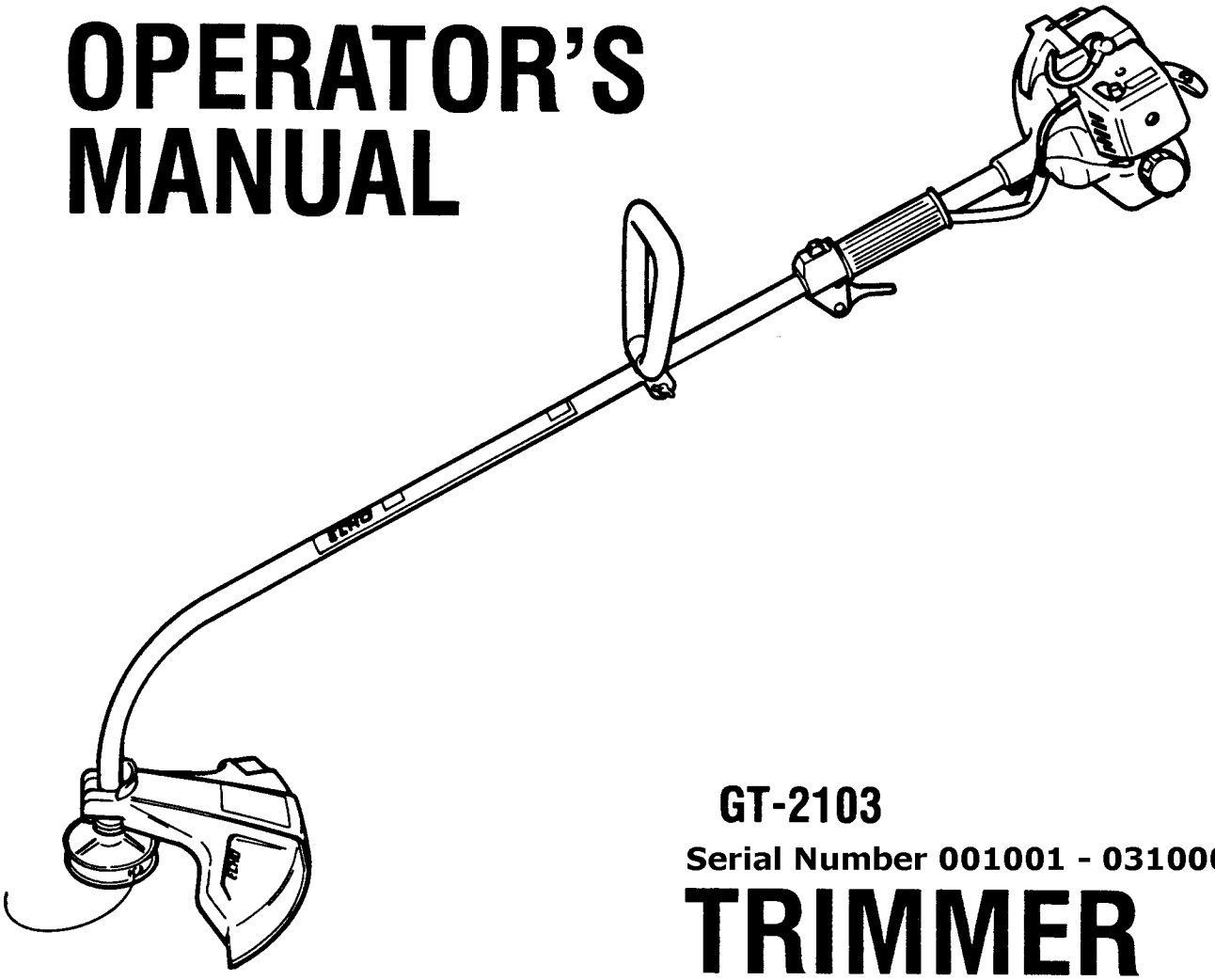
OPERATOR'S MANUAL



GT-2103

Serial Number 001001 - 031000

TRIMMER

⚠ DANGER
READ RULES FOR SAFE OPERATION
AND INSTRUCTIONS CAREFULLY

ECHO®

999222-01724
11/89/25M

INTRODUCTION

The ECHO GRASS Trimmer model GT-2103 is a light-weight, high-performance, gasoline powered unit designed for grass trimming 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

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

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.

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" and "B".

