

Grass Trimmer

Operator's Manual

MODELS

GT-2000SB Type 1 GT-2000SB Type 1E

Serial Number 001001 & Up



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

WARNING A DANGER

Read rules for safe operation and instructions carefully. ECHO provides an Operator's Manual and a Safety Manual. Both must be read and understood for proper and safe operation.



INTRODUCTION

Welcome to the ECHO family. This ECHO product was designed and manufactured to provide long life and on-the-job-dependability. Read and understand this manual and the SAFETY MANUAL you found in the same package. You will find both easy to use and full of helpful operations tips and SAFETY messages.

WARNING A DANGER

Read rules for safe operation and instructions carefully. ECHO provides an Operator's Manual and a Safety Manual. Both must be read and understood for proper and safe operation.

THE OPERATOR'S MANUAL ---

contains specifications and information for operation, starting, stopping, maintenance, storage and assembly specific to this product.

THE SAFETY MANUAL --

explains possible hazards involved with the use of Grass Trimmers and Brush cutters and what measures you should take to insure safe operation.

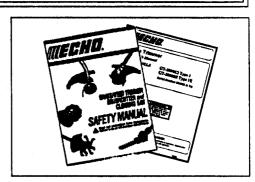


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Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories, and may not include all standard equipment.

MANUAL SAFETY SYMBOLS & IMPORTANT INFORMATION

Throughout this manual and on the product itself, you will find safety alerts and helpful, information messages preceded by symbols or key words. The following is an explanation of those symbols and key words and what they mean to you.

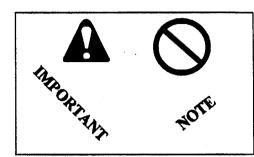


This symbol accompanied by the words WARNING and DANGER calls attention to an act or condition that can lead to serious personal injury to operator and bystanders.



The circle with the slash symbol means whatever is shown within the circle is prohibited.

IMPORTANT The enclosed message provides information necessary for the protection of the unit.



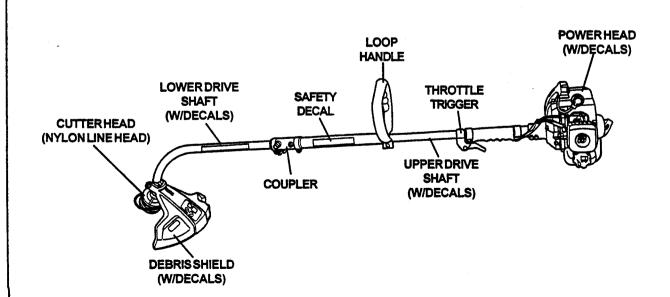
NOTE This enclosed message provides tips for use, care and maintenance of the unit.

SAFETY

GENERAL DESCRIPTION

IMPORTANT

See Description and Specification sections for full description and illustration of model variation in power head, handle type, harness and debris shield/cutter head.





DECALS

Locate these safety decals on your unit. The complete unit illustration found in the "DESCRIPTION" section, will help you locate them. Make sure the decals are legible and that you understand and follow the instructions on them. If a decal cannot be read, a new one can be ordered from your ECHO dealer. See PARTS ORDERING instructions for specific information.

A. SHAFT DECAL



WARNING A DANGER

This unit can be dangerous and cause serious injury if improperly used. • Operators, helpers and bystanders can be severely in jured by thrown objects and must wear specified ANS1 287.1 eye protection. Blindness or loss of eye can occur. Do not rely on cutter head shield to protect eyes. Ricochet can occur. •to avoid accidental contact, keep everyone beyond operating area. •To reduce the risk of injury to operator, helpers & bystanders, read and understand your operator's and safety manuals. For a free copy of the safety Manual, write to ECHO, INCORPORATED, 400 Oakwood Road, Lake Zurich, IL 60047. - Keep shield and other components in place and in good condition. Do not use attachments or other parts not approved by ECHO. GT style (non-blade capable) units must not be converted to blade use except Maxi-Cuts or similar ECHO approved attachments.



B. SPANISH DECAL



ADVERTENCIA



PELIGRO

Esta unidad puede ser peligrosa y producir lesiones personales graves si no se usa en forma adecuada. Para reducir el riesgo de lesionarse, los operadores, los ayudantes y los espectadores deben leer y comprender el Manual Del Operador y los Manuales De Seguridad que se entregan escritos en español.

ENGLISH TRANSLATION





WARNING A DANGER

This unit can be dangerous and cause serious injury if improperly used. To reduce injury risk to operator, helpers and bystanders, read and understand the Operator's and Safety Manuals, which are provided in Spanish.

C. SHIELD DECAL



INTERNATIONAL SYMBOLS

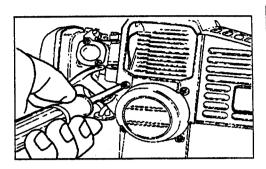
Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
®	"Warning, see Operator' Manual		Fuel and oil mixture
•	Wear eyes, ears and head protection		Finger Severing
STOP	Emergency stop	L	Carburetor adjustment - Low speed mixture

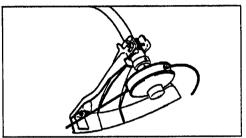
Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	Hot Surface	H	Carburator adjustment - High speed mixture
		T	Carburetor adjustment - Idie speed

EQUIPMENT CHECK

Before operation a complete check of the unit must be performed;

- Check unit for loose/missing nuts, bolts and screws. Tighten and/or replace as needed.
- Inspect fuel lines, tank and area around carburetor for fuel leaks. DO NOT operate unit if leaks are found.
- Inspect shield for damage and ensure that the cut-off knife is securely in place. Replace if either is damaged or missing.
- Check that the cutting attachment is firmly attached and in safe operating condition.





FUEL

WARNING A DANGER

Fuel is VERY flammable. Use extreme care when mixing, storing or handling, otherwise serious personal injury may result.

- Use an approved fuel container.
- DONOT smoke near fuel.
- DO NOT allow flames or sparks near fuel.
- Fuel tanks/cans may be under pressure. Always loosen fuel caps slowly allowing pressure to equalize.
- NEVER refuel a unit when the engine is HOT!
- NEVER refuel a unit with the engine running.
- DO NOT fill fuel tanks indoors. ALWAYS fill fuel tanks out doors over bare ground.
- Securely tighten fuel cap after refueling.
- Inspect for fuel leakage. If fuel leakage is found, do not start or operate unit until leakage is repaired.

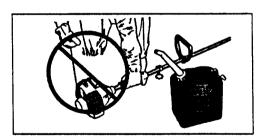


- Wipe any spilled fuel from the unit.
- Move at least 10 ft. (3 M) from refueling location before starting.

After use:

- DO NOT store a unit with fuel in its tank. Leaks can occur. Return unused fuel to an approved fuel storage container.







PERSONAL CONDITION & SAFETY EQUIPMENT

WARNING A DANGER



Trimmer users risk injury to themselves and others if the trimmer is used improperly and or safety precautions are not followed. Proper clothing and safety gear must be worn when operating a trimmer. Failure to do so can result in serious injury.

Physical Condition --

Your judgment and physical dexterity may not be good:

- if you are sick,
- if you are taking medication,
- if you have taken alcohol or drugs.

