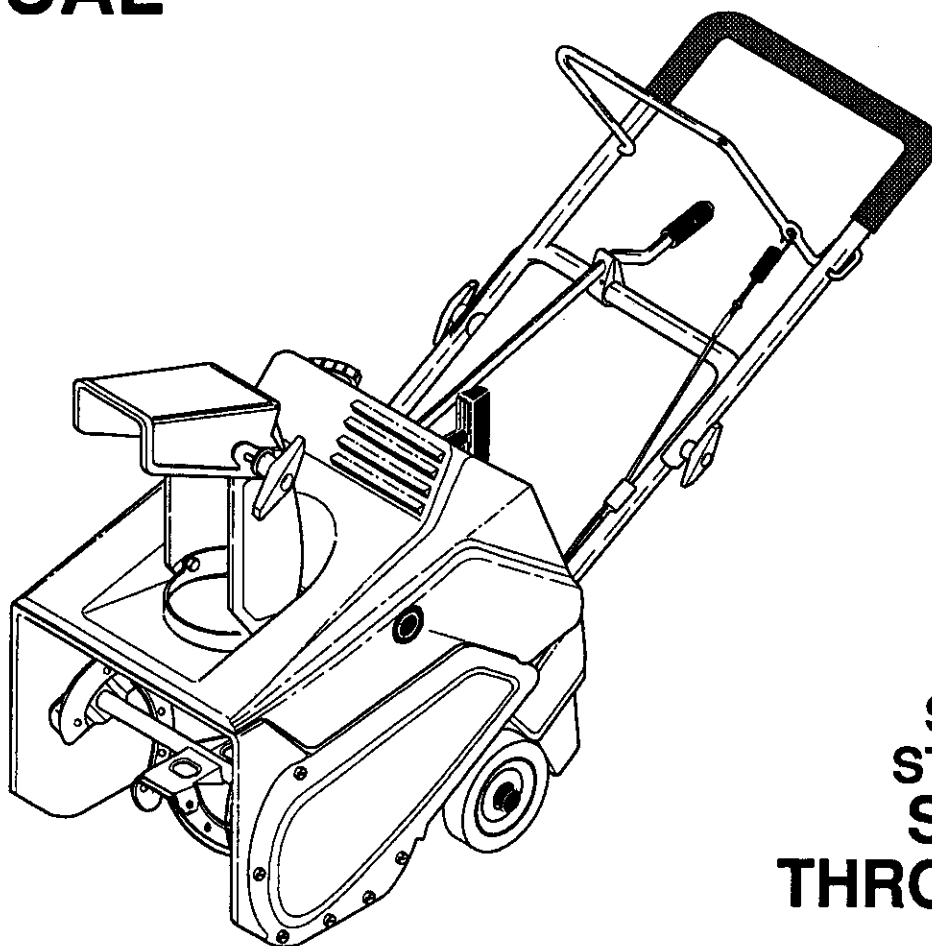


OPERATOR'S MANUAL



ST-5000
ST-5000E
SNOW
THROWER

WARNING



DANGER

READ INSTRUCTIONS CAREFULLY AND
FOLLOW RULES FOR SAFE OPERATION.
FAILURE TO DO SO COULD RESULT IN
SERIOUS INJURY.

ECHO®

SAFETY RULES



ALWAYS DISCONNECT SPARK PLUG WIRE AND PLACE WIRE WHERE IT CAN NOT CONTACT SPARK PLUG TO PREVENT ACCIDENTAL STARTING WHEN SETTING-UP, TRANSPORTING, ADJUSTING OR MAKING REPAIRS.



IMPORTANT

SAFETY STANDARDS REQUIRE OPERATOR PRESENCE CONTROLS TO MINIMIZE THE RISK OF INJURY. YOUR SNOW THROWER IS EQUIPPED WITH SUCH CONTROLS. DO NOT ATTEMPT TO DEFEAT THE FUNCTION OF THE OPERATOR PRESENCE CONTROL UNDER ANY CIRCUMSTANCES.

BEFORE USE

- Read the Owner's Manual carefully. Be thoroughly familiar with the controls and the proper use of the snow thrower. Know how to stop the snow thrower and disengage the controls quickly.
- Do not operate the snow thrower without wearing adequate winter outer garments. Wear footwear that will improve footing on slippery surfaces.
- Keep the area of operation clear of all persons, particularly small children, and pets.
- Thoroughly inspect the area where the snow thrower is to be used and remove all doormats, sleds, boards, wires, and other foreign objects.
- Use extension cords and receptacles as specified by the manufacturer for all snow throwers with electric drive motors or with factory-installed or optional starting motors.
- Use only attachments and accessories approved by the manufacturer of the snow thrower (such as electric starter kits, etc.).
- Never operate the snow thrower without good visibility or light. Always be sure of your footing, and keep a firm hold on the handles. Walk; never run.
- This snow thrower is for use on sidewalks, driveways, and other ground level surfaces. **Do not attempt to clear on steep sloping surfaces. DO NOT USE SNOW THROWER ON SURFACES ABOVE GROUND LEVEL** such as roofs of residences, garages, porches or other such structures or buildings.
- Check all bolts at frequent intervals for proper tightness to be sure the snow thrower is in safe working condition.
- Disengage clutch and shift into neutral before starting the engine.
- Let engine and snow thrower adjust to outdoor temperatures before starting to clear snow.

FUEL SAFETY

- Handle fuel with care; it is highly flammable.
- Use an approved fuel container.
- Check fuel supply before each use, allowing space for expansion as the heat of the engine and/or sun can cause fuel to expand.
- Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
- Replace fuel tank cap securely and wipe up spilled fuel.
- Never remove fuel tank cap or add fuel to a running engine or hot engine.
- Never store fuel or snow thrower with fuel in the tank inside a building where fumes may reach an open flame or spark.

OPERATING SAFETY

- Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
- Never operate the snow thrower without proper guards, plates or other safety protective devices in place.
- Never allow children or young teenagers to operate the snow thrower and keep them away while it is operating. never allow adults to operate the snow thrower without proper instruction.
- 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 snow thrower.
- Exercise extreme caution when operating on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
- Exercise caution to avoid slipping or falling, especially when operating in reverse or backing up.
- Do not clear snow across the face of slopes. Exercise caution when changing direction on slopes. Do not attempt to clear steep slopes.
- Never operate the snow thrower without proper guards, plates or other safety protective devices in place.
- Never operate the snow thrower near glass enclosures, automobiles, window wells, drop-offs, and the like without proper adjustment of the snow discharge angle. Keep children and pets away.
- Never operate the snow thrower at high transport speeds on slippery surfaces. Look behind and use care when backing.
- Do not run the engine indoors, except when starting the engine and for transporting the snow thrower in or out of the building. Open the outside doors; exhaust fumes are dangerous (containing **CARBON MONOXIDE**, an **ODORLESS** and **DEADLY GAS**).
- Take all possible precautions when leaving the snow thrower unattended. Disengage the auger/impeller, stop engine, and remove key.
- Do not overload the machine capacity by attempting to clear snow at too fast a rate.
- Never direct discharge at bystanders or allow anyone in front of the unit.

SAFETY RULES

SAFE STORAGE

- Always refer to Owner's Manual instructions for important details if the snow thrower is to be stored for an extended period.
- Disengage power to the auger/impeller when snow thrower is transported or not in use.
- Never store the snow thrower with fuel in the fuel tank inside a building where ignition sources are present such as hot water and space heaters, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.

REPAIR/ADJUSTMENTS SAFETY

- After striking a foreign object, stop the engine and remove the wire from the spark plug, or disconnect the cord from electric motor. Thoroughly inspect the snow thrower for any damage, and repair the damage before restarting and operating the snow thrower.
- If the snow thrower should start to vibrate abnormally, stop the engine (or electric motor) and check immediately for the cause. Vibration is generally a warning of trouble.

