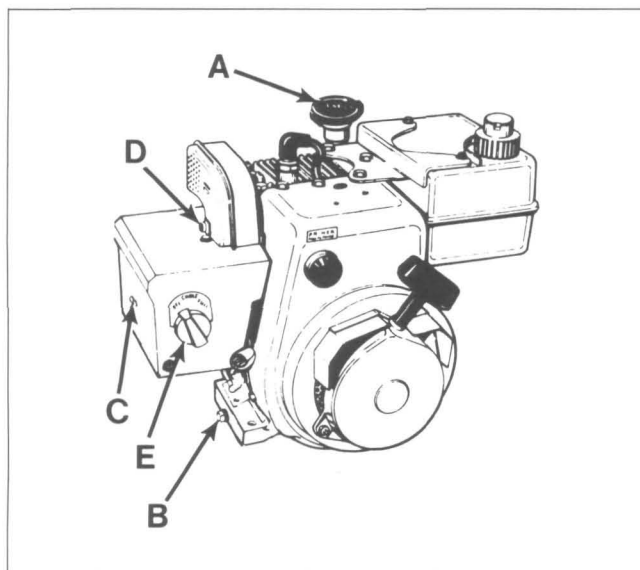


Figure 5-1

Changing the Engine Oil

After the very first two hours that you operate your snowthrower, change the engine oil. After this initial engine oil change, change the engine oil every 25 hours of operation (or at the end of the snow throwing season, whichever comes first).

To change the engine oil:

1. Start the engine. Allow it to warm up to operating temperature.
2. SHUT THE ENGINE OFF.
3. Fold a piece of cardboard (approximately 3 inches by 6 inches) lengthwise into a shallow "V". See Figure 5-2.
4. Use a 3/8-inch open end wrench (or an adjustable wrench) to loosen (not remove) the engine oil drain plug (Figure 5-2, Item B).
5. Place the folded cardboard beneath the drain plug as shown in Figure 5-2.
6. Place a container (minimum capacity of 1 quart) underneath the end of the cardboard to catch the draining oil.



Figure 5-2

ENGINE AND SNOWTHROWER MAINTENANCE

7. Slowly unscrew the drain plug. Allow the oil to run down the cardboard and into the container.
8. After the oil has drained, reinstall the drain plug and very securely tighten it.
9. Add clean oil to the engine. See "Checking Engine Oil Level and Adding Oil to Engine".

Engine Ignition System

The snowthrower engine has an electronic ignition system. This system eliminates the traditional set of points and condenser. The electronic ignition system also eliminates the yearly tune-up. The only scheduled maintenance you need to perform on the engine's ignition system concerns the spark plug (which is discussed next).

Spark Plug

Yearly, or every 100 hours of operation, remove the engine's spark plug, clean it, and inspect it. Clean the spark plug by scraping it (don't wire brush it or sand blast it). Replace the spark plug with a new one if its electrodes were pitted or burned, or if its porcelain was cracked.

Before installing the spark plug, set its electrode gap at 0.030 inch.

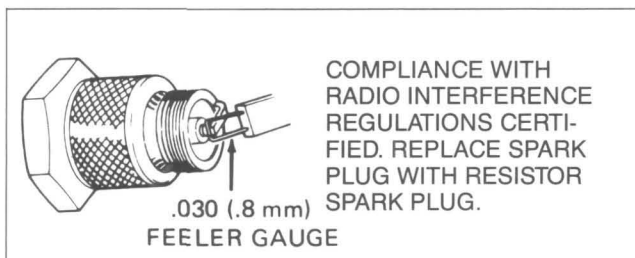


Figure 5-3

Carburetor Adjustment

Your carburetor has been set for proper operation. If you believe that it has come out of adjustment, please refer to the engine owner's manual for the correct carburetor adjustment procedure.

SNOWTHROWER MAINTENANCE

Lubrication

Refer to Figure 5-4 and the numbered items following it to determine which areas on your snowthrower should be lubricated.

At the beginning and end of each snow throwing season, be sure to lubricate the snow thrower as recommended. This will help prevent any corrosion at

friction points during the off-season. It will also ensure that the snowthrower will be ready to use when the first snow falls.