Operate unit only if you are physically and mentally well.

Eye Protection --

Eye protection goggles that meet ANSI Z87.1 requirements were included with your trimmer. Wear these goggles whenever you operate the trimmer.

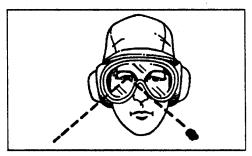
Hand Protection ---

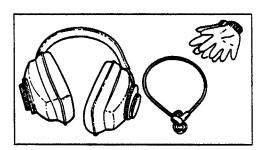
Wear no-slip, heavy duty work gloves in improve your grip on the Trimmer/Brush Cutter handles. Gloves also reduce the transmission of machine vibration to your hands. Special vibration reducing gloves such as Echo's Pro-Comfort are designed to provide additional comfort.

Hearing Protection --

Wear hearing protection. OSHA requires the use of hearing protection if this unit is used 2 hours per day or more. ECHO recommends wearing hearing protection whenever unit is used.







Proper Clothing --

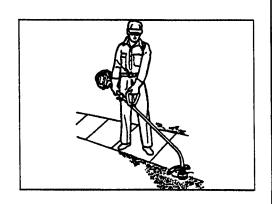
Wear snug fitting, durable clothing;

- Pants should have long legs, shirts with long sleeves.
- Wear hair covering to contain long hair.
- DO NOT WEAR SHORTS,
- DO NOT WEAR TIES, SCARFS, JEWELRY.

Wear sturdy work shoes with non-skid soles;

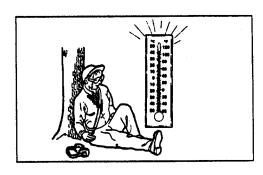
- DO NOT WEAR OPEN TOED SHOES.
- DO NOT OPERATE UNIT BAREFOOTED.

Wear no-slip, heavy duty work gloves.



Hot Humid Weather --

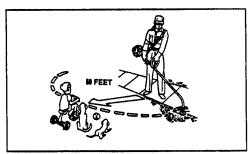
Heavy protective clothing can increase operator fatigue which may lead to heat stroke. Schedule heavy work for early morning or late afternoon hours when temperatures are cooler.



SAFE OPERATION

Determine Operation Area

- Review the area to be trimmed. Look for hazards that could contribute to unsafe conditions.
- Spectators and fellow workers must be warned, and children and animals prevented from coming nearer than 50 ft. (15M) while the trimmer is in use.

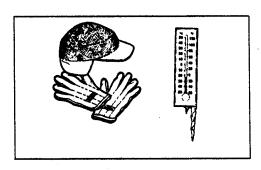


EXTENDED OPERATION/EXTREME CONDITIONS

Vibration and Cold -

It is believed that a condition called Raynaud's Phenomenon, which affects the fingers of certain individuals may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations followed by loss of color and numbness in the fingers. The following precautions are strongly recommended because the minimum exposure which might trigger the ailment is unknown.

- Keep your body warm, especially the head, neck, feet, ankles, hands and wrists.
- Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks and also by not smoking.
- Limit the hours of operation. Try to fill each day with jobs where operating the trimmer or other hand-held power equipment is not required.
- If you experience discomfort, redness and swelling of the fingers followed by whitening and loss of feeling, consult your physician before further exposing yourself to cold and vibration.



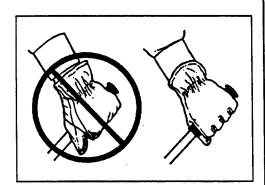




Repetitive Stress Injuries -

It is believed that overusing the muscles and tendons of the fingers, hands, arms and shoulders may cause soreness, swelling, numbness, weakness and extreme pain in those areas. Certain repetitive hand activities may put you at a high risk for developing a Repetitive Stress Injury (RSI). An extreme RSI condition is Carpal Tunnel Syndrome (CTS), which could occur when your wrist swells and squeezes a vital nerve that runs through the area. Some believe that prolonged exposure to vibration may contribute to CTS. CTS can cause severe pain for months or even years. To reduce the risk of RSI/CTS, do the following:

- Avoid using your wrist in a bent, extended or twisted position.
 Instead try to maintain a straight wrist position. Also, when grasping, use your whole hand, not just the thumb and index finger.
- Take periodic breaks to minimize repetition and rest your hands.
- Reduce the speed & force in which you do the repetitive movement.
- Do exercises to strengthen the hand and arm muscles.
- See a doctor if you feel tingling, numbness or pain in the fingers, hands, wrists or arms. The sooner RSI/CTS is diagnosed, the more likely permanent nerve and muscle damage can be prevented.





DESCRIPTION

The ECHO product you purchased has been factory pre-assembled for your convenience. Due to packaging restrictions, shield installation and positioning of the front handle are necessary.

After opening the carton, check for damage. Immediately notify your retailer or ECHO Dealer of damaged or missing parts. Use the contents list to check for missing parts.

EMISSION CONTROL - Type 1E Model

The emission control system for this engine is EM (Engine Modification).

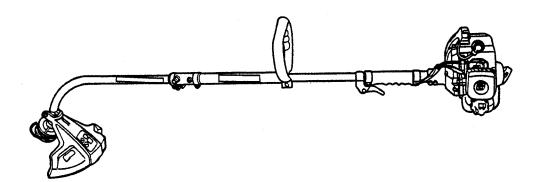
IMPORTANT ENGINE INFORMATION

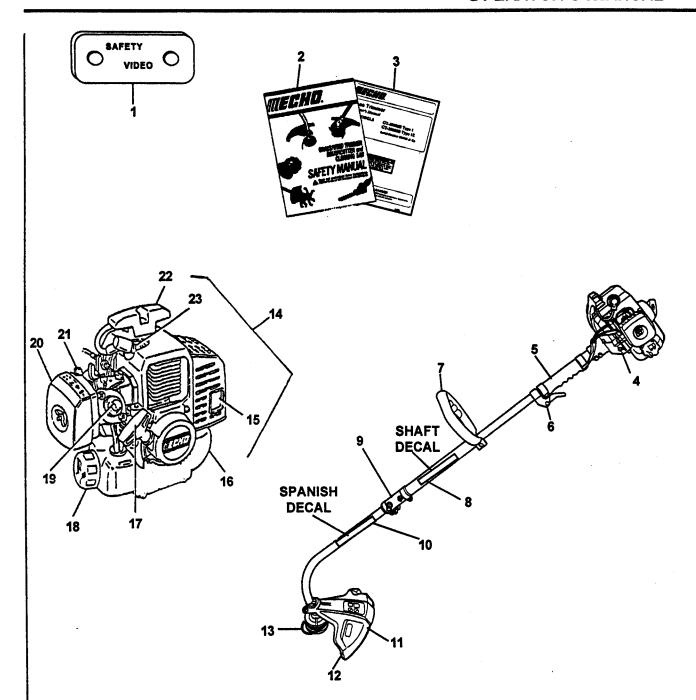
ENGINE FAMILY: TEH0240824RC

DISPLACEMENT: 23.6cc

THIS ENGINE MEETS U.S. EPA PH1 AND 1995-1998 CALIFORNIA EMISSION REGULATIONS FOR ULGE ENGINES. REFER TO OWNER'S MANUAL FOR MAINTENANCESPECIFICATIONS AND ADJUSTMENTS. KIORITZ CORP.

