



# OPERATOR'S MANUAL

SRM-2100  
SRM-2110  
SRM-2400  
SRM-2410  
SRM-2501  
SRM-2501S  
SRM-2510

## TRIMMER/BRUSH CUTTER

SRM-2100 Serial Number 001001 & Up, Blade Convertible  
SRM-2110 Serial Number 001001 & Up, Dedicated Blade (Included)  
SRM-2400 Serial Number 016001 & Up, Blade Capable  
SRM-2410 Serial Number 016001 & Up, Dedicated Blade  
SRM-2501/2501S Serial Number 098802 & Up, Blade Capable  
SRM-2510 Serial Number 098802 & Up, Dedicated Blade

**WARNING**  **DANGER**

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

For your nearest ECHO Dealer, call 1-800-432-ECHO (3246)

# INTRODUCTION

ECHO Trimmer/Brushcutters are lightweight, high-performance, gasoline powered units 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.

ECHO provides each product with an Operator's Manual and a Safety Manual. You must read both manuals to understand the safe and effective operation of your ECHO product.

If you need to obtain a copy of either manual, please write to ECHO, INCORPORATED, 400 OAKWOOD RD., LAKE ZURICH, IL 60047

**WARNING**



**DANGER**

**READ RULES FOR SAFE OPERATION AND INSTRUCTIONS CAREFULLY. ECHO PROVIDES AN OPERATOR'S MANUAL AND A SAFETY MANUAL. BOTH MUST BE READ FOR PROPER AND 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.

## TERMS & DEFINITION

**BLADE CONVERTIBLE** Model (SRM-2100) can be converted to utilize blades. Plastic/nylon blades require a "Blade conversion Kit", which includes a shoulder harness, and steel shield with necessary attaching hardware. Steel/metal blades also require the, "Blade conversion Kit", plus a "U-Handle Kit", must be installed.

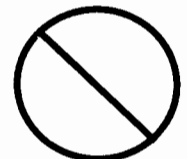
**BLADE CAPABLE** Models (SRM-2400, 2501, 2501S) include the "Blade Conversion Kit", therefore, they are capable of using plastic/nylon blades when the steel shield is installed and the shoulder harness is used. If steel/metal blades are used, the, "U-Handle Kit", must be installed.

**DEDICATED BLADE CAPABLE** Models (SRM-2110, 2410, 2510) include both the "Blade Conversion Kit", and, "U-Handle Kit".



**This device accompanied by the words WARNING and DANGER calls attention to an act or a condition which can lead to serious personal injury.**

**Circle and slash symbol means whatever is shown is prohibited.**



### IMPORTANT

This enclosed message provides information necessary for the protection of the unit.

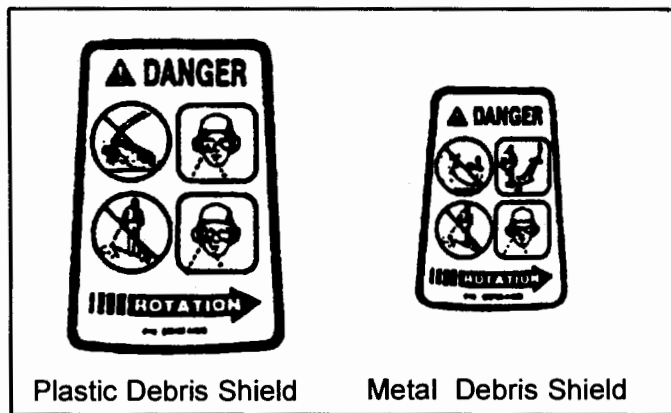
### NOTE

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

# DECALS

## DEBRIS SHIELD DECAL

Locate the safety decals on your unit. Make sure decals are legible and that you understand and follow the instructions on them. These two decals are English Only.



Plastic Debris Shield

Metal Debris Shield

## SHAFT DECAL

### 'SRM' UNITS

#### WARNING 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 Operators and Safety Manuals.

- Blindness can occur from objects that are thrown or ricochet even with shield in place. Operators, helpers and by-standers must wear eye protection, ANSI Z87.1 approved.

- Always wear hearing protection when operating unit.

- Prevent accidental contact with unit and any cutting attachment. Maintain a 50 ft. (15m) radius, **DANGER ZONE** surrounding the operator. **ONLY** the operator, dressed in proper protective clothing should be in the **DANGER ZONE**.

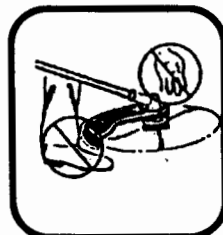
- Beware of **KICKOUT (blade thrust)** when using blades. Special precautions are necessary for blade operation, see your Operators and Safety Manuals. **ONLY** install ECHO approved blades on Brushcutters (SRM) models equipped with proper blade shield, U-handles, harness, blade collar, nut and cotter pin.

- Blade/Cutting attachment does not stop immediately after releasing throttle. Keep hands and feet clear of blade/cutting attachment unless engine is shut off and cutting attachment is not moving.

- **INSPECT BLADES BEFORE USE.**


- **DO NOT USE DAMAGED, CRACKED, BENT, DULL OR IMPROPERLY SHARPENED BLADES.**

- Do not remove shields, modify the unit or install attachments or parts not approved by ECHO. Approved attachment information and replacement Operator's and Safety Manuals are available from your ECHO dealer or by writing: **ECHO, INCORPORATED, 400 OAKWOOD RD., LAKE ZURICH, IL 60047.**




## SPANISH DECAL

## ENGLISH TRANSLATION

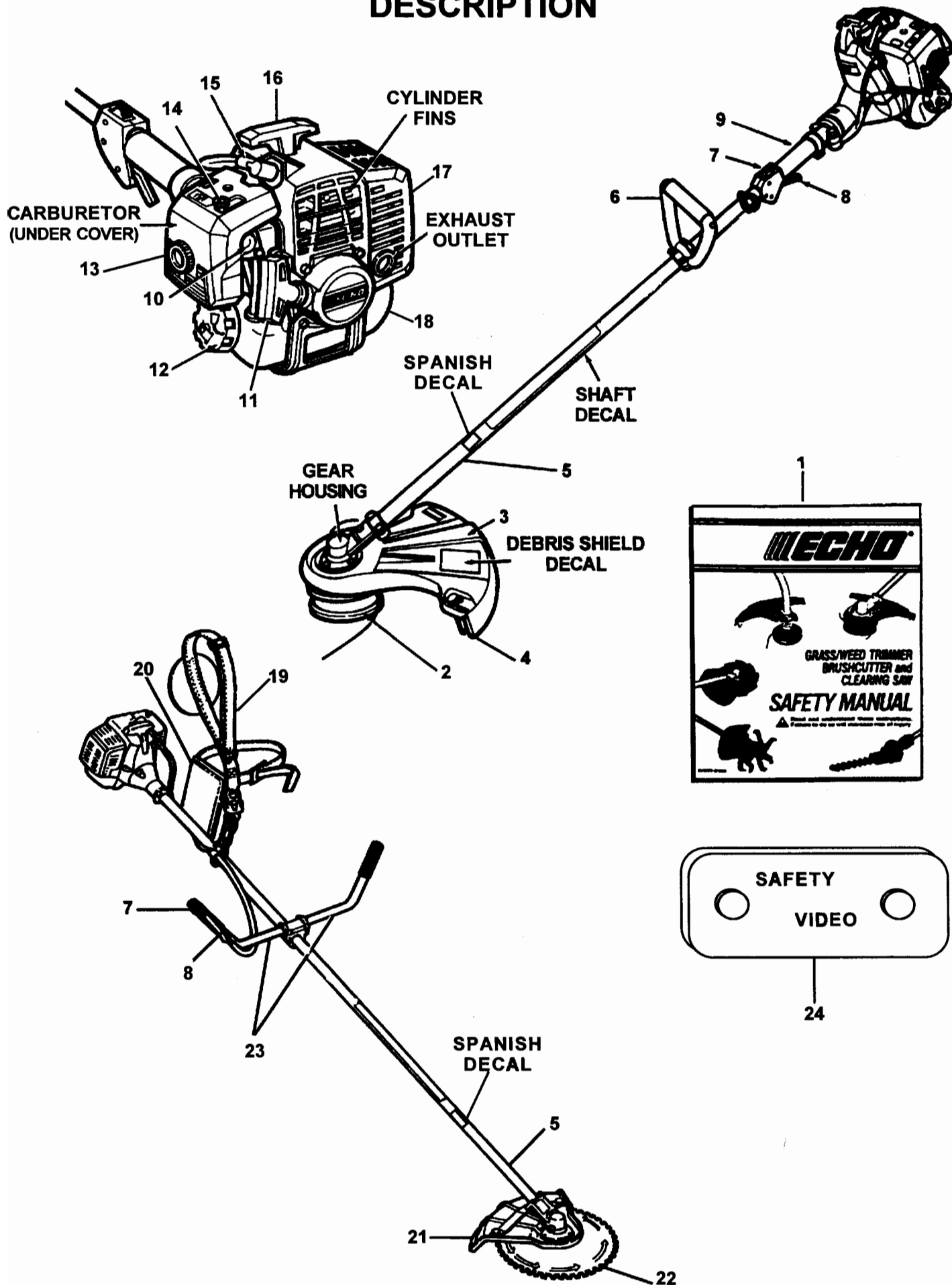
**ADVERTENCIA  PELIGRO**

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.

**WARNING  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.

# DESCRIPTION



# DESCRIPTION

1. **SAFETY MANUAL** - Included with unit. Read before operation and keep for future reference to learn proper, safe operating techniques.
2. **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.
3. **DEBRIS SHIELD** - Mounted just above the cutting attachment. Helps protect operator by deflecting debris produced during the trimming operation. Do not operate unit without shield.
4. **CUT-OFF KNIFE** - Trims line to the correct length - 5", head to end of line - after nylon trimming head is bumped on the ground during operation and line advances. If trimmer is operated without a cut-off knife the line becomes too long (more than 5") the operating speed will slow, the engine will overheat and performance suffers.
5. **DRIVE SHAFT ASSEMBLY** - Contains a specially designed liner and the flexible drive shaft. SRM-2501S has a solid drive shaft.
6. **LOOP HANDLE** - The loop (front) handle can be repositioned for comfortable operation by loosening the screws and moving the handle.
7. **IGNITION SWITCH** - "Slide Switch" mounted on top of the Throttle Trigger Housing. Move switch FORWARD to Run, BACK to STOP.
8. **THROTTLE TRIGGER** - Spring loaded to return to idle when released. When accelerating, press trigger gradually for best operating technique. DO NOT hold trigger while starting.
9. **GRIP** - Rear (right hand) handle.
10. **PURGE BULB** - Pump purge bulb (3-4 times or until a steady stream of fuel is visible through the "clear" fuel return line) before starting to draw fresh fuel from tank to carburetor replacing air and old fuel.
11. **STARTER HANDLE** - Pull handle until engine starts, then return handle slowly. DO NOT let handle snap back or damage to unit will occur.
12. **FUEL TANK CAP** - Covers and seals fuel tank.
13. **AIR CLEANER** - Contains replaceable felt element.
14. **CHOKE** - The choke control is located on the top of the choke case.  
  
