PPT-266LA
Power Pruner™
Operator's Manual

⚠ 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.

X7712090701

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INTRODUCTION

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.

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

Additional or Replacement Manuals

Replacement Operator, Safety Manuals, and Parts Catalogs are available from your ECHO dealer or at echo-latinamerica.com.

SERVICING INFORMATION

Parts and Serial Number

Genuine ECHO Parts and Assemblies for your 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. _____ Serial No._____

Warranty Registration

Your bill of sale must be provided to demonstrate proof of warranty.

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, visit echo-latinamerica.com.

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 CAN 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.

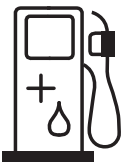
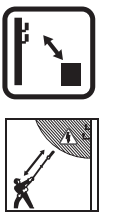
NOTICE

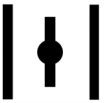
The enclosed message provides information necessary for the protection of the unit.

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 Mixture
	Wear Eye, Ear and Head Protection	T	Carburetor Adjustment - Idle Speed
	Wear Hand and Foot Protection	L	Carburetor Adjustment - Low Speed Mixture
	Safety/Alert	STOP	Stop Switch
	Hot Surface		Fuel and Oil Mixture
	Finger Severing		Do not operate closer than 15 m (50 ft.) from electrical hazard.
	Avoid all power lines. This unit is not insulated against electrical current.		Plan retreat path from falling objects.

Symbol	Description	Symbol	Description
	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)
	Wear Slip Resistant Footwear		Chain Lubrication
	Do not cut branches overhead.		

Note: Not all symbols will appear on your unit.

Personal Condition and Safety Equipment

⚠ WARNING

Cancer and Reproductive Harm
www.P65Warnings.ca.gov

⚠ WARNING

The muffler or catalytic muffler and surrounding cover may become extremely hot. 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 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. 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.

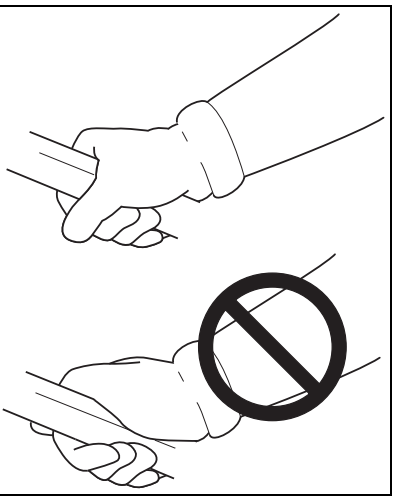
It is believed that a condition called Raynaud's Phenomenon, which affects the fingers of certain individuals, may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations, followed by loss of color and numbness in the fingers. The following 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 over head 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 this product indoors or in inadequately ventilated areas. Engine exhaust contains poisonous emissions and can cause serious injury or death.

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 and missing nuts, bolts, and screws. Tighten or replace as needed.**

Guide Bar and Saw Chain

- Check that the cutting attachment, guide bar, and saw chain is firmly attached and in safe operating condition.
- Use only one ECHO extension on the pruner.
- Do not hit rocks, stones, tree stumps, and other foreign objects with the saw chain.
- Do not cut into the ground with the saw chain.
- If cutting attachment end strikes an obstruction, stop engine immediately and inspect saw chain for damage.
- Do not operate with a dull, fractured, or discolored saw chain.
- Remove all foreign objects from work area.
- Always cover the guide bar and saw chain with guide bar cover during transportation and for storage.

⚠ WARNING

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

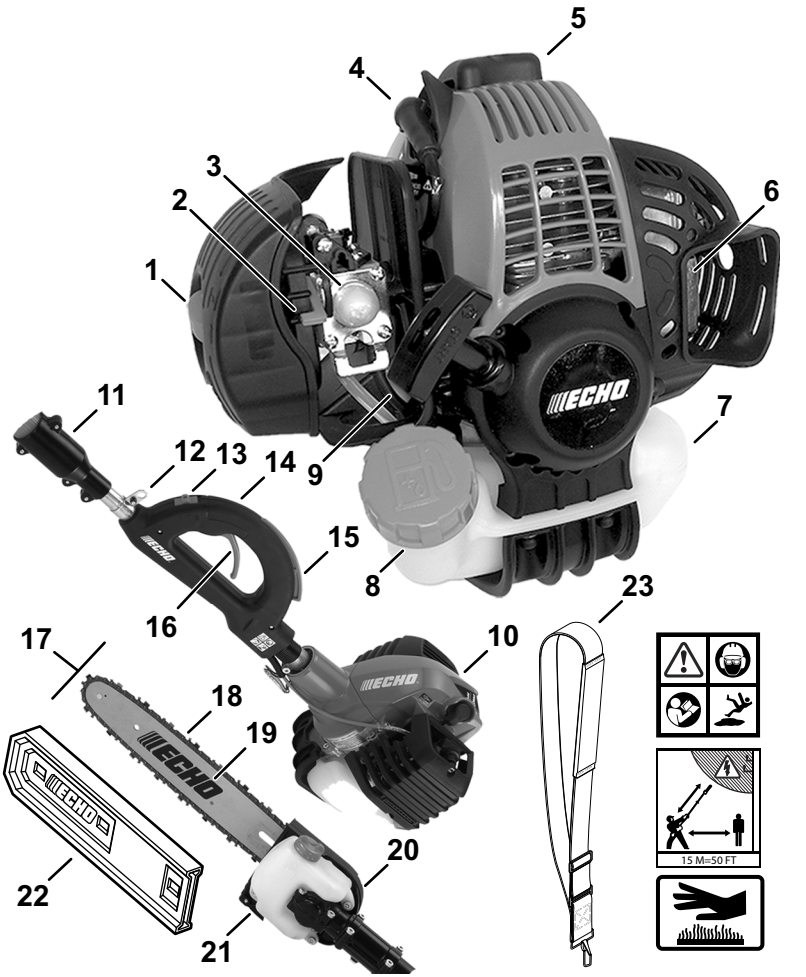
- ***ALWAYS stop engine, disconnect spark plug, and make sure all moving parts have come to a complete stop before removing obstructions, clearing debris, or servicing unit.***
- ***DO NOT start or operate unit unless all guards and protective covers are properly assembled to unit.***
- ***NEVER reach 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 servicing dealer before using.

