

# Homelite®

## OWNER'S MANUAL

### SUPER XL® AO CHAIN SAW

Leon's Chainsaw Parts & Repair  
Do Not Sell or Reproduce



FIRST EDITION  
PART NO. 17255-J  
Printed in U.S.A.



NOTE: See back page for Servicing Dealer Information.

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## BAR AND CHAIN COMBINATIONS

GUIDE BAR NO.	CHAIN PART NO.	CHAIN TYPE NO.
SP-16381-H5	J1-L7259-AH	38-LD50-59
GW-16001-G5	J1-L7259-AH	38-LD50-59
PT-20381-G5	J1-M7270-AH	38-MD50-70
SP-20381-H5	J1-M7270-AH	38-MD50-70
GW-20001-G5	J1-M7270-AH	38-MD50-70
PT-20381-G5	J1-L7270-AH	38-LD50-70
SP-20381-H5	J1-L7270-AH	38-LD50-70
GW-20001-G5	J1-L7270-AH	38-LD50-70
PT-24381-G5	J1-M7281-AH	38-MD50-81
SP-24381-H5	J1-M7281-AH	38-MD50-81
GW-24001-G5	J1-M7281-AH	38-MD50-81
PT-24381-G5	J1-L7281-AH	38-LD50-81
SP-24381-H5	J1-L7281-AH	38-LD50-81
GW-24001-G5	J1-L7281-AH	38-LD50-81

### SYMBOL DEFINITIONS



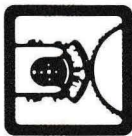
THIS SYMBOL INDICATES DANGER OR WARNING.



DANGER! BEWARE OF KICKBACK.



AVOID BAR NOSE CONTACT.



THE SAFE-TIP® DEVICE ON YOUR BAR NOSE PREVENTS KICKBACK.



READ YOUR PRODUCT LITERATURE.



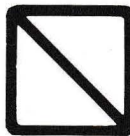
WEAR HEARING AND EYE PROTECTION DEVICES.



DO NOT USE ONE-HANDED.



HOLD SAW PROPERLY WITH BOTH HANDS.



DIAGONAL LINE ACROSS A SYMBOL "PROHIBITED" OR "TO BE AVOIDED."



# SAFETY PRECAUTIONS FOR CHAIN SAW USERS

## PRECAUTIONS AGAINST KICKBACK



**WARNING: KICKBACK** may occur when the nose or tip of the guide bar touches an object. Tip contact, in some cases, may cause a lightning-fast reverse reaction, kicking the guide bar up and back towards the operator.



**WARNING: PINCHING** the saw chain along the top of the guide bar may push the guide bar rapidly back towards the operator. The pinch may occur when the wood closes around the chain in the cut.

Either of the above reactions, **KICKBACK** or **PINCH**, may cause you to lose control of the saw and could result in **SERIOUS PERSONAL INJURY**. When a push has caused the operator to lose control, it is possible for a kickback to occur as a secondary reaction.

Do not rely exclusively upon the safety devices built into your saw to protect you from injury. As a chain saw user, you should do the following to avoid accident and injury:

- Keep **SAFE•T•TIP®** Anti-kickback Device properly mounted on the guide bar. It prevents kickback.
- Get a basic understanding of kickback so you can reduce or eliminate the element of surprise. Surprise can contribute to accidents.
- Keep a firm grip on the saw with both hands when the engine is running. The right hand should be on the rear handle and the left hand on the front handle. Use a firm grip with thumbs and fingers encircling the handles. A firm grip will help you to maintain control of the saw if kickback occurs. Don't let go.
- Be sure the area in which you are cutting is free from obstructions. To avoid kickback, if you remove the **SAFE•T•TIP** Device for a specific cut, do not let the chain at the tip of the guide bar contact a log, branch or any other obstruction while you are operating the saw.
- Keep your body to the left of the line of cut.
- Always bring the saw up to speed before letting the chain touch the wood. Once wood contact is made, keep cutting at steady speed. Do not slow down, then speed up or the saw may pull you off balance.
- Do not overreach or cut above shoulder height. You cannot maintain proper control in these positions.
- Follow Homelite's sharpening and maintenance instructions for the saw chain. Improper maintenance may defeat the safety features designed into your saw.
- Use only the bars and chains specified by Homelite. Other bars and chains may have greater kickback potential.
- Keep up to date with the latest technology in chain saw safety devices and equipment. Contact Homelite Manager of Customer Relations for information. (Address is on back page.)



# OTHER BASIC SAFETY PRECAUTIONS

## BASIC PRECAUTIONS FOR PERSONAL SAFETY

- Use safety footwear, snug-fitting clothing, and eye, hearing and head protection.
- Wear non-slip gloves to improve your grip. Do not wear scarfs, jewelry, or neckties which could be drawn into the engine or catch on the chain or underbrush.
- Always hold the chain saw with both hands when the engine is running. Use a firm grip with thumbs and fingers encircling the chain saw handles.
- **GUARD AGAINST KICKBACK:**
  - a) Hold the chain saw firmly with both hands. Don't overreach. You cannot maintain good control of the saw if you cut above shoulder height.
  - b) Don't let the nose of the guide bar contact a log, branch, the ground or any other obstruction. Keep the **SAFE•T•TIP®** anti-kickback device properly mounted on the guide bar.
  - c) Cut at high engine speeds.
  - d) Keep the chain sharp. Don't operate with a loose chain. Maintain the correct tension of the chain as prescribed in this Owner's Manual.
- Guard against the effects of a long or continuous exposure to noise, such as involved in the operation of a chain saw. Hearing protection devices are available from your local Homelite dealer.
- Never operate a chain saw when you are fatigued.
- Keep all parts of your body away from the saw chain when the engine is running.

## BASIC PRECAUTIONS WITH CHAIN SAWS

- Always carry the chain saw with the engine stopped, the guide bar and saw chain to the rear, and the muffler away from your body. When transporting your chain saw, use the appropriate guide bar and scabbard available from your Homelite Dealer.
- Always use caution when handling fuel. Move the chain saw at least 10 feet (3 m) from the fueling point before starting the engine.

- Keep the handles dry, clean and free of oil or fuel mixture.
- Before you start the engine, make sure the saw chain is not contacting anything.
- Shut off the engine before setting down the saw. Do not leave the engine running unattended.
- Operate the chain saw only in well ventilated areas.
- Be sure that the chain stops moving when the throttle control is released.

## BASIC PRECAUTIONS ABOUT MAINTENANCE

- Never operate a chain saw that is damaged, improperly adjusted, or is not completely and securely assembled. Be sure that the saw chain stops moving when the throttle control trigger is released.
- All chain saw service, other than items in the Owner's Manual maintenance instructions, should be performed by competent chain saw service personnel. (If improper tools are used to remove the flywheel or clutch, or if an improper tool is used to hold the flywheel in order to remove the clutch, structural damage to the flywheel could occur which could subsequently cause the flywheel to burst.)