**SRM-2100, 2110** - Push lever to "COLD START" to close choke for cold starting. Pull the lever all the way back of the "RUN" position.  
  
**SRM-2400, 2410, 2501, 2501S, 2510** - Pull choke knob up to close the choke for cold starting. Push knob down for the "RUN" position.
15. **SPARK PLUG** - Provides spark to ignite fuel mixture.
16. **ARM REST** - Provides arm rest during operation and protects arm from the hot engine.
17. **MUFFLER/SPARK ARRESTER** - The spark arrester muffler controls the exhaust noise and prevents hot, glowing particles of carbon from leaving the muffler.
18. **FUEL TANK** - Contains fuel and fuel filter.
19. **SHOULDER HARNESS** - An adjustable strap and waist belt that must be worn for metal blade use and should be worn when using nylon line cutting head.
20. **HIP PAD** - Used to protect hip/leg and clothing when using U-Handle equipped unit.
21. **METAL BLADE SHIELD** - Required when unit is equipped with blades. Do not operate unit without shield.
22. **BLADE** - Circular blade for grass, weed or brush cutting applications. Harness, metal shield and U-handles required for blade operation.
23. **U-HANDLE** - Required for metal blade operation.
24. **SAFETY VIDEO (Not included with unit)** - A 20 minute Safety Video, which reviews numerous safety precautions and proper operating techniques outlined in the Safety Manual, is available for your review and purchase at any Authorized ECHO Dealer. (English Only)

# OPERATOR SAFETY

**WARNING**



**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.**

## PHYSICAL CONDITION

- Your judgement and/or dexterity may be impaired if you are ill, are taking medication, and/or have taken alcohol or other substances known to affect the way you would normally function. Operate this unit only if you are in good physical and mental health.

## 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.

## 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 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 and neck, feet and ankles and hands and wrists.
- Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks and also by not smoking.
- Limit the number of 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 to the areas just mentioned. 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 repeatedly 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.
- Take periodic breaks to minimize repetition and rest your hands.
- Reduce the speed and force in which you do the repetitive movement.
- Do exercises to strengthen hand and arm muscles.
- See a doctor if you feel tingling, numbness or pain in your fingers, hands, wrists or arms. The sooner RSI/CTS is diagnosed, the more likely permanent nerve and muscle damage can be prevented.

## EYE AND HEARING PROTECTION

- Wear eye protection goggles that meet ANSI Z87.1 requirements. Goggles meeting the requirements (a pair was included with your trimmer) have the mark "Z87" stamped on them.
- Wear hearing protection. If this guideline is not followed, hearing loss can occur. The Occupational Health and Safety Act of 1970 (OSHA) requires the use of hearing protection if you use the unit more than two (2) hours per day. ECHO recommends wearing hearing protection at all times.

## WEAR PROPER CLOTHING

- Snug fitting, durable clothing should be worn. Pants should have long legs, **DO NOT WEAR SHORTS**. Do not wear loose fitting clothing, scarfs, neckties, jewelry or any item that may become tangled in surrounding growth or the trimmer itself.
- Wear shoes with non-skid soles. **DO NOT** wear open toed shoes or operate unit bare footed.
- Wear no-slip, heavy duty work gloves to improve your grip on the trimmer handles. The gloves also help 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.

## SPARK ARRESTOR MUFFLER

- The spark arrestor muffler controls the exhaust noise and prevents hot, glowing particles of carbon from leaving the muffler. Make sure the spark arrestor screen is in good repair and properly seated in the muffler.
- Certain internal combustion engines operated on forest, brush and/or grass-covered areas in the states of Washington, Oregon, Idaho, California, Minnesota, New Jersey and Maine, are required to be equipped with a spark arrestor. This requirement also applies to all U.S. Forest Service lands. In some of these areas, the spark arrestor system must be certified per USDA Forest Service Regulation SAEJ335. Check with your local or state authorities for specific regulations in your area. Failure to follow these requirements is a violation of the law.

# OPERATION

## OPERATION WITH BLADES

**WARNING**



**DANGER**

USE OF PLASTIC/NYLON BLADES REQUIRE A "BLADE CONVERSION KIT", WHICH INCLUDES SHOULDER HARNESS, STEEL SHIELD AND ATTACHING HARDWARE.

USE OF STEEL/METAL BLADES REQUIRES THE "BLADE CONVERSION KIT" PLUS A "U-HANDLE KIT".

## USE CORRECT BLADE

**WARNING**



**DANGER**

- SERIOUS INJURY MAY RESULT FROM THE IMPROPER USE OF STEEL BLADES. READ AND COMPLY WITH ALL SAFETY INSTRUCTIONS LISTED IN THIS MANUAL AND YOUR SAFETY 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.

## SAFETY PRECAUTIONS WHEN USING BLADES

- 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.
- Run engine at full throttle only when cutting large, tough weeds or woody growths.
- Remove all foreign objects from work area.
- Do not operate brushcutter without shoulder harness and metal shield.
- In case of an emergency, use quick-release collar on harness to free yourself from brush cutter.
- You must use the U-HANDLE KIT when using steel BLADES.
- Refer to Description Section for location of safety decals on shaft and shield.
- Keep bystanders 50 feet (15m) from operator.

## USING SHOULDER/WAIST HARNESS

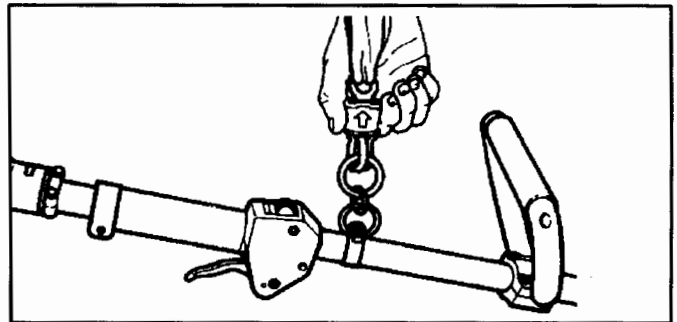
1. Place shoulder/waist harness over left shoulder and adjust straps so the quick-release latch rests just below the waist.
2. Buckle waist belt. Belt should be snug.
3. Attach Trimmer Brushcutter to harness.
4. Check for correct adjustment by moving cutter along ground. See Safety Manual for proper adjustment.
5. Re-adjust bracket if necessary.

**WARNING**



**DANGER**

IN CASE OF AN EMERGENCY, PULL UP ON THE QUICK-RELEASE COLLAR TO DISCONNECT THE TRIMMER FROM THE HARNESS.



## DETERMINE WORK AREA

- Review the area to be trimmed. Look for hazards that may contribute to unsafe conditions.
- Be certain there is adequate ventilation. This is a gasoline powered unit that produces poisonous, carbon monoxide gas (CO).

## INSPECT OPERATION AREA

- Inspect the area to be trimmed. Remove stones, wire, metal objects and any other item that could be thrown by the trimmer or tangle around the cutting head.

# OPERATION

## PROTECTING OTHERS



- Spectators, co-workers, children and animals should be kept at least 50 ft. (15m) away from the trimmer when it is in use. Individuals working within the 50 ft. radius should wear the same protective equipment as recommended for the operator and be aware of the location of the trimmer at all times.

## FUEL STATEMENT

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

**TWO-STROKE OIL** - Use 50:1 ECHO two-stroke oil **ONLY**. Engine problems due to inadequate lubrication caused by failure to use 50:1 ECHO oil will void the warranty on your ECHO product.

**MIXING** - Follow directions on the oil container.

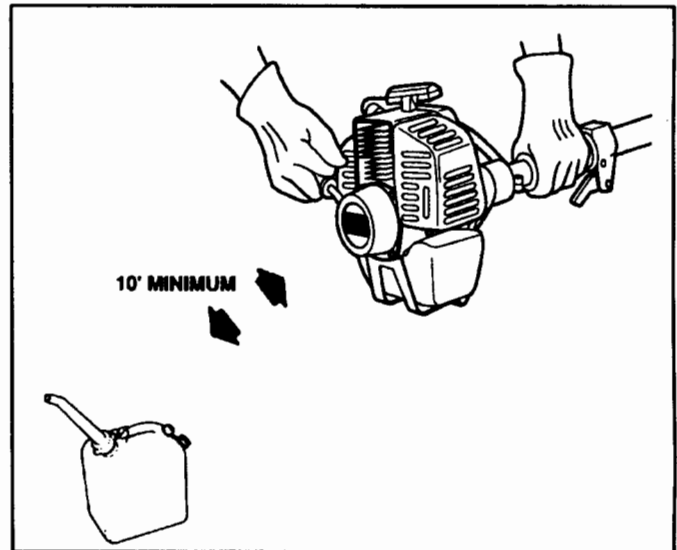
### IMPORTANT

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.

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

## HANDLING FUEL

- Never smoke or allow flame or sparks near fuel.
- Always fill the fuel tank outdoors. Never pour fuel indoors.
- Never refuel the engine when it is hot or running.
- Always use an approved, safe fuel container.
- After fueling, always wipe up spilled fuel.
- Always move at least 10 feet away from the fueling spot before starting the engine.
- Never store the trimmer with fuel in the tank - a fuel leak could start a fire.



## DURING OPERATION

### CAUTION

The complete unit, specifically the drive shaft housing and bearing housing may become very hot (too HOT to touch) during use. Avoid contact during and immediately after operation.

