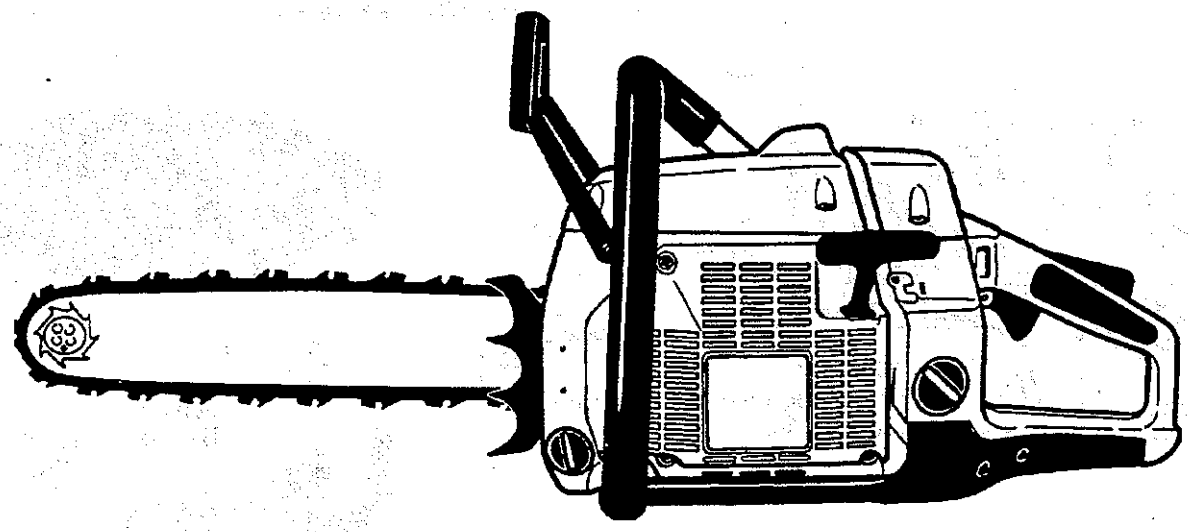
IMPORTANT MANUAL Do Not Throw Away

Poulan PRO™



⚠ WARNING:
This chain saw is capable of severe kickback that could result in serious injury to the user. Do not operate this saw unless you have specialized training and experience for dealing with kickback. Chain saws with significantly reduced kickback potential are available.

OPERATOR'S MANUAL

MODELS: 415 & 475
GAS POWERED CHAIN SAW

Always Wear Eye Protection During Operation

POULAN PRO
Shreveport, Louisiana 71139-9329

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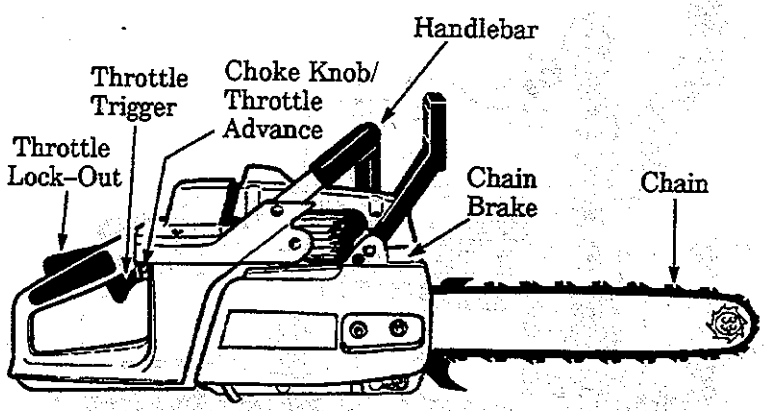
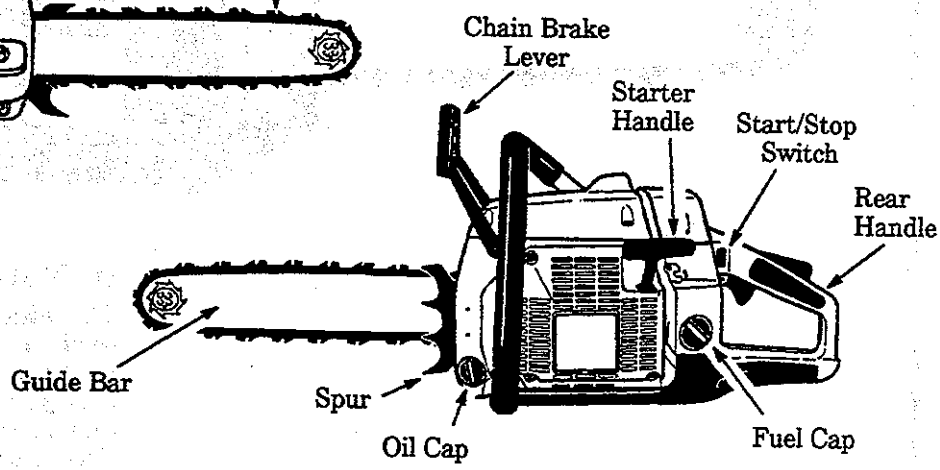


READ SPECIAL SAFETY SECTION FREQUENTLY



SPECIFICATIONS

MODEL:	415	475
DISPLACEMENT:	4.15 cu.in. (65cc)	4.7 cu.in. (77cc)
SPARK PLUG:	Champion (RCJ-7Y)	
SPARK PLUG GAP:	.027" (0.7mm)	
IGNITION:	Solid State	
MODULE AIR GAP:	.010" to .014"	
OILER:	Adjustable Automatic	
FUEL MIX:	Gasoline/Oil Mixture – 40:1 (see "Fueling Your Engine")	
MUFFLER:	Temperature Limiting/Spark Arresting—USDA Approved	

WARNINGS AND SAFETY INSTRUCTIONS

(See Additional Safety Instructions throughout this Manual)

GUARD AGAINST KICKBACK

Kickback is a dangerous reaction that can lead to serious injury. *Do not rely only on the safety devices provided with your saw.* As a chain saw user, you must take special safety precautions to help keep your cutting jobs free from accident or injury.

⚠ KICKBACK WARNING

Kickback can occur when the moving chain contacts an object at the upper portion of the tip of the guide bar or when the wood closes in and pinches the saw chain in the cut. Contact at the upper portion of the tip of the guide bar can cause the chain to dig into the object, which stops the chain for an instant. The result is a lightning fast, reverse reaction which kicks the guide bar up and back toward the operator. If the saw chain is pinched along the top of the guide bar, the guide bar can be driven rapidly back toward the operator. Either of these reactions can cause loss of saw control which can result in serious injury.

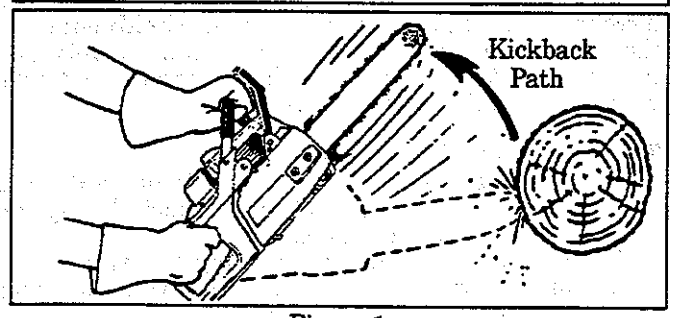


Figure 1

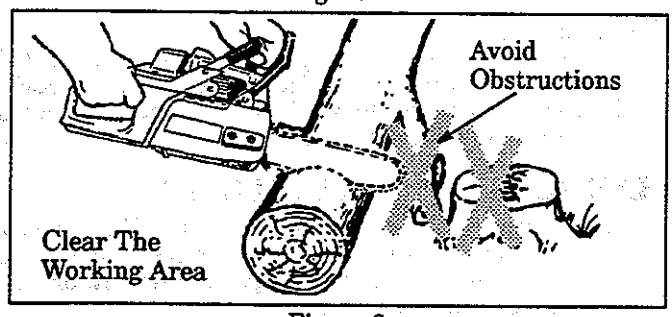


Figure 2

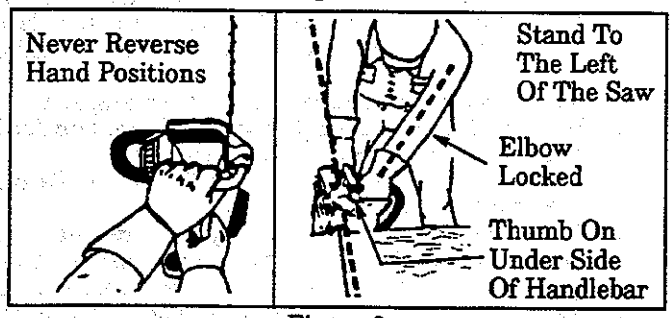


Figure 3

REDUCE THE CHANCE OF KICKBACK

1. **Recognize that kickback can happen.** With a basic understanding of kickback, you can reduce the element of surprise which contributes to accidents.
2. **Never let the moving chain contact any object at the tip of the guide bar.** Figure 1 .
3. **Keep the working area free from obstructions** such as other trees, branches, rocks, fences, stumps, etc. Figure 2 . Eliminate or avoid any obstruction that your saw chain could hit while you are cutting through a particular log or branch.
4. **Keep your saw chain sharp and properly tensioned.** A loose or dull chain can increase the chance of kickback to occur. Follow manufacturer's chain sharpening and maintenance instructions. Check tension at regular intervals with the engine stopped, never with the engine running. Make sure the bar clamp nuts are securely tightened after tensioning the chain.
5. **Begin and continue cutting at full throttle.** If the chain is moving at a slower speed, there is greater chance for kickback to occur.
6. **Cut one log at a time.**
7. **Use extreme caution when re-entering a previous cut.**
8. **Do not attempt plunge or bore cuts.**
9. **Watch for shifting logs** or other forces that could close a cut and pinch or fall into chain.
10. **A reduced kickback guide bar and low kickback chain** are available for your saw and are strongly recommended to further reduce the hazard of kickback.

MAINTAIN CONTROL

1. **Keep a good, firm grip on the saw with both hands when the engine is running and don't let go.** Figure 3 . A firm grip can neutralize kickback and help you maintain control of the saw. Keep the fingers of your left hand encircling and you left thumb under the front handlebar. Keep your right hand completely around the rear handle whether your are right handed or left handed. Keep your left arm straight with the elbow locked.
2. **Position your left hand on the front handlebar so it is in a straight line with your right hand on the rear handle when making bucking cuts.** Figure 3 . Never reverse right and left hand positions for any type of cutting.
3. **Stand with your weight evenly balanced on both feet.**
4. **Stand slightly to the left side of the saw to keep your body from being in a direct line with the cutting chain.** Figure 3 .
5. **Do not overreach.** You could be drawn or thrown off balance and lose control of the saw.
6. **Do not cut above shoulder height.** It is difficult to maintain control of saw above shoulder height.

⚠ WARNING
Because a chain saw is a high-speed wood-cutting tool, special safety precautions must be observed to reduce the risk of accidents. Careless or improper use of this tool can cause serious injury.

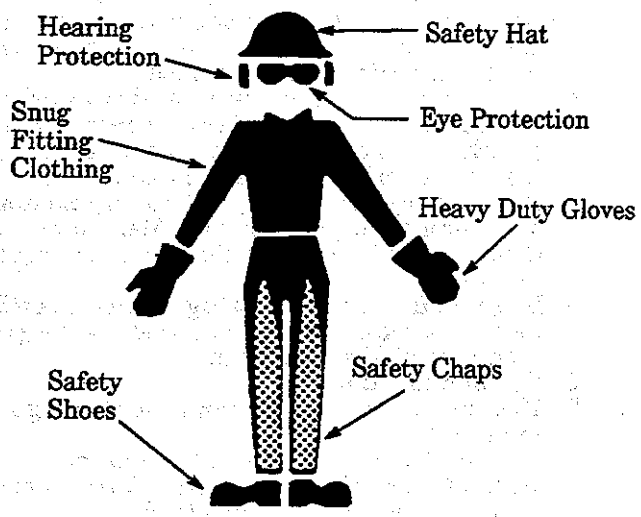


Figure 4

KNOW YOUR SAW

1. **Read your operator's manual carefully** until you completely understand and can follow all safety rules, precautions, and operating instructions before attempting to operate the unit.
2. **Restrict the use of your saw to adult users** who understand and can follow safety rules, precautions, and operating instructions found in this manual.

