



# PPF-225 POWER PRUNER™

## *Operator's Manual*

### **WARNING**



#### **Burn Hazard**

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



*Always keep clear of exhaust and muffler area, otherwise serious personal injury may occur.*

### **WARNING**

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

### **WARNING**



*Users of this equipment risk injury to themselves and others if the unit is used improperly and/or safety precautions are not followed. ECHO provides an operator's manual and a safety manual. Both must be read and understood for proper and safe operation. Failure to do so could result in serious injury.*

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.

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# INTRODUCTION

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

## The Operator’s Manual

Keep it in a safe place for future reference. Contains specifications and information for safety, operation, maintenance, storage and assembly specific to this product. Scan QR codes throughout the operator’s manual for more information.

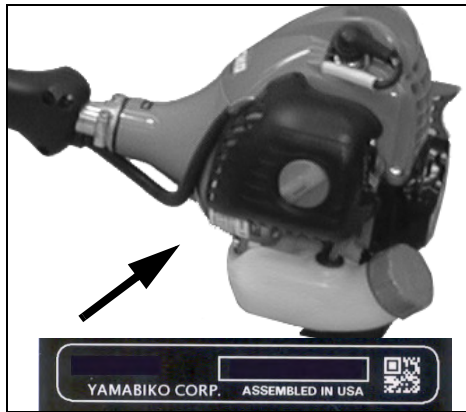
## The Safety Manual

Keep it in a safe place for future reference. Explains possible hazards and the measures you should take to insure safe operation.

# SERVICING INFORMATION

## Parts/Serial Number

Genuine ECHO Parts, assemblies and maintenance kits for your ECHO products are available 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. \_\_\_\_\_

## Service

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

## Echo Consumer Product Support

If you require assistance or have questions concerning the application, operation or maintenance of this product you may call the ECHO Consumer Product Support Department at 1-800-673-1558 from 8:00 am to 5:00 pm (Central Standard Time) Monday through Friday. Before calling, please know the model and serial number of your unit.

## Product Registration

To ensure trouble free warranty coverage it is important that you register your ECHO equipment on-line at [www.echo-usa.com](http://www.echo-usa.com) or by filling out the product registration sheet included in this manual. Registering your product confirms your warranty coverage and provides a direct link between you and ECHO if we find it necessary to contact you.

## Additional or Replacement Manuals

**Replacement Operator, Safety Manuals, and Parts Catalogs** are available from your ECHO dealer or at [www.echo-usa.com](http://www.echo-usa.com) or by contacting ECHO Inc., 400 Oakwood Road, Lake Zurich, IL 60047 (800-673-1558). Always check the ECHO Web Site for updated information.



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

## SAFETY

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### 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 may 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.








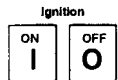











### CIRCLE AND SLASH SYMBOL

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	<b>H</b>	Carburetor Adjustment - High Speed Mixture
	Wear Eye, Ear and Head Protection	<b>T</b>	Carburetor Adjustment - Idle Speed
	Wear Hand and Foot Protection	<b>L</b>	Carburetor Adjustment - Low Speed Mixture
	Safety/Alert		Emergency Stop

Symbol	Description	Symbol	Description
	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		Plan retreat path from falling objects
	DO NOT Allow Flames or Sparks Near Fuel		Ignition ON / OFF
	DO NOT Smoke Near Fuel		Primer Bulb
	Choke Control "RUN" Position (Choke Open)		Choke Control "COLD START" Position (Choke Closed)
	Wear slip resistant footwear		Chain Lubrication.
	Do not operate closer than 15 M (50 ft.) from electrical hazards.		Keep bystanders at least 4.5 meters (15 ft.) away.



**LOOK BEFORE YOU PUMP!**

Ethanol Percentage

0% - 10%	15% - 30% - 50% - 85%
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**USE E10 OR LESS FUEL**

Do not use any fuel containing greater than 10 percent ethanol (E10) in this equipment. It may cause damage or failure and is prohibited by Federal Law.

For Details, see the "Fuel" Section of your Operators Manual

## Personal Condition and Safety Equipment

### **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 may 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/Ear Protection**

ECHO recommends wearing hearing protection 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 BAREFOOTED.

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**

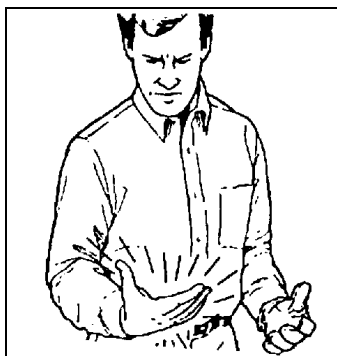
***The components of this machine generate an electromagnetic field during operation, which may interfere with some pacemakers. To reduce the risk of serious or fatal injury, persons with pacemakers should consult with their physician and the pacemaker manufacturer before operating this machine. In the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

**Extended Operation / Extreme Conditions****! CAUTION**

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

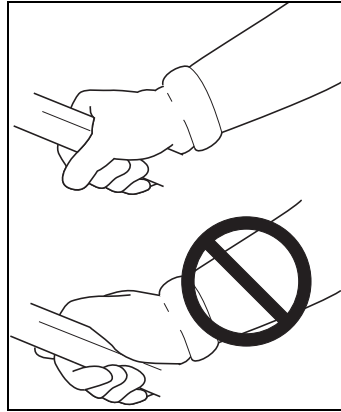
It is believed that a condition called Raynaud's Phenomenon, which affects the fingers of certain individuals, may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations, followed by loss of color and numbness in the fingers. The following 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 may 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.***

### Read the Manuals

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

### Clear the Work Area

- 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.