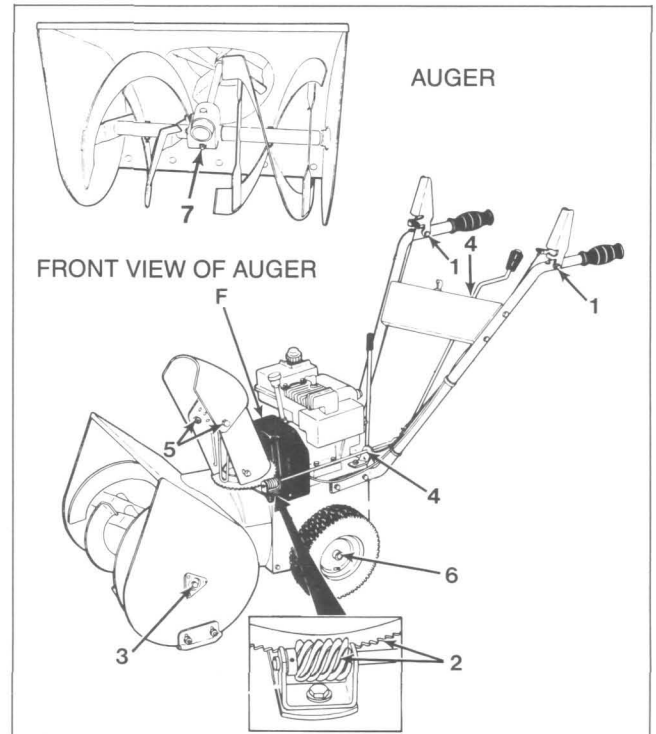


Figure 5-4

1. Use clean engine oil or a silicone spray to lubricate the handlebar levers' pivot points. Be careful not to get any oil or silicone spray on the levers.
2. Clean any dirt off the toothed part of the flange on the bottom of the discharge chute. Apply fresh grease to the worm gear and toothed part of the flange.
3. Apply fresh engine oil to the bearing on each side of the auger shaft. Wipe off any excess oil.
4. Sparingly oil the discharge chute control crank where it enters the control panel. Also oil it at the support on top of the left hand rear side of the frame.
5. Sparingly apply oil to the two pivot points on the deflector cap.
6. One at a time, remove the wheels and apply fresh grease to the wheel shaft and clevis pin. This makes future wheel removal easier.
7. Check the auger gear box's gear oil level. Move the snowthrower to a level area. Unscrew the plug (Figure 5-4, Item 7) from the front of the gear box. Oil should just begin to flow out of the hole. If it doesn't, add SAE 90 gear oil to the gear box. Fill the gear box until the oil just begins to flow from

the hole. Allow any excess to drain out of the gear box. Wipe any excess gear oil off the gear box. Reinstall the plug.

8. Touch up any scratches, unpainted or rusty surfaces with paint.

Wheel Drive Cable Adjustment



CAUTION Before adjusting the wheel drive cable, shut the engine off, allow it to cool, disconnect the spark plug wire and prevent it from touching the spark plug, and remove the engine ignition key.

Failure to do this could result in personal injury or property damage.