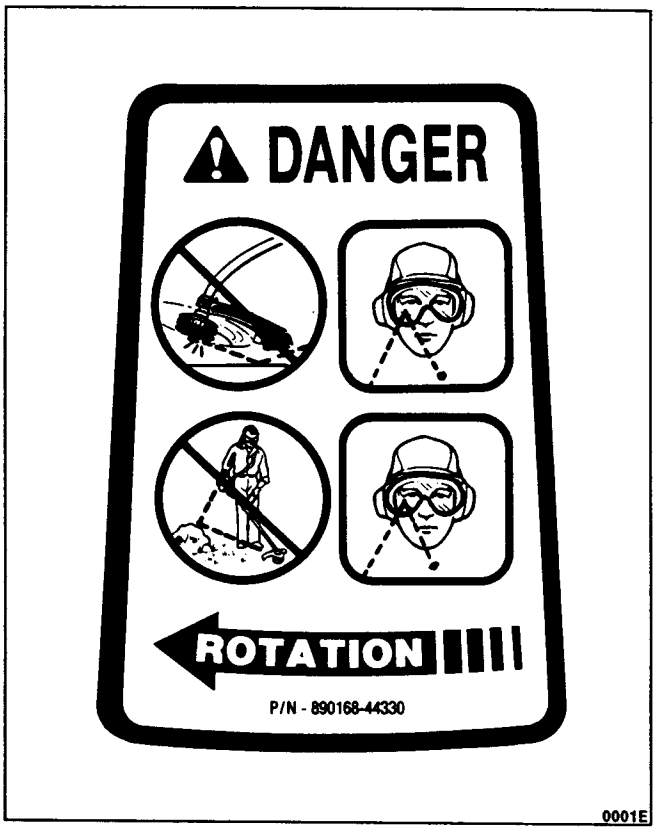
A. SHAFT DECAL

— WARNING—DANGER —

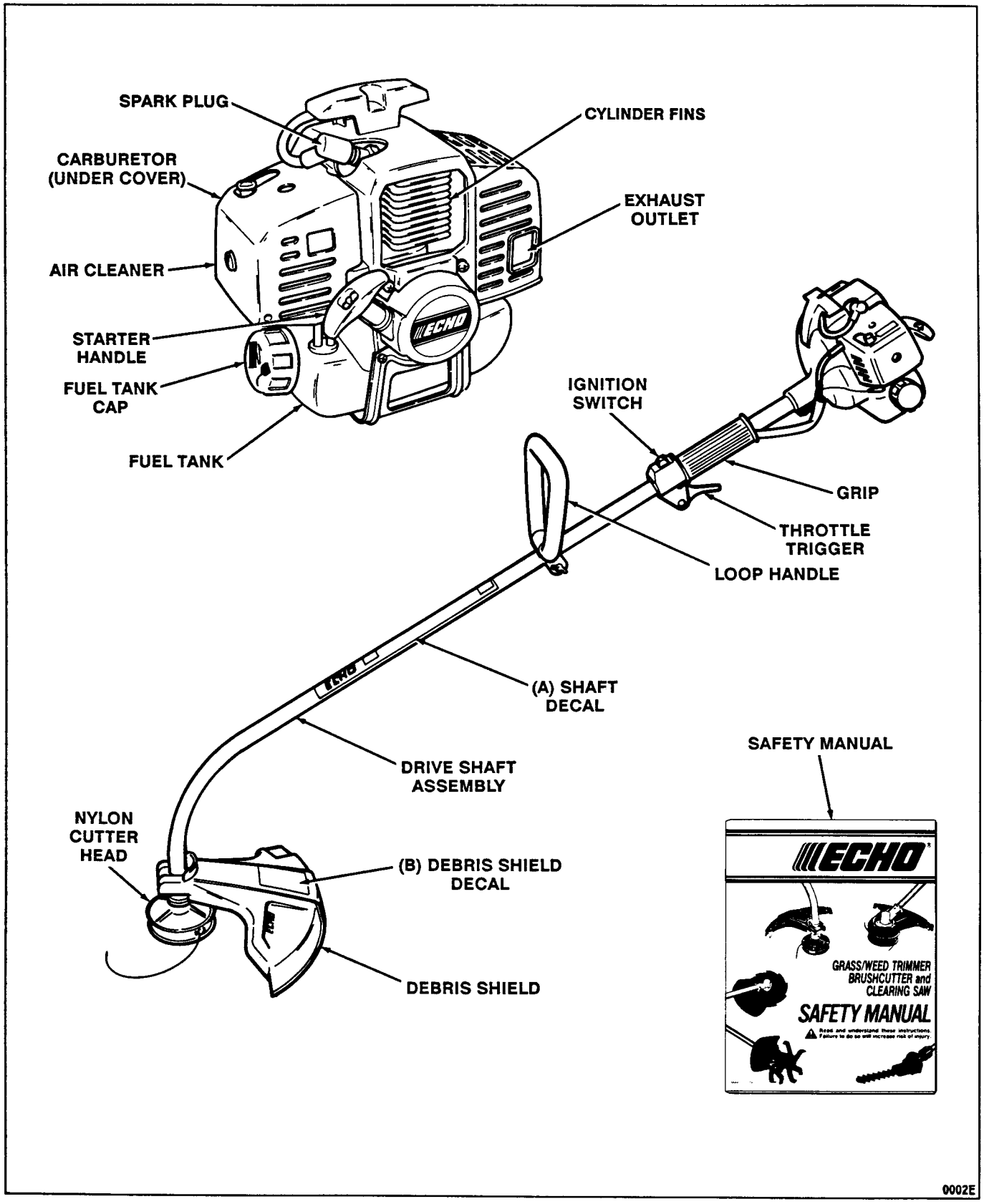
- **This unit can be dangerous and can cause serious injury if improperly used. Operators, helpers and bystanders can be severely injured by thrown objects and must wear specified ANSI Z87.1 eye protection. Blindness or loss of eye can occur. Do not rely on cutter head shield to protect eyes. Ricochet 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.**

P/N - 890160-44430

B. DEBRIS SHIELD DECAL



DESCRIPTION



OPERATION

2-STROKE FUEL (50:1 RATIO) ECHO BRANDED ENGINE OIL

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

ALTERNATE 2-STROKE FUEL (32:1 RATIO) ECHO OIL BRANDED ENGINE OIL

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

NOTE

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

Use only oils recommended in this section.

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

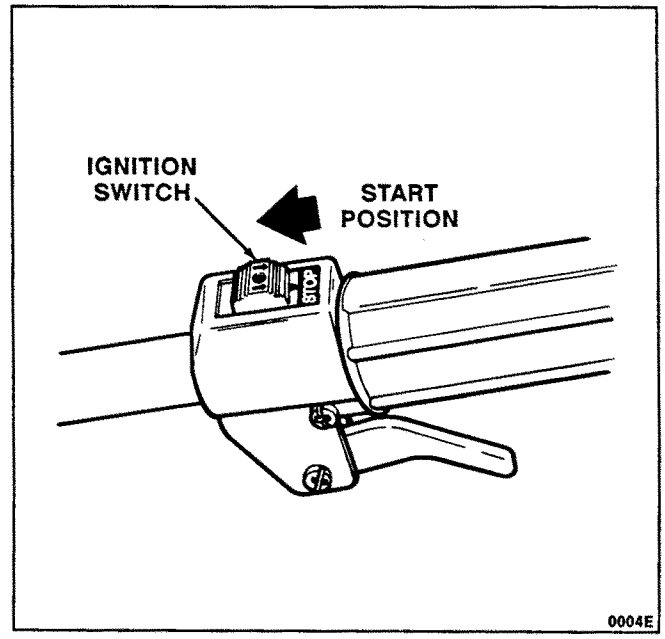
- Check unit for loose nuts, bolts and screws before starting before starting.
- Always clear work area of debris before starting operation.
- Always hold the unit firmly.
- When pulling starting rope, use short pulls, 1/2 to 2/3 of rope length.
- Do not allow the starter handle to snap back against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