### Use Proper Clothing & Equipment

- Always wear head protection with full face shield to help protect against falling branches and debris.

### Keep a Firm Grip

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

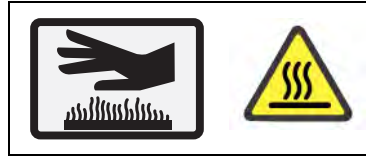
### Keep a Solid Stance

- 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 over reach.
- Operate the Power Pruner™ only from the ground or out of an approved bucket lift.
- Always evaluate the branches to be pruned for hazards such as loose dead branches which may fall and strike the operator or helpers. Remove hazards before pruning.
- Plan retreat path from falling objects.
- Cut branches bounce when striking ground.
- Check that shoulder harness is adjusted for safe, comfortable operation.
- Turn the Power Pruner™ off when moving from tree to tree.
- Avoid any contact with saw chain. For more information scan this QR code.



### Avoid Hot Surfaces

- Keep exhaust area clear of flammable debris. Avoid contact during and immediately after operation.

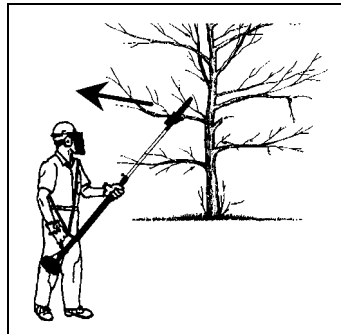


### Kickback

## WARNING

***Kickback can lead to dangerous loss of control of the Power Pruner™ and result in serious injury to the operator or any one standing close by. Hold the Power Pruner™ firmly with both hands with thumbs and fingers encircling the front and rear handles. Be aware of the down and outward path the pruner will take after the cut is made.***

Kickback may occur when the moving saw chain at the nose or tip of the guide bar touches an object, or when the wood closes in and pinches the saw chain in the cut. In some cases this may cause a lightning-fast reverse action, kicking the guide bar and saw chain up and back or down and back towards the operator. Either of these reactions may cause the operator to lose control of the Power Pruner™ which could result in serious personal injury.



With a basic understanding of kickback, you can reduce or eliminate the element of surprise which contributes to accidents.

Avoid contact of the guide bar tip with any object while the saw chain is moving.

Cut only wood. Avoid striking concrete, metal, wire, or other obstructions which could cause kickback or damage to the saw chain.

If the saw chain does strike a foreign object, immediately stop the engine, inspect and repair the Power Pruner™ if necessary.

## Equipment

### **WARNING**

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

- Check unit for loose/missing nuts, bolts, and screws. Tighten and/or replace as needed.

### **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.*

**EMISSION CONTROL (EXHAUST & EVAPORATIVE)**

**CARB And EPA Emissions 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.



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

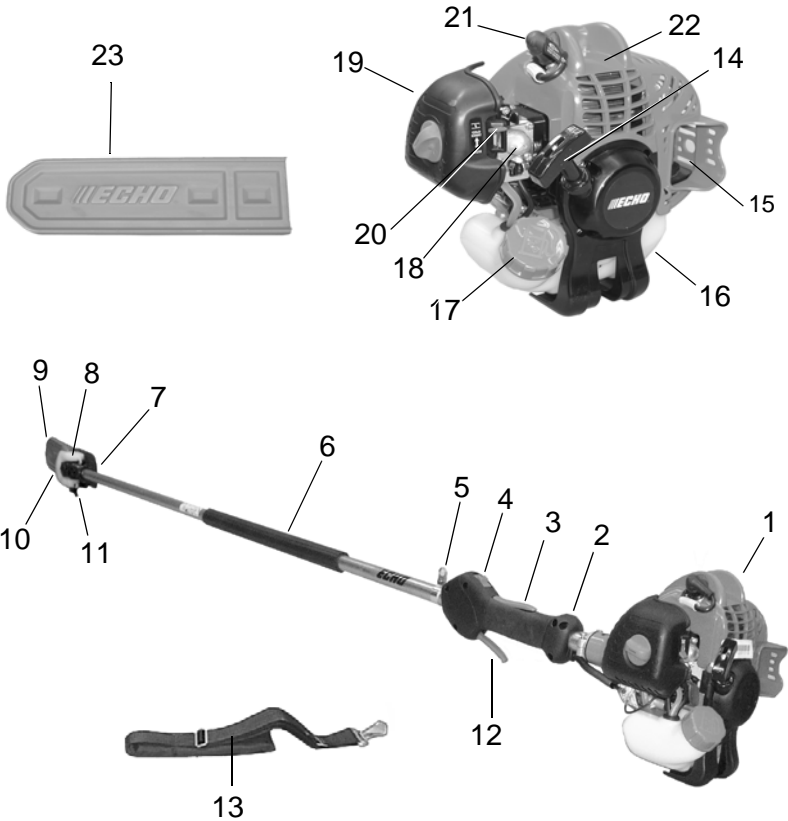


**Product Emission Durability (Emission Compliance Period)**

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) 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.