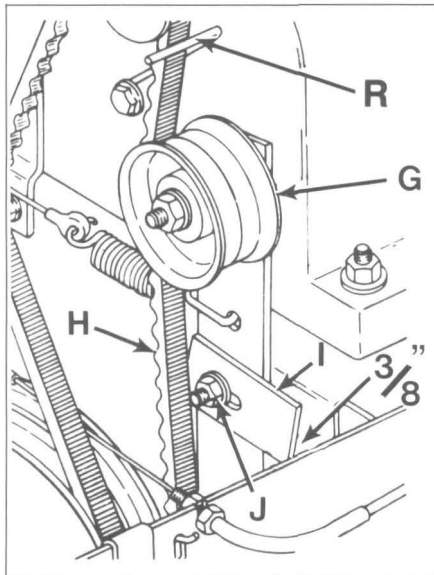


Figure 5-5

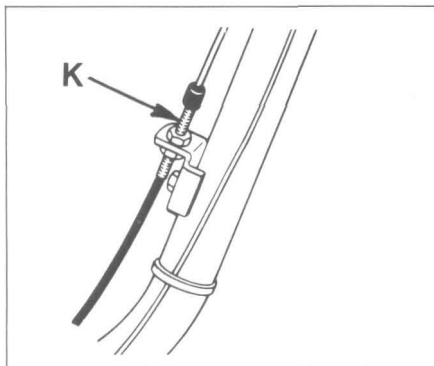


Figure 5-6

1. Remove the two screws that secure the sides of the belt cover (Figure 5-4, Item F) to the snowthrower. Take the belt cover off the snowthrower.
2. Push the idler pulley (Figure 5-5, Item G) to the left until the belt (Figure 5-5, Item H) is tight.
3. Adjust the idler stop (Figure 5-5, Item I) so that there is a gap of 3/8-inch between the left-hand edge of the idler stop and the inner surface of the frame. Make this adjustment by loosening the idler screw stop nut (Figure 5-5, Item J) and sliding the idler stop right or left as needed. Re-tighten the idler stop nut when you have the 3/8-inch gap.
4. Check the tension on the wheel drive cable. It should just be taut when the Wheel Drive Lever is not engaged. If it is slack or too taut, adjust the cable tension at the adjustment section (Figure 5-6, Item K).
5. Make sure that the spark plug wire is disconnected and not touching the spark plug. Pull the recoil starter rope while watching the engine wheel drive pulley (Figure 5-8, Item L). The belt should not move on this pulley. If the belt does move, decrease the 3/8-inch gap you set in Step 3.
6. Reinstall the belt cover (Figure 5-4, Item F) on the snowthrower.

Wheel Drive Belt Removal and Installation



CAUTION Before removing or installing the wheel drive belt, shut the engine off, allow it to cool, disconnect the spark plug wire and prevent it from touching the spark plug, and remove the engine ignition key.

Failure to do this could result in personal injury or property damage.

To remove the wheel drive belt:

1. Remove the two screws that secure the sides of the belt cover (Figure 5-4, Item F) to the snowthrower. Take the belt cover off the snowthrower.
2. Remove the worm gear and support (Figure 5-7, Item M) from the left hand side of the snowthrower by removing the bolt (Figure 5-7, Item N).

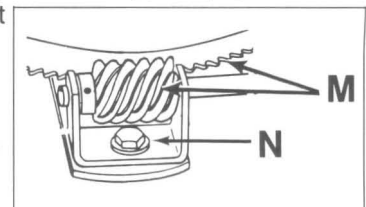


Figure 5-7

ENGINE AND SNOWTHROWER MAINTENANCE

3. Remove the two (each side) flange screws (Figure 5-8, Item O) from the snowthrower.

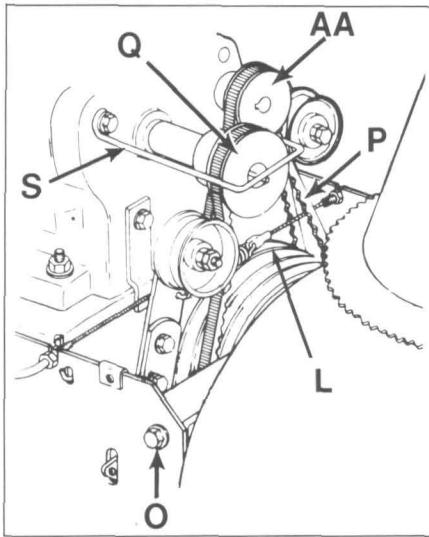


Figure 5-8

4. Slowly pivot the rear half of the snowthrower back. Rest the handlebars on a stable object.
5. Take the auger drive belt (Figure 5-8, Item P) off the engine auger drive pulley (Figure 5-8, Item Q). You may have to loosen the bolt that secures the belt guide (Figure 5-8, Item S) to the back of the engine and move the belt guide out of the way.
6. Loosen the bolts that attach the belt guides to the front of the chassis below the transmission pulley. Turn these belt guides to give you room to take the wheel drive belt off the transmission pulley.
7. You may have to loosen the bolt that secures the engine pulley belt guide (Figure 5-5, Item R) in place and turn this belt guide out of the way.
8. Take the wheel drive belt off the transmission pulley and engine wheel drive pulley.