- STOP THE ENGINE (OR ELECTRIC MOTOR) WHENEVER YOU LEAVE THE OPERATING POSITION, BEFORE UNCLOGGING THE AUGER/IMPELLER HOUSING OR DISCHARGE GUIDE, AND WHEN MAKING ANY REPAIRS, ADJUSTMENTS, OR INSPECTIONS. REMOVE WIRE FROM SPARK PLUG OR DISCONNECT CORD FROM ELECTRIC MOTOR.
- When cleaning, repairing, or inspecting, make certain the auger/impeller and all moving parts have stopped. Disconnect the spark plug wire and keep the wire away from the plug to prevent accidental starting.
- Never attempt to make any adjustments while the engine is running (except when specifically recommended in this manual or the engine manual).
- Maintain or replace safety and instruction labels, as necessary.
- Run the snow thrower a few minutes after throwing snow to prevent freeze-up of the auger/impeller.



LOOK FOR THIS SYMBOL TO POINT OUT IMPORTANT SAFETY PRECAUTIONS. IT MEANS- ATTENTION!!! BECOME ALERT!!! YOUR SAFETY IS INVOLVED.



California Proposition 65 WARNING!

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

INTERNATIONAL SYMBOLS



ENGINE START



ENGINE RUN



OFF



ELECTRIC
START



STOP



ENGINE STOP



ON



CHOKE OFF



CHOKE ON



THROTTLE



FAST



SLOW



NEUTRAL



PRIMER BUTTON



IGNITION KEY



IGNITION OFF



IGNITION ON



FUEL



OIL



FUEL OIL MIXTURE



TRANSMISSION



DRIVE CLUTCH



AUGER CLUTCH



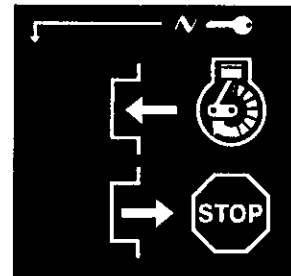
AUGER/
COLLECTOR



DISCHARGE
CHUTE - UP
POSITION



DISCHARGE
CHUTE - DOWN
POSITION



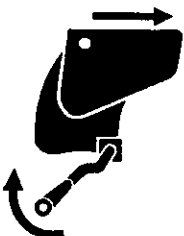
IGNITION KEY INSERT
TO RUN PULL OUT TO
STOP



FORWARD



REVERSE



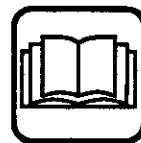
DISCHARGE
CHUTE -
TURN RIGHT



DISCHARGE
CHUTE -
TURN LEFT



CAUTION



READ OWNER'S
MANUAL



KEEP HANDS,
FEET, AND
CLOTHING AWAY!



KEEP
BYSTANDERS
AWAY



BEWARE OF
THROWN
OBJECTS



HOT SURFACE



DO NOT USE
HANDS TO UN-
CLOG DISCHARGE
CHUTE.

CONGRATULATIONS on your purchase of an **ECHO** Snow Thrower. It has been designed, engineered and manufactured to give you the best possible dependability and performance.

Should you experience any problem you cannot easily remedy, please contact your nearest **ECHO** dealer. **ECHO** has competent, well-trained technicians and the proper tools to service or repair this unit.

Please read and retain this manual. The instructions will enable you to assemble and maintain your snow thrower properly. Always observe the "**SAFETY RULES**."

MODEL
NUMBER ST-5000, ST-5000E

SERIAL
NUMBER _____
DATE OF
PURCHASE _____

THE MODEL AND SERIAL NUMBERS WILL BE FOUND ON A DECAL ATTACHED TO THE REAR OF THE SNOW THROWER HOUSING.

YOU SHOULD RECORD BOTH SERIAL NUMBER AND DATE OF PURCHASE AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE.

PRODUCT SPECIFICATIONS

HORSE POWER:	5 hp
DISPLACEMENT:	8.46 cu. in.
GASOLINE CAPACITY:	1.62 quarts Unleaded
FUEL/OIL MIX RATIO:	50:1 (2.6 oz. of ECHO BRAND 2-cycle oil specified for 50:1 ratio per 1 gal of gas)
SPARK PLUG : (GAP .030 In.)	Champion RCJ8Y

CUSTOMER RESPONSIBILITIES

- Read and observe the safety rules.
- Follow a regular schedule in maintaining, caring for and using your snow thrower.
- Follow the instructions under "**Maintenance**" and "**Storage**" sections of this Operator's Manual.

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Starting, Electric	13	Starting the Engine, Recoil	12		
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ASSEMBLY

CONTENTS OF SHIPPING CARTON

- 1 - 21 Inch Snow Thrower (completely assembled except for the folded upper handle, discharge chute, and the chute control rod)
- 1 - Chute Control Rod
- 1 - Electric Starter Cord (Electric Start Model Only)
- 1 - Parts Bag Containing:
 - 1 - Operator's Manual (not shown)
 - 1 - Discharge Chute

TOOLS REQUIRED FOR ASSEMBLY

- 1 - 3/8" Wrench (or adjustable wrench)
- 2 - 7/16" Wrenches
- 1 - Regular screwdriver
- 1 - Knife (to cut carton)



CAUTION: Always wear safety glasses or eye shields while assembling snow thrower.

FIG. 1-ASSY shows the snow thrower completely assembled.

Reference to the right and left hand side of the snow thrower is from the operator position at the handle.

TO REMOVE SNOW THROWER FROM CARTON

- Remove inserts located at four corners of carton.
- Remove chute control rod from insert and set aside.
- Remove chute and packing from carton.
- Cut down all four corners of carton and lay panels flat.
- Pull the snow thrower out of the carton.

TO ASSEMBLE THE HANDLE

- Loosen the tee knob on each side of the upper handle (See FIG. 2-ASSY).
- Raise the upper handle to the operating position as shown in FIG. 1-ASSY.
- Tighten the tee knobs on the upper handle.
- Discard the ties that secure the auger control bar to the upper handle (See FIG. 2-ASSY).
- Check to be sure the control cable is not caught in the handle.

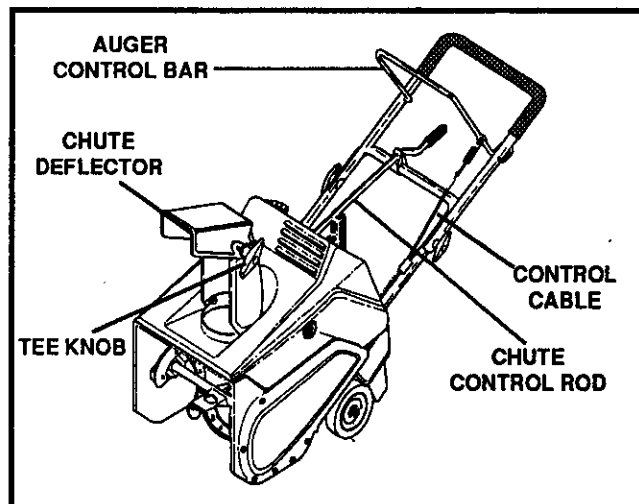


FIG. 1-ASSY

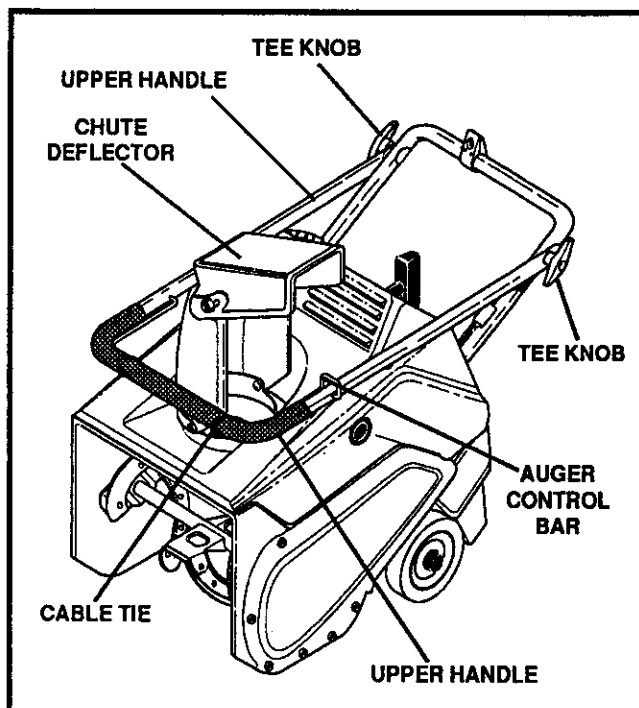


FIG. 2-ASSY

ASSEMBLY

TO ASSEMBLE THE CHUTE

- Remove the three hex head bolts and locknuts from the chute rotation ring (See FIG. 3-ASSY).
- Install the chute ring, aligning all three holes, and re-attach hardware, locknuts to the outside.