PLAN AHEAD

1. **Wear protective gear. Figure 4.** Always use steel-toed safety footwear with non-slip soles; snug-fitting clothing; heavy-duty, non-slip gloves; eye protection such as non-fogging, vented goggles or face screen; an approved safety hard hat; and sound barriers—ear plugs or mufflers to protect your hearing. Regular users should have hearing checked regularly as chain saw noise can damage hearing.
2. **Keep children, bystanders, and animals a minimum of 30 feet (10 Meters) away from the work area.** Do not allow other people or animals to be near the chain saw when starting or operating the chain saw.
3. **Do not handle or operate a chain saw when you are fatigued, ill, or upset, or if you have taken alcohol, drugs, or medication.** You must be in good physical condition and mentally alert. Chain saw work is strenuous. If you have any condition that might be aggravated by strenuous work, check with your doctor before operating a chain saw.
4. **Do not attempt to use your chain saw during bad weather** conditions such as strong wind, rain, snow, ice, etc., or at night.
5. **Carefully plan your sawing operation in advance.** Do not start cutting until you have a clear work area, secure footing, and, if you are felling trees, a planned retreat path.

AVOID REACTIVE FORCES

Pinch-Kickback and Pull-In occur when the chain is suddenly stopped by being pinched, caught, or by contacting a foreign object in the wood. This sudden stopping of the chain results in a reversal of the chain force used to cut wood and causes the saw to move in the opposite direction of the chain rotation. **Pinch-Kickback** drives the saw straight back toward the operator. **Pull-In** pulls the saw away from the operator. Either reaction can result in loss of control and possibly serious injury.

To avoid Pinch-Kickback:

1. **Be extremely aware of situations or obstructions** that can cause material to pinch the top of or otherwise stop the chain.
2. **Do not cut more than one log at a time.**
3. **Do not twist the saw** as the bar is withdrawn from an under-cut when bucking.

To avoid Pull-In:

1. **Always begin cutting with the engine at full throttle and the saw housing against wood.**
2. **Use wedges made of plastic or wood, (never of metal)** to hold the cut open.

HANDLE FUEL WITH CAUTION

1. **Eliminate all sources of sparks or flame in the areas where fuel is mixed, poured, or stored.** There should be no smoking, open flames, or work that could cause sparks.
2. **Mix and pour fuel in an outdoor area** on bare ground; store fuel in a cool, dry, well ventilated place; and use an approved, marked container for all fuel purposes.
3. **Wipe up all fuel spills before starting saw.**
4. **Move at least 10 feet (3 meters) from the fueling site before starting the engine.**
5. **Do not smoke while handling fuel or while operating the saw.**
6. **Turn the engine off and let your saw cool in a non-combustible area,** not on dry leaves, straw, paper, etc. Slowly remove fuel cap and refuel unit.
7. Store the unit and fuel in an area where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc.

If situations occur which are not covered in this manual, use care and good judgment. Contact your Service Dealer if you need assistance.

OPERATE YOUR SAW SAFELY

1. **Do not operate a chain saw that is damaged, improperly adjusted, or not completely and securely assembled.**
2. **Operate the chain saw only in outdoor areas.**
3. **Do not operate saw from a ladder or in a tree.**
4. **Position all parts of your body to the left of the cut and away from the saw chain when the engine is running.**
5. **Cut wood only.** Do not cut metal, plastics, masonry, non-wood building materials, etc. Do not use the saw to pry or shove away limbs, roots, or other objects.
6. **Make sure the chain will not make contact with any object** while starting the engine. Never try to start the saw when guide bar is in a cut or kerf.
7. **Use extreme caution when cutting small size brush and saplings.** Slender material can catch the saw chain and be whipped toward you or pull you off balance.
8. **Be alert for springback** when cutting a limb that is under tension so you will not be struck by the limb or saw when tension in the wood fibers is released.
9. **Do not put pressure on the saw at the end of a cut.** Applying pressure can cause you to lose control when the cut is completed.
10. **Stop the engine before setting the saw down.**
11. **Engage the chain brake when engine is running but not involved in a cutting procedure.**

MAINTAIN YOUR SAW IN GOOD WORKING ORDER

1. **Have all chain saw service performed by a qualified service dealer** with the exception of the items listed in the maintenance section of this manual. For example, if improper tools are used to remove or hold the flywheel when servicing the clutch, structural damage to the flywheel can occur and cause the flywheel to burst.
2. **Keep fuel and oil caps, screws, and fasteners securely tightened.**
3. **Keep the handles dry, clean, and free of oil or fuel mixture.**
4. **Make certain the saw chain stops moving when the throttle trigger is released.** For correction, refer to the "Trouble Shooting Chart."
5. **Stop the saw if chain strikes a foreign object.** Inspect unit and repair or replace parts as necessary.
6. **Disconnect spark plug before performing any maintenance** except for carburetor adjustments.
7. **Never modify your saw in any way.** Use only attachments supplied or specifically recommended by the manufacturer.
8. **Always replace the chain brake immediately if it becomes damaged, broken, or is other wise removed.**
9. **Keep the vibration isolators in good condition.** Periodically inspect isolators for tears, rips, or separation of the rubber portion from the metal mountings. Have a qualified service dealer replace the isolators if worn or damaged, if vibration increases, or if mounts develop an out of round or swollen shape from exposure to gasoline and/or oil.

CARRY AND STORE YOUR SAW SAFELY

1. **Hand carry your saw with the engine stopped, the muffler away from your body, and the guide bar and chain to the rear covered preferably with a scabbard.**
2. **Before transporting in any vehicle or storing in any enclosure,** allow your saw to cool completely, cover the bar and chain, and properly secure to avoid turnover, fuel spillage, or damage.
3. **Empty the fuel tank before storing the tool.** Use up the fuel left in the carburetor by starting the engine and letting the engine run until it stops.
4. **Store unit and fuel in a dry area out of the reach of children.** Do not store where fuel vapors can reach sparks or an open flame from hot water heaters, electric motors or switches, furnaces, etc.

NOTICE: Refer to the Code of Federal Regulations, Section 1910.266(5); 2.5.1 of American National Standard Safety Requirements for Pulpwood Logging, ANSI 03.1-1978; and relevant state safety codes when using a chain saw for logging purposes.

⚠ WARNING

The following features are available for your saw (in models equipped with 16", 20", and 24" 0.050 gauge bars) to help reduce the hazard of kickback; however, such features will not totally eliminate this dangerous reaction. As a chain saw user, do not rely only on safety devices. You must follow all safety precautions, instructions, and maintenance in this manual to help avoid kickback and other forces which can result in serious injury.

KICKBACK SAFETY FEATURES

- **Position of front and rear handlebars,** designed with distance between handles and "in line" with each other. The spread and "in line" position of the hands provided by this design work together to give balance and resistance in controlling the pivot of the saw back toward the operator if kickback occurs.
- **Chain Brake,** if activated during kickback, is a device to stop the chain. Do not rely on the chain brake to protect you against injury from kickback. Although it may appear the chain is stopping quickly, it still may not be fast enough to provide protection in the event of kickback.
- **Optional Reduced-Kickback Guide Bar,** designed with a small radius tip which reduces the size of the kickback danger zone on the bar tip. Figure 5 . A reduced-kickback guide bar has been demonstrated to reduce the hazard of kickback.
- **Optional Low-Kickback Chain,** designed with a contoured depth gauge and elongated guard link which allows wood to gradually ride into the cutter. Figure 5 . Low-Kickback Chain has been demonstrated to reduce kickback significantly.

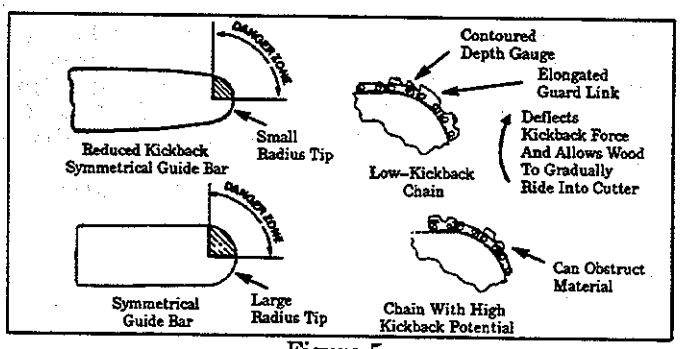


Figure 5

⚠ WARNING

Do not operate the saw unless the safety devices or their specified replacements are properly installed and maintained according to the instructions in this manual. Do not use any guide bar and chain combination that is not equivalent to the original or optional equipment. Failure to follow these instructions can result in serious injury.

SAVE THESE INSTRUCTIONS

STATE AND LOCAL REQUIREMENTS

For users on U.S. Forest Land and in some states, including California(Public Resources Codes 4442 and 4443), Idaho, Maine, Minnesota, New Jersey, Oregon, and Washington: Certain internal combustion engines operated on forest, brush, and/or grass-covered lands, in the above areas, must be equipped with a spark arrestor, maintained in effective working order, or the engine must be constructed, equipped, and maintained for the prevention of fire. Check with your state or local authorities for regulations pertaining to these requirements. Failure to follow these requirements is a violation of the law. **This unit is factory-equipped with a spark arrestor.** If a spark arrestor is required in your area, you are legally responsible for maintaining the operating condition of these parts.

KNOW YOUR UNIT

A. INTRODUCTION

Your saw has been designed with safety in mind and includes the following safety features as standard equipment:

- Chain Brake
- Spark Arrestor
- Temperature Limiting Muffler
- Throttle Lock-Out
- Anti-vibration System
- Chain Catcher Pin

B. UNPACKING INSTRUCTIONS

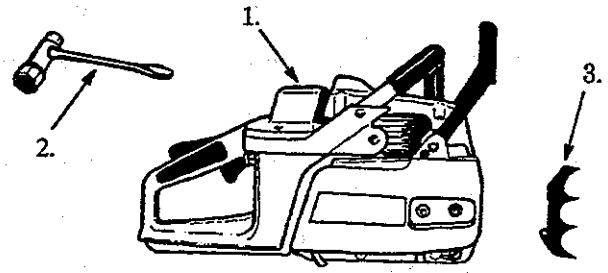
1. After removing the contents from the carton, check parts against the Carton Contents list.
2. Examine the parts for damage. Do not use damaged parts.
3. *Notify your POULAN PRO™ dealer immediately if a part is missing or damaged.*

NOTE: It is normal to hear the fuel filter rattle in an empty fuel tank.

C. CARTON CONTENTS

KEY NO.		QTY
1.	Powerhead	1
2.	Bar Wrench	1
3.	Bucking Spikes	1
A.	Nut	1
B.	Spacer	1
C.	Screw	1
D.	Screw	1
E.	Screw	1
F.	Screw	2
G.	Screw	1
—	Operator's Manual (not shown)	1

NOTE: Hardware "A" through "G" illustrated actual size in the Assembly section.



⚠ WARNING

The effectiveness of a chain brake in reducing operator injuries has not yet been fully determined. We cannot represent that a chain brake is an effective safety device to prevent or reduce the hazard of injuries resulting from kickback. DO NOT ASSUME THAT THE CHAIN BRAKE WILL PROTECT YOU IN THE EVENT OF A KICKBACK. Instead, use the saw properly and carefully to avoid kickback. Reduced-Kickback bars and Low-Kickback chains reduce the hazard of kickback and are recommended. Repairs on a chain brake should be made by an Authorized POULAN PRO Service Dealer. Take your unit to the place of purchase if purchased from a Servicing Dealer, or to the nearest Authorized Master Service Dealer.

SAFETY NOTICE

Exposure to vibrations through prolonged use of gasoline powered hand tools could cause blood vessel or nerve damage in the fingers, hands, and wrists of people prone to circulation disorders or abnormal swellings. Prolonged use in cold weather has been linked to blood vessel damage in otherwise healthy people. If symptoms occur such as numbness, pain, loss of strength, change in skin color or texture, or loss of feeling in the fingers, hands, or wrists, discontinue the use of this tool and seek medical attention. An anti-vibration system does not guarantee the avoidance of these problems. Users who operate power tools on a continual and regular basis must monitor closely their physical condition and the condition of this tool.

PREPARING YOUR SAW FOR USE

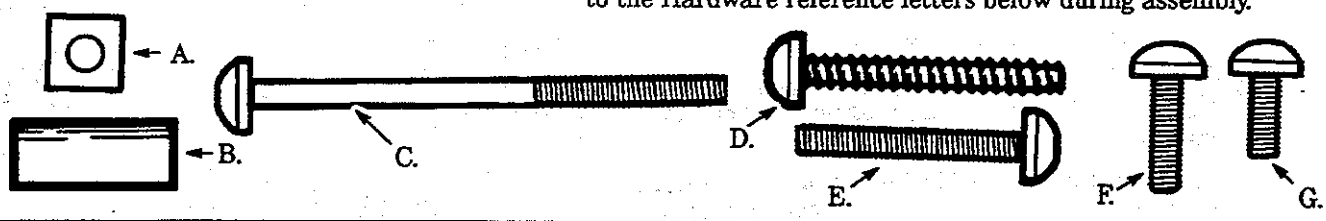
A. GETTING READY

1. **READ YOUR OPERATOR'S MANUAL CAREFULLY**
   Your Operator's Manual has been developed to help you prepare your saw for use and to understand its safe operation. It is important that you read your manual completely to become familiar with the unit *before* you begin assembly or attempt operation. Your POULAN PRO dealer is available to show you how to operate your saw. Be sure to ask for his assistance.