## BASIC PRECAUTIONS IN CUTTING/WORK AREA

- Do not operate a chain saw in a tree unless you have been specifically trained to do so.
- Keep bystanders and animals out of the work area.
- Never start cutting until you have a clear work area, secure footing, and a planned retreat path from the falling tree.
- Use extreme caution when cutting small size brush and saplings, because slender material may catch the saw chain and be whipped toward you or pull you off balance.
- When cutting a limb that is under tension, be alert for springback so that you will not be struck when the tension in the wood fibers is released.



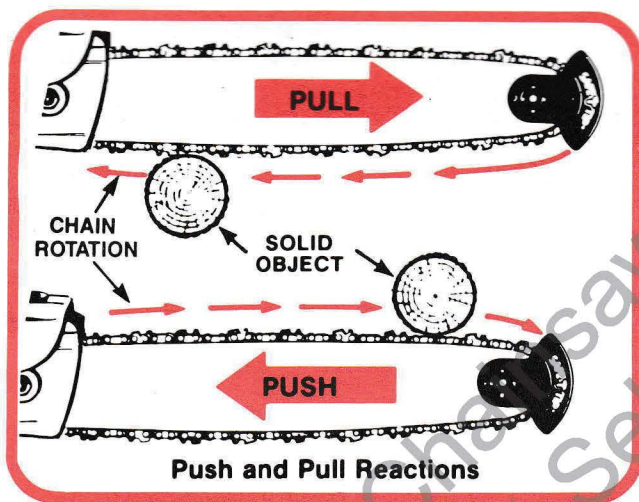
# KICKBACK, PUSH, AND PULL and how these reaction forces are best controlled

## CONTROLLING THE REACTION FORCES

The powerhead (engine) drives the chain to cut into the wood. Being hard, the wood exerts a reaction force against the saw. This force can be controlled. And it is an alert operator, not a safety device, who does the controlling. The inherent danger of a safety device is lulling the user into a false sense of security. The means of controlling the saw include keeping a balanced stance, keeping the left elbow straight, and using the proper grip to hold the saw firmly in both hands.

## PUSH AND PULL

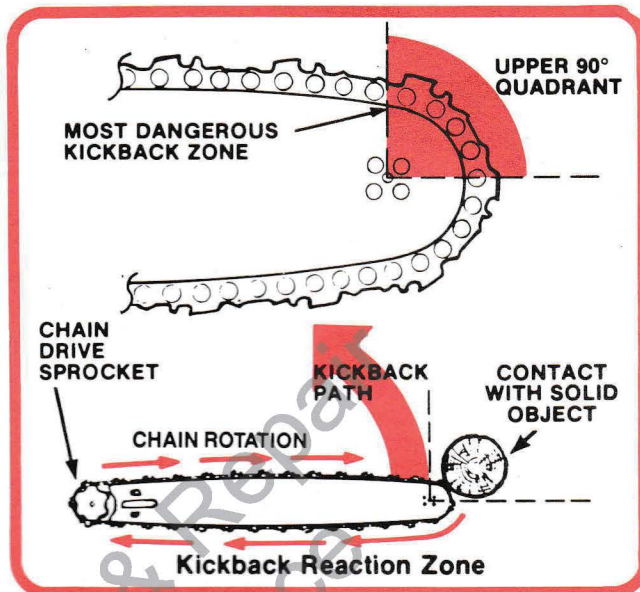
The reaction force is always opposite to the direction the chain is moving when wood contact is made. Thus, the operator must be ready to control the PULL when cutting on the bottom edge of the bar, and PUSH when cutting along the top edge. These reactions are referred to in the manual as PULL and PUSH.



THE SAFE•T•TIP DEVICE DOES NOT PREVENT OR REDUCE PUSH AND PULL REACTION.

**KICKBACK** is another reaction, the most dangerous of these (3) reactive forces. It occurs only when solid contact with moving chain is made at the upper quadrant of the bar nose. A violent reaction will occur any time the chain hits a solid object (or takes too large a cut) while rounding this top quadrant of the bar nose. For the instant that the chain is stopped cold, the engine drives the guide bar to rotate inside the chain loop. This results in a pin-wheeling rotation of the saw with bar and chain during which the chain saw *kicks back in an arc towards the operator*. This is KICKBACK the most dangerous of the reactions which can cause loss of control. When properly installed on a saw, a SAFE•T•TIP anti-kickback device prevents kickback. But it is not a general insurance against "accidents" with a chain saw.

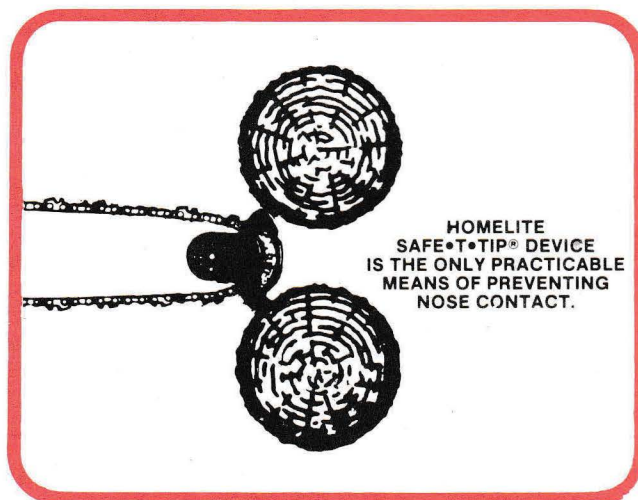
Even though it is up to you to keep control of the saw, certain of the ANSI-recommended safety devices may help protect you as explained above:



## SAFE•T•TIP® ANTI-KICKBACK DEVICE

You still have to control PULL and PUSH as well as the tendency of the chain to slide along the work rather than penetrate it. But, the SAFE•T•TIP Device really does prevent kickback from happening, because it covers the tip of the bar where kickback is generated. Inexperienced persons should never attempt any kind of cutting where the Device would have to be removed from the bar tip.

Those users, such as professional loggers, who may need to draw the tip through the cut, make boring cuts, or cut logs bigger than the bar length should replace the Device as soon as those cuts are complete. When cutting with the Device removed, the user must rely on careful use of the proper techniques as shown in the manual to avoid kickback. With proper care to keep the Device properly mounted and tightened on the bar, the SAFE•T•TIP Device will prevent kickback for the life of the unit. If allowed to loosen, it may catch the chain. Replace only if damaged.



