OPERATOR'S MANUAL

SRM-2201
SRM-2501

TRIMMER/ BRUSHCUTTER

WARNING ⚠ DANGER
READ RULES FOR SAFE OPERATION
AND INSTRUCTIONS CAREFULLY

ECHO®

INTRODUCTION

ECHO Trimmer/Brushcutter models SRM-2501 and SRM-2201 are light-weight, 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.

ECHO provides each product with a grass/weed trimmer and brushcutter safety manual. You must read the safety manual to understand the safe and effective operation of your ECHO product. If you need to obtain a copy of the grass/weed trimmer and brushcutter safety manual, please write ECHO, Incorporated, 400 Oakwood Road, Lake Zurich, Illinois 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.

CONTENTS

DECALS

FOLLOW SAFETY DECALS

Locate the safety decals on your unit. Make sure decals are legible and that you understand and follow the instructions on them. See page 3 for location of "A", "B" and "C".

A. SHAFT DECAL

— BLADE OPERATION — DANGER —

• Special precautions are necessary for Blade Operation. • Beware of "kickout" into bystanders. • Keep bystanders & helpers at least 10 meters (33 feet) away. • The blade does not stop immediately after trigger is released. • Keep hands and feet clear of blade. • Do not misuse blades. • Do not bend or stress or abuse on rocks or other solid objects. • Inspect the blade for bending or cracks that may have occurred. • Do not improperly sharpen or operate when dull, bent or cracked. • Select proper ECHO approved blades for your application. • When converting to blade operation, you must convert from a "D" handle to a special handle for blade use. • Some units require a blade conversion kit. • A harness, special blade shield, cotter pins, nut & arbors must be used for blade applications.

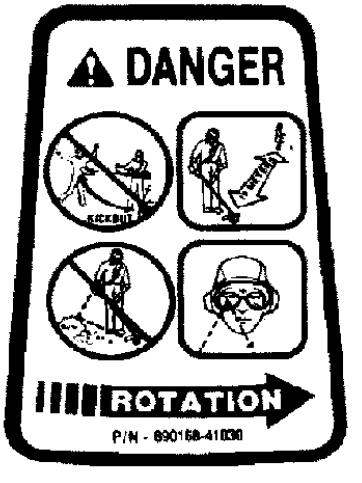
B. SHAFT DECAL

— WARNING — DANGER —

• This unit can be dangerous and can cause serious injury if improperly used. Operators, helpers and bystanders can be severely injured by thrown objects and must wear specified ANSI Z87.1 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, Illinois, 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.

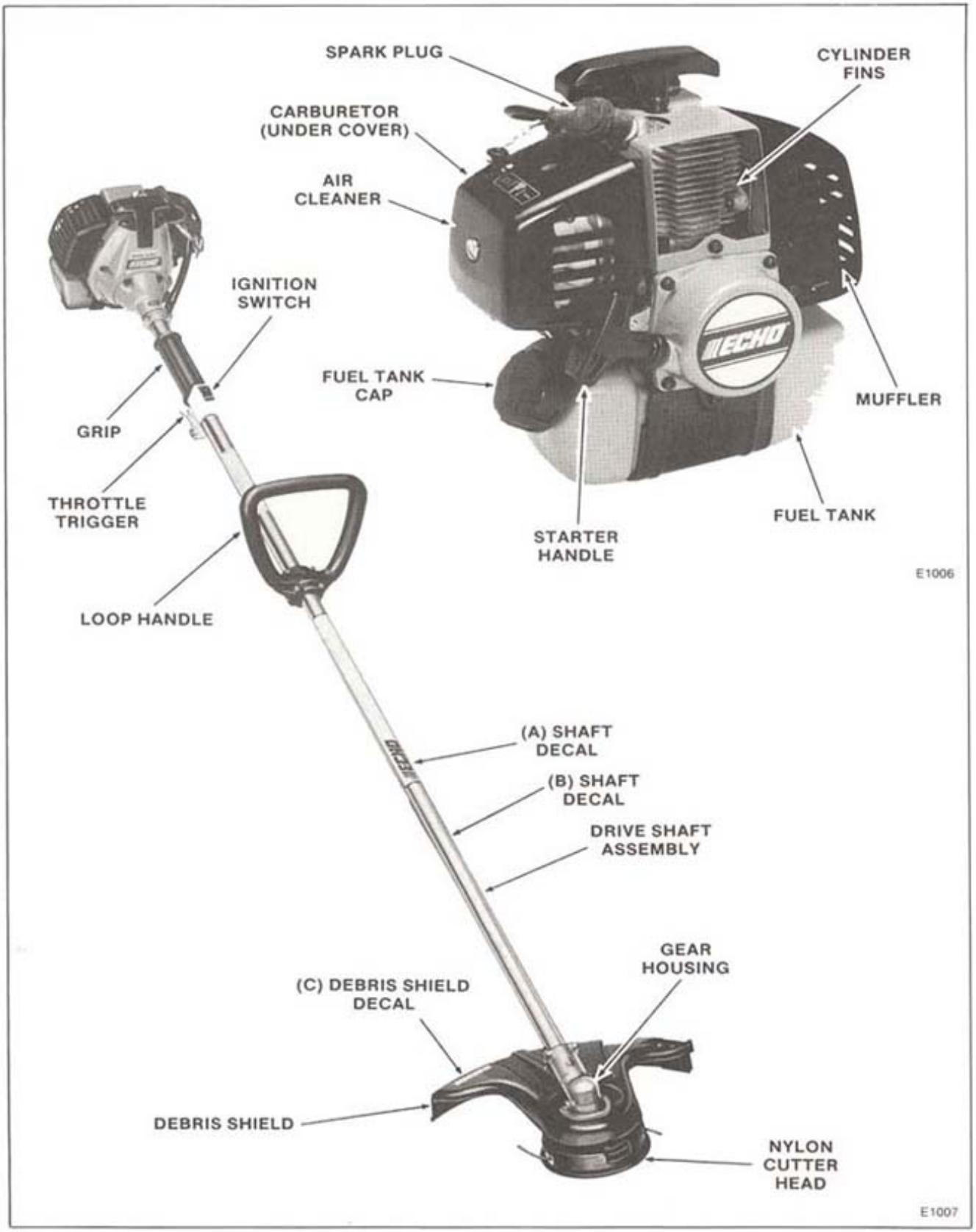
C. DEBRIS SHIELD DECAL

Plastic Debris Shield



Metal Debris Shield

DESCRIPTION



FUEL

2-STROKE FUEL (50:1 RATIO) 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.

