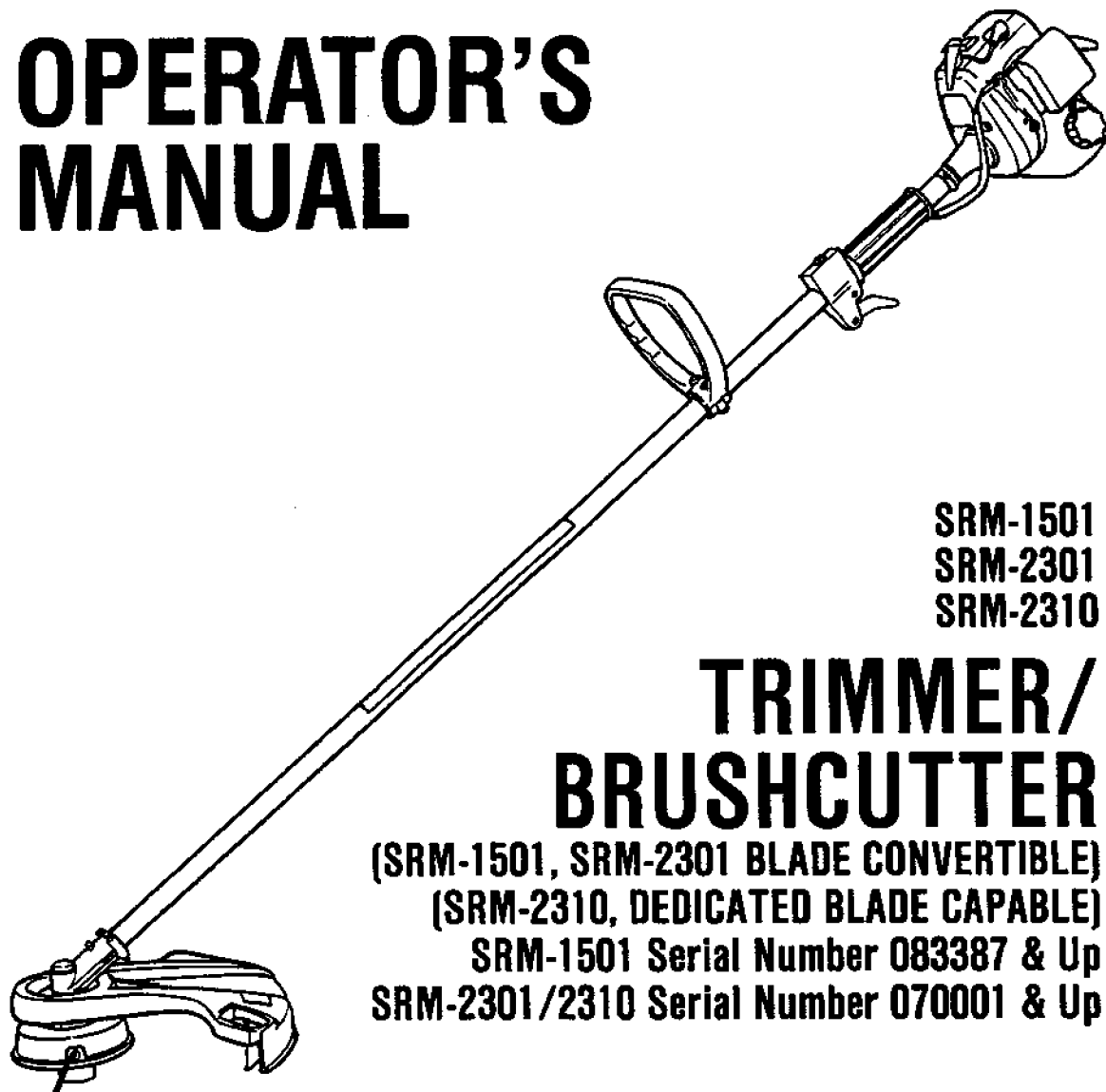


OPERATOR'S MANUAL



SRM-1501
SRM-2301
SRM-2310

TRIMMER/ BRUSHCUTTER

(SRM-1501, SRM-2301 BLADE CONVERTIBLE)

(SRM-2310, DEDICATED BLADE CAPABLE)

SRM-1501 Serial Number 083387 & Up

SRM-2301/2310 Serial Number 070001 & Up

WARNING DANGER

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

E1210

ECHO®


INTRODUCTION

ECHO Trimmer/Brushcutter models SRM-1501, SRM-2301 and SRM-2310 are light-weight, 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 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.

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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.

A. SHAFT DECAL

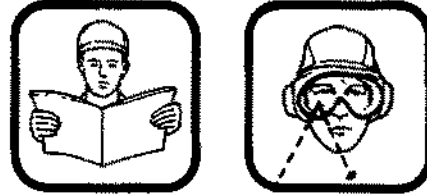
—BLADE OPERATION—DANGER—▲



- Special precautions are necessary for Blade Operation.
- Beware of "kickout" into bystanders.
- Keep bystanders and 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 and arbors must be used for blade applications.

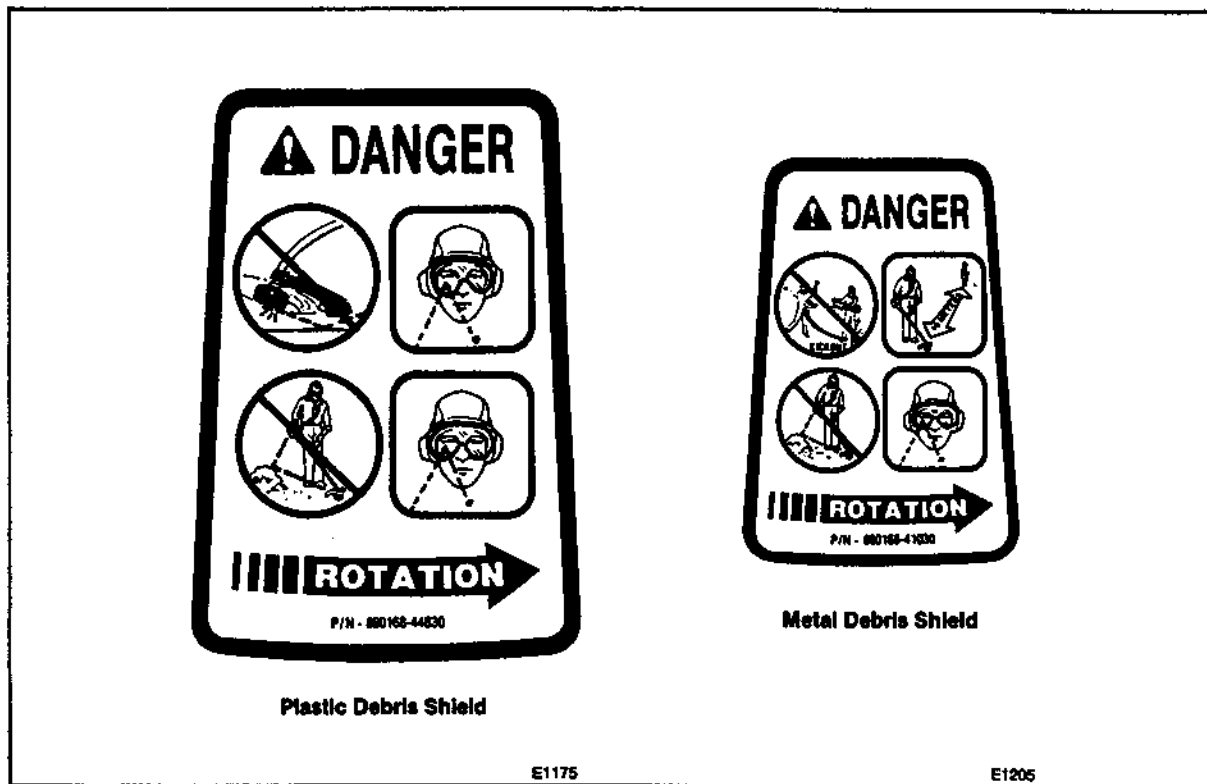
B. SHAFT DECAL

—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 and 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

