

# OPERATOR'S MANUAL

**PE-2201**  
**EDGER**

**WARNING**  **DANGER**  
READ RULES FOR SAFE OPERATION  
AND INSTRUCTIONS CAREFULLY

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# INTRODUCTION

ECHO Edger model PE-2201 is a light-weight, high-performance, gasoline powered unit designed for edging.

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

ECHO provides each product with an operator's manual. You must read the operator's manual to understand the safe and effective operation of your ECHO product. If you need to obtain a copy of the

operator's 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 which 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.

# 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 1 for location of "A" and "B".

### A. SHAFT DECAL



## WARNING DANGER



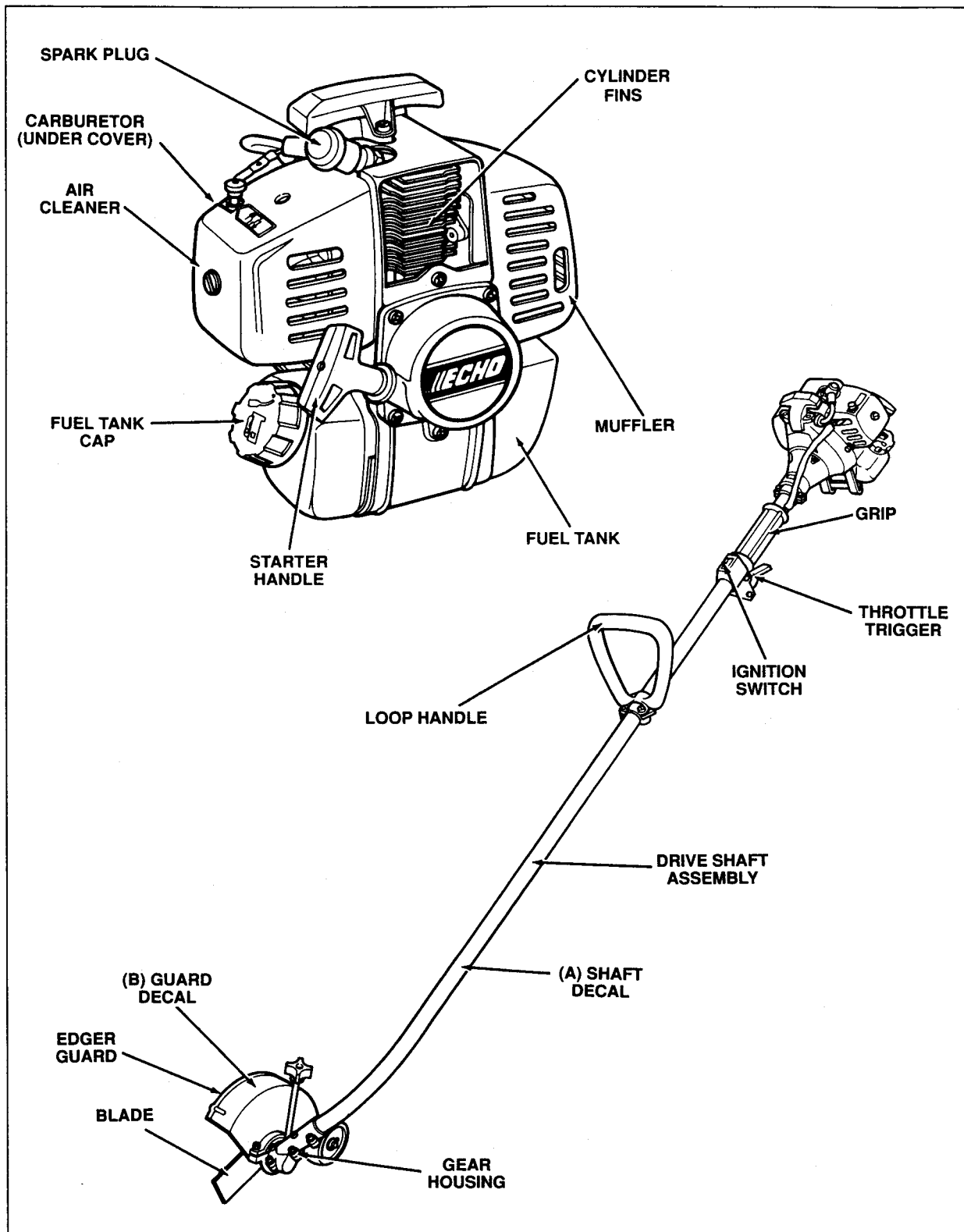
This unit can be dangerous and can cause serious injury if improperly used. Operators, helpers and bystanders can be severely injured by thrown objects and must wear specified ANSI Z87.1 eye protection. Blindness or loss of eye can occur. Do not rely on cutter head shield to protect eyes. Ricochet can occur. To avoid accidental contact, keep everyone a minimum of 50 feet beyond operating area. To reduce the risk of injury to operator, helpers and bystanders, read and understand your operator's manual.