DESCRIPTION

Locate the safety decal(s) on your unit. Make sure the decal(s) is legible and that you understand and follow the instructions on it. If a decal cannot be read, a new one can be ordered from your ECHO dealer. Safety label is for example only. Your label my appear slightly different.



1. Air Filter
2. Choke
3. Purge Bulb
4. Spark Plug
5. Top Guard
6. Spark Arrestor Muffler or Spark Arrestor Muffler with Catalyst
7. Fuel Tank
8. Fuel Tank Cap
9. Recoil Starter Handle
10. Power Head
11. Lower Shaft Tube
12. Strap Hook
13. Stop Switch
14. Throttle Handle (for right hand)
15. Throttle Trigger Lockout
16. Throttle Trigger
17. Cutting Attachment
18. Saw Chain
19. Guide Bar
20. Automatic Oiler Assembly
21. Cutting Shoe
22. Scabbard
23. Shoulder Harness

CONTENTS

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

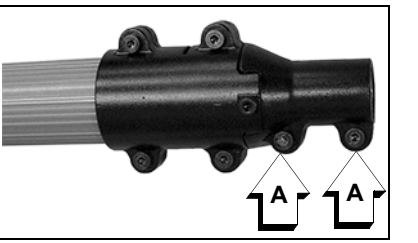
After opening the carton, check for damage. Immediately notify your retailer or ECHO Dealer of damaged or missing parts. Use the contents list to check for missing parts.

1	Power Head and Handle Assembly
1	Drive Shaft Assembly
1	Cutting Attachment with Guide Bar and Saw Chain
1	Operator's Manual
1	Warranty Statement
1	Shoulder Harness
1	Guide Bar Cover

ASSEMBLY

Drive Shaft and Handle Assembly

1. Remove protective caps from handle assembly.
2. Loosen clamping bolts (A) on drive shaft.

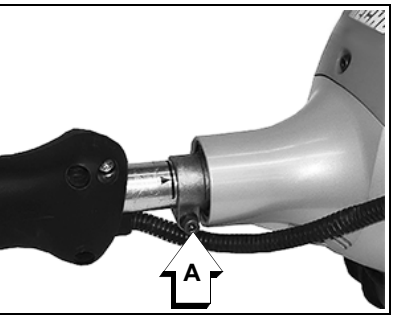


3. Pull flexible drive shaft coupler (B) 2-3 inches out of handle assembly.

4. Align flexible drive shaft coupler with drive shaft socket and slide together until handle assembly is fully seated into drive shaft.
5. Tighten clamping bolts (A).

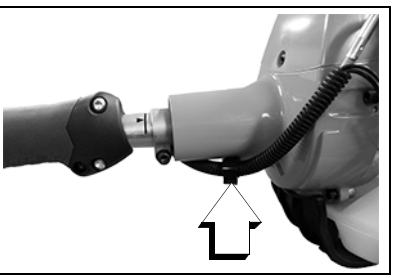
Drive Shaft and Power Head

1. Stand power head upright on a level surface.
2. Loosen the drive shaft clamp bolt (A) at engine drive shaft clamp.
3. Remove dust cap if necessary, and carefully fit drive shaft assembly to engine making sure that inner drive shaft engages into clutch mount.



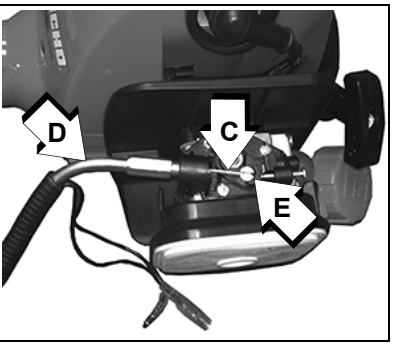
Note: Gear Housing must be aligned properly with engine.

4. Tighten drive shaft clamp bolt (A) securely.
5. Route throttle linkage and ignition lead assembly through clip below fan housing.

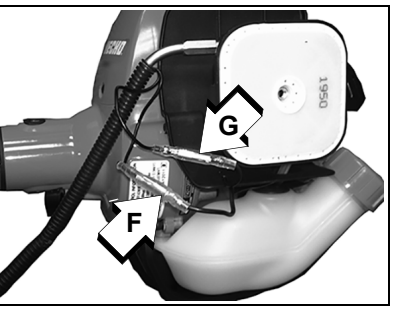


Throttle Linkage and Ignition Leads

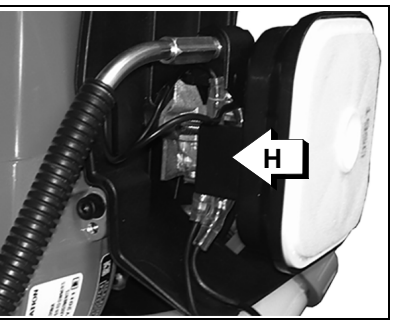
1. Close choke and remove air filter cover.
2. Place throttle linkage (C) through adjustment fixture (D) and install wire end into large carburetor throttle swivel hole (E). Check throttle for freedom of movement and that wide open throttle and low idle extremes are adjusted properly. The throttle linkage must be adjusted by moving the adjustment fixture (D). Consult with your ECHO Dealer for correct adjustment procedure.



3. Connect ignition stop leads (F, G) from throttle cable tubing to ignition leads (F, G) on engine.



4. Secure ignition leads behind air filter case with clip (H).
5. Install air filter and cover.

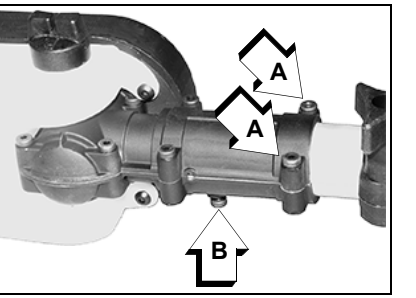


Cutting Attachment to Drive Shaft Installation

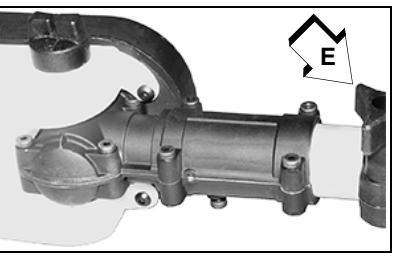
WARNING

Saw Chain is sharp! Always wear gloves when handling assembly, otherwise serious personal injury may result

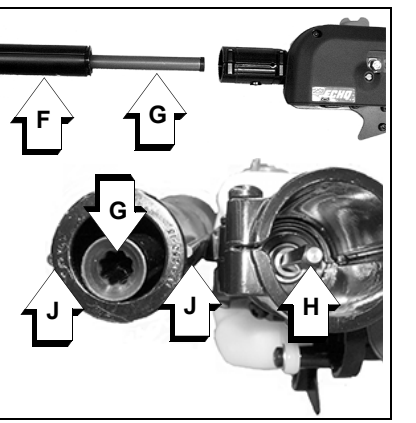
1. Loosen the two (2) screws (A) and remove locator screw (B) on cutting attachment.