Shaft Label



Hot Label



1. **POWER HEAD** - Factory Assembled to the Drive shaft assembly. Includes the Engine, Clutch, Fuel System, Ignition System and Recoil Starter.
2. **THROTTLE HANDLE - FOR RIGHT HAND** - Contains Stop Switch, Throttle Lockout, and Throttle Trigger.
3. **THROTTLE TRIGGER LOCKOUT** - This lever must be held during starting. Operation of the throttle trigger is prevented unless throttle trigger lockout lever is engaged.
4. **STOP SWITCH** - "SLIDE SWITCH" mounted on top of the Throttle Trigger Housing. Move switch FORWARD to RUN, BACK to STOP.
5. **STRAP HOOK** - Used to secure unit to shoulder harness
6. **SUPPORT HANDLE - FOR LEFT HAND** - Cushioned grip for left hand.
7. **CUTTING ATTACHMENT** - Sealed, gear ratio is 1.5:1 reduction.
8. **AUTOMATIC OILER ASSEMBLY** - Self oiling. Use high quality, low viscosity, non-detergent bar and chain oil.
9. **GUIDE BAR** - 254 mm (10 inch) Bar.
10. **SAW CHAIN** - Chain, serving as a cutting tool.
11. **CUTTING SHOE** - Used to capture and stabilize branch while cutting. Place cutting shoe against branch, accelerate and lower saw chain into branch.
12. **THROTTLE TRIGGER** - Controls engine speed. Spring loaded to return to idle when released. During acceleration, press trigger gradually for best operating technique.
13. **SHOULDER HARNESS** - An adjustable strap that suspends the unit from the operator.
14. **RECOIL STARTER HANDLE** - Pull handle slowly until recoil starter engages, then quickly and firmly. When engine starts return handle slowly. DO NOT let handle snap back or damage will occur.

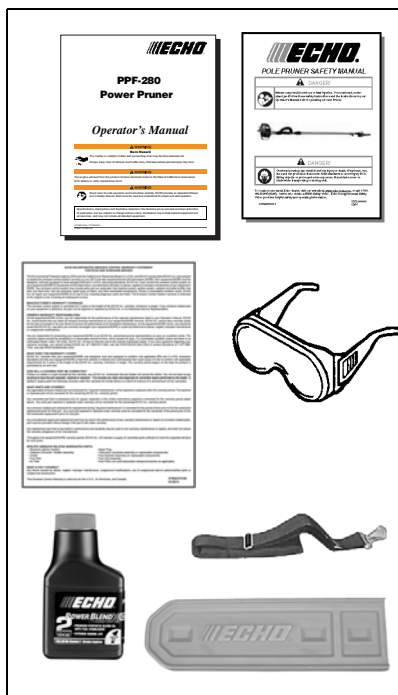
15. **SPARK ARRESTOR MUFFLER OR SPARK ARRESTOR MUFFLER WITH CATALYST** - The muffler or catalytic muffler controls exhaust noise and emission. The spark arrestor screen prevents hot, glowing particles of carbon from leaving the muffler. Keep exhaust area clear of flammable debris.
16. **FUEL TANK** - Contains fuel and fuel filter.
17. **FUEL TANK CAP** - Covers and seals fuel tank opening.
18. **PURGE BULB** - Pumping purge bulb before starting engine draws fresh fuel from the fuel tank, purging air from the carburetor. Pump purge bulb until fuel is visible and flows freely in the clear fuel tank return line. Pump purge bulb an additional 4 or 5 times.
19. **AIR CLEANER ASSEMBLY** - Contains replaceable air filter element.
20. **CHOKE** - The choke control is located at the rear of the air cleaner housing. Move choke lever to COLD START (  ) to close choke for cold start. Move choke lever to "RUN" (  ) position to open choke.
21. **SPARK PLUG** - Provides spark to ignite fuel mixture.
22. **TOP GUARD** - Provides arm rest during operation and protects arm from hot engine.
23. **GUIDE BAR COVER** - Used to cover guide bar and saw chain during transport and storage. Remove guide bar cover before using unit.

## 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 - Cutting Attachment
- \_\_\_\_\_ 1 - Operator's Manual
- \_\_\_\_\_ 1 - Safety Manual
- \_\_\_\_\_ 1 - Warranty Statement
- \_\_\_\_\_ 1 - Safety Glasses
- \_\_\_\_\_ 1 - Echo Power Blend X™ 2-stroke oil sample
- \_\_\_\_\_ 1 - Shoulder Harness
- \_\_\_\_\_ 1 - Guide Bar Cover



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**ASSEMBLY**

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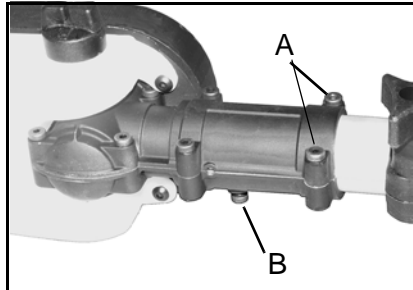
**Cutting Attachment to Drive Shaft Installation**

Parts Required: Drive Shaft Assembly, Cutting Attachment.

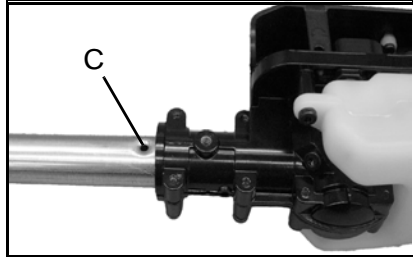
**⚠ WARNING**

***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. Slide the cutting attachment onto the shaft housing until the hole in the neck of the cutting attachment is aligned with the hole (C) in the housing. (It may be necessary to rotate the saw chain slightly to align the internal pinion and drive shaft.)