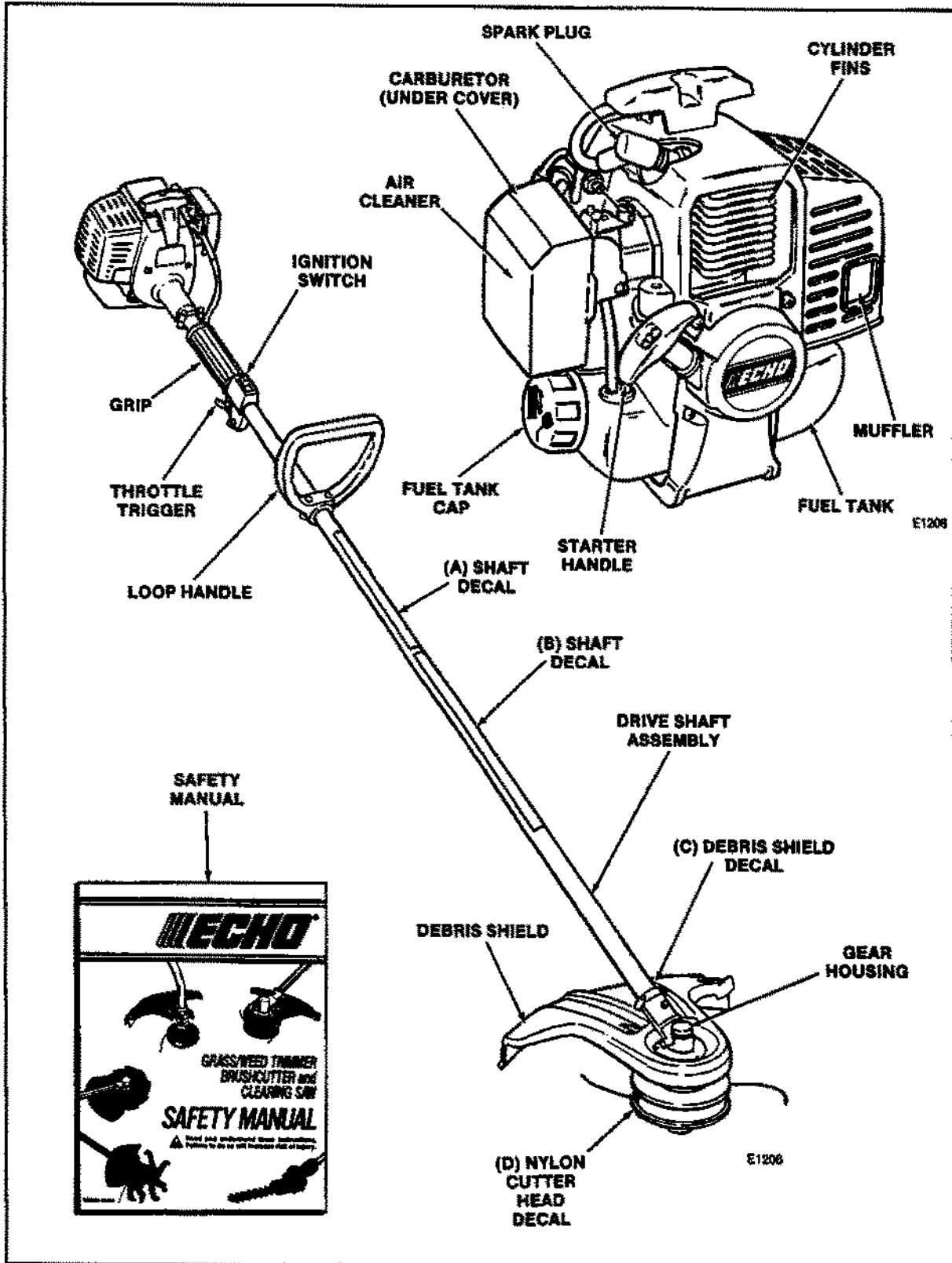


D. CUTTER HEAD DECAL

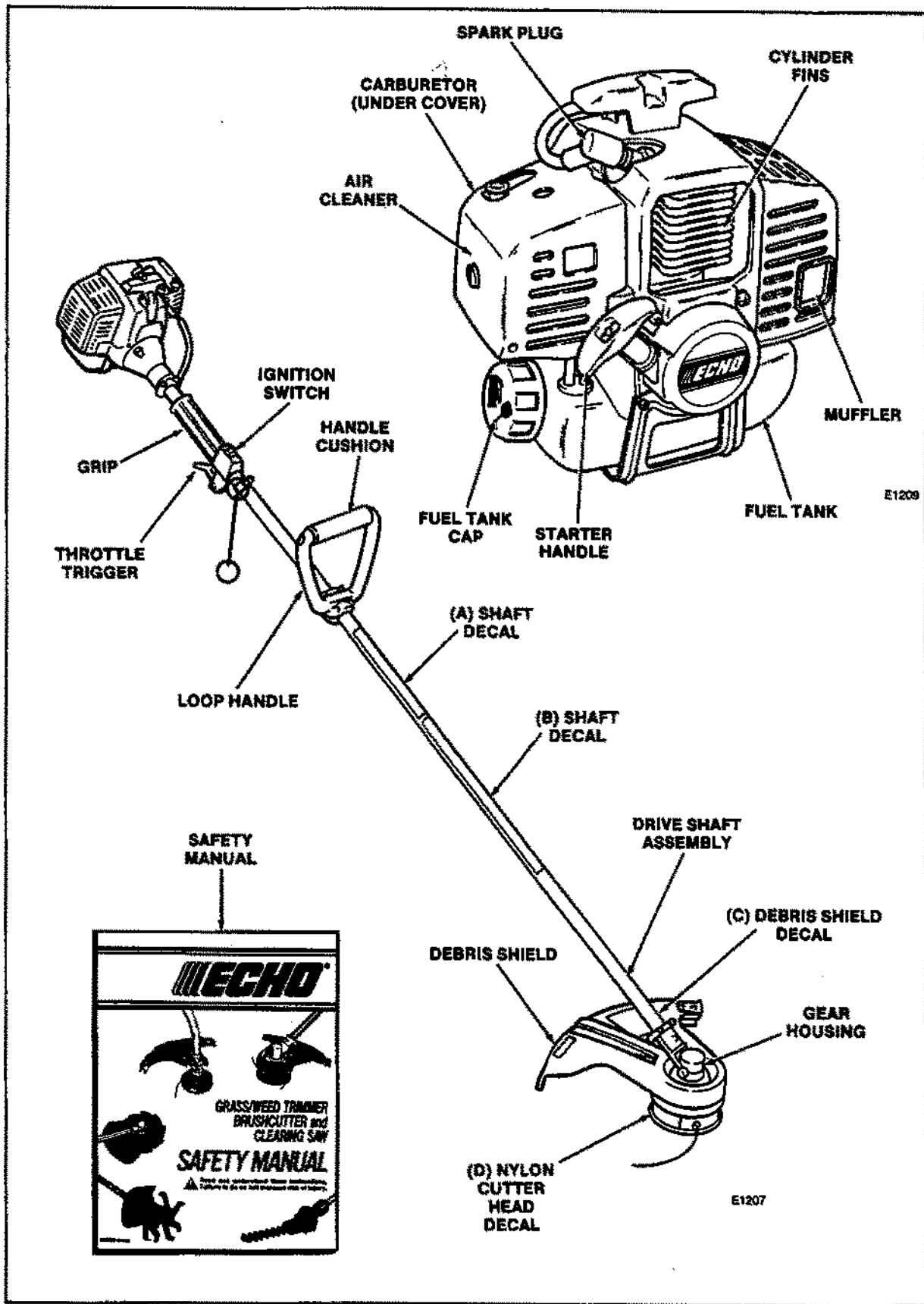


DESCRIPTION

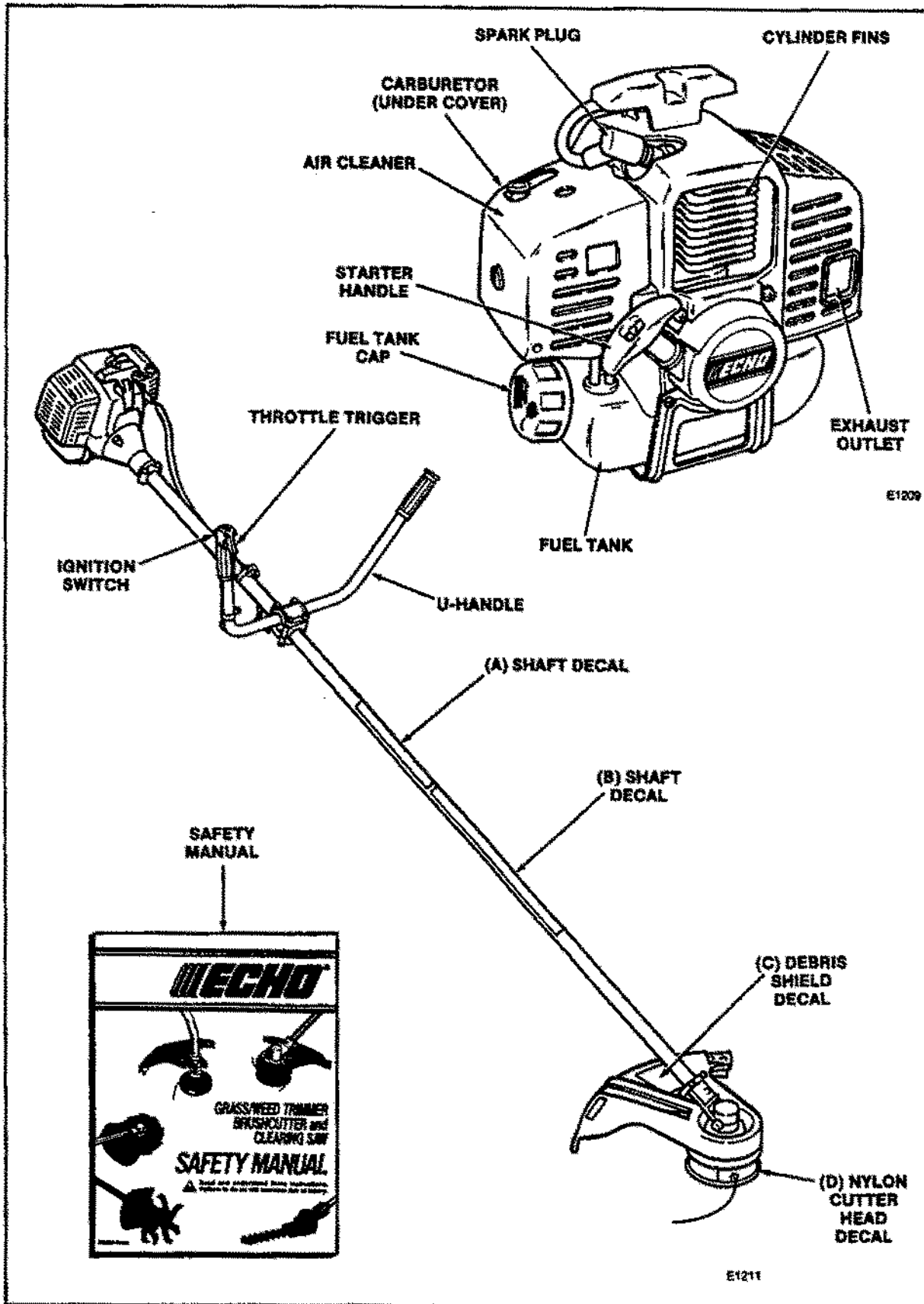
MODEL 1501



MODEL 2301



MODEL 2310



OPERATION

OPERATOR SAFETY

- Read this Trimmer 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 trimmer 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 cutting head is obstructed by the ground or any other object.
- Do not overreach or stand on unstable surfaces.
- Inspect area that trimmer will be used in. Remove stones, metal objects and any other object that could jam or damage the trimmer.

