

# OPERATOR'S MANUAL TRIMMER/ BRUSHCUTTER



SRM-2501 999222-01840 CAUTION READ RULES FOR SAFE OPERATION AND INSTRUCTIONS CAREFULLY

### INTRODUCTION

ECHO Trimmer/Brushcutter model SRM-2501 is a lightweight, high-performance, gasoline powered unit designed for weed control, grass trimming and light brush cutting in areas difficult to control by any other means.

This manual provides the information necessary for assembly, operation and maintenance.

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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.

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#### **UNDERSTAND SAFETY WARNINGS**



DANGER: This symbol is used to call attention to procedures that must be followed to avoid the risk of serious, immediate and irreversible human injury or death.



CAUTION: This symbol is used to call attention to procedures that must be followed to avoid serious, although not necessarily always immediate, risk of human injury or death.

#### FOLLOW SAFETY INSTRUCTIONS

Follow all danger and caution warnings in this manual and on safety decals on the trimmer.

#### **FOLLOW SAFETY DECALS**

Locate the safety decals on your trimmer. Make sure the decals are legible and that you understand them and follow them.

#### USE TRIMMER/BRUSHCUTTER AS INTENDED



DANGER: Serious injury may result from improper use of metal blades. Comply with all Safety Instructions in the Operator's Manual and supplied with the blades.

1. The Echo 80-tooth blade is designed to cut brush and small trees.



DANGER: To avoid injury due to kickout or blade fracture, do not use this blade to cut brush or trees.

- 2. The ECHO 8-tooth blade and tri-cut blade are designed to cut heavy weeds and grass.
- 3. ECHO, INC. will not be responsible for the failure of cutting devices which have not been tested and approved by ECHO for use in this unit.

#### HANDLE FUEL SAFELY

ALWAYS store gasoline in an approved container.

DO NOT smoke while handling gasoline.

ALWAYS stop the engine before refueling.

DO NOT refuel a hot engine. Wait until it cools.

**ALWAYS** remove the fuel cap slowly in order to relieve any pressure build-up in tank.

**DO NOT** overfill the tank and always wipe up spilled fuel.

ALWAYS restart the engine at least 10 feet away from refueling point.



#### AVOID CARBON MONOXIDE

DO NOT operate in a confined area.



#### KEEP PEOPLE AND ANIMALS AWAY

DO NOT operate if people or animals are in work area.

#### **CLEAR WORK AREA**

Before starting, inspect work area and remove stones or any other foreign objects such as cans, bottles and wire.



#### WEAR PROTECTIVE CLOTHING AND EQUIPMENT

**ALWAYS** wear safety protection that meets ANSI Z87.1 standards, while operating the unit.

ALWAYS wear gloves and non-skid footwear.

ALWAYS dress properly with snug fitting, durable clothing and avoid loose clothing.

**ALWAYS** wear eye protection, such as, safety goggles or glasses when operating the unit.



DO NOT operate the unit when you are fatigued.

**ALWAYS** remain alert when operating the unit to avoid possible injury to yourself and other people.

**DO NOT** operate the unit while under the influence of drugs or alcohol.

### **USE CORRECT TECHNIQUE**

**ALWAYS** hold the unit firmly with both hands and with fingers encircling the handles.

ALWAYS wear shoulder strap when using blades and/or handle bar kit.







### DESCRIPTION



### 2-STROKE FUEL (32:1, ECHO OIL)

Use a mixture of 32 parts leaded or unleaded regular grade gasoline (min. octane 87) and one part 32:1, ECHO 2-stroke oil.

NOTE: Do not use gasohol or alcohol blended fuels in this engine.

#### 2-STROKE FUEL (50:1, ECHO OIL)

Use a mixture of 50 parts leaded or unleaded regular grade gasoline (min. octane 87) and one part 50:1, ECHO 2-stroke oil.

NOTE: Do not use gasohol or alcohol blended fuels in this engine.

#### **MIX FUEL**

NOTE: Use only oils recommended above.

NOTE: Do not mix fuel in engine fuel tank.