TO ASSEMBLE THE CHUTE CONTROL ROD

- Remove the screw and nut from the end of the chute control rod and lay aside.
- Push the end of the chute control rod through the hole in chute control rod bracket on the lower handle (See FIG. 3A-ASSY).
- Align the hole in the chute control rod with the hole in the lower chute control rod (See FIG. 3A-ASSY). Secure with the screw and nut.
- Rotate the chute control rod fully clockwise and counterclockwise. The discharge chute should rotate freely.

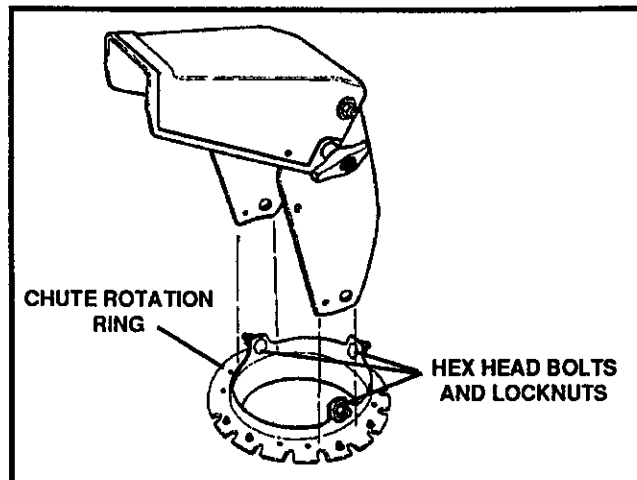


FIG. 3-ASSY

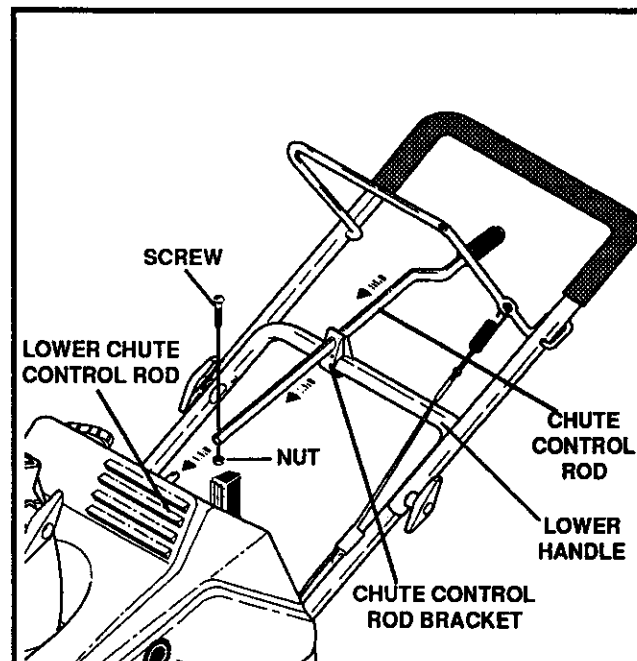


FIG. 3A-ASSY

OPERATION

KNOW YOUR SNOW THROWER

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

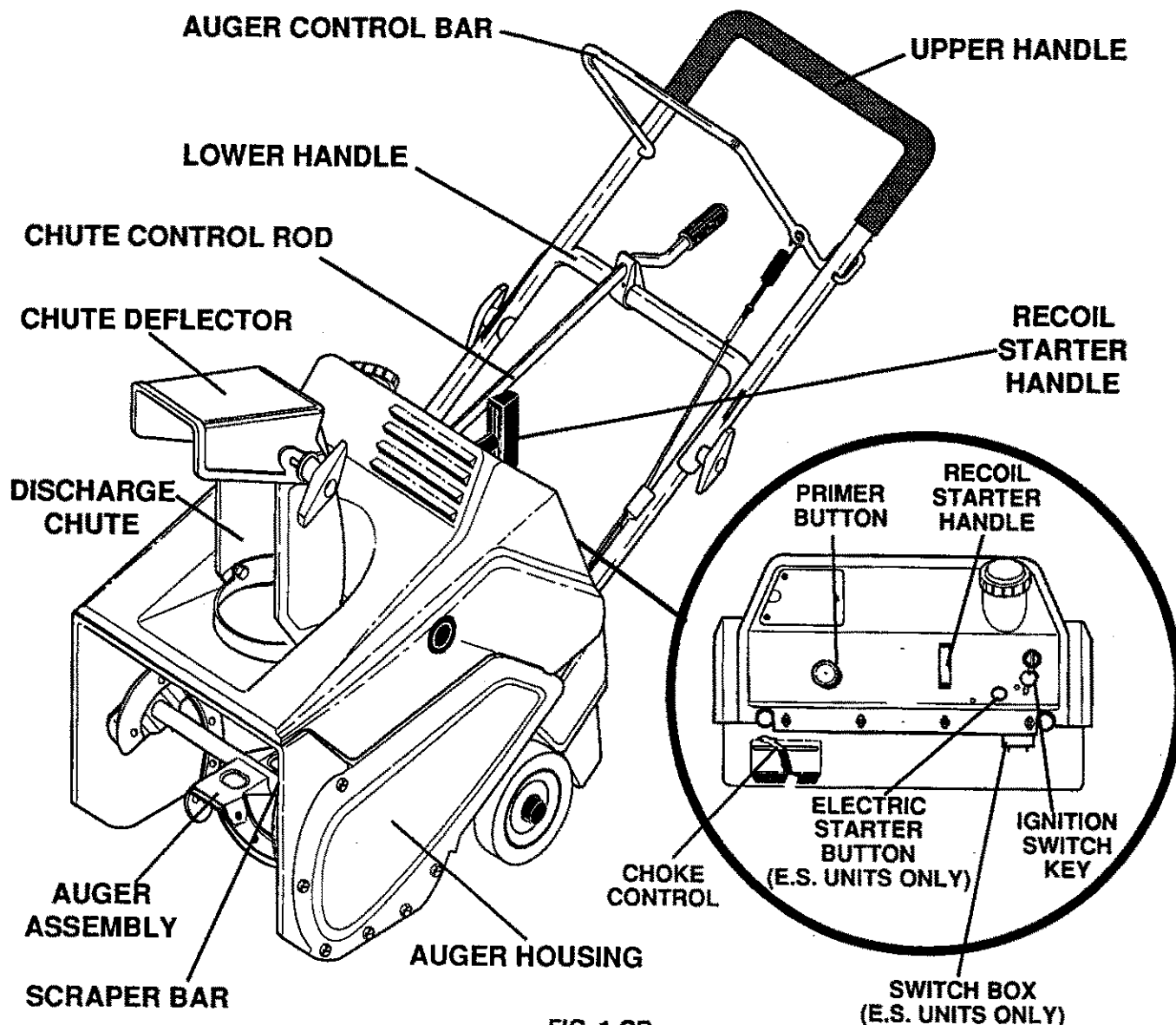


FIG. 1-OP

This ECHO Snow Thrower conforms to the safety standards of the American National Standards Institute.