ALTERNATE 2-STROKE FUEL (32:1 RATIO) 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.

MIXING FUEL

NOTE
Use only oils recommended in this section.

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.

STARTING AND STOPPING

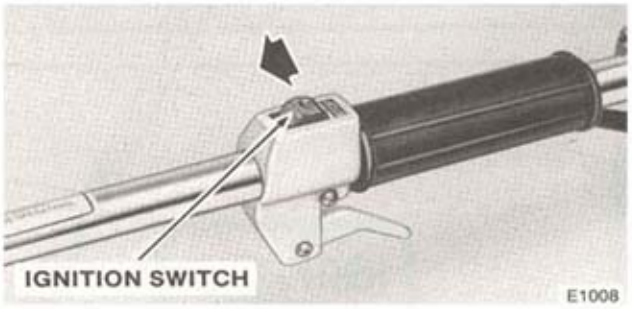
SAFE STARTING TECHNIQUES

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.
- 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.
- Always hold the unit firmly.

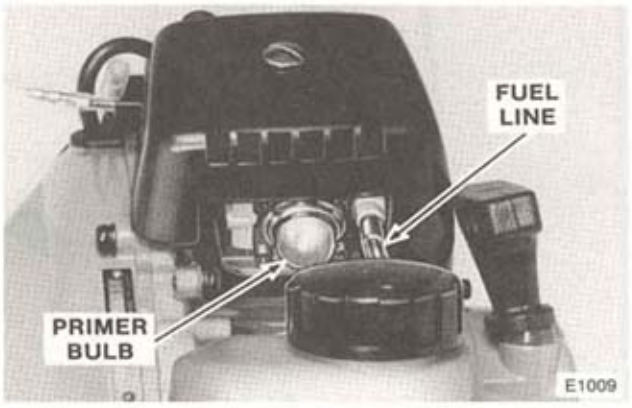
STARTING COLD ENGINE

⚠ **CAUTION**
When engine starts, the head may rotate even with trigger in low-speed position.

1. Slide ignition switch to START/RUN position.

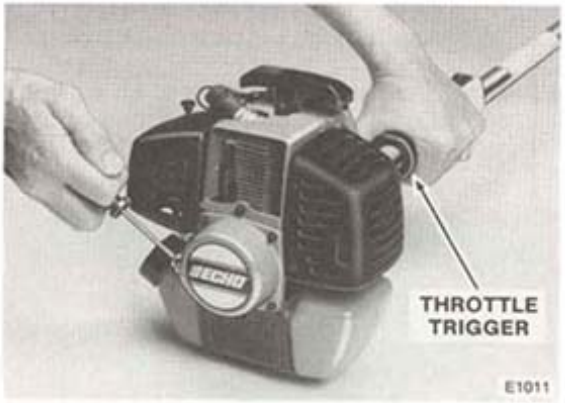


2. Push primer bulb 3 to 4 times (or until fuel is visible in fuel return line).

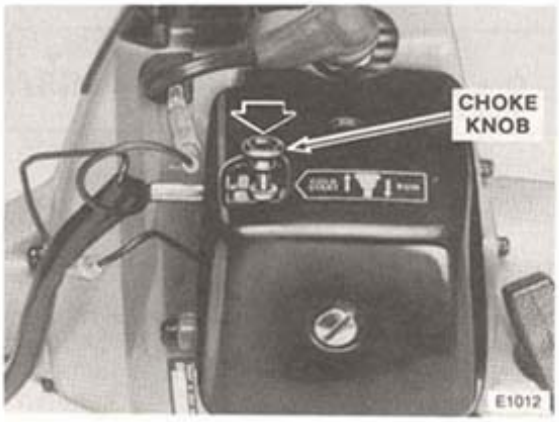


3. Pull choke knob up to COLD START (closed) position.

4. Pull starter rope until engine fires.



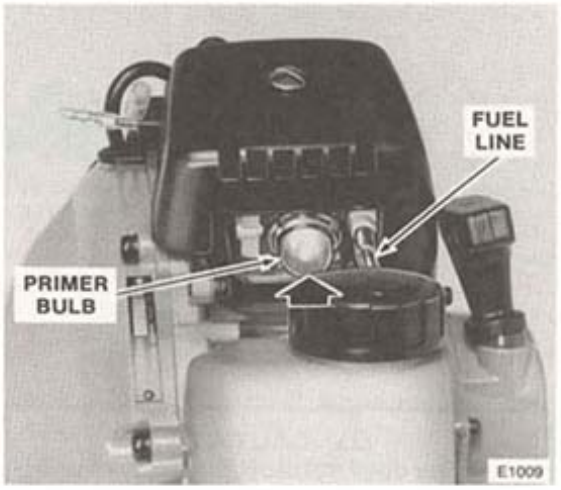
5. Push choke knob down to RUN (open) position.



6. Restart engine and allow it to warm up.
7. 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.



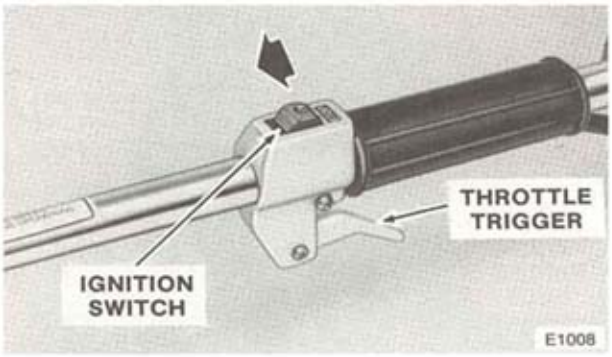
2. Slide ignition switch to START position.
3. Push choke knob in to RUN (open) position.