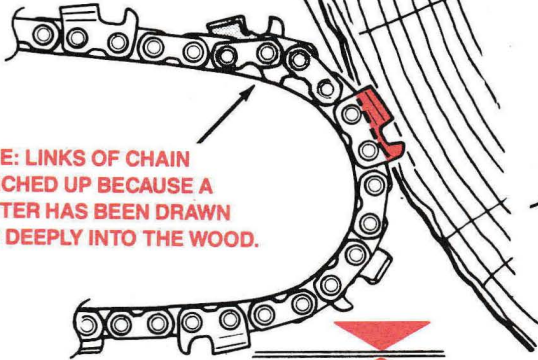


## COMPARE

THE CUTTER AND RAKER CAN DIG IN SO DEEP SUCH THAT IT CAUSES THE CHAIN TO STALL.

A SINGLE DEPTH GAUGE IS NOT ABLE TO CONTROL THE DEPTH OF CUT AT NOSE SECTION.

NOTE: LINKS OF CHAIN BUNCHED UP BECAUSE A CUTTER HAS BEEN DRAWN TOO DEEPLY INTO THE WOOD.

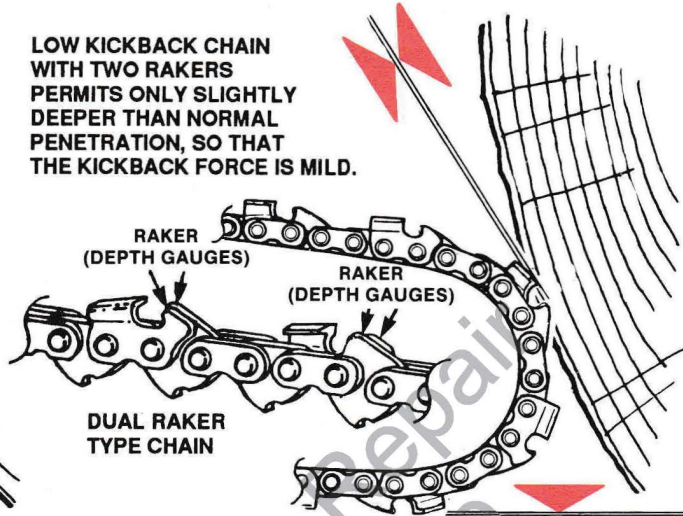


GAUGED DEPTH OF CUT ALONG STRAIGHT SECTION OF BAR.

### SINGLE RAKER CHAIN

Cutters with small single raker can overbite, pulling top plate and the raker into the wood, stopping the chain. A violent kickback reaction may result.

LOW KICKBACK CHAIN WITH TWO RAKERS PERMITS ONLY SLIGHTLY DEEPER THAN NORMAL PENETRATION, SO THAT THE KICKBACK FORCE IS MILD.



RAKER (DEPTH GAUGES)  
RAKER (DEPTH GAUGES)

DUAL RAKER TYPE CHAIN

GAUGED DEPTH OF CUT ALONG STRAIGHT SECTION OF BAR.

### DUAL RAKER CHAIN

Chain with two large surface rakers keeps cutting, no overbite, or no stalling. But the rakers are not pulled into the wood and continue to control the depth of cut. Kickback may occur but the angle is greatly reduced.

## DUAL RAKER LOW KICKBACK SAW CHAIN

The two rakers (depth gauges) ahead of each cutter can minimize the force of a kickback reaction by preventing the cutters rounding the tip of the bar from digging in too deeply at the kickback zone. Dual Raker chain is a key factor enabling your saw to meet the ANSI standard which requires that a saw shall kick back no more than 45 degrees under simulated conditions. These conditions are intended only to provide reference numbers for comparison (like EPA mileage ratings which may not represent actual fuel economy). A rating below 45 degrees *does not* mean the saw cannot kick much higher in actual use.

Under some conditions Dual Raker saw chain may not cut as smoothly or quickly as conventional chain. When cutting logs with smooth bark, the chain may tend to skid or slide along the work before penetrating into a cut. Top performance of the chain is obtained by frequent, precise chain maintenance.

Properly maintained Dual Raker chain may lose a bit of its kickback-reducing ability with every sharpening. This is due to the increase in space between rakers and teeth as the cutters are filed back. The chain will be rough-cutting, "grabby," and more kickback-prone if the cutters have a forward hook shape, rakers are filed too low or have an improper contour.

Generally: a) Dullness does not increase the kickback potential of a chain very much, b) improperly sharpened chain, especially the too-low filing of the rakers, may have a significantly higher kickback potential, and c) even with care to maintain the proper cutter angles and raker depths, the kickback potential can increase slightly with each filing.

## HOMELITE® GUIDE BARS

Generally, guide bars with small radius tips have somewhat lower kickback potentials, but at the sacrifice of both cutting efficiency and durability. Therefore, Homelite equips only electric saws with the narrow tip bars.

Homelite gasoline saws meet the kickback-reduction requirements of ANSI B175.1 without need for small radius tip bars.

When making a replacement be sure to order one of the Homelite bars listed for your saw in this owner's instruction. The proper size SAFE•T•TIP® Device comes installed on the bar. Bars of other manufacture which lack provision for mounting this kickback preventing device should not be used.

The ability of a kickback-reduction guide bar to reduce kickback does not normally diminish with either wear or normal use. But the owner's manual instructions for bar maintenance should be followed to prevent chain damage and preserve saw performance.



# OTHER PROTECTION AND PROTECTIVE DEVICES

## THE OWNER'S MANUAL

Your owner's manual is for your protection. READ IT. Keep it handy for reference. Know what you are doing before you begin assembly of the unit. Proper preparation and upkeep go hand-in hand with satisfactory performance of the saw and safety.

## FRONT HAND GUARD

Your saw has a factory-installed front hand guard. On some models it can be pivoted out of the way for fueling. Do not remove this guard or replace it with a substitute (which may not fit as well as the original design). Maintain the guard in good condition. Do not let it snag in the underbrush. Do not use the guard as a hand grip. Replace it if damaged or broken.

## WARNING

**For your own safety do not use guide bar and saw chains other than those listed for your model saw on page 2. Do not adapt your powerhead to a bow guide or use it to power any attachments or devices not listed for your saw in current Homelite sales literature. Chain saws and related equipment periodically are subject to modification. Keep yourself informed of the latest in attachments and new features for your saw by contacting our manager of customer relations. Our address is on the back cover.**

## CHAIN BRAKE

Homelite supplies a SAFE•T•TIP® anti-kickback device for the chain brake equipped model. This is because a chain brake does not prevent kickback any more than a seat belt prevents collisions. A chain brake can only stop the chain rotation. For your safety, rely on the SAFE•T•TIP® Device to prevent kickback. Also depend on using the proper grip and stance, and the safe cutting techniques recommended in your owner's manual to control the forces which tend to push or pull you and the saw during cutting.

At its best, a chain brake offers only partial protection against injury from kickback. In some situations it may be impossible for the brake mechanism to stop the chain before the saw blade reaches the operator. This is especially true in situations where the operator is positioned in close proximity to the saw blade.