AUGER CONTROL BAR - Starts and stops the auger which propels the snow thrower.

CHUTE CONTROL ROD - Changes the direction of snow discharge.

CHUTE DEFLECTOR - Changes the distance the snow is thrown.

DISCHARGE CHUTE - Changes the direction the snow is thrown.

IGNITION SWITCH KEY - Must be inserted and turned to the ON position to start the engine.

CHOKE CONTROL - Used to start a cold engine.

PRIMER BUTTON - Injects fuel directly into the carburetor manifold for fast starts in cold weather.

RECOIL STARTER HANDLE - Starts the engine manually.

ELECTRIC STARTER BUTTON - Used to start the engine using the 120 V electric starter.

OPERATION



The operation of any snow thrower can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields that meet ANSI standard Z87-1 while operating the snow thrower.

HOW TO USE YOUR SNOW THROWER

TO CONTROL SNOW DISCHARGE

- Loosen the tee knob on the chute deflector and move the deflector to set the **distance**. Move the deflector (**UP**) for more distance, (**DOWN**) for less distance. Then tighten the tee knob (See FIG. 2-OP).

TO STOP YOUR SNOW THROWER

- To stop the auger, release the auger control bar.

NOTE: If the auger continues to creep, turn engine off and refer to the To Adjust Auger Control Cable paragraph on page 15.

- To stop the engine, turn key to the (OFF) position.
- Turn the crank assembly to set the **direction** of the snow throwing.

TO USE AUGER PROPEL ACTION

- Squeeze the auger control bar down against the upper handle to allow the auger to turn.
- To propel forward, raise the handle to allow the auger blades to contact the ground (See FIG. 3-OP).

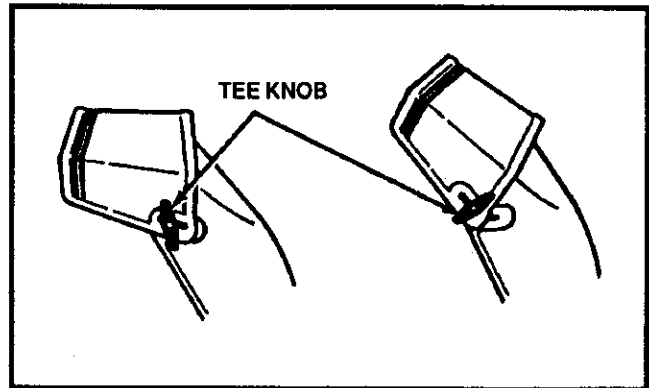


FIG. 2-OP

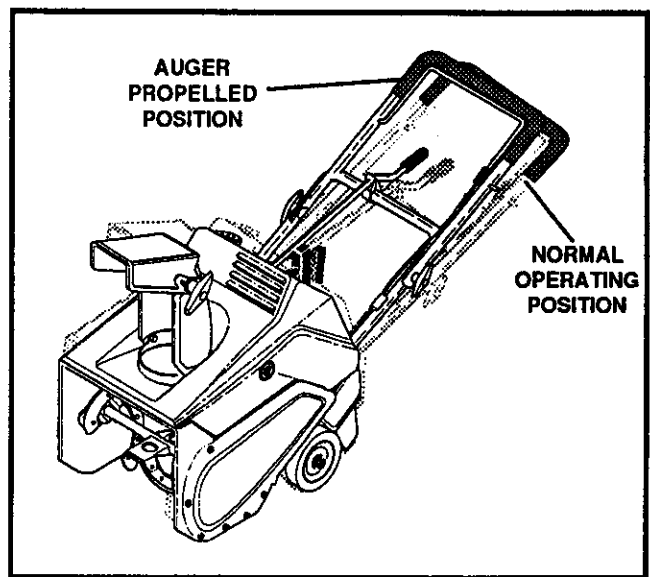


FIG. 3-OP



CAUTION: READ OPERATOR'S MANUAL BEFORE OPERATING MACHINE.

NEVER DIRECT DISCHARGE TOWARD BYSTANDERS.

RELEASE THE AUGER CONTROL BAR AND STOP THE ENGINE BEFORE UNCLOGGING DISCHARGE CHUTE OR AUGER HOUSING AND BEFORE LEAVING THE MACHINE.

DO NOT USE HANDS TO CLEAR DISCHARGE CHUTE.

OPERATION

BEFORE STARTING ENGINE

IMPORTANT: Experience indicates that alcohol blended fuels (called **gasohol** or those using **ethanol** or **methanol**) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage. To avoid engine problems, the fuel system should be emptied before storage for 30 days or longer. Start the engine and let it run until the fuel lines and carburetor are empty. Use fresh fuel next season. (See **Storage Instructions** on page 18 for additional information.)

Never use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.

FILL GAS

The two cycle engine used on this snow thrower requires a mixture of gasoline and oil for lubrication of the bearings and other moving parts. The correct fuel mixture ratio is 50:1. Gasoline and oil must be premixed in a clean gasoline container. Always use fresh, clean, unleaded gasoline.

FUEL MIX CHART (Mixture 50:1)

U. S.		IMPERIAL		S. I. (METRIC)	
GAS	OIL	GAS	OIL	GAS	OIL
1 Gal.	2.6 oz.	1 Gal.	3.1 oz.	4 Liters	80ML

GASOLINE AND OIL MIXTURE

Mix gasoline and oil (See FIG. 4-OP) as follows:

- Pour 1 U.S. quart of fresh, clean, unleaded automotive gasoline into a gallon gasoline container.
- Add (2.6 oz.) of ECHO Brand, high quality, two-cycle oil to the gasoline container.

IMPORTANT: DO NOT USE OUTBOARD MOTOR OIL OR AUTOMOBILE OILS, SUCH AS SAE 30 OIL, OR MULTI-VISCOSITY OILS, SUCH AS 10W-30 OR 10W-40.

- Reinstall the cap on the gasoline container and shake container vigorously so the oil mixes with the gasoline.
- Add an additional 3 U.S. quarts of gasoline to the gallon container and shake the container again.



DANGER: GASOLINE IS FLAMMABLE AND CAUTION MUST BE USED WHEN HANDLING OR STORING IT. DO NOT FILL FUEL TANK WHILE SNOW THROWER IS RUNNING, HOT, OR WHEN SNOW THROWER IS IN AN ENCLOSED AREA. KEEP AWAY FROM OPEN FLAME OR ELECTRICAL SPARK, AND DO NOT SMOKE WHILE MIXING FUEL OR FILLING FUEL TANK. NEVER FILL FUEL TANK COMPLETELY, BUT FILL THE TANK TO WITHIN 1/4 - 1/2 INCH FROM TOP TO PROVIDE SPACE FOR EXPANSION OF 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 ENGINE.

STORE GASOLINE IN A CLEAN, APPROVED CONTAINER, AND KEEP CAP IN PLACE ON 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.

DO NOT FILL THE FUEL TANK WITH GASOLINE THAT DOES NOT HAVE OIL MIXED IN IT. SHAKE THE GASOLINE CONTAINER BEFORE EACH FILLING OF THE FUEL TANK.