### B. GUARD DECAL

## WARNING DANGER

• When used improperly, this edger could cause serious personal injury. Read and follow all safety precautions in the owner's manual. • Never operate without eye protection. Always inspect area for hidden or throwable objects. Never use in gravel. • Stay clear of rotating blade at all times. Keep bystanders at least 50' away. • Stop engine before adjusting cutting height or performing any service. • Never operate with unit positioned on left side of the body. • Use only ECHO approved replacement blades on this unit. • Do not use edger blade on any brushcutter. • Edger attachment and blade are intended for edging only.

# DESCRIPTION



# OPERATION

## OPERATOR SAFETY

- Read this Edger Operator's Manual carefully. Be sure you understand how to operate this unit properly before you use it.
- Wear non-skid sole shoes. Do not wear open-toed shoes or operate unit while bare footed.
- Wear proper clothing to protect legs and other exposed parts of your body.
- Wear eye and hearing protection devices.
- Use caution when handling fuel. Put the gas caps back tightly on both the gas can and the edger fuel tank. Move at least 10 feet from the re-fueling point and be sure there is no leakage of fuel from the gas cap or the fuel system before starting the engine.
- Operate this gasoline engine powered equipment in a well-ventilated area only.
- Start the unit on the ground with the throttle set at idle. **Do not** start if the blade is obstructed by the ground or any other object.
- Inspect area that edger will be used in. Remove stones, metal objects and any other object that could jam or damage the edger.

### WARNING ▲ DANGER

Always stop the engine when a blade jam occurs. **DO NOT** attempt to remove an object causing a blade jam if the engine is running. Physical injury can occur if a blade jam is removed and the blade suddenly starts.

- Do not allow other persons or pets in the area when starting or using the edger.
- Keep a firm grip on the edger with both hands, the right hand on the rear handle, the left hand on the front handle. Use a firm grip with thumbs and fingers encircling the handles. A firm grip will help you keep control of the edger. **NEVER OPERATE** the edger with only one hand.
- Do all cutting at full throttle speed. Cutting at less than full speed can damage the clutch by allowing it to slip.
- Always carry the edger with the engine stopped and the **HOT** muffler away from your body.

## PREPARING FOR USE

### WARNING ▲ DANGER

Edger users risk injury to themselves and others if the edger is used improperly, and/or safety precautions are not followed. Proper clothing and safety gear must be worn when operating an edger.



## PROTECTIVE EQUIPMENT

- Always wear eye protection goggles that meet ANSI Z 87.1 requirements (Z87 is stamped on the goggles).
- Wear hearing protection. If this guideline is not followed, hearing loss can occur. The Occupational Health and Safety Act of 1970 requires the wearing of hearing protection if you use the unit more than two hours per day. Since the guidelines could be revised to require the wearing of hearing protection if you use the unit for less than two hours per day, we recommend that hearing protection be worn at all times.
- Wear snug fitting, durable clothing. Avoid wearing loose clothing that could become entangled when contact is made with the edger.
- Wear shoes with non-skid soles to ensure proper footing.
- Wear non-slip, heavy-duty work gloves to improve your grip on the edger handles. The gloves also help reduce the transmission of machine vibrations to your hands.

## PROTECTING OTHERS

Spectators, children, fellow workers and animals must be warned to come no nearer than 50 feet while the edger is in use. People working in the area near you should wear the same protective equipment as the operator.

## PHYSICAL CONDITION

Your judgement and/or dexterity may be impaired if you are ill or have taken alcohol or other substances known to affect the way you would normally function. Operate only when in sound mind and body.

### **WARNING ▲ DANGER** **PRECAUTION AGAINST VIBRATION AND COLD**

It is believed that a condition called Raynaud's Phenomenon which affects the fingers of certain individuals is brought about by exposure to cold and vibration. Accordingly, your ECHO edger has shock mounts designed to reduce the intensity of vibration received through the handles. Exposure to cold and vibration may cause tingling and burning, followed by loss of color and numbness in a person's fingers. We strongly recommend taking the following precautions because the minimum exposure which might trigger the ailment is unknown.

