Operator's Manual PE-225 Power Edger

⚠ 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

Read and understand all provided literature before use. Failure to do so could result in serious injury.

Note: This product complies with CAN ICES-2/NMB-2.

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INTRODUCTION

Specifications, descriptions, and illustrative material in this literature are as accurate as possible. Specifications are subject to change without notice. Illustrations might include optional equipment and accessories, and might not include all standard equipment. Your equipment might appear slightly different than pictured equipment.

Read and understand all provided literature. Literature contains specifications and information for safety, operation, maintenance, storage, and assembly specific to this product. Scan QR codes for more information.

For additional literature, including safety manuals where applicable, or questions regarding terms used in this manual, visit:

https://www.echo-usa.com/manuals

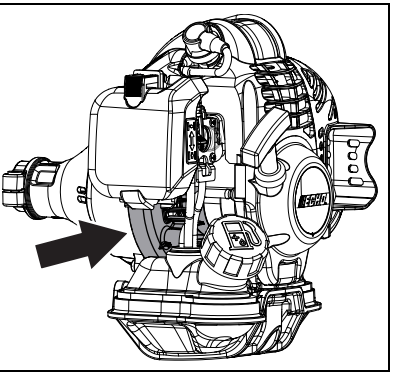
OR

https://www.shindaiwa-usa.com/manuals

SERVICING INFORMATION

Parts and Serial Number

Genuine ECHO parts and assemblies for your ECHO products are available only from an Authorized Service Dealer. When you do need to buy parts, always have the model number and serial number of the unit with you. Image shows serial number location. For future reference write them in the space provided below.



Model No. _____ Serial No. _____

Service

Service of this product during the warranty period must be performed by an Authorized Service Dealer. For the name and address of the Authorized Service Dealer nearest you, ask your retailer or call 1-800-432-ECHO (3246). Authorized Service Dealer information is also available on our website https://www.echo-usa.com. 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, call the ECHO Consumer Product Support Department at 1-800-432-ECHO (3246) from 8:00 a.m. to 5:00 p.m. (Central Standard Time) Monday through Friday. Before calling, please know the model and serial number of your unit.

Product Registration

Register your ECHO equipment online at https://www.echo-usa.com or by filling out the product registration sheet included in this manual. Registering your product confirms warranty coverage and provides a direct link to ECHO if we find it necessary to contact you.

Additional Literature

In addition to finding information online, information is available from your Authorized Service Dealer, or by contacting ECHO Incorporated, 400 Oakwood Road, Lake Zurich, IL 60047, 1-800-432-ECHO (3246).

SAFETY

Manual Safety Symbols and Important Information

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

⚠ DANGER

The safety alert symbol accompanied by the word "DANGER" calls attention to an act or condition which WILL lead to serious personal injury or death if not avoided.

⚠ WARNING

The safety alert symbol accompanied by the word "WARNING" calls attention to an act or condition which COULD lead to serious personal injury or death if not avoided.

⚠ CAUTION

The safety alert symbol accompanied by the word "CAUTION" calls attention to an act or condition which might lead to minor or moderate personal injury if not avoided.

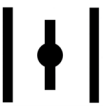
NOTICE

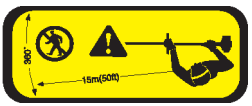
The enclosed message provides information necessary for the protection of the unit.

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

CIRCLE AND SLASH SYMBOL
This symbol means the specific action shown is prohibited. Ignoring these prohibitions can result in serious or fatal injury.

International Symbols

Symbol	Description	Symbol	Description
	Warning, see operator's manual.	H	Carburetor adjustment (high speed)
	Wear eye, ear and head protection.	T	Carburetor adjustment (idle speed)
	Wear hand and foot protection.	L	Carburetor adjustment (low speed)
	Safety/Alert		STOP switch
	Hot surface		Fuel and oil mixture
	Do not allow flames or sparks near fuel.		Ignition ON / OFF
	Do not smoke near fuel.		Purge bulb
	Choke control RUN position (choke open)		Choke control COLD START position (choke closed)

Symbol	Description	Symbol	Description
	Keep feet away from blade.		Rotating cutting attachment.
	Thrown objects		Direction of blade
	Do not use line heads, use blades only.		Do not use blades, use line heads only.
		Keep bystanders and helpers away 15 m (50 ft.).	
		Avoid kick-out. Keep bystanders and helpers away 15 m (50 ft.).	
		Beware of thrown objects. Wear eye protection.	

Note: Not all symbols will appear on your unit.

Personal Condition and Safety Equipment

⚠ WARNING

Cancer and Reproductive Harm
https://www.P65Warnings.ca.gov

⚠ WARNING

The muffler or catalytic muffler and surrounding cover may become extremely hot. If unit is equipped with muffler, always keep clear of exhaust and muffler area, otherwise serious personal injury might occur.

⚠ WARNING

Users of this product risk injury to themselves and others if the unit is used improperly and/or safety precautions are not followed. Proper clothing and safety gear must be worn when operating unit.

Physical Condition

Your judgment and physical dexterity may not be good:

- If you are tired or sick
- If you are taking medication
- If you have taken alcohol or drugs

Operate unit only if you are physically and mentally well.

Eye Protection

⚠ WARNING

- **Eye protection that meets ANSI Z87.1 or CE requirements must be worn whenever you operate the unit.**
- **For additional safety, a full-face shield (not included) can be worn over safety glasses or goggles to provide protection from sharp branches or flying debris.**

Hand Protection

Wear sturdy, no-slip, rubber work gloves to improve your grip on the handles. Gloves also provide protection against cuts and scratches, cold environments, and reduce the transmission of machine vibration to your hands.

Hearing and Ear Protection

ECHO recommends wearing personal protective equipment whenever unit is used.

Breathing Protection

Operators who are sensitive to dust or other common airborne allergens may need to wear a dust mask to prevent inhaling these materials while operating unit. Dust masks can provide protection against dust, plant debris, and other plant matter such as pollen. Make sure the mask does not impair your vision, and replace the mask as needed to prevent air restrictions.

Proper Clothing

Wear snug-fitting, durable clothing:

- Pants should have long legs, shirts should have long sleeves.
- Do not wear shorts.
- Do not wear ties, scarves, jewelry, or clothing with loose or hanging items that could become entangled in moving parts or surrounding growth.
- Keep clothing buttoned or zipped, and keep shirt tails tucked in.

Wear sturdy work shoes with nonskid rubber soles.

- Do not wear open toed shoes.
- Do not operate unit with bare feet.

Keep long hair away from engine and air intake. Retain hair with cap or net.

Heavy protective clothing can increase operator fatigue, which may lead to heat stroke. Schedule heavy work for early morning or late afternoon hours when temperatures are cooler.

⚠ WARNING

The components of this machine generate an electromagnetic field during operation, which can interfere with some pacemakers. To reduce the risk of serious or fatal injury, persons with pacemakers should consult with their physician and the pacemaker manufacturer before operating this machine. In the absence of such information, ECHO does not recommend the use of this machine by anyone who has a pacemaker.

Extended Operation and Extreme Conditions

⚠ CAUTION

Prolonged exposure to cold and/or vibration can result in injury. Read and follow all safety and operation instructions to minimize risk of injury. Failure to follow instructions can result in painful wrist/hand/arm injuries.

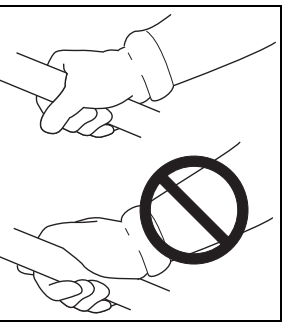
It is believed that a condition called Raynaud's Phenomenon, which affects the fingers of certain individuals, may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations, followed by loss of color and numbness in the fingers. The following 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 unit or other hand-held power equipment is not required.
- If you experience discomfort, 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 (RSI)

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.