A chain brake is not like a fire extinguisher which can be certified to work for a certain time. Too many things like breakage or wear, dirt, dust, sawdust, chain oil, and temperature changes in the chain saw's environment can reduce the chain brake's ability to stop the chain. The best chance you can give the brake to react effectively is to keep it clean. Even with daily cleaning of the mechanism, the dependability of a chain brake to perform under field conditions cannot be certified or even gauged. Keep the SAFE•T•TIP Device on your saw's guide bar, and use proper cutting techniques.

## HEARING PROTECTORS

Long or continuous exposure to high noise levels, such as involved in the operation of a chain saw, may cause permanent hearing impairment or other possible effects. Hearing protection devices are available from your Homelite dealer or can be ordered through him. When ordering, specify "Homelite Hearing Protectors #92810."

## SPARK ARRESTOR

Your saw has a spark arrestor screen built into the muffler and a temperature shield (muffler shield). In certain states where the law requires use of a spark arrestor, it also requires the owner/operator to keep a spark arrestor in good condition (intact) in the exhaust system at all times. The spark arrestor is a very fine stainless steel

mesh. Thus it is subject to clogging, cracking and burning out. Replacement spark arrestor screens are available.

## PROTECTION FROM VIBRATION

It has been reported that vibrations from hand-held tools (chain saws, pneumatic hammers, grinders, sledge hammers, etc.) may contribute to a condition called Raynaud's Syndrome in certain individuals. Symptoms may include tingling, numbness and blanching of the fingers, usually apparent upon exposure to cold. Hereditary factors, exposure to cold and dampness, diet, smoking and work practices are all thought to contribute to the development of these symptoms. It is presently unknown what, if any, vibrations or extent of exposure may contribute to the condition.

This saw is classified in the "occasional use" category by many current regulations that differentiate between "professional" and "occasional use" saws. These varied regulations place limits on the amount of vibration which saws can transmit to the operator.

There are measures that can be taken by the operator to possibly reduce the effects of vibration:

- Keep your body warm in cold weather. When operating the unit wear gloves to keep the hands and wrists warm. It is reported that cold weather is a major factor contributing to Raynaud's Syndrome.
- Refrain from smoking (another suspected contributing factor).
- After each period of operation, exercise to increase blood circulation.
- Take frequent work breaks. Limit the amount of exposure per day.
- Keep the tool well maintained, fasteners tightened and worn parts replaced.

If you experience any of the symptoms of this condition, immediately discontinue use and see your physician about these symptoms.

## PROTECTIVE ARTICLES, EQUIPMENT AND SUPPLIES





# COMPARISON CHART

FUNCTION	EFFECT, IF ANY, UPON PERFORMANCE OF CHAIN SAW	EFFECT IF REMOVED	EFFECT OF BOTH NORMAL AND IMPROPER USE & CARE	EFFECT OF A PRODUCT SUBSTITUTE
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## DEVICE TO PREVENT INJURIES FROM KICKBACK

### BAR-TIP GUARD (SAFE•T•TIP® Anti-kickback device is factory-installed on all Homelite bars.)

Covers kickback-generating zone of the bar tip to prevent kickback from happening.	Prevents (a) drawing of the bar tip through the cut, (b) boring and (c) cuts where tip is buried.	Cannot prevent kickback if removed from the bar.	No loss of protection if kept properly tighten. Loose device can catch the chain.	To be as effective as the SAFE•T•TIP Device, similar products must fit just as well over the bar tip.
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## DEVICES TO REDUCE INJURIES FROM KICKBACK

### LOW-KICKBACK CHAIN (Homelite's 35MD Dual Raker Chain)

Control depth of cutter penetration at the bar tip to reduce force of a potential kickback.	Low-kickback design may compromise cutting speed. Needs proper care to preserve top speed.		May be slight increase of potential kickback force as teeth are filed back. Can be grabby and more dangerous if improperly filed.	Other chains may have greater potential kickback force and may not cut as well.
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### REDUCED-KICKBACK GUIDE BAR (Most Homelite models do not use reduced-kickback guide bars.)

Small radius bar tip lowers potential kickback force and may provide a smaller kickback zone at bar tip.	May tend to have shorter life than wider tip bars, and may reduce the cutting rate in some situations.		No loss of protection if properly maintained, slow or off-line cutting if not properly maintained. Rail wear changing effective tip radius may affect protection.	Kickback potential may increase.
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### CHAIN BRAKE (Kits and special "SL" model chain saws with chain brakes are available for many Homelite saw models.)

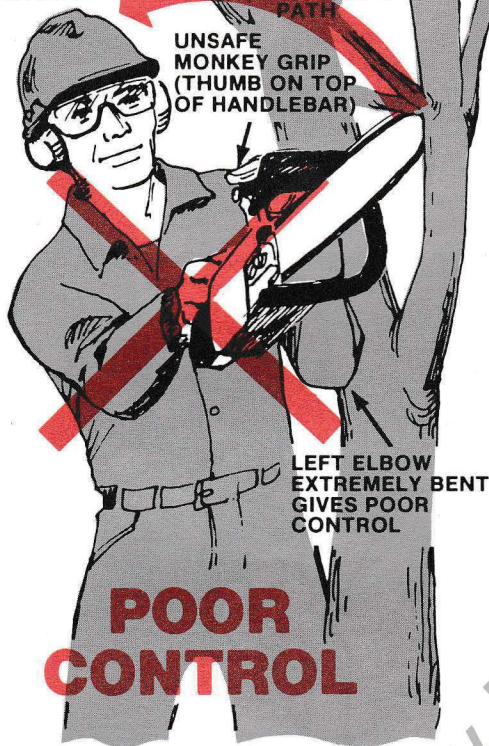
Intended to stop chain in time to reduce injury from a kickback.	Adds weight and bulk to the saw model. May snag in the brush. May activate unintentionally.	Chain will not be stopped by a brake.	May fail to stop chain quickly enough - even with normal use and care. Increase in stopping time likely to go undetected.	May not function as intended.
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### FRONT HAND GUARD (Front hand guards are provided on all Homelite saws.)