- Keep your body warm - especially head, 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 a part of each work day with jobs where operating the edger or other hand-held power tools is not required.
- If you experience discomfort, redness and swelling of the fingers, followed by whitening and loss of feeling, consult your physician before exposing yourself further to cold and vibration.

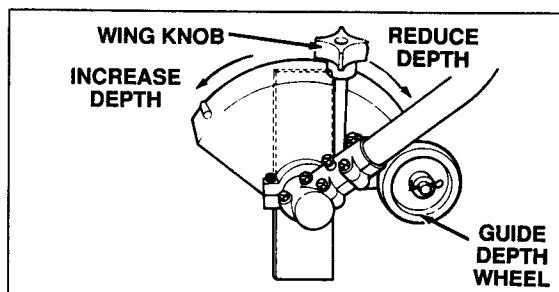
## OPERATING TECHNIQUES

- Before edging, water the area to soften the ground and make edging easier.
- Before edging, check the area and remove all obstacles and objects that could be thrown.
- Plan to edge regularly to make it easier to keep a neat edge and to avoid having to make more than one pass.

### **NOTE**

Blade depth may have to be adjusted due to differences in height between the hard surface and the top of the grass.

- Adjust the blade's depth of cut to produce a fine cut between sidewalk and grass using a minimum blade depth, usually with about 1/2" of the blade into the ground.



### **NOTE**

The blades' depth of cut is adjusted by moving the blade guard.

### **WARNING ▲ DANGER**

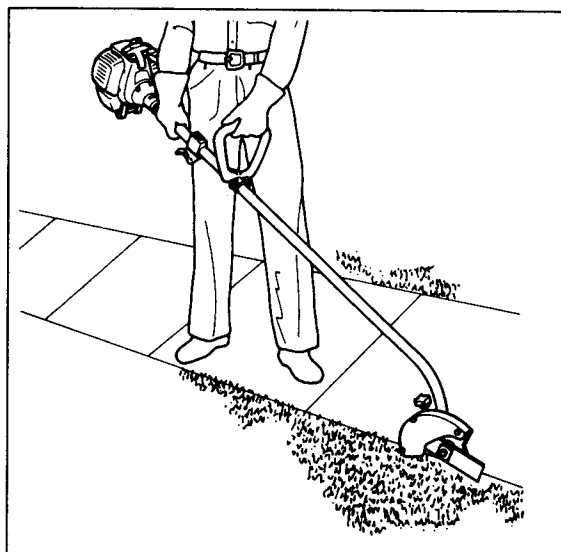
**Never adjust blade height with engine running.**

- Adjust blades' depth of cut by loosening the wing knob, moving the guard toward the operator to reduce depth or away from the operator to increase depth, and then retightening the knob.
- Before edging, plan your direction of travel so that the unit will always be positioned on your right side and so that you walk on a hard surface whenever possible.
- Hold edger as shown.

### **WARNING ▲ DANGER**

**Before edging, be sure to read and understand the entire operator's manual to avoid the chance of serious injury.**

- When starting to edge, run the engine at full throttle, and lower the blade gently into the ground, being careful not to hit the concrete with the blade.
- Don't force the blade and move as quickly as the blade will allow.



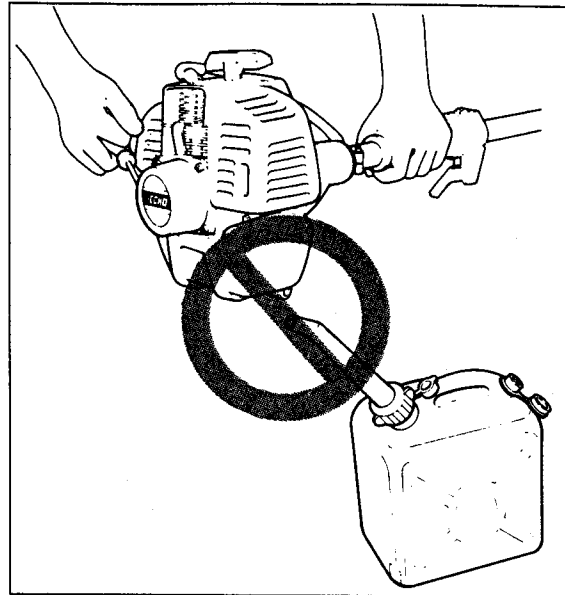
# FUEL

## HANDLING FUEL

### **WARNING ▲ DANGER**

**Handle fuel carefully. It is extremely flammable. Follow all rules listed below to help prevent fire or explosion which may result in severe injury or death.**

- 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 edger with fuel in the tank—a fuel leak could start a fire.