⚠ DANGER

All overhead electrical conductors and communications wires can have electricity flow with high voltages. This unit is not insulated against electrical current. Never touch wires directly or indirectly, otherwise serious injury or death can result.

⚠ DANGER

Do not operate gas-powered products indoors or in inadequately ventilated areas. Engine exhaust contains poisonous emissions and can cause serious injury or death.

Read Manuals

- Provide all users of this equipment with literature for instructions on safe operation.

Clear the Work Area

- Always clear the work area of foreign objects such as rocks, broken glass, nails, wire, or string, and check for any hidden hazards. Spectators and fellow workers must be warned, and children and animals prevented from coming nearer than 15 m (50 ft.) while the unit is in use.
- Outside the 15 m (50 ft.) zone, there is still a risk of injury from thrown objects.
- Bystanders should be encouraged to wear eye protection.
- If you are approached, stop the engine and cutting attachment.
- When a bladed unit is used, there is the added risk of injury to bystanders being struck with the moving blade in the event of a blade thrust or other unexpected reaction of the blade.

Keep a Firm Grip

- Always hold throttle handle and support handle with thumbs and fingers tightly encircling the handles.

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 overreach.
- Keep cutting attachment below waist.
- Keep all body parts away from rotating cutting attachment.

Avoid Hot Surfaces

- If unit is equipped with muffler, keep exhaust area clear of flammable debris. Avoid contact during and immediately after operation.

Equipment

⚠ WARNING

Use only ECHO attachments. Serious injury may result from the use of a non-approved attachment combination. ECHO Incorporated 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 or missing nuts, bolts, and screws. Tighten or replace as needed.**
- **Inspect shield for damage and that shield is securely in place. Replace if shield is damaged or missing.**
- **Check that the cutting attachment is firmly attached and in safe operating condition.**
- **Check that support handle is adjusted for safe, comfortable operation. See Assembly Section for proper adjustment.**

⚠ WARNING

Moving parts can amputate fingers or cause severe injuries. Keep hands, clothing and loose objects away from all openings.

- ***Always stop engine, disconnect spark plug, and make sure all moving parts have come to a complete stop before removing obstructions, clearing debris, or servicing unit.***
- ***Do not start or operate unit unless all guards and protective covers are properly assembled to unit.***
- ***Never reach into any opening while the engine is running. Moving parts may not be visible through openings.***

⚠ WARNING

Periodically check fuel system (fuel lines, vent, grommet, fuel tank, and fuel cap) for leaks especially if the unit is dropped. If damage or leaks are found, do not use unit, otherwise serious personal injury or property damage may occur. Have unit repaired by an Authorized Service Dealer before using.

EMISSION CONTROL

CARB and EPA Emission Control Information

The emission control system for the engine is EM (engine modification) and, if the second to last character of the Engine Family on the Emission Control Information label (sample below) is “B”, “C”, “K”, or “T”, the emission control system is EM and TWC (3-way catalyst). The fuel tank/fuel line emission control system is EVAP (evaporative emissions). Evaporative emissions for California models are only applicable to fuel tanks and fuel feed lines.

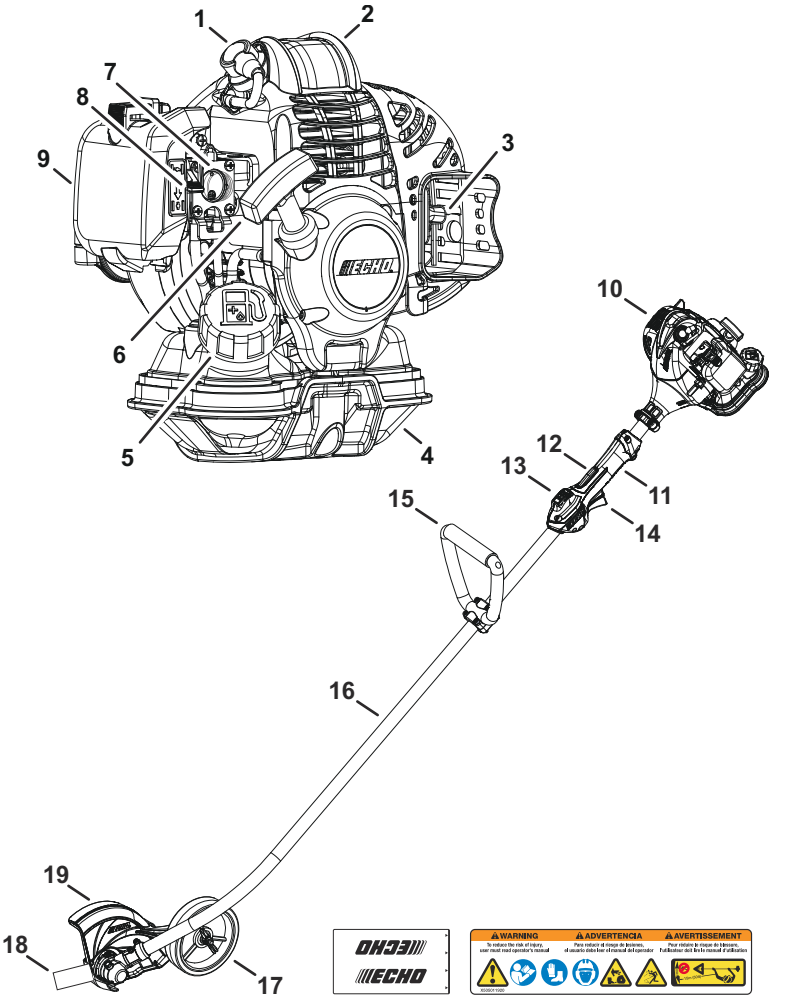
An Emission Control Label is located on the engine. (This is an EXAMPLE ONLY, information on label varies by engine FAMILY).

Product Emission Durability (Emission Compliance Period)

The 50 or 300 hour emission compliance period is the time span selected by the manufacturer certifying the engine emissions output meets applicable emissions regulations, provided that approved maintenance procedures are followed as listed in the Maintenance Section of this manual.

DESCRIPTION

Locate the safety decal(s) or etching(s) on your unit. Make sure they are legible, and that you understand and follow the instructions. If any cannot be read, replacements can be ordered from your ECHO dealer. Images shown below are for example only. Those on your unit might appear slightly different.



1. Spark plug
2. Top guard
3. Spark arrester muffler or spark arrester muffler with catalyst
4. Fuel tank
5. Fuel tank cap
6. Recoil starter handle
7. Purge bulb
8. Choke
9. Air filter
10. Power head
11. Support handle - for left hand
12. Throttle trigger lockout
13. Stop switch
14. Throttle trigger
15. Support handle - for left hand
16. Driveshaft assembly
17. Wheel
18. Blade
19. Debris shield

CONTENTS

The ECHO product you purchased has been factory pre-assembled for your convenience. Due to packaging restrictions, some assembly may be necessary.

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.

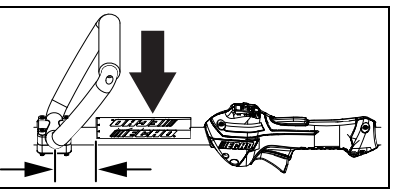
1	Power head / drive shaft assembly
1	Operator's manual
1	Warranty statement
2	Split pins

ASSEMBLY

Support Handle

1. If necessary, position support handle for comfortable operation and securely tighten screws.

Note: Label shows minimum spacing for support handle location.