WARNING DANGER

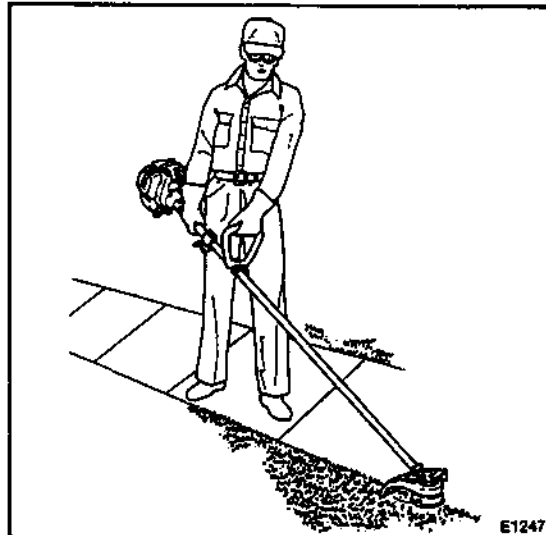
Always stop the engine when a cutting head jam occurs. DO NOT attempt to remove an object causing a jam if the engine is running. Physical injury can occur if a jam is removed and the cutting head suddenly starts.

- Do not allow other persons or pets in the area when starting or using the trimmer.
- Keep a firm grip on the trimmer 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 trimmer. NEVER OPERATE the trimmer 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 trimmer with the engine stopped and the HOT muffler away from your body.

PREPARING FOR USE

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.



PROTECTIVE EQUIPMENT

- Always wear eye protection goggles that meet ANSI Z87.1 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 trimmer.
- Wear shoes with non-skid soles to ensure proper footing.
- Wear non-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.

PROTECTING OTHERS

Spectators, children, fellow workers and animals must be warned to come no nearer than 33 feet while the trimmer 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. 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 trimmer 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.

AVOID DAMAGE TO TRIMMER

- 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.
- Do not run trimmer at full throttle without load.

OPERATION WITH BLADES (Optional Equipment - Models SRM 1501 and SRM 2301.) (Model SRM 2310 is blade capable.)

The ECHO SRM-1501 & SRM-2301 trimmers are blade convertible. ECHO recommends two special steel blades and a nylon Tri-Cut blade for use with this unit. Contact your Echo dealer for more information about available blades.

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.
- 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 device which have not been tested and approved by ECHO for use with this unit.

OBSERVE SAFETY PRECAUTIONS WHEN OPERATING TRIMMER WITH 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.
- 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 the U-HANDLE KIT for use with BLADE CONVERSION KIT. See page 20 (Models SRM 1501 and 2301).
- Always use the steel debris shield with metal blades.
- Refer to page 1 for safety decals on shaft and shield.
Keep bystanders 33 feet from operator.

USING SHOULDER HARNESS (Optional Equipment - Models SRM 1501 and SRM 2301. Standard Equipment - Model SRM 2310.)



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.

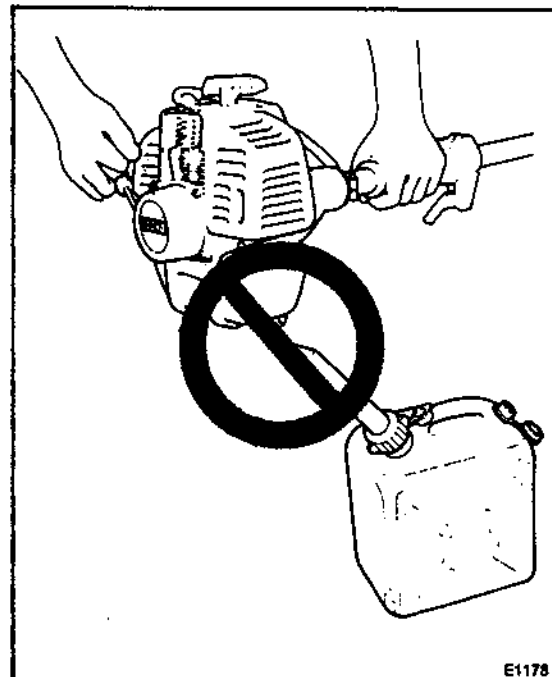
FUEL

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



E1178

MIXING FUEL

2-Stroke Fuel 50:1 Mixture

Mix one part "specially blended ECHO branded 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 branded 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.

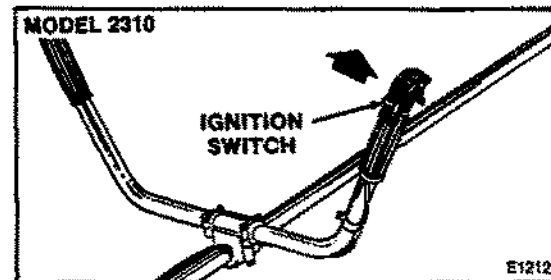
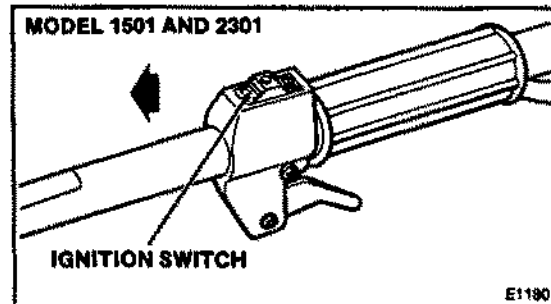
1. Pour 1/2 of the gasoline into a safe container.
2. Add oil to gas and mix.
3. Add remaining gasoline, remix and fill the fuel tank.
4. Install fuel tank cap and wipe spilled fuel from container and area.

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 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.
- Always hold the unit firmly.



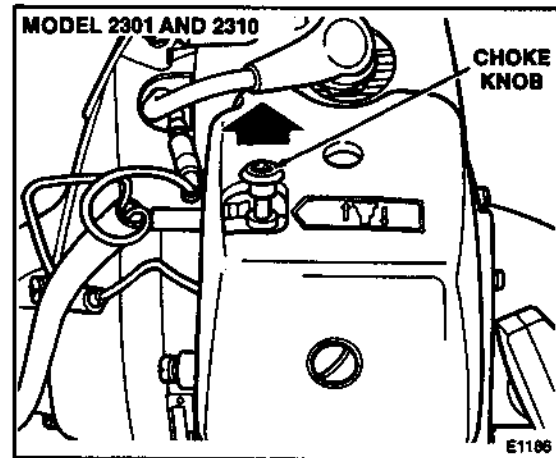
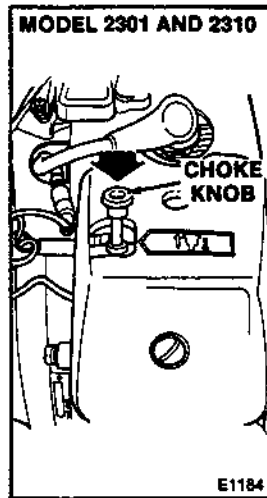
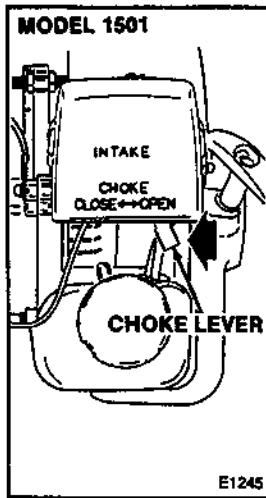
STARTING COLD ENGINE

WARNING DANGER

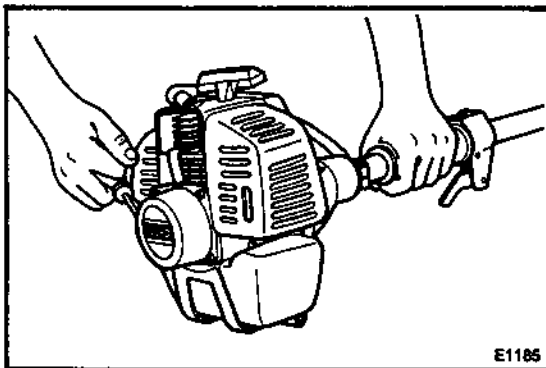
When engine starts, the head may rotate even with trigger in low-speed position.