## MIXING FUEL

### **2-Stroke Fuel 50:1 Mixture**

Mix one part "specially blended ECHO brand-ed 50:1 two cycle engine oil" with 50 parts unleaded gasoline (minimum octane 87).

#### **NOTE**

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

### **32:1 Mixture (Acceptable Alternative)**

Mix one part "specially blended ECHO brand-ed 32:1 two cycle oil" with 32 parts unleaded gasoline (minimum octane 87)

#### **NOTE**

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

#### **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, remix and fill the fuel tank.
4. Install fuel tank cap and wipe spilled fuel from container and area.

# STARTING AND STOPPING

## SAFE STARTING TECHNIQUES

### NOTE

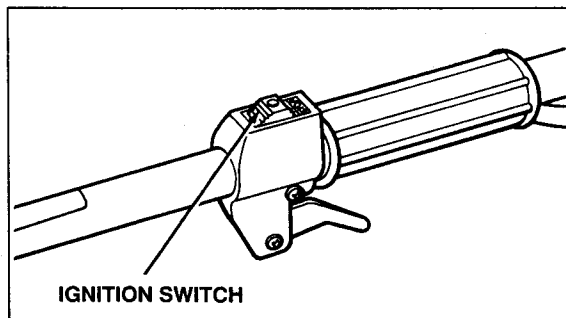
- Check unit for loose nuts, bolts and screws before starting.
- Always clear work area of debris before starting operation.
- Always hold the unit firmly.
- When pulling starting rope, use short pulls, 1/2 to 2/3 of rope length.
- Do not allow the starter handle to snap back against the housing.
- Always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

## STARTING COLD ENGINE

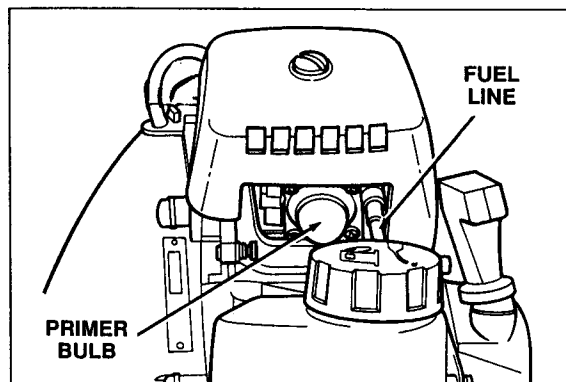
### WARNING ▲ DANGER

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

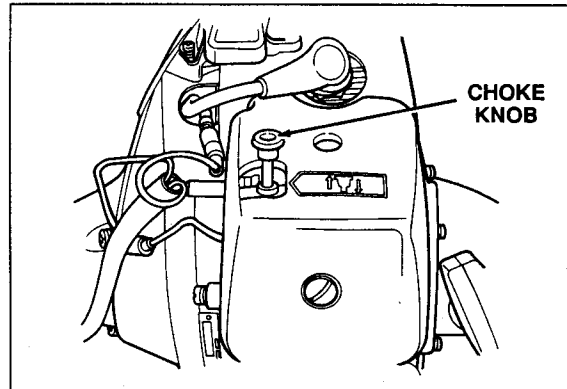
1. Slide ignition switch to START/RUN position.



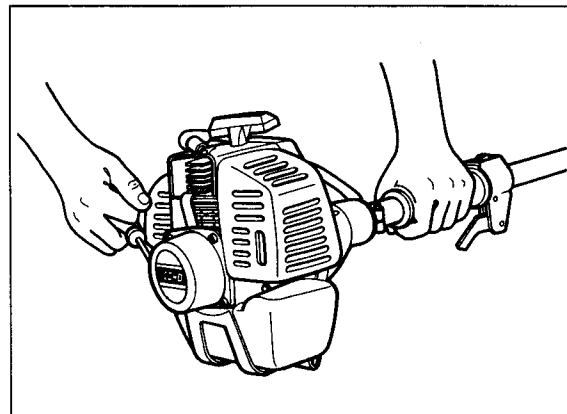
2. Push primer bulb 3 to 4 times (or until fuel is visible in fuel return line).



