



Hedge Clipper

Operator's Manual

MODEL **HC-1800 Type 1E**
Serial Number 001001 & Up

WARNING **DANGER**



The muffler or catalytic muffler and surrounding cover may become extremely hot. Always keep clear of exhaust and muffler area, otherwise serious personal injury may occur.

WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



WARNING **DANGER**

Read rules for safe operation and all instructions carefully. ECHO provides this Operator's Manual and a Safety Manual. Both must be read and understood for proper and safe operation.

INTRODUCTION

Welcome to the ECHO family. This ECHO product was designed and manufactured to provide long life and on-the-job dependability. Read and understand this manual and the SAFETY MANUAL you found in the same package. You will find both easy to use and full of helpful operating tips and SAFETY messages.

THE OPERATOR'S MANUAL

Contains specifications and information for operating, starting, stopping, maintaining, storing and assembling this product.

THE SAFETY MANUAL

Explains possible hazards involved with the use of Hedge Clippers, and what measures you should take to make their use safer.

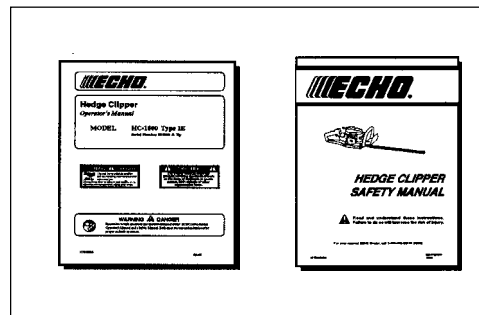


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Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories, and may not include all standard equipment.

MANUAL SAFETY SYMBOLS AND IMPORTANT INFORMATION

Throughout this manual and on the product itself, you will find safety alerts and helpful, information messages preceded by symbols or key words. The following is an explanation of those symbols and key words.



This symbol accompanied by the words **WARNING** and **DANGER** calls attention to an act or condition that can lead to serious personal injury to operator and bystanders.



The circle with the slash symbol means whatever is shown within the circle is prohibited.



IMPORTANT



NOTE

IMPORTANT

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

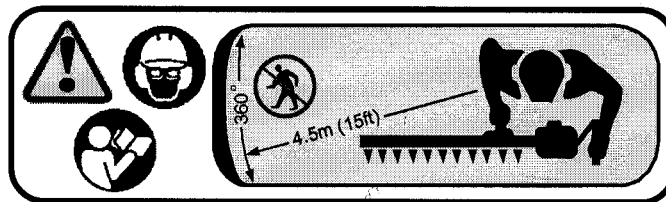
NOTE

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

SAFETY

DECALS

Locate these safety decals on your unit. The complete unit illustration found in the "DESCRIPTION" section, will help you locate them. Make sure the decals are legible and that you understand and follow the symbols on them. If a decal cannot be read, a new one can be ordered from your ECHO dealer. See PARTS ORDERING instructions for specific information.



P/N X505000270



P/N X505000290

INTERNATIONAL SYMBOLS

Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	Read and understand owners manual.		Fuel and oil mixture
	Wear eyes, ears and head protection		Finger Severing
	Emergency stop		Hot Surface
	Wear hand protection. Use two handed.		DO NOT smoke near fuel.
	Engine choke control.		Ignition ON/OFF
	Chain lubrication		Do not operate without guards in place.

Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	Carburetor adjustment - Low speed mixture		Carburetor adjustment - High speed mixture
	Safety/Alert		Carburetor adjustment - Idle speed
	Avoid all power lines. This unit is not insulated against electrical current.		Do not operate closer than 15 M (50 ft.) from electrical hazards.
	Plan retreat path from falling objects.		Primer bulb
	DO NOT allow flames or sparks near fuel.		Wear slip resistant foot wear.
	Keep bystanders at least 4.5 meters (15 feet) away.		

SAFETY INSTRUCTIONS

SAFETY EQUIPMENT AND PROPER CLOTHING

WARNING DANGER

Hedge Clipper users risk injury to themselves and others if the hedge clipper is used improperly and or safety precautions are not followed. Proper clothing and safety gear must be worn when operating a hedge clipper.

Eye Protection

Eye protection that meet ANSI Z87.1 or CE requirements must be worn whenever you operate the Hedge Clipper.

Hand Protection

Wear no-slip, heavy duty work gloves to improve your grip on the handles. Gloves also reduce the transmission of machine vibration to your hands.

Hearing Protection

Wear hearing protection. ECHO recommends wearing hearing protection whenever unit is used.

Proper Clothing

Wear snug fitting, durable clothing;

- Pants should have long legs, shirts with long sleeves.
- DONOTWEARSHORTS,
- DONOTWEARTIES,SCARFS,JEWELRY.

Wear protective hair covering to contain long hair.

Wear sturdy work shoes with nonskid soles;

- DONOTWEAROPENTOEEDSHOES,
- DONOTOPERATEUNITBAREFOOTED.

Wear no-slip, heavy duty work gloves.

EXTENDED OPERATION/EXTREME CONDITIONS

Vibration and Cold

It is believed that a condition called Raynaud's Phenomenon, which affects the fingers of certain individuals, may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations, followed by loss of color and numbness in the fingers. The following precautions are strongly recommended, because the minimum exposure which might trigger the ailment is unknown.

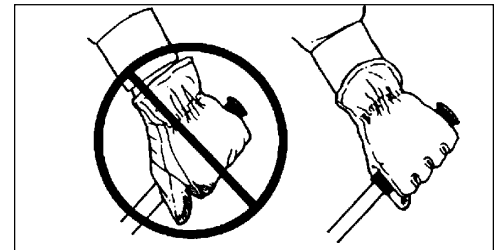
- Keep your body warm, especially the head, neck, feet, ankles, hands, and wrists.
- Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks, and also by not smoking.
- Limit the hours of operation. Try to fill each day with jobs where operating the trimmer or other hand-held power equipment is not required.
- If you experience discomfort, or redness and swelling of the fingers, followed by whitening and loss of feeling, consult your physician before further exposing yourself to cold and vibration.

Repetitive Stress Injuries

It is believed that overusing the muscles and tendons of the fingers, hands, arms, and shoulders may cause soreness, swelling, numbness, weakness and extreme pain in those areas. Certain repetitive hand activities may put you at a high risk for developing a Repetitive Stress Injury (RSI). An extreme RSI condition is Carpal Tunnel Syndrome (CTS), which could occur when your wrist swells and squeezes a vital nerve that runs through the area. Some believe that prolonged exposure to vibration may contribute to CTS. CTS can cause severe pain for months or even years.

To reduce the risk of RSI/CTS, do the following:

- Avoid using your wrist in a bent, extended, or twisted position. Instead, try to maintain a straight wrist position. Also, when grasping, use your whole hand, not just the thumb and index finger.
- Take periodic breaks to minimize repetition and rest your hands.
- Reduce the speed and force with which you do the repetitive movement.
- Do exercises to strengthen the hand and arm muscles.
- Immediately stop using all power equipment and consult a doctor if you feel tingling, numbness or pain in the fingers, hands, wrists or arms. The sooner RSI/CTS is diagnosed, the more likely permanent nerve and muscle damage can be prevented.