STARTING COLD ENGINE

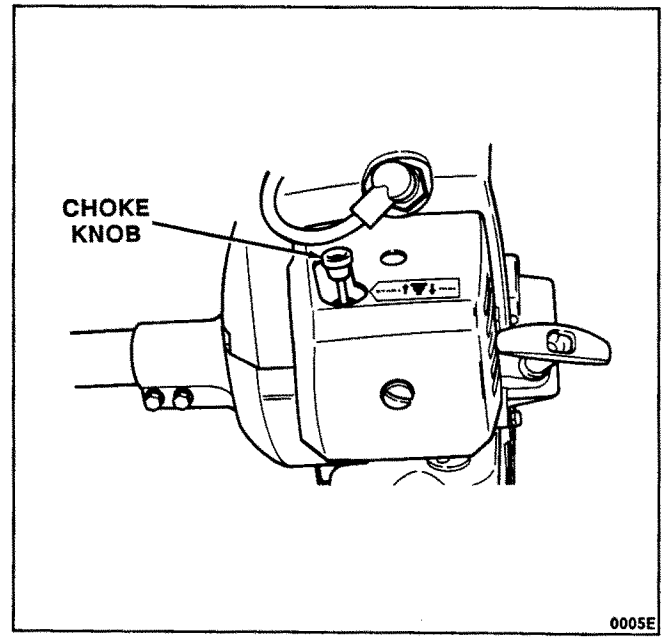
⚠ DANGER

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

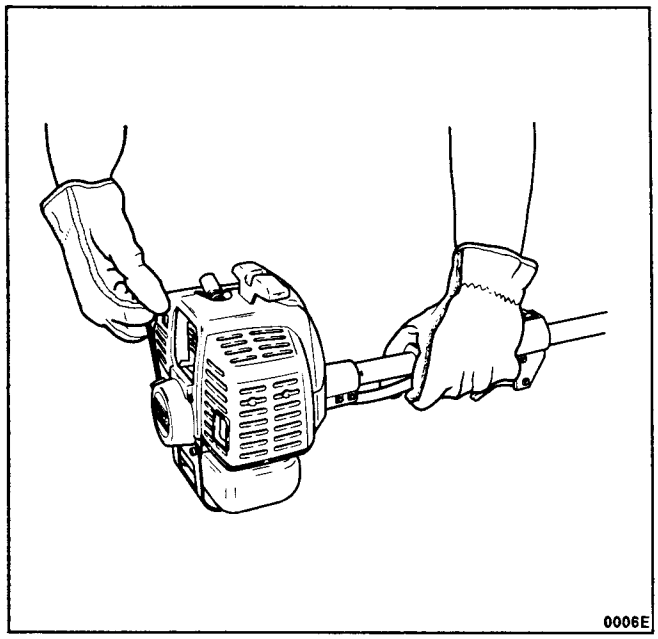
1. Slide ignition switch forward to START/RUN position.



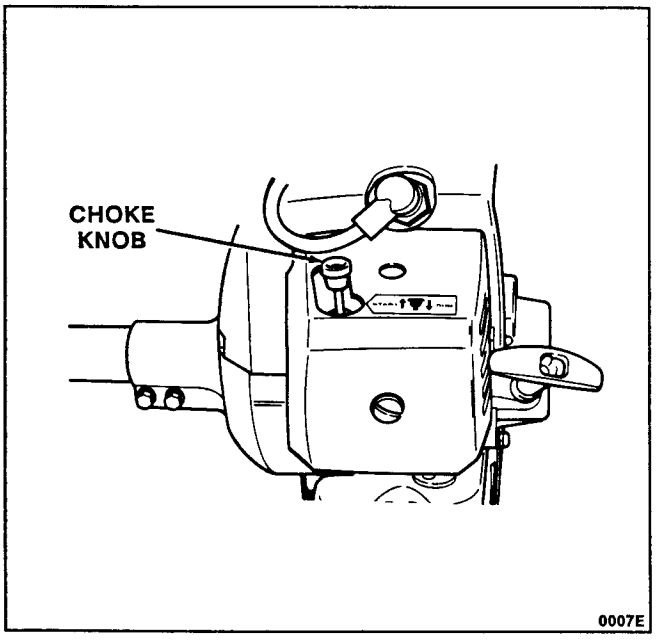
2. Pull choke knob up to START (closed) position.



3. Pull starter rope until engine fires.



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



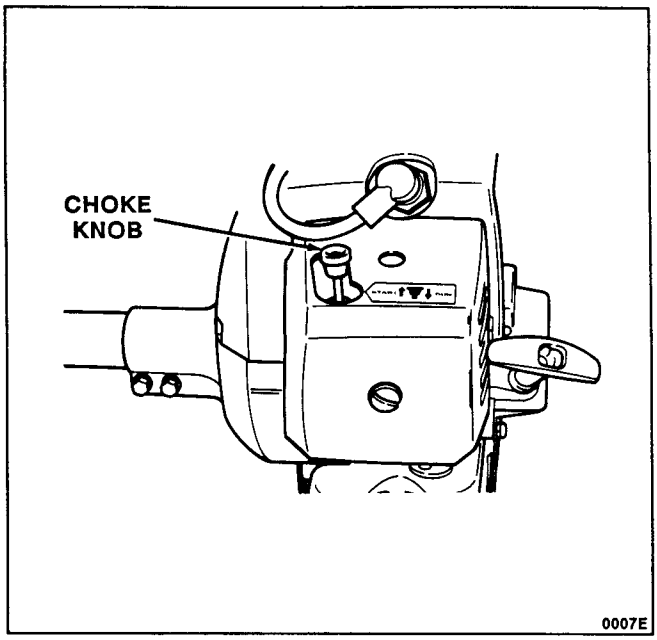
5. Restart engine and allow it to warm up.

6. Squeeze throttle trigger gradually.

STARTING WARM ENGINE

1. Slide ignition switch forward to START/RUN position.

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



3. Pull starter rope.

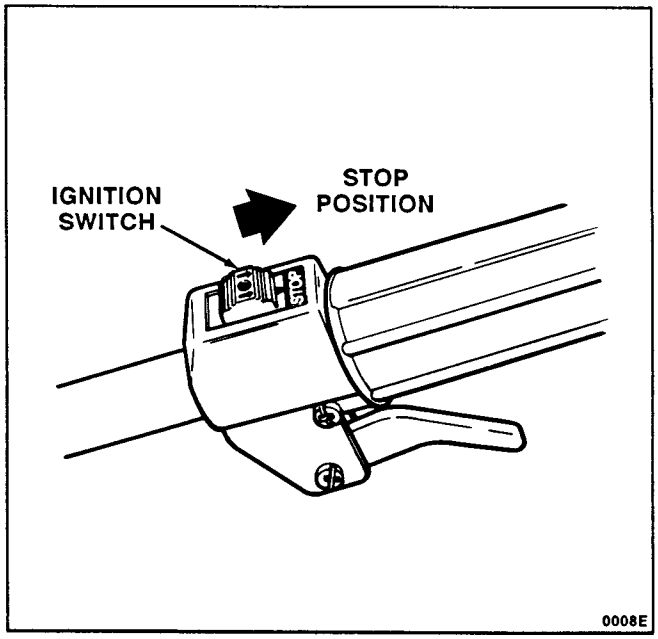
NOTE

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 rearward to STOP position.