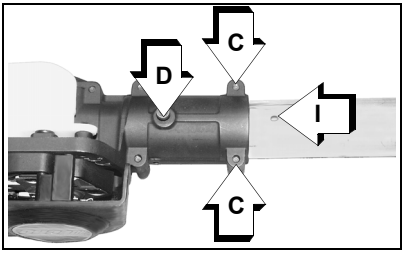
2. Loosen clamp knob (E).



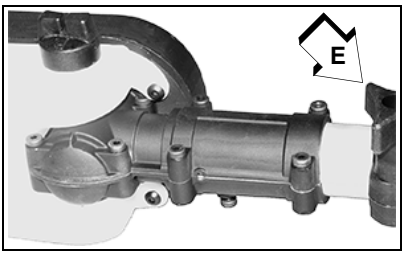
3. Pull upper tube (F) out of fiberglass lower tube 127-152 mm (5-6 in.), then slide (F) back into fiberglass lower tube exposing inner drive shaft (G). Align and join star shaped drive end of inner drive shaft (G) with cutting attachment shaft (H).
4. Align ridges (J) on upper tube with seams in cutting attachment.



5. Slide together, aligning locator hole (D) in cutting attachment with locating hole (I) in upper tube.
6. Install and tighten the locator screw. Tighten cutting attachment screws (C).



7. Extend upper tube to desired length. Tighten clamp knob (E) turning clockwise.



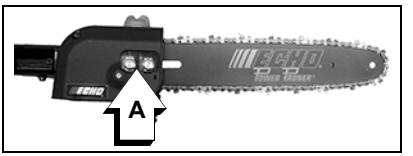
Saw Chain Tension Adjustment

WARNING

Always disconnect spark plug wire before servicing cutting attachment. Wear gloves when handling saw chain, otherwise serious personal injury may result.

To Adjust Saw Chain Tension

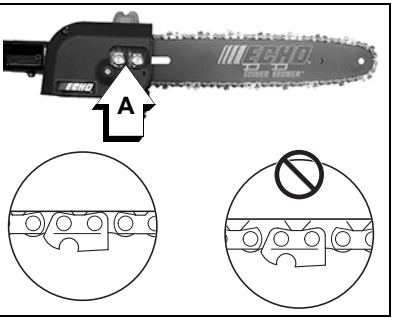
1. Move stop switch to STOP position.
2. Disconnect spark plug lead.
3. Loosen two guide bar nuts (A)



NOTICE

Always loosen guide bar nuts before turning the chain tension adjuster, otherwise the clutch cover and tensioner will be damaged.

4. Hold the bar nose up, and turn the adjuster screw (B) clockwise until the chain fits snugly against the underside of the bar, as shown. Cold Chain Only - turn adjuster screw clockwise an additional 1/8 - 1/4 turn.Tighten both guide bar nuts with nose held up. Tighten rear nut first.



5. Pull the chain around the guide bar by hand. Reduce the chain tension if you feel tight spots.
6. When chain is properly tensioned, tighten guide bar nuts securely.

NOTICE

Tighten guide bar nuts to 8-9 N•m (71-80 lbf•in.) DO NOT over-tighten nuts. Damage may result

7. Keep chain properly tensioned at all times.

Note: All chains require frequent adjustment.

8. Connect spark plug lead.

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 arrestor 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

NOTICE

Use of unmixed, improperly mixed, or fuel older than 90 days, (stale fuel), may cause hard starting, poor performance, or severe engine damage and void the product warranty. Read and follow instructions in the Storage section of this manual.

⚠ WARNING

Fuel containing more than 25% ethanol is NOT approved for use in ECHO 2-stroke gasoline engines. Fuel containing more than 25% ethanol may cause performance problems, loss of power, overheating, fuel vapor lock, and unintended machine operation, including, but not limited to, improper clutch engagement. Fuel containing more than 25% ethanol may also cause premature deterioration of fuel lines, gaskets, carburetors and other engine components.

Fuel Requirements

Gasoline - Use 89 Octane (mid grade or higher) gasoline known to be good quality. Gasoline may contain up to 25% Ethanol. Gasoline containing methanol (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. FD Standards must be used. ECHO brand 2-Stroke Oil meets 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. FD certified oil will void the two-stroke engine warranty.

NOTICE

ECHO branded 2-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 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 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.***
- ***Move at least 3m (10 ft.) from refueling location before starting the engine.***

Mixing Instructions

1. Fill an approved fuel container with half of the required amount of gasoline.
2. Add the proper amount of 2-stroke 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 System	
Gas	Oil	Gas	Oil
Gallons	Oz.	Liter	cm^3
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

- 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, 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 (30) days, ninety (90) days when a fuel stabilizer is added.

NOTICE

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

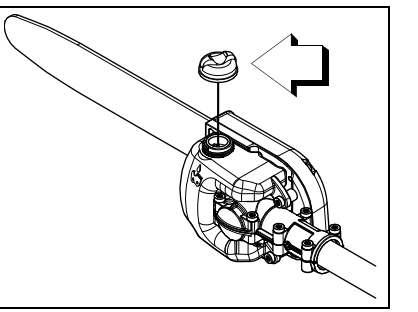
Lubricating the Guide Bar and Saw Chain

Automatic Oiling System

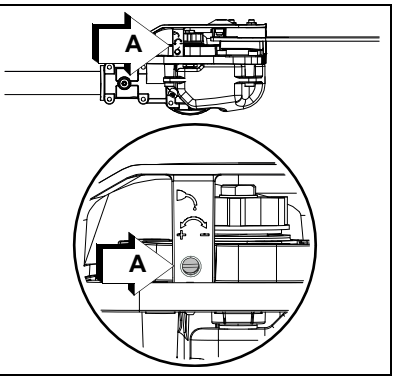
NOTICE

To prevent plastic deterioration, do not use synthetic or silicone based oil.