4. 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.

OPERATE SAFELY AND AVOID DAMAGE TO TRIMMER

- Read safety manual provided with this product.
- Keep both hands on handles when engine is running.
- 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.

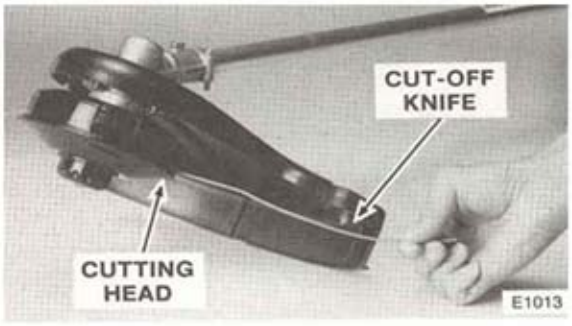
ADJUSTING LINE LENGTH

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 (Optional Blade)

BLADE TYPES

The ECHO SRM-2201 is blade convertible. A blade conversion kit and U-handle kit must be purchased and installed to use metal blades. The ECHO SRM-2501 is blade capable. A U-handle kit must be purchased and installed to use metal blades.

USE CORRECT BLADE

⚠ DANGER

- **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.**

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.
- You must use a U-HANDLE KIT with metal blades. See Page 15.
- Always use the steel debris shield with metal blades.
- Refer to page 2 for safety decals on shaft and shield.
- Keep bystanders 33 feet from operator.

USING SHOULDER HARNESS (Optional Equipment SRM-2201)

⚠ 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.

⚠ CAUTION

In case of an emergency, pull the quick-release pin to disconnect the trimmer from the harness.

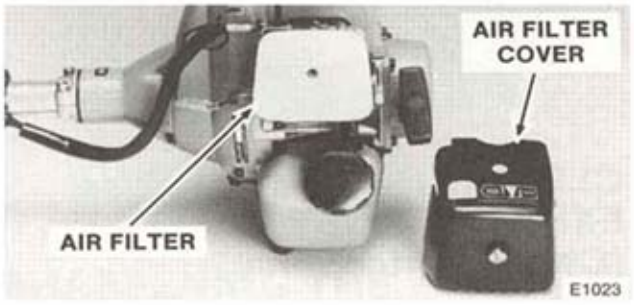
TROUBLESHOOTING

TROUBLE	CAUSE	REMEDY
1. Engine fails to start.	No fuel in tank.	Fill tank.
	Strainer clogged.	Replace strainer.
	Fuel line clogged.	Clean fuel line.
	Spark plug shorted or fouled.	Install new spark plug.
	Spark plug broken (cracked porcelain or electrodes broken).	Replace spark plug.
	Ignition lead wire shorted, broken or disconnected from spark plug.	Replace lead wire or attach to spark plug.
	Ignition inoperative (no spark from lead wire).	Contact your nearest authorized dealer.
2. Engine hard to start.	Water in gasoline or stale fuel mixture.	Drain entire system and refill with fresh fuel.
	Too much oil in fuel mixture.	Drain and refill with correct mixture.
	Engine over or under choked.	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.
	Carburetor out of adjustment.	See "Carburetor Adjustment."
	Gasket leaks (carburetor or cyl. base gasket).	Replace gaskets.
	Weak spark at spark plug.	Contact your nearest authorized dealer.
3. Engine misses.	Dirt in fuel line or carburetor.	Remove and clean.
	Carburetor improperly adjusted.	See "Carburetor Adjustment" in service section.
	Spark plug fouled, broken or incorrect gap setting.	Clean or replace spark plug - set gap to 0.6-0.7 mm (0.024-0.028 in.).
	Weak or intermittent spark at spark plug.	Contact your nearest authorized dealer.
4. Engine lacks power.	Air cleaner clogged.	Clean air cleaner.
	Carburetor out of adjustment.	See "Carburetor Adjustment."
	Muffler clogged.	Clean carbon from muffler.
	Clogged exhaust ports.	Remove muffler, rotate engine until the piston is at top 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.
	Poor compression.	Contact your nearest authorized dealer.
5. Engine overheats.	Insufficient oil in fuel mixture.	Mix fuel as shown in starting instructions.
	Air flow obstructed.	Clean flywheel and cylinder fins and screen.
6. Engine noisy or knocking.	Loose flywheel.	Tighten flywheel nut.
	Spark plugs incorrect heat range.	Replace with plugs specified for engine.
	Worn bearings, piston rings or cylinder walls.	Contact your nearest authorized dealer.
7. Engine "stalls" under load.	Carburetor main adjustment too "lean."	See "Carburetor Adjustment."
	Engine overheats.	See "Cleaning Cylinder Fins" in service section.

SERVICE

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.

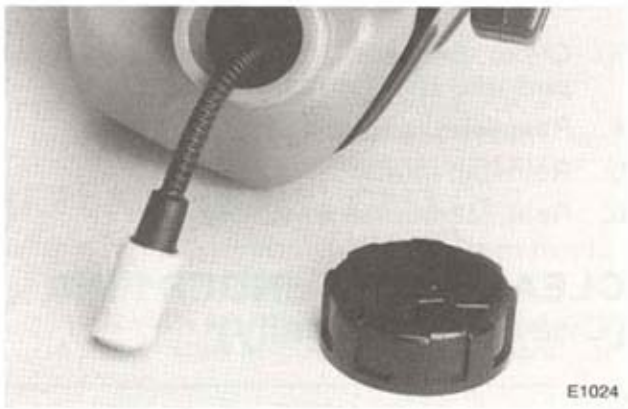
3. Brush dirt from filter or wash it in a suitable cleaner.

> NOTE
> Allow all parts to air dry.