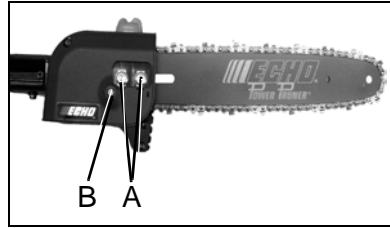


3. Insert locator screw (B) into hole (C) and tighten to snug.
4. Tighten bolts (A), clamping the cutting attachment onto the housing.

## 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.**



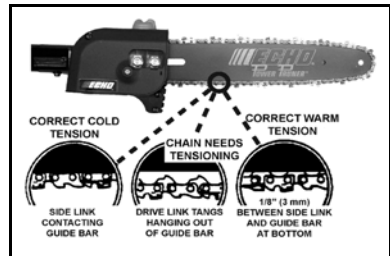
#### To Adjust Saw Chain Tension

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

### 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 CW 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 in. lbs.) 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.

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**OPERATION**

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** 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**

*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**** WARNING**

*Diesel fuels and alternative fuels, such as E-15 (15% ethanol), E-85 (85% ethanol) or any fuels not meeting ECHO requirements are NOT approved for use in ECHO 2-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 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. ECHO brand Power Fuel™ is 93 octane, ethanol-free fuel premixed with ECHO Red Armor® engine oil at 50:1 ratio. Use of ECHO Power Fuel™ is recommended to extend engine life in all air-cooled 2-stroke and 2/4-stroke hybrid engines.

**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 premium Power Blend X™ Universal 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. M345-FD certified oil, such as Echo premium Power Blend X™, will void the two-stroke engine warranty.

## NOTICE

*Echo premium Power Blend X™ Universal 2-Stroke Oil may be mixed at 50:1 ratio for application in all Echo engines sold in the past regardless of ratio specified in those manuals.*

### 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 3 m (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	
Gas	Oil	Gas	Oil
Gallons	Oz.	Liter	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**

- 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

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.



## NOTICE

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

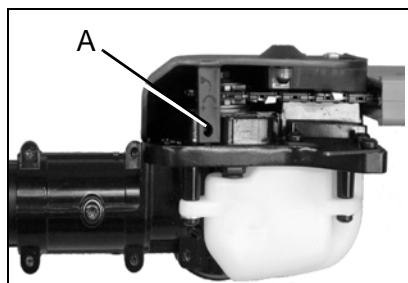
### Adjusting Automatic Oiler

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.



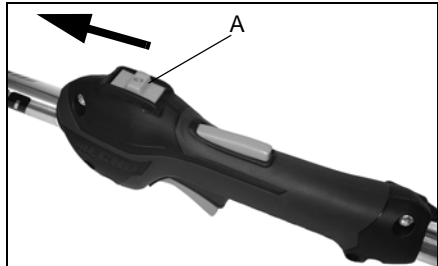
## Starting Cold Engine

 **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*

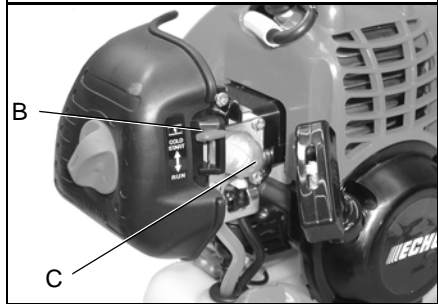
Move stop switch button (A) forward, away from the STOP position.

2. *Choke*

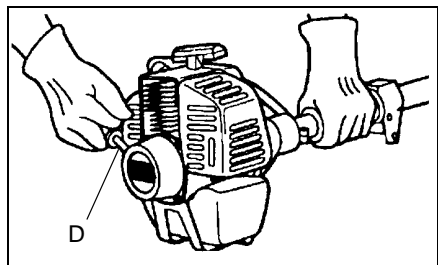
Move choke lever (B) to COLD START (←) position.

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 (B) to the RUN (|||) (open) position. Firmly grasp throttle handle and throttle trigger lockout with left hand and fully depress throttle trigger to wide open position. Pull 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, 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 except DO NOT close the choke, and do not hold throttle trigger fully depressed.

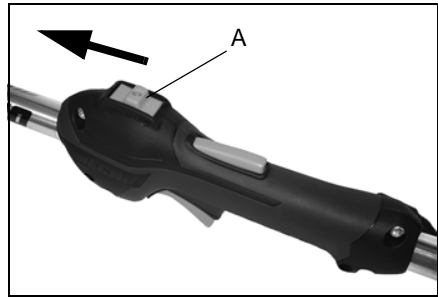
### WARNING

***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 ECHO Dealer.

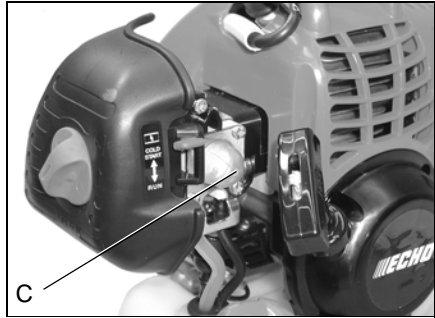
1. *Stop Switch*

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

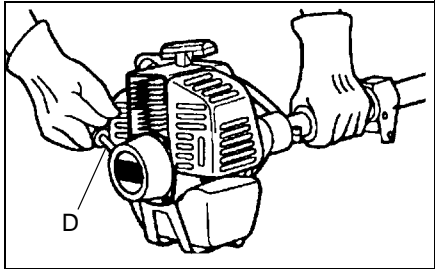


2. *Purge Bulb*

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



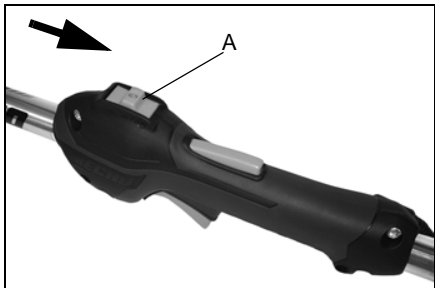
Note: If engine does not start after 5 pulls, use Cold Start Procedure.