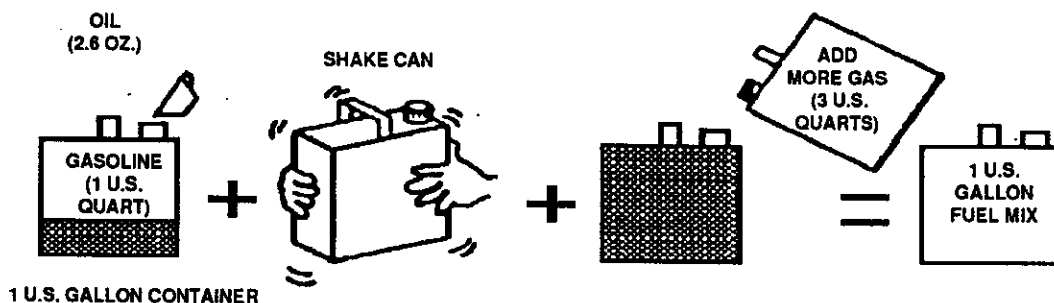


FIG. 4-OP

OPERATION

TO STOP ENGINE

- To stop the engine, turn the key to (OFF) and remove key. Keep key in a safe place. The engine will not start without the key.

Before starting the engine, be certain that you have read and understand all the instructions on the preceding pages.

TO START THE ENGINE (Recoil Starter) (See FIG. 5-OP)

COLD START

- Insert the key and turn (ON).
- Move the choke control to (FULL) position.
- Push the primer button while covering the vent hole as follows:

Do not prime if ambient temperature is above 50°F.

Two times if ambient temperature is 50°F to 15° F.

Four times if ambient temperature is below 15° F.

- Pull the starter handle with a smooth rapid movement. Do not allow the starter rope to snap back. Rewind smoothly while holding the starter handle. If the engine fires but does not start, pull the starter handle until the engine starts.
- After three pulls, repeat the priming and pulling steps again.
- As engine warms up and begins to operate evenly, move choke lever slowly to (OFF) position. If the engine falters, return to 1/2 choke until it runs smoothly, then move to (OFF) position.

NOTE: Allow the engine to warm up for a few minutes before using the snow thrower, as the engine will not develop full power until it reaches operating temperature.

WARM START

- Move the choke to the (OFF) position and pull the starter handle until the engine starts.

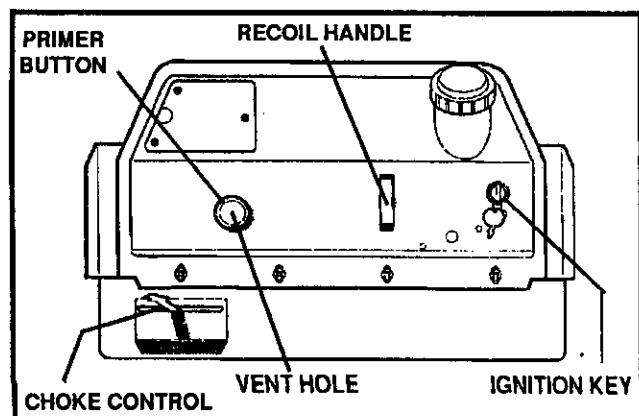


FIG. 5-OP



CAUTION: NEVER RUN ENGINE INDOORS OR IN ENCLOSED, POORLY VENTILATED AREAS. ENGINE EXHAUST CONTAINS CARBON MONOXIDE, AN ODORLESS AND DEADLY GAS.

ALWAYS STAND BEHIND SNOW THROWER (OPERATOR'S POSITION) WHEN STARTING ENGINE.

NEVER (AT ANY TIME) PUT HANDS, FEET, HAIR OR LOOSE CLOTHING IN OR NEAR THE DISCHARGE CHUTE DEFLECTOR OR AUGER HOUSING WHILE THE ENGINE IS RUNNING. THE TEMPERATURE OF THE MUFFLER AND NEARBY AREAS MAY EXCEED 150° F.; AVOID THESE AREAS.

- Do not prime a warm engine. If the engine fails to start, follow the Cold Engine Start instructions above.

SNOW THROWING TIPS

- This snow thrower will propel itself forward when the handle is raised enough to cause the auger blades to contact the ground. The auger should stop when auger control bar is released. If it does not, refer to Adjust Auger Control Cable paragraph on page 15.
- For most efficient snow throwing, turn the discharge chute deflector to throw snow downwind, and slightly overlap each swath. In light snow take up to a full cut and in heavy snow take less than a full cut.
- The distance snow will be discharged can be adjusted by moving the discharge chute deflector. Raise the deflector for more distance or lower the deflector for less distance.
- In windy conditions, lower the chute deflector to direct discharged snow close to the ground, where it is less likely to blow into unwanted areas.
- Keep the area to be cleared free of stones, toys and other foreign objects for safety and to prevent damage to the snowthrower.
- Do not use the auger propelling feature when on gravel or crushed rock driveways. Move the handle down to raise the auger slightly.
- The allowable forward speed of the snow thrower is dependent on the depth and weight of the snow. Experience will establish the most effective method of using the snow thrower under different conditions.



DANGER: OBJECTS SUCH AS GRAVEL, ROCKS OR OTHER DEBRIS, IF STRUCK BY THE AUGER, MAY BE THROWN WITH SUFFICIENT FORCE TO CAUSE PERSONAL INJURY OR PROPERTY DAMAGE.

OPERATION

TO START ENGINE (Electric Starter) (See FIG. 6-OP)

The snow thrower engine may be equipped with a 120 volt A.C. electric starter and recoil starter. Before starting the engine, be certain that you have read the following information:

COLD START

- Insert the key and turn (ON).
- Move the choke control to (FULL) position.
- Connect the power cord to the switch box on the snow thrower.
- Plug the other end of the power cord into a 120 volt A.C. household receptacle.
- Push the primer button while covering the vent hole as follows:

Do not prime if ambient temperature is above 50° F.

Two times if ambient temperature is 50° F to 15° F.

Four times if ambient temperature is below 15° F.

- Push down on the starter button until the engine starts. Do not crank for more than 10 seconds at a time. The electric starter is thermally protected. If overheated it will stop automatically and can be restarted only when it has cooled to a safe temperature (a wait of about 5 to 10 minutes is required).
- Disconnect the power cord from the receptacle first and then from the switch box on the snow thrower.
- As engine warms up and begins to operate evenly, move choke lever slowly to (OFF) position. If the engine falters, return to 1/2 choke until it runs smoothly, then move to (OFF) position.

NOTE: Allow engine to warm up for a few minutes before using the snow thrower, as the engine will not develop full power until it reaches operating temperature.

WARM START

- Move the choke to the (OFF) position and pull the starter handle until the engine starts.
- Do not prime a warm engine. If the engine fails to start, follow the Cold Start instructions above.

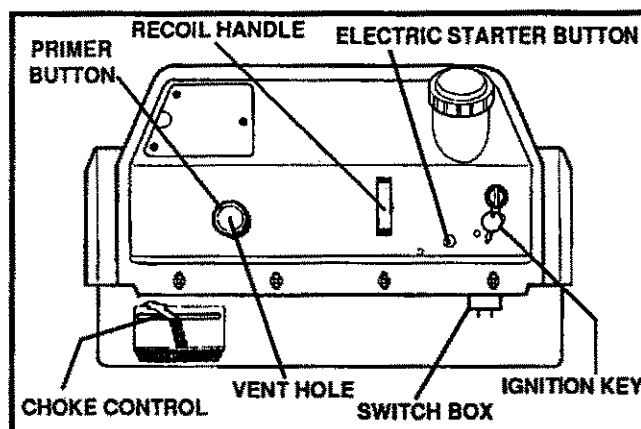


FIG. 6-OP

CAUTION: THIS STARTER IS EQUIPPED TO OPERATE ON 120 VOLT AC HOUSEHOLD CURRENT. FOLLOW ALL INSTRUCTIONS CAREFULLY AS SET FORTH IN THE "TO START ENGINE" SECTION.



WHEN CONNECTING 120 VOLT AC POWER CORD, ALWAYS CONNECT THE CORD TO THE SWITCH BOX ON THE ENGINE FIRST, THEN PLUG THE OTHER END INTO THE HOUSEHOLD RECEPTACLE.