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

REPLACING FUEL FILTER (Check Periodically)

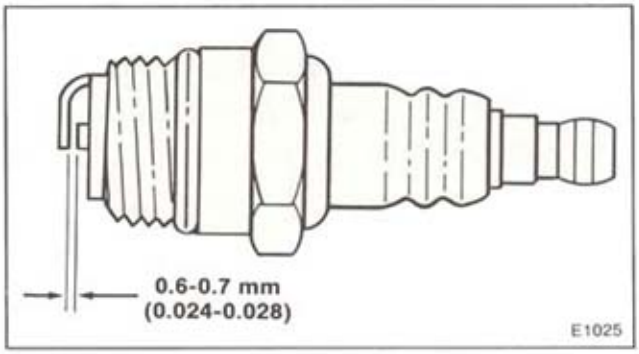
1. Pick up fuel filter through fuel tank opening with a piece of steel wire.



2. Remove old filter.
3. Install new filter.

CHECK SPARK PLUG (Check Periodically)

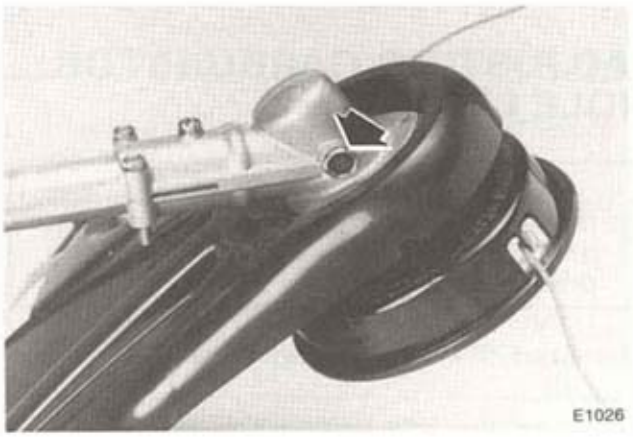
1. Check plug gap of 0.6-0.7 mm (0.024-0.028).



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.

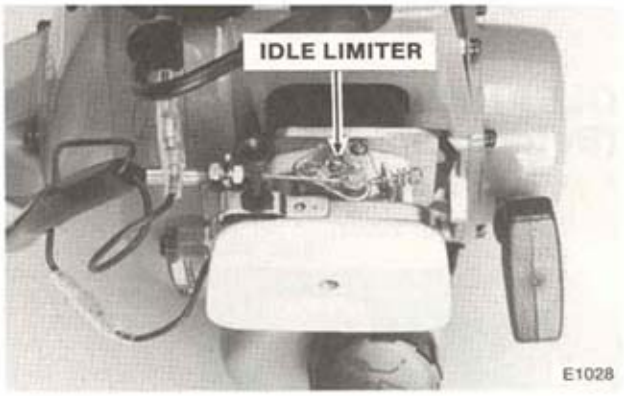
3. Turn the screw counterclockwise one turn.

ADJUSTING CARBURETOR IDLE LIMITER

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

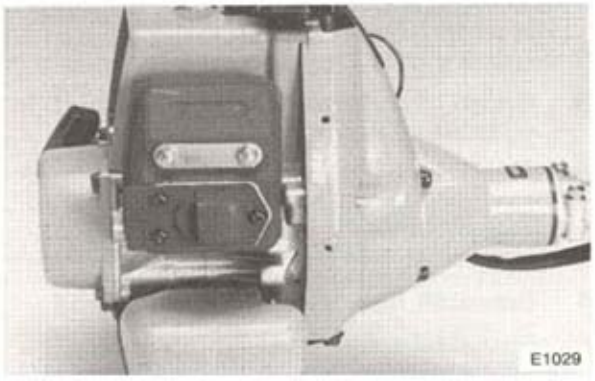
1. Start the engine and allow it to warm up.
2. Turn the idle limiter one or two steps clockwise to get leaner condition or one or two steps counterclockwise to obtain richer condition.
3. Recheck idle and reset idle adjustment screw if necessary.

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.

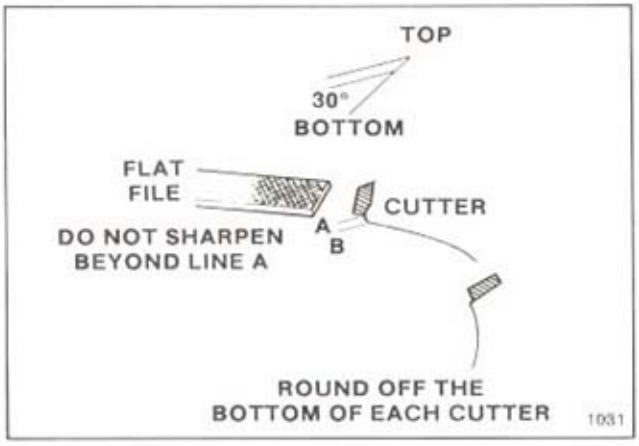
1. Remove dust and dirt from between fins.

SHARPENING THE OPTIONAL 8-TOOTH BLADE

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

NOTE
Sharpen each cutter equally.

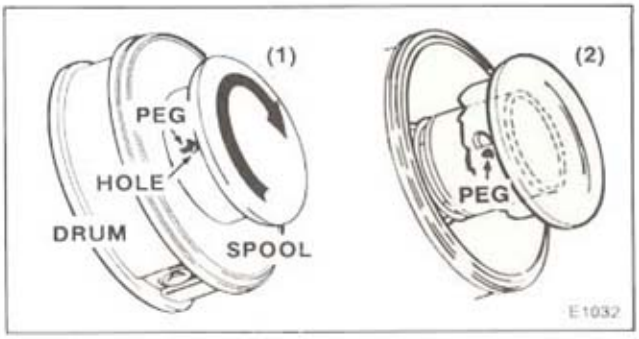
NOTE
If using a grinder, do not cool blade abruptly by immersing it in water.



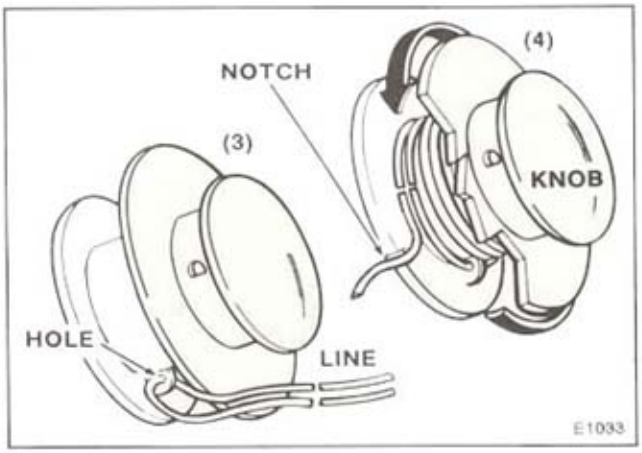
REPLACING NYLON LINE

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.