### WARNING



### DANGER

**ALWAYS STOP THE ENGINE WHEN A CUTTING HEAD JAM OCCURS. DO NOT ATTEMPT TO REMOVE AN OBJECT CAUSING A JAM IF THE ENGINE IS RUNNING. SEVERE INJURY CAN OCCUR IF A JAM IS REMOVED AND THE CUTTING HEAD SUDDENLY STARTS.**



# STARTING AND STOPPING

## SAFE STARTING TECHNIQUES

### NOTE

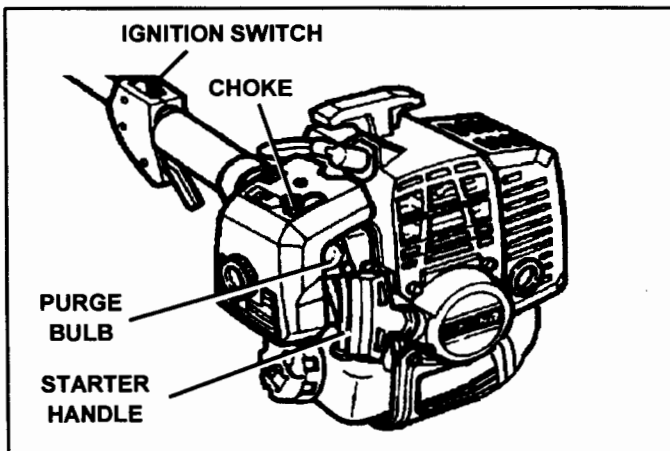
- Check unit for loose nuts, bolts and screws before starting.
- Always clear work area of debris before starting operation.
- Always hold the unit firmly on the ground.
- When pulling starting rope, use short pulls, 1/2 to 2/3 of rope length.
- Do not allow the starter handle to snap back against the housing.

## STARTING COLD ENGINE

### WARNING DANGER

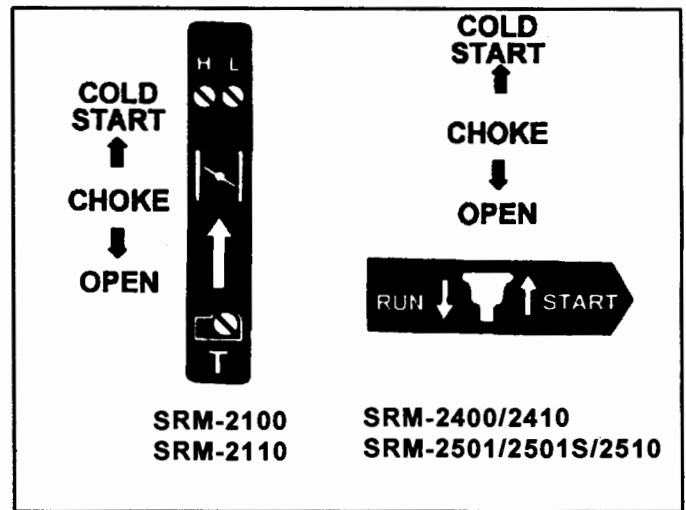
WHEN ENGINE STARTS, THE HEAD MAY ROTATE, EVEN WITH THROTTLE TRIGGER IN LOW-SPEED POSITION.

1. Slide ignition switch to START/RUN position.
2. Push purge bulb 3 to 4 times (or until constant flow of fuel is visible in fuel return line).
3. Close choke (Cold Start).
4. Pull starter rope until engine fires.



SRM-2400 SHOWN

5. Open choke.
6. Restart engine and allow engine to warm up.



## STARTING WARM ENGINE

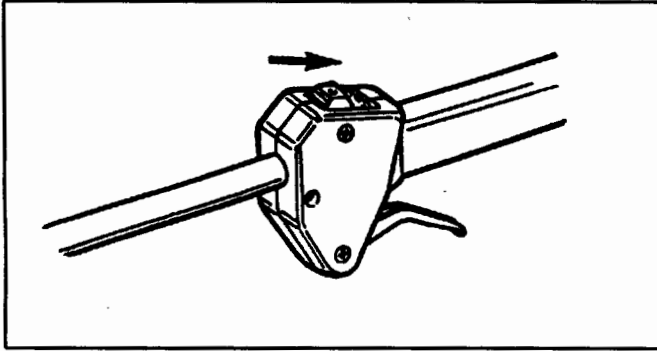
1. If fuel tank was emptied during previous operation, refill tank and push purge bulb 3 or 4 times or until constant flow of fuel is visible in fuel return line.
2. Slide ignition switch to START position.
3. Be certain choke is open.
4. Pull starter handle.

### NOTE

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

## STOPPING ENGINE

1. Release throttle trigger and allow engine to idle.
2. Place ignition switch in STOP position.

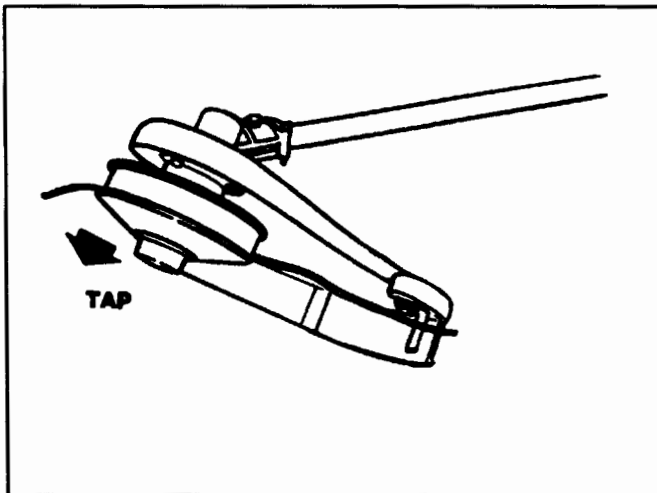


**WARNING**  **DANGER**  
IF ENGINE DOES NOT STOP, CLOSE CHOKE TO STALL ENGINE. HAVE YOUR ECHO DEALER INSPECT AND REPAIR IGNITION SWITCH BEFORE USING TRIMMER AGAIN.

## RELEASING LINE AND ADJUSTING LINE

With the engine running at normal operating speed, tap head firmly on the ground to release line.

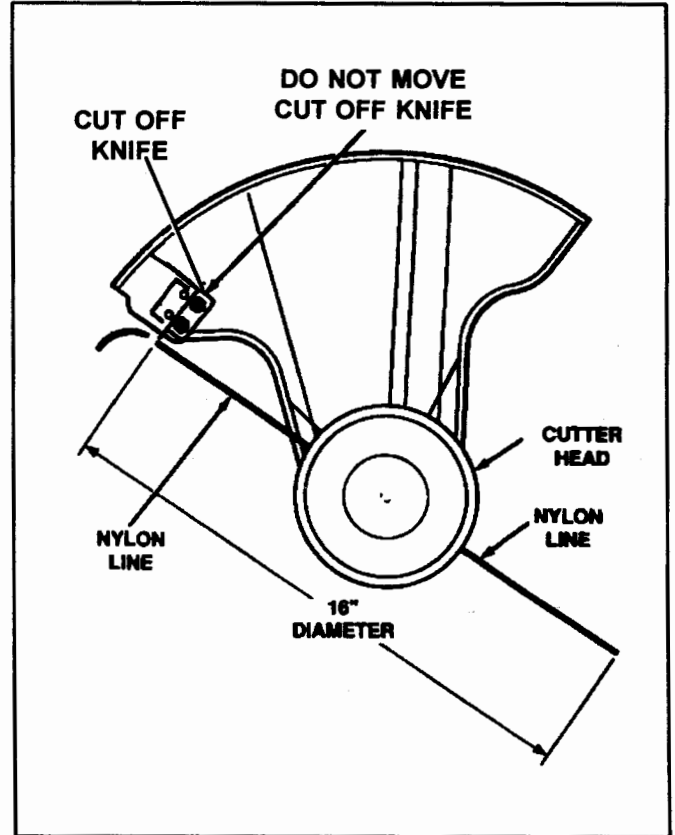
**NOTE**  
One inch of line will be released each time head is tapped.



## CUTTER HEAD LINE LENGTH

The cut off knife is pre-set at the factory to provide a 16 inch diameter cutting swath.

Do not move cut off knife from "FACTORY SET" position.



# SERVICE MAINTENANCE GUIDE

AREA	MAINTENANCE	BEFORE USE	MONTHLY	YEARLY	DATE MAINTENANCE PERFORMED**
Air Filter	Clean/Replace	●			
Fuel Filter	Inspect/Replace		●		
Spark Plug	Inspect/Clean/		●		
Carburetor	Adjust/Replace		●		
Cooling System	Inspect/Clean	●			
Muffler (Spark Arrestor)	Inspect/Clean		●		
Drive Shaft	Grease			● *	
Gear Housing	Grease			● *	
Cut-off Knife	Inspect/Replace	●			
Fuel System	Inspect/Repair	●			
Screw, Bolts & Nuts	Inspect, Tighten/ Replace	●			

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

\*Or 50 hours, whichever occurs first.

\*\*Record dates of monthly and yearly inspections.

## TROUBLESHOOTING

Problem		Cause	Remedy
Engine—starts hard —does not start			
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
	Muffler wet with fuel	Fuel mixture is too rich	Open choke Clean/replace air filter Adjust carburetor See your Echo dealer
	Spark at end of plug wire ↓ No spark at end of plug wire	Ignition switch off Electrical problem	Turn switch on 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 (0.026in.) Clean or replace Clean or replace Replace plug
Engine does not crank		Internal engine problem	See your Echo dealer
Engine runs	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