1. Slide ignition switch to START/RUN position.

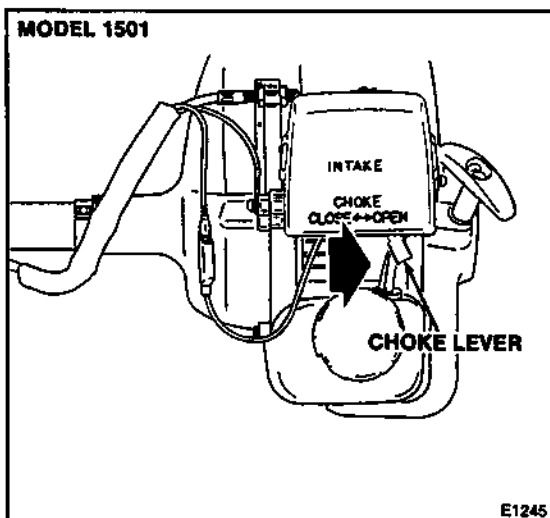
- Slide choke lever to CLOSE position for 1501 models. For 2301 and 2310 models, pull choke knob up to START (closed) position.



- Pull starter rope until engine fires.



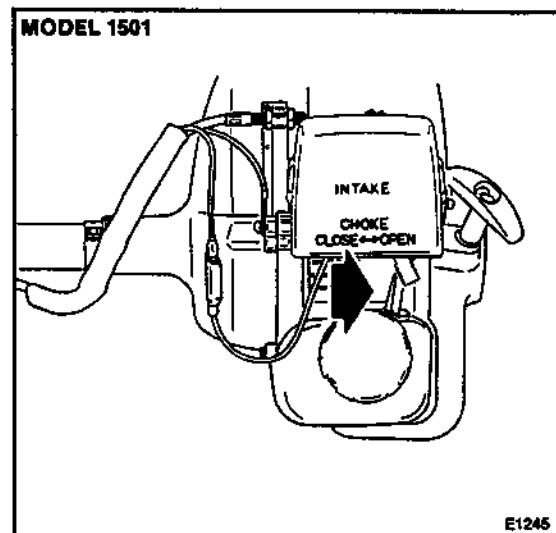
- Slide choke lever to OPEN position for 1501 models. For 2301 and 2310 models, push choke knob down to RUN (open) position.

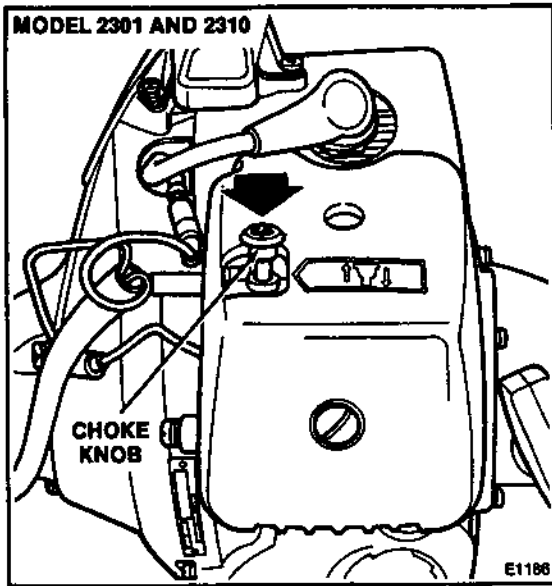


- Restart engine and allow it to warm up.
- Squeeze throttle trigger gradually.

STARTING WARM ENGINE

- Slide ignition switch to START/RUN position.
- Slide choke lever to OPEN position for 1501 models. For 2301 and 2310 models, push choke knob down to RUN (open) position.



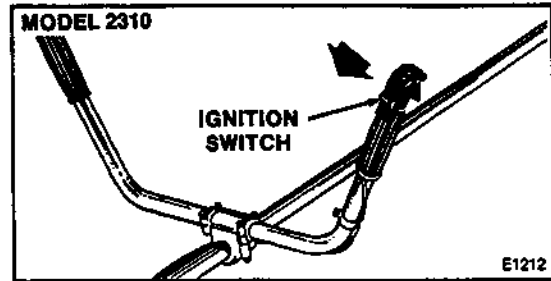
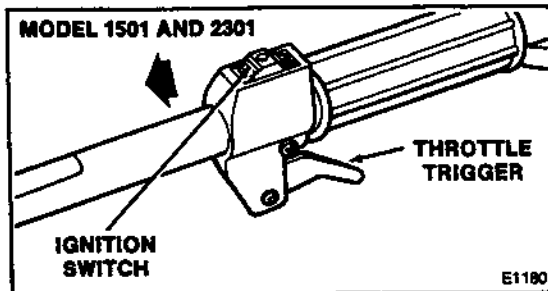



3. Pull starter handle.

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.

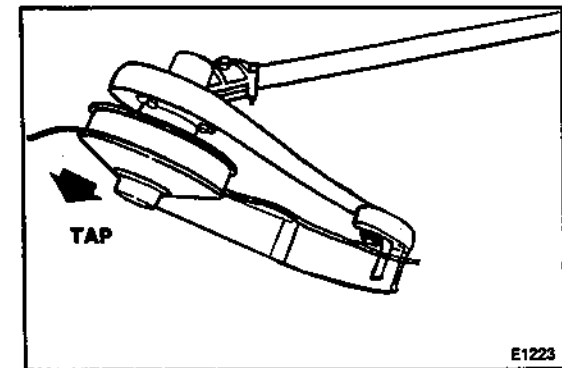


WARNING  **DANGER**
If engine does not stop when ignition switch is moved to STOP position, slide choke lever to CLOSE position (1501 models) or pull choke knob up to START position (2301 and 2310 models). Have your ECHO dealer inspect and repair ignition switch before using trimmer again.

RELEASING LINE AND ADJUSTING LINE LENGTH

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.

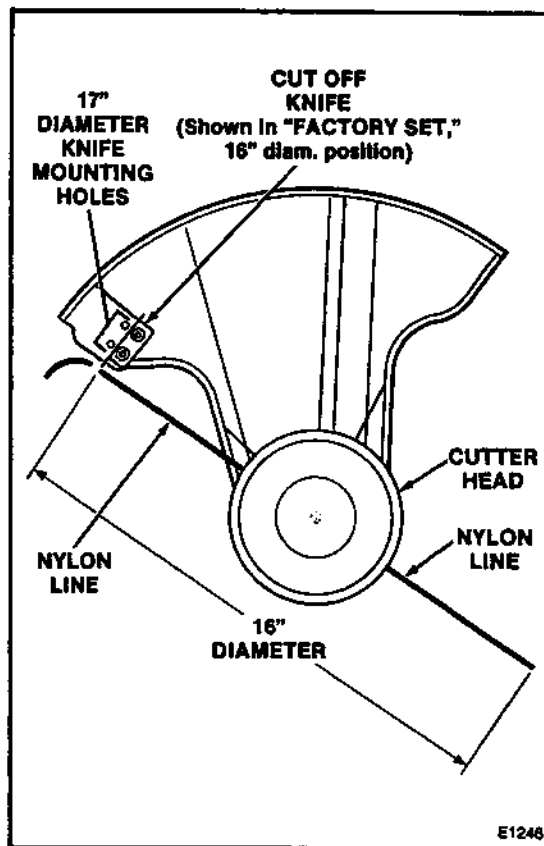


CUTTER HEAD LINE LENGTH

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

There is an additional set of knife mounting holes that the knife can be moved to that will result in a 17 inch diameter cutting swath. However, cutting performance will be reduced because of lower rpm.

IMPORTANT
Carburetor adjustment must be made whenever cut-off knife position is changed. Refer to Carburetor for proper procedure.



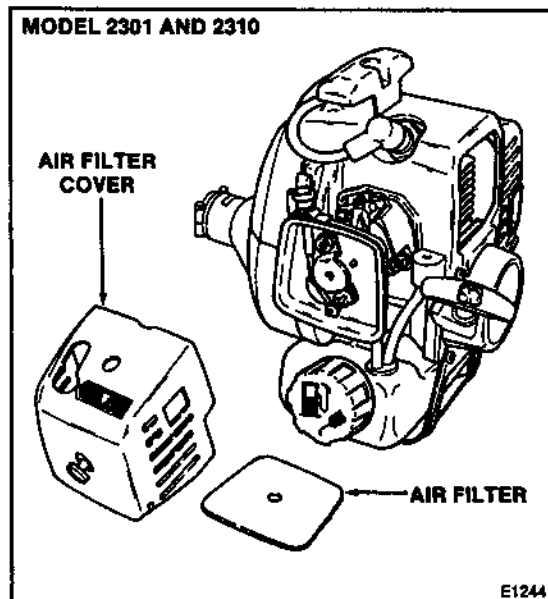
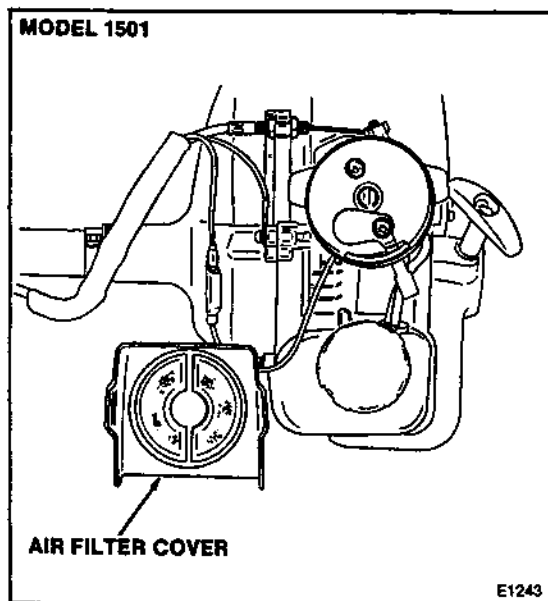
TROUBLESHOOTING