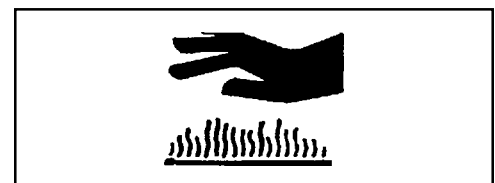


EQUIPMENT

WARNING DANGER

Use only ECHO approved attachments. Serious injury may result from the use of a non-approved attachment combination. ECHO, INC. will not be responsible for the failure of cutting devices, attachments, or accessories which have not been tested and approved by ECHO. Read and comply with all safety instructions listed in this manual and safety manual.

- Check unit for loose/missing nuts, bolts, and screws. Tighten and/or replace as needed.
- Inspect fuel lines, tank, and area around carburetor for fuel leaks. DO NOT operate unit if leaks are found.
- Never adjust blades when the engine is operating.
- Inspect hand guard for damage. Replace if damaged or missing.
- Check that the blade assembly is firmly attached and in safe operating condition. Dull, loose, or damaged blades should not be used.
- During operation, the complete unit, especially the power head, muffler area and cutting attachment may become very hot, too hot to touch. Avoid contact during and immediately after operation.



SAFE OPERATION

WARNING **DANGER**

Do not operate this product indoors or in inadequately ventilated areas. Engine exhaust contains poisonous emissions and can cause serious injury or death.

Provide Safety And Operating Instructions To All Operators

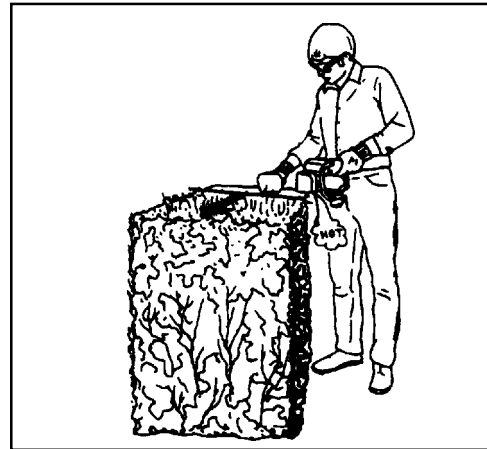
- Provide all users of this equipment with the Operator's Manual and Safety Manual for instructions on Safe Operation.

Keep a Solid Stance

- Maintain footing and balance at all times. Do not stand on slippery, uneven or unstable surfaces. Do not work in odd positions or on ladders. Do not over reach.

Keep a Firm Grip

- Hold the front and rear handles with both hands, with thumbs and fingers encircling the handles.



EMISSION CONTROL

The emission control system for this engine is EM (Engine Modification).

Emission Control Label (located on Engine) (EXAMPLE ONLY, information on label varies by FAMILY).

IMPORTANT ENGINE INFORMATION
ENGINE FAMILY : TEH021UB24RA
DISPLACEMENT : 21.2cc
THIS ENGINE MEETS U.S. EPA PHI AND 1995 - 1999
CALIFORNIA EMISSION REGULATIONS FOR ULGE
ENGINES. REFER TO OWNER'S MANUAL FOR
MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS.



KIORTZ CORP.



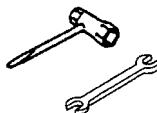
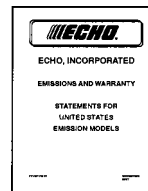
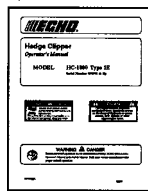
DESCRIPTION

The HC-1800 Hedge Clipper is pre-assembled and ready for use.

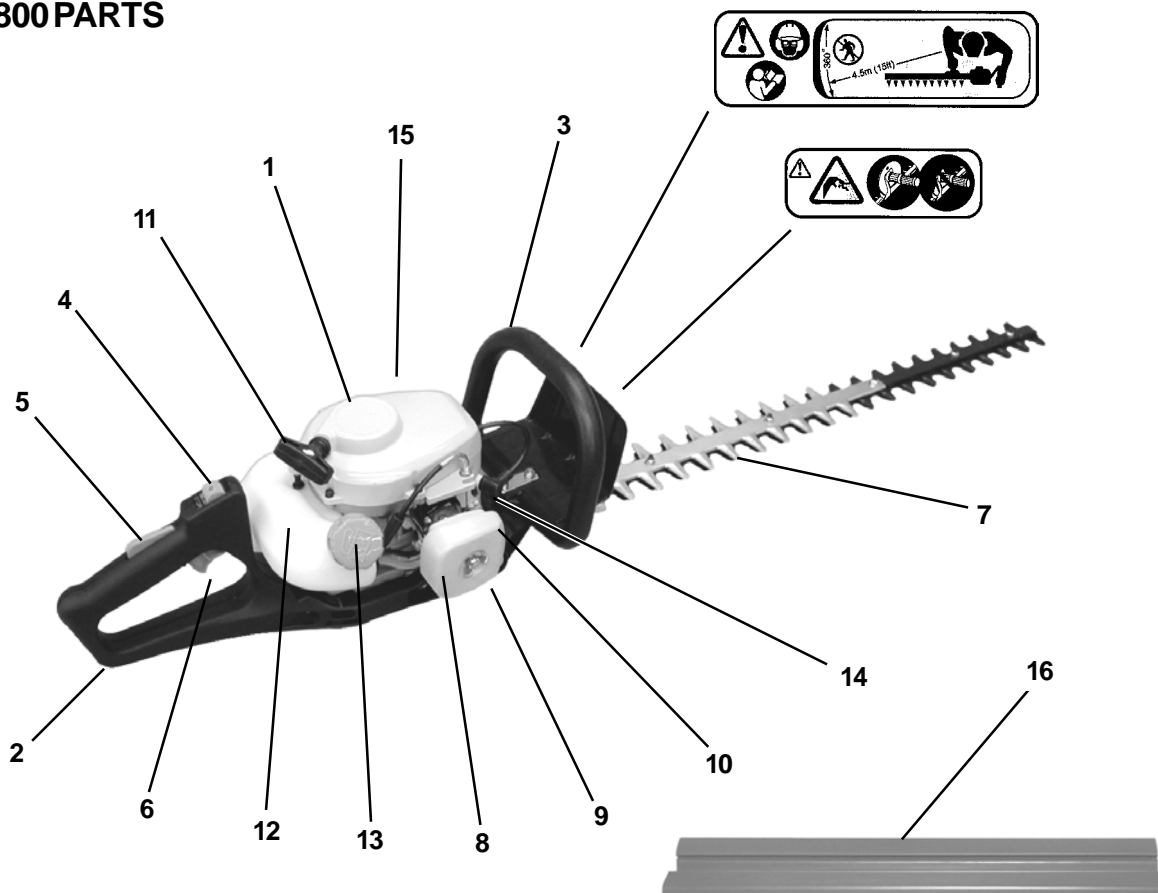
After opening the carton, check for damage. Immediately notify your retailer or ECHO Dealer of damaged or missing parts. Use the contents list to check for missing parts.