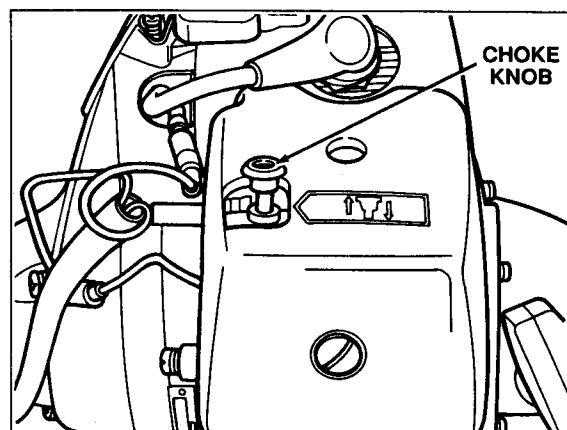
3. Pull choke knob up to COLD START (closed) position.



4. Pull starter rope until engine fires.



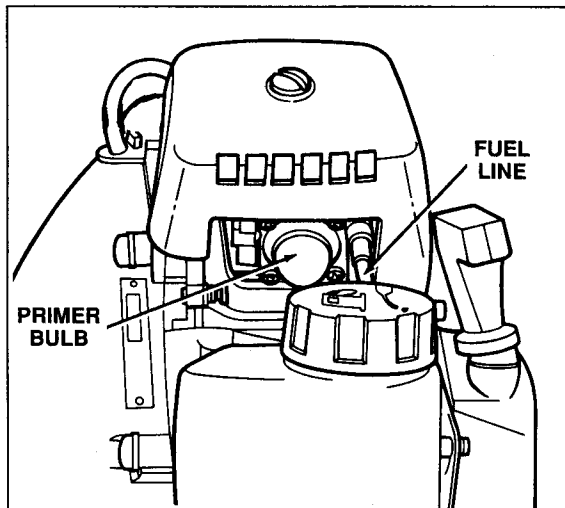
5. Push choke knob down to RUN (open) position.



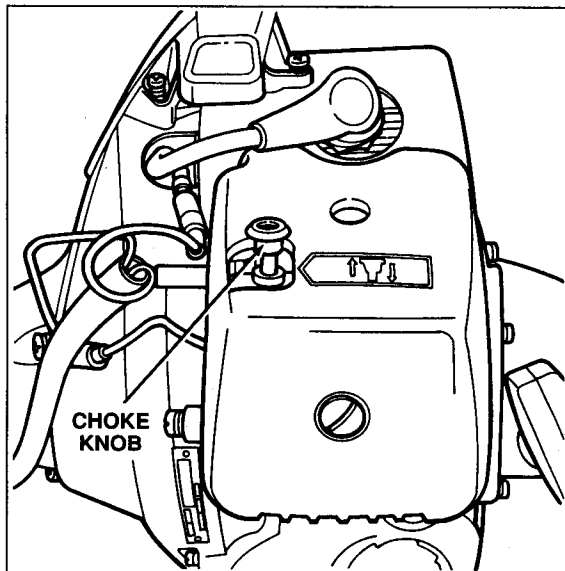
6. Restart engine and allow it to warm up.
7. Squeeze throttle trigger gradually.

## 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.



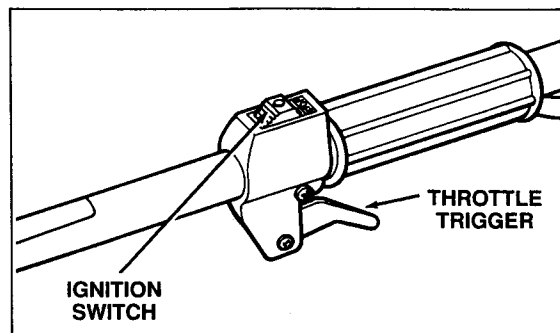
3. Push choke knob in to RUN (open) position.
4. Pull starter handle.

### 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.



### WARNING ▲ DANGER

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

## ADJUSTING DEPTH OF CUT

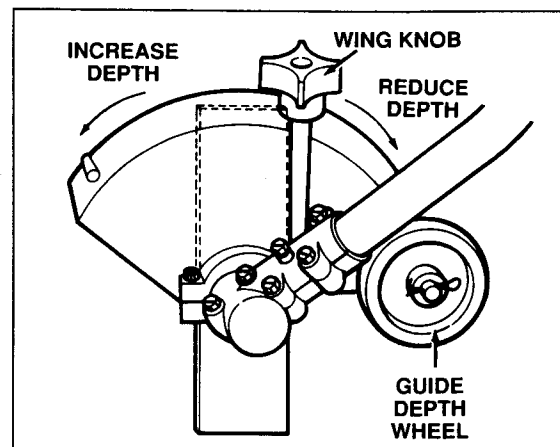
### NOTE

Adjust to obtain a fine cut line between sidewalk and grass with minimum blade depth (blade about 1/2" into ground). Avoid unnecessary depth which will shorten blade life and make edging more difficult.