Emission Control Label (located on Engine) (EXAMPLE ONLY, information on label varies by FAMILY).





CONTENTS LIST

 1 - Trimmer Assembly -Power Head -Drive Shaft Assemblies (Upper & Lower) 1 - Plastic Bag (Co-Pack) -Operators Manual -Safety Manual -Shield Assembly 	-Hardware Bag -1, 1/4-20 bolt (handle) -1, 1/4 washer, flat (handle) -1, 1/4-20 wing nut (handle) -1, 1/4-20x2 bolt (shield) -1, 1/4 washer, flat (shield) -1, 1/4-20 wing nut -Warranty Card & Limited Warranty
 Loop Handle Nylon Line Head	 -Safety Goggles
 - · ,	



- 1. SAFETY VIDEO P/N 99922202540 (Not included with unit and English version only) is available for your review and purchase at a cost of \$5.00 from ECHO, INC. or any authorized ECHO dealer. The video overviews safety precautions and proper operating techniques provided in detail in the Safety Manual and is supplemental to the Safety Manual. Read and understand the Safety Manual for complete information on safe operation.
- SAFETY MANUAL Included in plastic bag (co-pack). Read before operation and keep in a safe place for future reference to learn proper, safe operating techniques.
- 3. OPERATORS MANUAL Included in plastic bag (co-pack). Read before operation and keep in a safe place for future reference, i.e., operation, maintenance, storage and specifications.
- 4. POWER HEAD Factory Assembled to the Drive shaft assembly. Includes the Engine, Clutch, Fuel System, Ignition System and Starter.
- 5. GRIP-Rear (right hand) handle.
- 6. THROTTLE TRIGGER Spring loaded to return to idle when released. During acceleration, press trigger gradually for best operating technique. DO NOT hold trigger while starting.
- 7. LOOP HANDLE The Loop (left front) handle must be assembled onto Upper Drive Shaft Assembly and can be positioned for proper cutting attitude and operator comfort.
- UPPER DRIVE SHAFT ASSEMBLY Factory Assembled to the Power Head. Includes the Rear (right) Handle
 Assembly, Throttle Trigger, Loop (front, left hand) Handle Assembly, Coupler, Flexible Drive Cables and Safety
 Decals.
- 9. DRIVE SHAFT COUPLER Includes Locator Pin and Clamping Knob, and attaches the Lower Drive Shaft Assembly to the Upper Drive Shaft Assembly.
- 10. LOWER DRIVE SHAFT ASSEMBLY Incudes Gear Case, Debris Shield Assembly, Nylon Line Head, Flexible Drive Cable and Safety Decal.
- 11. DEBRIS SHIELD ASSEMBLY Included in plastic bag (co-pack). MUST be installed on unit before use, see Assembly Instructions. Shield assembly includes the Cut-Off Knife and Safety Decal. Mounts on the Bearing Housing Assembly just above the cutting attachment. Helps protect the operator by deflecting debris produced during the trimming operation.
- 12. CUT-OFF KNIFE Trims line to the correct length (5"). If trimmer is operated without a cut-off knife the line will become too long more than (5") the operating speed will slow, the engine overheat and performance will suffer.
- 13. NYLON CUTTER HEAD Contains replaceable nylon trimming line that advances when the trimmer head is tapped against the ground while the head is turning at normal operating speed.
- 15. MUFFLER/SPARK ARRESTOR The muffler controls the exhaust noise while the spark arrestor prevents hot, glowing particles of carbon from leaving the muffler where they could possibly start a fire. Built in accordance with SAEJ335, this product is approved for use on U.S. Forest Land and within the states of California, Maine, Oregon and Washington if the spark arresting screen is in place and in good repair.
- 16. FUEL TANK Contains fuel and fuel filter.
- 17. STARTER HANDLE Pull handle slowly until starter engages, then quickly and firmly. When engine starts, return handle slowly. DO NOT let handle snap back or damage to unit will occur.
- 18. FUEL TANK CAP Cover and seals fuel tank opening.
- 19. PURGE BULB Before starting and after filling the fuel tank, pump purge bulb 3-4 times or until a steady stream of fresh fuel is visible through the "clear" fuel return line.
- 20. AIR CLEANER Contains replaceable filter element.
- 21. CHOKE The choke control lever is located on the top of the choke case. Push the lever to "COLD START" to close the choke for cold starting. Pull the lever all the way back for the "RUN" position.
- 22. ARM REST Provides arm rest during operation and protects arm from the hot engine.
- 23. SPARK PLUG Provides spark to ignite fuel mixture.

SPECIFICATIONS

MODEL	GT-2000SB
Length	1400 mm (55.1 in.)
Width	330 mm (13.0 in.)
Height	360 mm (14.2 in.)
Weight (dry) w/Cutter Head	4.45 kg (9.8 lb.)
Engine Type	Air cooled, two-stroke, single cylinder gasoline engine
Bore	32.2 mm (1.268 in.)
Stroke	26.0 mm (1.04 in.)
Displacement	21.2 cc (1.29 cu. in.)
Exhaust System	Spark Arrestor Muffler
Carburetor	Zama diaphragm model C1U w/purge
Ignition System	Flywheel magneto, capacitor discharge
Spark Plug	NGK BPM-7A, NGK BPM-7Y or Champion CJ-7Y Gap 0.65 mm (0.026 in.)
Fuel	Mixed (Gasoline and Two-stroke Oil)
Fuel/Oil Ratio	50:1 ECHO High Performance, two-stroke air cooled engine oil
Gasoline	89 Octane unleaded. DO NOT use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE.
Oil	50:1 ECHO High Performance, two-stroke air cooled engine oil
Fuel Tank Capacity	0.4 lit. (14.2 US fl. oz.)
Starter System	Automatic Rewind Starter
Clutch	Centrifugal Type
Drive Shaft	1/4" Flex Shaft
Rotating Direction	Clockwise viewed from top
Cutter Head	Nylon line head (2-line) with .080 Line capacity 6.5m (20 ft.)
Handle	Left - D-Loop, Right - Grip
Shoulder Harness	Optional
Idle Speed	2600 - 3400 RPM
Wide Open Throttle Speed (W.O.T.) with Nylon Line Head	7000 - 8000 RPM
Wide Open Throttle Speed (W.O.T.) with Edger Blade Attachment	9000 - 10000 RPM

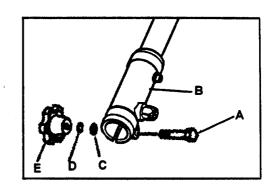
ASSEMBLY

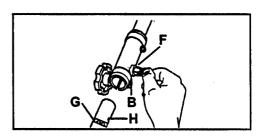
POWER HEAD SHAFT/LOWER SHAFT ASSEMBLY

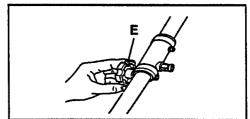
Tools Required: None

Parts Required: Power Head Shaft, Lower Shaft Assembly, Clamping Tool, Bolt (5x35mm), Flat Washer, Lockwasher.