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.	Drain entire system and refill with fresh fuel. Drain and refill with correct mixture. If flooded by over choking: a. Make certain choke knob is in OPEN (1501 models) or RUN (2301 and 2310 models) position. 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 (1501 models) or START (2301 and 2310 models) position and crank two or three times. Replace gaskets. Contact your nearest authorized dealer. Contact your nearest authorized dealer.
3. Engine misses.	Gasket leaks (carburetor or cyl. base gasket.) Carburetor out of adjustment. Weak spark at spark plug.	Replace gaskets. Contact your nearest authorized dealer. Contact your nearest authorized dealer.
3. Engine misses.	Dirt in fuel line or carburetor. Spark plug fouled, broken or incorrect gap setting. Weak or intermittent spark at spark plug. Carburetor improperly adjusted.	Remove and clean. Clean or replace spark plug - set gap to 0.6 - 0.7 mm (0.024 - 0.028 in.). Contact your nearest authorized dealer. Contact your nearest authorized dealer.
4. Engine lacks power.	Air cleaner clogged. Muffler clogged. Clogged exhaust ports.	Clean air cleaner. 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. Contact your nearest authorized dealer.
4. Engine lacks power.	Carburetor out of adjustment. Poor compression.	Contact your nearest authorized dealer. 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 wall.	Tighten flywheel nut. Replace with plugs specified for engine. Contact your nearest authorized dealer.
7. Engine "stalls" under load.	Engine overheats. Carburetor main adjustment too "lean."	See "Cleaning Cylinder Fins" in service section. Contact your nearest authorized dealer.

SERVICE

CLEANING AIR FILTER (Before Each Use)

1. Slide choke lever to CLOSE position for 1501 models. For 2301 and 2310 models, pull choke knob up to START (closed) position.
2. Snap off air filter cover for 1501 models. For 2301 and 2310 models, loosen screw and remove air filter cover.
3. Remove air filter (air filter is part of cover for 1501 models).



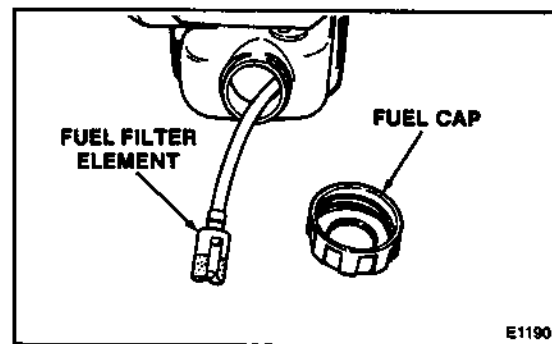
NOTE

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

4. Brush dirt from filter or clean with compressed air.
5. Reinstall filter.
6. Snap on cover for 1501 models. For 2301 and 2310 models, reinstall cover and tighten screw.

REPLACING FUEL FILTER (Check Periodically)

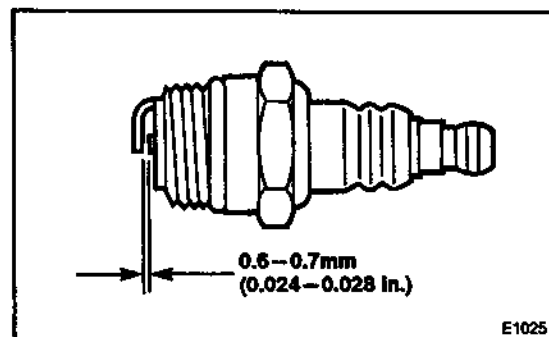
1. Use a piece of steel wire to pick up fuel filter through fuel tank opening.



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 in.).



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.).

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 that will be used, it is important that internal and external fuel lines, fuel cap gaskets, carburetor diaphragms and all other plastic and rubber fuel system components be inspected or replaced twice yearly by an ECHO authorized Service Dealer (more often when unit is used commercially).

IDLE SPEED ADJUSTMENT (As Needed)

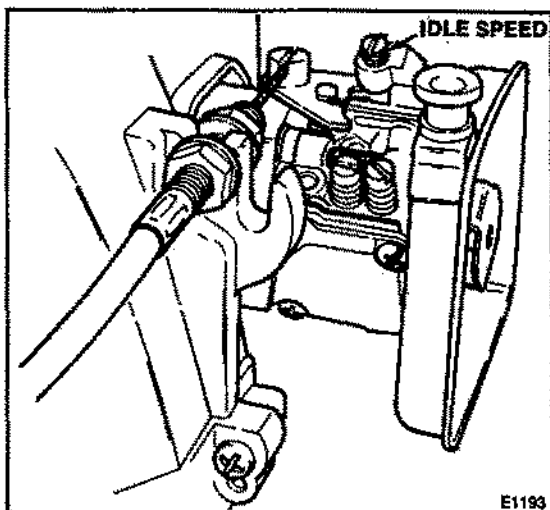
The idle speed adjustment screw controls the throttle opening at idle position.

If the idling adjustment is too low or too high, use the following procedure.

NOTE

If the following adjustment does not result in satisfactory performance, see your ECHO Dealer.

1. Start engine and allow it to warm up (2-3 minutes).
2. Turn idle speed screw clockwise until cutter head begins to turn.
3. Turn idle speed screw counterclockwise until head stops.



CARBURETOR ADJUSTMENT (As Needed)

General

If the carburetor requires adjustment, follow these procedures.

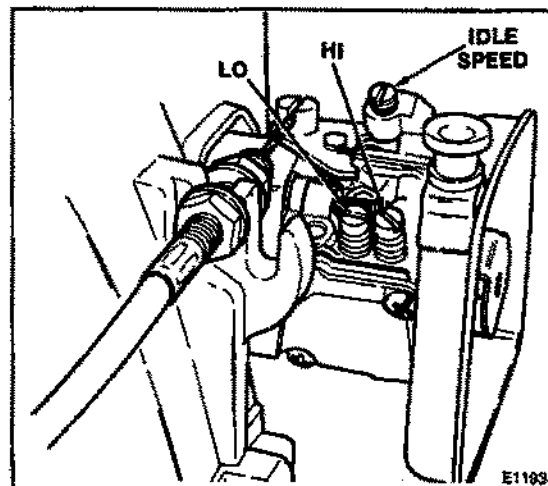
NOTE

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 (H) 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

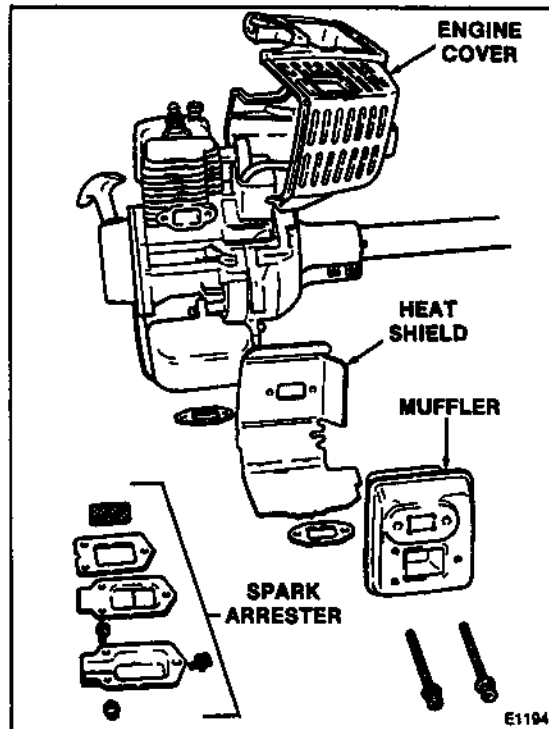
It may be necessary to reset idle speed as outlined in steps 4 and 5 of "Low Speed Adjustment" section.

CLEANING MUFFLER AND EXHAUST PORT (Check Periodically)

IMPORTANT

Exhaust system restrictions caused by build-up of exhaust particles/residue can occur gradually. This restriction prevents normal flow of gases and results in loss of power and poor idle stability.

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

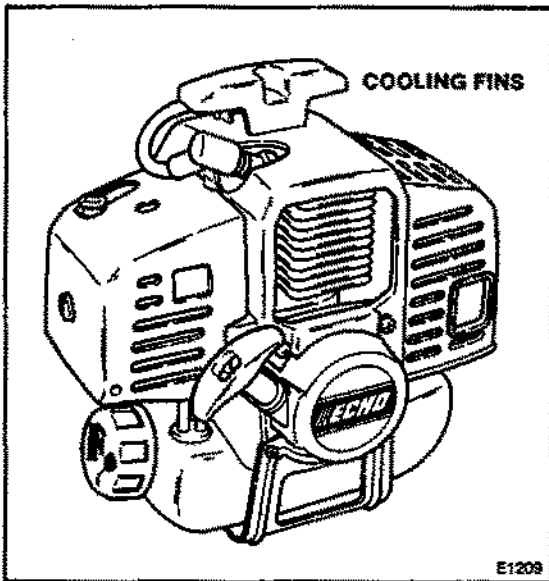
Be careful not to scratch the cylinder or piston when cleaning the cylinder exhaust port.