OPERATION

⚠ WARNING

Moving parts can amputate fingers or cause severe injuries. Keep hands, clothing and loose objects away from all openings. Always stop engine, disconnect spark plug, and make sure all moving parts have come to a complete stop before removing obstructions, clearing debris, or servicing unit.

⚠ WARNING

Engine exhaust is hot, and contains Carbon Monoxide (CO), a poison gas. Breathing CO can cause unconsciousness, serious injury, or death. Exhaust can cause serious burns. Always position unit so that exhaust is directed away from your face and body.

⚠ WARNING

Operation of this equipment may create sparks that can start fires around dry vegetation. This unit is equipped with a spark arrester to prevent discharge of hot particles from the engine. Metal cutters can also create sparks if the cutter strikes rocks, metal, or other hard objects. Contact local fire authorities for laws or regulations regarding fire prevention requirements.

Fuel

⚠ WARNING

Diesel fuels and alternative fuels, such as E15 (15% ethanol), E85 (85% ethanol) or any fuels not meeting ECHO requirements are not approved for use in ECHO two-stroke or hybrid four-stroke gasoline engines. Use of diesel or alternative fuels may cause performance problems, loss of power, overheating, fuel vapor lock, and unintended machine operation, including, but not limited to, improper clutch engagement. Diesel or alternative fuels may also cause premature deterioration of fuel lines, gaskets, carburetors and other engine components.

Fuel Requirements

Gasoline - Use fresh (purchased within the last 30 days from the pump) 89 Octane [R+M/2] (mid grade or higher) gasoline known to be good quality. Gasoline may contain up to 10% Ethanol (grain alcohol) or 15% MTBE (methyl tertiary-butyl ether). Gasoline containing methanol (wood alcohol) is not approved. Use of ECHO branded fuel is recommended to extend engine life in all air-cooled two-stroke and two or four-stroke hybrid engines.

Two-Stroke Oil - A two-stroke engine oil, such as ECHO branded two-stroke oils, meeting ISO-L-EGD (ISO/CD 13738) and J.A.S.O. FD Standards must be used. ECHO branded two-stroke oils meet these standards. Engine problems due to inadequate lubrication caused by failure to use an ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345-FD certified oil will void the two-stroke engine warranty.

⚠ WARNING

Two-stroke engine oil contains petroleum distillates and other additives that may be harmful if swallowed. Heated oil can release vapors that can cause flash fire, or ignite with explosive force. Read and follow the oil manufacturer's instructions, and observe all safety warnings and precautions for handling flammable liquids. For more detailed safety and first aid information, visit https://www.echo-usa.com for a copy of the Material Safety Data Sheet.

- **Keep out of reach of children.**
- **If swallowed, do not induce vomiting. Call physician or a poison control center immediately.**
- **Wear safety glasses when mixing or handling.**
- **Avoid repeated or prolonged skin contact.**
- **Avoid inhaling oil mists or vapors.**

NOTICE

ECHO branded two-stroke oils may be mixed at 50:1 ratio for application in all ECHO engines sold in the past, regardless of ratio specified in those manuals.

Handling Fuel

⚠ DANGER

Fuel is 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 or running.***
- ***Do not fill fuel tanks indoors. Always fill fuel tanks outdoors over bare ground.***
- ***Do not overfill fuel tank. Wipe up spills immediately.***
- ***Securely tighten fuel tank cap and close fuel container after refueling.***
- ***Inspect for fuel leakage. If fuel leakage is found, do not start or operate unit until leakage is repaired.***
- **Use caution when handling fuel. Mix and pour fuel outdoors where there are no sparks and flames. Slowly remove the fuel cap only after stopping the engine and allowing the unit to cool. Do not smoke while fueling or mixing fuel. Move the unit at least 3 m (10 ft.) from the fueling point before starting the engine.**

⚠ DANGER

Gasoline vapor is heavier than air, and can travel along the ground to nearby sources of ignition such as electrical motors, pilot lights, and hot or running engines. Vapors ignited by an ignition source can flash back to the fuel container, resulting in an explosion, fire, serious or fatal injuries, and extensive property damage.

Mixing Instructions

1. Fill an approved fuel container with half of the required amount of gasoline.
2. Add the proper amount of engine oil to gasoline.
3. Close container and shake to mix oil with gasoline.
4. Add remaining gasoline, close fuel container, and remix.

FUEL TO OIL MIX – 50:1 RATIO			
US		Metric	
Gas	Oil	Gas	Oil
gal.	fl. oz.	L	cc
1	2.6	5	100
2	5.2	10	200
5	13	25	500

NOTICE

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.

After use - Empty the fuel tank prior to storing the unit. 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, airtight container. Store in a well-ventilated, unoccupied building, away from sparks and flames.

NOTICE

Stored fuel ages. Do not mix more fuel than you expect to use in thirty days or ninety days when a fuel stabilizer is added.

NOTICE

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

NOTICE

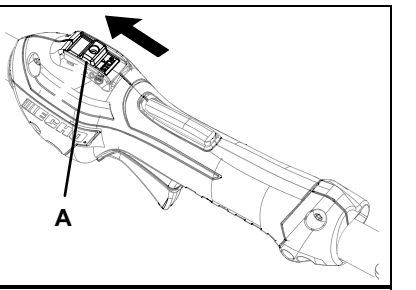
Used oil and gasoline, and soiled towels are hazardous waste materials. Disposal laws vary by locality.

Starting Cold Engine

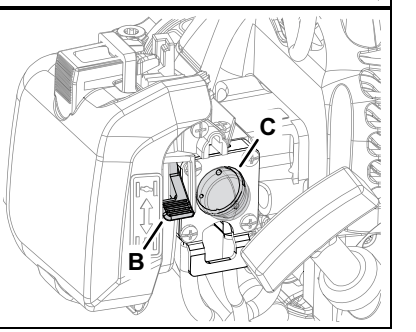
⚠ WARNING

The attachment will operate immediately when the engine starts, and could result in possible serious injury. Keep movable parts of the attachment away from objects that could become entangled or thrown, and surfaces that could cause loss of control.

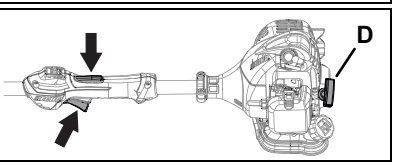
1. Move stop switch (A) forward, away from the STOP position.



2. Move choke lever (B) to COLD START position.
3. Pump purge bulb (C) until fuel is visible and flows freely in the clear fuel tank return line. Pump bulb an additional five times.



4. Lay the unit on a flat area and keep movable attachment parts clear of all obstacles.
5. Firmly grasp throttle handle and throttle trigger with left hand and fully depress throttle trigger to wide open position.



6. Rapidly pull recoil starter handle/rope (D) until engine fires or maximum three pulls.
7. After engine fires (or three pulls), move choke to the RUN (open) position.
8. Firmly grasp throttle handle and throttle trigger lockout with left hand and fully depress throttle trigger to wide open position.

9. Pull starter handle/rope until engine starts and runs.

Note: If engine does not start with choke in RUN position after two to three pulls, repeat steps 2 - 5.

10. Release throttle trigger and allow unit to warm up at idle for several minutes.
11. After engine warm-up, grip throttle handle and support handle. Depress the throttle trigger lockout, and gradually depress throttle trigger to increase engine RPM to operating speed.