- 1. Pour 1/2 of the gasoline into a safe container.
- 2. Add oil to gas and mix.
- 3. Add remaining gasoline and remix.
- 4. Install fuel tank cap and wipe spilled fuel from container and area.

#### **CHECK TRIMMER CONDITION**

1. Check for loose nuts, bolts and screws before using unit.

#### SAFE STARTING TECHNIQUES

- NOTE: Always clear work area of debris before starting operation.
- NOTE: Always hold the unit firmly.
- NOTE: When pulling starting rope, use short pulls, 1/2 to 2/3 of rope length.
- NOTE: Do not allow the starter handle to snap back against the housing.
- NOTE: Always hold the unit firmly.

#### STARTING COLD ENGINE

CAUTION: When engine starts, the head will rotate even with trigger in low-speed position.

1. Slide ignition switch to START/RUN position.



2. Push primary bulb 3 to 4 times (or until fuel is visible in fuel return line).





- 4. Depress throttle trigger fully.
- 5. Pull starter rope until engine fires.



- 6. Push choke knob down to RUN (open) position.
- 7. Restart engine and allow it to warm up.
- 8. Squeeze throttle trigger gradually.



#### STARTING WARM ENGINE

1. If fuel tank was emptied during previous operation, refill tank and push primer bulb 3 to 4 times or until fuel flow is visible in fuel return line.



- 2. Slide ignition switch to START position.
- 3. Push choke knob in to RUN (open) position.
- 4. Squeeze throttle trigger fully.
- 5. Pull starter handle.
- NOTE: If engine does not start after 4 pulls, use cold start procedure.



### **STOPPING ENGINE**

- 1. Release throttle trigger and allow engine to idle.
- 2. Slide ignition switch to STOP position.
  - CAUTION: If engine does not stop, pull choke knob up to CLOSE position. Check and replace stop switch before starting engine again.



# **OPERATION (Nylon Line)**

#### OPERATE SAFELY AND AVOID DAMAGE TO TRIMMER

- Keep both hands on handles when engine is running.
- If blade becomes clogged, stop engine and clean cutter.
- Do not overreach or stand on unstable surfaces.
- If cutter strikes an obstruction or is prevented from turning freely, stop engine and inspect cutter head for damage.
- If the trimmer is operated for extended periods in high temperatures, the drive shaft housing may become very hot (too hot to touch). Allow unit to cool and check lubrication as outlined in service section before continuing.
- To avoid damage, do not run at full throttle without load.

### **ADJUSTING LINE LENGTH**

RECOMMENDED LINE LENGTH: 13 cm (5 in.). Measure from cut-off knife to edge of cutting head.

- NOTE: Line cutting is done with the tip of the line. Cutting with entire length of the line will result in the line snapping or fraying.
- 1. With the engine running at normal operating speed, tap head firmly on the ground.
- NOTE: One inch of line will be released each time head is tapped.



# **OPERATION (Nylon Line)**

### TRIMMING

1. Place trimmer so cutter is facing straight ahead.



2. Trim from left to right, tilting the unit slightly to the right, allowing the debris to be thrown away from the operator.



### SCALPING

NOTE: Scalping is the removal of all vegetation.

- 1. Tilt the cutter head about 30 degrees to the right.
- NOTE: Scalping is very effective around trees and shrubs, but care should be taken not to bruise bark and young sensitive growth.
- NOTE: When trimming around flowers, keep in mind that line cuts in a full circle around head.

### EDGING

- 1. Tilt the cutter head at right angles to the ground.
- 2. Adjust handle bracket to fit edging position.
- 3. Allow line to skim along edge of concrete or other hard surface when edging.



DANGER: Do not edge with metal blades. Edging must be done only with nylon line trimmer head.

### SWEEPING

- 1. Tilt cutter head slightly to the right.
- 2. Swing cutter head side to side.





# **OPERATION (Nylon Line)**

#### MOWING



**DANGER:** During this operation, debris may be thrown in any direction.

1. Hold cutter head parallel to the ground and operate at full throttle.



# **OPERATION (Blade)**

#### **BLADE TYPES**

Echo recommends two special steel blades and a nylon Tri-Cut blade for use with this unit.