2. **HAVE THE FOLLOWING AVAILABLE:**
   a. Protective gloves.
   b. Approved, marked fuel container.
   c. One gallon regular unleaded gasoline.
   d. 3.2 oz. 2 cycle, air-cooled engine oil (See the "Fueling Your Engine" section).
   e. Bar and Chain Oil (See the "Bar and Chain Oil" section).
   f. Bar Wrench.
   g. Standard Screwdriver.

B. HARDWARE USAGE

NOTE: This Hardware is packaged in the Plastic Bag. Refer to the Hardware reference letters below during assembly.



C. ATTACHING THE SPUR

1. Set saw upright on a flat surface. Figure 6 .
2. Remove Bar Clamp Nuts and Bar Clamp using the Bar Wrench provided with the unit. Figure 6 .
3. Remove the Housing Screw. Figure 6 .
4. Align screw holes in the Spur over the screw holes on the crankcase. Figure 6 .
5. Install Screw "F." and the Housing Screw removed in step 3. Tighten evenly and securely.

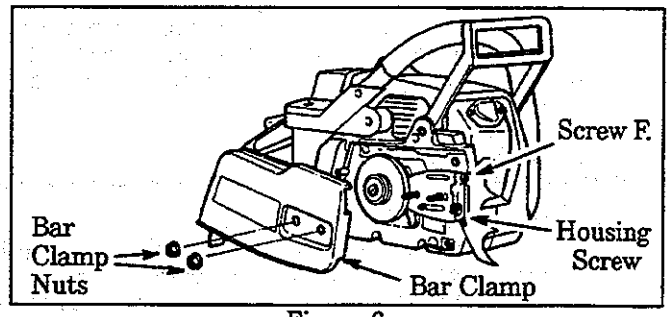


Figure 6

D. ATTACHING THE BAR AND CHAIN

- **See your POULAN PRO Dealer for the various bars and chains available for your unit.**

CAUTION: Wear protective gloves when handling or operating your saw. The chain is sharp and can cut you even when it is not moving!

1. Set the saw upright on a flat surface. Figure 7 .
2. Turn the Adjusting Screw counterclockwise with a standard screwdriver to move the Adjusting Pin almost as far as it will go to the rear. Figure 7 .
3. Mount the Guide Bar with the slotted end over the mounting bolts and the small adjusting pin through the small hole in the bar. Figure 7 (inset).
4. Slide the Guide Bar toward the rear of the saw as far as possible.
5. Hold the chain with the cutters facing as shown in Figure 8 (inset).
6. Place the chain on the Sprocket. Fit the bottom of the Drive Links in the slots in the Sprocket.
7. Fit the bottom of the chain Drive Links into the groove on top of the Guide Bar, then around the Guide Bar nose. Figure 8 .
8. Turn the Adjusting Screw clockwise with a standard screwdriver until the chain is snug in the Guide Bar groove.
9. Hold the Guide Bar against the saw frame and install the Bar Clamp.
10. Replace the Bar Mounting Nuts. Tighten finger tight *only*.
11. Follow "Chain Tension" instructions.

▲ WARNING
Do not start engine without the guide bar, chain, and bar clamp completely assembled. Otherwise, the chain and clutch can come off resulting in serious injury.

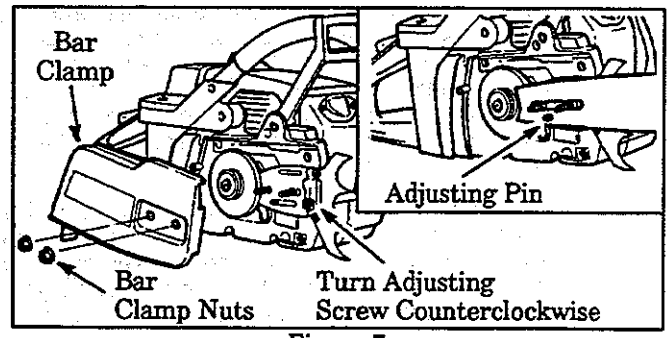


Figure 7

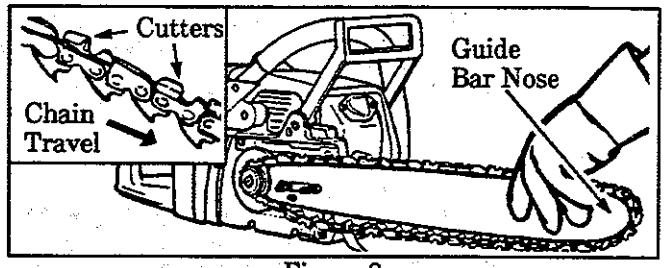


Figure 8

E. CHAIN TENSION

- **Chain Tension is very important—**
  - A loose chain will wear the bar and itself.
  - A loose chain can jump off bar during cutting.
  - A tight chain can break or damage the saw and/or bar.
- **The chain stretches during use,** especially when new. Check tension periodically as follows:
  - each time the saw is used;
  - more frequently when the chain is new;
  - as the chain warms up to normal operating temperature.
- **Chain tension is correct when the chain** can be lifted about 1/8" from the Guide Bar at a point near the middle of the bar and will move freely around the bar.
- **Chain tensioning procedure:**

CAUTION: **Always wear gloves when handling the chain. The chain is sharp and can cut you even when it is not moving!**

1. Lift up the tip of the Guide Bar and turn the Adjusting Screw clockwise until the chain does not sag beneath the Guide Bar. Figure 9 .
2. Check the tension by lifting the chain from the Guide Bar at the center of the bar. Figure 10 .
3. Continue adjusting the Adjusting Screw until the tension is correct.
4. Tighten the Bar Clamp Nuts with the Bar Wrench.
5. Recheck chain tension.

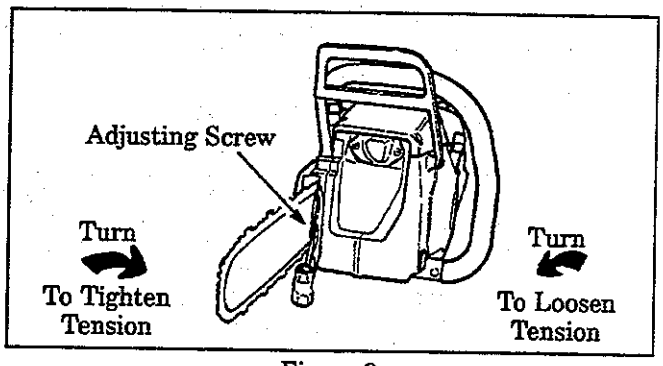


Figure 9

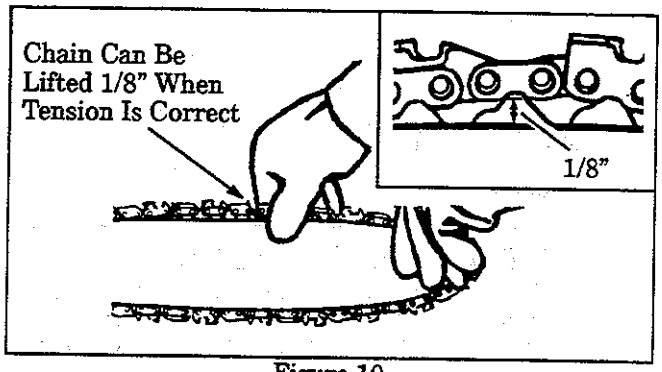


Figure 10

F. BAR AND CHAIN OIL

- **The Guide Bar and Cutting Chain require continuous lubrication to remain in operating condition.** Lubrication is provided by the automatic oiler system when the oil tank is kept filled.
  - — **Lack of oil will quickly ruin the Bar and Chain.**
  - — **Too little oil will cause overheating,** resulting in smoke coming from the chain and/or discoloration of the guide bar rails.
- **Genuine POULAN/POULAN PRO Bar and Chain Oil is recommended to protect your unit against excessive wear from heat and friction.** POULAN/POULAN PRO oil resists high temperature thinning. If POULAN/POULAN PRO Bar and Chain Oil is not available, use a good grade SAE 30 oil. Never use waste oil for bar and chain lubrication.
- **In freezing weather oil will thicken, making it necessary to thin bar and chain oil with a small amount of Diesel Fuel #1 or kerosene.** Bar and chain oil must be free flowing for oil system to pump enough oil for adequate lubrication.

1. **USE THE FOLLOWING:**
   30° or above — 100% lubricant — undiluted.
   30°–0°F — 95% lubricant to 5% Diesel Fuel #1 or kerosene.
   Below 0°F — 90% lubricant to 10% Diesel Fuel #1 or kerosene.
2. **HOW TO FILL THE OIL TANK**
   a. Stop the engine.
   b. Turn saw on its side, oil cap up. Figure 11 .
   c. Loosen cap slowly and wait for pressure in the tank to be released before removing the cap.
   d. Fill the oil tank. Figure 12 .
   e. Replace the oil cap securely.
3. **IMPORTANT POINTS TO REMEMBER**
   a. **Fill oil tank each time you fill fuel tank** to ensure that there will be sufficient oil for the chain whenever you start and run the saw.
   b. **The saw will normally use about one tank of chain oil for each tank of fuel mixture.** If less oil is used, check for a plugged oil hole in the guide bar.
   c. **Keep sawdust and debris cleaned from the oil holes in the guide bar** to allow an adequate oil flow to the bar and chain.
   d. **Keep spilled and spattered oil wiped from the unit to avoid sawdust and debris build-up.** Pay particular attention to oil on the fan housing and starter assembly to avoid overheating the engine.
   e. **It is normal for a small amount of oil to appear under the saw after the engine stops.** This is excess oil draining from the bar and chain when the saw is not in use.

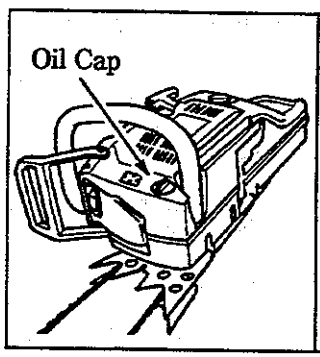


Figure 11

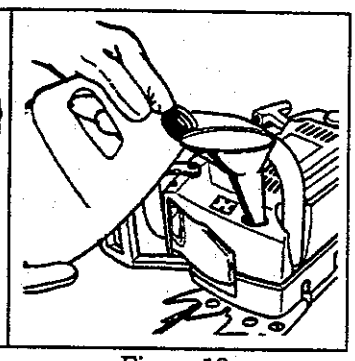


Figure 12

G. ENGINE INFORMATION

1. FUEL SAFETY

a. Use only recommended fuel mixtures.
b. Mix and pour fuel outdoors and where there are no sparks or flames.
c. Use a container approved for fuel.
d. Do not smoke or allow smoking near fuel or the tool or while using the tool.
e. Wipe up all fuel spills before starting the engine.
f. Move at least 10 feet (3 meters) away from the fueling site before starting the engine.
g. Stop the engine before removing the fuel cap.
h. Empty the fuel tank before storing the tool. Use up fuel left in the carburetor by starting the engine and letting it run until it stops.
i. Store unit and fuel in an area where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc.

2. FUEL MIXTURE

- **Your unit is powered by a 2–cycle engine which requires a fuel mixture of regular unleaded gasoline and a high quality engine oil specially made for 2–cycle, air–cooled engines.** The internal design of the 2–cycle engine requires lubrication of moving parts. Lubrication is provided when the recommended mixture of gasoline and oil is used.
- **Genuine POULAN PRO 40:1, 2–cycle engine oil is strongly recommended for the protection of your unit.** Extensive engineering tests have proven that POULAN PRO oil resists break–down at operating temperatures common to 2–cycle engines, resulting in dependable performance and longer engine life.
- **Gasoline must be clean and not over two months old.** Gasoline will chemically break down and form compounds that cause hard starting and damage in two–cycle engines.
- **The correct measure of gasoline to oil is very important.** Too much oil in the mixture will foul the spark plug and cause excess carbon build–up in the combustion and muffler areas (especially on the spark arrestor screen).

CAUTION: **Too little oil or incorrect oil will cause the engine to overheat and seize.**

- **Always mix the fuel thoroughly in a container** since gasoline and oil do not readily combine. *Do not mix gasoline and oil directly in the fuel tank.*

3. USE THE FOLLOWING ONLY:

POULAN PRO 40:1, 2–cycle engine oil is strongly recommended. Any other POULAN or WEED EATER brand 2–cycle engine oil is acceptable if mixed according to the instructions on container. If POULAN or WEED EATER brand 2–cycle engine oil is not available, use a good quality, 2–cycle engine oil mixed at a ratio of 16:1 (8 oz. oil to 1 gal. gasoline).

4. DO NOT USE THE FOLLOWING:

- **NMMA OIL (National Marine Manufacturers Association)––formerly BIA oil**
  —Does not have proper additives for air–cooled, 2–cycle engines and can cause engine damage.
- **AUTOMOTIVE OIL––**
  —Does not have proper additives for air–cooled, 2–cycle engines and can cause engine damage.