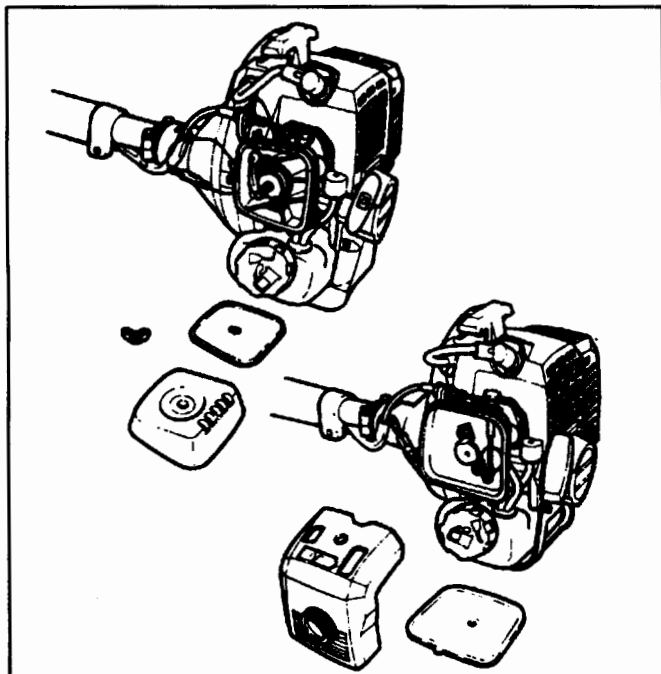
# TROUBLESHOOTING

TROUBLE	CAUSE	WHAT TO DO
1. Engine fails to start.	<p>No fuel in tank.            Filter 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).</p>	<p>Fill tank.            Replace filter.            Clean fuel line.            Install new spark plug.            Replace spark plug.</p> <p>Replace lead wire or attach to spark plug.            Contact your nearest authorized ECHO dealer.</p>
2. Engine hard to start.	<p>Water in gasoline or stale fuel mixture.            Too much oil in fuel mixture.            Engine over or under choked.</p> <p>Carburetor out of adjustment.            Gasket leaks (carburetor or cylinder base gasket).            Weak spark at lead wire.</p>	<p>Drain entire system and refill with fresh fuel mixture.            Drain and refill with correct mixture. If flooded by over choking, proceed according to instruction in previous section. If under choked, move choke lever to closed position and crank two or three times.            See "Carburetor Adjustment".            Replace gaskets.</p> <p>Contact your nearest authorized ECHO dealer.</p>
3. Engine misses.	<p>Dirt in fuel line or carburetor.            Carburetor improperly adjusted.</p> <p>Spark plug fouled, broken or incorrect gap setting.            Weak or intermittent spark at lead wire.</p>	<p>Remove and clean.            See "Carburetor Adjustment" in Service Section.            Clean or replace spark plug - set gap to 0.65mm (0.026 in.).            Contact your nearest authorized ECHO dealer.</p>
4. Engine lacks power.	<p>Air cleaner clogged.            Carburetor out of adjustment.            Muffler clogged.            Clogged exhaust ports.</p> <p>Poor compression.</p> <p>Insufficient oil in fuel mixture.</p>	<p>Clean air cleaner.            See "Carburetor Adjustment".            Clean carbon from muffler.            Remove muffler, rotate engine until the position 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.            Start engine and run briefly to remove all carbon, then install muffler and gasket.            Contact your nearest authorized ECHO dealer.</p>
5. Engine overheats.	<p>Air flow obstructed.</p>	<p>Mix fuel as shown in starting instructions.            Clean flywheel and cylinder fins and screen.</p>
6. Engine noisy or knocking.	<p>Loose flywheel.            Spark plugs incorrect for heat range.</p> <p>Worn bearings, piston rings or cylinder walls.</p>	<p>Tighten flywheel nut.            Replace with plugs specified for engine.            Contact your nearest authorized ECHO dealer.</p>
7. Engine "stalls" under load.	<p>Carburetor main adjustment too "lean".            Engine overheats.</p>	<p>See "Carburetor Adjustment".            See "Cleaning Cylinder Fins" in Service Section.</p>

# SERVICE

## CLEANING AIR FILTER

1. Close choke. Loosen screw or remove wing nut and remove air filter cover.
2. Remove air filter (air filter is located inside air filter cover).



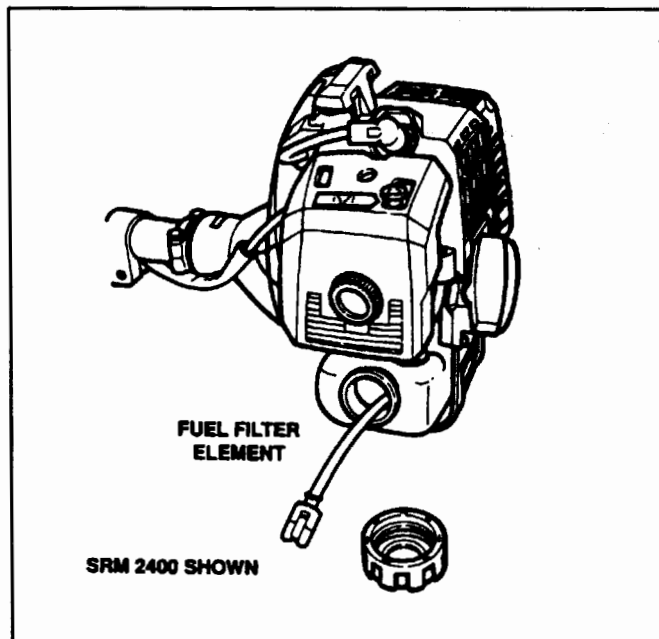
3. Brush dirt from filter or clean with compressed air.
4. Reinstall filter and cover.

## FUEL SYSTEM INSPECTION

Poor quality fuel, e.g. high alcohol content, can cause rapid deterioration of plastic and rubber components. Due to unknown fuel quality, it is important that internal and external fuel lines, fuel cap gaskets, carburetor diaphragms and all other plastic and rubber fuel system components be checked a minimum of twice yearly (more often when unit is used commercially). Replace any part that is defective or questionable.

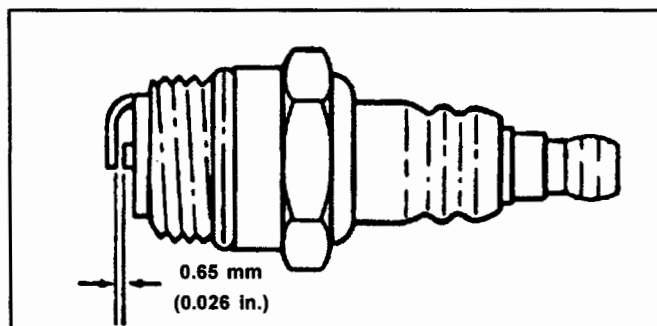
## REPLACING FUEL FILTER

1. Use a piece of steel wire to pick up fuel filter through fuel tank opening.
2. Pull old filter from fuel line.
3. Install new filter element.



## CHECK SPARK PLUG

1. Check plug gap. Correct gap is 0.65 mm (0.026 in.).



2. Inspect electrode for wear.
3. Inspect insulator for oil or other deposits.
4. Replace plug if needed, tighten to 145-155kg-cm (125 - 135 in. lb.).

## CARBURETOR ADJUSTMENT

Every unit is test run at the factory and the carburetor is fine tuned for maximum performance. Any change from this setting should be performed only with the aid of an accurate tachometer (see Specifications for RPM setting). If carburetor adjustment is performed without a tachometer, only the Basic Setting adjustment is recommended.

Before adjusting carburetor, clean or replace air filter, start engine and run several minutes to bring it to operating temperature. Extend trimmer line to cut-off knife.

# SERVICE continued

## IDLE SPEED ADJUSTMENT

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.

**WARNING**



**DANGER**

**CUTTING ATTACHMENT MUST NOT TURN WHEN UNIT IS IDLING.**

## BASIC SETTING

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.

2. Turn LO needle out, CCW 1 turn. Turn HI needle out CCW 1-1/4 turn.

## FINE TUNING

(Requires Accurate Tachometer)

1. Start engine and allow to warm to operating temperature (minimum 2 - 3 minutes) varying engine speed from idle to full throttle.
2. Adjust idle speed if necessary (2500-3000 RPM).
3. Always begin fine tuning with LO needle.

### a. LEAN DROP-OFF

With engine idling, turn LO needle slowly CW (in) to LEAN drop-off point. RPM will increase, then abruptly drop-off. Note this position.



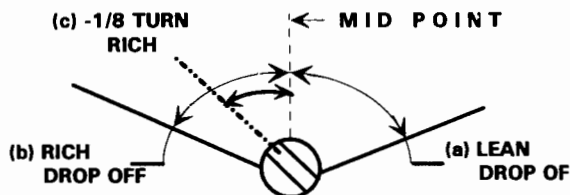
### b. RICH DROP-OFF

With engine idling, slowly turn LO needle CCW (out) to RICH drop-off point. RPM will increase then gradually slow and drop-off. Note this position.



### c. FINAL SETTING

Set needle at mid point between LEAN and RICH drop-off points and turn 1/8 turn CCW (out) making mixture slightly richer.



- d. Re-adjust idle speed if necessary. (See idle adjustment)

### IMPORTANT

Improper HI speed adjustment can result in lean operation and consequent severe engine damage. Perform adjustments according to application; nylon line head or blades.

4. HI speed adjustment nylon line head.

- a. Turn HI needle out CCW an additional 1/4 turn.

### b. LEAN DROP-OFF

With engine running at full throttle, observe tachometer and slowly turn HI needle in until maximum speed is reached (just before LEAN drop-off) **DO NOT EXCEED 9500 RPM.**

### IMPORTANT

Do not run engine on full throttle longer than 5-6 seconds during HI needle adjustment to avoid damage to engine.

### c. FINAL SETTING

Turn needle out CCW until engine varies between even (lean) sound to slightly uneven/husky (rich) four-cycle sound and re-check RPM. Final RPM range is 8500 - 9500.

### IMPORTANT

The engine will overheat when the HI speed needle is adjusted to the lean sound reducing engine life.

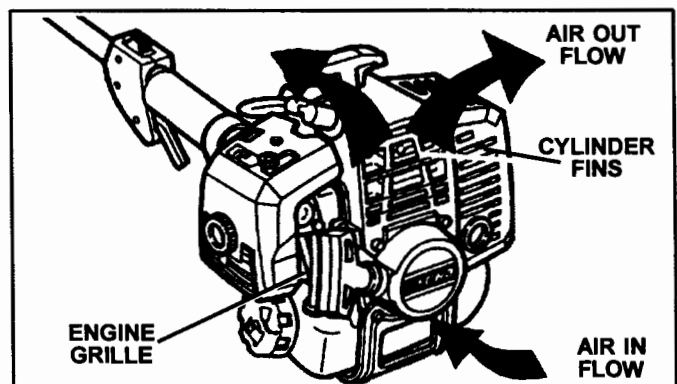
5. HI speed adjustment blades (metal circular, Tri-Cut, Maxi-Cut.

- a. Follow adjustment procedure described in 4a and 4b. **DO NOT** exceed 11,500 RPM.

- b. Final Setting - Turn needle out CCW until engine varies between even (lean) sound to slightly uneven/husky four cycle sound. Turn needle out CCW an additional 1/8-1/4 turns making mixture slightly richer and recheck RPM. Final RPM range is 10,500 - 11,500.

## COOLING SYSTEM MAINTENANCE

The cooling system relies on cooling air entering the engine through the bottom engine grille located between the fuel tank and starter. The cooling fan pushes this air through the cylinder fin area and out the rear grille openings in the engine cover.



# SERVICE continued

## 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.

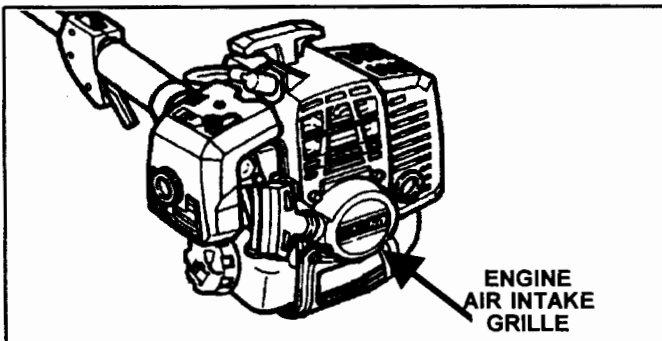
Overheating and engine seizure can occur when:

- Air intakes are blocked, preventing cooling air from reaching the cylinder, or
- 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 cylinder fins is considered "Normal Maintenance". Any resultant failure attributed to lack of maintenance is not warranted.