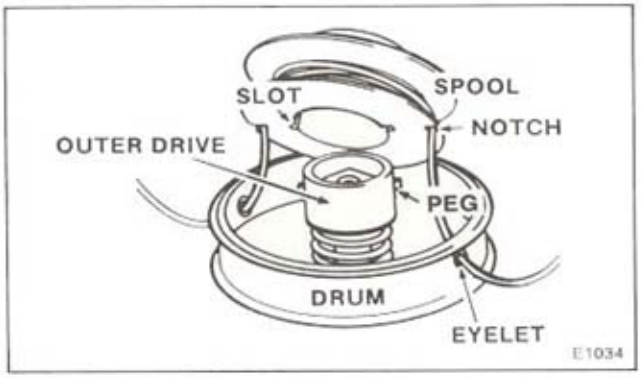
NOTE
If not replacing line, go to Step 5.



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, counterclockwise, tightly and evenly without twisting, in direction of arrow marked "cc" on spool.



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.

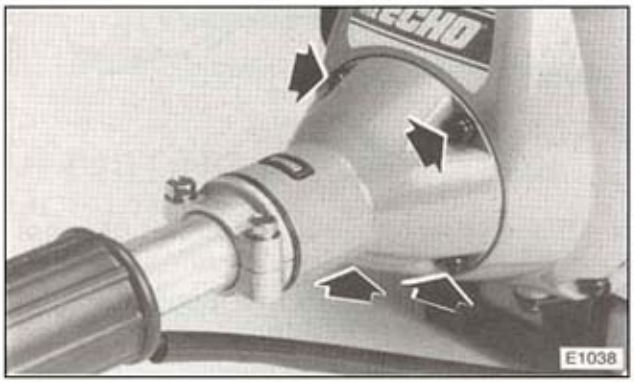


9. Pull both lines to disengage from notches in spool.
10. Hold drum firmly, twist spool sharply until peg goes into hole with a click and locks spool to drum.
11. Cut lines to 4".

ASSEMBLY

ASSEMBLING DRIVE SHAFT

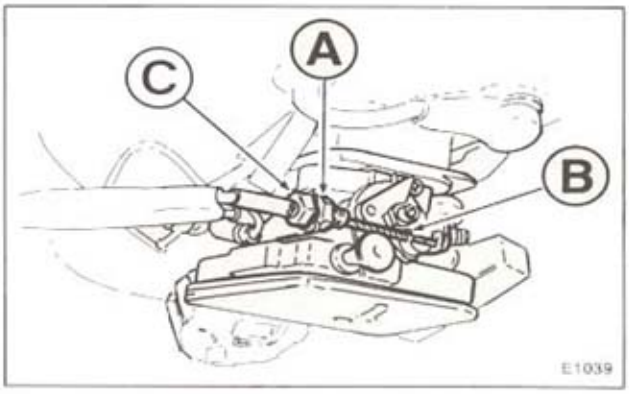
1. Stand engine upright on a level floor.
2. Fit drive shaft assembly to the engine. (Make sure gear housing is aligned properly. Refer to page 3.)
3. Secure drive shaft assembly to engine with screws.



ASSEMBLING THROTTLE CABLE

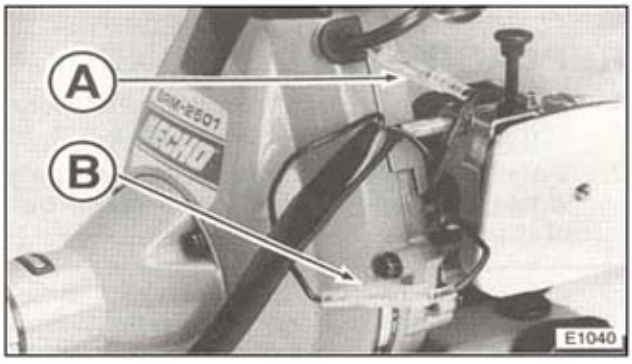
NOTE
The engine is delivered with the throttle cable (engine side) separated.

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.



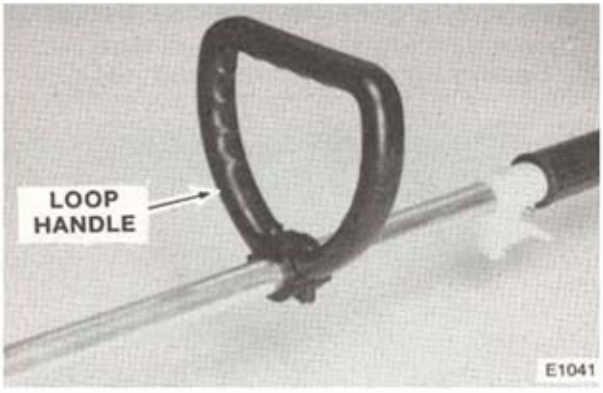
CONNECTING LEADS

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



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)

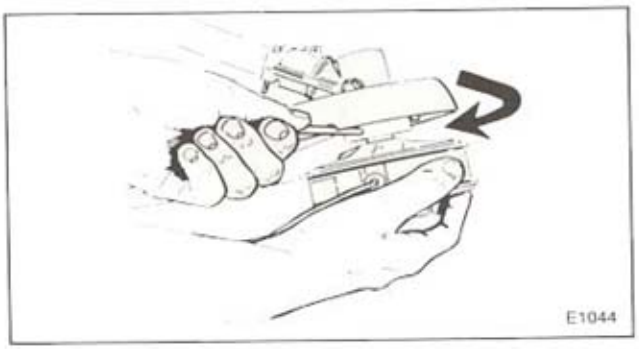
1. Fit the shield to the gear housing.
2. Place shield plate on shield.