1. Wipe debris from around oil fill cap.
2. Remove oil fill cap and fill reservoir with a quality, low viscosity guide bar and saw chain oil.



Adjusting Automatic Oiler



1. From bottom of gear case, turn adjustment screw (A) clockwise to decrease oil volume, or counterclockwise to increase oil volume.

Note: The automatic oiler is preset to deliver a sufficient oil discharge volume during normal operating conditions. During heavy or dry cutting conditions, the oil discharge volume may be increased to assure adequate lubrication. If oil is leaking from the bar cover area, reduce the oil discharge volume. Refill the oil reservoir with each tank of fuel.

Note: Very little visible oil on the saw chain will provide sufficient lubrication.

Starting Cold Engine

⚠ WARNING

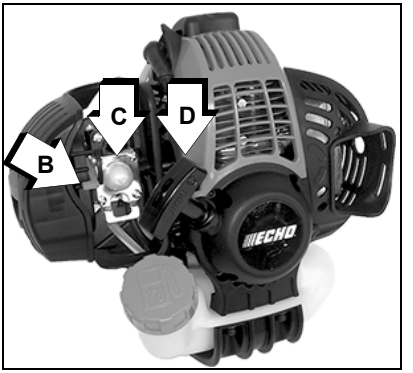
The attachment will operate immediately when the engine starts, and could result in possible serious injury. Keep movable parts of the attachment away from objects that could become entangled or thrown, and surfaces that could cause loss of control.

1. *Stop Switch*

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

2. *Choke*

   Move choke lever (B) to Cold Start Position ( ).



3. *Purge Bulb*

   Pump purge 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*

   Lay the unit on a flat area and keep movable attachment parts clear of all obstacles. Firmly grasp throttle handle and throttle trigger lockout with left hand and fully depress throttle trigger to wide open position. Rapidly pull recoil starter handle/rope (D) until engine fires (or maximum five [5] pulls).

5. *Choke*

   After engine fires (or 5 pulls), move choke lever back to Run ( ) position. Firmly grasp throttle handle and throttle trigger lockout with left hand and fully depress throttle trigger to wide open position. Pull recoil starter handle/rope until engine starts and runs. Release throttle trigger, and allow unit to warm up at idle for several minutes.

Note: If engine does not start with choke in Run position after 5 pulls, repeat instructions 2–5.

6. *Throttle Trigger*

   After engine warm-up, gradually depress throttle trigger to increase engine RPM to operating speed.

Starting Warm Engine

The starting procedure is the same as Cold Start except DO NOT close the choke, and do not depress throttle trigger to wide open position.

⚠ 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 dealer.

1. *Stop Switch*

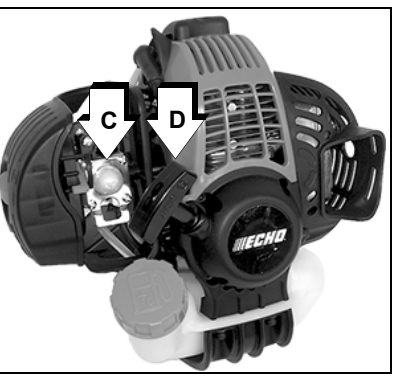
   Move stop switch button (A) forward away from the STOP position.

2. *Purge Bulb*

   Pump purge bulb (C) until fuel is visible in the Clear fuel return line. Pump bulb an additional 4 or 5 times

3. *Recoil Starter*

   Lay the unit on a flat area and keep movable attachment parts clear of all obstacles. Rapidly pull the recoil starter handle (D) until the engine fires.



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

Stopping Engine

1. *Throttle*

   Release throttle and allow engine to return to idle before shutting off engine.

2. *Stop Switch*

   Move stop switch button (A) backward to STOP position.

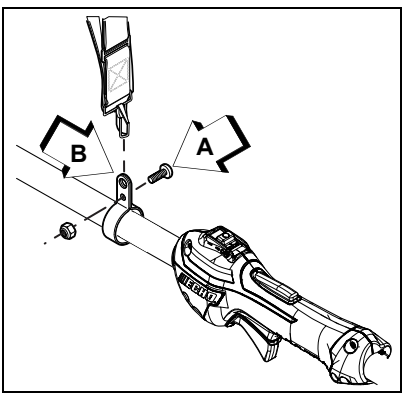
⚠ WARNING

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.

Pruning Techniques

Shoulder Harness (if included)

1. Loosen the harness clamp bolt (A).
2. Put the harness on and attach it to the clamp ring (B).
3. Adjust harness for comfortable operation.
4. Tighten harness clamp bolt (A).



The pole pruner attachment is designed for light to medium trimming of limbs and branches up to 203 mm (8 in.) diameter. Follow these tips for successful operation.

- Plan cut carefully. Check direction branch will fall.
- Plan retreat path from falling branch. Cut branches bounce when striking ground.

- Long branches should be removed in several pieces.
- Do not stand directly beneath branch being cut.
- When ready to cut, hold the cutting shoe against the branch. This will prevent whipping of the branch. DO NOT use back and forth sawing action.

Correct

Cutting shoe against branch

- Look out for branches immediately behind the branch being cut. If saw chain hits a rear branch damage to the saw chain and guide bar may occur.
- Accelerate to full throttle.

Not Correct

Cutting shoe away from branch

- Ease cutting pressure when nearing end of cut to maintain control.
- When pruning a limb 102 mm (4 in.) diameter or larger cut as follows:
  1. Under cut 1/4 limb diameter near tree trunk.
  2. Finish top cut slightly farther out on limb.
  3. Flush cut stub at trunk.
- DO NOT use for felling or bucking.

Not Correct

Blade hits rear branch

MAINTENANCE

⚠ 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. Allow unit to cool before performing service. 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 many hours of trouble free service. Regular scheduled maintenance will help your unit achieve that goal. If you are unsure or are not equipped with the necessary tools, we recommend that you take your unit to a Servicing Dealer for maintenance. To help you decide whether you want to DO-IT-YOURSELF or have the Dealer do it, each maintenance task has been graded. If the task is not listed, see your 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 dealer.