PACKAGE CONTENTS

- 1 - Hedge Clipper Assembly
- 1 - Operator's Manual
- 1 - Safety Manual
- 1 - Warranty Statement
- 1 - Warranty Registration Card
- 1 - Combination Wrench - Screwdriver
- 1 - 8 mm x 10 mm Open-end Wrench
- 1 - Sample Bottle ECHO 2.6 oz. 2-Cycle Oil
- 1 - Blade Cover



HC-1800 PARTS



HC-1800 PARTS DESCRIPTIONS

1. **POWER HEAD** - Factory Assembled to the gear housing assembly. Includes the Engine, Clutch, Fuel System, Ignition System, and Recoil Starter.
2. **REAR HANDLE** - Contains the Stop Switch, Throttle Lockout, and Throttle Trigger.
3. **FRONT HANDLE / GUARD** - Comfortable, textured finish provides anti-slip grip for front hand. Guard protects hand from the blades. Warning decals are located on guard.
4. **STOP SWITCH** - SLIDE SWITCH mounted on top of the rear handle. Move switch FORWARD to RUN, BACK to STOP.
5. **THROTTLE TRIGGER LOCKOUT** - This lever must be depressed before Throttle Trigger can be activated.
6. **THROTTLE TRIGGER** - Spring loaded to return to idle when released. Trigger Lockout must be depressed fully before Throttle Trigger will move. During acceleration, depress gradually for best operating technique.
7. **BLADES** - Double-sided reciprocating blades mounted to a blade support bar.
8. **AIR CLEANER** - Contains replaceable filter element.
9. **PRIMER BULB** - Pumping primer bulb before starting engine draws fresh fuel from the fuel tank priming the carburetor for starting. Pump primer bulb until fuel is visible and flows freely in the clear fuel tank return line. Pump bulb an additional 4 or 5 times.
10. **CHOKE** - The choke control lever is located alongside the air filter case. Move lever up to "COLD START" to close the choke for Cold Starting. Move lever down to "RUN" position to open choke.
11. **RECOIL STARTER HANDLE** - Pull handle slowly until recoil starter engages, then pull quickly and firmly. DO NOT pull rope all the way out or allow the handle to snap back, damage to the starter will occur.
12. **FUEL TANK** - Contains fuel and fuel filter.
13. **FUEL TANK CAP** - Covers and seals fuel tank opening.
14. **SPARK PLUG** - Provides spark to ignite fuel mixture.
15. **MUFFLER/SPARK ARRESTOR** - The muffler controls the exhaust noise while the spark arrestor prevents hot, glowing particles of carbon from leaving the muffler where they could possibly start a fire.
16. **BLADE COVER** - Used to cover blades during transportation or storage. Remove blade cover before using unit.

SPECIFICATIONS

MODEL	H C -1800
Length	1238 mm (48.7 in.)
Width	240 mm (9.4 in.)
Height	200 mm (7.9 in.)
Weight, dry	5.6 kg (12.4 lb.)
Type of Engine	Air cooled, two-stroke, single cylinder, gasoline engine
Displacement	21.2 cc (1.29 cu.in.)
Bore	32.2 mm (1.27 in.)
Stroke	26.0 mm (1.02 in.)
Exhaust System	Spark Arrestor Muffler
Carburetor	Zama C1U w/primer
Ignition System	Flywheel Magneto, Capacitor discharge ignition
Spark Plug	BPM-7Y (Gap 0.65 mm (0.026 in.))
Fuel	Mixed Fuel - gasoline and oil
Fuel/Oil Ratio	50:1 Ratio using ECHO Hi-Performance, two-stroke air cooled engine oil
Gasoline	89 Octane Unleaded. Do not use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE.
Oil	ECHO Hi-Performance, two-stroke air cooled engine oil
Fuel Tank Capacity	0.5 lit. (17.0 fl. oz)
Starter System	Automatic Recoil Starter
Clutch	Centrifugal Type
Gear Case Ratio	1:5.88
Cutter	(Double Reciprocating Blade) Double Edge
Length: From guard to tip Cutting length	826 mm (32.5 in.) 709 mm (27.9 in.)
Pitch	35 mm (1.4 in.)
Height	21 mm (0.83 in.)
Idle Speed (RPM)	3,000
Wide Open Throttle (RPM)	11,000 - 12,000

PRE-OPERATION

FUEL

Fuel Requirements

Gasoline - Use 89 Octane [(R+M)/2] (mid grade or higher) gasoline known to be good quality. Gasoline may contain up to 15% MTBE (methyl tertiary-butyl ether). Gasohol containing methyl (wood) alcohol is **NOT** approved.

Two Stroke Oil - A two-stroke engine oil meeting ISO-L-EGD (ISO/CD 13738) and J.A.S.O. FC Standards, must be used. Echo brand Premium 50:1 oil meets these standards. Engine problems due to inadequate lubrication caused by failure to use an ISO-L-EGD and J.A.S.O. FC certified oil, such as Echo Premium 50:1 Two-stroke Oil, will void the two-stroke engine warranty. (Emission related parts only are covered for two years, regardless of two-stroke oil used, per the statement listed in the EPA Phase I/California Emission Defect Warranty Explanation.)

IMPORTANT

Echo Premium 2-Stroke Oil may be mixed at 50:1 ratio for application in all Echo engines sold in the past regardless of ratio specified in those manuals.

Mixing Instructions

1. Fill an approved fuel container with half of the required amount of gasoline.
2. Add 2-stroke oil to gasoline.
3. Close container and shake to mix oil with gasoline.
4. Add remaining gasoline and remix.
5. Install fuel container cap and wipe any spilled fuel from container and surrounding area.

Handling Fuel

WARNING **DANGER**

Fuel is **VERY** flammable. Use extreme care when mixing, storing or handling or serious personal injury may result.

- Use an approved fuel container.
- **DO NOT** smoke near fuel.
- **DO NOT** allow flames or sparks near fuel.
- Fuel tanks/cans may be under pressure. Always loosen fuel caps slowly allowing pressure to equalize.
- **NEVER** refuel a unit when the engine is **HOT!**
- **NEVER** refuel a unit with the engine running.
- **DO NOT** fill fuel tanks indoors. **ALWAYS** fill fuel tanks outdoors over bare ground.
- Securely tighten fuel cap after refueling.
- Inspect for fuel leakage. If fuel leakage is found, do not start or operate unit until leakage is repaired.

IMPORTANT

Spilled fuel is a leading cause of hydrocarbon emissions. Some states may require the use of automatic fuel shut-off containers to reduce fuel spillage. Contact your ECHO dealer for ordering information.

After Refueling

- Wipe any spilled fuel from the unit.
- Move at least 3 m (10 ft.) from refueling location before starting the engine.

After use

- **DO NOT** store a unit with fuel in its tank. Leaks can occur. Return unused fuel to an approved fuel storage container.

Storage - Fuel storage laws vary by locality. Contact your local government for the laws affecting your area. As a precaution, store fuel in an approved, air tight container. Store in a well ventilated, unoccupied building, away from sparks and flames. Do not store fuel longer than 30 days.

IMPORTANT

Stored fuel ages. Do not mix more fuel than you expect to use in thirty (30) days, ninety (90) days when a fuel stabilizer is added.

IMPORTANT

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

OPERATION

STARTING COLD ENGINE

1. *Stop Switch*
Slide stop switch (A) forward, away from the STOP position.
2. *Choke Lever*.
Move choke (B) up to the closed, Cold Start position.
3. *Primer*
Pump primer bulb (C) until fuel is visible, and flows freely in the clear fuel tank return line. Pump bulb an additional 4 or 5 times.
4. *Recoil Starter*
Place the hedge clipper on a flat clear area. Grip the front handle (D) securely with one hand, and pull the recoil starter handle (E) until engine fires.
5. *Choke Lever*
Move choke (B) down to the open, Run position. Restart engine if necessary and allow unit to warm up at idle for several minutes.