5. HOW TO MIX FUEL AND FILL TANK

a. Pour 1/2 gallon regular unleaded gasoline into an approved, marked container. *Do not mix gasoline and oil directly in the fuel tank.*
b. Add the entire measure of engine oil.
c. Cover the container tightly and shake for one minute.
d. Slowly remove the fuel container cover.
e. Add remainder of gasoline.
f. Cover the container tightly and shake again.
g. Slowly remove the fuel container cover.
h. Slowly remove the fuel cap. See the "Specifications" section for location.
i. Fill the tank using a spout or funnel.
j. Reinstall the fuel cap securely.

⚠ WARNING

Alcohol blended fuels (called gasohol or using ethanol or methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage. To avoid engine problems, the fuel system should be emptied before storage. Drain the gas tank, start the engine, and let it run until the fuel lines and carburetor are empty. Use fresh fuel after taking the unit out of storage. See the "Storage" section for additional information. Never use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.

NOTES

STARTING YOUR UNIT

A. PRE-OPERATION CHECKS

Each time before operating your saw, always:

1. ✓**Check over the safety rules and precautions in this manual.** Make certain you completely understand and can apply each one.
2. ✓**Check protective gear.** Always use eye, hearing, and head protection devices; safety footwear; protective gloves; and snug fitting clothing.
3. ✓**Check the saw for loose bolts, nuts, or fittings.** Tighten, repair, or replace parts as necessary. Tools required are listed in "Getting Ready" section.
4. ✓**Check the air filter.** Clean the filter before starting the engine. For location, see the "Air Filter" section.
5. ✓**Check the saw chain.** The chain should be sharp and at the correct tension.
6. ✓**Check the fuel tank and oil tank.** Both tanks should be filled.
7. ✓**Check the handles.** Handles should be dry and free of fuel mixture and oil.
8. ✓**Check weather conditions.** Do not use your saw at night or during bad conditions such as strong wind, rain, snow, etc.
9. ✓**Check the work area.** Keep children, bystanders, and animals a safe distance away from the work area when starting or operating the saw—a minimum of 30 feet.

B. STARTING INSTRUCTIONS (Refer to the "Specifications" section for location of controls.)

1. BASIC PROCEDURE

a. Set the saw on the ground. Put your right foot in the rear handle and firmly grip the front handle with your left hand. Make sure the saw chain is free to turn without contacting any object.

b. Move Start/Stop switch to the "Start" position. Figure 13 .

c. Move choke lever to "ON" position. Figure 13 .

NOTE: This saw is equipped with an automatic throttle advance used to make starting easier. When the choke lever is moved to the "ON" position, the throttle advance is automatically set.

d. Pull the starter rope until the saw attempts to run. Figure 14 .

e. Move choke lever to "OFF" position. Figure 13 .

f. Pull the starter rope until the saw runs.

g. Squeeze then release throttle trigger to disengage the throttle advance and allow the engine to idle.

> **⚠ WARNING**
> **The chain must not move when the engine runs at idle speed. Refer to the "Carburetor Adjustments" section for correction.**

h. Stop the engine by moving the Start/Stop Switch to the "Stop" position. Figure 13 .

> **⚠ WARNING**
> **Always wear gloves; safety footwear; snug fitting clothing; and eye, hearing, and head protection devices when operating a chain saw.**

2. STARTING PROCEDURE FOR VARYING CONDITIONS

a. **COLD ENGINE:**

1.) Follow steps "a." and "b." in section "1. BASIC PROCEDURE."
2.) Move the choke lever to the "On" position. Figure 13 .
3.) Pull starter rope until engine attempts to run.
4.) Push in choke lever approximately halfway.
5.) Pull the starter rope until the engine runs.
6.) Allow the engine to run for about 5 seconds. Then, move the choke lever to the "Off" position. Figure 13 .
7.) Follow steps "g." and "h." in section "1. BASIC PROCEDURE."

> **⚠ WARNING**
> **Avoid bodily contact with muffler when starting or using a warm engine to avoid serious burns.**

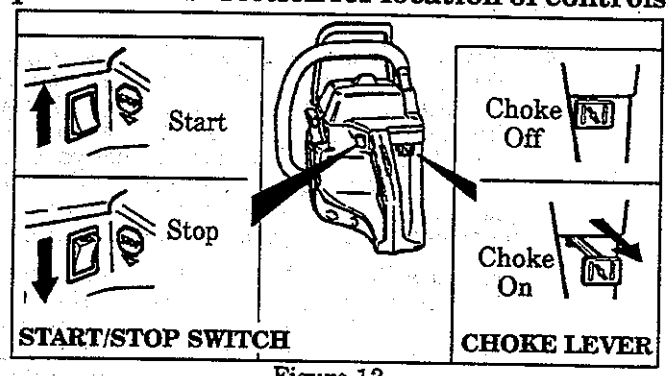


Figure 13

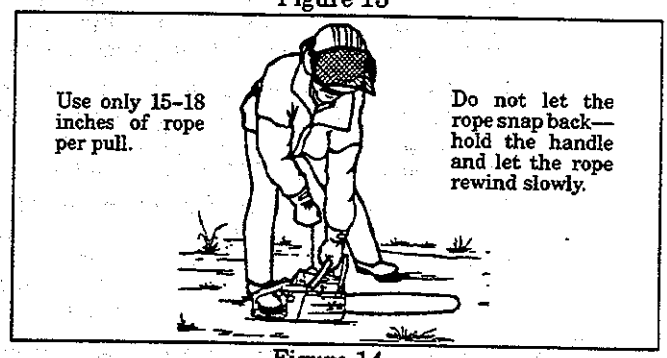


Figure 14

b. **WARM ENGINE:**

1.) Follow steps "a." and "b." in section "1. BASIC PROCEDURE."
2.) Move the choke lever to the "On" position to set the throttle. Then, move the choke lever to the "Off" position. Figure 13 .
3.) Pull the starter rope until the engine runs.
4.) Follow steps "g." and "h." in section "1. BASIC PROCEDURE."

c. **REFUELED WARM ENGINE AFTER RUNNING OUT OF FUEL:**
Follow the steps in section "1. BASIC PROCEDURE."

3. IMPORTANT POINTS TO REMEMBER

a. **When pulling the starter rope,** do not use the full extent of the rope as this can cause the rope to break. Do not let the starter rope snap back—hold the handle and let the rope rewind slowly.

b. **If the engine floods,** let the unit sit for a few minutes; then, follow the steps in "2.b. WARM ENGINE."

c. **For cold weather starting,** allow the engine to warm up (1–2 min.) with choke lever in the "Half-choke" position.

C. CHAIN BRAKE

- This saw is equipped with a chain brake. The brake is designed to stop the chain if a kick-back occurs.
- The inertia activated chain brake is activated if the front hand guard is pushed forward, either manually or by centrifugal force. Figure 15 .

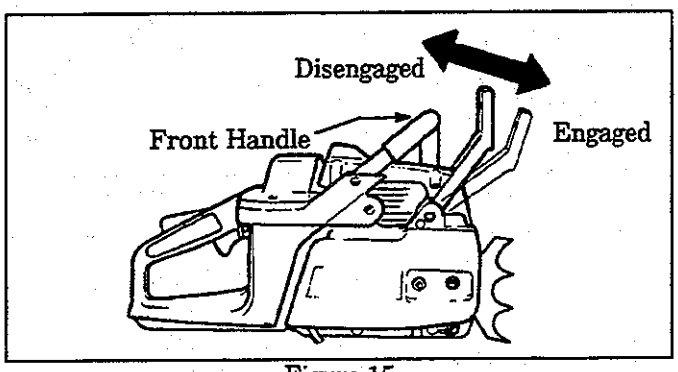


Figure 15

- If the brake is already activated, it is disengaged by pulling the front hand guard back until it touches the front handle. Figure 15 .
- When working with the saw, the chain brake must be disengaged.

⚠ WARNING

The effectiveness of a chain brake in reducing operator injuries has not yet been fully determined. We cannot represent that a chain brake is an effective safety device to prevent or reduce the hazard of injuries resulting from kickback. DO NOT ASSUME THAT THE CHAIN BRAKE WILL PROTECT YOU IN THE EVENT OF A KICKBACK. Instead, use the saw properly and carefully to avoid kickback. Reduced-Kickback bars and Low-Kickback chains reduce the hazard of kickback and are recommended. Repairs on a chain brake should be made by an Authorized POULAN PRO Service Dealer. Take your unit to the place of purchase if purchased from a Servicing Dealer, or to the nearest Authorized Master Service Dealer.

TYPES OF CUTTING

A. BASIC CUTTING TECHNIQUE

1. **IMPORTANT POINTS**
   a. **Cut wood only.** Do not cut metal; plastics; masonry; non-wood building materials; etc.
   b. **Stop the saw if the chain strikes a foreign object.** Inspect the saw and repair or replace parts as necessary.
   c. **Keep the chain out of dirt and sand.** Even a small amount of dirt will quickly dull a chain and thus increase the possibility of kickback.

⚠ WARNING

Kickback can occur when the moving chain contacts an object at the upper portion of the tip of the guide bar or when the wood closes in and pinches the saw chain in the cut. *Contact at the upper portion of the tip of the guide bar* can cause the chain to dig into the object and stop the chain for an instant. The result is a *lightning fast, reverse reaction which kicks the guide bar up and back toward the operator. If the saw chain is pinched along the top of the guide bar, the guide bar can be driven rapidly back toward the operator.* Either of these reactions can cause loss of saw control *which can result in serious injury.*

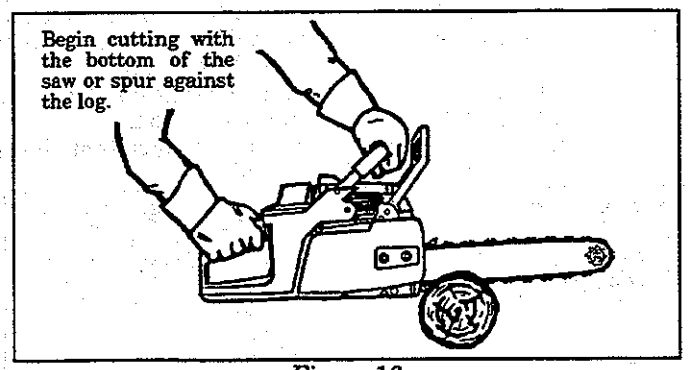


Figure 16

2. **UNDERSTANDING REACTIVE FORCES**
   Pinch-kickback and Pull-In occur when the chain is suddenly stopped by being pinched, caught, or by contacting a foreign object in the wood. This stopping of the chain results in a reversal of the chain force used to cut wood and causes the saw to move in the opposite direction of chain rotation. Either reaction can result in loss of control and serious injury.
   - **Pinch-Kickback--**
   — occurs when the chain on top of the bar is suddenly stopped.
   — *rapidly drives the saw back toward the operator.*
   - **Pull-In--**
   — occurs when the chain on the bottom of the bar is suddenly stopped.
   — *pulls the saw rapidly forward.*
3. **PROCEDURE**
   Practice cutting a few small logs using the following technique to get the "feel" of using your saw before you begin a major sawing operation.
   a. **Accelerate engine to full throttle before entering cut** by squeezing the throttle trigger.
   b. **Begin cutting with the saw frame or spur against the log.** Figure 16 .
   c. **Keep the engine at full throttle the entire time you are cutting.**
   d. **Allow the chain to cut for you;** exert only light downward pressure. If you force the cut, damage to the bar, chain, or engine can result.
   e. **Release the throttle trigger as soon as the cut is completed,** allowing the engine to idle. If you run the saw at full throttle without a cutting load, unnecessary wear can occur to the chain, bar, and engine.
   f. To avoid losing control when cut is complete, **do not put pressure on saw at end of cut.**
   g. **Stop the engine** before setting the saw down after cutting.

B. TREE FELLING TECHNIQUES

1. **CAREFULLY PLAN YOUR SAWING OPERATION IN ADVANCE**
   a. **Clear the work area.** You need a **clear area all around the tree** where you can have secure footing.
   b. **Study the natural conditions** that can cause the tree to fall in a particular direction.
      1.) The **WIND** direction and speed.
      2.) The **LEAN** of the tree.
      3.) **WEIGHTED** with **BRANCHES** on one side.
      4.) Surrounding **TREES** and **OBSTACLES.**

c. **Look for decay and rot.** If the trunk is rotted, it can snap and fall toward the operator.
d. **Check for broken or dead branches** which can fall on you while cutting.
e. **Make sure there is enough room for the tree to fall.** Maintain a distance of 2 1/2 tree lengths from the nearest person or other objects. Engine noise can drown out a warning call.
f. **Remove dirt, stones, loose bark, nails, staples, and wire from the tree where cuts are to be made.**
g. **Plan to stand on the up-hill side when cutting on a slope.** Figure 17 .
h. **Plan a clear retreat path to the rear and diagonal to the line of fall.** Figure 18 .