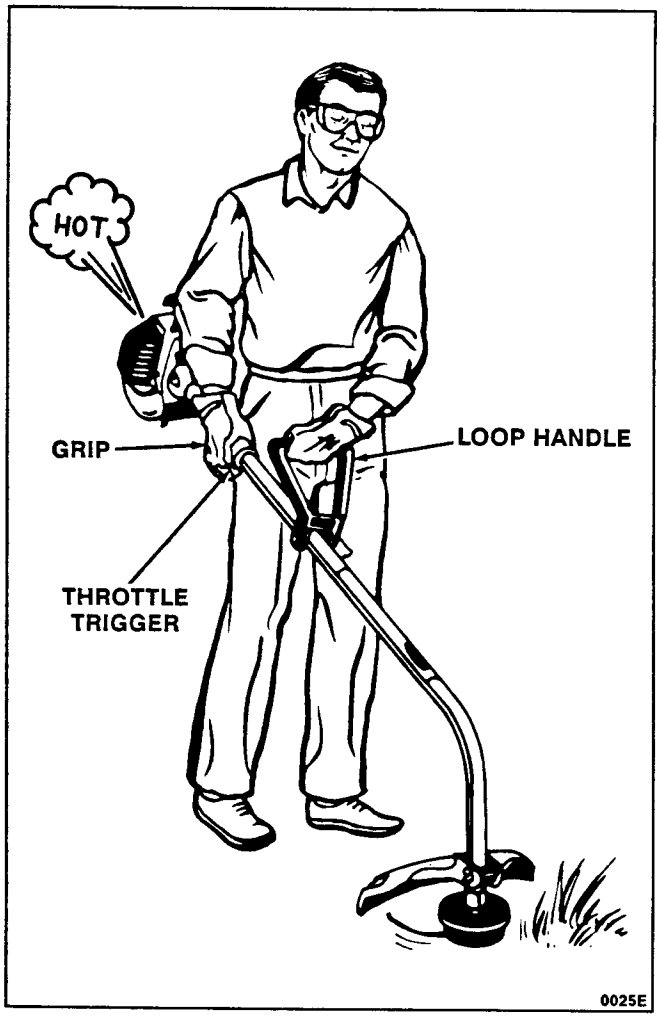


⚠ **DANGER**

If engine does not stop, pull choke knob up to START position. Check and replace stop switch before starting engine again.

OPERATE SAFELY AND AVOID DAMAGE TO TRIMMER

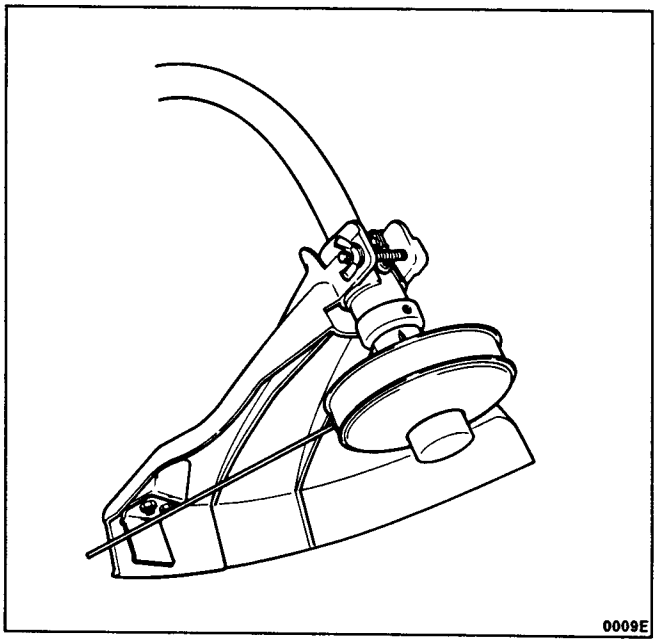
- Read safety manual provided with this product.
- Hold grip and operate throttle trigger with right hand.
- Hold loop handle with left hand.
- Keep right hand on grip and left hand on loop handle when engine is running.
- Avoid hot exhaust when operating trimmer.



- Always wear hearing protection if you use this tool for more than 1 1/2 hours per day. This is based on the Occupational Safety and Health act of 1970. The allowable hours of use could be reduced if guidelines are revised, therefore we recommend hearing protection at all times.
- 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.). Measured from cut-off knife to edge of cutting head.



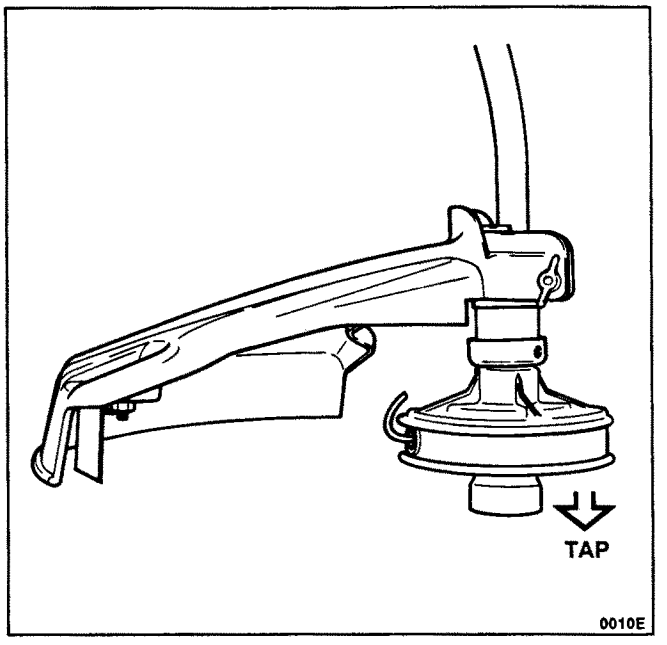
NOTE

Line cutting is done with the tip of the line. Cutting with entire length of 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.