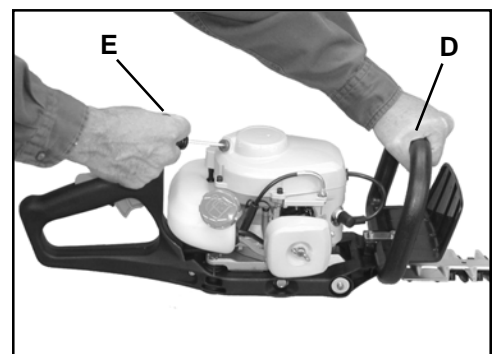
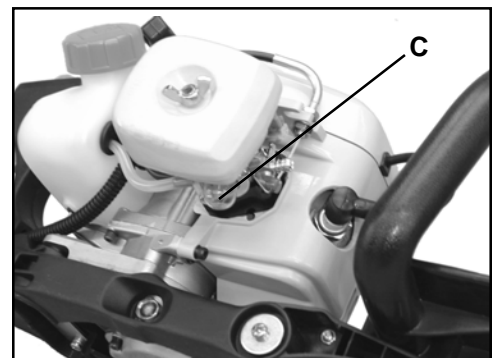
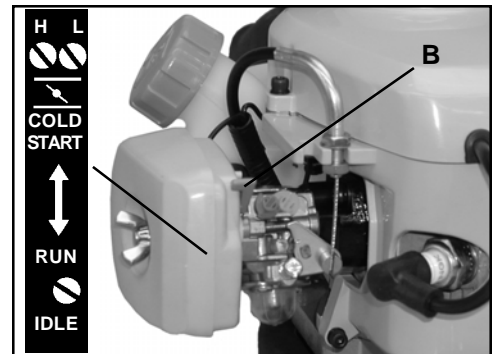
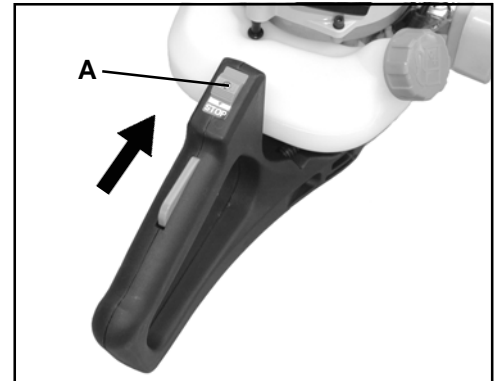
WARNING DANGER

The blades should not move at idle. If blades move, readjust carburetor according to "Carburetor Adjustment" instructions in this manual or see your ECHO Dealer, otherwise serious personal injury may result.

6. *Throttle Trigger*
After engine warm-up, grip the handle to depress the throttle trigger lockout, and gradually depress throttle trigger to increase engine RPM to operating speed.

NOTE

Refer to the Hedge Clipper Safety Manual for proper and safe Trimming Techniques.



STARTING WARM ENGINE

The starting procedure is the same as Cold Start, except DO NOT close the choke.

WARNING



DANGER

The blades should not move at idle. If blades move, readjust carburetor according to "Carburetor Adjustment" instructions in this manual or see your ECHO Dealer, otherwise serious personal injury may result.

1. Stop Switch

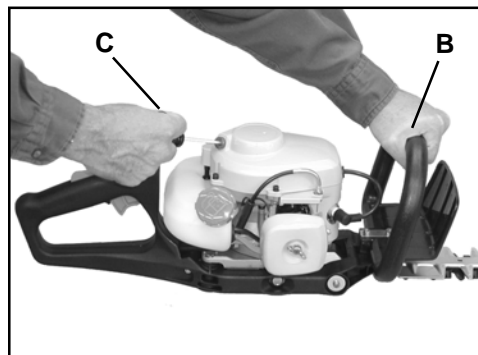
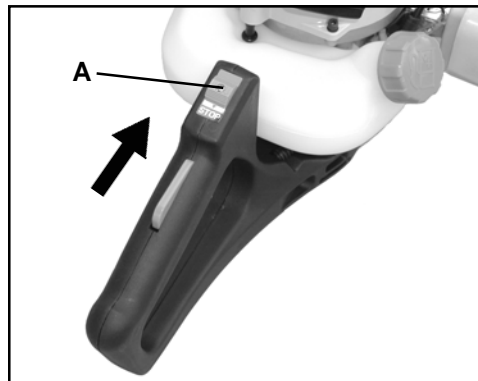
Move stop switch (A) forward, away from the STOP position.

2. Recoil Starter

Place the hedge clipper on a flat clear area. Grip the front handle (B) securely with one hand, and pull the recoil starter handle (C) until engine fires.

NOTE

If engine does not start after 5 pulls, use Cold Start Procedure.



STOPPING ENGINE

1. Throttle Trigger

Release throttle trigger, and allow engine to return to idle.

2. Stop Switch

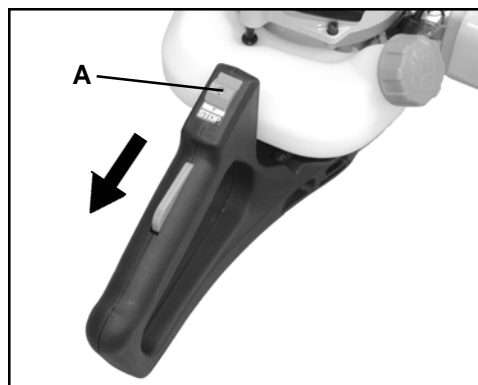
Move stop switch (A) back to STOP position.

WARNING



DANGER

If engine does not stop when stop switch is moved to STOP position, move choke lever up to Cold Start position to stall engine. Have your ECHO dealer repair stop switch before using hedge clipper again.



MAINTENANCE

Your ECHO Hedge Clipper is designed to provide many hours of trouble-free service. Regularly scheduled maintenance will help your Hedge Clipper achieve that goal. To help you decide whether you want to DO-IT-YOURSELF or have the ECHO Dealer do it, the skill level required for each maintenance task has been graded. If you are unsure or are not equipped with the necessary tools, you may want to take your unit to an ECHO Service Dealer for maintenance.

ECHO offers **REPOWER™** Maintenance Kits and Parts to make your maintenance job easier. The various part numbers required for each task are listed below the task headings on the following pages. See your ECHO dealer for these parts. If a repair is not listed, see your Echo Service Dealer for maintenance.

SKILL LEVEL

- Level 1** = Easy to do. Basic tools are required.
- Level 2** = Moderate difficulty. Some specialized tools may be required.
- Level 3** = Experience required. Specialized tools are required. ECHO recommends the unit be returned to your ECHO dealer for servicing.

MAINTENANCE INTERVALS

COMPONENT/ SYSTEM	MAINTENANCE PROCEDURE	REQ'D SKILL LEVEL	BEFORE USE	EVERY REFUEL	DAILY OR EVERY 4 HOURS	3 MONTHS OR 100 HOURS	6 MONTHS OR 300 HOURS	YEARLY OR 600 HOURS
Recommended Echo Dealer Maintenance Procedures								
Carburetor	Inspect/Clean/Replace	3					I / C	R*(1)
Sharpen Blades	Inspect/Sharpen	3	I / S (4)					
Ignition System	Clean/Replace	3	No Maintenance required for coil and flywheel					
Do-It-Yourself Maintenance Procedures								
Air Filter	Inspect/Clean/Replace	1	I / C		I / C	R*		
Choke	Inspect/Clean	2			I / C			
Fuel Filter	Inspect/Replace	1				I		R*
Fuel Line	Inspect/Replace	1	I			I / R*		R*
Cooling System	Inspect/Clean	2	I / C		I / C			
Muffler Spark Arrestor	Inspect/Replace	2				I / C		R*
Gear Housing	Lubricate	1	L (2)					
Lubricate Blades	Inspect/Clean/Lubricate	1			I / C / L (3)			
Recoil Starter Rope	Inspect/Clean	1	I					I / R*
Fuel Leaks	Inspect/Replace	1	I	I				I / R*
Spark Plug	Inspect/Clean	2				I / C	R*	
Screws/Nuts/Bolts	Inspect/Tighten/Replace	1	I / R*					

MAINTENANCE PROCEDURE LETTER CODES: I = INSPECT, R = REPLACE, C = CLEAN, L=LUBRICATE

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

MAINTENANCE PROCEDURE NOTES:

(1) Replacement will be required for Commercial use after 600 hours. For Consumer use, cleaning every 6 months is required. Cleaning includes rebuild kits.