6. Clean deposits from muffler, spark arrester screen and cylinder exhaust port.
7. Inspect gaskets, replace if necessary.

8. Install heat shield and muffler.
9. Install spark arrester.
10. Install engine cover and spark plug lead.

CLEANING CYLINDER FINS (Check Periodically)

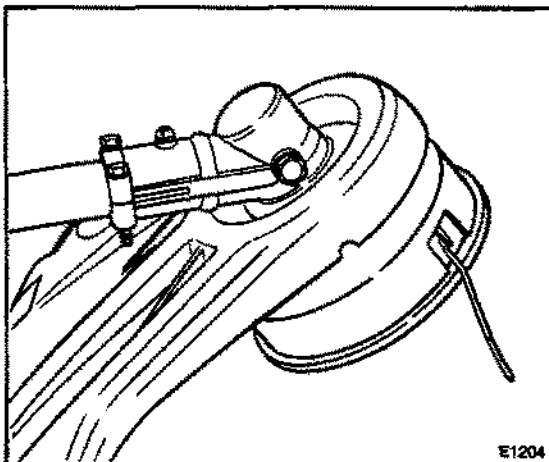
1. Remove dust and dirt from between fins.



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".

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.

SHARPENING THE OPTIONAL 8-TOOTH BLADE

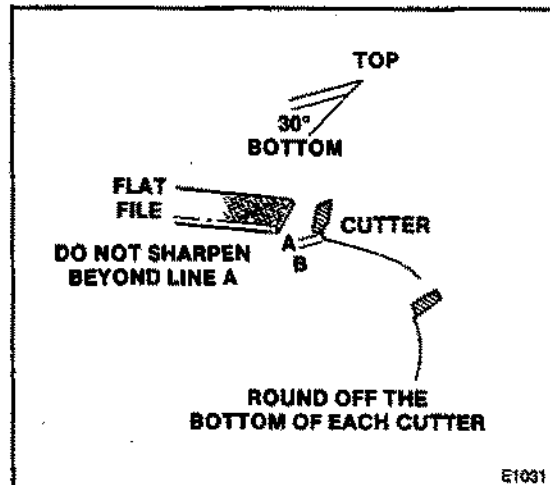
File the bottom of the teeth to a 1-2 mm radius.

NOTE

Sharpen each cutter equally.

NOTE

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

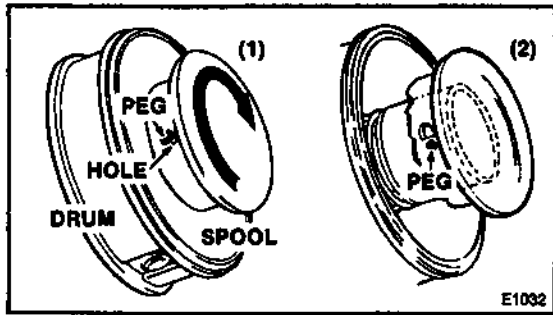


REPLACING NYLON LINE

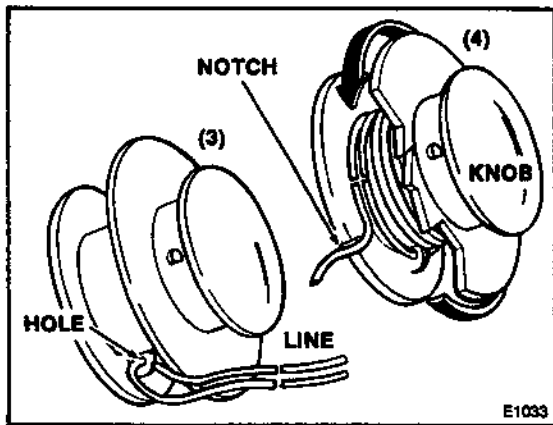
1. (Do not push spool in.) Hold drum firmly and turn spool to take up slack.
2. Twist with a hard snap until plastic peg is not visible in hole and pull spool out of drum.

NOTE

If not replacing line, go to Step 5.

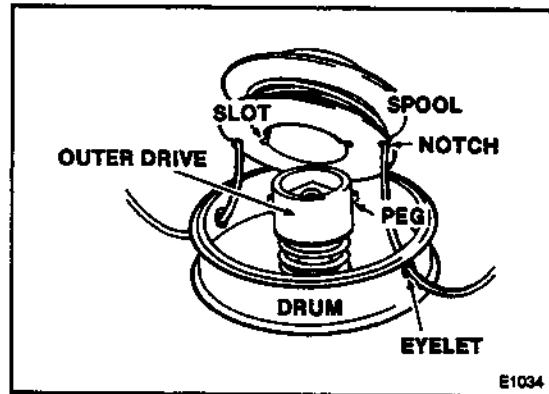


3. Use one line (20' x .095") and thread line through hole on spool until ends are even.
4. Wind both ends of line at same time, counterclockwise, tightly and evenly without twisting, in direction of arrow marked "cc" on spool.

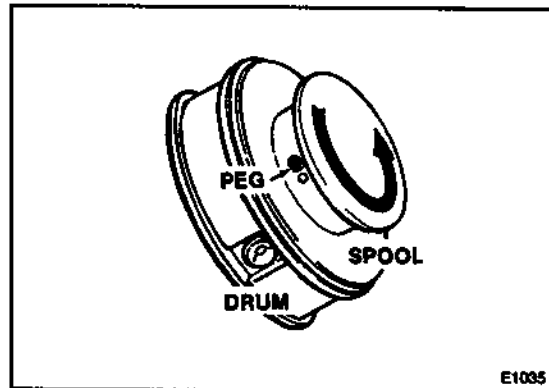


5. Place ends of line into notches of spool with about 5 inches protruding.
6. Turn outer drive so that pegs are lined up with eyelets in drum.

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

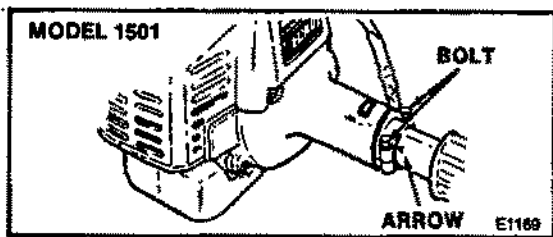
ASSEMBLING DRIVE SHAFT FOR MODEL 1501 ONLY (See Picture)

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

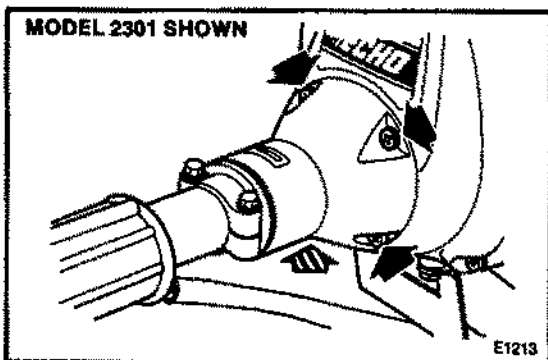
The line on the drive shaft housing must be in contact with the engine (arrow Δ on drive shaft indicates line).

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



FOR MODEL 2301 AND 2310 ONLY (See Picture)

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 pages 4 and 5.)
3. Secure drive shaft assembly to engine with screws.

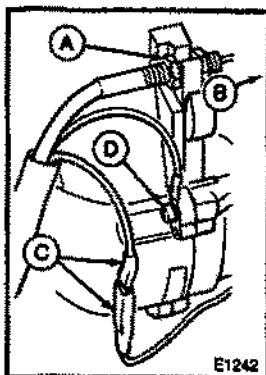


ASSEMBLING THROTTLE CABLE

NOTE

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

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



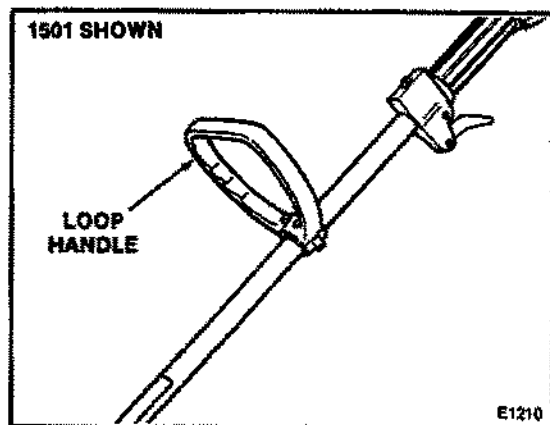
NOTE

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

5. Tighten nut (A).
6. Check throttle for freedom of movement and make sure it returns to idle position.
7. Connect stop lead to stop lead connector (C).
8. Secure ground lead under screw (D) on housing.
9. 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 screws.