2. **FELLING SMALL TREES--LESS THAN 6" IN DIAMETER**
   a. If you know the direction of fall:
      1.) Make a single felling cut on the side away from the direction of fall.
      2.) Cut all the way through.
      3.) Stop the saw, put it down, and get away quickly on your planned retreat path.
   b. If you are not sure which way the tree will fall, use the notch method described for felling large trees.

▲ WARNING
DO NOT CUT:
--near electrical wires or buildings.
--if you do not know the direction of tree fall.
--at night since you will not be able to see well.
--during bad weather -- rain, snow, strong wind, etc.

3. **FELLING LARGE TREES--6" Dia. Or More**
   The notch method is used to cut large trees. A notch is cut on the side of the tree in the desired direction of fall. After a felling cut is made on the opposite side of the tree, the tree will tend to fall into the notch.
   NOTE: If the tree has large buttress roots, remove them before making the notch. Cut into the buttresses vertically, then horizontally. Figure 17 .
   a. Make the notch cut. Figure 19 .
      1.) Cut the bottom of the notch first, through 1/3 of the diameter of the tree.
      2.) Complete the notch by making the slant cut.
      3.) Remove the notch of wood.
   b. Make felling cut on the opposite side of the notch about 2" higher than the bottom of the notch.
   c. Leave enough uncut wood between the felling cut and the notch to form a hinge. Figure 20 .

▲ WARNING
Stay on the uphill side of the terrain to avoid injury from the tree rolling or sliding downhill after it is felled. Figure 17 .

NOTE: Before the felling cut is complete, use wedges to open the cut when necessary to control the direction of fall. Use wood or plastic wedges, but *never* steel or iron, to avoid kickback and chain damage.

Figure 17

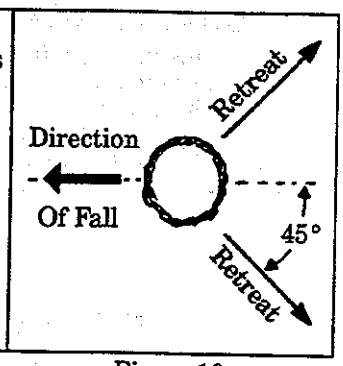


Figure 18

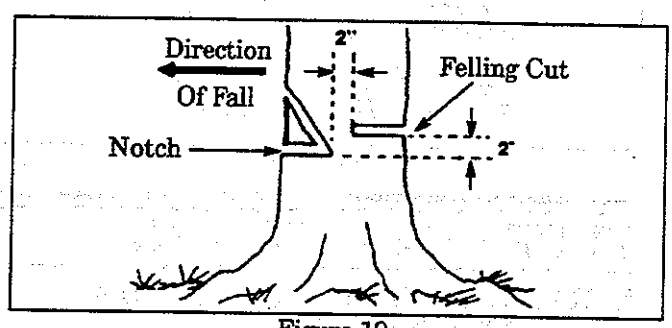


Figure 19

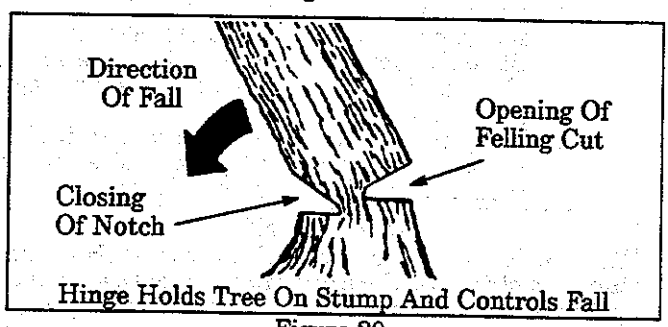


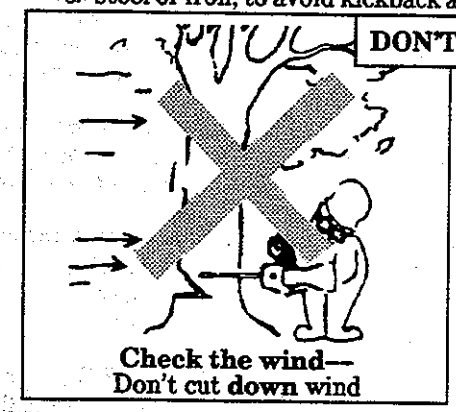
Figure 20

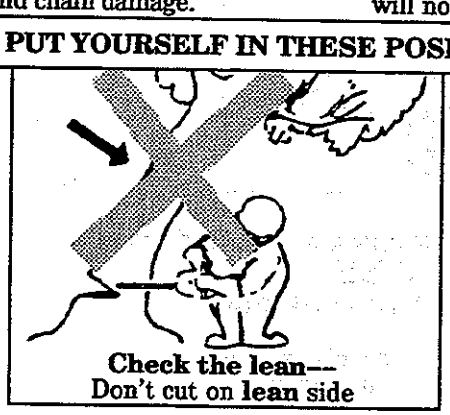
d. Be alert to signs that the tree is ready to fall:
   1.) Cracking sounds.
   2.) Widening of the Felling Cut.
   3.) Movement in the upper branches.
e. As tree starts to fall, *stop the saw, put it down, and get away quickly on your planned retreat path.*
f. Be extremely cautious with partially fallen trees that may be poorly supported. When a tree doesn't fall completely, set the saw aside and pull down the tree with a cable winch, block and tackle, or tractor. To avoid injury, do not cut down a partially fallen tree with your saw.

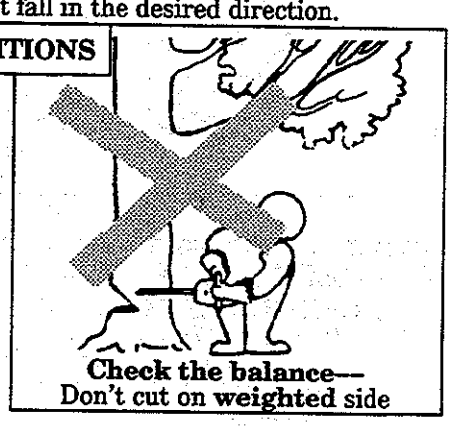
NOTE: The hinge helps to keep the tree from twisting and falling in the wrong direction.

g. Use a wedge if there is any chance that the tree will not fall in the desired direction.

DON'T PUT YOURSELF IN THESE POSITIONS


Check the wind--
Don't cut **down** wind


Check the lean--
Don't cut on **lean** side


Check the balance--
Don't cut on **weighted** side

C. BUCKING

Bucking is the term used for cutting a fallen tree to the desired log size.

1. **IMPORTANT POINTS**
   a. **Cut only one log at a time.**
   b. **Cut shattered wood very carefully.** Sharp pieces of wood could be flung toward the operator.
   c. **Use a sawhorse to cut small logs.** Never allow another person to hold the log while cutting and never hold the log with your leg or foot.
   d. **Do not cut in an area where logs, limbs, and roots are tangled such as in a blown down area.** Drag the logs into a clear area before cutting by pulling out exposed and cleared logs first.
   e. **Make the first bucking cut 1/3 of the way through the log and finish with a 2/3 cut on the opposite side.** As the log is being cut, it will tend to bend. The saw can become pinched or hung in the log if you make the first cut deeper than 1/3 of the diameter of the log.
   f. **Give special attention to logs under strain to prevent the saw from pinching.** Make the first cut on the pressure side to relieve the stress on the log. Figure 21 .

2. **TYPES OF CUTTING USED** (Figure 22):
   -- **Overcutting** — begin on the top side of the log with the bottom of the saw against the log; exert light pressure downward.
   -- **Undercutting** — begin on the under side of the log with the top of the saw against the log; exert light pressure upward. During undercutting, the saw will tend to ***push*** back at you. Be prepared for this reaction and hold the saw firmly to maintain control.

⚠ WARNING
Never turn the saw upside down to undercut. The saw cannot be controlled in this position.

⚠ WARNING
If saw becomes pinched or hung in a log, don't try to force it out. You can lose control of the saw resulting in injury and/or damage to the saw. Stop the saw, drive a wedge of plastic or wood into the cut until the saw can be removed easily. Figure 23 . Restart the saw and carefully reenter the cut. To avoid kickback and chain damage, do not use a metal wedge. Do not attempt to restart your saw when it is pinched or hung in a log.

3. **BUCKING WITHOUT A SUPPORT**
   a. Overcut with a 1/3 diameter cut.
   b. Roll log over and finish with an overcut.

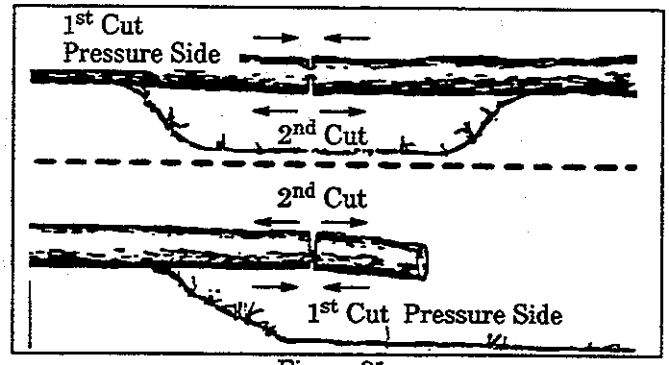


Figure 21

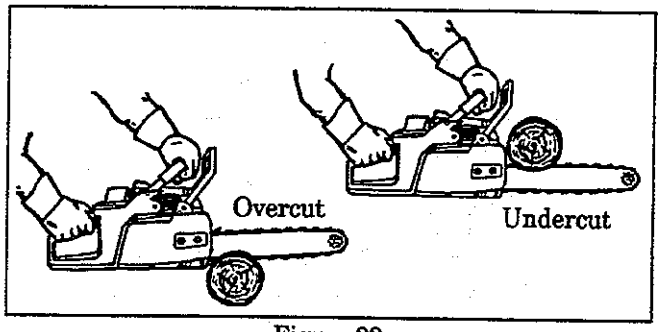


Figure 22

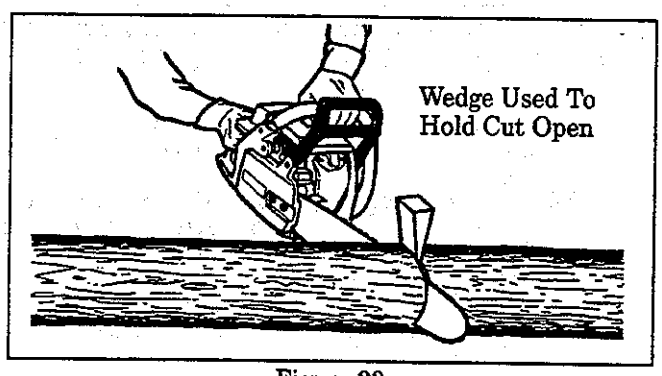


Figure 23

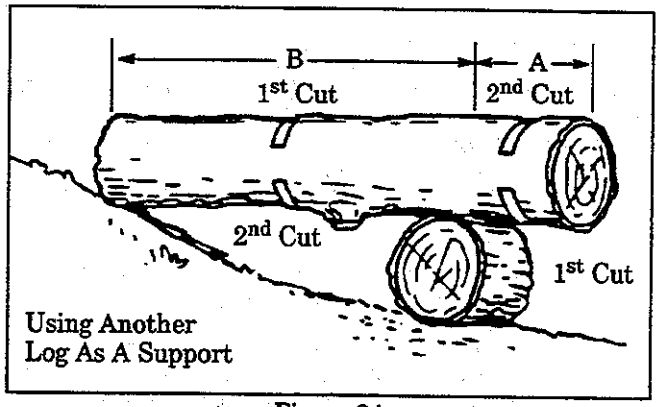


Figure 24

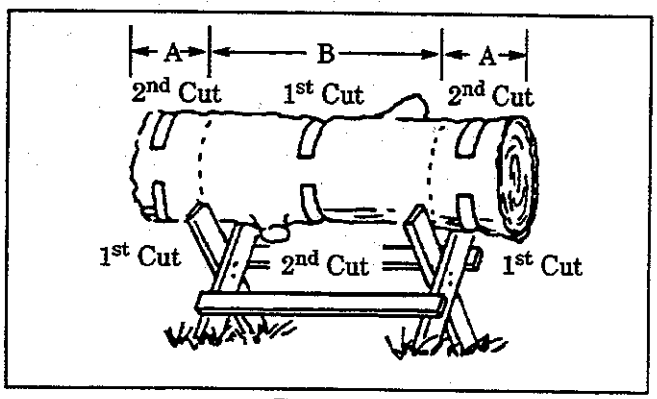


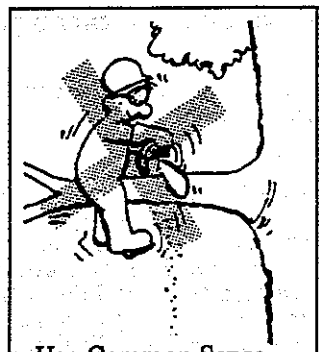
Figure 25

4. **BUCKING USING ANOTHER LOG AS A SUPPORT**
   a. In area A:
      1.) Undercut 1/3 of the way through the log.
      2.) Finish with an overcut.
   b. In area B:
      1.) Overcut 1/3 of the way through the log.
      2.) Finish with an undercut.