(2) Apply 1-2 pumps of ECHO® LUBE™ every 10 hours.

(3) Inspect blades and clean as needed. Lubricate blades periodically during use.

(4) Inspect blades and have sharpened if dull or nicked. Frequency depends on use and type of materials being cut.

* All recommendations to replace are based on the finding of damage or wear during inspection.

AIR FILTER

Level 1.

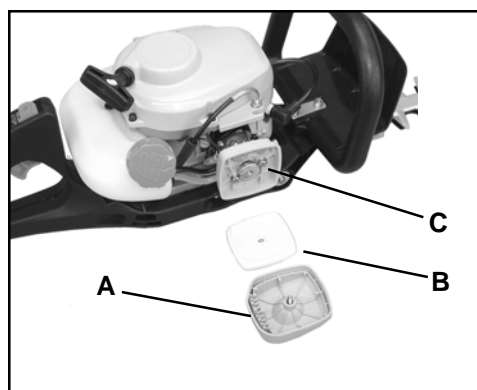
Tools required: 25 or 50 mm (1 or 2 in.) medium bristle paint brush

Parts required: 90008REPOWER™ AIR & FUEL FILTER KIT

1. Close choke (Cold Start Position). This prevents dirt from entering the carburetor throat when the air filter is removed. Brush accumulated dirt from the air cleaner area.
2. Remove the air cleaner cover (A). Inspect the air filter (B) and choke area (C), and brush lightly to clean. If air filter is fuel soaked, very dirty, or damaged, replace.
3. If element can be cleaned and reused, be certain it:
 - still fits the cavity in the air cleaner cover.
 - is installed with the original side out.

NOTE

Carburetor adjustment may be needed after air filter cleaning/replacement.



FUEL FILTER

Level 1.

Tools required: 200-250 mm (8-10 in.) length of wire with one end bent into a hook. Clean rag, funnel, and an approved fuel container

Parts required: 90008REPOWER™ AIR & FUEL FILTER KIT

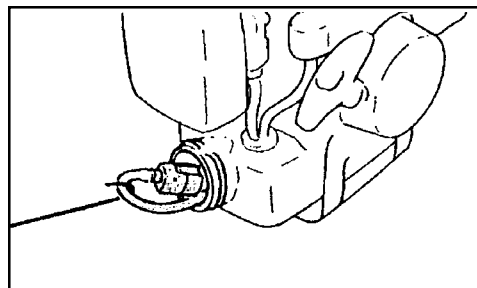
WARNING



DANGER

Fuel is **VERY** flammable. Use extreme care when mixing, storing or handling.

1. Use a clean rag to remove loose dirt from around fuel cap and empty fuel tank.
2. Use the “fuel line hook” to pull the fuel line and filter from the tank.
3. Remove the filter from the line and install the new filter.



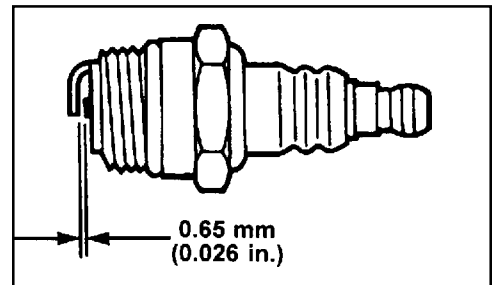
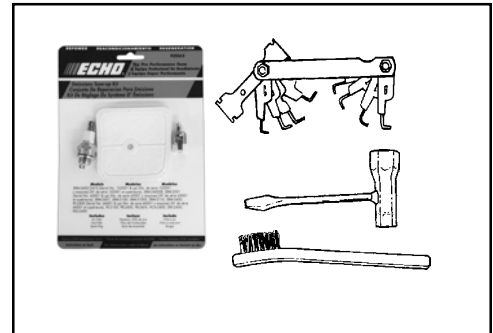
SPARK PLUG

Level 2.

Tools required: 19 mm Spark Plug Wrench, Feeler gauge, Soft metal brush

Parts required: 90064 REPOWER™ Tune-Up Kit

1. Remove spark plug and check for fouling, worn and rounded center electrode.
2. Clean the plug or replace with a new one. DO NOT sand blast to clean. Remaining sand will damage engine.
3. Adjust spark plug gap by bending outer electrode.
4. Install spark plug and tighten to 145-155 kg/cm (125-135 in. lb.).



COOLING SYSTEM CLEANING

Level 2.

Tools required: 3 mm Hex Wrench, Pointed Wood Stick, Cross head Screwdriver, 8 mm & 10 mm socket wrenches, 10 mm Open-end Wrench

Parts required: None

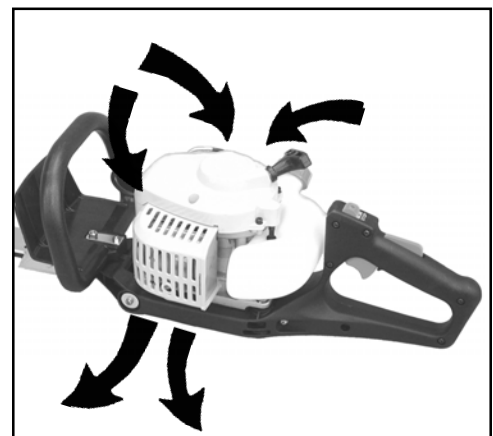
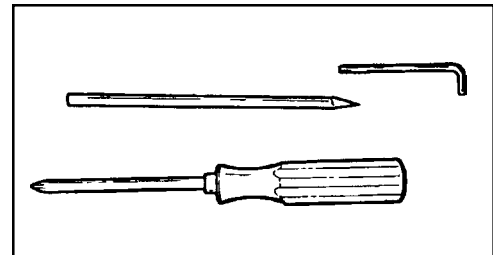
IMPORTANT

To maintain proper engine operating temperatures, cooling air must pass freely through the cylinder fin area. This flow of air carries combustion heat away from the engine.

Overheating and engine seizure can occur when:

- Air intakes in the crankcase are blocked, preventing cooling air from reaching the cylinder.
- Dust and grass build up on the outside of the cylinder. This build up insulates the engine and prevents the heat from leaving.

Removal of crankcase cooling passage blockages or cleaning of cooling fins is considered "Normal Maintenance." Any failure attributed to lack of maintenance is not warranted.



1. Disconnect spark plug lead (E).
2. Remove (4) starter cover screws, and lift cover (A) off engine.
3. Remove (2) front handle nuts, and remove handle (B) .
4. Loosen throttle linkage nut (C), and disconnect throttle linkage and throttle cable.
5. Remove (2) engine cover screws (D) at bottom of cover.
6. Disengage muffler deflector shield tab (F) from engine cover (G), and remove cover.
7. Use the wooden stick or brush to remove dirt from the cylinder fins.