TROUBLESHOOTING

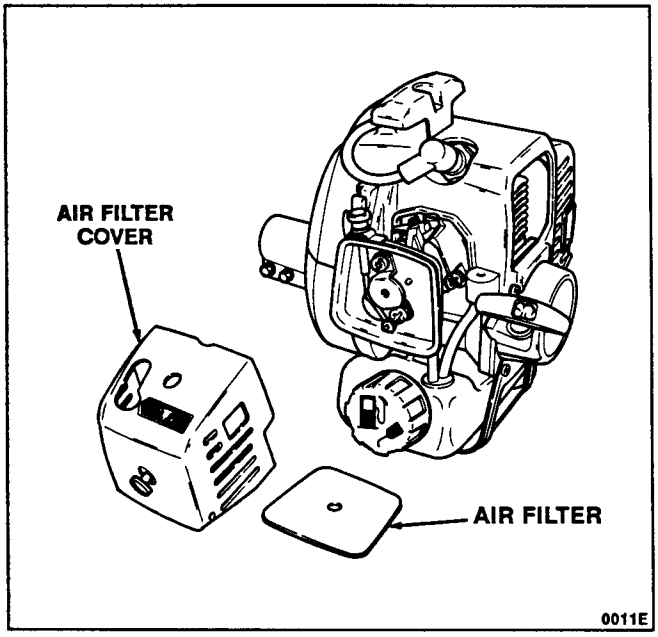
TROUBLE	CAUSE	REMEDY
1. Engine fails to start.	No fuel in tank.	Fill tank.
	Strainer clogged.	Replace strainer.
	Fuel line clogged.	Clean fuel line.
	Spark plug shorted or fouled.	Install new spark plug.
	Spark plug broken (cracked porcelain or electrodes broken.)	Replace spark plug.
	Ignition lead wire 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: a. Make certain choke is open. b. Check that ignition switch is in START/RUN position. c. Hold throttle full open and pull starter rope until engine fires. d. If engine fails to start after 10—15 tries, refer to Trouble 1. If under choked, move choke knob 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 wall.	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. Close choke.
   Loosen screw and remove air filter cover.

2. Remove air filter (element is in the cover).



NOTE

If filter is excessively dirty or no longer fits properly, replace it.

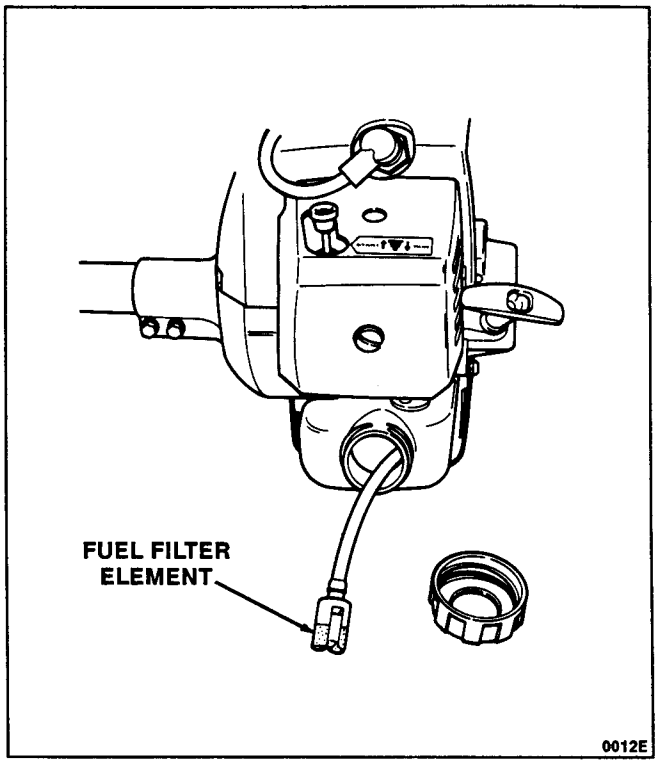
3. Brush dirt from filter or clean with compressed air.

4. Reinstall filter in cover.

5. Reinstall cover and tighten screw.

REPLACING FUEL FILTER (Check Periodically)

1. Use a piece of steel wire to pick up fuel filter through fuel tank opening.

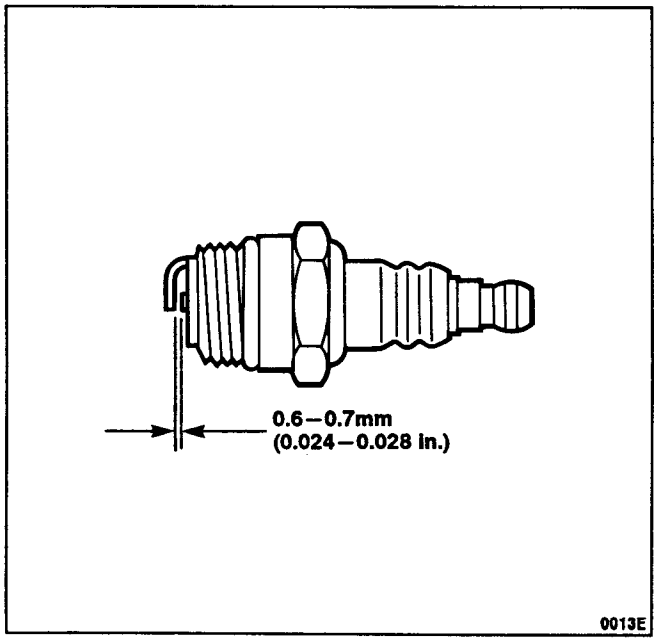


2. Pull old filter from fuel line.

3. Install new filter element.

CHECK SPARK PLUG (Check Periodically)

1. Check plug gap. Correct gap is 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, tighten to 145 – 155 kg – cm (125 – 135 in. lb.).

CARBURETOR ADJUSTMENT (As Needed)

General

If the carburetor requires adjustment, follow these procedures.

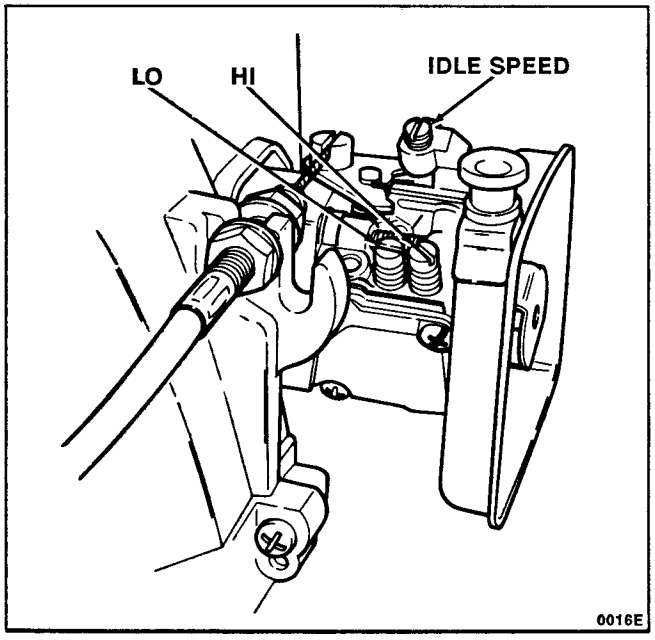
NOTE

The diaphragm carburetor has three external adjustments. Each adjustment affects the others.

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

The low (LO) speed adjustment screw controls the volume of fuel/oil mixture at low engine speed. It also controls the supplementary fuel required to obtain smooth progression from idling to high speed.