Starting Warm Engine

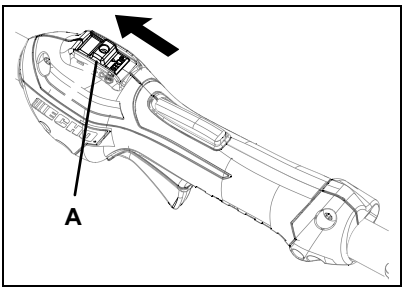
The starting procedure is the same as Cold Start instructions except do not close the choke, and do not depress throttle trigger.

⚠ WARNING

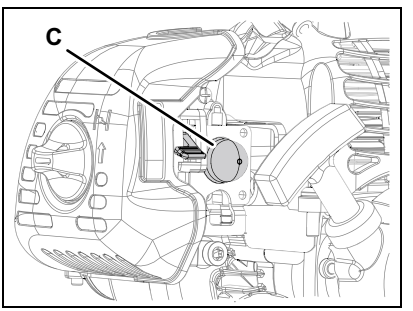
The attachment should not move at idle, otherwise serious personal injury may result.

Note: If attachment moves, readjust carburetor according to Carburetor Adjustment instructions in this manual or see your Authorized Service Dealer.

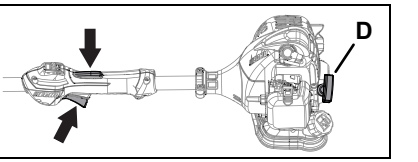
1. Move stop switch (A) forward, away from the STOP position.



2. Pump purge bulb (C) until fuel is visible in the clear fuel return line. Pump bulb an additional five times.



3. Lay the unit on a flat area and keep movable attachment parts clear of all obstacles.



Note: If engine does not start after two to three pulls, use Cold Start Procedure.

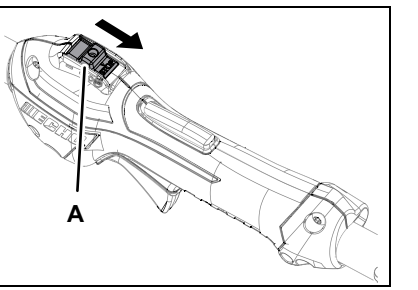
4. Firmly grip throttle handle and throttle trigger lockout with left hand.
5. Rapidly pull recoil starter handle/rope (D) until engine starts.

Stopping Engine

⚠ WARNING

If engine does not stop when stop switch is moved to STOP position, close choke, COLD START position, to stall engine. Have your ECHO dealer repair stop switch before using unit again.

1. Release throttle trigger and allow engine to return to idle before shutting off engine.
2. Move stop switch (A) to STOP position.



Edger Operation Techniques

⚠ WARNING

- **The cutting attachment will continue to rotate even after the throttle is release. Maintain control of the unit until it has come to a complete stop.**
- **Blade thrust may occur when the spinning blade contacts an object that it does not immediately cut. Following proper cutting techniques will prevent blade thrust.**
- **Blade thrust can be violent enough to cause the unit and/or operator to be propelled in any direction, and possibly lose control of the unit.**
- **Blade thrust can occur without warning if the blade snags, stalls or binds.**
- **Blade thrust is more likely to occur in areas where it is difficult to see the material being cut.**

⚠ WARNING

The complete unit, specifically the drive shaft assembly and muffler exhaust area become very hot during use. Avoid contact during and immediately after operation, otherwise serious personal injury could result.

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

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

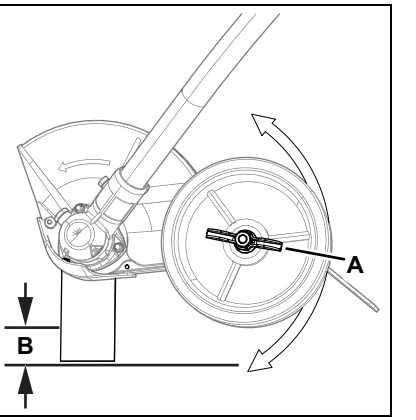
⚠ WARNING

Never adjust blade height with engine running, otherwise serious personal injury could result.

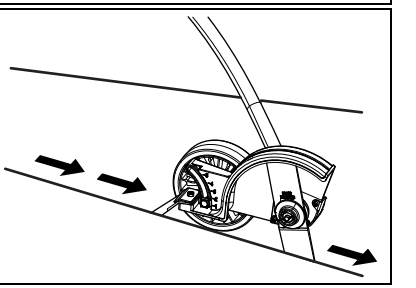
⚠ CAUTION

Wear gloves or personal injury could result. Gear case and surrounding area may be hot.

4. Loosen adjustment knob (A). Move wheel up to increase cutting depth, or down to decrease cutting depth. A depth of (B) 13 mm (0.5 in.) is optimal. Tighten adjustment knob (A).
5. Before edging, plan your direction of travel so that the unit will always be positioned on your right side and so that you walk on a hard surface whenever possible.



6. Position edger as shown.



⚠ WARNING

Before edging, be sure to read and understand the entire Operator's Manual to avoid serious injury.

7. When starting to edge, run the engine at full throttle, and lower the blade gently into the ground, being careful not to hit the concrete with the blade.
8. Do not force the blade. Move only as quickly as the blade will allow.

MAINTENANCE

⚠ WARNING

Moving parts can amputate fingers or cause severe injuries. Keep hands, clothing and loose objects away from all openings. Always stop unit, disconnect spark plug or remove battery, and make sure all moving parts have come to a complete stop before removing obstructions, clearing debris, or servicing unit. Allow the unit to cool before performing maintenance or adjustments. Wear gloves to protect hands from sharp edges and hot surfaces.

⚠ WARNING

Operating a poorly maintained unit can result in serious injuries to operator or bystanders. Always follow all maintenance instructions as written, otherwise serious personal injury can result.

Your unit is designed to provide of trouble-free service. Perform regular scheduled maintenance. If you are unsure about the task, or are not equipped with the necessary tools, we recommend that you take your unit to an Authorized Service Dealer for maintenance. To help you decide whether you want to do it yourself or have the Authorized Service Dealer do it, each maintenance task has been graded. If a task is not listed, see your Authorized Service Dealer for repairs.

NOTICE

The use of emission control components other than those specifically designed for this unit is a violation of federal law.

Skill Levels

Level 1 = Easy to do. Common tools may be required.

Level 2 = Moderate difficulty. Some specialized tools may be required.

Level 3 = See your Authorized Service Dealer.

Click HERE or go to https://www.echo-usa.com/products/maintenance-kit

or

https://www.shindaiwa-usa.com/you-can.aspx

Maintenance Intervals

COMPONENT / SYSTEM	MAINTENANCE PROCEDURE	SKILL LEVEL
Daily or Before Use		
Air filter	Inspect / Clean [1]	**1**
Choke shutter		
Fuel system	Inspect [2]	
Cooling system	Inspect / Clean	**2**
Recoil starter rope	Inspect / Clean [1]	**1**
Screws / nuts / bolts	Inspect / Tighten / Replace [1]	
Blade	Inspect / Replace [1]	**1**
Every Refuel		
Fuel system	Inspect [2]	**1**
3 Months		
Air filter	Replace [1]	**1**
Fuel filter	Inspect [1]	
Fuel cap gasket		
Spark plug	Inspect / Clean / Replace [1]	
Muffler spark arrester		**2**
Cylinder exhaust port	Inspect / Clean / Remove carbon deposits	
Drive shaft (flex cable models)	Grease [3]	
Gear housing (certain models)	Grease [4]	
Yearly		
Fuel filter	Inspect / Replace [1]	**1**
Fuel cap gasket	Replace [1]	

Note: Time intervals shown are maximum. Actual use and your experience will determine the frequency of required maintenance.

[1] Replacement is recommended based on the finding of damage or wear during inspection.