### WARNING ▲ DANGER

Never adjust blade height with engine running.

1. Loosen wing knob.
2. Turn shield toward operator to reduce depth or away from operator to increase depth.





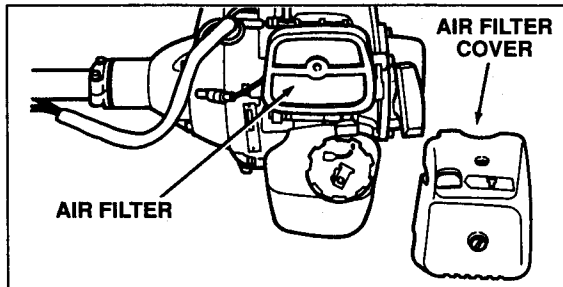
# TROUBLESHOOTING

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

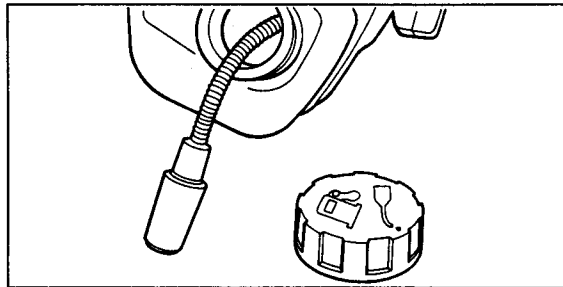
#### NOTE

Allow all parts to air dry.

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

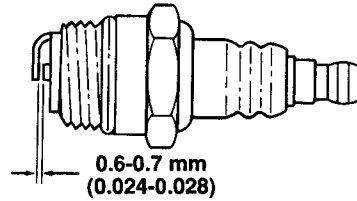
### REPLACING FUEL FILTER (Check Periodically)

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 that plug gap is 0.6-0.7mm (0.024-0.028 in.).
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 CASE AND REPLACING BLADE

#### NOTE

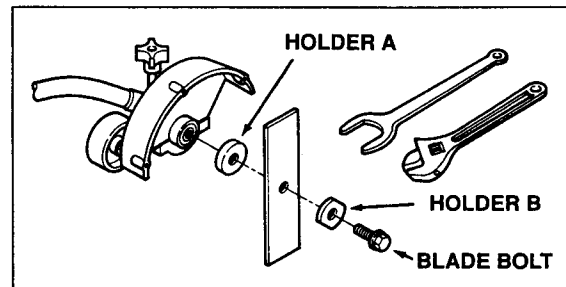
Grease gear case every 10 hours of use.  
Replace blade when it is worn shorter than 6".  
Remove blade and holders before greasing to prevent damage to gear and bearings

1. Shut down engine

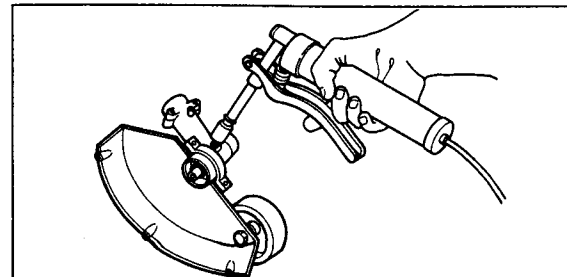
#### NOTE

Blade bolt is left hand thread.

2. Remove blade and holders using spanner wrench on holder (B) and a suitable wrench on blade bolt.
3. Remove holder (A).



4. Grease gear housing.
5. Install (new) blade on holder A and install holder B and bolt.
6. Make sure blade is centered and tighten bolt securely, counter clockwise.
7. Rotate blade to check that it does not touch shield.



## CARBURETOR ADJUSTMENT (As Needed)

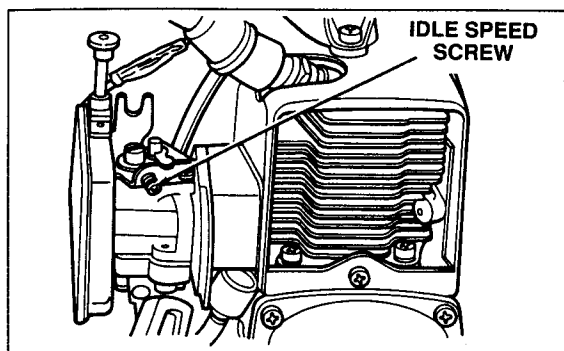
### GENERAL

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 blade begins to rotate.