- 1. Assemble bolt (A) through coupler (B) mounting holes from right to left viewed from open end.
- 2. Assemble flat washer (C) and lock washer (D) onto bolt end.
- 3. Assemble and lightly snug clamping knob (E).
- 4. Set power head and upper drive shaft assembly on a level surface, with open coupler end up.
- 5. Pull locator pin (F) out and rotate counter clockwise 1/4 turn to lock out position.
- 6. Carefully fit lower drive shaft assembly into coupler (B) to decal assembly line (G), making sure that the inner lower drive shaft engages into the upper drive shaft mount.
- 7. Rotate locator pin (F) 1/4 turn clockwise to engage lower shaft hole (H). Insure locator pin is fully engaged by gently twisting lower drive shaft. Locator pin should snap flush in coupler. Full engagement will prevent further shaft rotation.
- 8. Secure lower shaft assembly to coupler by tightening clamping knob (E).

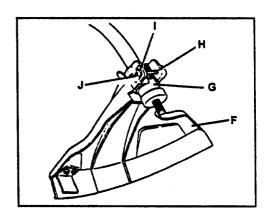






PLASTIC SHIELD INSTALLATION

- 1. Snap the shield (F) over the bearing housing (G).
- 2. Install 2 inch 1/4-20 bolt (H), washer (I), 1/4-20 wing nut (J) and tighten.



NYLON HEAD INSTALLATION

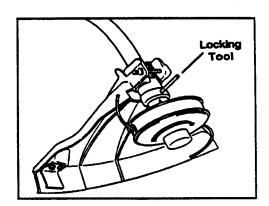
- 1. Align locating hole in locating plate with hole in bearing housing.
- 2. Insert 1/8" dia. locking tool (not included with unit) and thread head onto shaft clockwise until head is tight.

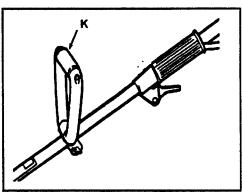
IMPORTANT

Remember to remove the locking tool.

FRONT (LOOP) HANDLE INSTALLATION

- 1. Snap loop handle (K) over upper drive shaft.
- 2. Install 1/4-20 bolt, flat washer and wing nut.
- 3. Position handle in comfortable operating position and tighten nut. The cutting head should be 2"-3" (5cm-7.5cm) above the ground and as level as possible. When right hand is holding rear throttle grip and left hand is holding loop handle.





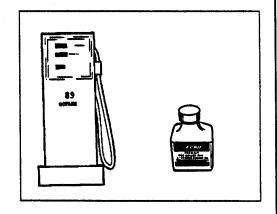
PRE-OPERATION

FUEL

Gasoline - Use 89 Octane $\left[\frac{R+M}{2}\right]$ gasoline or gasohol known to be good quality. Gasohol may contain up to 10% Ethanol (grain alcohol) or 15% MTBE (methyl tertiary-butyl ether). Gasohol containing methanol (wood alcohol) is NOT approved.

Two-Stroke Oil - A two-stroke engine oil meeting proposed ISO-L-EGD Standard (ISO/CD 13738), must be used. Echo brand Premium 50:1 oil meets this proposed standard. Engine problems due to inadequate lubrication caused by failure to use an ISO-L-EGD approved oil, such as Echo Premium 50:1 Two-stroke Oil, will void the two-stroke engine warranty. (Emission related parts only are covered for two years, regardless of two-stroke oil used, per the statement listed in the EPA Phase I/California Emission Defect Warranty Explanation.)

Mixing - Follow directions on the oil container.



Handling Fuel -

WARNING A DANGER

Fuel is VERY flammable. Use extreme care when mixing, storing or handling or serious personal injury may result.

- Use an approved fuel container.
- DO NOT smoke near fuel.
- DO NOT allow flames or sparks near fuel.
- Fuel tanks/cans may be under pressure. Always loosen fuel caps slowly allowing pressure to equalize.
- NEVER refuel a unit when the engine is HOT!
- NEVER refuel a unit with the engine running.
- DO NOT fill fuel tanks indoors. ALWAYS fill fuel tanks outdoors over bare ground.
- Securely tighten fuel cap after refueling.
- Inspect for fuel leakage. If fuel leakage is found, do not start or operate unit until leakage is repaired.



- Wipe any spilled fuel from the unit.
- Move at least 3M. (10 ft.) from refueling location before starting.

After use -

- DO NOT store a unit with fuel in its tank. Leaks can occur. Return unused fuel to an approved fuel storage container.

Storage -

Fuel storage laws vary by locality. Contact your local government for the laws affecting your area. As a precaution, store fuel in an approved, air tight container. Store in a well ventilated, unoccupied building, away from sparks and flames. Do not store fuel longer than 30 days.

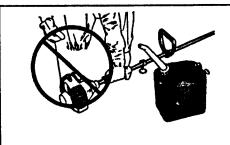
IMPORTANT

Stored fuel ages. Do not mix more fuel than you expect to use in thirty (30) days, ninety (90) days when a fuel stabilizer is added.

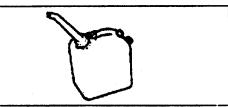
IMPORTANT

Stored two-stroke fuel may separate. ALWAYS shake fuel container thoroughly before each use.





S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
	23			26	27	28
29	3	31				

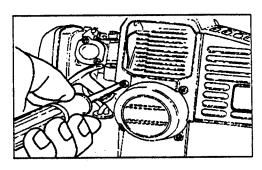


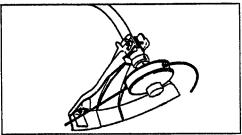
EQUIPMENT CHECK

Before operation a complete check of the unit must be performed;

- Check unit for loose/missing nuts, bolts and screws. Tighten and/or replace as needed.
- Inspect fuel lines, tank and area around carburetor for fuel leaks.

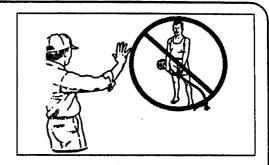
 DO NOT operate unit if leaks are found.
- Inspect shield for damage and ensure that the cut-off knife is securely in place. Replace if either is damaged or missing.
- Check that the cutting attachment is firmly attached and in safe operating condiction





OPERATION

- Before starting the unit, equip yourself and any other person working within the 50 ft. (15M) Safety Zone with the required Protective Equipment and clothing.
- During operation, the complete unit, especially the drive shaft housing and the bearing housing may become very hot, too hot to touch. Avoid contact during and immediately after operation.





STARTING COLD ENGINE

WARNING A DANGER



Trimmer head should not rotate at idle. If head rotates, readjust carburetor according to carburetor adjustment instructions in this manual or see your ECHO Dealer, otherwise serious personal injury may result.



Move Ignition Switch lever/button away from the STOP position.

2. CLOSECHOKE-COLDSTART.

Push choke lever forward to the Cold Start Position.



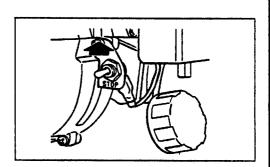
Pump purge bulb until fuel is visible in the "Clear" fuel return line.

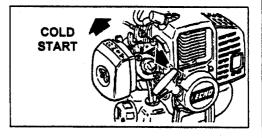
4. START-PULLROPE.