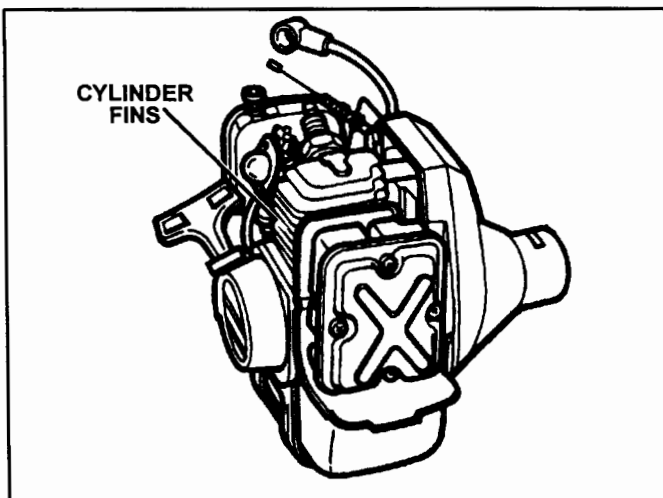
## Cleaning Grille

1. Before each use, remove accumulated debris from bottom engine intake grille located between the fuel tank and starter.



## Cleaning Cylinder Fins (Check Before Use)

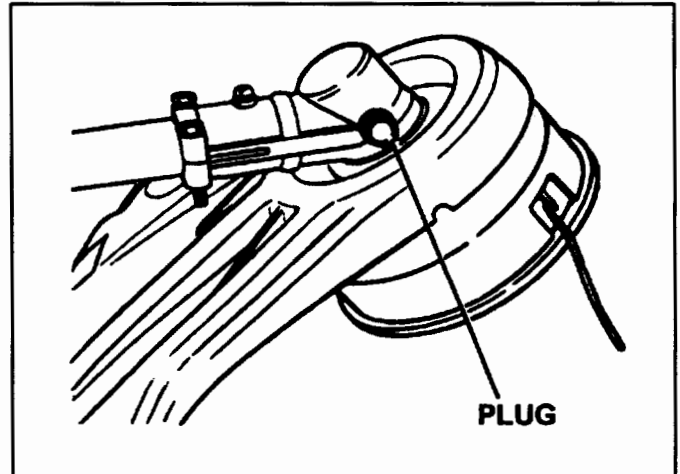
1. Remove dust and dirt from between cylinder fins.



2. If greater access is needed to thoroughly clean fins, remove engine cover as outlined in steps 1 & 2 in "Cleaning Muffler and Exhaust Port".

## LUBRICATING GEAR HOUSING

1. Remove plug from housing.



2. Check level and add grease, if necessary, using low pressure pump. Leave 1/8" for expansion of grease.

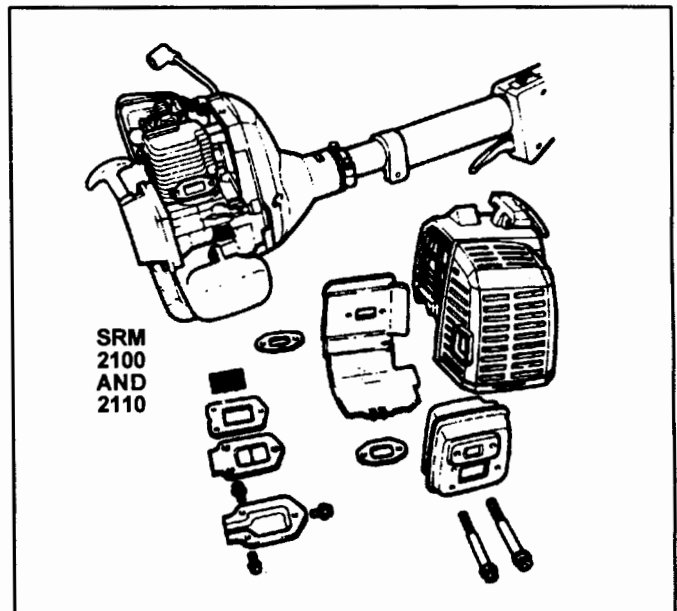
### NOTE

Use good quality lithium multi grease. DO NOT overfill housing.

3. Reinstall plug.

## CLEANING MUFFLER AND EXHAUST PORT SRM-2100/2110

1. Remove spark plug lead from spark plug, and throttle cable from carburetor swivel.
2. Remove the four screws which secure engine cover.
3. Pull engine cover away from engine.



## SERVICE continued

4. Remove muffler lid spark arrestor. Replace screen if it is plugged, cracked or has holes burned through it.
5. Remove muffler and heat shield.
6. Place piston at top dead center. Use a wooden stick to clean deposits from muffler, spark arrestor screen and cylinder exhaust port.

### NOTE

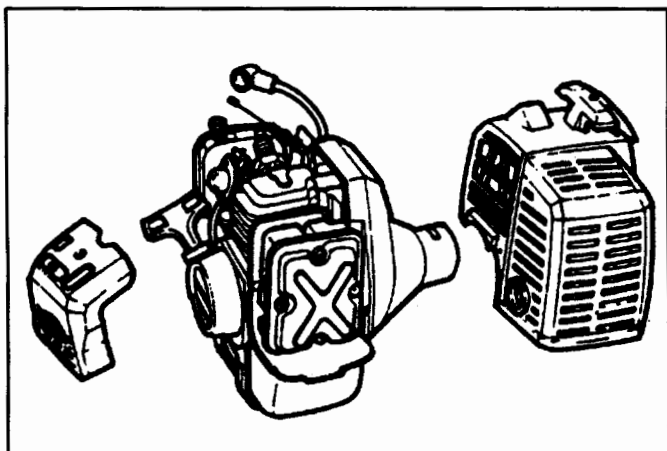
Use a wooden stick to avoid scratching the cylinder or piston when cleaning the cylinder exhaust port.

7. Inspect gasket, replace if necessary.
8. Install heat shield and muffler.
9. Install spark arrestor.
10. Install engine cover and spark plug lead.

## CLEANING MUFFLER AND EXHAUST PORT

### SRM-2400, 2410, 2501, 2501S, 2510

1. Remove spark plug lead from spark plug, and throttle cable from carburetor swivel.
2. Remove engine cover.

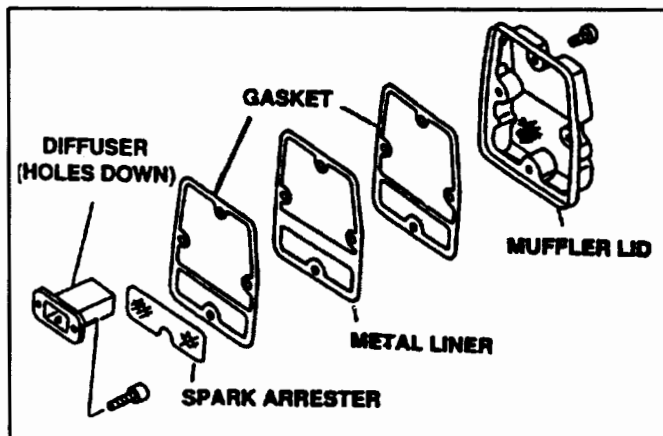


3. Remove muffler lid and spark arrestor screen.
4. Replace screen if it is plugged, cracked or has holes burned through it. Clean muffler lid.
5. Remove diffuser, place piston at top dead center and clean carbon from dufusser and the exhaust port.

### IMPORTANT

Do not use a metal tool to scrape carbon from the exhaust port. Do not scratch the piston when cleaning the exhaust port. Also be careful not to scratch the cylinder or piston when cleaning the cylinder exhaust port.

6. Inspect gaskets, replace if necessary.
7. Install diffuser, holes down. See drawing for correct assembly sequence of remaining components.



## SHARPENING THE 8-TOOTH BLADE

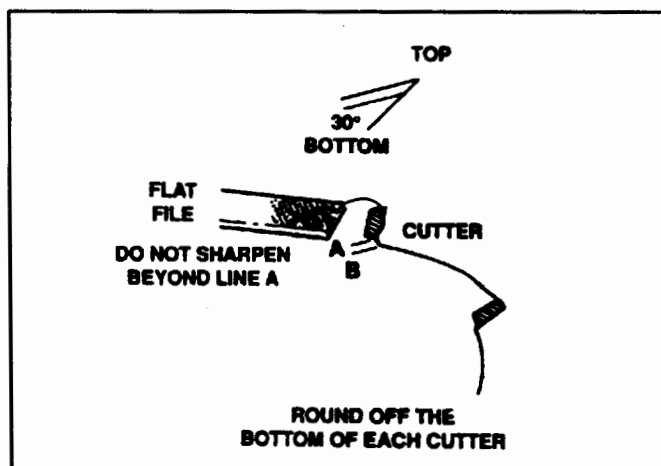
File the bottom of the teeth to a 1-2 mm radius.

### NOTE

Sharpen each cutter equally.

### NOTE

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





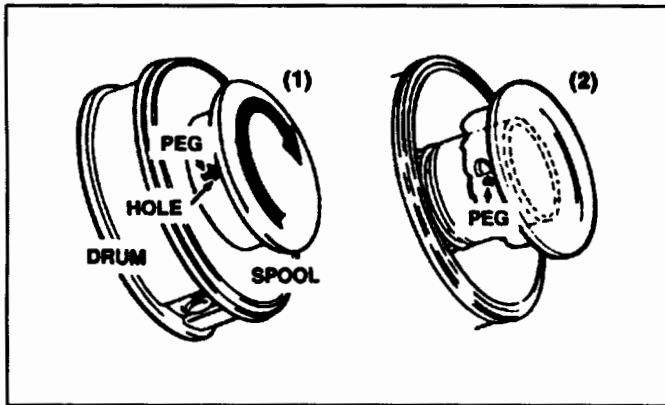
# SERVICE continued

## REPLACING NYLON LINE

1. (Do not push spool in.) Hold drum firmly and turn spool to take up slack.
2. Twist with a hard snap until plastic peg is not visible in hole and pull spool out of drum.