**Stopping Engine**1. *Throttle*

Release throttle trigger 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.**

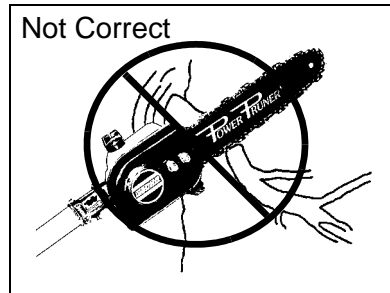
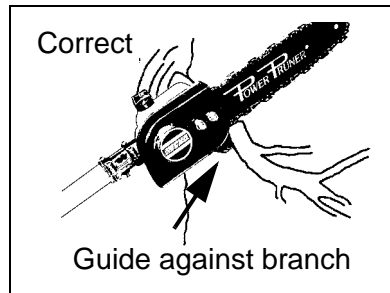
## Pruning Techniques

### WARNING

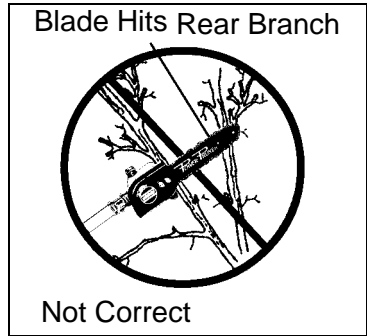
**Engine exhaust IS HOT, and contains Carbon Monoxide (CO), a poison gas. Breathing CO can cause unconsciousness, serious injury, or death. Exhaust can cause serious burns. ALWAYS position unit so that exhaust is directed away from your face and body.**

The Power Pruner™ is designed for light to medium trimming of limbs and branches up to 203mm (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.



- 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.
- 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.



**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.***

Your ECHO 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 an ECHO Servicing Dealer for maintenance. To help you decide whether you want to DO-IT-YOURSELF or have the ECHO Dealer do it, each maintenance task has been graded. If the task is not listed, see your ECHO Dealer for repairs.

**Skill Levels**

- Level 1** = Easy to do. Common tools may be required.
- Level 2** = Moderate difficulty. Some specialized tools may be required.

Click [HERE](http://www.echo-usa.com/products/maintenance-kit) or go to <http://www.echo-usa.com/products/maintenance-kit> for information on Maintenance Kits

## Maintenance Intervals

COMPONENT/SYSTEM	MAINTENANCE PROCEDURE	REQ'D SKILL LEVEL
<b>Daily or Before Use</b>		
Air Filter	Inspect/Clean*	1
Choke Shutter	Inspect/Clean *	1
Fuel System	Inspect	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
<b>Every Refuel</b>		
Fuel System	Inspect	1
Guide Bar/Sprocket Nose	Inspect/Clean/Lubricate*	2
Saw Chain	Inspect/Sharpen/Replace/Tension*	2
<b>3 Months</b>		
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/Decarbon	2
Drive Shaft (Flex Cable Models)	Grease(1)	2
<b>Yearly</b>		
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: Tune up Kit

1. Close choke (COLD START [  ] position). This prevents dirt from entering the carburetor throat when the air filter is removed. Brush accumulated dirt from air cleaner area.
2. Remove air filter cover. Brush dirt from inside cover.
3. Replace filter if it is damaged, fuel soaked, very dirty, or the rubber sealing edges are deformed.
  - 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.
4. Install air filter in air filter case.
5. Install air filter cover.



## Fuel Filter

### Level 1.

Parts Required: Tune up Kit

 **DANGER**

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

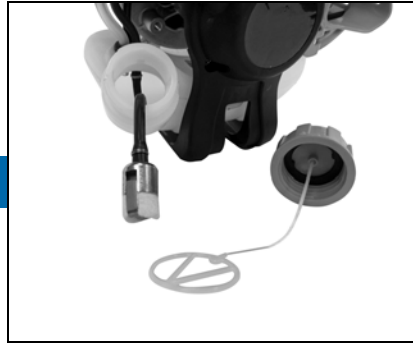


1. Use a clean rag to remove loose dirt from around fuel cap and empty fuel tank.
2. Pull the fuel filter from the fuel tank.

## NOTICE

*Do not damage fuel line while removing fuel filter from 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 an un-certified replacement part.

## Spark Plug

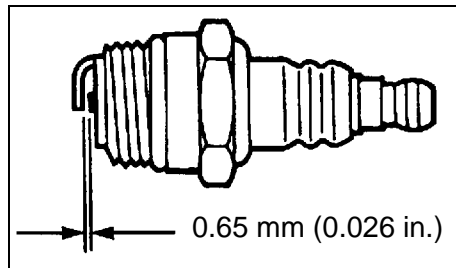
### Level 2.