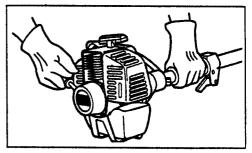
Lay the trimmer on a flat clear area and pull the starter rope until engine fires.

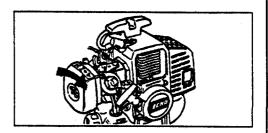


Push the choke lever back to the OPEN - RUN position. Restart engine if necessary and allow to warm up running at idle for several minutes.









STARTING WARM ENGINE

The starting procedure is the same as Cold Start except DO NOT close the choke.

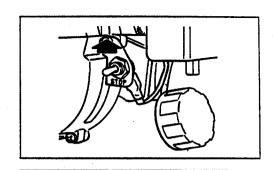
NOTE

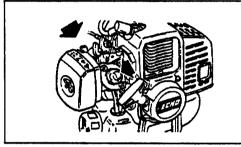
If engine does not start after 4 pulls, use Cold Start Procedure.

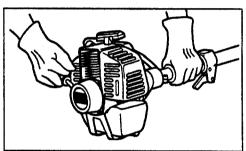


Trimmer head should not rotate at idle. If head rotates, readjust carburetor according to carburetor adjustment instructions in this manual or see your ECHO Dealer, otherwise serious personal injury may result.

- 1. IGNITION SWITCH-START/RUN Move Ignition Switch lever/ button away from the STOP position.
- 2. PURGE-PUMP BULB Pump purge bulb until fuel is visible in the "Clear" fuel return line.
- 3. START-PULL ROPE Lay the trimmer on a flat clear area and pull the starter rope until the engine fires.





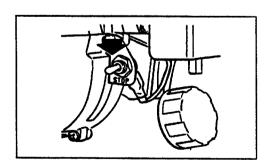


STOPPING ENGINE

- 1. RELEASE THROTTLE. Allow engine to idle for a minute.
- 2. IGNITION SWITCH-STOP. Move ignition switch lever/button to STOP position.



If engine does not stop when ignition switch is moved to STOP position, close choke - COLD START position - to stall engine. Have your ECHO dealer repair ignition switch before using trimmer again. Failure to repair the ignition switch can result in serious injury.





MAINTENANCE

SKILL LEVEL

Your ECHO trimmer is designed to provide many hours of trouble free service. Regular scheduled maintenance will help your trimmer achieve that goal. If you are unsure or are not equipped with the necessary tools, you may want to take your unit to an ECHO Service Dealer for maintenance. To help you decide whether you want to DO-IT-YOURSELF or have the ECHO Dealer do it, each maintenance task has been graded.

Level 1 = Easy to do. Most required tools come with unit.

Level 2 = Moderate difficulty. Some specialized tools may be required.

Level 3 = Experience required. Specialized tools are required.

ECHO offers REPOWER Maintenance Kits and Parts to make your maintenance job easier. Just below each task heading are listed the various part numbers required for that task. See your ECHO dealer for these parts.

MAINTENACE INTERVALS

Component/System	Maintenance Prodedure	Before Use	Every Refuel	Daily or Every 4 Hours	3 Months or 100 Hours	6 Months or 300 Hours	Yearly or 600 hours	* Date Maintenance Performed
Air Filter	Clean	•		•				
	Replace				•			
Fuel Strainer	Clean/Replace				•			
Fuel Line	Inspect				•			
Carburetor	Inspect/Rebuild					•		
	Replace						• (1)	
Choke System	Inspect/Clean/Replace		•					
Cooling System	Inspect	•		•				
	Clean	•		•				
Muffler Spark Arrestor	Inspect				•			
	Clean				.•			
Drive Shafts (Upper & Lower)	Grease			• (2)	•			·
Gear Housing	Grease				•			
Starter Rope	Inspect/Clean	•			·			
Fuel Leaks	Inspect	•						
	Repair	•						
Spark Plug	Clean				•			
·	Replace					•		
Ignition System	Clean/Replace	No Maintenance required for coil and flywheel						
Screws/Nuts/Bolts	Inspect/Tighten/Replace	•						

IMPORTANT -Time intervals shown are maximum. Actual use and your experience will determine the frequency of required maintenance.

* Record dates of monthly and yearly inspections.

(1) Replacement will be required for commercial use after 600 hours. For Consumer use, cleaning every 6 months is required. Cleaning includes Rebuild Kits.

(2) Grease flexible drive cables every 25 and/or on a weekly schedule.

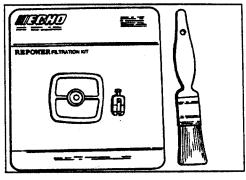
AIR FILTER

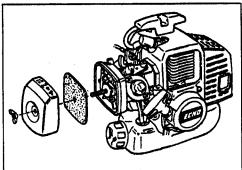
Level 1.

Tools required: Cleaning brush, 1" or 2" medium bristle paint brush.

Parts required: 90008 REPOWER AIR & FUEL FILTER KIT.

- 1. Close choke (Cold Start Position). This prevents dirt from entering the carburetor throat when the air filter is removed. Brush accumulated dirt from the air cleaner area.
- 2. Remove the air cleaner cover. Clean and inspect the element for damage. If element is fuel soaked and very dirty, replace.

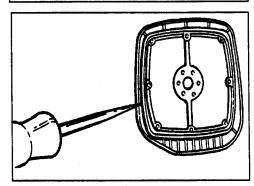




- 3. If element can be cleaned and reused, be certain it:
 - -still seals the cavity in the air cleaner cover.
 - -is installed with the original side out.

NOTE

Carburetor adjustment may be needed after air filter cleaning/ replacement. See Carburetor Adjustment Section.

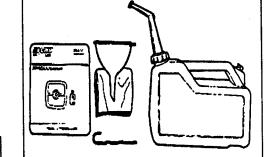


FUEL FILTER

Level 1.

Tools required: Fuel line hook. 8"-10" (203-254 mm) length of wire with one end bent into a hook. Clean rag, funnel, and an approved fuel container.

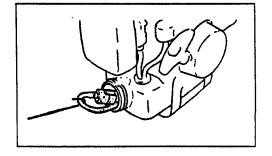
Parts required: 90008 REPOWER AIR & FUEL FILTER KIT





Fuel is VERY flammable. Use extreme care when mixing, storing or handling, or serious personal injury may result.

- 1. Use a clean rag to remove loose dirt from around fuel cap and empty fuel tank.
- 2. Use the "fuel line hook" to pull the fuel line and filter from the tank.
- 3. Remove the filter from the line and install the new filter.



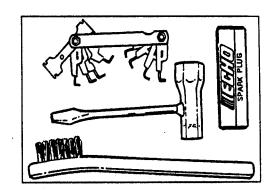
SPARK PLUG

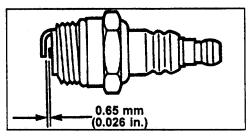
Level 2.

Tools Required: Spark Plug socket wrench and screw driver, Feeler gauge. Preferably a wire gauge.