WHEN DISCONNECTING THE 120 VOLT AC POWER CORD, ALWAYS UNPLUG FROM THE HOUSEHOLD RECEPTACLE FIRST.

MAINTENANCE

GENERAL RECOMMENDATIONS

The warranty on this snow thrower does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, the operator must maintain the snow thrower as instructed in this manual.

SNOW THROWER

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

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

AFTER FIRST USE

- Check for any loose or damaged parts after each use.

AFTER EACH USE

- Tighten any loose fasteners.
- Run the machine to clear the auger of snow.
- Remove all snow and slush from the snow thrower to prevent freezing of auger or controls.

LUBRICATION - AS REQUIRED

- Lubricate the idler arm before the season and after every ten (10) hours of use.
- See (Lubrication Chart diagram on page 18) for lubrication points and type of lubricant.

ENGINE

SPARK PLUG

- Clean the spark plug and reset the gap periodically at .030 inch. To service or replace the spark plug see ("To Replace The Spark Plug" paragraph on page 16).
- Clean the area around the spark plug base before removal to prevent dirt from entering the engine.
- Make sure that the spark plug is tightened securely into the engine and the spark plug wire is attached to the spark plug.
- If a torque wrench is available, torque plug to 18 to 23 foot pounds.

IMPORTANT: IF YOU THINK THE CARBURETOR IS NOT OPERATING PROPERLY, CONTACT YOUR NEAREST ECHO DEALER.

SERVICE AND ADJUSTMENTS

TO ADJUST THE CHUTE CRANK ASSEMBLY

The chute crank assembly has been pre-set at the factory and readjustment should not be necessary. If the chute crank is not operating properly, take your snow thrower to an authorized ECHO dealer for repair and adjustment.

TO ADJUST THE AUGER CONTROL CABLE

The auger control cable is set at the factory for proper operation. If you need to adjust the cable for proper drive tension, do the following:

- Slide the boot on the spring toward hook end of the spring, exposing threaded rod and nut (See FIGS. 1 and 2-SERV & ADJ).
- Loosen the nut with 3/8" wrench while holding the steel shank with pliers.
- Hold the threaded rod and twist the steel shank until slack is removed from the cable (See FIG. 2-SERV & ADJ).

NOTE: Do not overtighten or clutch will not disengage.

- Tighten the nut against the steel shank.
- Slide the boot over the spring.
- Start the snow thrower and check that the auger does not continue to turn when the auger control bar (FIG. 1-SERV&ADJ) is released.
- If auger continues to turn, stop the engine, loosen nut and twist steel shank 2 or 3 turns to loosen cable, and then tighten nut against steel shank using the same tools (See FIG. 2-SERV & ADJ).

TO REMOVE BELT COVER

- Remove the belt cover (See FIG. 3-SERV & ADJ) by removing the 6 screws.
- Pull the belt cover away from the snow thrower.

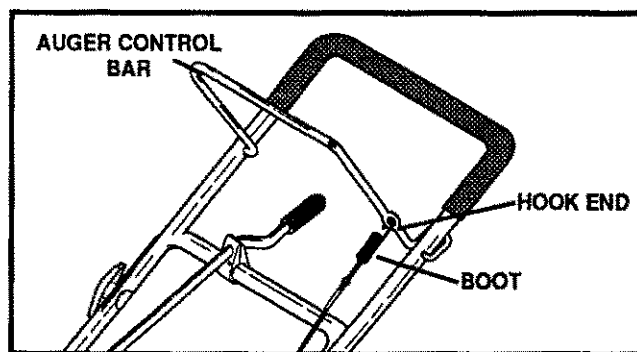


FIG. 1-SERV & ADJ

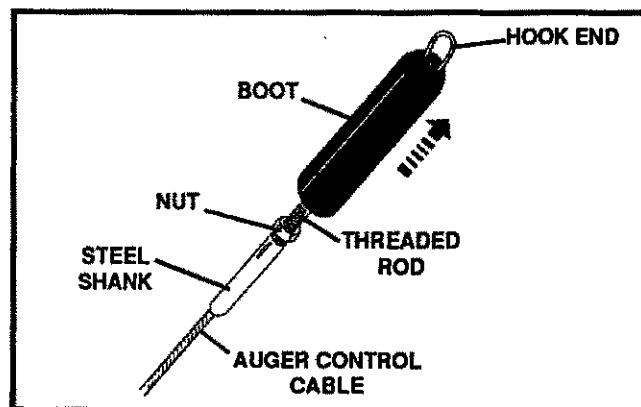


FIG. 2-SERV & ADJ

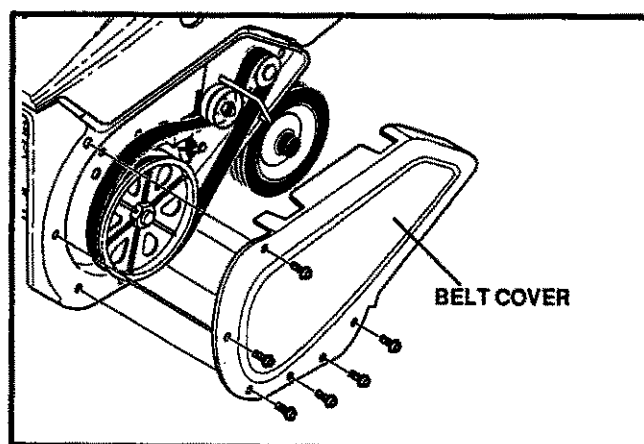


FIG. 3-SERV & ADJ

SERVICE AND ADJUSTMENTS

TO ADJUST THE DRIVE BELT TENSION

The auger drive belt tension is set at the factory. If the snow discharge distance decreases, do the following:

- Remove the 3 screws from the access panel on the rear of the top cover (See page 17).
- Disconnect the spark plug wire (See page 17).
- Remove the belt cover (See to Remove the Belt Cover paragraph on page 15).
- Loosen but do not remove the nut on the idler pulley. (See FIG. 4-SERV & ADJ)
- Move the idler pulley to the bottom of the idler arm slot. Tighten the nut.
- Reconnect the spark plug wire.

NOTE: If the idler pulley is already in the bottom position, replace the belt.

TO REPLACE THE DRIVE BELT

The drive belt on this unit is of special construction and must be replaced with the same type belt available at your nearest ECHO dealer.

- Remove the 3 screws from the access panel on the rear of the top cover. (See page 17).
- Disconnect the spark plug. (See page 17).
- Remove the belt cover (See to Remove the Belt Cover paragraph on page 15).
- Remove washer and nut from belt guide. (See FIG. 4-SERV & ADJ).
- Pull the belt guide off the weld screw and save. **NOTE:** Screw holding belt guide is welded to the inside and cannot be removed.
- Once belt guide is removed, the belt can then be removed by pressing the idler pulley down and removing the belt from under the brake tab.
- Remove the belt from around engine pulley.
- Loosen the nut on the idler pulley.
- Move the idler pulley to the middle of the idler arm slot. Tighten the nut.
- Install the new belt.
- Reinstall the belt guide. **NOTE:** One leg of the belt guide goes through a positioning hole in the frame and the other side is held in place by the weld screw, washer, and nut.
- Reconnect spark plug wire and replace access cover. (See FIG. 8-SERV & ADJ).
- Start the snow thrower and check that the auger does not continue to turn when the auger control bar is released.

- If auger continues to turn, stop the engine, loosen nut and twist steel shank 2 or 3 turns to loosen cable, and then tighten nut against steel shank. See III. 13.
- Reinstall the belt cover.