Parts Required: Tune up Kit

## 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 in•lb).



## Cooling System

### Level 2.

Parts Required: None if you are careful.

## NOTICE

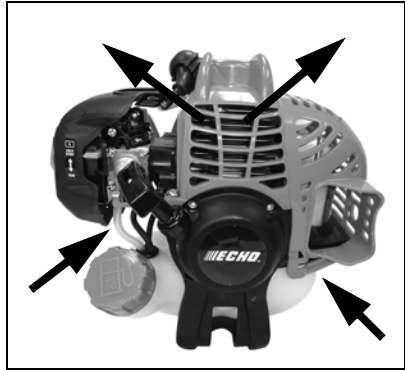
*To maintain proper engine operating temperatures, cooling air must pass freely through the cylinder fin area. This flow of air carries combustion heat away from the engine.*

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.

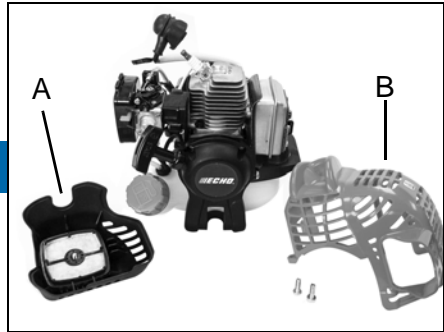
Removal of cooling passage blockages or cleaning of cooling fins is considered "Normal Maintenance." Any failure attributed to lack of maintenance is not warranted.

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



## NOTICE

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



4. Use brush to remove dirt from the cylinder fins.
5. Remove ignition wires from clip for cleaning.



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.

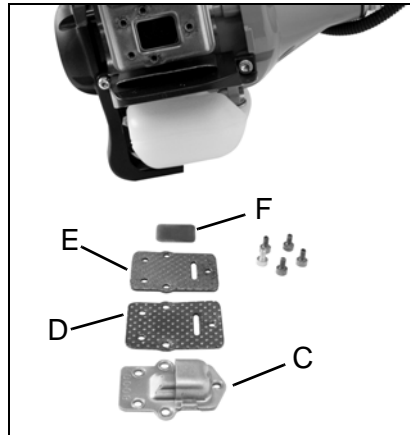
Parts Required: Spark Arrestor Screen, Gasket

1. Remove spark plug lead.
2. Remove engine cover (B).
3. Place piston at Top Dead Center (TDC) to prevent carbon/dirt from entering cylinder.

4. Remove spark arrestor screen cover (C), gaskets (D), (E), and screen (F), from muffler body.
5. Clean carbon deposits from muffler components.

Note: When cleaning carbon deposit, 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.

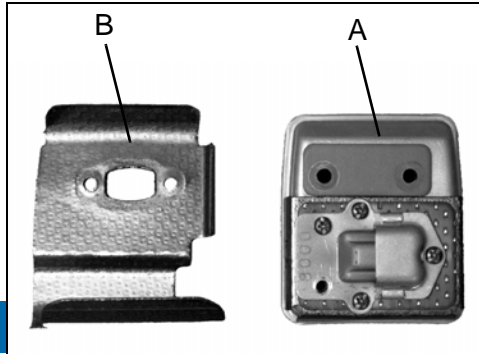


**Exhaust Port Cleaning**

**Level 2.**

Parts Required: As needed: Heat Shield

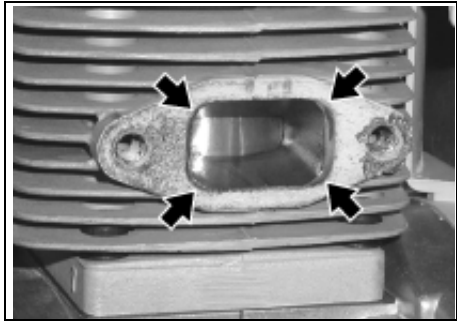
1. Remove spark plug lead from spark plug, and remove engine cover.
2. Place piston at top dead center. Remove muffler (A) and heat shield (B).
3. Use a wood or plastic scraping tool to clean deposits from cylinder exhaust port.



**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 in•lbf).
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

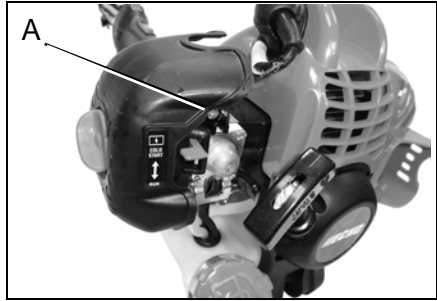
This engine has been factory adjusted to maintain satisfactory starting, emission, and durability performance up to 1,100 feet above sea level (ASL) (96.0 kPa). To maintain proper engine operation and emission compliance above 1,100 feet ASL the carburetor may need to be adjusted by an authorized ECHO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

Parts Required:     None

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 ECHO dealer.



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 "Specifications" page of this manual. Turn idle 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.***

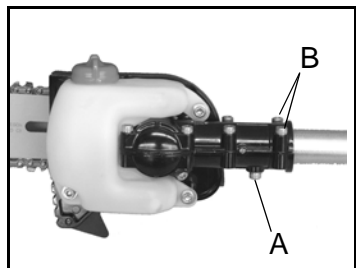
## Lubrication

### Drive Shaft

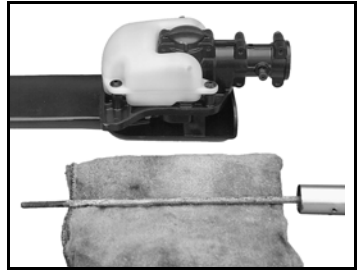
#### Level 1.