BLADE	TEETH	DIA.	PART NO.
Steel, Weed and Grass (Opt.)	8	8"	696 001-2033 0
Steel, Brush and Small Trees (Opt.)	80	8″	695 001-0833 0
Nylon Tri-Cut, Weed and Grass (Std.)			999 442-0003 0

# USE CORRECT BLADE

- Serious injury may result from the improper use of steel blades. Read and comply with all safety instructions listed in this manual.
- The eight-tooth blade is designed especially to cut weeds and grass. To avoid injury due to kickout or blade fracture, DO NOT use the Tri-Cut Blade or eight-tooth blade to cut brush or trees.
- ECHO, INC. will not be responsible for the failure of cutting devices which have not been tested and approved by ECHO for use with this unit.

# **OPERATION (Blade)**

#### **OPERATE BRUSHCUTTER SAFELY**

- Always use the blade suited for the job.
- Do not hit rocks, stones, tree stumps and other foreign objects with the blade.
- Do not cut into the ground with the blade.
- If blade strikes an obstruction, stop engine immediately and inspect blade for damage.
- Do not operate with a dull, bent, fractured or discolored blade.
- Do not run engine at full throttle without a load.
- · Remove all foreign objects from work area.
- Do not operate brushcutter without harness and shield correctly fitted.
- In case of an emergency, use quick-release latch on harness to free yourself from brushcutter.
- ECHO recommends the use of a U-HANDLE KIT for use with blades.
- Always use the steel shield with metal blades.

### **USING SHOULDER HARNESS**



CAUTION: Shoulder harness must be worn when using blades.

- 1. Place shoulder harness over left shoulder and adjust straps so the quick-release latch rests just below the waist.
- 2. Attach Trimmer/Brushcutter to harness.
- 3. Check for correct adjustment by moving cutter along ground.
- 4. Readjust bracket if necessary.





# **OPERATION (Blade)**

#### HEAVY WEED CUTTING (Eight-Tooth Blade, Tri-Cut Blade)

- 1. Install steel shield.
- Install 8-tooth or Tri-Cut blade (se page 26 for installation).
- 3. Start engine.
- 4. Allow engine to warm up.
- 5. Depress throttle.
- 6. Swing blade in an arc as you move forward.

#### BRUSHCUTTING (Eighty-Tooth Blade)

- 1. Install steel shield.
- 2. Install the 80-tooth blade (see page 26 for installation).
- 3. Swing blade in an arc as you move forward.





### **CUTTING SMALL TREES**

- NOTE: The unit is designed to cut small trees up to three inches in diameter when equipped with the eighty-tooth blade.
- 1. Make sure the tree will fall away from you before attempting to cut it.
- NOTE: It may be necessary to tie a rope to the tree to guide it in a safe direction.
- NOTE: Do not attempt to use the brushcutter like an axe. Doing so will result in damage to the brushcutter.
- 2. Brace your feet firmly on the ground and cut with the right-hand side of the blade.



CAUTION: Always cut on full throttle. Never try cutting with a dull blade.



### TROUBLESHOOTING

#### TROUBLE

1. Engine fails to start.

2. Engine hard to start.

3. Engine misses.

4. Engine lacks power.

5. Engine overheats.

6. Engine noisy or knocking.

7. Engine "stalls" under load.

#### CAUSE

No fuel in tank. Strainer clogged. Fuel line clogged. Spark plug shorted or fouled. Spark plug broken (cracked porcelain or electrodes broken). Ignition lead wire shorted, broken or disconnected from spark plug. Ignition inoperative (no spark from lead wire).

Water in gasoline or stale fuel mixture.

Too much oil in fuel mixture. Engine over or under choked.

Carburetor out of adjustment. Gasket leaks (carburetor or cyl. base gasket). Weak spark at spark plug.

Dirt in fuel line or carburetor. Carburetor improperly adjusted.