### NOTE

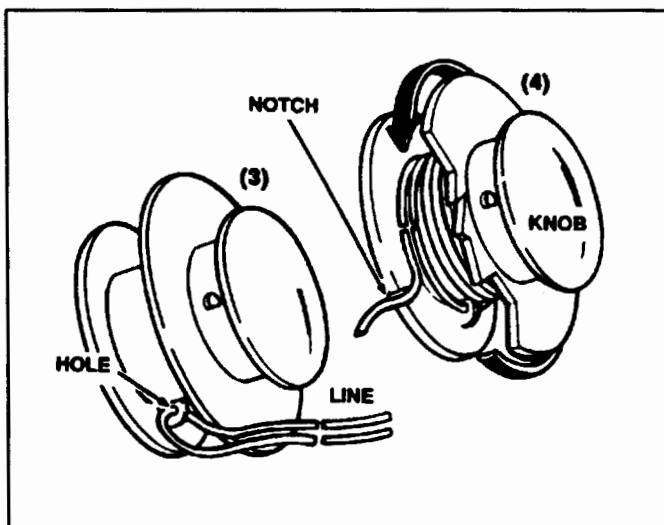
If not replacing line, go to Step 5.



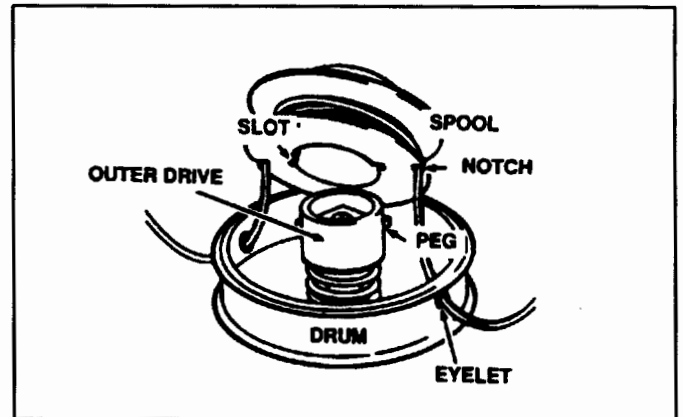
3. Use one line (20' x .095") and thread line through hole on spool until ends are even.
4. Wind both ends of line at same time, counter clockwise, tightly and evenly without twisting, in direction of arrow marked "cc" on spool.

### IMPORTANT

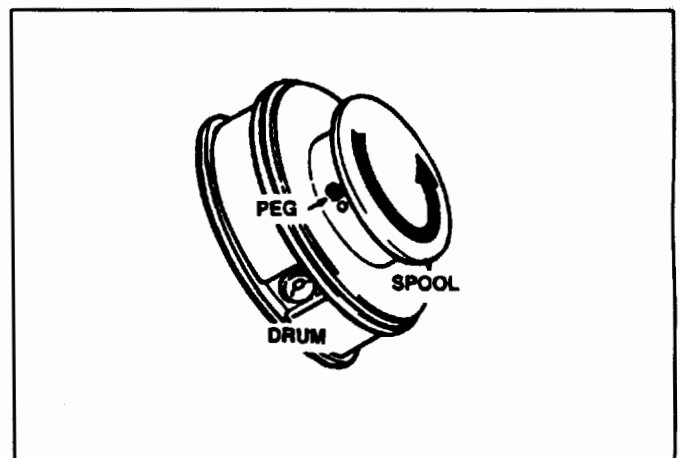
Make sure line is installed correctly. If line is improperly installed it may cause "line weld", head imbalance or engine failure due to excessive engine R.P.M.



5. Place ends of line into notches of spool with about 5 inches protruding.
6. Turn outer drive so that pegs are lined up with eyelets in drum.
7. Feed ends of line out eyelets in drum.



8. Align pegs on outer drive with slots in spool and push spool into drum.
9. Pull both lines to disengage from notches in spool.
10. Hold drum firmly, twist spool sharply until peg goes into hole with a click and locks spool to drum.
11. Cut lines to 4".



# ASSEMBLY

## DRIVE SHAFT

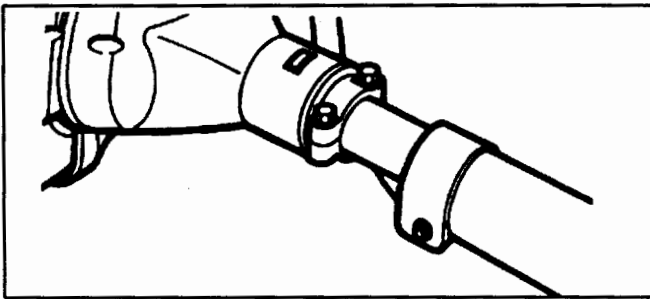
### SRM-2400, 2410

1. Stand engine upright on a level surface.
2. Loosen the two bolts at drive shaft end of engine.
3. Carefully fit drive shaft assembly to engine, making sure the shaft is correctly engaged.

#### NOTE

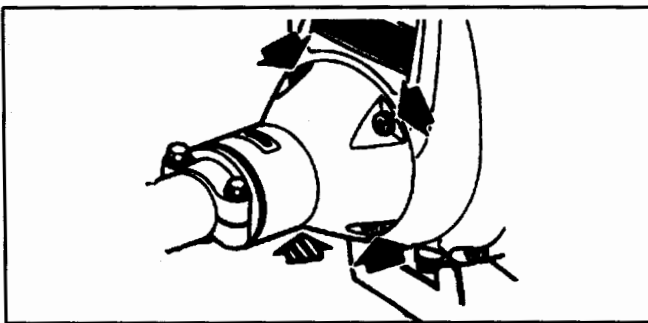
The line on the drive shaft housing must be in contact with the engine (arrow  $\Delta$  on drive shaft indicates line).

4. Rotate the drive shaft housing until bearing housing is in line with the engine.
5. Tighten bolts.



### SRM-2501, 2501S, 2510

1. Stand engine upright on a level floor.
2. Rotate the drive shaft housing until bearing housing is in line with the engine.
3. Secure drive shaft assembly to engine with screws.

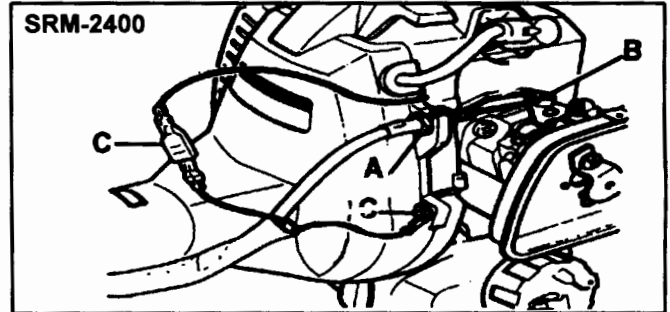


## THROTTLE CABLE AND IGNITION LEADS

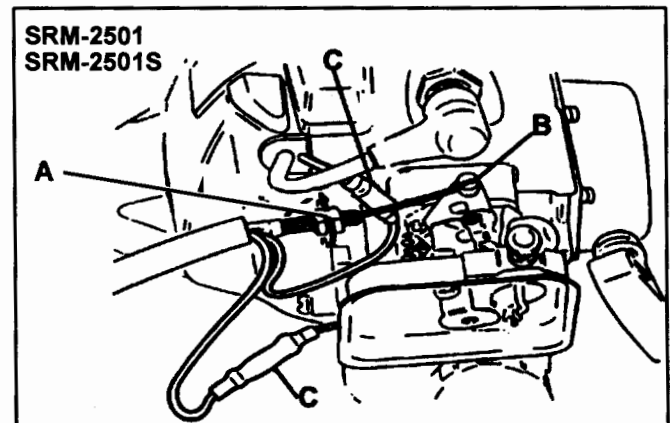
SRM-2400, 2501, 2501S  
(SRM-2110, 2410, 2510 See U-Handle Installation)

1. Close choke and remove air filter cover.

2. Loosen nut (A) and place threaded cable housing in bracket slot. If there are flat washers between the two nuts, place one on each side of the bracket. Finger tighten nut (A).
3. Place inner cable in slot of carburetor swivel (B) and tighten nut (A).
4. Check to make sure throttle operates freely, opens completely and returns to idle.



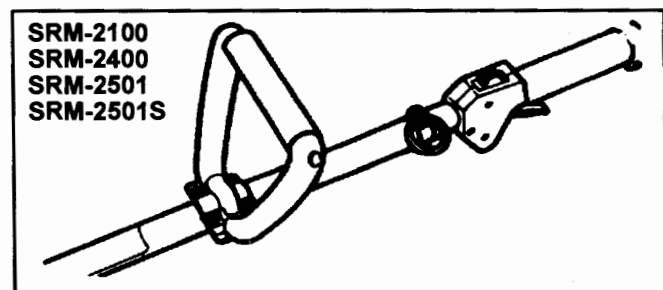
5. Connect ignition leads (C). SRM-2400 has one spade terminal pair and one ring terminal which attaches under fan cover screw. The SRM-2501 has two spade terminal pair.



6. Re-install air cleaner cover.

## INSTALLING LOOP HANDLE

1. Assemble loop handle and bracket to drive shaft loosely.



2. Position handle in comfortable operating position and tighten screws.

# ASSEMBLY

## INSTALLING PLASTIC SHIELD (For Nylon Line Operation)

### NOTE

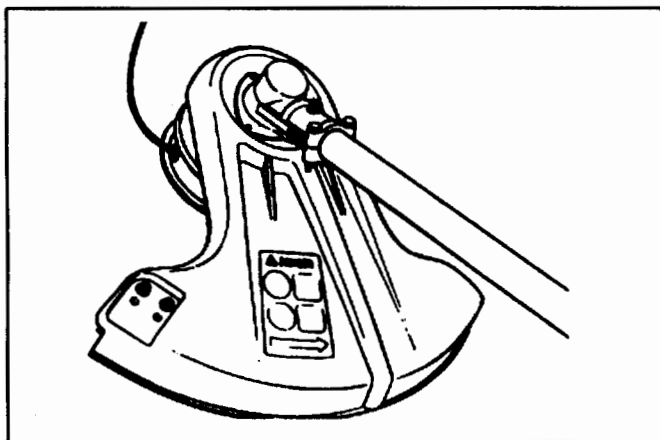
The plastic shield is for use with the nylon cutting head only. Install metal shield if using Tri-Cut or steel blades.

1. Fit the shield to the bearing housing.
2. Place shield plate on shield.

### NOTE

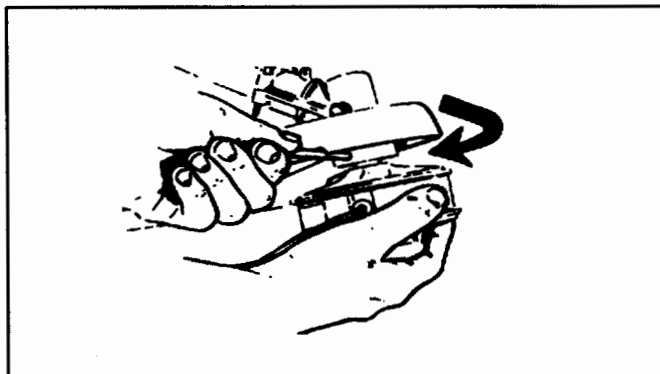
Be sure holes in plate and shield are aligned with those on gear housing.