Protects left hand from contact with the saw chain.	Adds slight weight. May snag in the brush.	Loss of protection.	May fail to protect if bent, loose, damaged or broken.	May provide less protection than original guard.
---	--	---------------------	--	--



OPERATOR  
STANDING  
IN THE  
CHAIN LINE  
DIRECTLY IN  
POTENTIAL  
KICKBACK PATH



UNSAFE  
MONKEY GRIP  
(THUMB ON TOP  
OF HANDLEBAR)

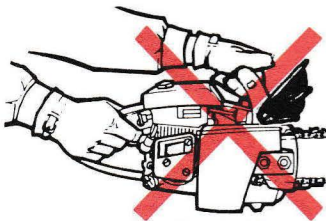
LEFT ELBOW  
EXTREMELY BENT  
GIVES POOR  
CONTROL

**POOR  
CONTROL**

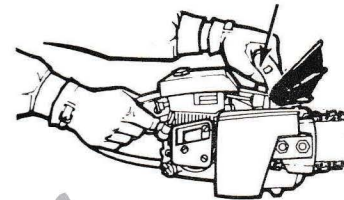
## HOW TO MAINTAIN CONTROL

1. First of all, you must keep the front handlebar diameter in the webbing between the thumb and index finger of your left hand. This grip helps maintain control of the saw and limits the possibility that your hand will come in contact with the chain. See the illustrations of the correct and incorrect grips.

NOTE THUMB  
POSITION



INCORRECT  
"MONKEY" GRIP



CORRECT  
GRIP

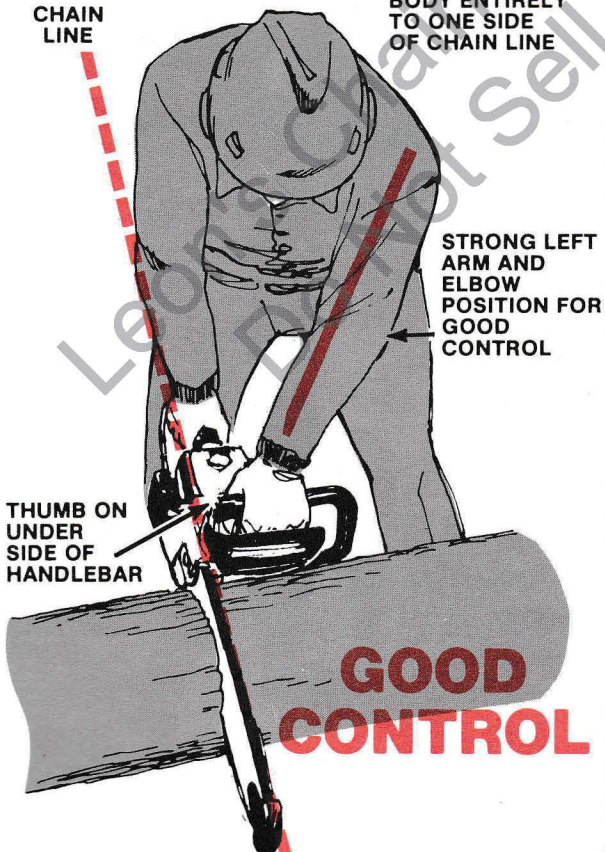
- Do not use a "Monkey Grip" because your hand can slip.  
Don't forget to wear your gloves.
2. Hold the front handlebar close to the balance point of the saw (or where you can best oppose and absorb the push, pull and kickback forces of the saw without having it twist out of your grip).  
Do not reverse right and left hand positions on the saw handles.
  3. Get a good grip on the rear handle.
  4. Maintain your balance on both feet, and do not reach above chest height with the saw engine, or reach so far forward that you could be drawn off balance by the saw's reactions.
  5. Stand a bit to one side so that no point of your body is behind the chain line (in the line the saw will take if it kicks back).

## HOW TO REDUCE THE CHANCE OF KICKBACK

1. Avoid letting the nose section of the saw contact any object. Note: A SAFE•T•TIP® device, when properly installed on the bar nose, will prevent kickback.
2. Avoid use of the nose section of the saw for cutting. Cut well back on the straight section of the bar.
3. Be sure to keep your chain sharp and properly tensioned on the saw, because a loose or dull chain is apt to increase the chance of kickback.
4. Use extreme caution when cutting brush, hedges and other "whippy" material. Unless the saw has a properly installed SAFE•T•TIP device, cut only one piece at a time and make sure that the nose of the saw stays in the clear.
5. Never bore with the nose section of the saw unless you absolutely have to. If you really *must* make a boring cut with the nose, follow our instructions on page 18 for minimum risk of kickback.

CHAIN  
LINE

BODY ENTIRELY  
TO ONE SIDE  
OF CHAIN LINE



STRONG LEFT  
ARM AND  
ELBOW  
POSITION FOR  
GOOD  
CONTROL

THUMB ON  
UNDER  
SIDE OF  
HANDLEBAR

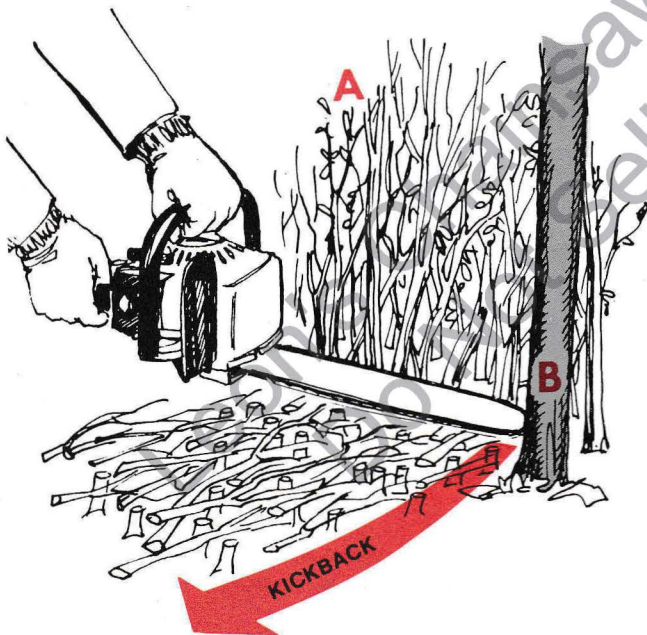
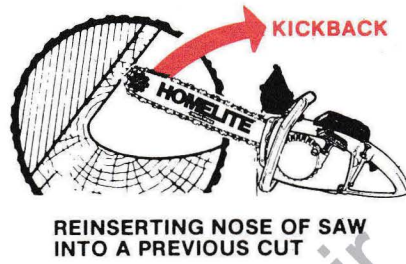
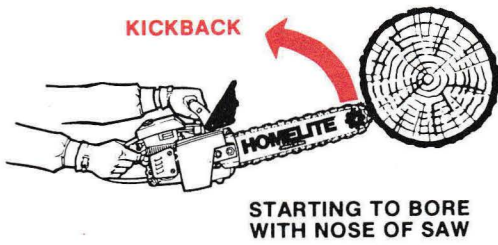
**GOOD  
CONTROL**