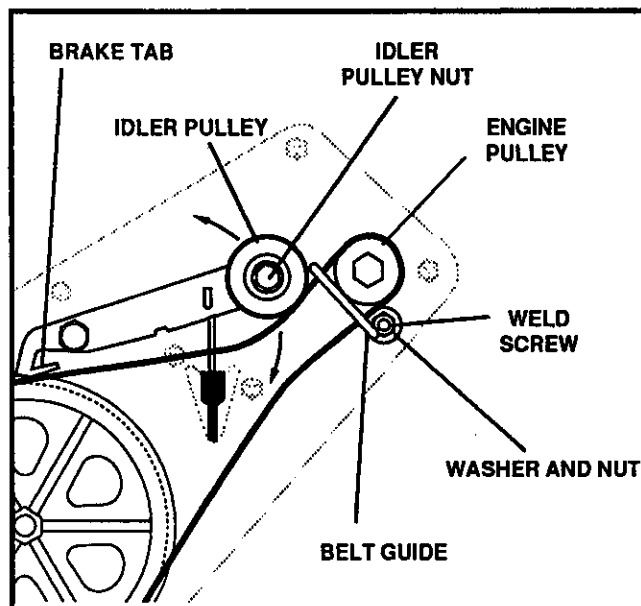


FIG. 4-SERV & ADJ

TO REPLACE THE SCRAPER BLADE

If the scraper blade must be replaced due to wear, proceed as follows (See FIG. 6-SERV & ADJ):

- Remove 4 nuts, 4 bolts and scraper blade.
- Install new scraper blade, 4 nuts, and 4 bolts.

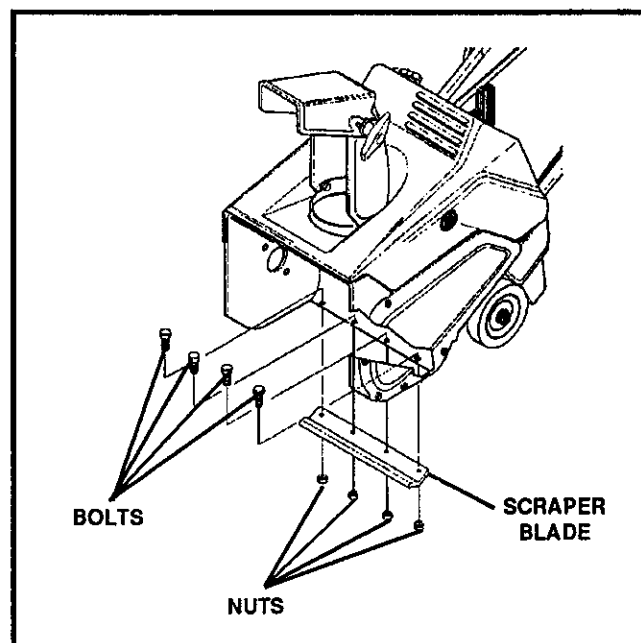


FIG. 6-SERV & ADJ

SERVICE AND ADJUSTMENTS

TO REPLACE THE AUGER

- Remove the 3 screws from the access panel on the rear of the top cover.
- Disconnect the spark plug wire.
- Remove the belt cover (See **To Remove Belt Cover** paragraph on page 15) and the drive belt (See the **Drive Belt Replacement** paragraph on page 16).
- Remove the auger pulley (See FIG. 7-SERV & ADJ) from the auger shaft (threads are left hand; turn clockwise to remove and place a piece of wood (2"x4") on the center paddle area to secure the auger to keep it from turning). NOTE: When unscrewing the pulley hold the idler pulley down.
- Remove the bearing assembly from the left frame of snow thrower by removing the (2) nuts.
- Slide the auger assembly out of the bearing assembly on the right side of the snow thrower.
- Tip the auger assembly enough to allow it to slide out of the front of the auger housing.
- Install the new auger assembly in reverse order of removal.
- Reconnect the spark plug wire and reinstall access panel.

NOTE: Check the drive belt adjustment before reinstalling the belt cover (See **To Adjust the Drive Belt** paragraph on page 15).

TO REPLACE THE SPARK PLUG

The spark plug is housed in the engine compartment under the top cover (See FIG. 8-SERV & ADJ) and cannot be seen under normal conditions.

- Remove the 3 screws from the access panel on the rear of the top cover.
- Remove the spark plug wire.
- Clean the area around the plug base to prevent dirt from entering the engine when the plug is removed.
- Remove the spark plug. If it is cracked, fouled or dirty, it must be replaced (See page 5 for the proper replacement plug).
- Set the gap between the electrodes of the new spark plug at .030 inch. Next, install the spark plug in the cylinder head. Tighten the plug to 18 to 23 foot pounds. If you do not use a torque wrench, tighten the plug firmly (See FIG. 9-SERV & ADJ).
- Push the spark plug wire onto the spark plug.
- Reinstall the access panel to the top cover.

ENGINE SERVICE

Unless the operator is fully qualified to make engine repairs or adjustments, we recommend that such work be done by technicians trained to work on snow thrower type engines. Take your snow thrower to an authorized **TECUMSEH** dealer for repair and adjustment.

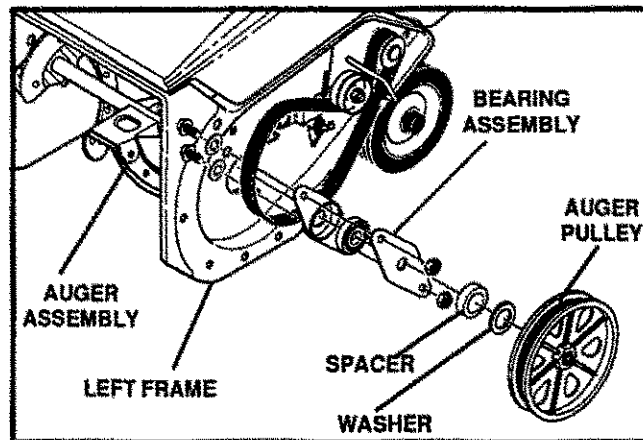


FIG. 7-SERV & ADJ

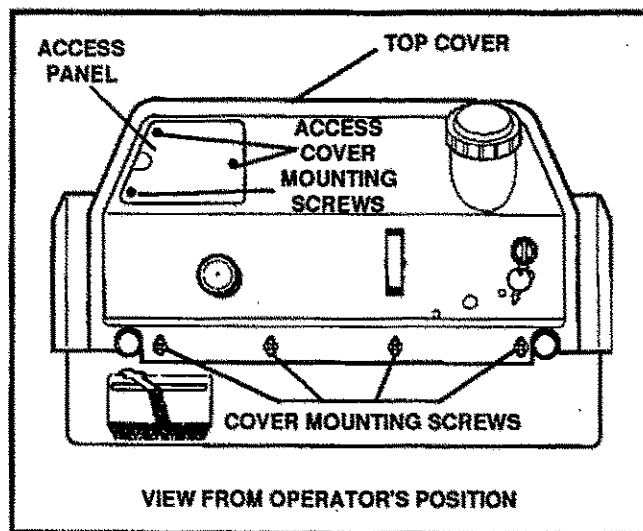


FIG. 8-SERV & ADJ

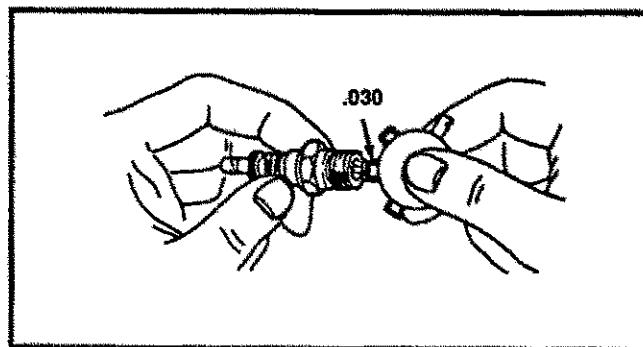


FIG. 9-SERV & ADJ

ADJUST ENGINE SPEED

Your engine speed has been factory set. Do not attempt to change engine speed or it may result in personal injury. If you believe that the engine is running too fast or too slow, take your snow thrower to an authorized **TECUMSEH** dealer for repair and adjustment.