Parts Required:      Lithium Based Grease

1. Remove cutting attachment locator screw (A).
2. Loosen two (2) bolts (B).
3. Remove cutting attachment assembly.
4. Remove flex cable, wipe clean and apply a thin coating (15 ml [1/2 oz.]) of lithium based grease.



- Slide the flexible cable back in the drive housing. DO NOT get dirt on the flex cable.
- Install and secure cutting attachment assembly.



## Guide Bar and Saw Chain Replacement

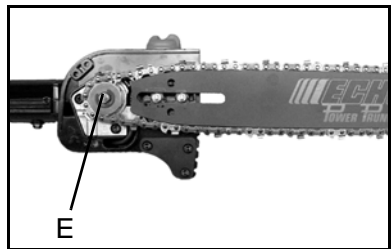
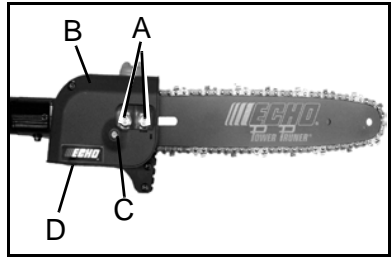
### **! WARNING**

***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 / Installation

#### Level 2

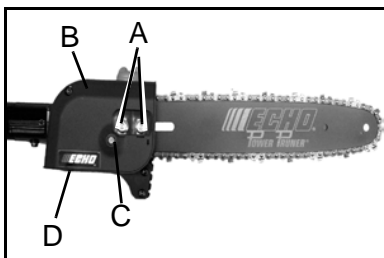
- Remove 2 guide bar nuts (A) and sprocket guard screw (B), and turn saw chain tension adjustment screw (C) counterclockwise to release tension.
- Remove sprocket guard (D).
- Remove guide bar and saw chain from gear case and sprocket.
- Remove chain from guide bar and check guide bar for damage and excessive or uneven wear. Replace guide bar if necessary.
- Install chain on guide bar with cutters on top of bar facing toward bar tip.
- Install guide bar and chain on gear case, engaging chain with drive sprocket (E).
- Turn tension adjustment screw (C) to ensure chain tension adjuster pin fits into the guide bar adjuster hole.



8. Install sprocket guard (D), and tighten guide bar nuts finger tight and install guide bar cover screw (B).
9. Adjust chain tension.

### Sprocket Guard Cleaning

1. Remove 2 guide bar nuts (A), and unscrew sprocket guard screw (B).
2. Remove sprocket guard (D).
3. Gently brush debris from inside sprocket guard and from around sprocket.
4. Turn tension adjustment screw (C) to ensure chain tension adjuster pin fits into the guide bar adjuster hole.
5. Install sprocket guard (D), tighten guide bar nuts (A) finger tight, and fasten sprocket guard screw (B).
6. Adjust chain tension.



### Filing Standard Saw Chain

Power Pruner B&C Combinations					
BAR P/N	CHAIN P/N	CHAIN TYPE	LINKS	PITCH	GUAG E
<b>Narrow Kerf</b>					
10" narrow bar P/ N 10A4CD3739	90PX39CQ	90	39	3/8"	0.043
12" narrow bar P/ N 12A4CD3744	90PX44CQ	90	44	3/8"	0.043
<b>Regular</b>					
10" regular bar P/ N 10A0CD3739	91VXL39CQ	91	39	3/8"	0.050
12" regular bar P/ N 12A0CD3744	91VXL44CQ	91	44	3/8"	0.050



## NOTICE

Check bar Part Number on your Power Pruner. Chain and guide bar gauge size must be identical. Use Bar/Chain combinations shown in table above.

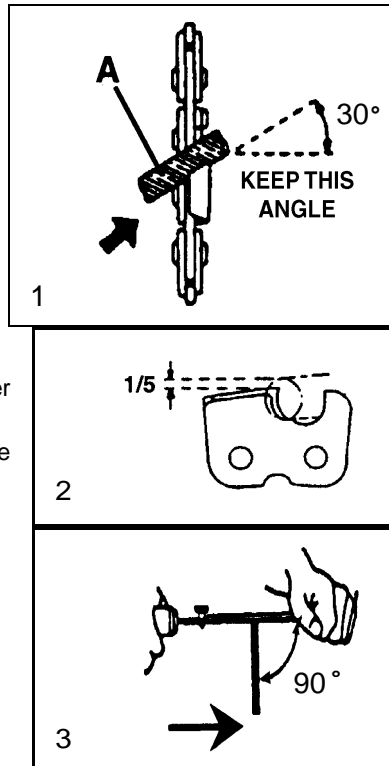
## NOTICE

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

### Level 2

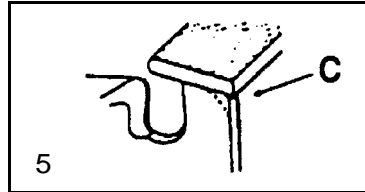
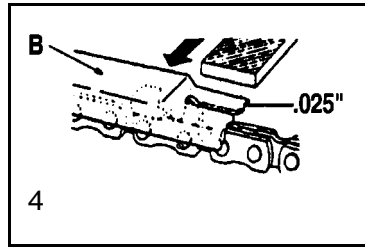
## WARNING

**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.**

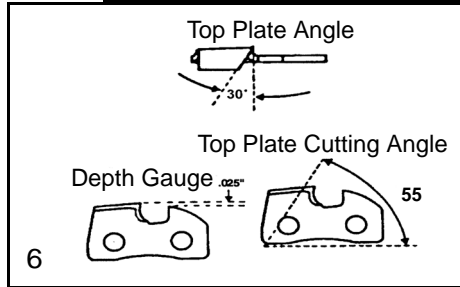


1. Set round file (A) in cutter at  $30^\circ$  angle. One fifth ( $1/5$ ) of the file should be exposed above top cutter edge.
2. Keep file horizontal in cutter and file in one direction.
3. File until cutter top and side bevel edges are sharp without nicks.