3. Turn the screw counterclockwise one turn.

### ADJUSTING CARBURETOR IDLE LIMITER

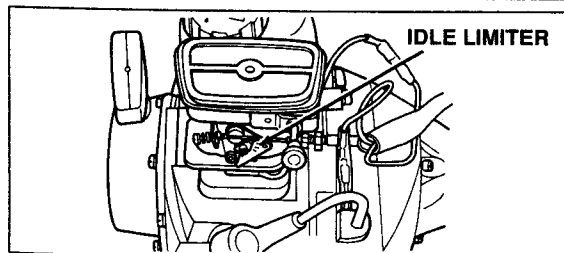
#### NOTE

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.

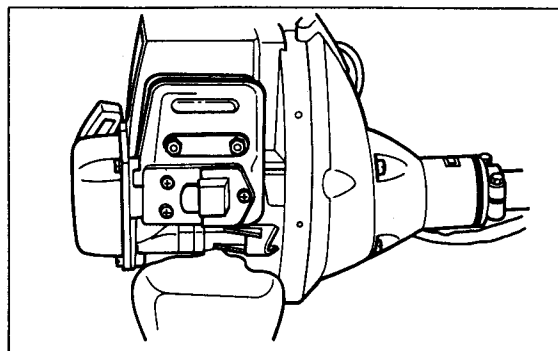
#### NOTE

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.

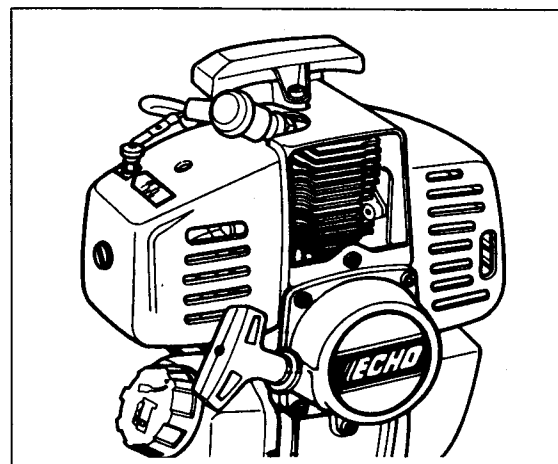
3. Clean deposits from cylinder exhaust port and spark arrestor screen.
4. Reassemble muffler.
5. Reinstall muffler.
6. Reinstall muffler cover.

## CLEANING CYLINDER FINS (Check Periodically)

#### NOTE

Dusty or dirty cylinder fins can cause overheating.

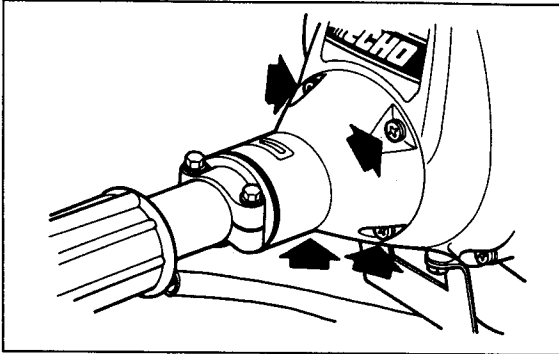
1. Remove dust and dirt from between fins.



# ASSEMBLY

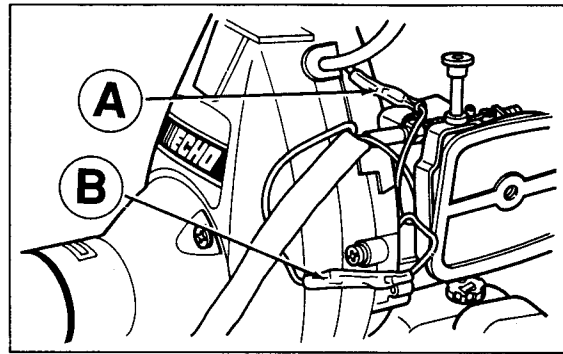
## ASSEMBLING DRIVE SHAFT

1. Stand engine upright on a level floor.
2. Fit drive shaft assembly to the engine.
3. Secure drive shaft assembly to engine with screws.