STORAGE



WARNING: NEVER STORE YOUR SNOW THROWER INDOORS OR IN AN ENCLOSED, POORLY VENTILATED AREA IF GASOLINE REMAINS IN THE TANK. FUMES MAY REACH AN OPEN FLAME, SPARK OR PILOT LIGHT FROM A FURNACE, WATER HEATER, CLOTHES DRYER, CIGARETTE, ETC.

To prevent engine damage (If snow thrower is not used for more than 30 days) follow the steps below.

ENGINE STORAGE

Gasoline must be removed or treated to prevent gum deposits from forming in the tank, filter, hose, and carburetor during storage. Also during storage, alcohol blended gasoline that uses ethanol or methanol (sometimes called gasohol) attracts water. It acts on the gasoline to form acids which damage the engine.

- To remove gasoline, run the engine until the tank is empty and the engine stops.
- If you do not want to remove gasoline, a fuel stabilizer may be added 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 SNOW THROWER IN A SAFE PLACE. SEE WARNING ABOVE.**

You can keep your engine in good operating condition during storage by:

- 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.

SNOW THROWER STORAGE

- Thoroughly clean the snow thrower.
- Lubricate all the lubrication points (See the Maintenance section, page 14).
- Be sure that all nuts, bolts and screws are securely fastened. Inspect all visible moving parts for damage, breakage and wear. Replace if necessary.
- Touch up all rusted or chipped paint surfaces; sand lightly before painting.
- Cover the bare metal parts of the blower housing and auger with rust preventative, such as sprayable lubricant.

OTHER

- If possible, store your snow thrower indoors and cover it to give protection from dust and dirt.
- If the machine must be stored outdoors, block up the snow thrower to be sure the entire machine is off the ground.
- Cover the snow thrower with a suitable protective cover that does not retain moisture. Do not use plastic or vinyl.

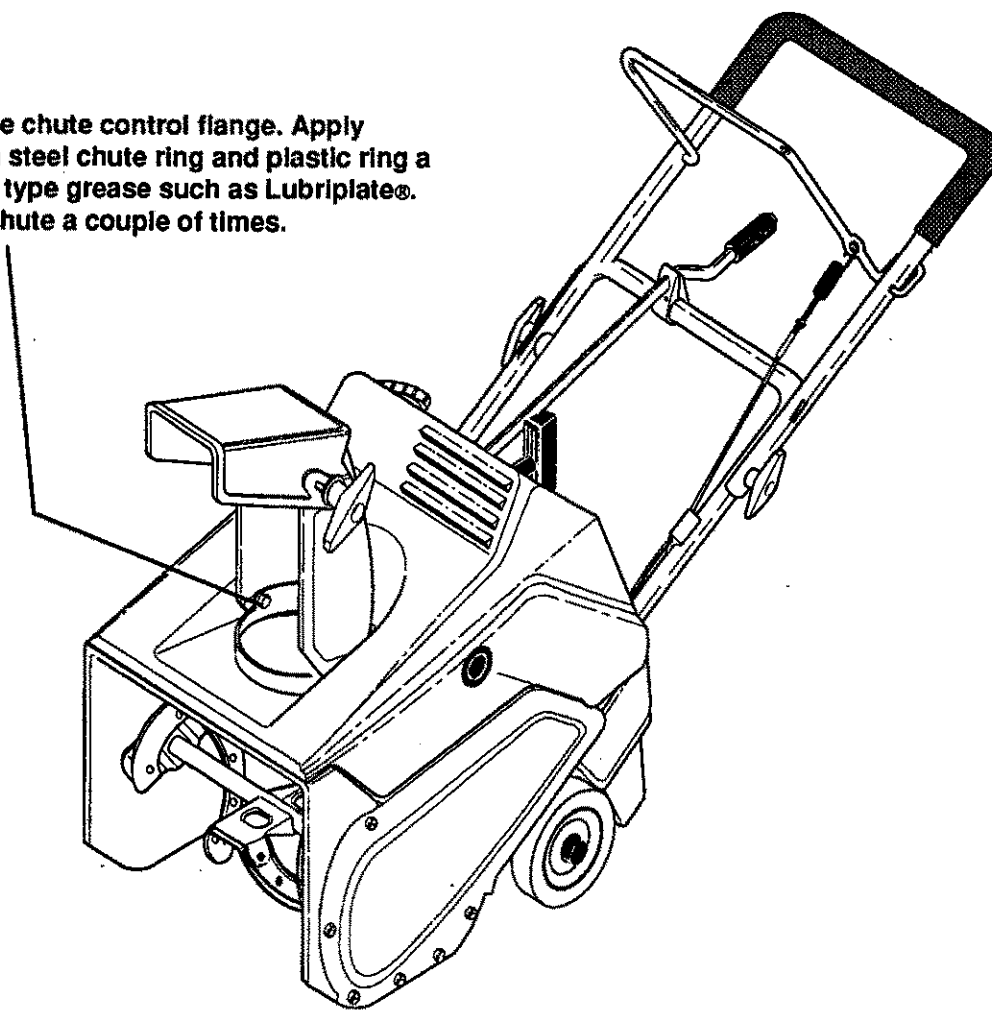
NOTE: A yearly checkup or tuneup by an authorized ECHO dealer is a good way of ensuring that your snow thrower will provide maximum performance for the next season.

SERVICE RECOMMENDATIONS

SERVICE RECORDS Fill in dates as you complete regular service	SCHEDULE					SERVICE DATES					
	Before Each Use	After first 12 Hours	As Needed	Before Storage	Before Each Season						
Tighten All Screws and Nuts	✓	✓	✓								
Check Spark Plug					✓						
Check Drive Belts					✓						
Check Fuel	✓										
Drain Fuel				✓							
Lubricate Chute Control Flange				✓							

LUBRICATION CHART

Lubricate chute control flange. Apply between steel chute ring and plastic ring a clinging type grease such as Lubriplate®. Rotate chute a couple of times.



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TROUBLE SHOOTING POINTS

TROUBLE	CAUSE	CORRECTION
Difficult starting	Defective spark plug	Replace defective plug.
Engine stalls	Unit running on FULL choke	Set choke lever to OFF position.
Engine runs erratically; Loss of power	Blocked fuel line or low on fuel	Clean fuel line; check fuel supply; add fresh gasoline (oil mixture).
	Water or dirt in fuel system	See Engine Manual.
	Carburetor out of adjustment	See Engine Manual.
Excessive vibration	Loose parts; damaged impeller	Stop engine immediately and disconnect spark plug wire. Tighten all bolts and make all necessary repairs. If vibration continues, have the unit serviced by a competent repairman.
	Damaged auger	Repair or replace auger assembly.
Unit fails to propel itself	Drive belt loose or damaged	Replace drive belt.
	Incorrect adjustment of auger control cable	Adjust auger control cable.
Unit fails to discharge snow	Auger drive belt loose or damaged	Adjust auger drive belt; replace if damaged.
	Auger control cable not adjusted correctly	Adjust auger control cable.
	Discharge chute clogged	Stop engine immediately and disconnect spark plug wire. Clean discharge chute and inside of auger housing. Do not use your hands to clear discharge chute.
	Foreign object lodged in auger	Stop engine immediately and disconnect spark plug wire. Remove object from auger.

PARTS CATALOG

To obtain a parts catalog send a check or money order for \$2.00 per parts book made payable to ECHO, INCORPORATED and state on a sheet of paper the part number ST-5000 and ST-5000E 999222 02824, your name and address and mail to:

ECHO, INCORPORATED
400 Oakwood Rd.
Lake Zurich, IL 60047

If you require additional parts books, you may order them by writing down the model number and serial number of the ECHO unit you have along with \$2.00 per parts book.

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