SAFE•T•TIP DEVICE PREVENTS CONTACT WITH  
SOLID OBJECTS, PREVENTS KICKBACK WHEN  
PROPERLY INSTALLED

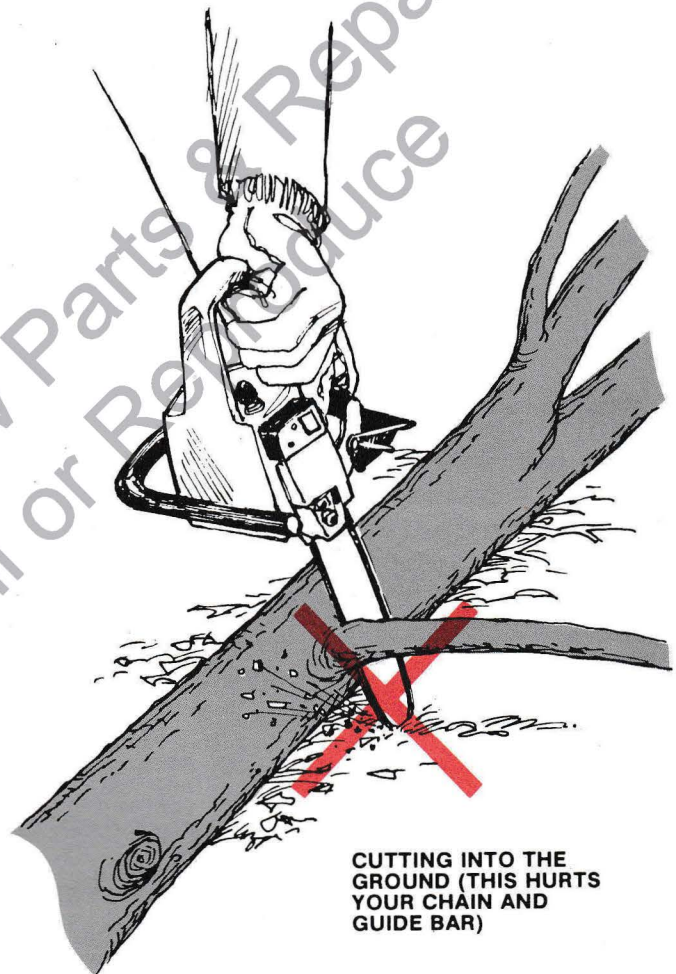




Without the anti-kickback device on your saw you would have to beware of these situations.



CUTTING MORE THAN ONE PIECE OF WOOD AT A TIME (NOTE THAT CUTTING BRUSH (A) CAN PULL THE SAW SO THAT THE BAR NOSE COULD CONTACT AN OBJECT SUCH AS TREE (B) RESULTING IN A SECONDARY REACTION — KICKBACK.





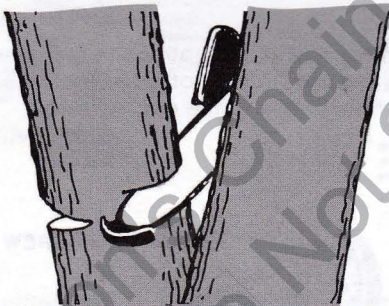
**HERE ARE SOME SITUATIONS WHERE THE SAFE•T•TIP® ANTI-KICKBACK DEVICE ACTUALLY MAKES CUTTING FASTER AND EASIER AS WELL AS SAFER.**