The high (HI) speed adjustment screw controls the volume of fuel/oil mixture at full throttle.



Initial Adjustment

NOTE

The needle screws have a sharp point. To avoid carburetor damage, do not use excessive force when seating needle in body.

1. Turn HI and LO adjustment screws clockwise until seated lightly in carburetor body.

2. Turn LO adjustment screw counterclockwise one turn.

3. Start engine and allow it to run at high idle until warm (approx. 2 – 3 minutes).

NOTE

Idle speed screw may have to be readjusted to keep engine from stalling.

Low Speed Adjustment

1. Slowly turn the LO adjustment screw clockwise and note the position when engine speed drops.

2. Turn the LO adjustment screw counterclockwise and note position when engine speed drops.

3. Set the screw midway between these points.

4. Turn the idle speed screw clockwise until cutter head just begins to turn.

5. Turn idle speed screw counterclockwise one-half turn to stop cutter head from turning.

High Speed Adjustment

NOTE

Engine must be at normal operating temperature and line length should be extended to the cut-off knife.

1. Turn the HI adjustment screw counterclockwise 1-1/4 turns.

IMPORTANT

Do not run the engine on full throttle longer than 5 – 6 seconds to avoid damage to engine.

2. While running the engine at full throttle, turn the HI adjustment screw slowly clockwise until the engine runs smoothly.

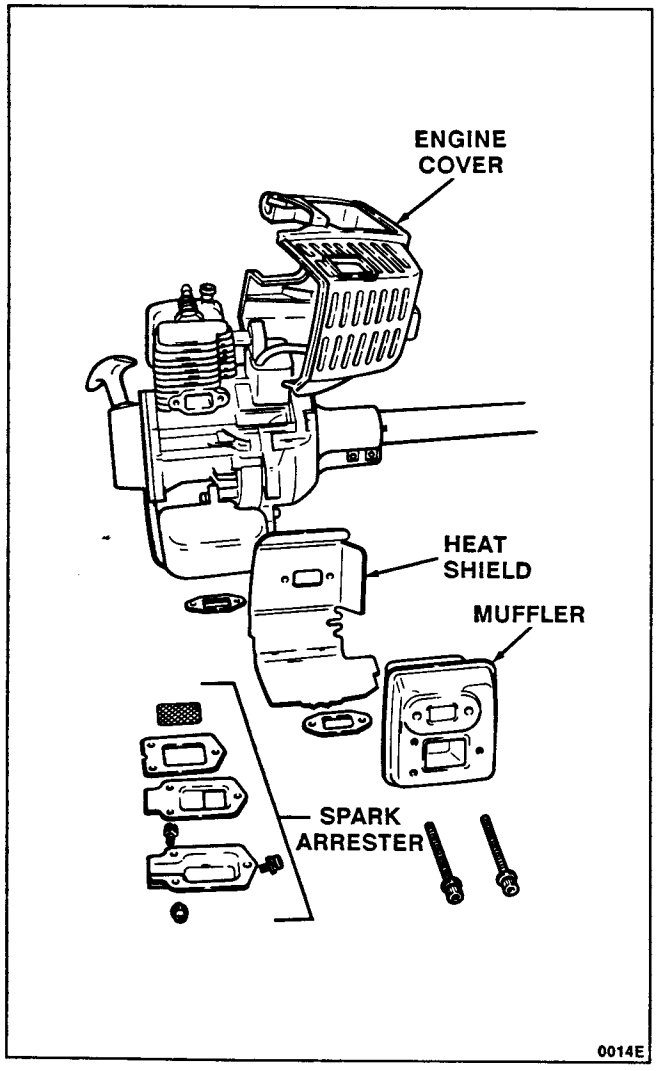
3. Turn the screw counterclockwise 1/8 turn to obtain optimum fuel mixture for full power under load conditions.

NOTE

It may be necessary to reset idle speed as outlined in steps 4 and 5 of "Low Speed Adjustment" section.

CLEANING MUFFLER AND EXHAUST PORT (Check Periodically)

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.
4. Remove spark arrester. Replace screen if it is plugged, cracked or has holes burned through it.



5. Remove muffler and heat shield.

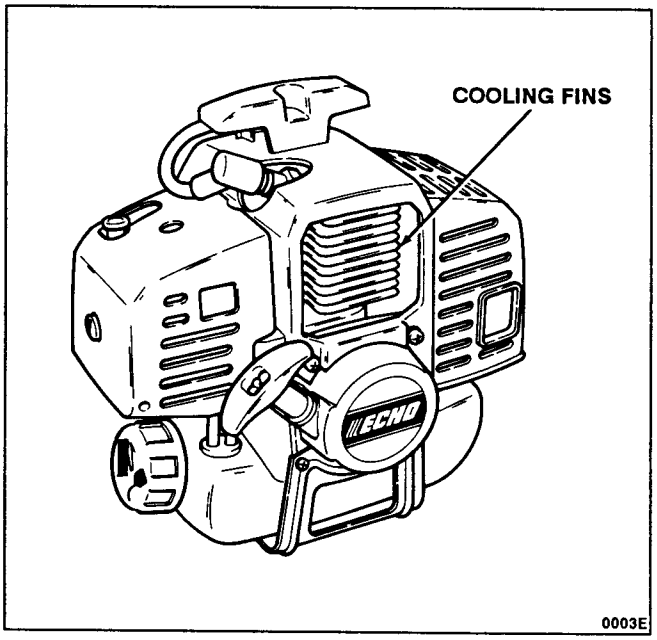
NOTE

Be careful not to scratch the cylinder or piston when cleaning the cylinder exhaust port.

6. Clean deposits from muffler, spark arrester screen and cylinder exhaust port.
7. Inspect gaskets, replace it necessary.
8. Install heat shield and muffler.
9. Install spark arrester.
10. Install engine cover and spark plug lead.

CLEANING CYLINDER FINS (Check Periodically)

1. Remove dust and dirt from between fins.



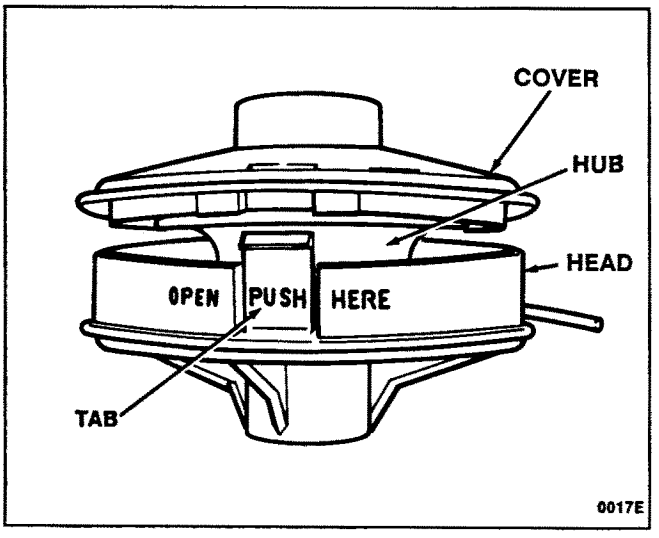
2. If greater access is needed to thoroughly clean fins, remove engine cover as outlined in steps 1, 2 and 3 in "Cleaning Muffler and Exhaust Port".