Parts Required: Spark Plug, Champion CJ-7Y or NGK BPM-7A

- Remove spark plug and check for fouling, worn and rounded center electrode.
- 2. Clean the plug or replace with a new one. DO NOT sand blast to clean. Remaining sand will damage engine.
- 3. Adjust spark plug gap by bending outer electrode.





COOLING SYSTEM CLEANING

Level 3.

Tools required: Phillips Screwdriver, 3MM Hexagon wrench, Pointed Wood Stick, Cleaning Brush, 1"-2" medium bristle paint brush.

Parts Required: None.

IMPORTANT

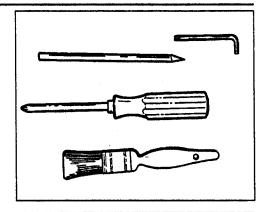
To maintain proper engine operating temperatures, cooling air must pass freely through the cylinder fin area. This flow of air carries combustion heat away from the engine.

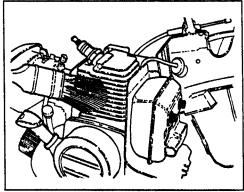
Overheating and engine seizure can occur when:

- -Air intakes are blocked, preventing cooling air from reaching the cylinder.
- -Dust and grass build up on the outside of the cylinder. This build up insulates the engine and prevents the heat from leaving.

Removal of cooling passage blockages or cleaning of cooling fins is considered "Normal Maintenance". Any failure attributed to lack of maintenance is not warranted.

- Remove spark plug lead and throttle cable end from the carburetor swivel.
- 2. Remove the four screws that retain the cover. Two at the top of the starter, two on either side of the front. Lift the cover from the engine and lay to the front of the trimmer.





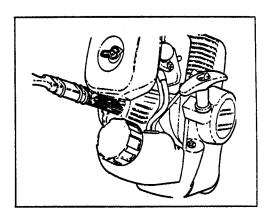
NOTE

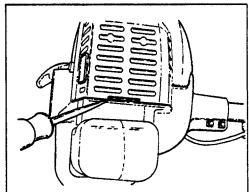
The throttle cable remains assembled to the cover and the spark plug lead and grommet remain installed.

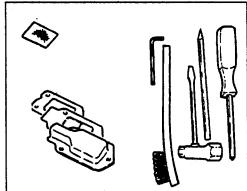
IMPORTANT

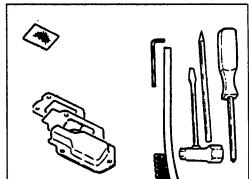
DO NOT use a metal scraper to remove dirt from the cylinder fins.

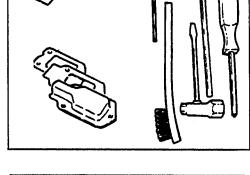
- 3. Use the wooden stick or brush to remove dirt from the cylinder fins.
- 4. Remove grass and leaves from the grid between the starter and fuel
- 5. When installing the cover, be certain the tab of the metal deflector shield is in the slot of the cover.

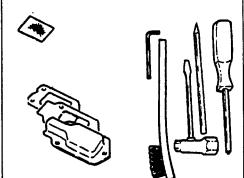












EXHAUST SYSTEM

Carbon Removal

SPARK ARRESTOR SCREEN REPLACEMENT **CLEANING MUFFLER CLEANING EXHAUST PORT**

Level 3.

Tools Required: Phillips Screwdriver. Scrench. 4MM Hexagon wrench. Soft metal brush. Wooden carbon scraper.

Parts Required: P/N 13001642031 Spark Arrestor Screen P/N 14586642031 Screen Holder

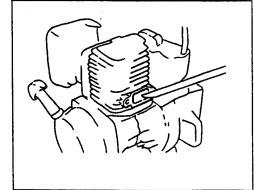
Exhaust Port

- 1. Remove engine cover. See "Cleaning Cooling System" page 18 & 19 for step by step instructions.
- 2. Remove muffler.
- 3. Place piston at Top Dead Center (TDC) to prevent carbon/dirt from entering cylinder.
- 4. Inspect exhaust port for carbon buildup and clean using a wooden carbon scraper.

IMPORTANT

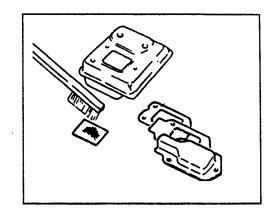
DO NOT use a metal tool to remove carbon deposits. Use extreme care not to scratch piston.

5. Check that all loose carbon is removed from exhaust port.



Spark Arrestor Screen

- 1. Remove screen holder and gasket from muffler body.
- 2. Clean carbon deposits from screen and muffler components.
- 3. Replace screen if it is cracked, plugged or has holes burned through.
- 4. Reinstall with new gaskets.



CARBURETOR ADJUSTMENT

Type 1E Models

Level 2.

Tools required: Screwdriver, Tachometer (P/N 99051130017).

Parts required: None.

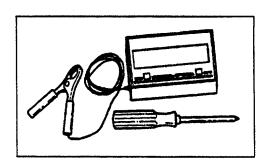
NOTE

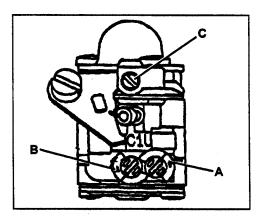
Every unit is run at the factory and the carburetor is set in compliance with EPA Phase 1 and California Emission Regulations. In addition, the carburetor is equipped with HI and LO needle adjustment limiters that prevent settings outside acceptable limits.

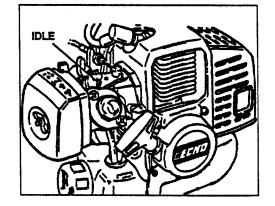
- 1. Before adjusting the carburetor, clean or replace the air filter and spark arrester screen.
- 2. Trimmer line must be extended to the cut-off knife.
- 3. Start engine and run for 5 minutes to reach operating temperature.
- 4. Stop engine. Turn HI speed needle (A) CCW (counter clockwise) to stop. Turn LO speed needle (B) midway between full CCW and CW (clockwise) stops.
- 5. Idle Speed Adjustment.
 - -Start engine and turn "idle" speed adjustment screw (C) CW until the cutting attachment begins to turn, then turn the screw CCW until cutting attachment stops turning. Turn screw CCW an additional 1/4 turn.
- 6. Accelerate to full throttle for 2-3 seconds to clear excess fuel from engine then return to idle. Accelerate to full throttle to check for smooth transition from idle to full throttle. If engine hesitates, turn LO needle (B) CCW an additional 1/8 turn and repeat acceleration. Continue adjusting until smooth acceleration results.
- Check HI speed RPM at W.O.T. (Wide Open Throttle). HI speed RPM should be set to specifications found on page 11 "Specifications" of this manual for the type cutting attachment on this unit.
- 8. Check idle speed and reset if necessary. If a tachometer is available, idle speed should be set to the specification found on page 11 "Specifications" of this manual.



When carburetor adjustment is completed, the trimmer head or blade should not turn at idle, otherwise serious personal injury may result.







CARBURETOR ADJUSTMENT

Type 1 Models

NOTE

If carburetor has limiter caps follow "Carburetor Adjustment" procedures for Type 1E models on previous page.