## CONNECTING LEADS

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

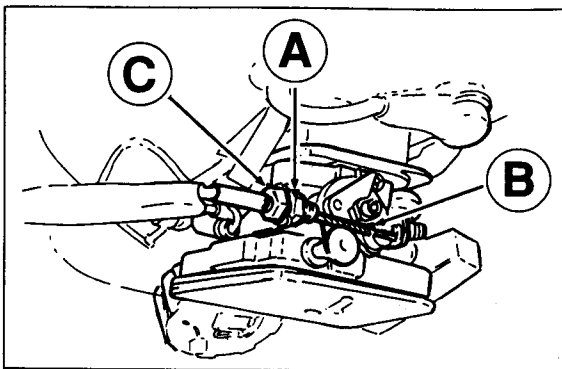


## ASSEMBLING THROTTLE CABLE

### NOTE

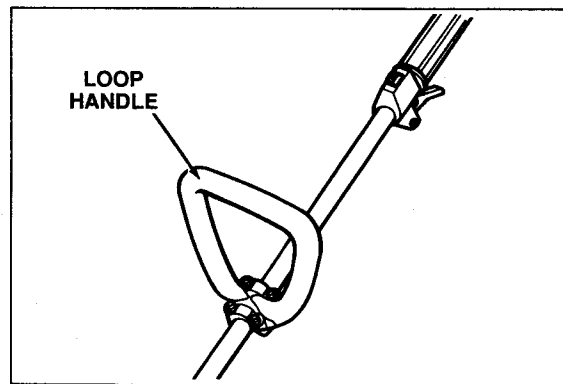
The engine is delivered with the throttle cable (engine side) separated.

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.



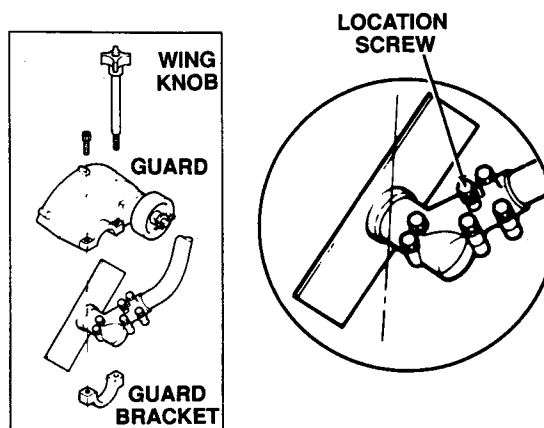
## INSTALLING LOOP HANDLE

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



## INSTALLING GEAR CASE, EDGER GUARD AND BLADE

1. Slide gear housing on shaft, aligning location screw with location hole in housing.
2. Fasten gear housing to shaft with screws.
3. Position guard as shown and secure with wing knob and shaft, hex screw and guard bracket.
4. Install blade as outlined in service section.



## STORAGE

### LONG TERM STORAGE (over 60 days)

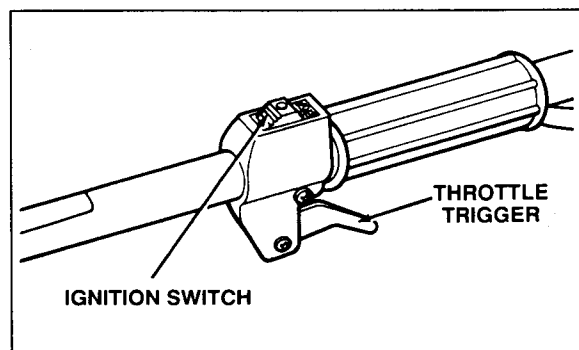
Do not store your unit for a prolonged period of time (60 days or longer) without performing protective storage maintenance which includes the following:

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.

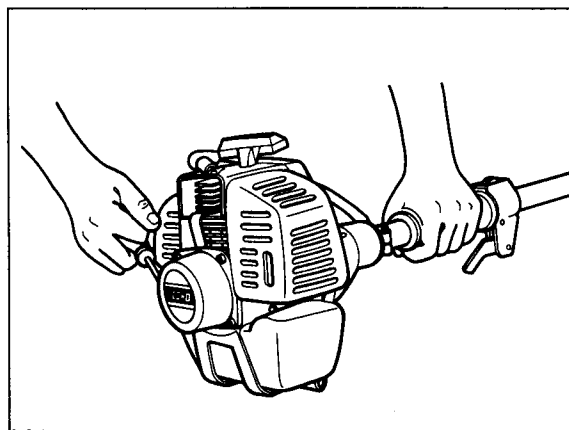
2. Place the ignition in the "OFF" position.



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, 2-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.)
  9. Lubricate the blade with a heavy coat of oil to prevent rust.



**ECHO, INCORPORATED**  
400 OAKWOOD ROAD • LAKE ZURICH, IL 60047  
PHONE: 708-540-8400

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0590