REPLACING NYLON LINE

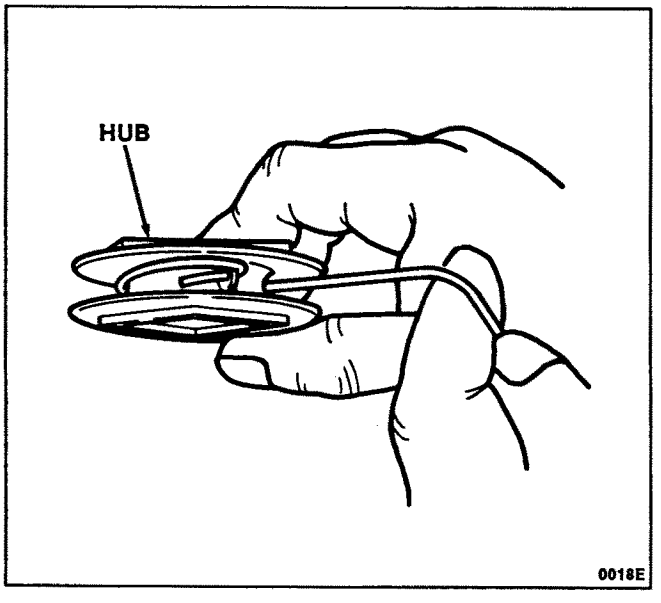
NOTE

Cutter head line capacity: 4.5 m (15 feet) of 0.080 nylon line.

1. Depress tab on head and remove cover. Remove hub from head.

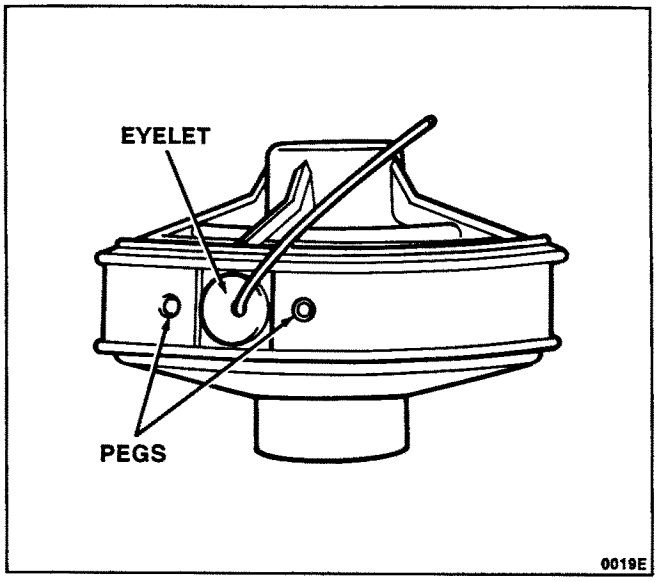


2. Secure one end of the replacement nylon line to the loop on the hub. Hold the line tight while winding it in a clockwise direction. (See arrow on hub).



3. Feed the nylon line through the eyelet in the head and press the reel into position against the spring.

4. Align pegs on cover with holes in head and press cover into place.



ASSEMBLY

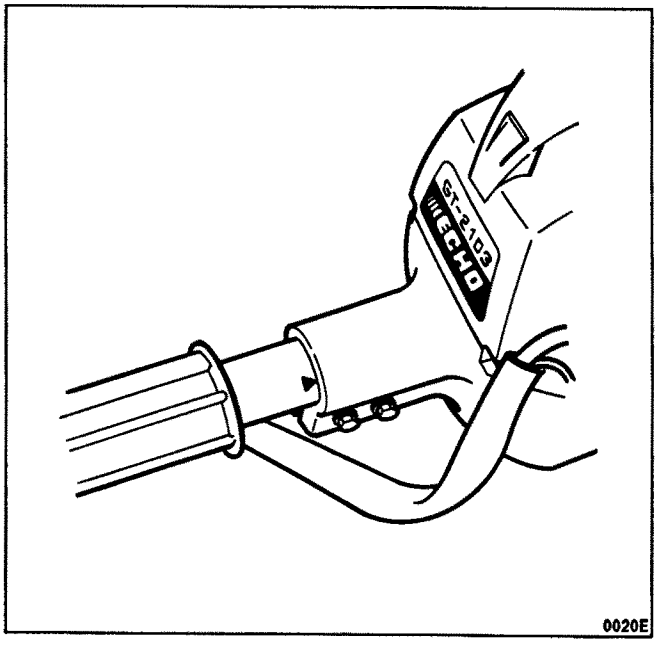
ASSEMBLING DRIVE SHAFT

1. Stand engine upright on a level floor.

2. Loosen the two bolts on driveshaft end of engine.

3. Fit drive shaft assembly to the engine. (Make sure engine is aligned properly with cutter head. Refer to illustrations on page 3.)

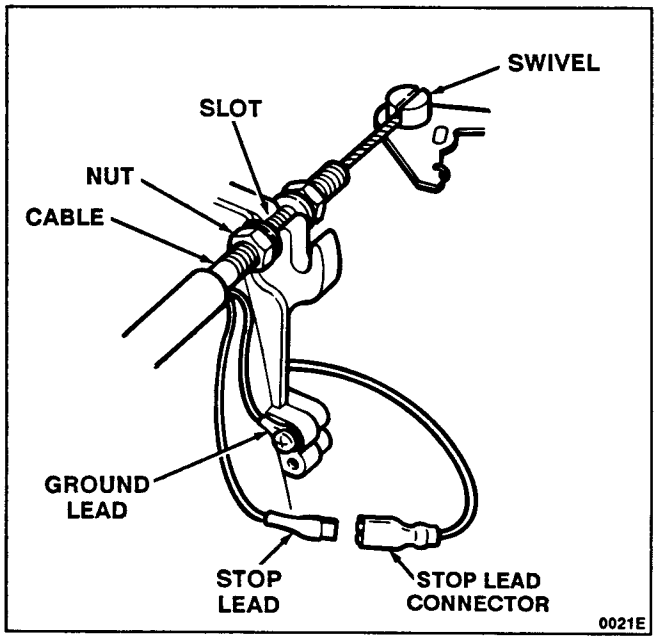
4. Secure drive shaft assembly to engine by tightening bolts.