**DEVICE RESTED AGAINST AN OBSTRUCTION TO PREVENT CHAIN DAMAGE**



**CUTTING IN CLOSE QUARTERS SUCH AS NEAR MASONRY WALL WITHOUT HAZARD OF KICKBACK.**

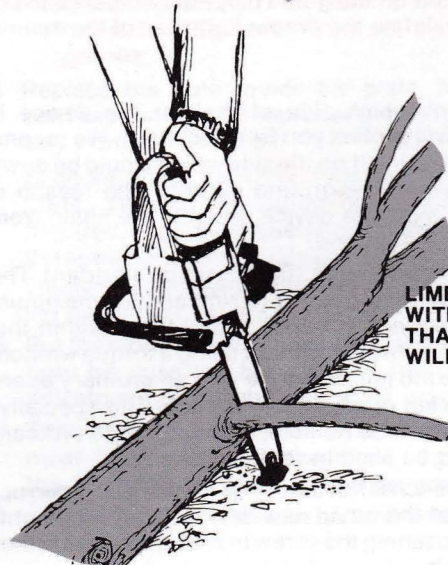


**CUTTING ONE TRUNK ONLY OF A DOUBLE-TRUNK SHADE TREE**



**PLUNGING THE SAW BLADE INTO PILES OF BRUSH FOR QUICK CLEAN-UP.**

**USE A SCYTHING TECHNIQUE TO CLEAR LIGHT BRUSH**

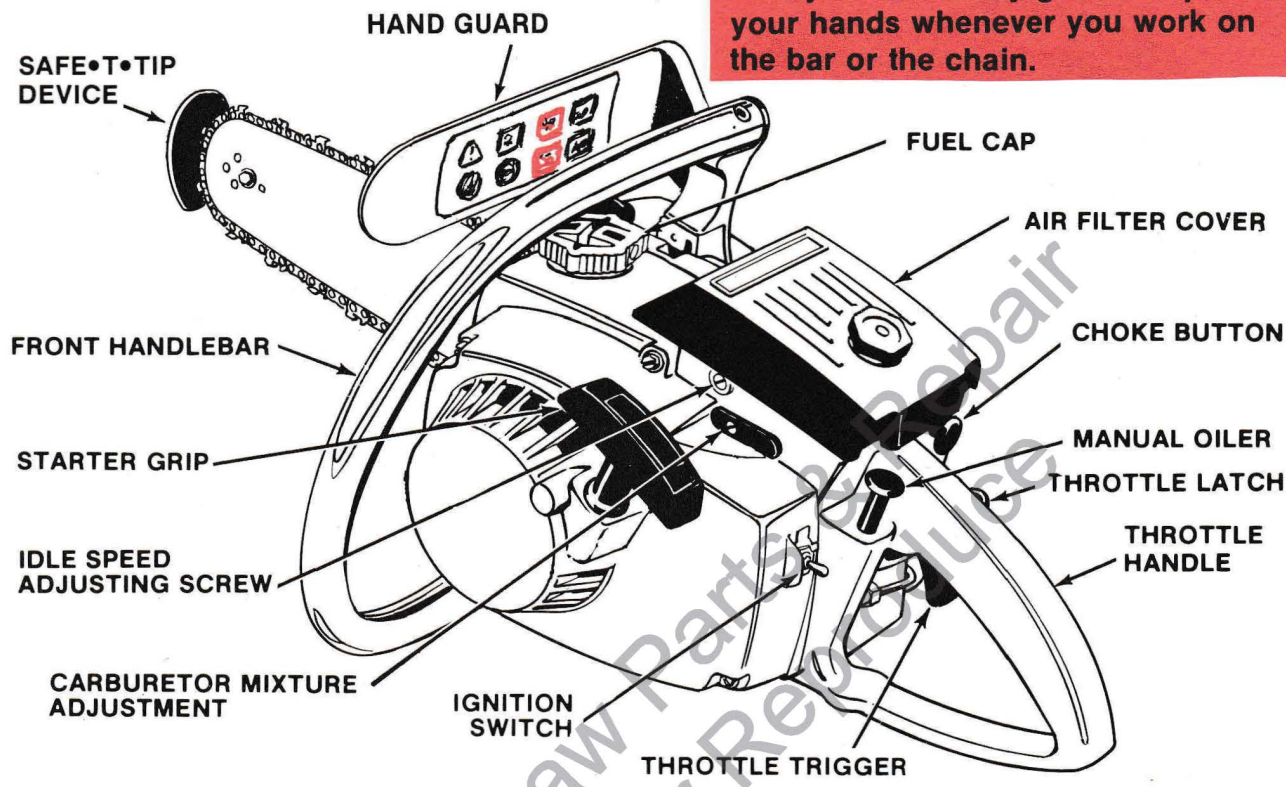


**LIMB AND BUCK WITHOUT FEAR THAT THE SAW WILL KICK BACK**



# SECTION 1 / PREPARATION

**WARNING**  
Always wear sturdy gloves to protect your hands whenever you work on the bar or the chain.



## FAMILIARIZE YOURSELF WITH YOUR NEW SAW

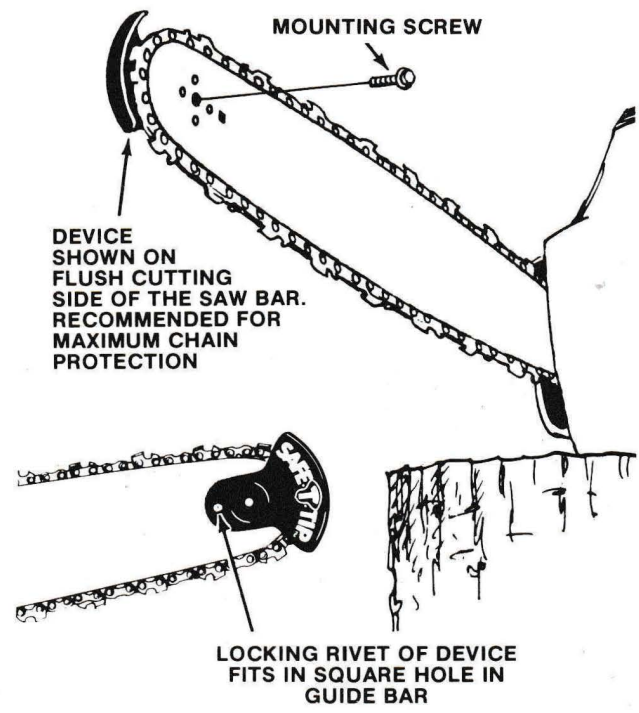
Take the saw in hand and familiarize yourself with the parts by comparing it with illustrations in this manual. Make sure you know where all the safety features are before operating the saw. Also, note the locations of: a) filler caps for oil and fuel; b) carburetor speed and adjustment screws; c) throttle control lever.

## MOUNTING ANTI-KICKBACK DEVICE

### IMPORTANT

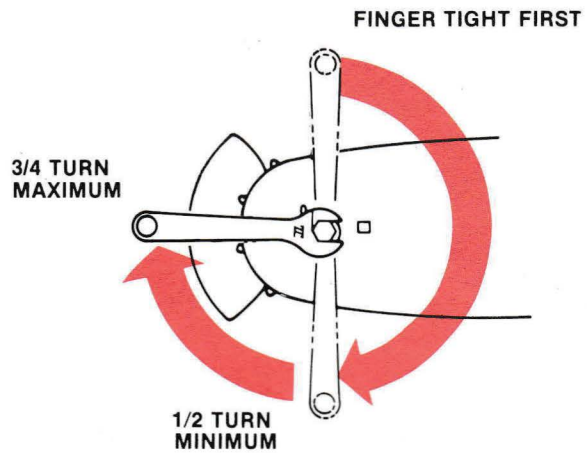
Even though the SAFE•T•TIP® anti-kickback device comes assembled on the guide bar, attention is called to your need to maintain the proper tightness of the mounting screw.

1. Regardless of which side of the bar the device is mounted, it will protect you from kickback. We recommend your keeping it on the side which would be down during flush-with-the-ground cutting. The reason is that, on this side, the device protects the chain from contact with the ground.
2. The proper screw torque (tightness) is important. The minimum is 70 inch-pounds (8 Nm) and the maximum is 100 inch-pounds (11 Nm). A tightness within this range may be achieved without using a torque wrench. However, the job must be done with an ordinary open-end, box, socket or adjustable wrench. This specially-hardened screw has no screwdriver slot. No ordinary screw should be used in replacement.  
If a torque wrench is not used, you must chase (open up) the threads of the brand new device. Do this by tightening and loosening the screw in the hole several times with a wrench.

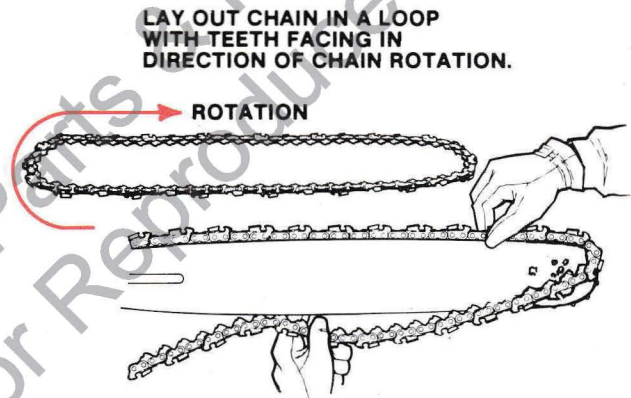
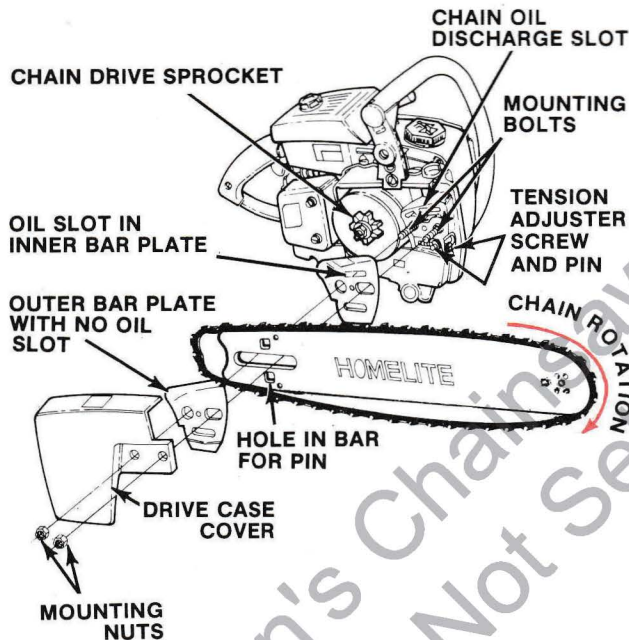




- Position the device on the bar and install the screw. Make sure the locking rivet of the device fits into the square hole in the bar. Using only your fingers, make the screw as tight as you can.
- After the screw is finger tight, tighten it only 1/2 to 3/4 turn more with a wrench (see illustration). This sets the torque within the specified range. Check that the locking rivet is still in the square hole.