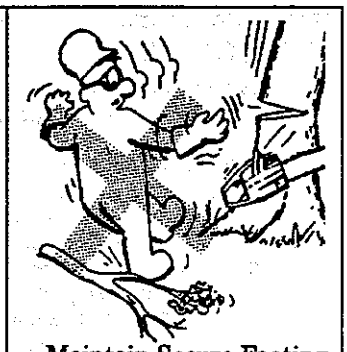
5. **BUCKING USING A STAND**
   a. In area A:
      1.) Undercut 1/3 of the way through the log.
      2.) Finish with an overcut.
   b. In area B:
      1.) Overcut 1/3 of the way through the log.
      2.) Finish with an undercut.

⚠ WARNING

Do not stand on the log being cut. Any portion can roll causing loss of footing and control.



Use Common Sense



Maintain Secure Footing

D. DEBRANCHING AND PRUNING

- **Work slowly, keeping both hands firmly gripped on the saw.** Maintain secure footing and balance.
- **Watch out for springpoles.** Use extreme caution when cutting small size limbs. Slender material may catch the saw chain and be whipped toward you or pull you off balance.
- **Be alert for springback.** Watch out for branches that are bent or under pressure as you are cutting to avoid being struck by the branch or the saw when the tension in the wood fibers is released.
- **Keep a clear work area.** Frequently clear branches out of the way to avoid tripping over them.

⚠ WARNING

Never climb into a tree to debranch or prune. Do not stand on ladders, platforms, a log, or in any position which can cause you to lose your balance or control of the saw.

1. **DEBRANCHING**
   a. **Always debranch a tree after it is cut down.** Only then can debranching be done safely and properly.
   b. **Leave the larger limbs underneath the felled tree to support the tree as you work.**
   c. **Start at the base of the felled tree and work toward the top,** cutting branches and limbs. Remove small limbs with one cut. Figure 26 .
   d. **Keep the tree between you and the chain.** Cut from the side of the tree opposite the branch you are cutting.
   e. **Remove larger, supporting branches with the 1/3, 2/3 cutting techniques described in the bucking section.**
      1.) Undercut 1/3 of the way through the log.
      2.) Finish with an overcut.
   f. **Always use an overcut to cut small and freely hanging limbs.** Undercutting could cause limbs to fall and pinch the saw.

2. **PRUNING**
   a. **Limit pruning to limbs shoulder height or below.** *Do not cut* if branches are higher than your shoulder. Get a professional to do the job.
   b. **Refer to Figure 27 for the pruning technique.**
      1.) Undercut 1/3 of the way through the limb near the trunk of the tree.
      2.) Finish with an overcut farther out from the trunk.
      3.) Keep out of the way of the falling limb.
      4.) Cut the stump flush near the trunk of the tree.

⚠ WARNING

Be alert for and guard against kickback. Do not allow the moving chain to contact any other branches or objects at the nose of the guide bar when debranching or pruning. Allowing such contact can result in serious injury.

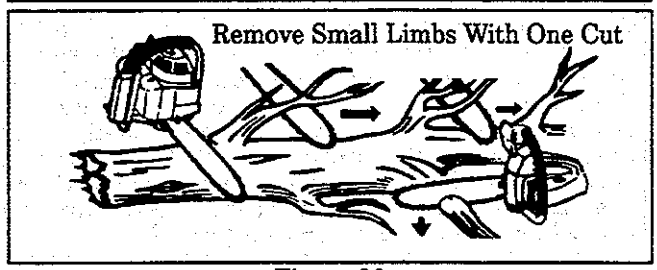


Figure 26

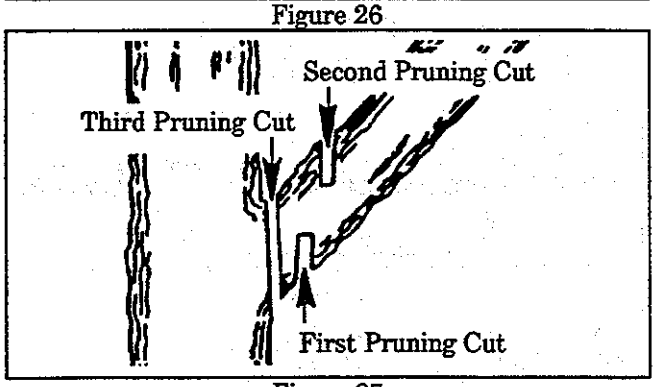


Figure 27

GENERAL MAINTENANCE

A good maintenance program of regular inspection and care will increase the service life and help to maintain the safety and performance of your saw.

- **Make all adjustments or repairs (except carburetor adjustments) with:**
  - — spark plug wire disconnected.
  - — engine cool as opposed to a saw that has just been run.
- **Check the saw for loose bolts, screws, nuts, and fittings regularly.** Loose fasteners can cause an unsafe condition as well as damage to your saw.

⚠ WARNING
Have all chain saw service performed by a qualified service dealer other than the items listed in the maintenance section of this manual.

A. GUIDE BAR AND CHAIN

Increase the service life of your Guide Bar and Chain by:

- — Using the saw properly and as recommended in this manual.
- — Maintaining correct chain tension.
- — Proper lubrication.
- — Regular maintenance as described in this manual.

1. CHAIN MAINTENANCE

- **Sharpen the chain when:**
  - **— wood chips are small and powdery.** Wood chips made by the saw chain should be about the size of the teeth of the chain.
  - **— saw has to be forced through the cut.**
  - **— saw cuts to one side.**

CAUTION: Always wear gloves when handling the chain. The chain can be sharp enough to cut you even though it is too dull to cut wood.

a. SHARPENING INSTRUCTIONS

NOTE: These instructions apply to Poulan P720 and P730 chain. Other chain types may vary. Follow the manufacturer's specifications for the chain used on your saw.

Items required:

Gloves	Flat File
7/32" Diameter File	Depth Gauge
6" File Holder	

1.) **Stop Engine.**
2.) Adjust the chain for proper tension. Page 7.
3.) Work at the midpoint of the bar, moving the chain forward by hand as each cutter is filed.
4.) Sharpen Cutters.
   a.) Position the file holder at a 10° angle on the top plate of the cutter and depth gauge. Figure 28 .
   b.) Align the 25° file holder marks with the bar and parallel to the center of the chain. Figures 29 & 31 .

NOTE: If your file holder has a 30° mark, disregard this mark and file at a 25° angle.

   c.) File from inside toward outside of cutter, straight across on forward stroke in one direction only. Use 2 or 3 strokes per cutting edge. Figure 30 .
   d.) Keep all cutters the same length. Figure 30 .
   e.) File enough to remove any damage to the cutting edges (side plate and top plate) of the cutter. Figure 30 .
   f.) File chain to meet specifications shown in Figure 31 .

⚠ WARNING
Maintain the proper hook angle according to the manufacturer's specification for the chain you are using. Too much hook angle will increase the chance of kickback which can result in serious injury. Figures 31 & 33 .

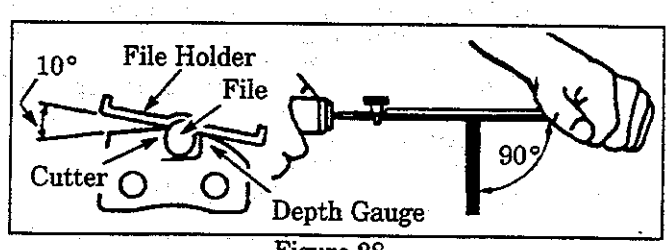


Figure 28

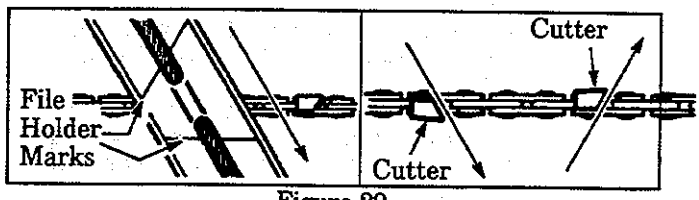


Figure 29

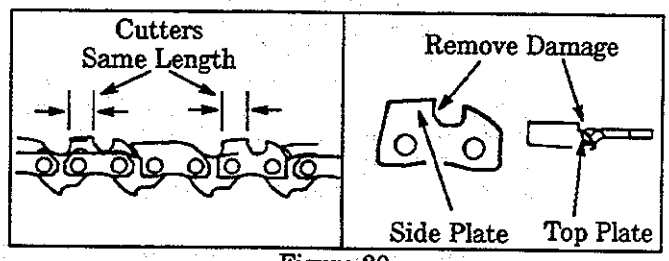


Figure 30

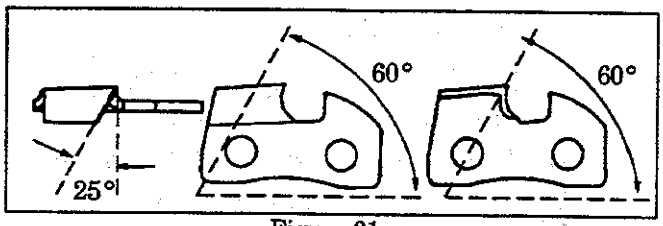


Figure 31

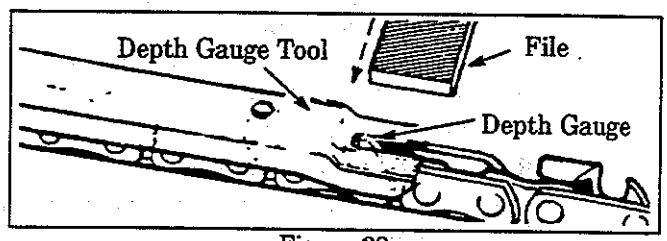


Figure 32

5.) **Correct Depth Gauges**
   a.) Place depth gauge tool over each cutter depth gauge. Figure 32 .
   b.) File depth gauge with a flat file until it is level with the top of the depth gauge tool.
   c.) Maintain rounded front corner of depth gauge with a flat file. Figures 32 & 33 .

NOTE: The very top of the depth gauge should be flat with the front half rounded off with a flat file.

⚠ WARNING
The Depth Gauge Tool is required to insure proper depth gauge. Filing the depth gauge too deep will increase the chance of kickback which can result in serious injury.

b. **CHAIN REPLACEMENT**
   1.) **Use only the replacement chain specified for your saw (see "NOTE" in the Accessory section).**
   2.) **Replace the chain when cutters or links break.**
   3.) **See a qualified service dealer to replace and sharpen individual cutters for matching your chain.**
   4.) **Always have a worn sprocket replaced by a qualified service dealer when installing a new chain to avoid excessive wear to the chain.**

2. **GUIDE BAR MAINTENANCE**
   - **Conditions which can require guide bar maintenance:**
     — **saw cuts to one side.**
     — **saw has to be forced through a cut.**
     — **inadequate supply of oil to bar and chain.**
   - **Check the condition of the guide bar each time the chain is sharpened.** A worn guide bar will damage the chain and make cutting more difficult.
   - **Replace the guide bar when:**
     — the groove in the guide bar is worn.
     — the guide bar is bent or cracked.
   - **Use only the replacement guide bars specified for your saw. Reduced Kickback guide bars are available (see "NOTE" in the Accessory section).**

     a. Remove the guide bar to service.

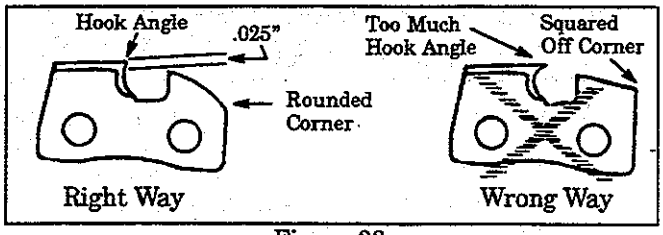


Figure 33

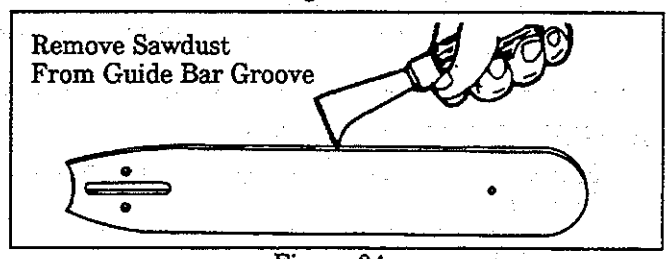


Figure 34

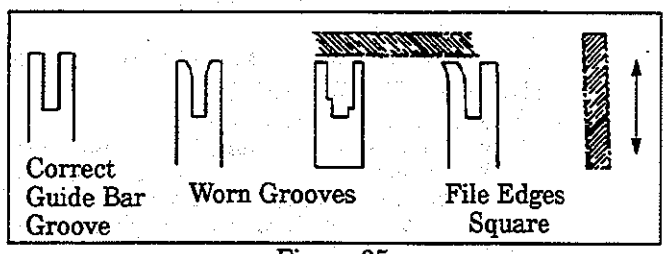


Figure 35

b. Clean the oil holes at least once after every five hours of operation.
c. Remove sawdust from the guide bar groove periodically with a putty knife or a wire. Figure 34 .
d. Remove burrs by filing the side edges of the guide bar grooves square with a flat file. Figure 35 .
e. Square the edges of an uneven rail top by filing with a flat file. Figure 35 .