[2] Low evaporative fuel tanks do not require regular maintenance to maintain emission integrity.

[3] Apply lithium-based grease every 25 hours of use.

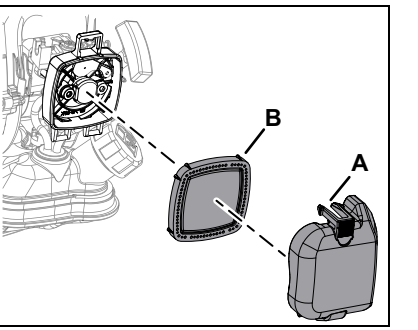
[4] Apply lithium-based grease every 50 hours of use.

Air Filter

Level 1.

Parts required: Tune-up kit.

1. Move stop switch to STOP position.
2. Allow unit to cool (if required).
3. Remove spark plug lead from spark plug.
4. Close choke (COLD START position) to prevent dirt from entering the carburetor throat when the air filter is removed. Brush accumulated dirt from air cleaner area.
5. Remove air filter cover (A). Brush dirt from inside cover.
6. Lightly brush debris from air filter (B).
7. Soak heavily soiled air filters in water/detergent solution to loosen dirt, then brush lightly.
8. Rinse with clean water and allow to dry completely before reuse.



Note: Replace air filter (B) if it is damaged, fuel soaked, very dirty, or the rubber sealing edges are deformed.

9. Install air filter in air filter case.
10. Install air filter cover.

Fuel Filter

Level 1

Parts required: Tune-up kit.

DANGER

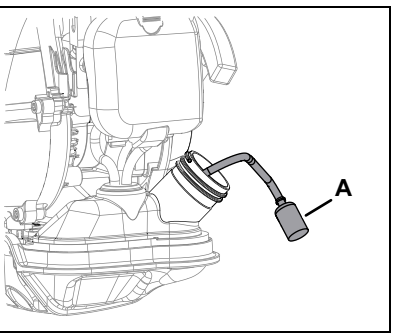
Fuel is flammable. Use extreme care when mixing, storing or handling, or serious personal injury may result.

1. Move stop switch to STOP position.
2. Allow unit to cool (if required).
3. Remove spark plug lead from spark plug.
4. Use a clean cloth to remove loose dirt from around fuel cap and empty fuel tank.

NOTICE

Do not damage fuel line while removing fuel filter from tank or line.

5. Pull the fuel filter (A) from the tank.
6. Do not remove the wire coil clamp to remove the fuel filter. Pinch the fuel filter with the fingers on one hand and the fuel line with the other hand.
7. Pull and twist slightly to separate.
8. Install the new filter in reverse order.



Note: Federal EPA regulations require all model year 2012 and later gasoline powered engines produced for sale in the United States to be equipped with a special low permeation fuel supply hose between the carburetor and fuel tank. When servicing model year 2012 and later equipment, only fuel supply hoses certified by EPA can be used to replace the original equipment supply hose. Fines up to $37,500 may be enforced for using a non-certified replacement part.

Spark Plug

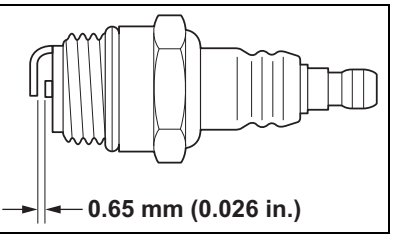
Level 2.

Parts required: Tune-up kit.

NOTICE

Use only NGK BPM8Y spark plug (BPMR8Y in Canada) otherwise severe engine damage may occur.

1. Move stop switch to STOP position.
2. Allow unit to cool (if required).
3. Remove spark plug lead from spark plug.
4. Remove spark plug and check for fouling, worn and rounded center electrode.
5. Clean the plug or replace with a new one. Do not sandblast to clean.
6. Adjust spark plug gap to 0.65 mm (0.026 in.).
7. Tighten spark plug to 130-170 kgf•cm (112-150 lbf•in).



Cooling System

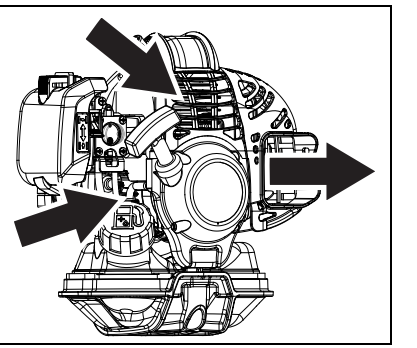
Level 2.

NOTICE

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.

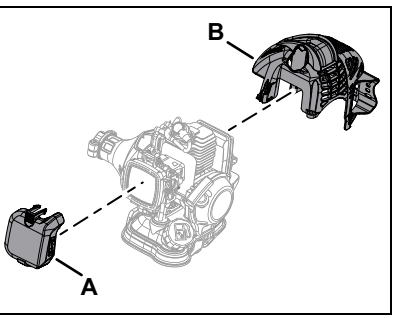
Overheating and engine seizure can occur when:

- Air intakes 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 cooling passage blockages or cleaning of cooling fins is considered normal maintenance. Any failure attributed to lack of maintenance is not warranted.

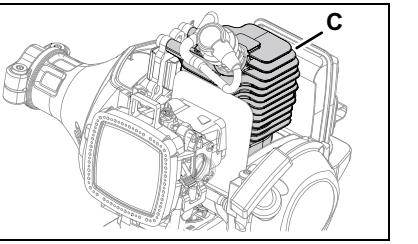
1. Move stop switch to STOP position.
2. Allow unit to cool (if required).
3. Remove spark plug lead from spark plug.
4. Close choke (COLD START position) to prevent dirt from entering the carburetor throat when the air filter is removed.
5. Remove air filter cover (A).
6. Remove engine cover (B).



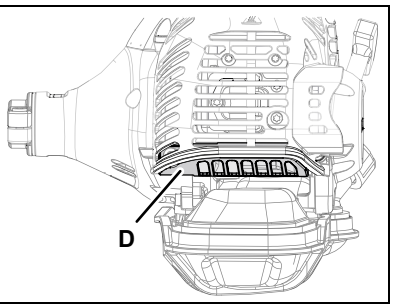
NOTICE

Do not use a metal scraper to remove dirt from the cylinder fins.

7. Use a nylon or plastic bristle brush to remove dirt from the cylinder fins (C).
8. Remove ignition wires from clip for cleaning.



9. Remove grass and leaves from the grid between the recoil starter and fuel tank.
10. Assemble components in reverse order.



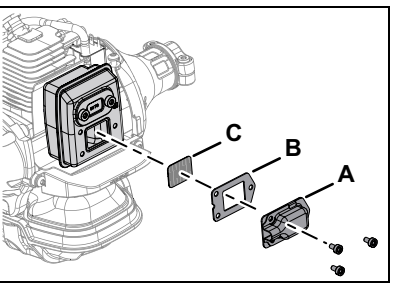
Exhaust System

Spark Arrester Screen

Level 2.

Parts required: Spark arrester screen, gasket.

1. Move stop switch to STOP position.
2. Allow unit to cool (if required).
3. Remove spark plug lead.
4. Remove engine cover.
5. Place piston at Top Dead Center (TDC) to prevent carbon/dirt from entering cylinder.
6. Remove spark arrester screen cover (A), gasket(s) (B), and screen (C), from muffler body.



NOTICE

When cleaning carbon deposits, be careful not to damage the catalytic element inside muffler.