ASSEMBLING THROTTLE CABLE

NOTE

The engine is delivered without throttle cable attached to engine.



1. Remove air filter cover.
2. Loosen nut.
3. Insert throttle cable in slot.
4. Finger tighten nut.
5. Attach inner cable to the swivel.

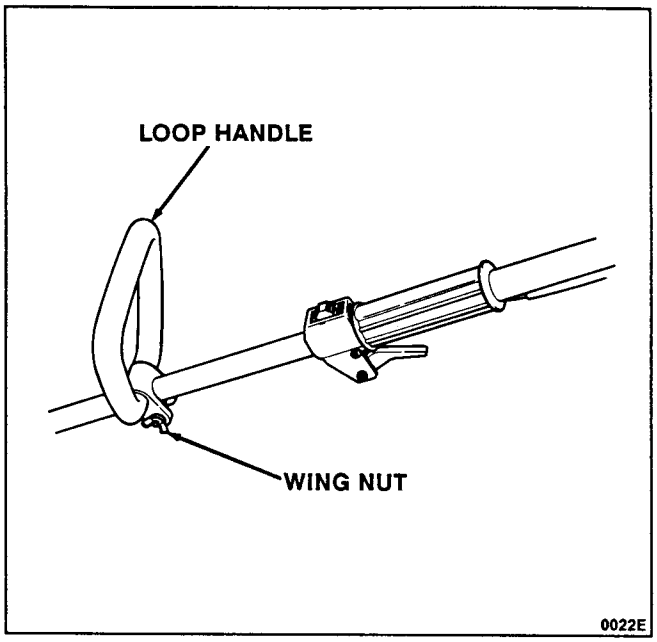
NOTE

It is important that the nipple of the throttle cable fit into the slot of the swivel.

6. Tighten.
7. Check throttle for freedom of movement and make sure it returns to idle position.
8. Connect stop lead to stop lead connector.
9. Secure ground lead under screw on housing.
10. Reinstall air filter cover.

INSTALLING LOOP HANDLE

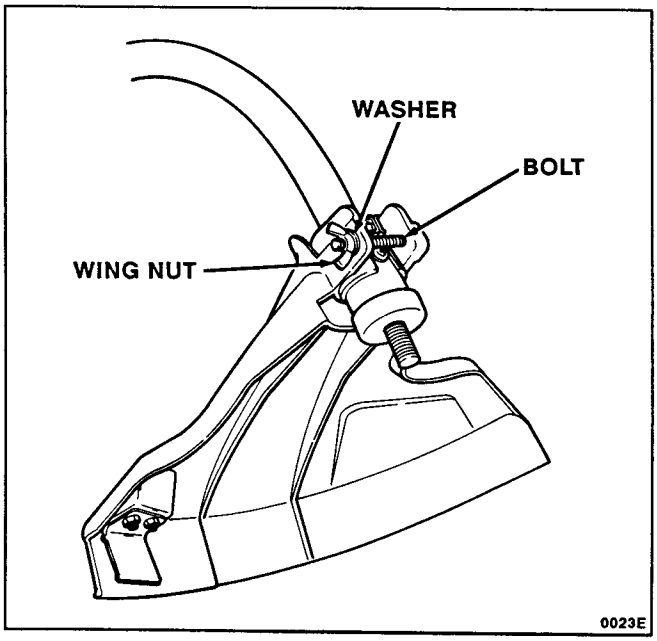
1. Assemble loop handle and bracket to drive shaft loosely.



2. Position handle in comfortable operating position and tighten wing nut.

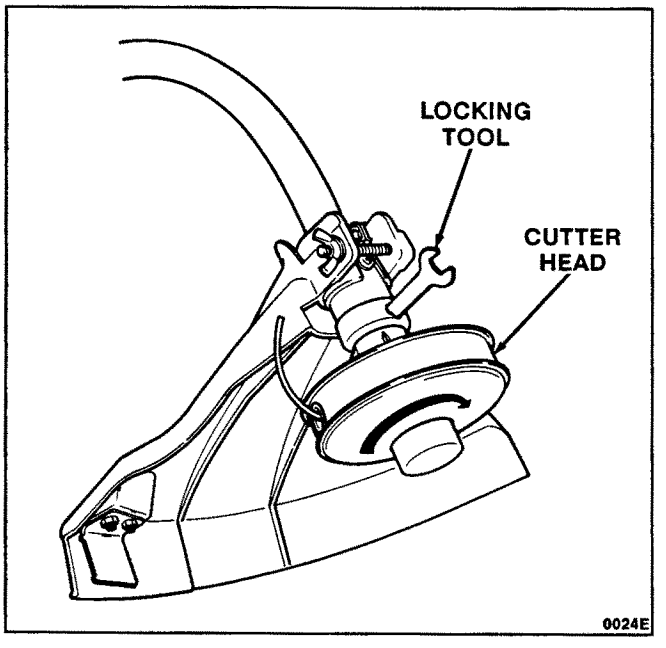
INSTALLING PLASTIC SHIELD

1. Fit the shield to the bearing housing.
2. Install bolt, washer and wing nut.



INSTALLING NYLON LINE CUTTER HEAD

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



3. Remove locking tool.

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. Store trimmer in a dry, dust free, area.

SPECIFICATIONS	
Length	1500 mm (59.1 in.)
Width	330 mm (13 in.)
Height	360 mm (15.2 in.)
Weight (dry weight with cutter head)	4.5 Kg (9.9 lbs)
Type of Engine	Air-cooled, two-stroke, single-cylinder, gasoline engine
Bore	32.2 mm (1.268 in.)
Stroke	26.0 mm (1.04 in.)
Displacement	21.2 cc (1.294 cu. in.)
Exhaust System	Spark arrester muffler
Carburetor	ZAMA diaphragm model C1U 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 or 50:1 ratio with ECHO branded engine
Gasoline	Regular (DO NOT use gasohol or alcohol blended fuel)
Oil	Designated ECHO brand, two-stroke, air-cooled engine oil
Fuel Tank Capacity	0.4 lit. (13.5 oz.)
Starter System	Automatic rewind starter
Clutch	Centrifugal type
Drive Shaft	1/4" flexible shaft
Rotating Direction	Counterclockwise viewed from top
Cutter Head	Nylon line head (UN-35, 1-line) with .080" line, capacity 4.5 m (15 feet)
Handle	Left – D-loop Right – grip