Maintenance Intervals

COMPONENT/SYSTEM	MAINTENANCE PROCEDURE	SKILL LEVEL
Daily or Before Use		
Air Filter	Inspect/Clean*	**1**
Choke Shutter	Inspect/Clean*	**1**
Fuel System	Inspect [2]	**1**
Cooling System	Inspect/Clean	**2**
Recoil Starter Rope	Inspect/Clean*	**1**
Screws/Nuts/Bolts	Inspect/Tighten/Replace*	**1**
Guide Bar/Sprocket Nose	Inspect/Clean/Lubricate*	**2**
Saw Chain	Inspect/Sharpen/Replace/Tension*	**2**
Every Refuel		
Fuel System	Inspect [2]	**1**
Guide Bar/Sprocket Nose	Inspect/Clean/Lubricate*	**2**
Saw Chain	Inspect/Sharpen/Replace/Tension*	**2**
3 Months		
Air Filter	Replace*	**1**
Fuel Filter	Inspect*	**1**
Fuel Cap Gasket	Inspect*	**1**
Spark Plug	Inspect/Clean/Replace*	**1**
Muffler Spark Arrestor	Inspect/Clean/Replace*	**2**
Cylinder Exhaust Port	Inspect/Clean/De-carbon	**2**
Drive Shaft (Flex Cable Models)	Grease[1]	**2**
Yearly		
Fuel Filter	Inspect/Replace*	**1**
Fuel Cap Gasket	Replace*	**1**

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

MAINTENANCE PROCEDURE NOTES:

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

[2] Low evaporative fuel tanks DO NOT require regular maintenance to maintain emission integrity.

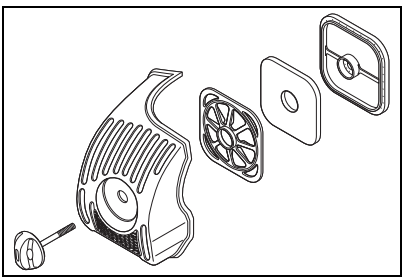
* Replacement is recommended based on the finding of damage or wear during inspection.

Air Filter

Level 1

Parts Required: Air Filter.

1. Close choke (Cold Start Position [ ]). This prevents dirt from entering the carburetor throat when the air filter is removed. Brush accumulated dirt from air cleaner area.
2. Remove air filter cover and air filter retainer from inside cover. Brush dirt from inside cover.
3. Replace filter if it is damaged, very dirty, or the rubber sealing edges are deformed.



4. Remove foam pre-filter and air filter and clean as indicated below.
5. Foam Pre-filter
   - Clean foam filter in water/ detergent solution and rinse with clean water.
   - Wrap the filter in a clean, dry cloth and squeeze (do not wring) dry. Allow to dry completely before reuse. Do not oil.

   Dual Layer Air Filter

   - Lightly brush debris from filter.
   - Soak heavily soiled filters in water/detergent solution to loosen dirt, then brush lightly.
   - Rinse with clean water and allow to dry completely before reuse.
6. Place foam pre-filter over raised center and inside outer lip of air filter. Install air filter in air filter case.
7. Install air filter retainer on post in air filter cover, flat side up.
8. Install air filter cover and tighten cover knob securely.

Fuel Filter

Level 1

Parts Required: Fuel Filter.

⚠ WARNING

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

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

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

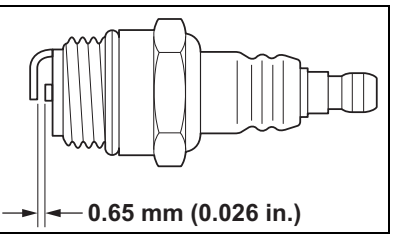
Level 2

Parts required: Spark Plug

NOTICE

Use only NGK BPM-8Y spark plug (BPMR-8Y in Canada) otherwise severe engine damage may occur.

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. Tighten spark plug to 150–170 kgf•cm (130–150 lbf•in).

Cooling System

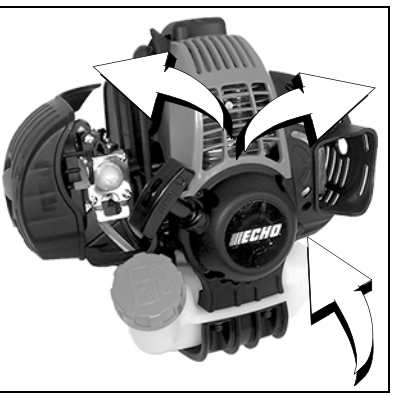
Level 2

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.

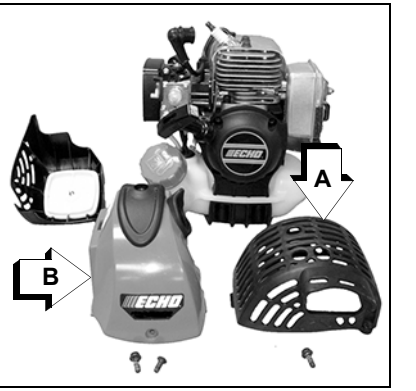
Overheating and engine seizure can occur when:

- 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.

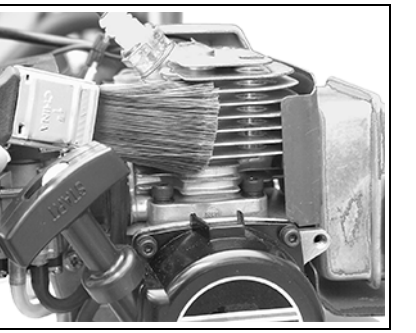
1. Remove spark plug lead.
2. Remove air cleaner cover.
3. Remove muffler cover (A).
4. Remove engine cover (B).



NOTICE

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

5. Use brush to remove dirt from the cylinder fins.
6. Remove grass and leaves from the grid between the recoil starter and fuel tank.
7. Assemble components in reverse order.