To install the wheel drive belt:

1. Place the wheel drive belt on the engine wheel drive pulley and transmission pulley.
2. If you had to loosen the bolt that secures the engine pulley belt guide (Figure 5-5, Item R) in place, position the leg of this belt guide approximately 1/16-inch from the outer surface of the wheel drive belt and tighten the bolt that secures it to the back of the engine.
3. Rotate one of the two belt guides that is below the transmission pulley so that its "leg" is 1/16-inch away from the outer surface of the wheel drive belt. Hold the belt guide in this position and

tighten the bolt that holds the belt guide in place. Repeat this step for the remaining belt guide.

4. Retighten bolt that attaches belt guide (Figure 5-8, Item S) to engine.
5. Move the rear half of the snowthrower close to the front half. Place the auger drive belt onto the engine auger drive pulley (Figure 5-8, Item Q).
6. Move the snowthrower halves together. Align the four attachment holes (two in each side of the frame). Loosely install the four screws (Figure 5-8, Item Q) that secure the halves of the snowthrower together. Then firmly tighten the screws.
7. Reinstall the worm gear and support (Figure 5-7, Item M) to the left-hand side of the snowthrower. Firmly tighten the bolt (Figure 5-7, Item N) that holds it in place. Rotate the chute control crank to make sure that the deflector chute turns freely. If it doesn't, loosen the bolt (Figure 5-7, Item N) and adjust the support inward or outward so that the chute doesn't bind.
8. Adjust the wheel drive cable. See "Wheel Drive Cable Adjustment".
9. Reinstall the belt cover on the snowthrower.

Auger Drive Cable Adjustment



CAUTION Before adjusting the auger drive cable, shut the engine off, allow it to cool, disconnect the spark plug wire and prevent it from touching the spark plug, and remove the engine ignition key.

Failure to follow this instruction could result in personal injury or property damage.

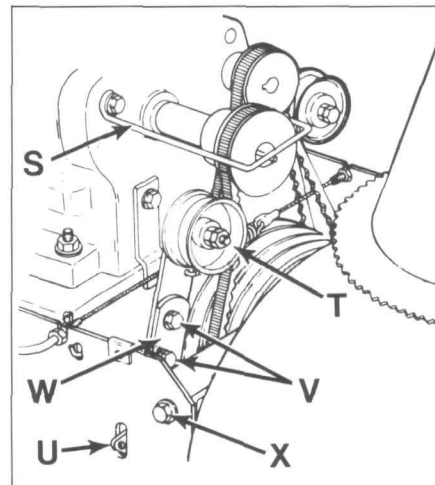


Figure 5-9

1. Remove the two screws that secure the sides of the belt cover (Figure 5-4, Item F) to the snowthrower. Take the belt cover off the snowthrower.
2. Push the idler (Figure 5-9, Item T) sideways to tighten the auger drive belt.
3. Look at the brake arm hole (Figure 5-9, Item U). This hole should be flush with the outside of the right-hand side of the frame.
4. If the brake arm hole is not flush with the outside of the right-hand side of the frame, loosen the two screws (Figure 5-9, Item V) and move arm (Figure 5-9, Item W) sideways as necessary. Tighten the two screws and then repeat Steps 2 and 3.
5. Check auger drive cable tension. It should be taut when the auger drive handle is not engaged (when it is not squeezed down). Adjust tension at the auger drive cable's adjustment section (at the lower end of the handlebar) (Figure 5-6).

Auger Drive Belt Removal and Installation



CAUTION Before removing or installing the auger drive belt, shut the engine off, allow it to cool, disconnect the spark plug, and remove the engine ignition key.

Failure to follow this instruction could result in personal injury or property damage.