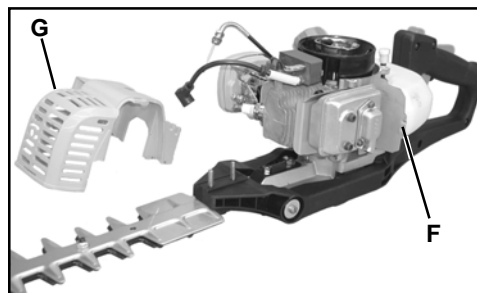
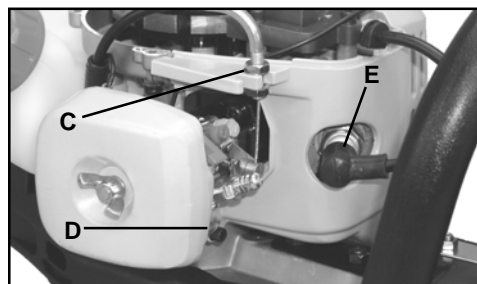
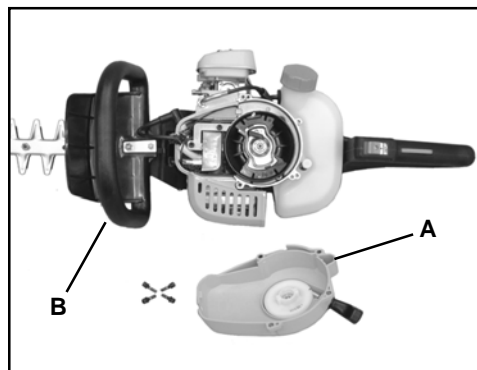
IMPORTANT

DO NOT use a metal scraper to remove dirt from the cylinder fins.

8. Assemble components in reverse order of removal

NOTE

When installing the engine cover (F), be certain that the tab of the metal deflector shield is in the slot of the cover, and the black ignition wire is placed in the notch to prevent pinching.



EXHAUST SYSTEM

Spark Arrestor Screen

Level 2.

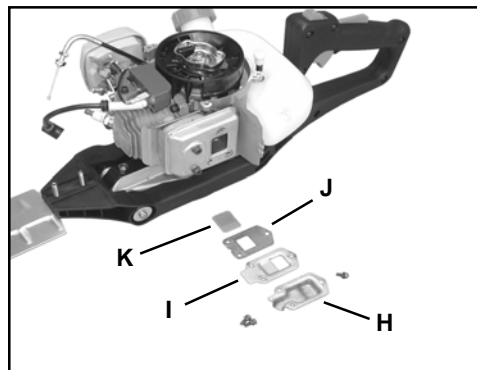
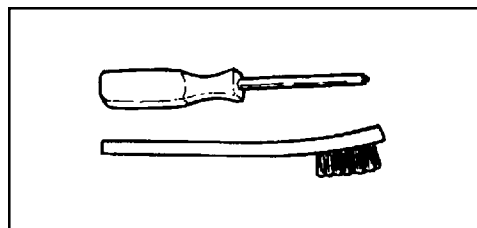
Tools required: Blade-type Screwdriver, Soft metal brush

Parts Required: Screen P/N 14586240630, Gasket Lid P/N 14586642031

1. Remove engine and starter cover. See "Cleaning Cooling System" above for step-by-step instructions.
2. Place piston at Top Dead Center (TDC) to prevent carbon/dirt from entering cylinder.
3. Remove spark arrestor screen cover (H), screen holder (I), gasket (J) and screen (K) from muffler body.
4. Clean carbon deposits from muffler components.
5. Replace screen if it is cracked, plugged or has holes burned through.
6. Assemble components in reverse order of removal.

NOTE

When installing the engine cover (F), be certain that the tab of the metal deflector shield is in the slot of the cover, and the black ignition wire is placed in the notch to prevent pinching.



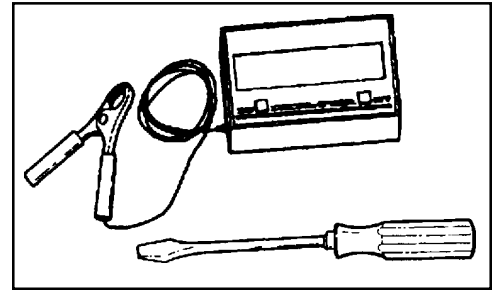
CARBURETOR ADJUSTMENT

Emission Models

Level 2.

Tools required: Screwdriver with 2 mm blade width, Tachometer (ECHOP/N99051130017)

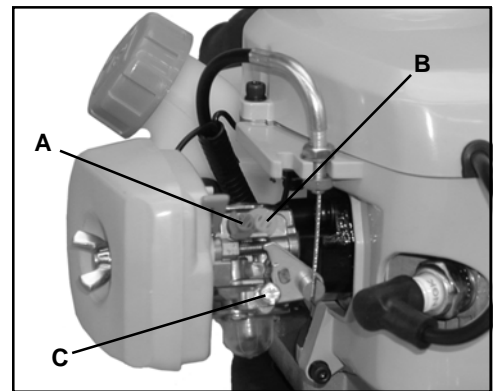
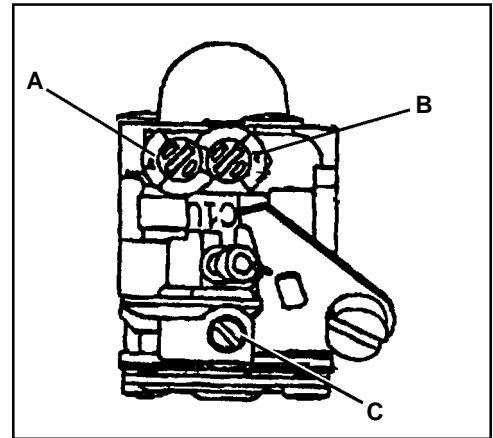
Parts required: None.



NOTE

Every unit is run at the factory and the carburetor is set in compliance with EPA Phase 1 and California Emission Regulations. In addition, the carburetor is equipped with HI (A) and LO (B) needle adjustment limiters that prevent settings outside acceptable limits.

1. Before adjusting the carburetor, clean or replace the air filter and spark arrester screen.
2. Start engine and run for several minutes to reach operating temperature.
3. Stop engine. Turn HI (A) speed needle CCW (counter clockwise) to stop. Turn LO (B) speed needle midway between full CCW and CW (clockwise) stops.
4. Idle Speed Adjustment.
-Start engine and turn idle (C) speed adjustment screw CW until the blades begin to move, then turn the screw CCW until blades stop moving. Turn screw CCW an additional 1/4 turn.
5. Accelerate to full throttle for 2-3 seconds to clear excess fuel from engine then return to idle. Accelerate to full throttle to check for smooth transition from idle to full throttle. If engine hesitates, turn LO (B) needle CCW an additional 1/8 turn and repeat acceleration. Continue adjusting until smooth acceleration results.
6. Check HI speed RPM at W.O.T. (Wide Open Throttle). HI speed RPM should be set to specifications found on page 9 "Specifications" of this manual.
7. Check idle speed and reset if necessary. If a tachometer is available, idle speed should be set to the specifications found on page 9 "Specifications" of this manual.



WARNING **DANGER**

When carburetor adjustment is completed, blades should not move at idle, otherwise serious personal injury may result.