Exhaust System

Spark Arrestor Screen

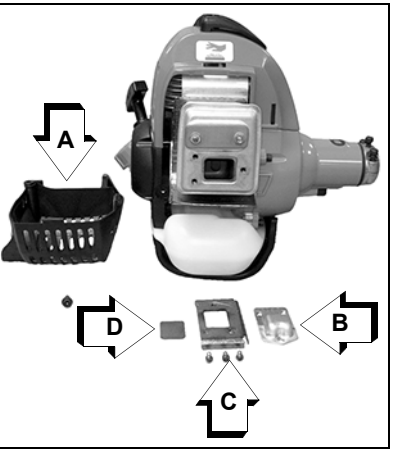
Level 2

Parts Required: Spark Arrestor Screen, Gasket.

1. Remove spark plug lead.
2. Remove muffler cover (A).
3. Place piston at Top Dead Center (TDC) to prevent carbon/dirt from entering cylinder.
4. Remove spark arrestor screen (D), gasket (C) and exhaust guide (B) from muffler body.
5. Clean carbon deposits from muffler components.

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

6. Replace screen if it is cracked, plugged, or has holes burned through.
7. Assemble components in reverse order.

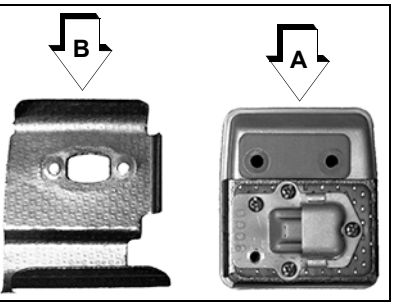


Exhaust Port Cleaning

Level 2

Parts Required: As needed; Heat Shield.

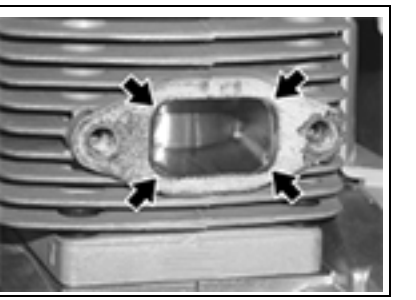
1. Remove spark plug lead from spark plug, and remove engine cover.
2. Place piston at top dead center. Remove muffler (A) and heat shield (B).
3. Use a wood or plastic scraping tool to clean deposits from cylinder exhaust port.



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.

4. Inspect heat shield, and replace if damaged.
5. Install heat shield and muffler.
6. Tighten muffler mounting bolts (or nuts) to 90–110 kgf•cm (80–95 lbf•in).
7. Install engine cover and attach spark plug lead.
8. Start engine, and warm to operating temperature.



9. Stop engine, and re-tighten mounting bolts (or nuts) to specifications.

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, emission, and durability performance up to 1,100 feet above sea level (ASL) (96.0 kPa). To maintain proper engine operation and emission compliance above 1,100 feet ASL the carburetor may need to be adjusted by an authorized ECHO service dealer.

NOTICE

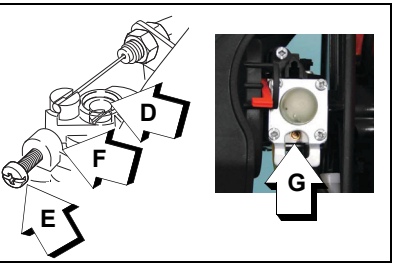
If the engine is adjusted for operation above 1,100 feet ASL, the carburetor must be re-adjusted when operating the engine below 1,100 feet ASL, otherwise severe engine damage may result.

⚠ CAUTION

Always operate unit in a clear work area. Keep hands clear of moving parts during adjustment otherwise serious bodily injury may occur.

Before adjustment make sure that:

- Check for correct spark plug (BPM-8Y P/N 15901019830) and gap of 0.026 in. (0.65 mm).
- The air filter element is clean and properly installed.
- The muffler spark arrestor screen and exhaust port are clear of carbon.
- The fuel lines, tank vent, and fuel filter are in good condition and clear of debris.
- The fuel is fresh (> 89 octane: RON+MON/2) and properly mixed at 50:1 with “ISO L-EGD” or “JASO-FD” 2-stroke oil.



1. Turn Hi mixture needle (G) clockwise (CW) until lightly seated. And then turn Hi mixture needle (G) (CCW) 1 3/4 turns. Turn idle mixture needle (D) (CW) until lightly seated. And then turn idle mixture needle (D) (CCW) 1 3/4 turns.
2. Turn idle adjust screw (E) until the head touches boss (F). Then turn idle adjust screw (E) (CCW) 3 1/2 turns.
3. Start and run engine for 2 minutes alternating between wide open throttle (WOT) and idle every 5 seconds. Adjust idle mixture needle (D) to achieve 2,900 RPM.
4. Adjust Hi mixture needle (G) and achieve 11,000 RPM.
5. When final adjustment is completed, the engine should idle, accelerate smoothly, and attain (WOT) per above specification.

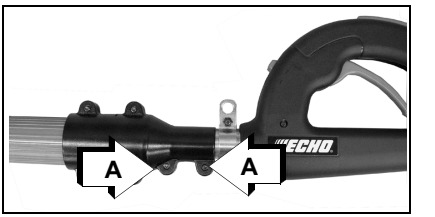
Lubrication

Flexible Drive Shaft

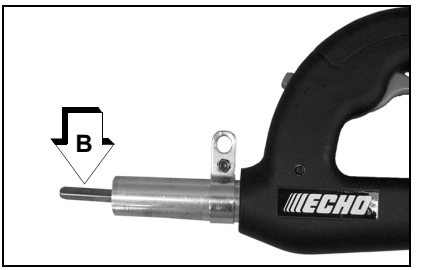
Level 1.

Parts required: Lithium Based Grease.

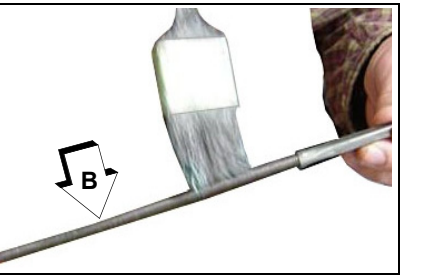
1. Loosen clamping screws (A) on driveshaft coupling.
2. Remove handle and flexible drive shaft.



3. Remove flexible drive shaft (B).



4. Wipe flex shaft clean and apply a thin coating of grease.
5. Slide flex shaft into handle. Leave 2–3 inches of flex shaft exposed. DO NOT get dirt on flex shaft.
6. Align flexible drive shaft with drive shaft socket, and slide together until handle is fully seated into drive shaft coupling.
7. Tighten clamping screws (A).