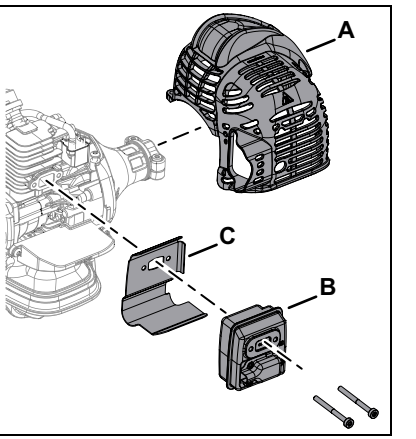
7. Clean carbon deposits from muffler components.
8. Replace screen if it is cracked, plugged, or has holes burned through.
9. Assemble components in reverse order.

Exhaust Port Cleaning

Level 2.

Parts required: Heat shield (as needed).

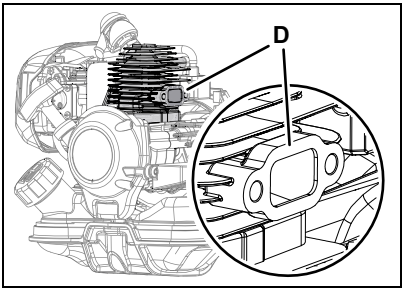
1. Move stop switch to STOP position.
2. Allow unit to cool (if required).
3. Remove spark plug lead from spark plug
4. Remove engine cover (A).
5. Place piston at top dead center. Remove muffler (B) and heat shield (C).



NOTICE

Never use a metal tool to scrape carbon from the exhaust port. Do not scratch the cylinder or piston when cleaning the exhaust port. Do not allow carbon particles to enter the cylinder.

6. Use a wood or plastic scraping tool to clean deposits from cylinder exhaust port (D).
7. Inspect heat shield, and replace if damaged.
8. Install heat shield and muffler.
9. Tighten muffler mounting bolts (or nuts) to 90-110 kgf•cm (80-95 lbf•in).
10. Install engine cover and attach spark plug lead.



11. Start engine and warm to operating temperature.
12. Stop engine and re-tighten mounting bolts (or nuts) if required.

Carburetor Adjustment

Level 2.

Engine Break-In

New engines must be operated a minimum duration of two tanks of fuel break-in before carburetor adjustments can be made. During the break-in period your engine performance will increase and exhaust emissions will stabilize. Idle speed can be adjusted as required.

High Altitude Operation

This engine has been factory adjusted to maintain satisfactory starting and durability performance up to 335 m (1,100 ft.) above sea level (ASL) (96.0 kPa). To maintain proper engine operation and emission compliance above 335 m (1,100 ft.) ASL the carburetor may need to be adjusted by an authorized service dealer.

NOTICE

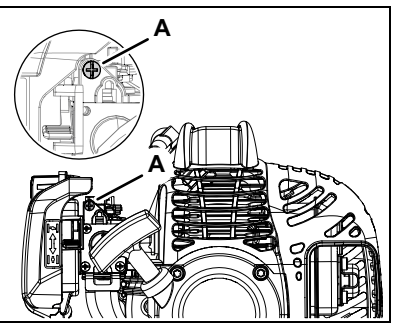
If the engine is adjusted for operation above 335 m (1,100 ft.) ASL, the carburetor must be re-adjusted when operating the engine below 335 m (1,100 ft.) ASL, otherwise severe engine damage may result.

Note: Every unit is run at the factory and the carburetor is set in compliance with emission regulations. Carburetor adjustments, other than idle speed, must be performed by an authorized dealer.

⚠ WARNING

- **The cutting attachment may be moving during carburetor adjustments.**
- **Wear your protective equipment and observe all safety instructions.**
- **For units equipped with a clutch, be sure the cutting attachment stops moving when the engine idles.**
- **When the unit is turned off, make sure the cutting attachment has stopped before the unit is set down.**

1. Check idle speed and reset if necessary. If a tachometer is available, idle speed screw (A) should be set to the specifications found on the Specifications page of this manual. Turn idle speed screw (A):
   - Clockwise to increase idle speed.
   - Counterclockwise to decrease idle speed.



⚠ WARNING

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

Lubrication

Level 1.

Parts required: Lithium-based grease.

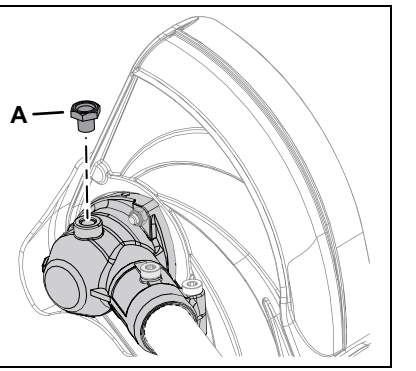
NOTICE

Gear cases without a grease plug do not require lubrication.

Note: Your debris shield may appear different than the debris shield shown.

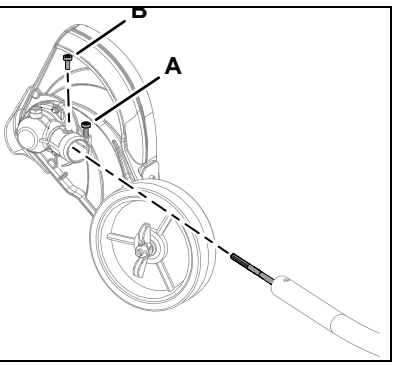
Gear Housing

1. Remove grease plug (A), if required, and add grease to gear housing. Do not overfill.
2. Replace plug and tighten securely.



Drive Shaft

1. Loosen screw (A) and remove center locating screw (B). Pull gear box and shield from drive shaft housing.
2. Pull flexible cable from the drive shaft housing, wipe clean and apply 15 ml (0.5 oz.) of grease.
3. Slide the flexible cable back in the drive housing. Do not get dirt on the flex cable.
4. Install the gear housing and shield assembly. Align locating screw hole with hole in drive shaft housing.
5. Tighten screws securely.



Edger Blade Replacement

Level 1.

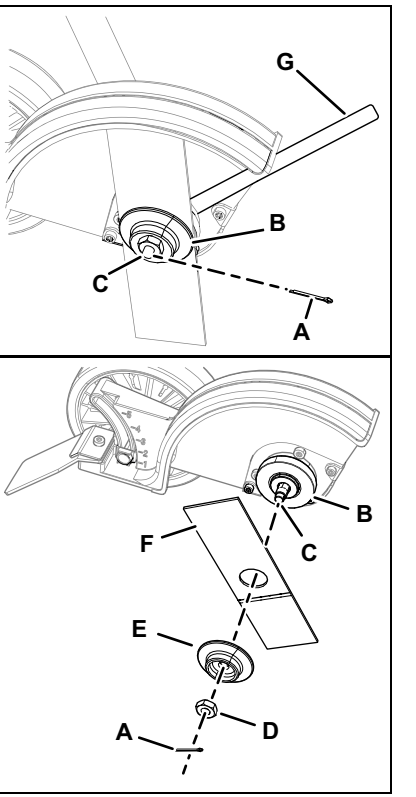
Parts required: Blade, new split pin.

Note: Replace blade when it is bent, damaged, or worn shorter than 152.4 mm (6 in.).

CAUTION

Wear gloves or personal injury could result. Gear case and surrounding area might be hot.

1. Remove split pin (A).
2. Align hole in inner blade adapter (B) with notch in gear case, and insert locking tool (G) to prevent PTO shaft (C) from rotating.



3. Remove blade nut (D) by turning clockwise. Remove outer blade adapter (E), and blade (F).
4. Install and center blade (F) on inner blade adapter (B).
5. Install outer adapter (E) and nut (D). Tighten nut (D) firmly, turning counterclockwise.

Note: Never reuse old split pin.