Idle Speed Adjustment (Unit running 2-3 minutes)

Turn "idle" speed adjustment screw CW (clockwise) until cutting attachment begins to turn, then turn screw out CCW (counter clockwise) until attachment stops turning. Turn screw out, CCW an additional 1/4 turn.



Trimmer head or blades must not move when unit is idling, otherwise serious personal injury may result.



1. Stop engine and turn both LO and HI needles in, CW until they stop and are lightly seated.

IMPORTANT

DO NOT over tighten needles. Forcing them to tighten will damage the carburetor.

 Turn LO needle out, CCW 1-3/4 turns. Turn HI needle out CCW 1-3/4 turns.

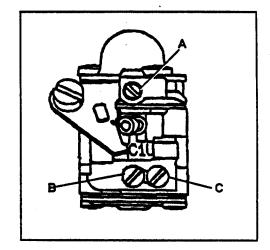
Fine Tuning (Requires Accurate Tachometer ECHO P/N 99051130017)

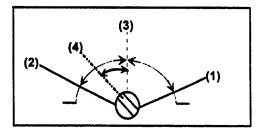
- 1. Start engine and allow to warm to operating temperature (minimum 2 3 minutes) varying engine speed from idle to full throttle.
- 2. Always begin fine tuning with LO needle.
 - a. Lean drop-off With engine idling, turn LO (B) needle slowly CW
 (in) to lean drop-off point. RPM will increase, then abruptly dropoff. (1) Note this position.
 - b. Rich drop-off With engine idling, slowly turn LO (B) needle CCW (out) to rich drop-off point. RPM will increase then gradually slow and drop-off. (2) Note this position.
 - c. Final setting Set needle at mid point between lean rich drop-off points. (3)
 - d. Turn 1/8 turn CCW (out) making mixture slightly richer. (4)
- 3. High speed adjustment.

 Adjust HI (C) needle with tachometer to achieve the specifications found on page 11 "Specifications" of this manual.
- 4. Check idle speed and reset if necessary. Using a tachometer, idle speed should be set to the specification found on page 11 "Specifications" of this manual.

WARNING A DANGER

When carburetor adjustment is completed cutting attachment should not move at idle, otherwise serious personal injury may result.



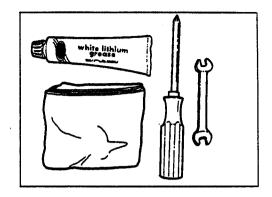


LUBRICATION

Level 1.

Tools Required: 8 mm Open End Wrench, Screwdriver, Clean Rag.

Parts Required: Lithium Base Grease.



Drive Shaft (Lower)

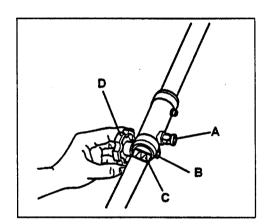
IMPORTANT

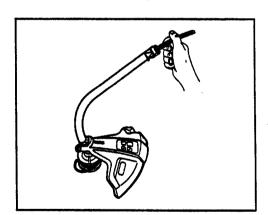
Lower and upper drive shaft <u>must</u> be lubricated with high temperature automotive grease every 25 hours of operation, otherwise drive shaft assembly overheating and failure can result.

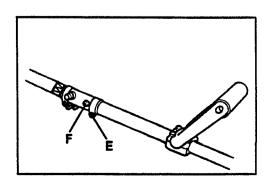
- 1. Loosen clamping knob (D).
- 2. Pull locator pin (A) and rotate 1/4 turn counter clockwise to lockout position.
- 3. Remove lower drive shaft housing.
- 4. Remove lower flex cable, wipe clean and recoat cable with thin coating of (1/2 oz. (15ml) of high temperature automotive grease.
- 5. Reinstall cable. Carefully fit lower drive shaft assembly into coupler (B) to decal assembly line (C) making sure inner lower flex cable engages into the upper drive shaft mount.

Drive Shaft (Upper)

- 1. Remove coupler from upper drive shaft assembly by loosening clamping screw (E) and removing set screw (F).
- 2. Remove upper flex cable, wipe clean and apply a thin coat of (1/2 oz. (15ml) of high temperature automotive grease.
- 3. Reinstall cable. Make sure that the flex cable engages into the clutch mount and also into the coupler mount.
- 4. Install set screw (F) and tighten clamping screw (E).







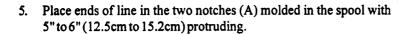
NYLON LINE REPLACEMENT

Level 1.

Tools Required: Head locking tool - 1/8" dia. (not supplied with unit if head is to be removed)

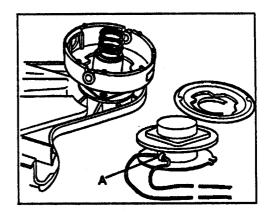
Parts Required: ECHO 0.080 (2mm) Nylon Trimmer Line 15 feet (4.6m)

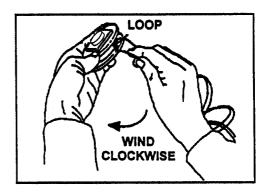
- 1. Shut engine off. Lay unit on the ground with head assembly up.
- 2. Hold head firmly, push in housing tab and turn cover counter clockwise to remove cover and spool.
- 3. Cut .080" line to 15 ft. (4.6 m) length. Thread line through hole (A) in spool spindle until one end is 4" longer than the other end.
- 4. Hold spool with words "WIND LINE" and tap knob towards you. Place index finger between the two lines and wind line clockwise tightly and evenly.

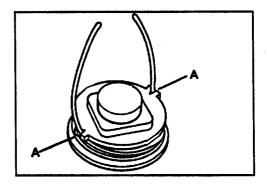


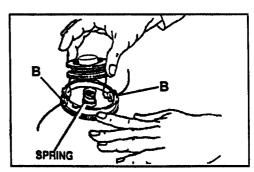
6. Place spool in housing against spring; thread line ends through housing eyelets (B)

7. Align cover arrow with housing tab; push down on cover and twist clockwise until cover locks in place.



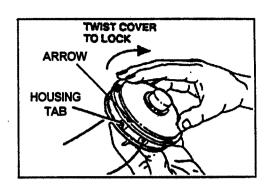






8. Pull both lines out and trim to cut-off knife length.

Before installing, test head. Push center button while pulling on both lines. Trimmer line should advance approximately 1 (one) inch.



STARTER ROPE REPLACEMENT

Level 3.

Tools required: SAFETY GOGGLES, Screwdriver

Parts Required: 3.5 in. (890 mm) ECHO Starter Rope - Part No. 99944400040, Lithium based grease.

 Remove four (4) screws holding starter assembly on engine, remove starter.

WARNING



DANGER

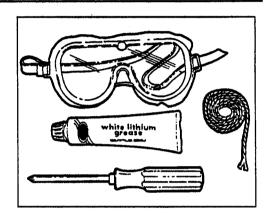
The spring inside the starter is under tension. DO NOT remove screw (B) until spring tension is relieved or serious personal injury may result..

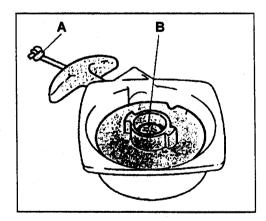
- 2. Hold starter drum in place and cut off or until knot (A). Allow the drum to slowly turn until all spring tension is relieved.
- 3. Remove screw (B), turn drum slightly clockwise and lift carefully and slowly away from spring.