Guide Bar and Saw Chain Replacement

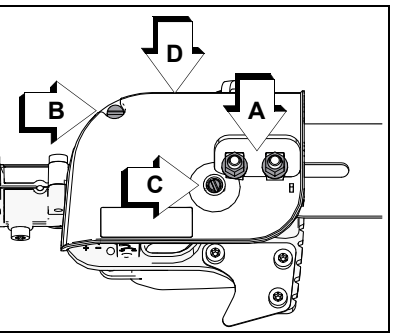
⚠ WARNING

Never try to replace or adjust guide bar and saw chain with engine running. Always disconnect spark plug wire before servicing guide bar and saw chain. This saw chain is VERY sharp, wear heavy gloves to protect your hands when handling it. Wear eye protection meeting CE or ANSI specification Z87.1.

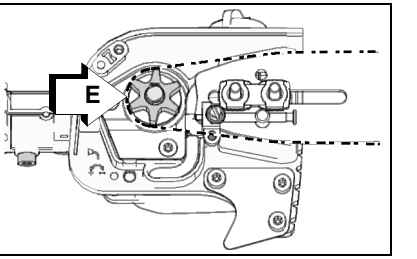
Guide Bar Replacement

Level 2.

1. Remove two guide bar nuts (A) and guide bar cover screw (B), turn saw chain tension adjustment screw (C) counterclockwise to release tension.
2. Remove guide bar cover (D).
3. Remove guide bar and saw chain from gear case and sprocket.
4. Remove chain from guide bar and check guide bar for damage and excessive or uneven wear. Replace guide bar if necessary
5. Install chain on guide bar with cutters on top of bar facing toward bar tip.

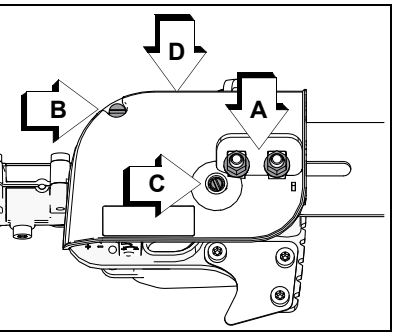


6. Install guide bar and chain on gear case, engaging chain with drive sprocket (E).
7. Turn tension adjustment screw (C) clockwise to take up slack in saw chain.
8. Install guide bar cover (D), and tighten guide bar nuts finger tight and install guide bar cover screw (B).
9. Adjust chain tension.

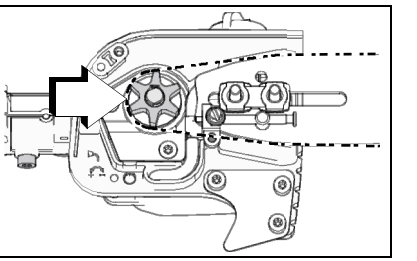


Guide Bar Cover Cleaning

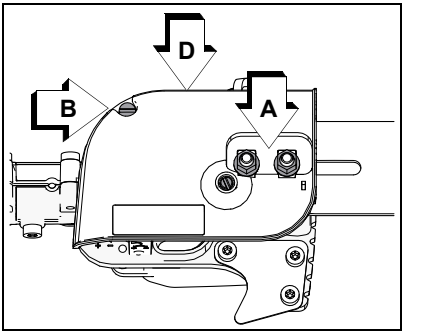
1. Remove two guide bar nuts (A) and guide bar cover screw (B).
2. Remove guide bar cover (D).



3. Gently brush debris from inside guide bar cover and from around sprocket.



4. Hold the bar nose up. Install guide bar cover (D). Install the guide bar nuts (A). Tighten the rear nut first, then tighten the front nut. Install and tighten the guide bar cover screw (B)



Filing Standard Saw Chain

Level 2

Power Pruner™ Bar and Chain Combinations					
BAR P/N	**CHAIN P/N**	**CHAIN TYPE**	**LINKS**	**PITCH**	**GAUGE**
Narrow Kerf					
254 mm (10 in.) narrow bar P/N 10A4CD3739	90PX39CQ	**90**	39	0.375 in.	0.043 in.
305 mm (12 in.) narrow bar P/N 12A4CD3744	90PX44CQ		44		
Regular					
254 mm (10 in.) regular bar P/N 10A0CD3739	91VXL39CQ	**91**	39	0.375 in.	0.050
305 mm (12 in.) regular bar P/N 12A0CD3744	91VXL44CQ		44		

NOTICE

Check bar part number on your Power Pruner™. Chain and guide bar gauge size must be identical. Use bar and chain combinations shown in table above.

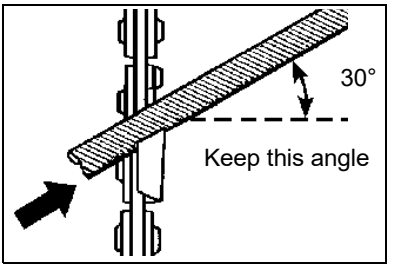
NOTICE

Dull or damaged cutters will result in poor cutting performance, increased vibration, and premature saw chain failure.

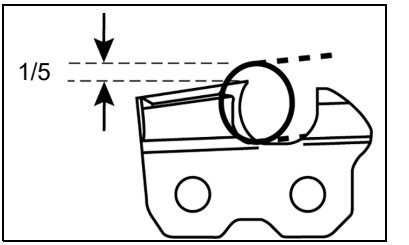
⚠ WARNING

Always stop engine and disconnect spark plug wire before servicing guide bar and saw chain. Always wear gloves when filing saw chain, otherwise serious personal injury may result.

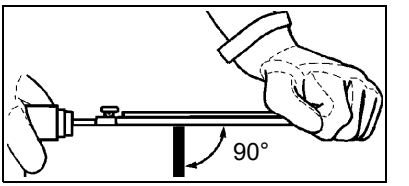
1. Use a 4.5 mm round file for a 0.043 in. gauge saw chain. Use a 5/32 in. round file for 5/32 in. gauge saw chain.
2. Set round file in cutter at 30° angle. One fifth (1/5) of the file should be exposed above top cutter edge.