Spark plug fouled, broken or incorrect gap setting. Weak or intermittent spark at spark plug.

Air cleaner clogged. Carburetor out of adjustment. Muffler clogged. Clogged exhaust ports.

Poor compression.

Insufficient oil in fuel mixture. Air flow obstructed.

Loose flywheel. Spark plugs incorrect heat range. Worn bearings, piston rings or cylinder walls. Carburetor main adjustment too "lean." Engine overheats.

#### WHAT TO DO

Fill tank. Clean strainer. Clean fuel line. Install new spark plug. Replace spark plug.

Replace lead wire or attach to spark plug.

Contact your nearest authorized dealer.

Drain entire system and refill with fresh fuel.

Drain and refill with correct mixture.

If flooded by over choking, proceed according to instructions in previous section. If under choked, move choke lever to closed position and crank two or three times.

See "Carburetor Adjustment." Replace gaskets.

Contact your nearest authorized dealer.

Remove and clean.

See "Carburetor Adjustment" in service section.

Clean or replace spark plug – set gap to 0.6-0.7 mm (0.024-0.028 in.).

Contact your nearest authorized dealer.

Clean air cleaner.

See "Carburetor Adjustment."

Clean carbon from muffler.

Remove muffler, rotate engine until the piston is at bottom of cylinder. With a wooden scraper or blunt tool, remove all carbon from exhaust ports. Be careful not to scratch or damage piston or cylinder walls. Blow out loose carbon with compressed air. Install muffler and gasket.

Contact your nearest authorized dealer.

Mix fuel as shown in starting instructions. Clean flywheel and cylinder fins and screen.

Tighten flywheel nut. Replace with plugs specified for engine. Contact your nearest authorized dealer.

See "Carburetor Adjustment." See "Cleaning Cylinder Fins" in service section.

#### CLEANING AIR FILTER (Before Each Use)

- 1. Loosen screw and remove air filter cover.
- 2. Remove air filter.
- NOTE: If filter is excessively dirty or no longer fits properly, replace it.
- 3. Brush dirt from filter or wash it in a suitable cleaner.

NOTE: Allow all parts to air dry.

- 4. Reinstall filter.
- 5. Reinstall cover and tighten screw.



AIR FILTER

#### **REPLACING FUEL FILTER** (Check Periodically)

- 1. Pick up fuel filter through fuel tank opening with a piece of steel wire.
- 2. Remove old filter.
- 3. Install new filter.



#### CHECKING SPARK PLUG (Check Periodically)

- 1. Check plug gap of 0.6-0.7 mm (0.024-0.028).
- 2. Inspect electrode for wear.
- 3. Inspect insulator for oil or other deposits.
- 4. Replace plug if needed, and torque to 145-155 kg-cm (125-135 in. lb.).



### LUBRICATING GEAR HOUSING (Every 50 Hours)

- 1. Remove bolt from housing.
- 2. Check level and add grease, if necessary, using low pressure pump. Leave 1/8" for expansion of grease.
- NOTE: Use a good quality lithium multi grease. DO NOT overfill housing.
- 3. Reinstall bolt.

# CARBURETOR ADJUSTMENT (As Needed)

#### GENERAL

The idle speed adjustment screw controls the throttle opening at idle position.

If the idling adjustment is too low or too high, go to the following procedures.

#### ADJUSTING CARBURETOR IDLE SPEED SCREW

- 1. Start engine and allow it to warm up.
- 2. Turn the screw clockwise until the cutting head begins to rotate.
- 3. Turn the screw counterclockwise one turn.

#### ADJUSTING CARBURETOR IDLE LIMITER

NOTE: If the engine continues to run too fast or too slow, perform the following procedure.

- 1. Start the engine and allow it to warm up.
- 2. Turn the idle limiter one or two steps clockwise to get leaner condition or one or two steps counterclockwise to obtain richer condition.
- 3. Recheck idle and reset idle adjustment screw if necessary.

NOTE: Do not turn needle pin which is inside of limiter.