LUBRICATION

Blades

Level 1.

Tools required: Clean rag, 25 or 50 mm (1 or 2 in.) medium bristle paint brush, Oil can

Parts Required: 20W Engine Oil (lubrication), 50-50 mixture of kerosene and 20W oil (cleaning).

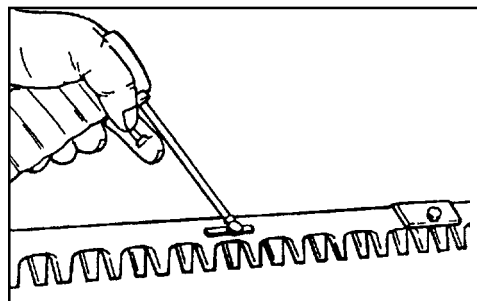
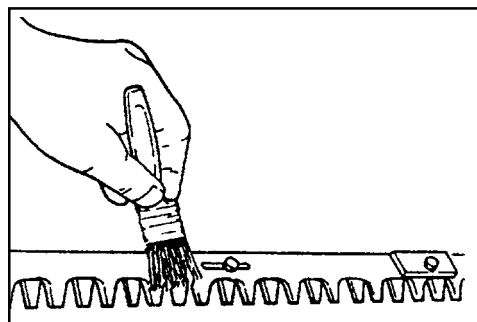
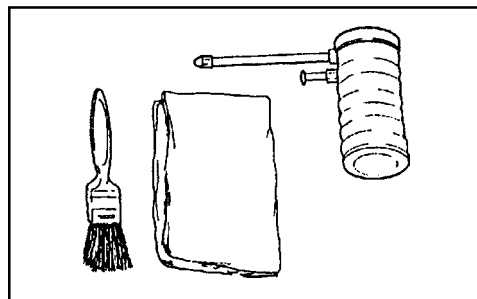
WARNING



DANGER

Hedge Clipper Blades are very sharp. Wear gloves to protect hands.

1. Disconnect spark plug wire from spark plug.
2. Brush loose debris from blade and coat both sides of blade with the 50-50 cleaning mixture.
3. Allow cleaning mixture to soften the remaining gummy residue then wipe it from the blade.
4. Apply clean oil to the entire length of the blade. Be certain the blade bolts are lubricated.
5. Wipe excess oil from the blade before putting the unit back in service.



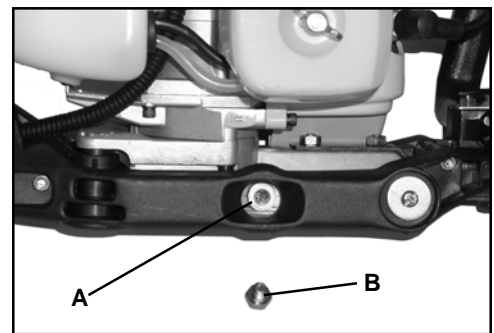
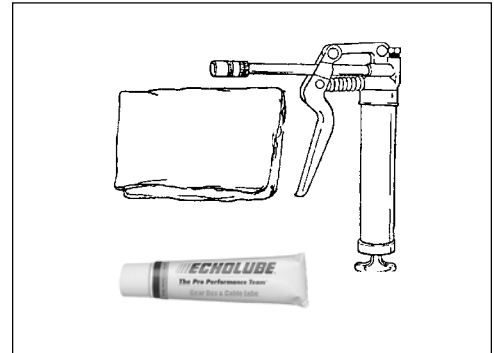
Gear Box Assembly

Level 2.

Tools required: 13 mm Socket Wrench, Grease Gun, Rag

Parts Required: ECHO® LUBE™ 8 oz. (P/N 91014) or Lithium-based grease.

1. Clean dirt from filler plug area (A) and remove plug (B).
2. Carefully add 1 or 2 pumps of grease into hole. **DO NOT** force grease. Too much pressure will force grease past seals and cause damage. Recheck grease level, and add as required.
3. Wipe excess grease from around filler plug area, and replace the filler plug. Tighten plug securely.



BLADE STIFFENER REMOVE/INSTALL

Level 2.

Tools required: (2) 10 mm Wrenches

Parts Required: Blade Lock Nuts P/N 43302206460 (As Needed)

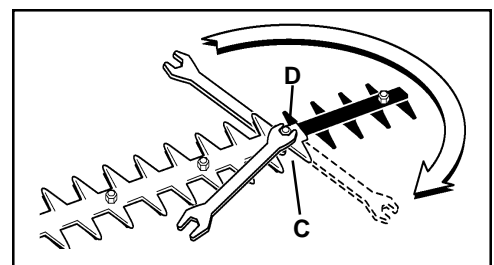
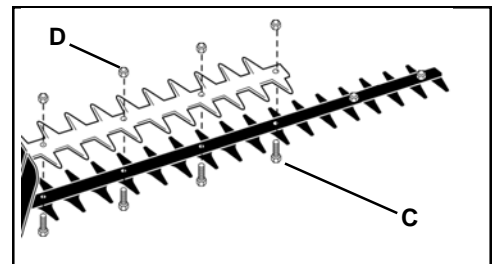
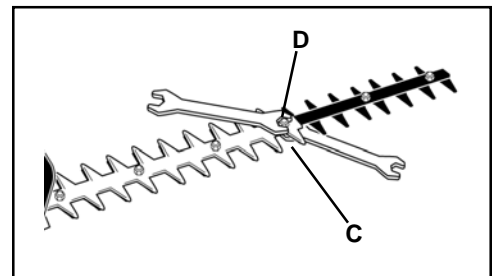
WARNING DANGER

Hedge Clipper blades are very sharp. Wear gloves to protect hands.

1. Disconnect spark plug wire from spark plug.
2. Hold blade bolt heads (C) under blade assembly. Remove blade locknuts (D) from top side, turning counterclockwise. **DO NOT** remove blade bolts.
3. Remove blade stiffener. Replace if bent or damaged.
4. Assemble blade stiffener using new blade lock nuts if required. Tighten blade bolts (C) until snug. Loosen blade bolts 1/2 turn. Hold blade bolts from turning using 10 mm wrench, and tighten blade lock nuts (D) with other 10 mm wrench.

NOTE

Locking ability of Hedge Clipper blade lock nuts will diminish each time they are removed. Replace if turning resistance is not felt when installing locknuts.



SHARPENING BLADES

Level 3.

Tools required: (2) 10 mm Wrenches, Flat file, Screwdriver

Parts required: None

WARNING DANGER

Hedge Clipper Blades are very sharp. Wear gloves to protect hands.

1. Disconnect spark plug wire from spark plug.
2. Remove blade stiffener (See "Blade Stiffener Remove/Install" on page 19).
3. Using slots (A) on bottom of blade, carefully slide blades to midpoint cutting position to permit sharpening of edges.

IMPORTANT

DO NOT pry against cutting edges of blades to move blades into sharpening position. Blade damage will result.