B. SPARK ARRESTOR

- **Carbon deposits build up on the spark arrestor** as the saw is used and must be removed to avoid creating a fire hazard or causing engine damage.
- **Replace the spark arrestor if breaks occur.**
- **Keep the spark arrestor clean at all times.**
  Clean: —as required.
  —at least once for each 25–30 hours of operation.

Items required: wire brush, 3/8" wrench

1. Disconnect the spark plug wire.
2. Remove the Muffler Cover. Figure 36 .
3. Remove the Screen from the muffler.
4. Clean the screen with a wire brush or replace if breaks are found.
5. Reassemble parts.

<u>NOTE:</u> Too much oil in the fuel mixture can cause excessive carbon build–up in the spark arrestor screen. Use only the correct fuel/oil ratio as instructed in the Engine Information section.

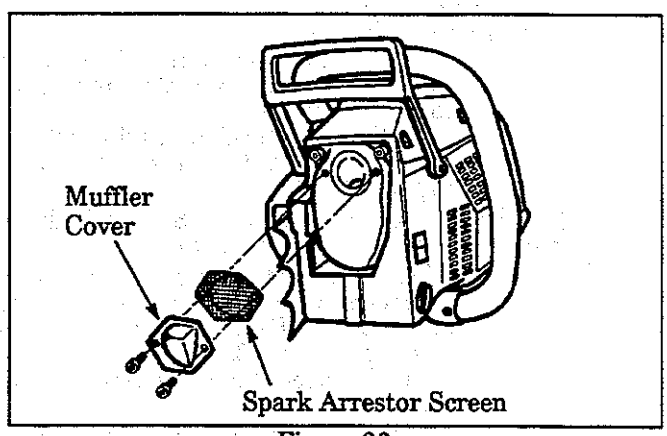


Figure 36

READ SPECIAL SAFETY SECTION FREQUENTLY

C. STARTER ROPE

- **Replace a broken starter or a rope that is badly frayed.**

  NOTE: A recoil spring lies beneath the pulley and is under tension. **If the recoil spring is disturbed, considerable time and effort will be required to reinstall.** For this reason you may want to let a qualified service dealer handle this repair. If you try to repair the starter rope and the recoil spring pops out, take the unit to your dealer.

> **⚠ WARNING**
> **Always wear eye protection when servicing the starter rope. The recoil spring beneath the pulley is under tension. If the spring pops out, serious injury can result.**

1. Drain the fuel tank.
2. Remove the four screws on the side of the fan housing. Figure 37 .
3. Separate the fan housing from the unit.
4. If the starter rope is not broken, release the spring tension by pulling about 10 inches of rope from the pulley and catch the rope in the notch as shown in Figure 38 .
5. Turn the pulley counterclockwise until the spring tension is released.
6. Remove the pulley screw/washer in the center of the pulley. Figure 39 .
7. Lift the pulley *carefully* while gently twisting it counterclockwise. Remove any remaining rope.
8. Move away from the fuel tank and melt both ends of the new rope.
9. Allow each melted end to drip once. Then, while the rope is still hot, pull each melted end through a rag to obtain smooth, pointed ends.
10. Feed the rope through the hole in the handle. Secure the rope with a knot, leaving about a 3/16" pigtail. Figure 39 .
11. Feed the rope through the round starter rope hole in the fan housing. Figure 39 .
12. Guide the rope inside the pulley, then up through the pulley hole to the outside. Figure 39 . Secure the rope with a knot, leaving about a 3/16" pigtail. Figure 39 (inset).
13. Rewind the rope onto the pulley by turning the pulley in a counterclockwise direction.
14. Set the pulley into the housing; push it down and engage the spring.
15. Replace and tighten the pulley screw/washer.

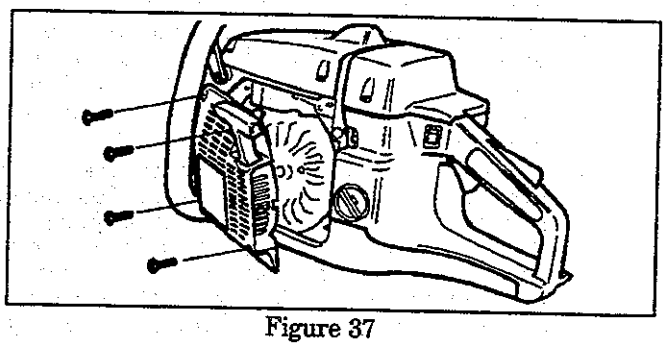


Figure 37

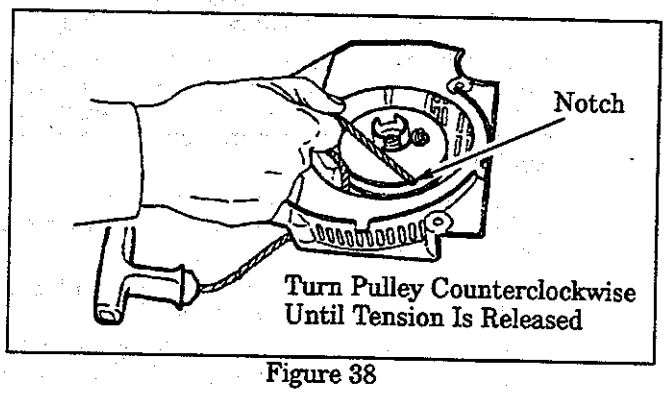


Figure 38

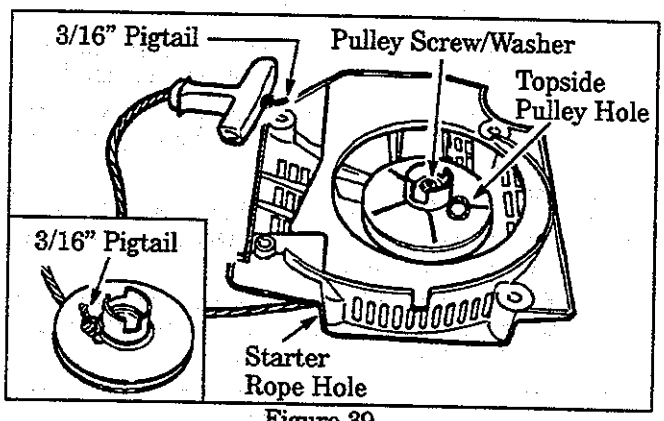


Figure 39

16. Pull out (*inside* the pulley housing) 10 inches of rope and catch the rope in the notch in the pulley. Figure 38 .
17. Turn the pulley 2 complete turns clockwise winding up the spring.
18. Hold the pulley and pull the starter rope to the full extent. Let the rope rewind slowly.
19. Reinstall fan housing.

D. OIL PUMP

The oil flow can be varied by turning the adjustment screw on the crankcase. Figure 40 .

1. Turn the adjustment screw counterclockwise (to +) to increase the oil supply.
2. Turn the adjustment screw clockwise (to –) to decrease the oil supply.

NOTE: Never adjust the oil pump when the engine is running.

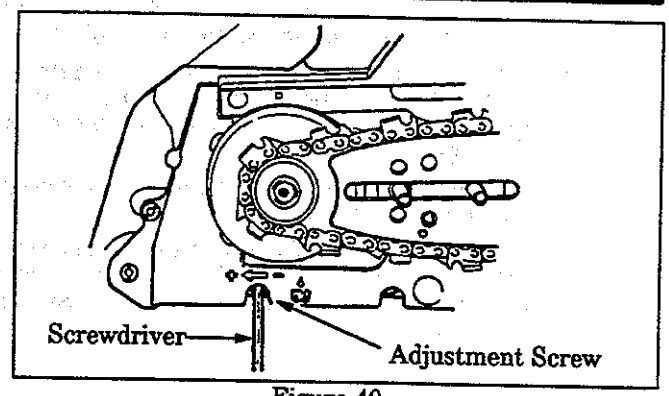


Figure 40

E. CARBURETOR ADJUSTMENTS

- **Poor engine performance can be a result of other causes such as dirty air filter, carbon build-up on muffler outlets, etc. See the "Trouble Shooting Chart" before proceeding with carburetor adjustments.**
- **For best results, the manufacturer recommends that you have a qualified service dealer make all carburetor adjustments.** Your dealer has the training, experience, and tools necessary to properly adjust your saw to meet factory performance specifications. *This service is not covered by warranty.* If it becomes necessary for you to make carburetor adjustments yourself, follow the described procedures very carefully.
- **The carburetor has been adjusted at the factory for sea level conditions.** Adjustments may become necessary if the saw is used at significantly higher altitudes or if you notice any of the following conditions:

  NOTE: Be sure to properly prepare the saw as described in "1. Preparation" (below) before making any adjustments.

  — Chain moves when the engine runs at idle speed. See "2. Idle Speed Adjustment."

  — Saw will not idle. See "2. Idle Speed Adjustment" and "3. Low Speed Mixture Adjustment."

  — Engine dies or hesitates when it should accelerate. See "4. Acceleration Adjustment."

  — Loss of cutting power which is not corrected by air filter cleaning. See "5. High Speed Mixture Adjustment."

CAUTION: Permanent damage will occur to any 2-cycle engine if incorrect carburetor adjustments are made.

- **If the unit will not operate properly after making these adjustments, take the saw to a qualified service dealer.**

⚠ WARNING
The chain will be moving during most of this procedure. Wear your protective gear and observe all safety precautions.

1. PREPARATION

a. Stop the engine.

b. Use a fresh fuel mixture with proper gasoline/oil ratio.

c. Place the saw on a solid, flat surface and make sure the chain will not contact any object.

d. Insert the tip of a small screwdriver into the hole in the pre-filter. Figure 41 . Push the pre-filter forward, then remove the pre-filter from the engine.

e. Locate the three (3) carburetor adjusting screw openings Figure 42 .

f. Start the engine and allow engine to idle three (3) minutes to warm up. *The engine must be at operating temperature for proper adjustments to be made.*

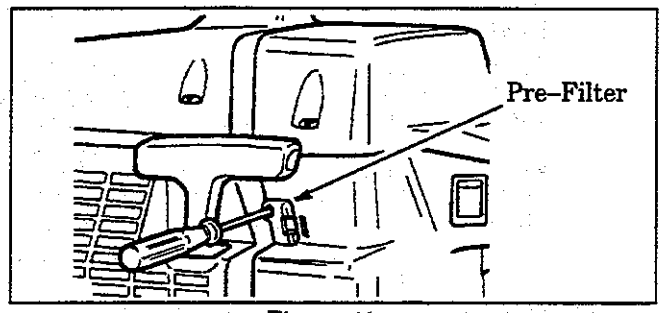


Figure 41

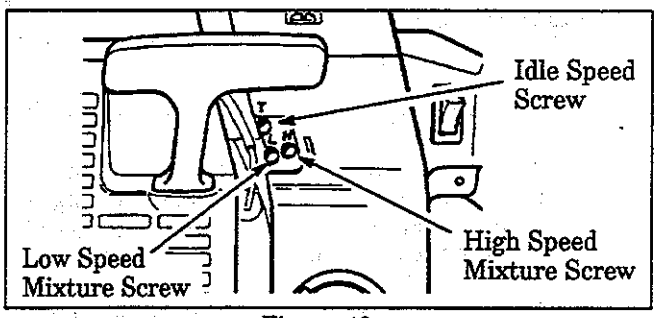


Figure 42

2. IDLE SPEED ADJUSTMENT

a. Allow the engine to idle.

b. Adjust the Idle Speed Screw until the engine continues to run without stalling and without the chain moving.

— *Turn screw clockwise to increase engine speed if engine stalls or dies.*

— *Turn screw counterclockwise to slow engine down and/or to keep the chain from turning.*

c. **No further adjustments are necessary if the chain does not move at idle speed and if performance is satisfactory.**

d. Reinstall the pre-filter. Figure 41 .

⚠ WARNING
In "3. Low Speed Mixture Adjustment," recheck idle speed after each adjustment. The chain must not move at idle speed if performance is satisfactory.

3. LOW SPEED MIXTURE ADJUSTMENT

a. Allow engine to idle.

b. Turn the Low Speed Mixture Screw slowly clockwise until the RPM starts to drop. Note the position.

c. Turn the Low Speed Mixture Screw slowly counterclockwise until the RPM speeds up and starts to drop again. Note the position.

d. Set the Low Speed Mixture Screw at the midpoint between the two positions.

e. If no further adjustments are necessary, reinstall the pre-filter. Figure 41 .