6. Install new split pin (A) to secure nut, and bend both legs of pin counterclockwise around PTO shaft (C).

TROUBLESHOOTING

⚠ DANGER

Fuel vapors are flammable and can cause fire and/or explosion. Never test for ignition spark by grounding spark plug near cylinder plug hole, otherwise serious personal injury can result.

ENGINE PROBLEM TROUBLESHOOTING CHART				
Problem	**Check**	**Status**	**Cause**	**Remedy**
Engine starts hard. or Engine does not start.	Fuel at carbure-tor.	No fuel at carburetor.	Fuel filter or fuel line obstructed.	Clean or replace. See your Authorized Service Dealer.
	Fuel at cylinder.	No fuel at cylinder.	Carburetor	See your Authorized Service Dealer.
		Muffler wet with fuel.	Fuel mixture too rich.	Open choke. Clean or replace air filter. Adjust carburetor. See your Authorized Service Dealer.
	Spark at end of plug wire.	No spark.	Stop switch OFF. Electrical problem. Interlock switch.	Turn switch to ON. See your Authorized Service Dealer.
	Spark at plug.		Incorrect gap. Covered with carbon. Fouled with fuel. Spark plug defective.	Adjust to 0.65 mm (0.026 in.). Clean or replace spark plug.

ENGINE PROBLEM TROUBLESHOOTING CHART				
Problem	**Check**	**Status**	**Cause**	**Remedy**
Engine runs, but dies. or Engine does not acceler-ate properly.	Air filter	Air filter dirty.	Normal wear.	Clean or replace.
	Fuel filter	Fuel filter dirty.	Contaminants or residue in fuel.	Replace filter or replace fuel.
	Fuel vent	Fuel vent plugged.	Contaminated fuel.	Clean or replace.
	Spark plug	Plug dirty or worn.	Normal wear.	Clean and adjust or replace.
	Carbure-tor	Improper adjust-ment.	Vibration	Adjust
	Cooling system	Cooling system dirty or plugged.	Extended oper-ation in dirty or dusty locations.	Clean
	Spark arrester screen	Spark arrester screen plugged.	Normal wear.	Replace
Engine does not crank.	N/A		Internal engine problem.	See your Autho-rized Service Dealer.

STORAGE

Transportation

- Shut engine off before transporting.
- Secure unit to prevent fuel spillage and damage.

Short-Term Storage

- Shut engine off.
- Store unit in a dry, dust-free place, out of the reach of children.

Long-Term Storage (Over 30 Days)

⚠ DANGER

Explosion hazard. Fuel fumes can accumulate and explode if exposed to an open flame or spark. Store in a well ventilated area.

Do not store your unit for a prolonged period of time (30 days or longer) without performing protective storage maintenance.

1. Move stop switch to STOP position.
2. Allow engine to cool.
3. Clean exterior of unit.
4. Perform required maintenance.
5. Tighten all fasteners.

⚠ DANGER

Fire hazard. Fuel is flammable. Burning fuel will cause bodily injury or death. Wear protective equipment. Use care when mixing, storing or handling.

⚠ WARNING

Burn hazard. 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.

6. Drain fuel tank completely.

7. Press purge bulb six to seven times to remove remaining fuel from carburetor then drain tank again.
8. Close choke, start and run the engine until it stops due to lack of fuel.
9. Allow engine to cool.
10. Remove spark plug lead from spark plug.
11. Remove spark plug from cylinder.
12. Pour 7 mL (0.25 fl. oz.) of two-stroke engine oil into cylinder through spark plug hole.
13. Pull recoil starter handle two to three times to distribute oil inside engine.
14. Observe 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.
15. Install spark plug.
16. Connect spark plug lead to spark plug.
17. Store unit in a dry, dust-free place, out of the reach of children.

⚠ WARNING

Hedge trimmer blades are sharp. Avoid touching blades whenever possible, and always wear gloves to protect hands. Touching blades could lead to severe personal injury.

NOTICE

Always store and transport hedge trimmers 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.

18. **Hedge trimmers only:** Apply clean oil to the entire length of the blade. Be certain the blade bolts are lubricated.
19. **Hedge trimmers only:** Install blade guard on blades.

NOTICE

Some tree sap and resins are corrosive and can damage guide bars, saw chains and sprockets.

20. **Power pruners only:** Wash the guide bar and sprocket areas after each use, then coat metal parts with oil.

SPECIFICATIONS

MODEL	PE-225 (S/N U95012, U99314, U95113)
Length (without cutting attachment)	1,727 mm (68.0 in.)
Width	348 mm (13.7 in.)
Height	345 mm (13.6 in.)
Weight (with fuel, blade guard, cutting attachment, and harness)	5.8 kg (12.8 lb.)
Weight - with blade guard (without fuel, cutting attachment, or harness)	5.3 kg (11.1 lb.)
Engine Type	Air-cooled, two-stroke, single cylinder gasoline engine
Bore	32.2 mm (1.27 in.)
Stroke	26.0 mm (1.02 in.)
Displacement	21.2 cc (1.29 $in.^3$)
Exhaust	Spark arrester muffler or spark arrester muffler with catalyst
Carburetor	Diaphragm with purge pump
Ignition System	Flywheel magneto, capacitor discharge ignition type
Spark Plug	NGK BPM8Y (BPMR8Y in Canada) Gap 0.65 mm (0.026 in.)
Fuel	Mixed (gasoline and two-stroke oil)
Gasoline/Oil Ratio	50:1
Gasoline	Use 89 Octane unleaded. Do not use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE. Do not use alternative fuels such as E-15 or E-85.
Oil	ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345-FD, two-stroke, air-cooled engine oil
Fuel Tank Capacity	0.45 L (15.2 US fl. oz.)
Starter System	Automatic rewind starter

MODEL	PE-225 (S/N U95012, U99314, U95113)
Clutch	Centrifugal type
Vibration Reduction Systems	Rubber cushion on engine mount
Operation Rod	25 mm (1.0 in.) diameter aluminum tube
Drive Shaft	6.0 mm (0.25 in.) flexible shaft
Gear Case Ratio	1.62:1
Rotating Direction	Counterclockwise (viewed from left side)
Cutter Head	Edger blade
Blade Length	197 mm (7.75 in.)
Blade Width	50.8 mm (2.0 in.)
Blade Thickness	Standard 2.3 mm (0.090 in.) Premium 4.6 mm (0.181 in.)
Handle	Front - D-loop type with plastic grip Rear - Plastic grip with throttle trigger and switch
Idle Speed	3,900 RPM
Clutch Engagement Speed	4,200 RPM
Wide Open Throttle Speed	10,900 RPM

MODEL	PE-225 (S/N T46814, T86414, T86714, U55114, U36414)
Length (without cutter head)	1736 mm (68.3 in.)
Width	304 mm (12.0 in.)
Height	335 mm (13.2 in.)
Weight (dry) (without cutter head)	5.5 kg (11.9 lb.)
Engine Type	Air cooled, two-stroke, single cylinder gasoline engine
Bore	32.2 mm (1.27 in.)
Stroke	26.0 mm (1.02 in.)
Displacement	21.2 cc (1.29 in.3)
Exhaust	Spark arrester muffler or spark arrester muffler with catalyst
Carburetor	Diaphragm with purge pump