4. Place depth gauge tool (B) 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.
5. Finish cutter sharpening by rounding front raker edge (C) with flat file.
6. Properly filed cutter is as shown.



7. Apply clean oil and rotate saw chain slowly to wash away filings.
8. 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 cranks - starts hard/ doesn't start	Fuel at carburetor	No fuel at carburetor	Fuel strainer clogged - Fuel line clogged - Carburetor	Clean or replace - See your Echo dealer
	Fuel at cylinder	No fuel at cylinder	Carburetor	See your Echo dealer
		Muffler wet with fuel	Fuel Mixture too rich	OPEN choke - Clean/replace air filter - Adjust carburetor - See your Echo dealer
	Spark at end of plug wire	No spark	Stop switch OFF - Electrical problem - Interlock switch	Turn switch to ON - See your Echo dealer
	Spark at plug	No spark	Spark gap incorrect - Covered with carbon - Fouled with fuel - Plug defective	Adjust to 0.65mm (0.026 in.) - Clean or replace plug
Engine runs, but dies or does not accelerate properly	Air filter	Air filter dirty	Normal wear	Clean or replace
	Fuel filter	Fuel filter dirty	Contaminants/residues in fuel	Replace
	Fuel vent	Fuel vent plugged	Contaminants/residues in fuel	Clean or replace
	Spark Plug	Plug dirty/worn	Normal wear	Clean and adjust or replace
	Carburetor	Improper adjustment	Vibration	Adjust
	Cooling System	Cooling system dirty/plugged	Extended operation in dirty/dusty locations	Clean
	Spark Arrestor Screen	Spark arrestor screen plugged	Normal wear	Replace

ENGINE PROBLEM TROUBLESHOOTING CHART				
Problem	Check	Status	Cause	Remedy
Engine does not crank	N/A	N/A	Internal engine problem	See your Echo dealer

## DANGER

*Fuel vapors are extremely flammable and may cause fire and/or explosion. Never test for ignition spark by grounding spark plug near cylinder plug hole, otherwise serious personal injury may 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.
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 then remove the spark plug and pour 7 cc (1/4 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 (do not connect ignition cable).

## SPECIFICATIONS

MODEL	PPF-225
Length	2,398 mm (94.4 in.)
Width	251 mm (9.88 in.)
Height	236 mm (9.29 in.)
Weight (dry)	6.8 kg (15.1 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 cu. in.)
Exhaust	Spark arrestor muffler or spark arrestor muffler with catalyst
Carburetor	Diaphragm w /purge pump
Ignition System	Flywheel magneto, capacitor discharge ignition type
Spark Plug	NGK BPM8Y (Gap 0.65 mm [0.026 in.]
Fuel	Mixed (Gasoline and Two-stroke Oil)
Fuel/Oil Ratio	50 : 1 Power Blend X™ or ECHO Red Armor® ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345- <u>FD</u> , two-stroke, air-cooled engine oil.
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 E15 or E85.
Oil	Power Blend X™ or ECHO Red Armor® Premium Universal 2-Stroke Oil
Fuel Tank Capacity	0.44 L (14.9 US fl. oz.)
Starter System	Automatic Rewind Starter
Clutch	Centrifugal Type
Drive Shaft	6.35 mm (1/4 in.) flexible shaft
Shaft Tube Assembly	25 mm (1 in.) Galvanized Steel
Gear Case Ratio	1.53
Oiling System	Automatic
Chain Oil Capacity	197 ml (6.6 oz.)
Handles	Right hand grip w/throttle trigger and throttle trigger lockout / Left foam hand grip
Shoulder Harness	Standard

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<b>MODEL</b>	<b>PPF-225</b>
Idle Speed	3,000 RPM
Clutch Engagement Speed	4,300 RPM
Wide Open Throttle Speed (W.O.T.)	10,900 RPM
Guide Bar and Saw Chain (91)	254 mm (10 in.); 9.53 mm (3/8 inch) pitch chain, 0.050 gauge

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**PRODUCT REGISTRATION**

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E-Mail Address : Dirección De Correo Electrónico : Courrier Électronique	
Phone Number : Número De Teléfono : Téléphone	Date of Purchase : Fecha de la Compra : Date de l'achat
Where Purchased : Nombre del Almacén donde fue Comprado : Lieu d'achat	
Model Number : Numero del Modelo : No. de modèle	Serial Number : Numero de Serie : No. de série

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 Uso primario de la herramienta:  Profesional  Dueño de casa  Alquiler  
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 Amigo/Familia  Marca  Garantía

Quel facteur (facteurs) vous a influencé le plus?  
 Performance  Prix  Marchand  
 Fiabilité  Expérience  Qualité  
 Ami/Famille  Marque  Garantie

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