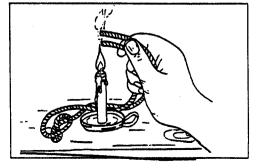
IMPORTANT

The spring must not come out with the drum. If resistance is felt when lifting the drum, STOP! See your Authorized ECHO Service Dealer for help.

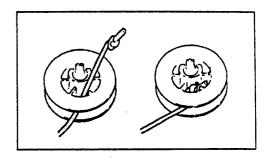
4. Remove the old starter rope and prepare the new rope by first heating both ends to prevent fraying.



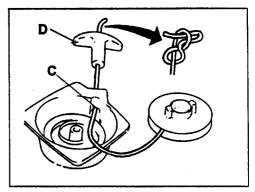




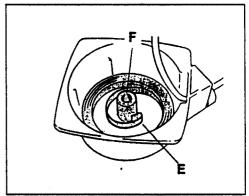
5. Pass one end of the rope through the opening of the drum and tie a knot. Press knot and end of rope in cavity of drum.



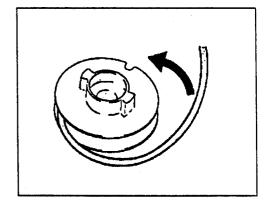
6. Thread the rope through the eyelet in the housing (C) then through the starter handle (D). Follow the illustration and tie another knot in the free end of the rope. Pull the knot into the handle.



- 7. Check that the hook (E) on the end of the spring touches the post (F). Lightly grease the top of the spring and the post.
- 8. Hold the drum pawl side up and wind the rope on the drum counterclockwise, four(4) turns.

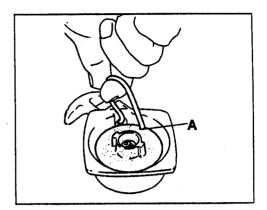


9. Install drum. The loop in the spring must engage the slot in the drum. Replace the screw and washer. Be sure drum is fully seated before tightening counter screw.





- 10. Hold the rope in the notch of the rope pulley (A) and rotate the drum counterclockwise 2 to 3 turns.
- 11. Hold the drum to prevent it from rewinding, pull the excess rope taught with the handle and allow to rewind slowly.
- 12. Pull rope several times to check spring tension. If rope does not rewind fully, repeat 10.
- 13. Pull rope out all the way. Drum must be able to turn an additional 1/2 turn counter clockwise. If drum does not turn, see your Authorized ECHO Service Dealer.
- 14. Install starter and test.



TROUBLESHOOTING

Problem Engine — starts hard — does not start		t	Cause	Remedy
Engine Cranks	Fuel at carburetor No fuel at carburetor		Fuel strainer clogged Fuel line clogged Carburetor	Clean Clean See your Echo dealer
	Fuel at cylinder	No fuel at cylinder	Carburetor	See your Echo dealer
	+	Mufflerwet with fuel	Fuel mixture is too rich	Open choke Clean/replace air filter Adjust carburetor See your Echo dealer
	Spark at end of of plug wire plug wire		Ignition switch off Electrical problem Interlock switch	Turn switch on See your Echo dealer See your Echo dealer
	Spark at plug	No spark at plug	Spark gap incorrect Covered with carbon Fouled with fuel Spark plug defective	Adjust. 0.65 mm (0.026 in Clean or replace Clean or replace Replace plug
Engine does not crank	·		Internal engine problem	See your Echo dealer
Engine	Dies or Accelerates	poorly	Air filter dirty Fuel filter dirty Fuel vent plugged Spark plug Carburetor Cooling system plugged Exhaust port/spark arrestor screen plugged	Clean or replace Replace Replace Clean and adjust/replace Adjust Clean Clean



STORAGE

Long Term Storage (over 30 days)

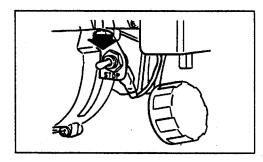
Do not store your unit for a prolonged period of time (30 days or longer) without performing protective storage maintenance which includes the following:

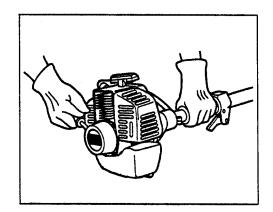
Store unit in a dry, dust free place, out of the reach of children.



Do not store in enclosure where fuel fumes may accumulate or reach an open flame or spark. Failure to do so could result in serious personal injury or property damage.

- Place the ignition in the "OFF" position.
- Remove accumulation of grease, oil, dirt and debris from exterior of
- Perform all periodic lubrication and services that are required.
- Tighten all the screws and nuts.
- Drain the fuel tank completely and pull the starter handle several times to remove fuel from the carburetor.
- Remove the spark plug and pour 1/4 oz. (1/2 tablespoon) of fresh, clean, two-stroke engine oil into the cylinder through the spark plug hole.
 - A. Place a clean cloth over the spark plug hole.
 - B. Pull the recoil starter handle 2-3 times to distribute the oil inside the engine.
 - C. Observe the piston location through the spark plug hole. Pull the recoil handle slowly until the piston reaches the top of its travel and leave it there.
- Install the spark plug (do not connect spark plug cable).





NOTES

SERVICING INFORMATION

PARTS

Genuine ECHO Parts and ECHO Re Power Parts and Assemblies for your ECHO products are available only from an Authorized ECHO Dealer. When you do need to buy parts always have the Model Number, Type number and Serial Number of the unit with you. You can find all three numbers on the engine housing. For future reference, write them in the space provided below.

Model No	Type No.		SN.
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SERVICE

Service of this product during the warranty period must be performed by an Authorized ECHO Service Dealer. For the name and address of the Authorized ECHO Service Dealer nearest you, ask your retailer or call: 1-800-432-ECHO. When presenting your unit for Warranty service/repairs, proof of purchase is required.

DEALER?

Call

1-800-432-ECHO

WARRANTY CARD

This card is our means of registering all original owners of ECHO equipment. The card plus proof of purchase provides you the assurance that authorized warranty work will be done. It also provides a direct link between you and ECHO if we find it necessary to contact you.

LIMITED WARRANTY REGISTRATION CARD Chart of Land of L

ADDITIONAL OR REPLACEMENT MANUALS

Safety Manuals are available, free of charge, from your ECHO dealer or by contacting Echo Incorporated, 400 Oakwood Road, Lake Zurich, IL 60047

Operators and Parts Manuals are available for purchase from your ECHO dealer or directly from ECHO. [See ordering instructions at the end of this manual.]

ORDERING INSTRUCTIONS

ECHO Incorporated 400 Oakwood Road Lake Zurich, IL 60047

Technical Publications Orders

To obtain a Parts Catalog or Operator's Manual send a check or money order for \$2.00 per Parts Catalog or \$1.50 per Operator' Manual made payable to ECHO, INCORPORATED. State on a sheet of paper model number and serial number of the ECHO unit you have, part number of the manual (if known), your name and address and mail to address above.

Available Parts Lists

GT-2000SB TYPE 1/1E S/N 001001 & UP

PART NUMBER 99922202872