1. Remove the two screws that secure the sides of the belt cover (Figure 5-4, Item F) to the snowthrower. Take the belt cover off the snowthrower.
 2. Remove the screw (Figure 5-7, Item N), worm gear, and support (Figure 5-7, Item M).
 3. Remove the two (each side) flange screws (Figure 5-9, Item X) from the snowthrower.
 4. Slowly pivot the rear half of the snowthrower back. Rest the handlebars on a stable object.
 5. Take the auger drive belt (Figure 5-8, Item P) off the engine auger drive pulley (Figure 5-8, Item Q). You may have to loosen the bolt that secures the belt guide (Figure 5-9, Item S) to the back of the engine and move the belt guide out of the way.
 6. Loosen the two belt guides that are located on the back of the auger housing, below the auger drive pulley. Rotate the belt guides out of the way.
 7. Take the old auger drive belt off the engine pulley and auger drive pulley.
- To install the auger drive belt:
1. Place the new auger drive belt into the groove in the auger drive pulley.
 2. Move one of the belt guides on the back of the auger housing (below the auger drive pulley) so that its "leg" is 1/16-inch away from the auger drive belt. Hold the belt guide in this position. Tighten the bolt that secures this belt guide to the back of the auger housing. Repeat this step for the remaining belt guide.
 3. Retighten the bolt that secures the belt guide (Figure 5-9, Item S) to the engine.
 4. Move the rear half of the snowthrower close to the front half. Place the auger drive belt into the groove in the engine auger drive pulley.
 5. Move the snowthrower halves together. Align the four attachment bolt holes (two on each side). Loosely install the screws (Figure 5-9, Item X) that secure the halves of the snowthrower together. Firmly tighten these screws.
 6. Reinstall the worm gear and support (Figure 5-7, Item M) to the left-hand side of the snowthrower. Firmly tighten the bolt that holds it in place. Rotate the chute control crank to make sure that the deflector chute turns freely. If it doesn't, loosen the bolt (Figure 5-7, Item N) and move the support inward or outward as necessary so that the discharge chute does not bind when you rotate the chute control crank.
 7. Adjust the Auger Drive Cable. See "Auger Drive Cable Adjustment".
 8. Reinstall the belt cover on the snowthrower.

ENGINE AND SNOWTHROWER MAINTENANCE

MAINTENANCE SCHEDULE

	Before each use	After each use	Every 25 hours of operation	Every 50 hours of operation	At the end of the season
Check engine oil level.	✓				
Check all fasteners for tightness.	✓				
Check operation of Auger Drive Lever and Wheel Drive Lever.	✓				
Apply oil to handlebar control levers and linkages.		✓			
Clean all snow, slush, and ice off snowthrower.		✓			
Change engine oil.			✓		✓
Check tire pressure.			✓		
Check auger gear box oil level. Add SAE 90 gear oil as required.			✓		
Check and clean engine cowling air screen on engine.			✓		
Check both belts for wear.			✓		
Check, clean, and re-gap (or simply replace) spark plug.				✓	
Apply a light coating of multipurpose grease to axle shaft bearing.				✓	
Apply a light coating of oil to drive chain.				✓	
Check belts for wear and damage.					✓
Check wheel drive belt and auger drive belt for adjustment.					✓
Sand and re-paint any rusted areas.					✓

TROUBLESHOOTING

Trouble	Possible Problem	Solution
<p>Engine won't start.</p>	<p>Ignition key in OFF position.</p> <p>Spark plug wire disconnected.</p> <p>Gas tank empty.</p> <p>Fouled spark plug.</p> <p>Engine Control Lever is in idle position.</p> <p>Engine not primed enough.</p> <p>Engine primed too much.</p> <p>Fuel shutoff valve closed.</p>	<p>Turn key to ON position.</p> <p>Reconnect spark plug wire to spark plug.</p> <p>Fill gas tank.</p> <p>Remove, clean, inspect, (or replace), re-gap and reinstall spark plug.</p> <p>Move Engine Control Lever to its FAST position.</p> <p>Push primer button several more times.</p> <p>Move choke knob to its OFF position, and Engine Control Lever to idle. Attempt to start engine — this should burn up excess gas in carburetor. Then proceed with normal starting procedure.</p> <p>Open fuel shutoff valve.</p>
<p>Engine is difficult to start.</p>	<p>Incorrect Choke Knob setting.</p> <p>Engine Control Lever is in incorrect position.</p> <p>Fuel shutoff valve closed.</p> <p>Engine not primed enough.</p> <p>Stale gas in tank.</p> <p>Faulty spark plug.</p>	<p>Reposition Choke Knob.</p> <p>Move Engine Control Lever to its FAST position.</p> <p>Open fuel shutoff valve.</p> <p>Push primer button several times.</p> <p>Drain gas. Refill with fresh gas.</p> <p>Remove, clean, inspect, re-gap, and reinstall spark plug.</p>
<p>Engine idles rough.</p>	<p>Faulty or fouled spark plug.</p> <p>Incorrect choke setting.</p>	<p>Remove, clean, inspect, re-gap, and reinstall spark plug.</p> <p>After engine starts, move engine choke knob gradually to its NO CHOKE position.</p>