3. Secure shield with screws.



## INSTALLING 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 OPTIONAL U-HANDLE KIT

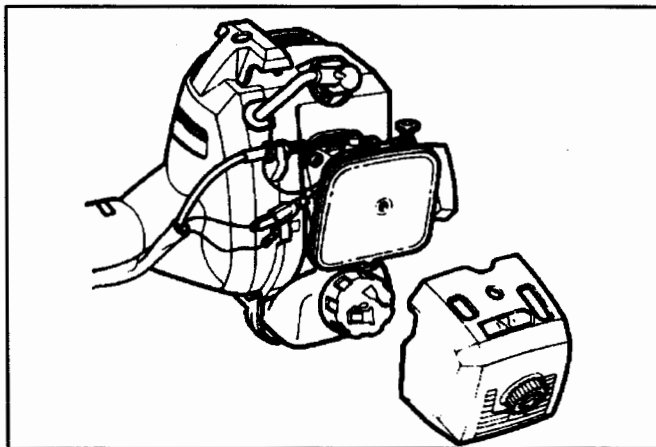
### IMPORTANT

Refer to Safety Manual for proper location of harness assembly.

### NOTE

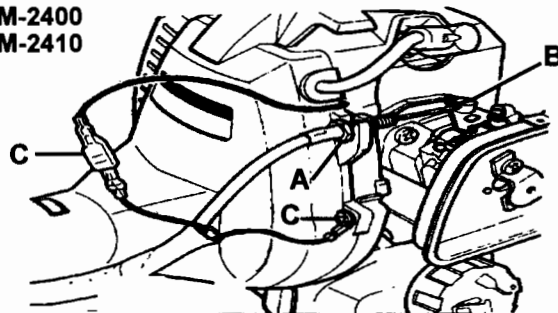
For Model SRM-2110 only step 12 is required for assembly.

1. Remove air filter cover.

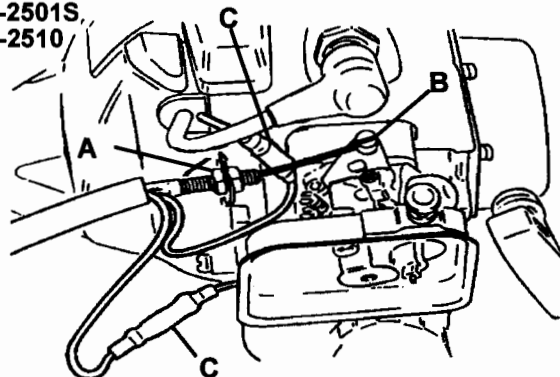


2. Disconnect stop ignition leads (C).
3. Detach inner cable from swivel (B).
4. Loosen nut (A) and remove throttle cable.

SRM-2400  
SRM-2410

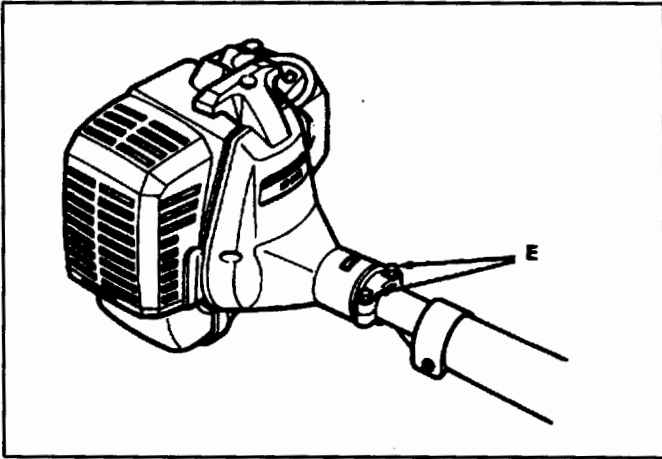


SRM-2501  
SRM-2501S  
SRM-2510

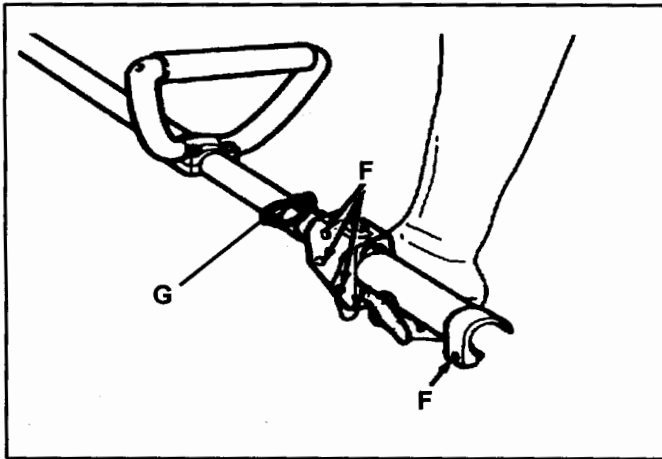


# ASSEMBLY

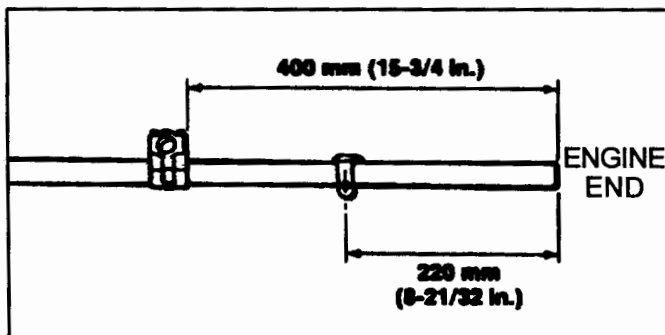
5. Loosen screws (E) and pull drive shaft assembly out of clutch case.



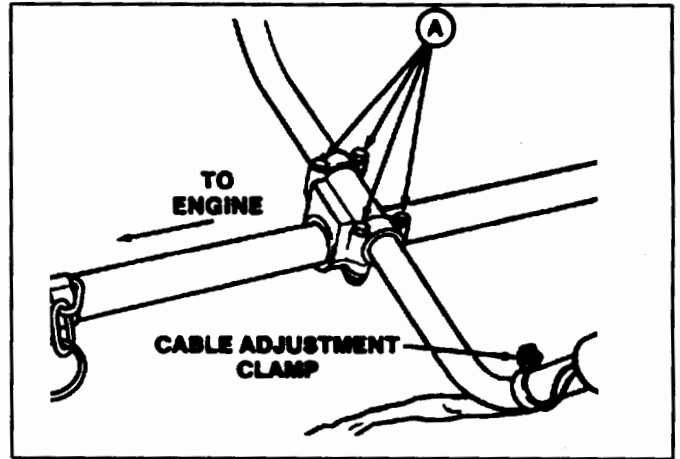
6. Remove loop handle.



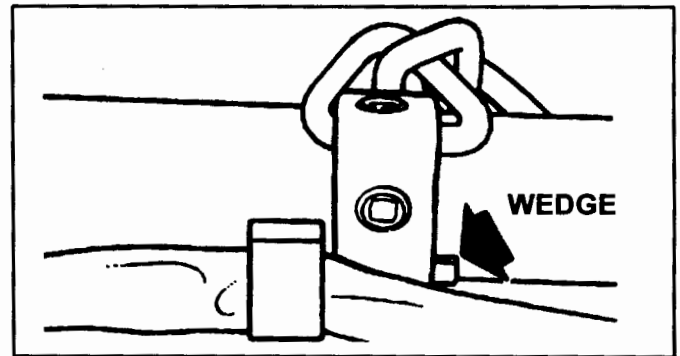
7. Loosen four screws (F) and slide trigger and grip from drive shaft.
8. Remove hook (G).
9. Position handle bracket approximately 400 mm (15-3/4 in.) from end of drive shaft.
10. Secure handle bracket with screw.
11. Install hook (larger hook for nylon head operation, small hook for metal or Tri-Cut blade operation) approximately 220 mm (8-21/32 in.) from end of drive shaft.



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



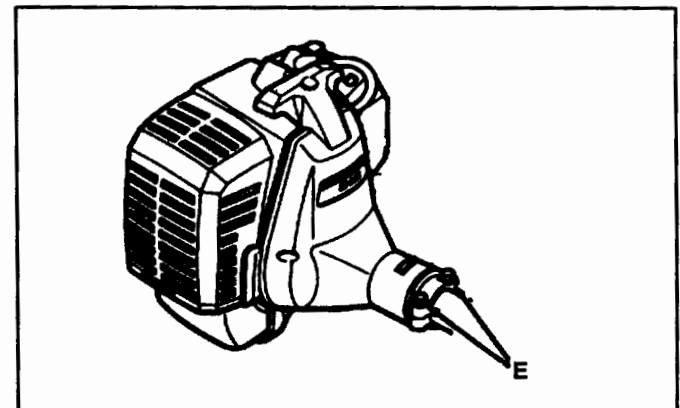
13. Secure throttle cable and leads to drive shaft by sliding wedge under harness hook.



14. Slide drive shaft assembly into clutch case and tighten screws (E).

## NOTE

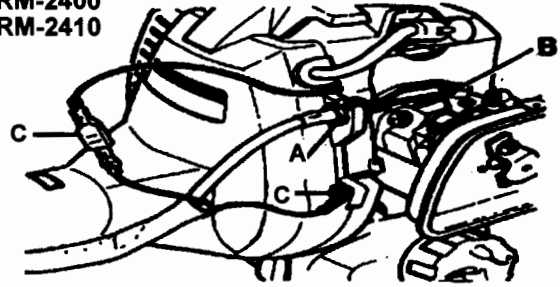
Make sure shaft engages clutch and that gear housing is straight in line with engine.



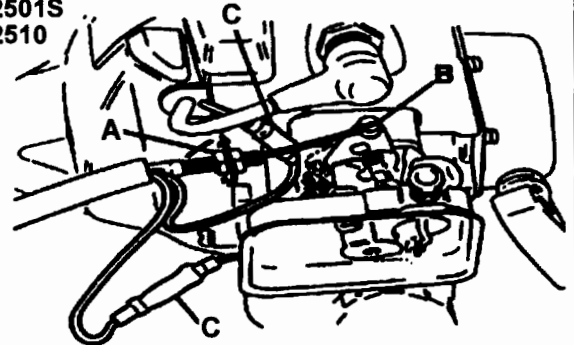
# ASSEMBLY

15. Insert throttle cable in slot.
16. Finger tighten nut (A).
17. Attach inner cable to the swivel (B).
18. Tighten nut (A).
19. Check throttle for freedom of movement and make sure it returns to idle.
20. Connect ignition leads (C).
21. If proper high speed or idle adjustment of the throttle cable cannot be made with the two adjusting nuts, the outer cable must be adjusted by moving the cable adjustment clamp up or down on the handle bar. Consult your servicing dealer for correct adjustment in this case.
22. Re-install air filter cover.