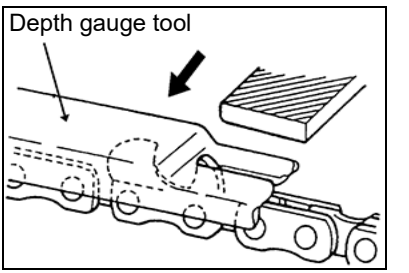
3. Keep file horizontal in cutter and file in one direction.



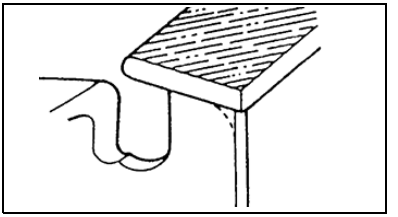
4. File until cutter top and side bevel edges are sharp without nicks.



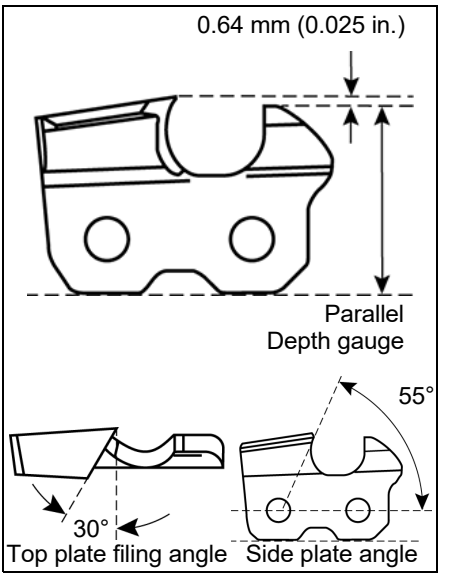
5. Place depth gauge tool firmly on top of cutter with 0.635 mm (0.025 in.) slot and end against front cutter raker. File cutter raker with flat file until flush with top of depth gauge.



6. Finish cutter sharpening by rounding front raker edge with flat file.



7. Properly filed cutter is as shown.
8. Apply clean oil and rotate saw chain slowly to wash away filings.
9. If saw chain is coated or clogged with resin, clean in kerosene, then soak in oil.



TROUBLESHOOTING

ENGINE PROBLEM TROUBLESHOOTING CHART				
Problem	**Check**	**Status**	**Cause**	**Remedy**
Engine starts hard or Engine does not start	Fuel at carburetor	No fuel at carburetor	Fuel strainer or fuel line obstructed	Clean or replace See your dealer
	Fuel at cylinder	No fuel at cylinder	Carburetor	See your dealer
		Muffler wet with fuel	Fuel mixture too rich	OPEN choke Clean or replace air filter Adjust carburetor See your dealer
	Spark at end of plug wire	No spark	STOP switch OFF - Electrical problem - Interlock switch	Turn switch to ON See your dealer
	Spark at plug		Incorrect gap - Covered with carbon - Fouled with fuel - Plug defective	Adjust to 0.65 mm (0.026 in.) Clean or replace plug
Engine runs, but dies or Engine does not accelerate 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
Engine runs, but dies or Engine does not accelerate properly	Spark plug	Plug dirty or worn	Normal wear	Clean and adjust or replace
	Carburetor	Improper adjustment	Vibration	Adjust
	Cooling system	Cooling system dirty or plugged	Extended operation in dirty or dusty locations	Clean
	Spark arrestor screen	Spark arrestor screen plugged	Normal wear	Replace
Engine does not crank	N/A		Internal engine problem	See your dealer

DANGER

Fuel vapors are extremely 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.

STORAGE

WARNING

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.

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.

NOTICE

Some tree sap and resins are corrosive. Thoroughly wash the guide bar and sprocket areas after each use, then coat metal parts with light oil.

4. Perform all periodic lubrication and services that are required.
5. Tighten all the screws and nuts.

6. Drain fuel tank completely. Press purge bulb 6–7 times to remove remaining fuel from carburetor then drain the tank again. Close choke, start and run the engine until it stops due to lack of fuel.
7. Allow engine to cool. Remove the spark plug lead from the spark plug. Remove the spark plug. Pour 7 cc (0.25 oz.) of fresh, clean, two-stroke engine oil into the cylinder through the spark plug hole.
8. Pull the recoil starter handle 2-3 times to distribute the oil inside the engine.
9. 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. Connect the spark plug lead to the spark plug.

SPECIFICATIONS

MODEL	PPT-266LA
Length (Standard)	2.72 m (8 ft. 11 in.)
Length (Extended)	3.71 m (12 ft. 2 in.)
Length with extension	4.93 m (16 ft. 2 in.)
Width	0.25 m (9.8 in.)
Height	0.25 m (9.8 in.)
Weight (dry)	8.4 kg (18.5 lb.)
Engine Type	Air cooled, 2-stroke, single cylinder gasoline engine
Bore	34.0 mm (1.34 in.)
Stroke	28.0 mm (1.10 in.)
Displacement	25.4 cc (1.55 $in.^3$)
Exhaust	Spark arrestor muffler or spark arrestor muffler with catalyst
Carburetor	Diaphragm with purge pump
Ignition System	Flywheel magneto, capacitor discharge ignition type
Spark Plug	NGK BPM-8Y, Gap 0.65 mm (0.026 in.)
Fuel	Mixed (Gasoline and 2-stroke Oil)
Fuel/Oil Ratio	50:1
Gasoline	Use 89 Octane unleaded. Do not use fuel containing methyl alcohol, more than 25% ethyl alcohol or 15% MTBE. Do not use alternative fuels such as E15 or E85.
Oil	ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345- FD, two-stroke, air-cooled engine oil

MODEL	PPT-266
Fuel Tank Capacity	0.5 Liter (16.9 US fl. oz.)
Starter System	Automatic Recoil Starter
Clutch	Centrifugal Type
Sprocket Type	6 tooth spur, 9.53 mm (3/8 inch) pitch
Power Transmission Shaft Assembly	Aluminum Extrusion
Gear Case Ratio	1.5:1
Oiling System	Automatic
Chain Oil Capacity	225 ml (7.6 oz.)
Handles	Right hand grip with throttle trigger and throttle trigger lockout
Shoulder Harness	Standard
Idle Speed	2,900 RPM
Clutch Engagement Speed	3,900 RPM
Wide Open Throttle Speed (W.O.T.)	11,000 RPM
Guide Bar and Saw Chain (91)	305 mm (12 in.); 9.53 mm (3/8 inch) pitch chain, 0.050 gauge

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