#### CLEANING MUFFLER AND EXHAUST PORT (Check Periodically)

- 1. Remove muffler cover.
- 2. Remove and disassemble muffler.
- NOTE: Be careful not to scratch the cylinder or piston when cleaning the cylinder exhaust port.
- 3. Clean deposits from cylinder exhaust port and spark arrestor screen.
- 4. Reassemble muffler.
- 5. Reinstall muffler.
- 6. Reinstall muffler cover.



#### CLEANING CYLINDER FINS (Check Periodically)

NOTE: Dusty or dirty cylinder fins can cause overheating.

1. Remove dust and dirt from between fins.



#### **SHARPENING THE 8-TOOTH BLADE**

- 1. File the bottom of the teeth to a 1-2 mm radius.
- NOTE: Sharpen each cutter equally.

NOTE: If using a grinder, do not cool blade abruptly by immersing it in water.





- 3. Wind both ends of line tightly in the direction of arrow marked on spool.
- 4. Route ends of line into notches opposite each other, marked with the diameter of the line.

6. Remove lines from notches and route through

7. Press two housings together until tabs snap into

eyelets.

slots.

5. Install hub, spool and spring in outer housing.



PRESS TAB

### **ASSEMBLING DRIVE SHAFT**

- 1. Stand engine upright on a level floor.
- 2. Fit drive shaft assembly to the engine (make sure gear housing is aligned properly).
- 3. Secure gear housing to engine with screws.



### **ASSEMBLING THROTTLE CABLE**

NOTE: The engine is delivered with the throttle cable (engine side) separated.

- 1. Remove air filter cover.
- 2. Loosen nut (C).
- 3. Place throttle cable in bracket with nut (A) and washer on top of bracket and nut (C) and washer on bottom of bracket.
- 4. Attach inner cable to swivel.
- 5. Tighten nut (C).
- 6. Check to make sure throttle operates freely and returns to idle position.

### **CONNECTING LEADS**

- 1. Connect stop lead (A).
- 2. Connect ground lead (B).
- 3. Reinstall air filter.



#### INSTALLING LOOP HANDLE.

- 1. Assemble loop handle and bracket to drive shaft loosely.
- 2. Position handle in comfortable operating position and tighten screws.



#### INSTALLING PLASTIC SHIELD (For Nylon Line Operation)

- 1. Fit the shield to the gear housing.
- 2. Place shield plate on shield.
- NOTE: Be sure holes in plate and shield are aligned with those on gear housing.
- 3. Secure shield with screws.

#### INSTALLING STEEL SHIELD (For Metal Blade and Tri-Cut Blade Operation)

- 1. Fit shield to gear housing and secure with screws and washers.
- 2. Place shield bracket over shaft, aligning holes in bracket with those in shield.
- 3. Secure bracket to shield with screws.

### **INSTALLING NYLON LINE CUTTER HEAD**

- 1. Align hole in adapter plate with hole in shaft and install locking tool.
- 2. Thread cutter head onto shaft (turning it counter clockwise) until it is tight.
- 3. Remove locking tool.





### **INSTALLING TRI-CUT BLADE**

- NOTE: The Tri-Cut blade is designed for weed and grass cutting. Do not attempt to cut brush or trees with this blade.
- 1. Install blade (A) on shaft.
- 2. Install adapter (B) on shaft.
- Align hole in adapter plate with hole in bearing housing (C) and insert locking tool.
- 4. Install nut (D) (rotate nut counterclockwise to tighten).
- 5. Install split pin (E) in hole of shaft and bend over to prevent it from coming off.
- NOTE: Cracked or worn Tri-Cut blades cannot be repaired. They must be replaced.



#### **INSTALLING METAL BLADES**

NOTE: This procedure applies to the installation of both metal blades approved for this unit by ECHO, Inc.

1. Center blade on adapter plate.



- 2. Fit lower adapter plate to blade and secure it with locking nut.
- NOTE: The drive shaft is fitted with right-hand threads. Turn locking nut counterclockwise to tighten.



3. Secure locking nut with new split pin.

NOTE: Always use a new split pin to secure locking nut.