ENGINE AND SNOWTHROWER MAINTENANCE

TROUBLESHOOTING

Trouble	Possible Problem	Solution
<p>Engine overheats.</p>	<p>Dirty air screen.</p> <p>Low engine oil level.</p> <p>Dirty cooling fins.</p> <p>Loose spark plug.</p>	<p>Remove all debris from air screen.</p> <p>Check engine oil level. Add oil as necessary.</p> <p>Clean cooling fins.</p> <p>Disconnect spark plug wire. Re-tighten spark plug.</p>
<p>Auger drive lever does not make auger spin.</p>	<p>Not enough tension on auger drive belt.</p> <p>Incorrect auger drive belt adjustment.</p> <p>Broken shear bolt(s) on auger drive shaft(s).</p> <p>Broken idler spring (at lower end of cable).</p> <p>Broken cable.</p> <p>Belt guide(s) adjusted incorrectly.</p> <p>Broken square key or loose setscrew on auger drive pulley.</p> <p>Broken woodruff key and roll pin on transmission input shaft.</p>	<p>Increase tension at auger drive cable adjustment section.</p> <p>Re-adjust auger drive cable.</p> <p>Replace bolt(s).</p> <p>Replace spring.</p> <p>Replace cable.</p> <p>Belt guides should be 1/16-inch away from belt.</p> <p>Replace key and retighten setscrew.</p> <p>Replace woodruff key and roll pin.</p>
<p>Auger spins when Auger Drive Lever is not engaged.</p>	<p>Too much tension on auger drive cable.</p> <p>Incorrect auger drive belt adjustment.</p> <p>Belt guide(s) adjusted incorrectly.</p>	<p>Cable should just be taut when Auger Drive Lever is not engaged. Adjust tension at auger drive cable adjustment section.</p> <p>Adjust auger drive belt.</p> <p>Belt guides should be 1/16-inch away from belt.</p>

TROUBLESHOOTING

Trouble	Possible Problem	Solution
<p>Wheel Drive Lever does not make wheels turn.</p>	<p>Shift Handle is in (N) Neutral.</p> <p>Not enough tension on wheel drive belt.</p> <p>Incorrect wheel drive belt adjustment.</p> <p>Broken or excessively worn wheel drive belt.</p> <p>Broken wheel drive cable.</p> <p>Broken wheel drive spring (on end of cable).</p> <p>Broken square key or loose setscrew on wheel drive pulley.</p> <p>Broken wheel drive chain.</p> <p>Broken woodruff key and/or loose setscrew on wheel drive pulley(s).</p>	<p>Release Wheel Drive Lever, move Shift Handle to desired speed, re-engage Wheel Drive Lever.</p> <p>Cable should just be taut when Wheel Drive Lever is not engaged. Adjust tension at wheel drive cable adjustment section.</p> <p>Re-adjust wheel drive belt.</p> <p>Replace wheel drive belt.</p> <p>Replace wheel drive cable.</p> <p>Replace spring.</p> <p>Replace key/retighten setscrew.</p> <p>Replace chain.</p> <p>Replace woodruff key and tighten setscrew.</p>
<p>Wheels turn when Wheel Drive Lever is not engaged.</p>	<p>Too much tension on wheel drive cable.</p> <p>Incorrect wheel drive belt adjustment.</p> <p>Belt guide(s) adjusted incorrectly.</p>	<p>Cable should just be taut when Wheel Drive Lever is not engaged. Adjust tension at wheel drive cable adjustment section.</p> <p>Re-adjust wheel drive cable.</p> <p>Belt guides should be 1/16-inch away from belt.</p>
<p>Snowthrower doesn't throw snow well.</p>	<p>Discharge chute, impeller, or auger clogged with snow, slush, or ice.</p>	<p>Stop engine, disconnect spark plug wire. Use a long stick to unclog chute, auger, and/or impeller.</p> <p>(continued)</p>