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

3. Secure shield with screws.

INSTALLING NYLON LINE CUTTER HEAD

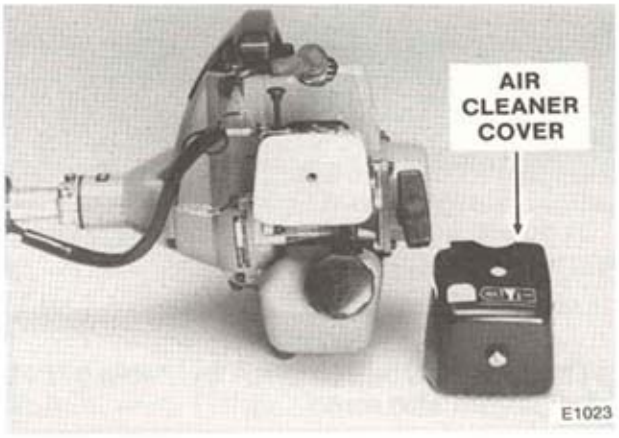
1. Align hole in adapter plate with hole in shaft and install locking tool.
2. Thread cutter head onto shaft (turning it counterclockwise) until it is tight.



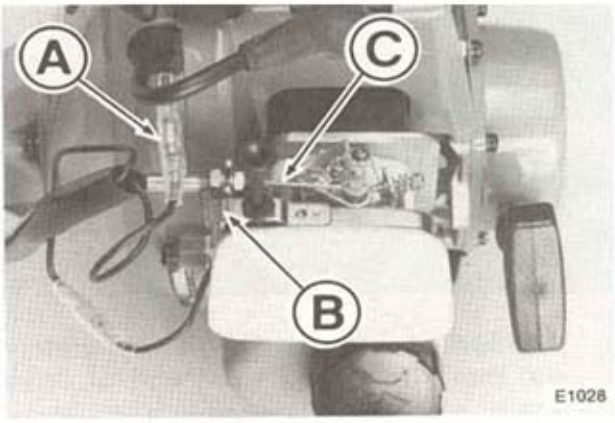
3. Remove locking tool.

INSTALLING OPTIONAL U-HANDLE KIT

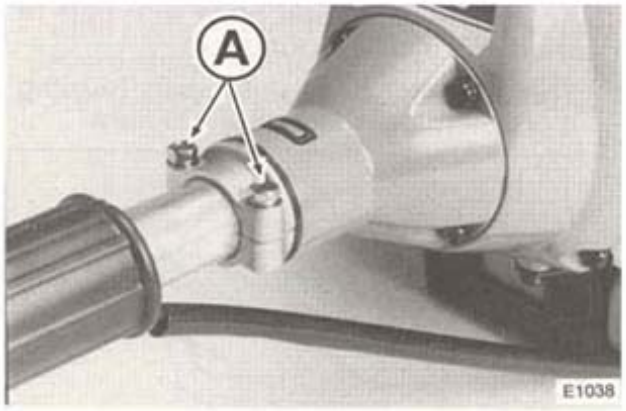
1. Remove air cleaner cover.



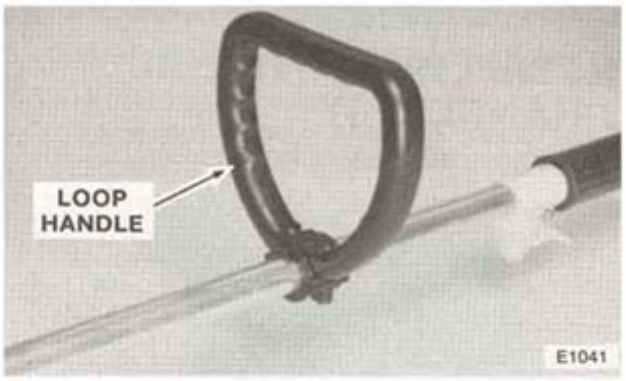
2. Disconnect stop lead (A), ground lead (B) and throttle cable (C) from engine.



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

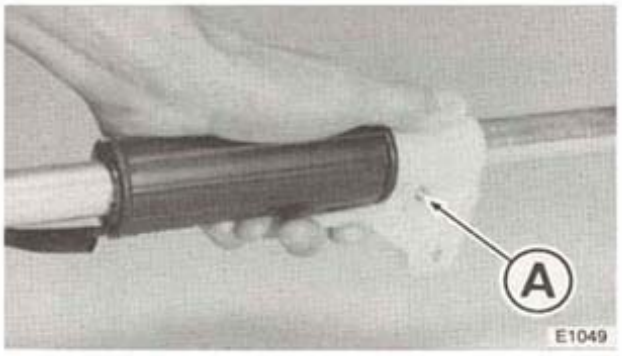


4. Remove loop handle.



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.

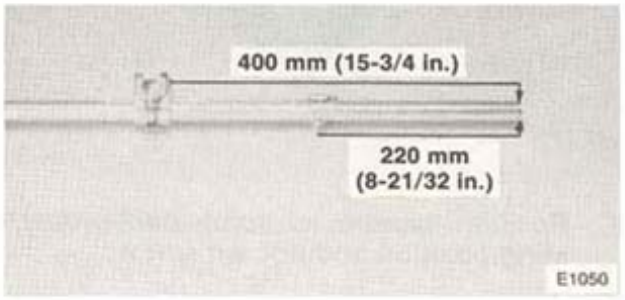


6. Position handle bracket approximately 400 mm (15-3/4 in.) from end of drive shaft.

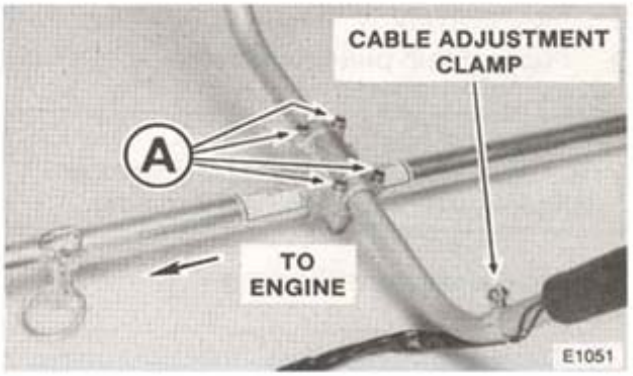
7. Secure handle bracket with screws.