Split pin 2 x 22 mm 900 300-2002 2

#### INSTALLING U-HANDLE KIT. (Not Standard on SRM-2501)

1. Remove air cleaner cover.



2. Disconnect stop lead (A), ground lead (B) and throttle cable (C) from engine.



3. Loosen screws (A) and pull drive shaft assembly out of clutch case.



4. Remove loop handle.



- 5. Loosen screw (A) and slide trigger and grip off of drive shaft.
- NOTE: The grip can be removed by cutting it full length and removing.
- 6. Remove screw (B) and slide harness clip off of drive shaft.

- 7. Position handle bracket approximately 400 mm (15-3/4 in.) from end of drive shaft.
- 8. Secure handle bracket with screws.
- 9. Install hook approximately 220 mm (8-21/32 in.) from end of drive shaft.
- 10. Secure hook with screw and nut.





11. Install handles in bracket and tighten screws (A).

12. Secure throttle cable and leads to drive shaft by sliding wedge under harness hook.



13. Slide drive shaft assembly into clutch case and tighten screws (A).

NOTE: Make sure shaft engages clutch and that gear housing is straight in line with engine.



14. Connect stop switch lead (A).

15. Connect ground lead (B).



- 16. Loosen nut (A).
- 17. Place throttle cable in bracket.
- 18. Attach inner cable to swivel (B).
- 19. Tighten nut (C).
- 20. Check to make sure throttle operates freely and returns to idle position.



21. Install air cleaner cover.



### STORAGE

### LONG TERM STORAGE

- 1. Clean each part and repair, if necessary.
- 2. Apply a thin coating of oil to metal parts to prevent rust.
- 3. Drain fuel tank and pull starter a few times to remove fuel from carburetor.
- 4. Pour a small amount of clean motor oil into spark plug hole and pull starter handle until engine reaches top dead center.
- 5. Lubricate the cutter blades with a heavy coat of motor oil to prevent rusting.
- 6. Store trimmer in a dry, dust free, area.

#### PARTS BOOKS

To obtain a replacement parts book, complete this order form and enclose a check or money order for \$2.00. Make payable to ECHO, INCORPORATED and mail to:

> ECHO, INCORPORATED P.O. Box 67 Lake Zurich, IL 60047

**ATTN: Technical Publications** 

Purchaser's Name
Address (Street)
(City/State/Zip Code)
ECHO Model No. S.R.M2501
Parts Book No. 898-696-44830

### **SPECIFICATIONS**

#### MODEL SRM-2501

MODEL SRM-2501				
Length	1770 mm (70 in.)			
Width	330 mm (13 in.)			
Height	300 mm (12 in.)			
Weight (dry weight, without cutter and shoulder harness)	12.6 lbs.			
Type of Engine	Air-cooled, two-stroke, single-cylinder, gasoline engine			
Bore	32.2 mm (1.268 in.)			
Stroke	30.0 mm (1.17 in.)			
Displacement	24.4 cc (1.48 cu. in.)			
Exhaust System	Spark arrester muffler			
Carburetor	WALBRO diaphragm model WY type			
Ignition System	Flywheel magneto, capacitor discharge ignition type			
Spark Plug	NGK BPM7A, CHAMPION CJ-7Y			
Fuel	Mixed fuel			
Fuel Oil Ratio	32:1 ratio with ECHO oil or 50:1 ratio with ECHO oil			
Gasoline	Alcohol free 87 octane			
Oil	ECHO two-stroke, air-cooled engine oil			
Fuel Tank Capacity	0.4 lit. (13.5 oz.)			
Starter System	Automatic rewind system			
Clutch	Centrifugal type			
Drive Shaft	1/4" flexible shaft			
Rotating Direction	Counterclockwise viewed from the top			
Cutter Head	Nylon line head Option: 8-tooth blade, 80-tooth blade Standard: Tri-Cut blade			
Handle	Left — D-loop Right — grip			
Gear Case	1:1.4 reduction			
Anti-Vibration System	Rubber cushion			