SRM-2100  
SRM-2110  
SRM-2400  
SRM-2410



SRM-2501  
SRM-2501S  
SRM-2510



## BLADE INSTALLATION

### IMPORTANT

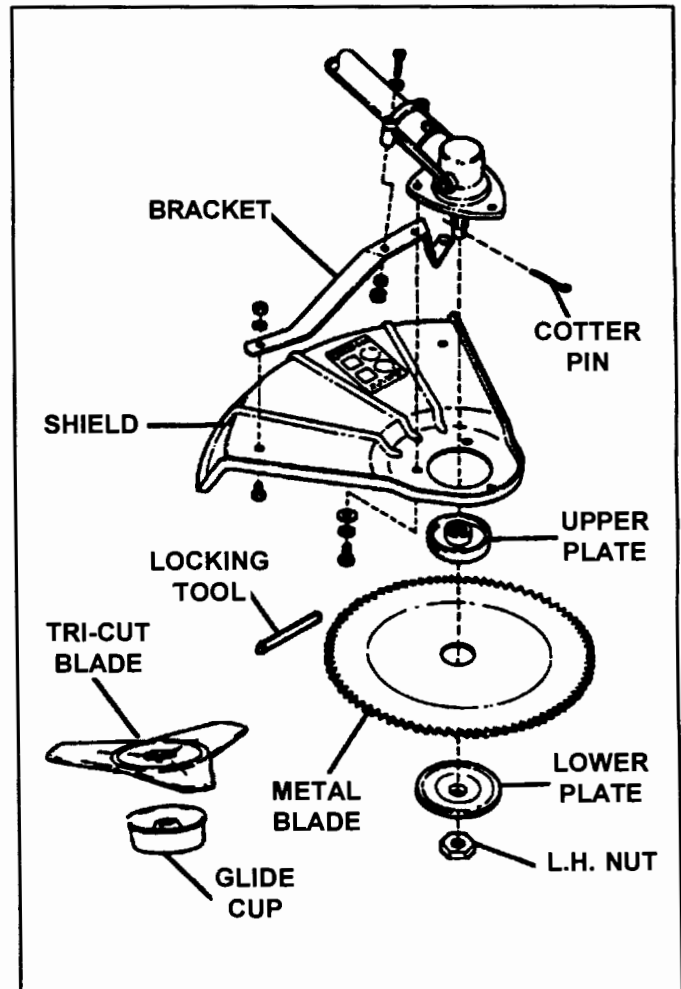
If non-standard monofilament heads, METAL/ PLASTIC blades or cultivators etc. are used, THE CARBURETOR MUST BE RE-SET or serious engine damage can occur. See "Carburetor Adjustments".

You MUST install U-Handle Kit to operate this unit with Steel Blades. If you are installing both the U-Handle Kit and the Steel Shield, the large hook for the harness in the U-Handle Kit is not needed (Nylon head operation only). Use the smaller hook provided.

### SHIELD INSTALLATION

1. Loosely attach bracket to shield and attach to bottom of gear housing with screws and nuts provided.
2. Install nuts and lockwashers on screws where indicated and tighten all hardware.

If necessary, remove nylon head and plastic shield. (Refer to page 18).



# BLADE INSTALLATION

## INSTALLING OPTIONAL BLADE (STEEL OR TRI-CUT)

1. Install upper plate on splined shaft.
2. Place blade over upper plate pilot and install the "lower plate" and L.H. nut. Tri-Cut blade is installed with glide cup.
3. Insert locking tool through hole in upper plate and notch in gear housing to prevent splined shaft from turning, tighten nut and secure with a split pin (cotter pin).

### NOTE

This procedure applies to the installation of metal blades approved for this unit by ECHO, INC.

### NOTE

Always use a new split pin (cotter pin) to secure locking nut. Split pin 2 x 22mm (90030020022).

### NOTE

The Tri-Cut blade is designed for weed and grass cutting. Do not attempt to cut brush or trees with this blade. Cracked or worn Tri-Cut blades cannot be repaired. They must be replaced.

## STORAGE

### LONG TERM STORAGE (Over 60 Days)

Do not store your unit for a prolonged period of time (60 days or longer) without performing protective storage maintenance which includes the following:

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

**WARNING**



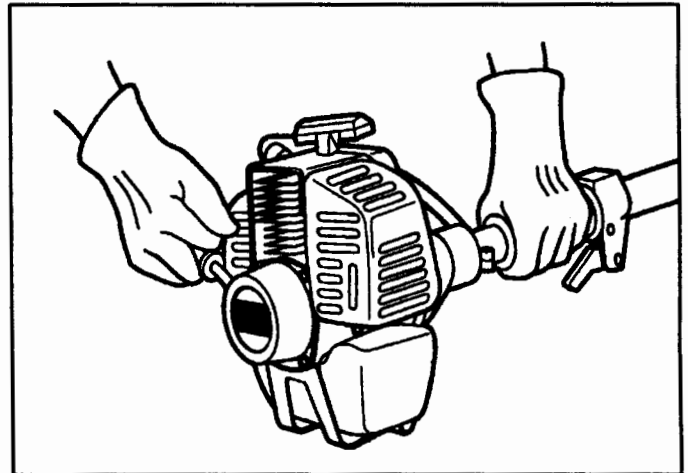
**DANGER**

**DO NOT STORE IN ENCLOSURE WHERE FUEL FUMES MAY ACCUMULATE OR REACH AN OPEN FLAME OR SPARK.**

2. Place the ignition in the "OFF" position.
3. Remove accumulation of grease, oil, dirt and debris from exterior of unit.
4. Perform all periodic lubrication and services that are required.
5. Tighten all the screws and nuts.
6. **Drain the fuel tank completely** and pull the starter handle several times to remove fuel from the carburetor.

7. 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.
8. Install the spark plug (do not connect ignition cable).

# SPECIFICATIONS

## MODEL SRM-2100/2110/2400/2410/2501/2501S/2510

Model	2100/2110	2400	2410	2501	2510	2501S
<b>Shaft Length</b>	1499 mm (59 in.)	1499mm (59 in.)	1499 mm (59 in.)	1499 mm (59 in.)	1499 mm (59 in.)	1499 mm (59 in.)
<b>Width</b>	330 mm/600 mm (13.0 in.)/(23.6 in.)	330 mm (13.0 in.)	600 mm (23.6 in.)	330 mm (13.0 in.)	600 mm (23.6 in.)	330 mm (13.0 in.)
<b>Height</b>	300 mm (11.8 in.)	360 mm (14.2 in.)	360 mm (14.2 in.)	360 mm (14.2 in.)	360 mm (14.2 in.)	360 mm (14.2 in.)
<b>Weight (dry weight w/cutter head)</b>	5.1 kg/5.5 kg (11.3 lb.)/(12 lb.)	5.5 kg (12.1 lb.)	5.8 kg (12.7 lb.)	6.0 kg (13.3 lb.)	6.3 kg (13.9 lb.)	6.1 kg (13.5 lb.)
<b>Type of Engine</b>	Air-cooled, two-stroke, single cylinder gasoline engine					
<b>Bore</b>	32.2 mm (1.268 in.)	34.0 mm (1.34 in.)	34.0 mm (1.34 in.)	32.2 mm (1.27 in.)	32.2 mm (1.27 in.)	32.2 mm (1.27 in.)
<b>Stroke</b>	26.0 mm (1.04 in.)	26.0 mm (1.04 in.)	26.0 mm (1.04 in.)	30.0 mm (1.18 in.)	30.0 mm (1.18 in.)	30.0 mm (1.18 in.)
<b>Displacement</b>	21.2 cc (1.29 cu.in.)	23.6 cc (1.44 cu.in.)	23.6 cc (1.44 cu.in.)	24.4 cc (1.49 cu.in.)	24.4 cc (1.49 cu.in.)	24.4 cc (1.49 cu.in.)
<b>Exhaust System</b>	Spark arrester muffler					
<b>Carburetor</b>	Zama diaphragm model C1U w/purge					
<b>Ignition System</b>	Flywheel magneto, capacitor discharge					
<b>Spark Plug</b>	NGK BPM-7A or Champion CJ-7Y 0.65 mm (0.026 in.)					
<b>Fuel</b>	Mixed (gasoline and oil)					
<b>Fuel/Oil Ratio</b>	50:1 ECHO High Performance, two-stroke, air cooled engine oil					
<b>Gasoline</b>	89 octane unleaded. Do not use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE.					
<b>Oil</b>	50:1 ECHO High Performance, two-stroke, air-cooled engine oil					
<b>Fuel Tank Capacity</b>	.4 lit. 13.5 oz.	.4 lit. 13.5 oz.	.4 lit. 13.5 oz.	.6 lit. 20.3 oz.	.6 lit. 20.3 oz.	.6 lit. 20.3 oz.
<b>Starter System</b>	Automatic rewind starter					
<b>Clutch</b>	Centrifugal type					
<b>Drive Shaft</b>	1/4 in. flexible shaft					7 mm Splined steel shaft
<b>Rotating Direction</b>	Clockwise viewed from top					
<b>Cutter Head</b>	Nylon line head (2-line) with .095 CROSS FIRE™ line capacity 6.5 m (20 ft.)					
<b>Loop Handle*</b>	Left — D-Loop Right — Grip - when operating with line Standard on SRM-2100, 2400, 2501, 2501S					
<b>U-Handle</b>	Standard on SRM-2110, 2410, 2510					
<b>Shoulder Harness</b>	Recommended while operating all models. Standard on all models except SRM-2100.					

\*INSTALL AND USE U-HANDLE WHEN OPERATING ANY MODEL WITH BLADE.

## PARTS CATALOG

To obtain a parts catalog send a check or money order for \$2.00 per parts book made payable to ECHO, INCORPORATED. Include a sheet of paper stating your name, address and specify

SRM-2100/2110	S/N 001001 - 085004	Part #99922202288
SRM-2100/2110	S/N 085005 & UP	Part #99922202544
SRM-2400/2410	S/N 016001 - 037399	Part #99922202347
SRM-2400/2410	S/N 037400 - 065999	Part #99922202343
SRM-2400/2410	S/N 066000 & UP	Part #99922202537
SRM-2501/2510	S/N 098802 & UP	Part #99922202538
SRM-2501S	S/N 098802 & UP	Part #99922202449

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