8. 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.

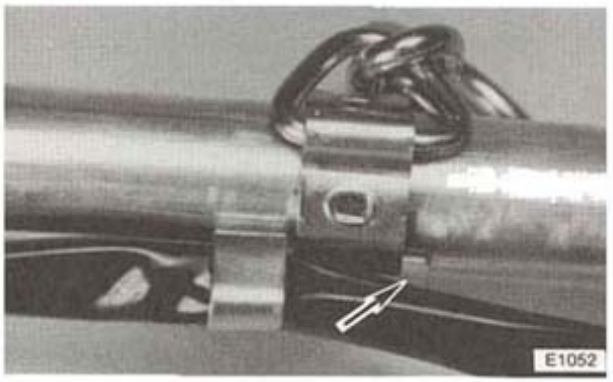
9. Secure hook with screw and nut.



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

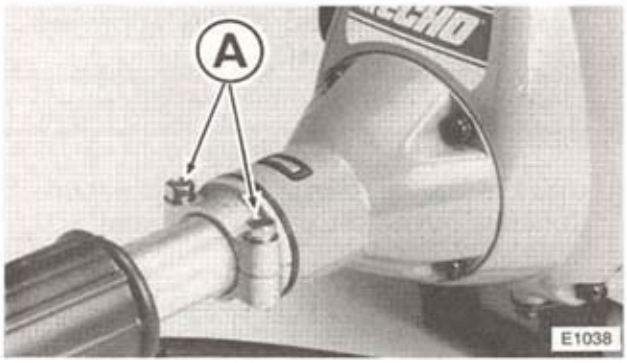


11. Secure throttle cable and leads to drive shaft by sliding wedge under harness hook.

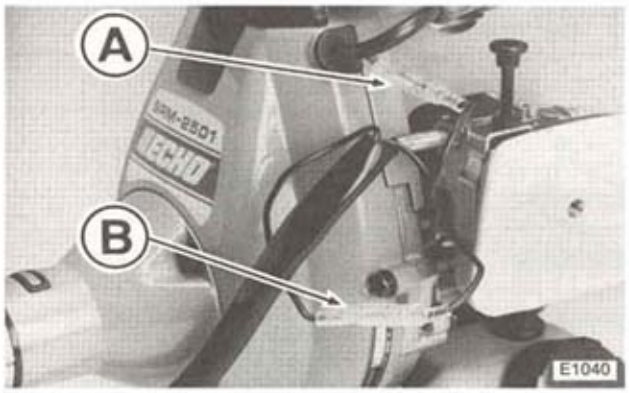


12. Slide drive shaft assembly into clutch case and tighten screws (A).

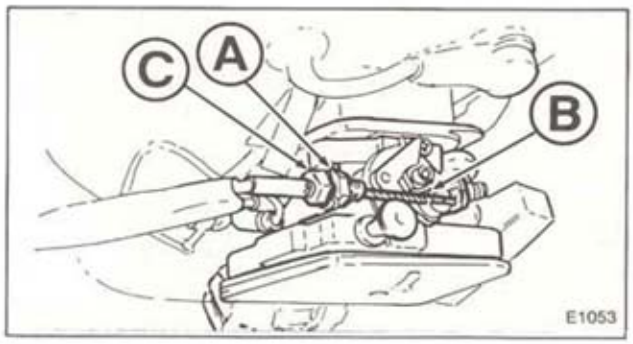
> NOTE
> Make sure shaft engages clutch and that gear housing is straight in line with engine.



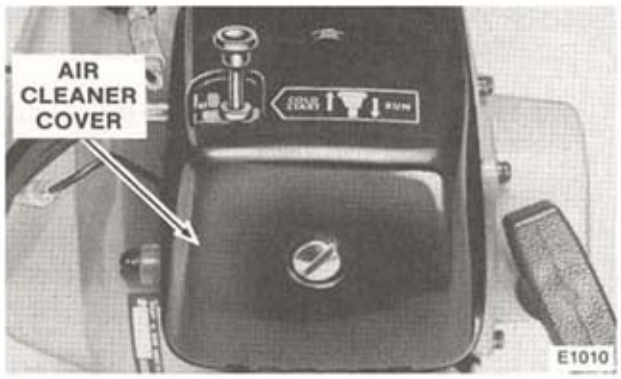
13. Connect stop switch lead (A).
14. Connect ground lead (B).



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



20. 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 (cable adjustment clamp). Consult your servicing dealer for correct adjustment in this case.
21. Install air cleaner cover.



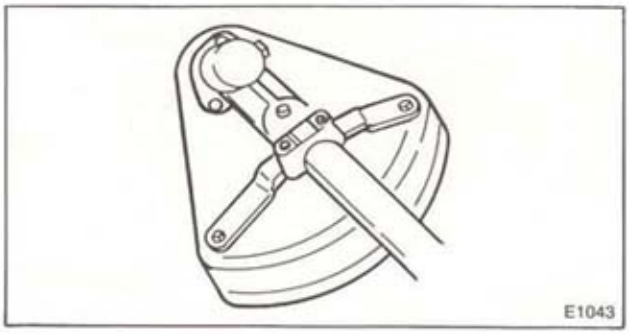
INSTALLING BLADE CONVERSION KIT (Optional For SRM-2201)

You MUST install U-Handle Kit (as described on page 13) to operate this unit with optional Metal Blade. If you are installing both the U-Handle Kit and the blade conversion kit, the large hook for the harness in the U-Handle Kit is not needed (Nylon head operation only). Use the smaller hook provided.