INSTALLING PLASTIC SHIELD (For Nylon Line Operation)

NOTE

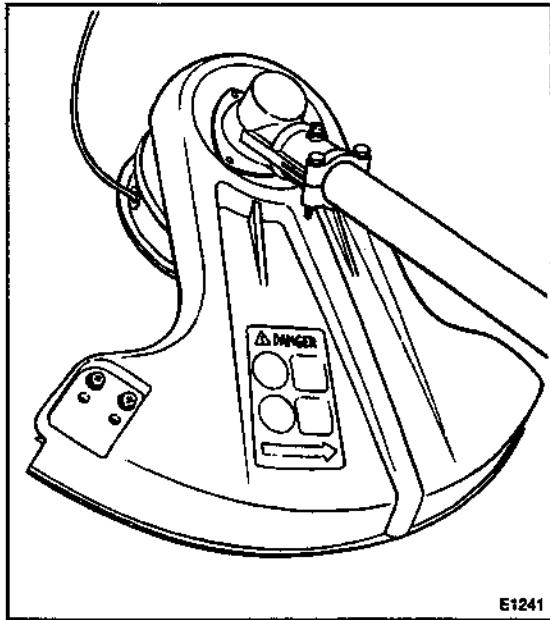
The plastic shield is for use with the nylon cutting head only. Install metal shield if using Tri-Cut or metal blades. See page 22.

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

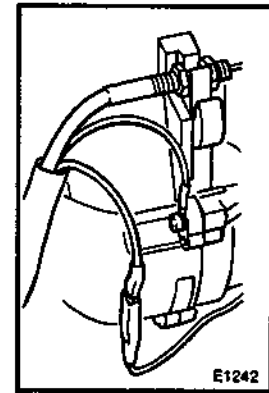
NOTE

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

3. Secure shield with screws.



1. Disconnect stop lead from stop lead connector (A).



2. Detach inner cable from swivel (B). Remove air cleaner cover on 2301 models to provide access.

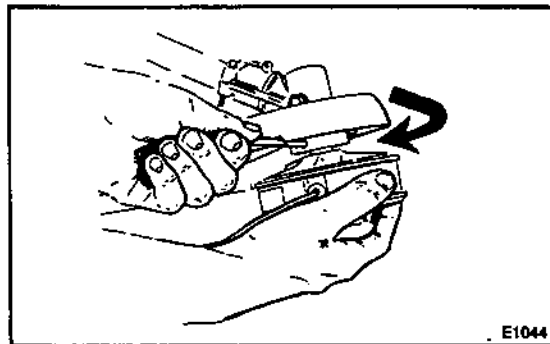
3. Loosen nut (C) and remove throttle cable.

4. Remove ground lead (D).

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

INSTALLING NYLON LINE CUTTER HEAD

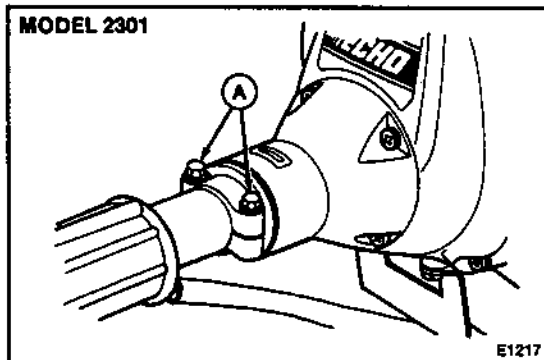
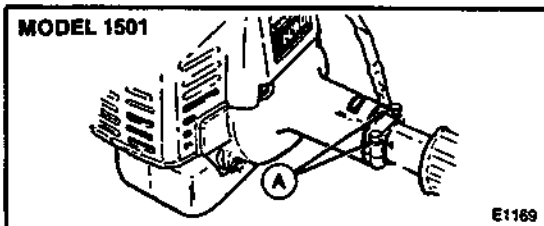
1. Align hole in adapter plate with hole in shaft and install locking tool.
2. Thread cutter head onto shaft (turning it counterclockwise) until it is tight.



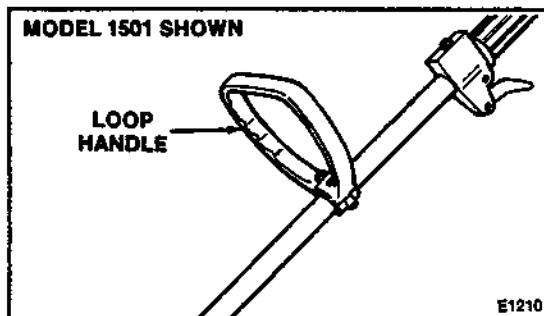
3. Remove locking tool.

INSTALLING U-HANDLE KIT (Optional Equipment - Models SRM 1501 and SRM 2301. Standard Equipment - Model SRM 2310.)

NOTE
Begin with step 1 for models 1501 and 2301. For model 2310, begin with step 12.

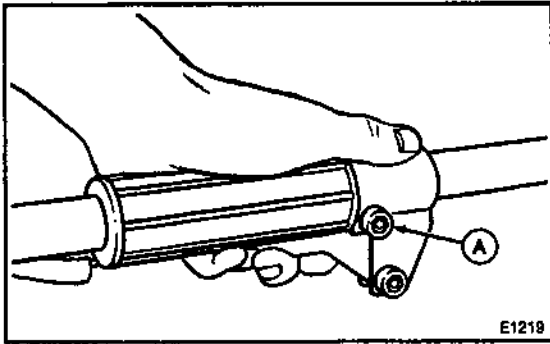


6. Remove loop handle.

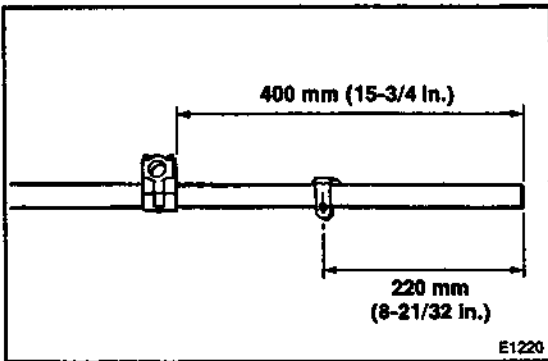


7. Loosen screw (A) and slide trigger and grip off of drive shaft.

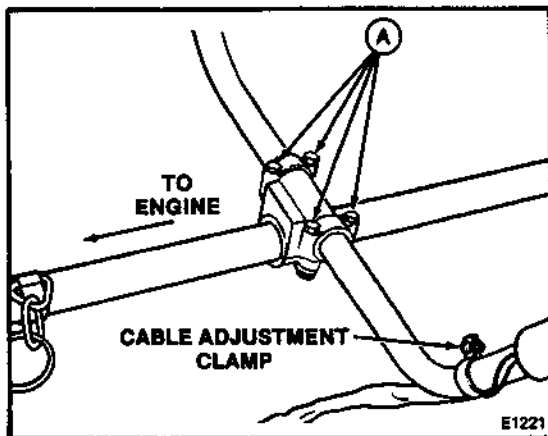
NOTE
The grip can be removed by cutting it full length and removing.



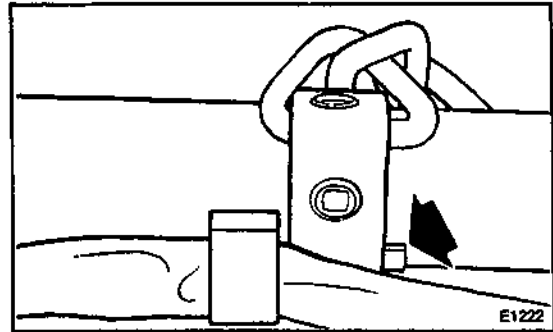
8. Position handle bracket approximately 400 mm (15-3/4 in.) from end of drive shaft.
9. Secure handle bracket with screws.
10. Install hook (larger hook for nylon head operation, small hook for metal or Tri-Cut blade operation) approximately 220 mm (8-21/32 in.) from end of drive shaft.
11. Secure hook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



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

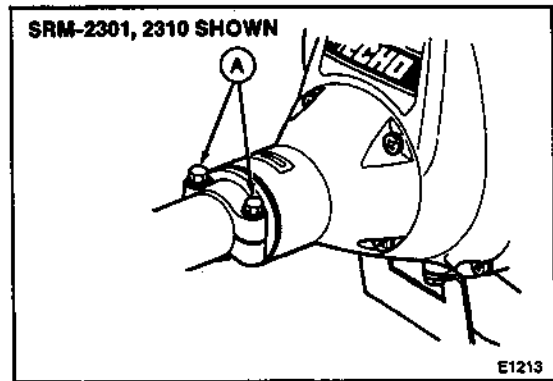


13. Secure throttle cable and leads to drive shaft by sliding wedge under harness hook.

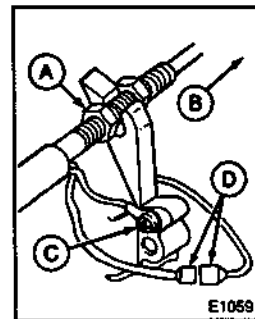


14. Slide drive shaft assembly into clutch case and tighten screws (A).

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



15. Loosen nut (A).
16. Insert throttle cable in slot.
17. Finger tighten nut (A).
18. Attach inner cable to the swivel (B). Remove air cleaner cover on 2310 models to provide access.
19. Tighten nut (A).
20. Check throttle for freedom of movement and make sure it returns to idle.
21. Secure ground lead to screw (C) on housing.