MODEL	PE-225 (S/N T46814, T86414, T86714, U55114, U36414)
Ignition System	Flywheel magneto, capacitor discharge ignition type
Spark Plug	NGK BPM8Y (BPMR8Y in Canada) Gap 0.65 mm (0.026 in.)
Fuel	Mixed (gasoline and two-stroke oil)
Gasoline/Oil Ratio	50:1
Gasoline	Use 89 Octane unleaded. Do not use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE. Do not use alternative fuels such as E-15 or E-85.
Oil	ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345-FD, two-stroke, air-cooled engine oil.
Fuel Tank Capacity	0.42 L (14.2 US fl. oz.)
Starter System	Automatic rewind starter
Clutch	Centrifugal type
Vibration Reduction Systems	Not Equipped
Operation Rod	22.2 mm (0.9 in.) diameter aluminum tube
Drive Shaft	6.0 mm (0.25 in.) flexible shaft
Gear Case Ratio	1.62:1
Rotating Direction	Counterclockwise (viewed from left side)
Cutter Head	Edger blade
Blade Length	203.2 mm (8.0 in.)
Blade Width	50.8 mm (2 in.)
Blade Thickness	Standard 2.3 mm (0.090 in.), Premium 4.6 mm (0.181 in.)
Handle	Front - D-loop type with plastic grip Rear - Plastic grip with throttle trigger and switch
Idle Speed	3,000 RPM
Clutch Engagement Speed	4,200 RPM
Wide Open Throttle Speed	10,900 RPM

MODEL	PE-225 (S/N U68314, U68214)
Length (without cutter head)	1724 mm (67.9 in.)
Width	304 mm (12.0 in.)
Height	335 mm (13.2 in.)
Weight (dry) (without cutter head)	5.5 kg (12.1 lb.)
Engine Type	Air cooled, two-stroke, single cylinder gasoline engine
Bore	32.2 mm (1.27 in.)
Stroke	26.0 mm (1.02 in.)
Displacement	21.2 cc (1.29 in.3)
Exhaust	Spark arrester muffler or spark arrester muffler with catalyst
Carburetor	Diaphragm with purge pump
Ignition System	Flywheel magneto, capacitor discharge ignition type
Spark Plug	NGK BPM8Y (BPMR8Y in Canada) Gap 0.65 mm (0.026 in.)
Fuel	Mixed (gasoline and two-stroke oil)
Gasoline/Oil Ratio	50:1
Gasoline	Use 89 Octane unleaded. Do not use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE. Do not use alternative fuels such as E-15 or E-85.
Oil	ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345-FD, two-stroke, air-cooled engine oil.
Fuel Tank Capacity	0.38 L (12.8 US fl. oz.)
Starter System	Automatic rewind starter
Clutch	Centrifugal type
Vibration Reduction Systems	Not equipped.
Operation Rod	22.2 mm (0.9 in.) diameter aluminum tube
Drive Shaft	6.0 mm (0.25 in.) flexible shaft
Gear Case Ratio	1.62:1
Rotating Direction	Counterclockwise (viewed from left side)
Cutter Head	Edger blade

MODEL	PE-225 (S/N U68314, U68214)
Blade Length	197 mm (7.75 in.)
Blade Width	50.8 mm (2 in.)
Blade Thickness	Standard 2.3 mm (0.090 in.), Premium 4.6 mm (0.181 in.)
Handle	Front - D-loop type with plastic grip Rear - Plastic grip with throttle trigger and switch
Idle Speed	3,000 RPM
Clutch Engagement Speed	4,200 RPM
Wide Open Throttle Speed	10,900 RPM

MODEL	PE-225 (S/N U71614)
Length (without cutter head)	1,724 mm (67.9 in.)
Width	304 mm (12.0 in.)
Height	335 mm (13.2 in.)
Weight - dry (without cutter head)	5.7 kg (12.5 lb.)
Engine Type	Air-cooled, two-stroke, single cylinder gasoline engine
Bore	32.2 mm (1.27 in.)
Stroke	26.0 mm (1.02 in.)
Displacement	21.2 cc (1.29 in.3)
Exhaust	Spark arrester muffler or spark arrester muffler with catalyst
Carburetor	Diaphragm with purge pump
Ignition System	Flywheel magneto, capacitor discharge ignition type
Spark Plug	NGK BPM8Y (BPMR8Y in Canada) Gap 0.65 mm (0.026 in.)
Fuel	Mixed (gasoline and two-stroke oil)
Gasoline/Oil Ratio	50:1

MODEL	PE-225 (S/N U71614)
Gasoline	Use 89 Octane unleaded. Do not use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE. Do not use alternative fuels such as E-15 or E-85.
Oil	ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345-FD, two-stroke, air-cooled engine oil
Fuel Tank Capacity	0.38 L (12.8 US fl. oz.)
Starter System	Automatic rewind starter
Clutch	Centrifugal type
Vibration Reduction Systems	Rubber cushion on engine mount
Operation Rod	25 mm (1.0 in.) diameter aluminum tube
Drive Shaft	6.0 mm (0.25 in.) flexible shaft
Gear Case Ratio	1.62:1
Rotating Direction	Counterclockwise (viewed from left side)
Cutter Head	Edger blade
Blade Length	197 mm (7.75 in.)
Blade Width	50.8 mm (2.0 in.)
Blade Thickness	Standard 2.3 mm (0.090 in.), Premium 4.6 mm (0.181 in.)
Handle	Front - D-loop type with plastic grip Rear - Plastic grip with throttle trigger and switch
Idle Speed	3,000 RPM
Clutch Engagement Speed	4,200 RPM
Wide Open Throttle Speed	10,900 RPM

MODEL	PE-225 (S/N V00112)
Length (without cutter head)	1,724 mm (67.9 in.)
Width	304 mm (12.0 in.)
Height	335 mm (13.2 in.)

MODEL	PE-225 (S/N V00112)
Weight - dry (without cutter head)	5.7 kg (12.5 lb.)
Engine Type	Air-cooled, two-stroke, single cylinder gasoline engine
Bore	32.2 mm (1.27 in.)
Stroke	26.0 mm (1.02 in.)
Displacement	21.2 cc (1.29 in.3)
Exhaust	Spark arrester muffler or spark arrester muffler with catalyst
Carburetor	Diaphragm with purge pump
Ignition System	Flywheel magneto, capacitor discharge ignition type
Spark Plug	NGK BPM8Y (BPMR8Y in Canada) Gap 0.65 mm (0.026 in.)
Fuel	Mixed (gasoline and two-stroke oil)
Gasoline/Oil Ratio	50:1
Gasoline	Use 89 Octane unleaded. Do not use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE. Do not use alternative fuels such as E-15 or E-85.
Oil	ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345-FD, two-stroke, air-cooled engine oil
Fuel Tank Capacity	0.38 L (12.8 US fl. oz.)
Starter System	Automatic rewind starter
Clutch	Centrifugal type
Vibration Reduction Systems	Rubber cushion on engine mount
Operation Rod	25 mm (1.0 in.) diameter aluminum tube
Drive Shaft	6.0 mm (0.25 in.) flexible shaft
Gear Case Ratio	1.62:1
Rotating Direction	Counterclockwise (viewed from left side)
Cutter Head	Edger blade

MODEL	PE-225 (S/N V00112)
Blade Length	197 mm (7.75 in.)
Blade Width	50.8 mm (2.0 in.)
Blade Thickness	Standard 2.3 mm (0.090 in.), Premium 4.6 mm (0.181 in.)
Handle	Front - D-loop type with plastic grip Rear - Plastic grip with throttle trigger and switch
Idle Speed	3,000 RPM
Clutch Engagement Speed	4,200 RPM
Wide Open Throttle Speed	10,900 RPM

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ECHO INC., 400 Oakwood Rd., Lake Zurich, IL 60047
1.800.432.ECHO WWW.ECHO-USA.COM

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ECHO INCORPORATED
400 Oakwood Road
Lake Zurich, IL 60047
www.echo-usa.com