4. ACCELERATION ADJUSTMENT

If the engine dies or hesitates instead of accelerating, turn the Low Speed Mixture Screw 1/16 of a turn at a time counterclockwise until you have smooth acceleration.

5. HIGH SPEED MIXTURE ADJUSTMENT

CAUTION: **Adjustments as small as 1/16 of a turn can affect engine performance. It is important to turn the screw only 1/16 of a turn per adjustment and test the performance of the saw before making further adjustments.**

a. Make a test cut.
b. Adjust the High Speed Mixture Screw 1/16 of a turn as follows:
   — Clockwise if the saw smokes or loses power.
   — Counterclockwise if the saw has speed out of the cut but lacks power in the cut.
c. Repeat test cut.
d. Continue 1/16 of a turn adjustments until the saw runs smoothly in cut.
e. If no further adjustments are necessary, reinstall the pre-filter. Figure 41 .

CAUTION: **A too lean high speed setting (clockwise adjustment) will cause engine damage to any 2-cycle engine from overheating and lack of lubrication. Never set the high speed mixture screw so far clockwise that you have high speed but lack power while cutting. An effective approach follows.**

— Turn screw counterclockwise until engine loses power while cutting.
— Then, turn screw clockwise in 1/16 of a turn increments *only until* the engine has power while cutting.
— This saw has a governor to protect the engine from over revving; however, a too lean setting will still damage the engine.

NOTE: If the unit will not operate properly after making these adjustments, take the saw to a qualified service dealer.

F. AIR FILTER

- **A dirty air filter:**
  — reduces cutting power.
  — increases fuel consumption.
- **Clean the air filter:**
  — frequently, especially under very dusty conditions.
  — always after 10 tanks of fuel mixture or 5 hours of operation, whichever is less.

1. Clean off the air filter cover and the area around it to keep dirt and sawdust from falling into the engine when the cover is removed.
2. Loosen the air filter cover screws and remove the air filter cover. Figure 43 .
3. Using a screwdriver, remove the air filter from the air filter cover. Figure 43 .
4. Wash the filter in soap and water.

CAUTION: **Do not use gasoline or other flammable liquid to clean the filter to avoid creating a fire hazard.**

5. Reverse steps 1. through 3. to reassemble parts.

NOTE: This saw is equipped with a pre-filter. Clean the pre-filter as follows:

a. Insert the tip of a small screwdriver into the hole in the pre-filter. Figure 41 .
b. Push the pre-filter forward, then remove the pre-filter from the engine.

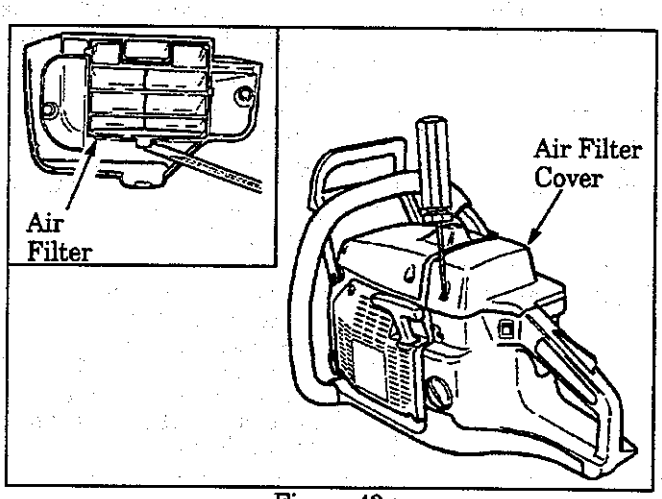


Figure 43

c. Wash the pre-filter in soap and water.

CAUTION: **Do not use gasoline or other flammable liquid to clean the pre-filter to avoid creating a fire hazard.**

d. Reinstall pre-filter in engine. Figure 41 .

CAUTION: **To avoid damage to the engine, do not operate the unit without the pre-filter and air filter in place.**

G. STORAGE

When your saw is to be stored for over 30 days, always:

1. Drain fuel tank in a safe manner. See "Fueling Your Engine—Fuel Safety."
2. Start engine and allow to run at idle speed until the engine stops.

   NOTE: Running the engine until it stops will remove most of the fuel from the fuel system.

   NOTE: It is important to prevent gum deposits from forming in essential fuel systems parts such as the carburetor, fuel filter, fuel hose, or tank during storage. Alcohol blended fuels (called gasohol or using ethanol or methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage.
3. Drain oil from oil tank.

CAUTION: **Wear protective gloves when handling the chain. The chain is sharp and can cut you even when it is not moving.**

4. Remove, clean, and dry the bar and chain.
5. Store the chain in a container filled with oil to prevent rust.
6. Apply a coating of oil to the entire surface of the bar and wrap it in heavy paper, cloth, or plastic.
7. Clean the outside surfaces of the engine.
8. Store the saw in a dry place, out of the reach of children, and away from where fuel vapors can reach open flames from hot water heaters, electric motors or switches, furnaces, etc.

D. TROUBLE SHOOTING CHART

SYMPTOM	CAUSE	REMEDY
Engine will not start or will run only for a few seconds after starting.	1. Fuel tank empty. 2. Engine flooded. 3. Spark plug not firing. 4. Fuel not reaching carburetor. 5. Carburetor requires adjustment. 6. Ignition Switch Off. 7. None of the above.	1. Fill tank with correct fuel mixture 2. See "Starting Instructions." 3. Install new plug/check ignition system. 4. Clean fuel filter; inspect fuel line. 5. See "Carburetor Adjustments." 6. Move switch to the "START" position. 7. Contact your Authorized Service Dealer.
Engine will not idle properly.	1. Idle speed set too fast or too slow. 2. Low speed mixture requires adjustment. 3. Crankshaft seals worn. 4. Compression low. 5. None of the above.	1. See "Carburetor Adjustments." 2. See "Carburetor Adjustments." 3. Contact your Authorized Service Dealer. 4. Contact your Authorized Service Dealer. 5. Contact your Authorized Service Dealer.
Engine will not accelerate,lacks power, or dies under a load.	1. Air filter dirty. 2. Spark plug fouled. 3. Carburetor requires adjustment. 4. Exhaust ports or muffler outlets plugged. 5. Compression low. 6. None of the above.	1. Clean or replace air filter. 2. Clean or replace spark plug and re–gap. 3. See "Carburetor Adjustments." 4. Contact your Authorized Service Dealer. 5. Contact your Authorized Service Dealer. 6. Contact your Authorized Service Dealer.
Engine smokes excessively.	1. Air filter dirty. 2. Fuel mixture incorrect. 3. High speed mixture requires adjustment. 4. Choke partially on. 5. Crankcase leak.	1. Clean or replace air filter. 2. Refuel with correct fuel mixture. 3. See "Carburetor Adjustments." 4. Push Choke knob in. 5. Contact your Authorized Service Dealer.
Engine runs hot.	1. Fuel mixture incorrect. 2. High speed mixture set too low (Lean). 3. Spark plug incorrect. 4. Exhaust ports or muffler outlets plugged. 5. Carbon build–up on muffler outlet screen. 6. Fan housing/cylinder fins dirty. 7. None of the above.	1. See "Fueling Your Unit." 2. See "Carburetor Adjustments." 3. Replace with correct plug. 4. Contact your Authorized Service Dealer. 5. Clean spark arrestor screen. 6. Clean area. 7. Contact your Authorized Service Dealer.
Oil inadequate for bar and chain lubrication.	1. Oil tank empty. 2. Improperly adjusted oiler. 3. Oil pump or oil filter clogged. 4. Guide bar oil hole blocked.	1. Fill oil tank. 2. Adjust oiler. 3. Contact your Authorized Service Dealer. 4. Remove bar and clean.
Chain moves at Idle Speed.	1. Idle speed requires adjustment. 2. Clutch requires repair.	1. See "Carburetor Adjustments." 2. Contact your Authorized Service Dealer.
Chain does not move when engine is accelerated.	1. Chain off sprocket/chain tension too tight. 2. Carburetor requires adjustment. 3. Guide bar rails pinched. 4. Clutch slipping. 5. Chain brake engaged.	1. Reinstall chain and check tension. 2. See "Carburetor Adjustments." 3. Repair or replace. 4. Contact your Authorized Service Dealer. 5. Disengage chain brake.
Chain clatters or cuts roughly.	1. Chain tension incorrect. 2. Cutters damaged. 3. Chain worn. 4. Cutters dull, improperly sharpened, or depth gauges too high. 5. Sprocket worn.	1. See "Chain Tension." 2. Contact your Authorized Service Dealer. 3. Resharpen or replace chain. 4. See the chain sharpening instructions. 5. Contact your Authorized Service Dealer.
Chain stops within the cut.	1. Chain cutter tops not filed flat. 2. Guide bar burred or bent; rails uneven. 3. Clutch slipping.	1. See the chain sharpening instructions. 2. Repair or replace guide bar. 3. Contact your Authorized Service Dealer.
Chain cuts at an angle.	1. Cutters damaged on one side. 2. Chain dull on one side. 3. Guide bar bent or worn.	1. Resharpen until all cutters have equal angles and lengths. 2. Resharpen until all cutters have equal angles and lengths. 3. Replace guide bar.

E. MAINTENANCE CHART

		before starting work	after finishing work or daily	after each refueling stop	weekly	monthly
Complete machine.	Visual inspection (condition, leaks)	✓		✓		
	Clean		✓			
Throttle trigger; safety throttle lock; stop switch.	Check operation	✓		✓		
Filter in fuel tank.	Clean felt — when clogged or dirty.					
	Replace pick-up — when clogged or dirty.					
Fuel tank.	Clean					✓
Chain oil tank.	Clean					✓
Chain lubrication.	Check	✓				
Saw chain.	Inspect (sharpness, wear, damage)	✓		✓		
	Check chain tension	✓		✓		
	Sharpen — when dull					
Guide bar.	Inspect (wear, damage)	✓				
	Clean				✓	
	Lubricate sprocket nose	✓		✓		
	Deburr				✓	
	Replace — when worn or damaged					
Chain sprocket.	Check				✓	
Pre-filter/Air filter (See Note below).	Clean	✓				
	Replace — when worn or damaged					
Exhaust ports.	Clean				✓	
Cylinder fins (See Note below).	Clean					✓
Carburetor	Check idle adjustment — chain must not turn	✓				
	Readjust idle — when chain turns					
Spark plug.	Replace — when fouled or damaged					
All accessible screws and nuts (not adjusting screws).	Retighten	✓				
Vibration mounts.	Inspect — (tears, rips, separation, out of round)	✓				
	Replace — when necessary					
Spark arrestor screen.	Inspect	✓				
	Replace — when worn or damaged					

NOTE: When cutting fibrous material such as palms, pampas grass, yucca, etc., clean the cooling system (including cylinder cooling fins) after every other refueling.

POULAN PRO™ ACCESSORIES

See your **Poulan Pro** dealer for accessories and parts.

File – flat – 6"	952–055027
File – round – 7/32"	952–055025
Depth Gauge	952–055028
Safety Glasses	952–062003
Spark Plug	952–030037
2–cycle Engine Oil	
3.2 oz.–40:1	952–030132
8 oz.–40:1	952–030127
Bar & Chain Lubricant	
32 oz.	952–030129
1 gal.	952–030130
Operator's Manual	530–067722

See your **Poulan Pro** dealer for information on the various bars and chains available for your saw.

NOTES

NOTES

PARTS AND SERVICE

Your Poulan Pro product has been expertly engineered and carefully manufactured to rigid quality standards. As with all mechanical products, some adjustments or part replacement may be necessary during the life of your unit.

FOR SERVICE OR REPLACEMENT PARTS:

1. Consult your dealer/place of purchase.
2. Consult the yellow pages of your phone directory for the name of the nearest Poulan Pro/Weed Eater Master Service Dealer (under "saws" for Chain Saws or under "lawnmowers" for Trimmers, Brushcutters, and Blowers).
3. For replacement parts, have available the following information:
   a. Description of the tool.
   b. Model Number.
   c. Part Number or description of part.

NOTE: Poulan/Weed Eater Division provides parts and service through its authorized distributors and dealers; therefore, all requests for parts and service should be directed to your local dealer(s). The philosophy of Poulan/Weed Eater Division is to continually improve all of its products. If the operating characteristics or the appearance of your product differs from those described in this Operator's Manual, please contact your local Poulan/Weed Eater Dealer for updated information and assistance. Always update your tool when improvements are made available, especially those related to safety. Parts and repair service are not available directly from Poulan/Weed Eater Division White Consolidated Industries, Inc.

POULAN/WEED EATER
DIVISION WHITE CONSOLIDATED INDUSTRIES, INC.
Shreveport, Louisiana 71139-9329

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