22. Connect stop leads (D).
23. 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.
24. Reinstall air filter cover.

INSTALLING STEEL SHIELD FOR METAL BLADE AND TRI-CUT BLADE OPERATION
(Optional Equipment - Models SRM 1501 and SRM 2301. Standard Equipment - Model SRM 2310.)

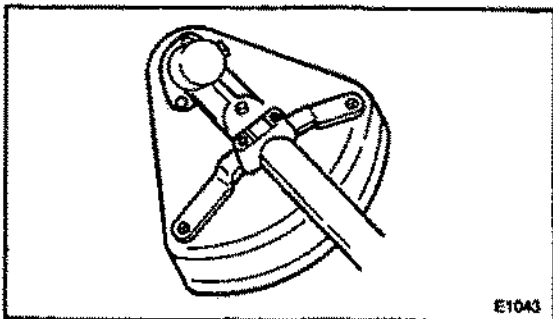
You MUST install U-Handle Kit (as described on page 20) to operate this unit with Metal Blade. If you are installing both the U-Handle Kit and the blade conversion kit, the large hook for the harness in the U-Handle Kit is not needed (Nylon head operation only). Use the smaller hook provided.

If necessary, remove nylon head and plastic shield. Follow previous procedures in reverse order. (Refer to pages 19 and 20)

1. Fit shield to gear housing and secure with screws and washers.

Install upper fitting plate (D) on shaft.

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



INSTALLING BLADE ADAPTER AND BLADE (METAL OR TRI-CUT)
(Optional Equipment - Models SRM 1501 and SRM 2301. Standard Equipment - Model SRM 2310)

1. Install upper fitting plate (D) on shaft.
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 and insert locking tool.
5. Place locking nut on shaft and rotate counter-counterwise to tighten.
6. Install split pin in hole of shaft and bend over to prevent it from coming off.

NOTE

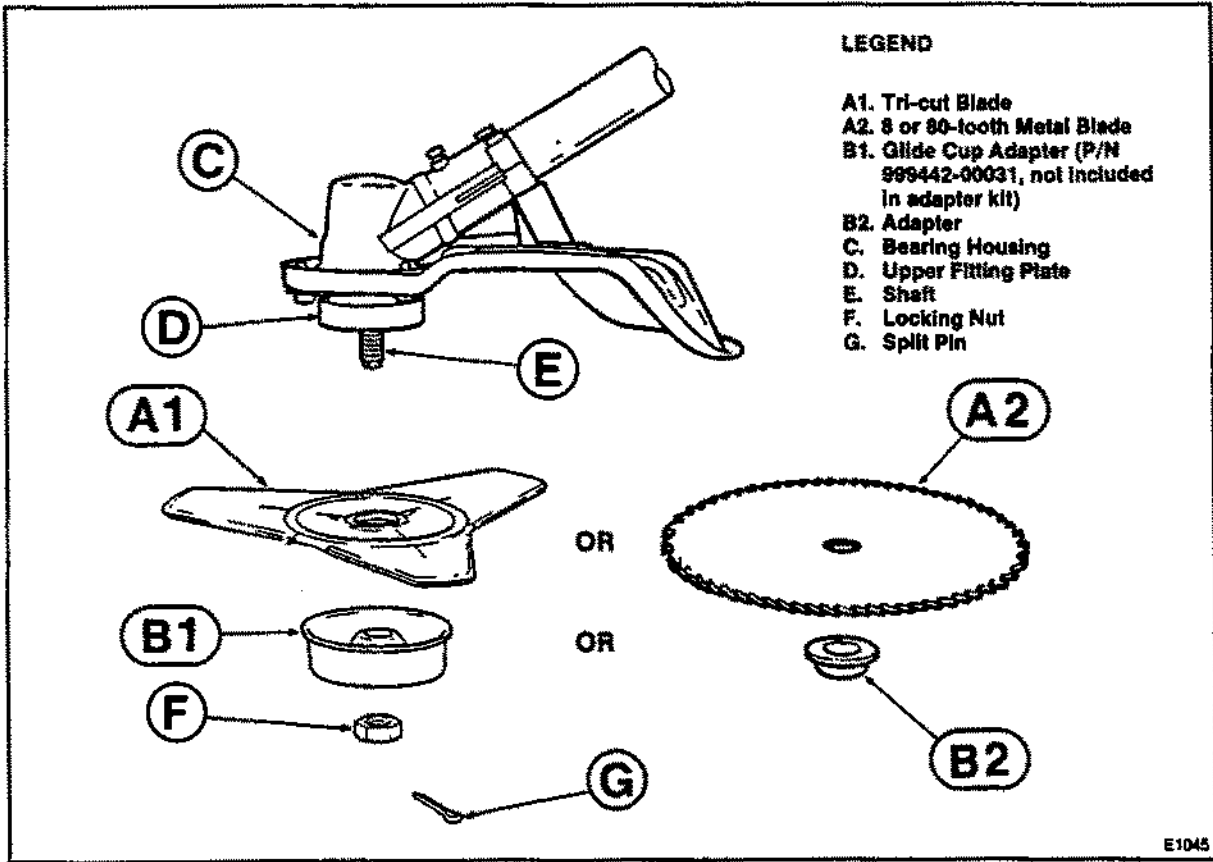
This procedure applies to the installation of both metal blades approved for this unit by ECHO, Inc.

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.



E1045

STORAGE

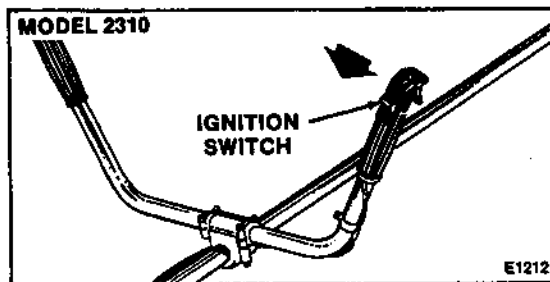
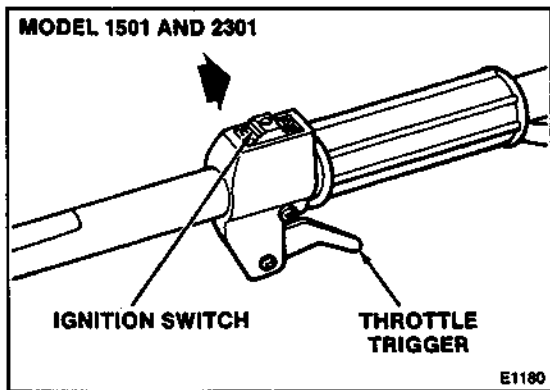
LONG TERM STORAGE (over 60 days)

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

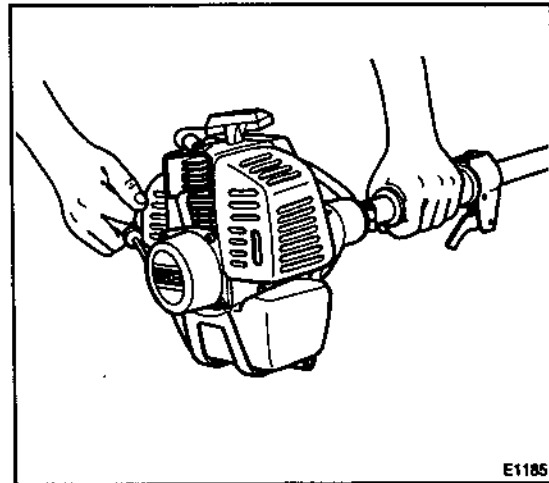
1. Store unit in a dry, dust free place, out of the reach of children.



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.)

SPECIFICATIONS

MODEL SRM-1501, 2301 AND 2310

Length Model 1501, 2301 and 2310	1770 mm (70 in.)
Width Model 1501 and 2301 Model 2310	330 mm (13 in.) 500 mm (23.6 in.)
Height Model 1501 and 2301 Model 2310	300 mm (12 in.) 360 mm (14.2 in.)
Weight (dry weight without cutter and shoulder harness) Model 1501 Model 2301 Model 2301	4.5 kg (9.9 lbs.) 5.1 kg (11.2 lbs.) 5.4 kg (12.01 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 Model 1501 Model 2301 and 2310	WALBRO diaphragm model WYL type 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 with ECHO oil or 50:1 ratio special oil approved by ECHO
Gasoline	Regular
Oil	Designated, two-stroke, air-cooled engine oil
Fuel Tank Capacity	0.4 lit. (13.57 oz.)
Starter System	Automatic rewind starter
Clutch	Centrifugal type
Anti-vibration system	Rubber cushion
Drive Shaft	1/4" flexible shaft
Gear Case	1:1.4 reduction
Rotating Direction	Counterclockwise viewed from top
Cutter Head	Nylon line head (UNIV. SA 2-line)
Handle Model 1501 and 2301 Model 2310	Left — D-loop Right — grip U-Handle

PARTS CATALOG

To obtain a parts catalog send a check or money order for \$2.00 per parts book made payable to ECHO, INCORPORATED and state on a sheet of paper the part number (SRM-1501 — Part Number 99922201783, SRM-2301 — Part Number 99922201784 SRM-2310 — Part Number 99922201784), your name and address and mail to:

**ECHO, INCORPORATED
400 Oakwood Road
Lake Zurich, IL 60047**

If you require additional parts books, you may order them by writing down the model number and serial number of the ECHO unit you have along with \$2.00 per parts book.



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PHONE: 708-540-8400

(X750 227-3902)

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