If necessary, remove nylon head and plastic shield. Follow previous procedures in reverse order. (Refer to page 13)

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 BLADE ADAPTER KIT (STD on SRM-2501) AND OPTIONAL BLADE (METAL OR TRI-CUT)

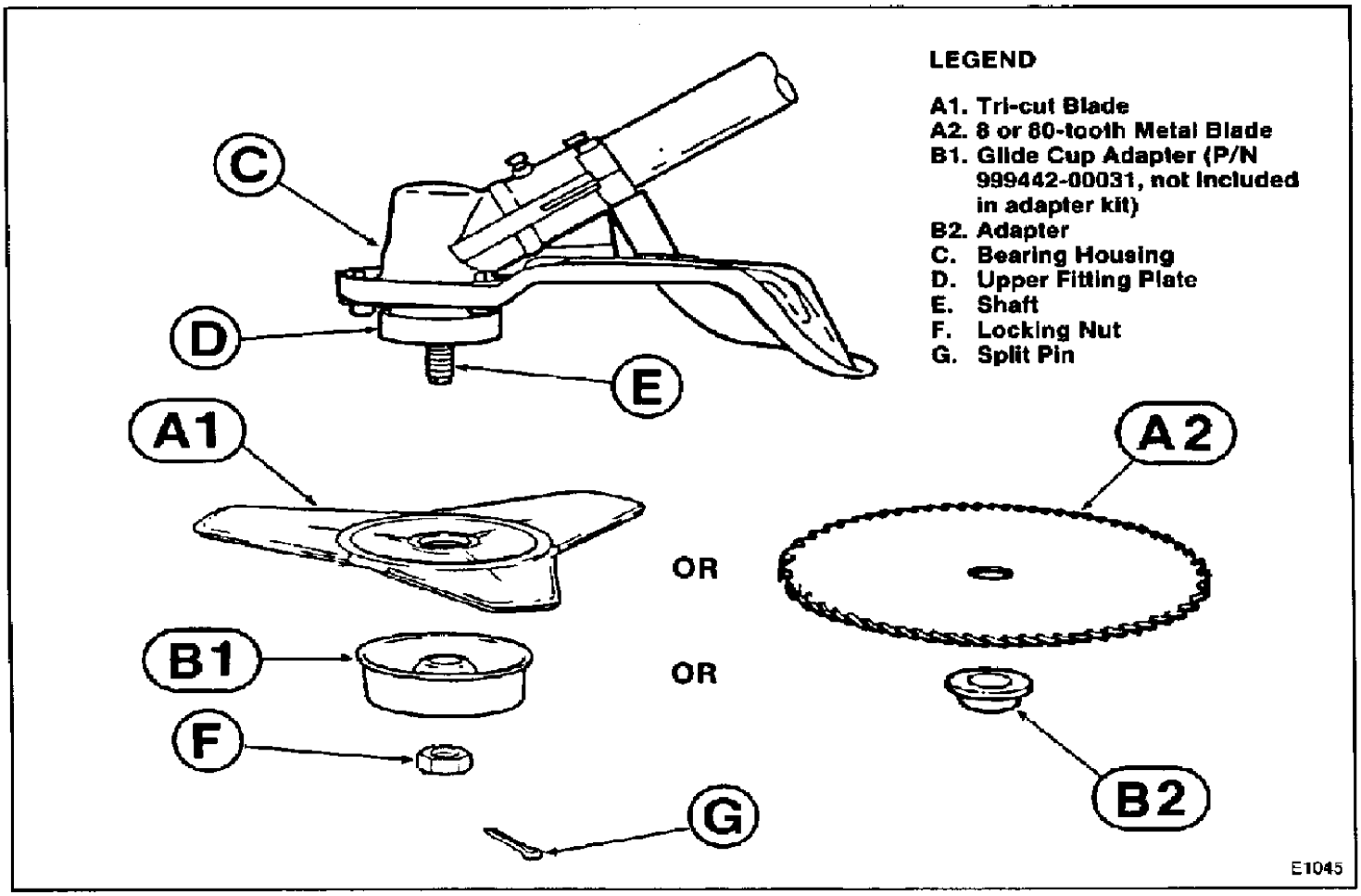
1. Install upper fitting plate (D) on shaft from bearing housing.
2. Install either Tri-cut blade (A1); or the 8 or 80-tooth metal blade (A2) on shaft.
3. Then install either the glide cup adapter (B1) for Tri-cut blade; or adapter (B2) for metal blade.
4. Align hole in adapter plate with hole in bearing housing (C) and insert locking tool.
5. Place locking nut (F) on shaft (E) and rotate counter-counterwise to tighten.
6. Install split pin (G) in hole of shaft and bend over to prevent it from coming off.

NOTE
Always use ECHO approved metal blades with 20 mm arbors on these units.

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

NOTE
Always use a new split pin to secure locking nut. Split pin 2 x 22 mm 900 300-2002 2.

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

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.

APPLICATION GUIDE & ACCESSORY QUICK REFERENCE CHARTS

TRIMMERS/BRUSHCUTTERS

CUTTING HEAD APPLICATIONS	Grass	Light weeds	Heavy weeds (less than 1/4")	Brush (up to 3")	Clearing saplings
GT Echomatic Head GT Series	■	■			
SRM Echomatic Head SRM Series	■	■	■		
Heavy Duty Manual Head SRM Series	■	■	■		
Maxi-Cut Weed Cutter All Units	■	■	■		
Plastic Blade SRMs 3000 & up		■	■		
8 Tooth Knife Blade SRMs Only			■	■	
Brush Blade & 24 Tooth Blade SRMs Only				■	■

SPECIFICATIONS
MODEL SRM-2201 AND 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) Model 2201 Model 2501	 12.1 lbs. 13.5 lbs.
Type of Engine	Air-cooled, two-stroke, single-cylinder, gasoline engine
Bore	32.2 mm (1.268 in.)
Stroke Model 2201 Model 2501	 26.0 mm (1.024 in.) 30.0 mm (1.17 in.)
Displacement Model 2201 Model 2501	 21.2 cc (1.294 cu. in.) 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 Model 2201 Model 2501	 0.45 lit. (15.2 oz.) 0.60 lit. (20.3 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
Handle	Left — D-loop Right — grip
Gear Case	1:1.4 reduction
Anti-Vibration System	Rubber cushion