TROUBLESHOOTING

Trouble	Possible Problem	Solution
<p>Snowthrower doesn't throw snow well. (continued)</p>	<p>Snow sticks to auger or chute.</p> <p>Incorrect wheel speed setting (on shift handle).</p> <p>Auger drive belt is loose.</p> <p>Skid shoes set too high.</p> <p>Scraper blade adjusted incorrectly.</p>	<p>Spray auger and chute with silicone lubricant.</p> <p>When throwing snow, generally use faster speeds. Use slower speeds on heavier snow.</p> <p>Adjust auger drive belt.</p> <p>Adjust skid shoes equally so that the scraper blade is 1/8-inch above the surface being cleared.</p> <p>Readjust scraper blade so that it is 1/8-inch above the surface being cleared.</p>
<p>Snowthrower makes sloping cut in snow.</p>	<p>Skid shoes not set at equal height.</p> <p>Scraper blade is incorrectly adjusted.</p>	<p>Readjust skid shoes to an equal height.</p> <p>Re-level scraper blade.</p>
<p>Electric start motor won't crank engine.</p>	<p>Electrical cord not plugged in.</p> <p>Fuse or circuit breaker for outlet is blown.</p> <p>Faulty electrical cord or plug.</p> <p>Overheated starter.</p>	<p>Plug electrical cord into outlet.</p> <p>Replace fuse or re-set circuit breaker.</p> <p>Replace electrical cord.</p> <p>Starter is thermally protected. If overheated, it will stop automatically. Allow starter to cool before again trying to restart engine.</p>

SPECIFICATIONS

Snowthrower

HEIGHT

To top of handlebar lever: 42½ inches
Without handlebars: 29¼ inches

WIDTH

At tires: 19¾ inches
At handlebars: 23 inches

LENGTH

With handlebars: 59½ inches
Without handlebars: 40 inches

TIRES

2 ply, 4:10-4
Pressure: 15-20 PSI

AUGER WIDTH

21 inches

TRANSMISSION GEAR OIL

SAE 90W gear oil

OPTIONAL EQUIPMENT

Electric Start Kit (120 Volt)
Tire chains

Engine

**Single Cylinder Tecumseh
5 horsepower**

Oil recommendations:

Use a high quality 4-cycle engine oil rated SD, SE, or SF.

Viscosities:

Below 0° F: SAE 0w30 or SAE 10W diluted with 10% kerosene

Between 0°-32°F: SAE 5W30 or SAE 10W

Above 32° F: SAE 30 or SAE 10W30

Fuel recommendations:

Use a fresh clean unleaded regular gasoline. Do not mix any oil with the gasoline!

Spark plug type:

See Engine Owner's Manual.

Spark plug gap:

0.030-inch

LIMITED THREE YEAR WARRANTY

What is Covered:

Your TROY-BILT Snowthrower is carefully inspected and tested at the Factory. We, or your Dealer, will repair or replace, at our option and at no cost to you, any part which we find to be defective in materials or workmanship for a period of 3 years from the date you purchase your Snowthrower. Note: Warranty for commercial use is limited to ninety (90) days from the date of purchase.

This LIMITED 3 YEAR WARRANTY also applies to all parts except the engine, which is warranted separately by the engine manufacturer. (Call or write us for a free copy of the engine warranty.)

All transportation and shipping costs for returned and replacement parts and for making the product available for service, must be paid by you. This warranty presumes you will provide reasonable care for the product and does not cover defects, malfunctions or failure caused by misuse, neglect, accidents or unauthorized attachments or parts.

This warranty does not cover incidental or consequential damages or expense of any kind, including but not limited to cost of equipment rental. Any implied warranties, including but not limited to any implied warranty of merchantability or fitness for a particular purpose, are limited in duration to the warranty period specified above.

How to Get Service:

To obtain warranty service, write to: Troy-Bilt Manufacturing Company, 102nd Street & 9th Avenue, Troy, N.Y. 12180, or call (toll free) 1-800-833-6990, or consult your Yellow Pages for the name of your closest authorized Troy-Bilt Dealer.

Your Rights Under State Law:

Some states do not allow limitations on how long an implied warranty lasts, or 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 legal rights, and you may also have other rights which vary from state to state.

Troy-Bilt Manufacturing Co., 102nd Street & 9th Ave., Troy, NY 12180
Call Toll-Free 1-800-833-6990

Garden Way Canada, Inc., 1515 Matheson Blvd., Unit B11, Mississauga, Ontario L4W 2P5
Local calls only (416 Area Code): 624-8423 • From Ontario and Quebec Provinces call Toll-Free: 1-800-387-3351
From Western Canada & Maritime Provinces call Toll-Free: 1-800-387-3316