4. File each edge carefully. Follow the original shape of the blade.

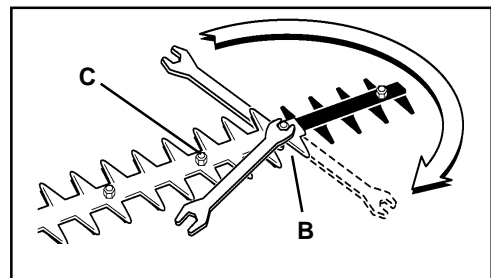
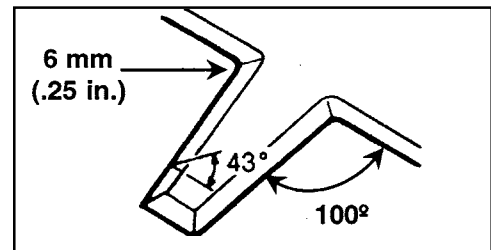
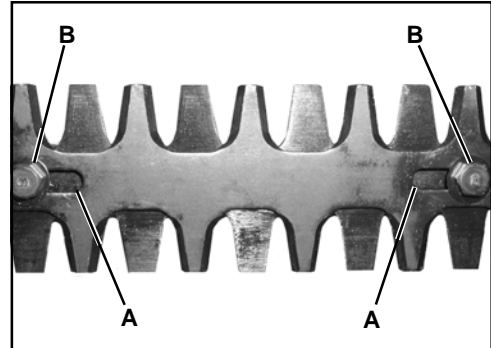
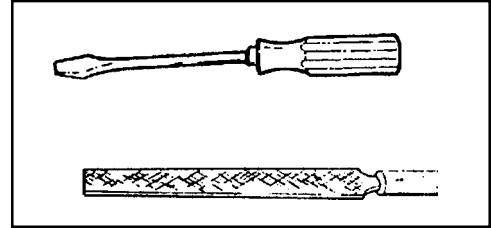
IMPORTANT

If a power grinder is used, **DO NOT** allow blade to over heat.

5. Assemble blade stiffener using new blade lock nuts if required. Tighten blade bolts (B) until snug. Loosen blade bolts 1/2 turn. Hold blade bolts from turning using 10 mm wrench, and tighten blade lock nuts (C) with other 10 mm wrench.
6. Lubricate blades. See "Lubrication" on page 18.

IMPORTANT

Blades should only be removed and reinstalled by an Authorized ECHO Servicing Dealer, otherwise premature wear or internal damage may occur.



TROUBLESHOOTING

ENGINE PROBLEM TROUBLESHOOTING CHART				
Problem	Check	Status	Cause	Remedy
Engine cranks - starts hard/ doesn't start	Fuel at carburetor	No fuel at carburetor	Fuel strainer clogged Fuel line clogged Carburetor	Clean or replace Clean or replace See your Echo dealer
	Fuel at cylinder	No fuel at cylinder	Carburetor	See your Echo dealer
		Muffler wet with fuel	Fuel Mixture too rich	Open choke Clean/replace air filter Adjust carburetor See your Echo dealer
	Spark at end of plug wire	No spark	Stop switch off Electrical problem Interlock switch	Turn switch to ON See your Echo dealer See your Echo dealer
	Spark at plug	No spark	Spark gap incorrect Covered with carbon Fouled with fuel Plug defective	Adjust to .65mm (0.026 in.) Clean or replace Clean or replace Replace plug
Engine runs, but dies or does not accelerate properly	Air filter	Air filter dirty	Normal wear	Clean or replace
	Fuel filter	Fuel filter dirty	Contaminants/residues in fuel	Replace
	Fuel vent	Fuel vent plugged	Contaminants/residues in fuel	Clean or replace
	Spark Plug	Plug dirty/worn	Normal wear	Clean and adjust or replace
	Carburetor	Improper adjustment	Vibration	Adjust
	Cooling System	Cooling system dirty/plugged	Extended operation in dirty/dusty locations	Clean
	Spark Arrestor Screen	Spark arrestor screen plugged	Normal wear	Replace
Engine does not crank	N/A	N/A	Internal engine problem	See your Echo dealer

WARNING



DANGER

Fuel vapors are **extremely** flammable and may cause fire and/or explosion. **Never** test for ignition spark by grounding spark plug against cylinder, otherwise serious personal injury may result.

STORAGE

WARNING DANGER

During operation, the muffler or catalytic muffler and surrounding cover become hot. Always keep exhaust area clear of flammable debris during transportation or when storing, otherwise serious property damage or personal injury may result.

Long Term Storage (over 30 days)

Do not store your unit for a prolonged period of time (30 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 stop switch 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. Apply a light coating of clean 20W engine oil along entire length of blades and on blade bolts.
6. Install blade cover.
7. Tighten all the screws and nuts.
8. **Drain** the fuel tank **completely** and pull the recoil starter handle several times to remove fuel from the carburetor.
9. Remove the spark plug and pour 1/4 oz. (1/2 table-spoon) of fresh, clean, two-stroke engine oil into the cylinder through the spark plug hole.
 - A. Place a clean cloth over the spark plug hole.
 - B. Pull the recoil starter handle 2-3 times to distribute the oil inside the engine.
 - C. Observe the piston location through the spark plug hole. Pull the recoil handle slowly until the piston reaches the top of its travel and leave it there.
10. Install the spark plug (do not connect ignition cable).

IMPORTANT

Always store and transport hedge clippers in a stable, horizontal position. Support gear case and cutting blades to prevent excessive flexing, which may cause damage to these components. Always install blade cover when transporting or storing unit.

NOTES

SERVICING INFORMATION

PARTS

Genuine ECHO Parts and ECHO REPOWER™ Parts and Assemblies for your ECHO products are available only from an Authorized ECHO Dealer. When you do need to buy parts, **always** have the Model Number and Serial Number of the unit with you. You can find these numbers on the engine housing. For future reference, write them in the space provided below.

Model No. _____ SN. _____

SERVICE

Service of this product during the warranty period must be performed by an Authorized ECHO Service Dealer. For the name and address of the Authorized ECHO Service Dealer nearest you, ask your retailer or call: 1-800-432-ECHO (3246). Dealer information is also available on our Web Site. When presenting your unit for Warranty service/repairs, proof of purchase is required.

ECHO CONSUMER PRODUCT SUPPORT

If you require assistance or have questions concerning the application, operation or maintenance of this product you may call the ECHO Consumer Product Support Department at 1-800-673-1558 from 8:30 am to 4:30 pm (Central Standard Time) Monday through Friday. Before calling, please know the model and serial number of your unit to help your Consumer Product Support Representative.

WARRANTY REGISTRATION

You may register your Echo equipment using the warranty registration card, or register on-line at www.echo-usa.com. Registering provides a direct link between you and ECHO if we find it necessary to contact you.

ADDITIONAL OR REPLACEMENT MANUALS

Safety Manuals in English/Spanish or English/French are available free of charge from your ECHO dealer or at www.echo-usa.com.

Operator's and Parts Manuals are available by:

- Downloading free from www.echo-usa.com
- Purchasing from your Echo Dealer.
- Sending a check or money order for \$2.00 per Parts Catalog or \$1.50 per Operator's Manual made payable to ECHO, INCORPORATED. State on a sheet of paper the model number and serial number of the ECHO unit you have, part number of the manual (if known), your name and address and mail to address above.

Safety Videos are available from your Echo dealer. A \$5.00 shipping charge will be required for each video.

Available Parts Catalog Parts Lists

HC-1800 Type 1E

Serial Number 001001 UP P/N 99922203436



DEALER?

Call

1-800-432-ECHO

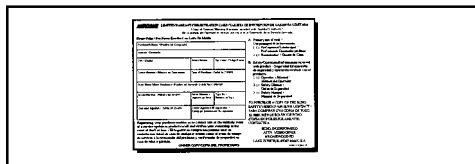
1-800-432-3246

www.echo-usa.com

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1-800-673-1558

8:30 - 4:30 Mon - Fri C.S.T.



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