## GUIDE BAR AND CHAIN ASSEMBLY



- Push the ignition switch to "STOP". Remove the two guide bar mounting nuts and lift the drive case cover off the mounting bolts. Remove the outer guide bar plate. A close inspection of the plates will show that the inner plate has a slot for oil passage and the outer plate does not.

**CAUTION: When working on saw chain, protect your hands from cuts by wearing gloves or by covering the chain with a rag.**

- Put the guide bar on the mounting bolts and up against the inner plate. Use the adjuster pin for alignment.
- Remove the chain from the carton, lay it out in a loop and check the teeth. The teeth should face in the direction of rotation which is away from the drive sprocket along the top edge of the bar.
- Fit the chain over the clutch and onto the sprocket. Now, beginning at the top of the sprocket, feed the chain drive links into the top bar groove, continuing around the nose of the bar until the chain is on the bar.

- Pull the bar out in the direction of its nose to remove slack from the chain. If any drive links come out of the bar groove, put them back in the groove.

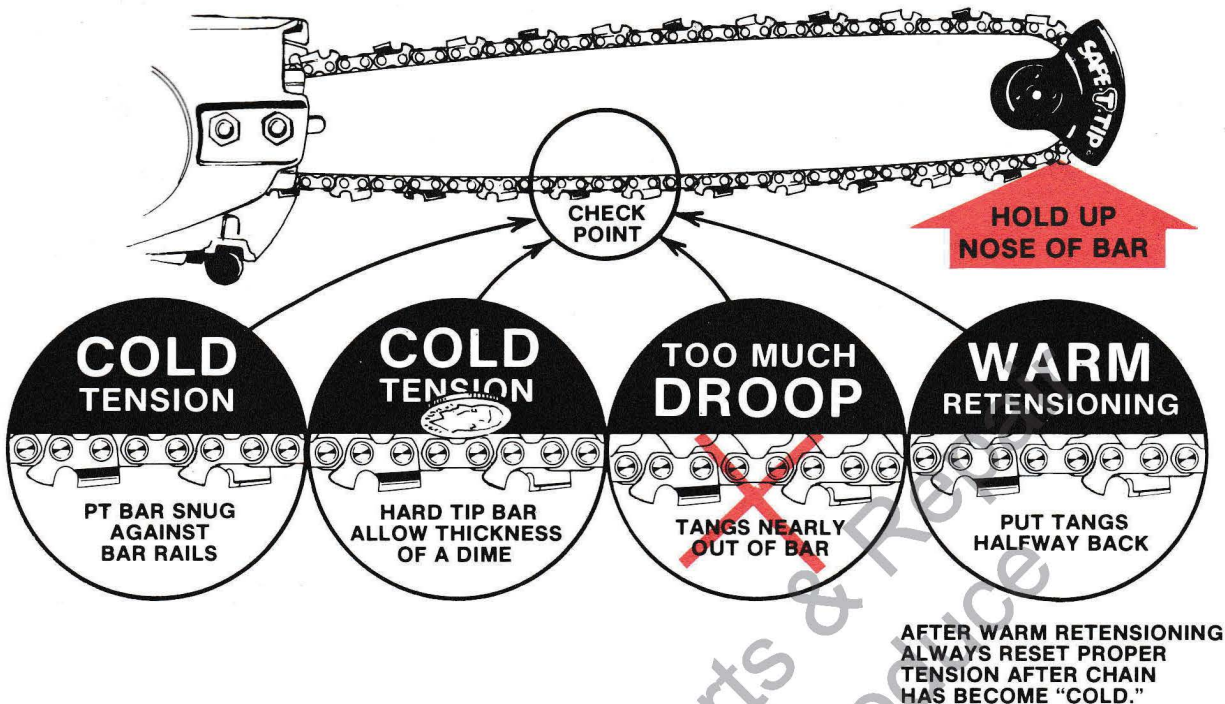
**NOTE: Check assembly. Pull chain along bar by hand; make sure the drive links are riding in the bar groove.**

- Replace the outer guide bar plate. Notice that the bent section, of both outer and inner plate, points away from the guide bar.
- Slide the drive case cover loosely onto the mounting bolts. Turning the guide bar adjuster screw as required, align the adjuster pin in the drive case with the large hole in the guide bar. Make sure that the pin engages in the hole. Press cover into place against the guide bar.
- Put the mounting nuts back on. Make them only finger tight because the bar must be free to slide during adjustment of the chain tension.
- Turn the guide bar adjuster screw clockwise to take out most of the slack in the chain. Again check that the drive link tangs are in the bar groove.
- Adjust the chain tension as instructed under chain tension.



# CHAIN TENSION

(Remember: Wear gloves)



1. Mounting nuts should be finger-tight. Turn the adjuster screw clockwise to remove slack in the chain. Tighten until the chain tie-straps come up close to the bottom bar rails.
2. With your gloved hand "snap" the chain several times by pulling up and letting go of the chain. As this removes some of the stiffness, the chain may hang or droop from the bar.

### NOTE

From now on during the tensioning, hold up the nose of the bar until the mounting nuts have been tightened. This is to take up play between the bar slot and the mounting bolts.

### Steps 3 through 6 are for tensioning a cold bar and chain.

3. The proper tension is according to the type of bar nose.
  - a) Sprocket nose (PT series) bar: Increase tension until there is no clearance (zero droop) between the chain and bar. Pull chain along bar as you increase the tension. If you feel any binding, that is too tight.
  - b) Hard nose (GW series) bar: Increase tension until the amount of clearance or "droop" between the bar rails and the chain tie-straps is no more than the thickness of a dime or penny.
4. While holding up the bar nose, tighten the nuts to lock the bar at proper tension.
5. Pull chain around bar by hand to check that assembly is correct. Start engine. Hold the saw free of obstructions and let the chain turn at slow speed for a few seconds. If droop develops, shut down the saw and reset the tension.
6. For the first few tankfuls of fuel make light cuts only. Watch the tension. When the chain tangs hang more than halfway out of the bar, shut down and retension. New chain stretches rapidly due to the combination of limbering up, warming up, and friction wear of both the bar and chain surfaces.

### Steps 7 and 8 are for retensioning a warm chain.

7. During operation, the chain will expand as it warms up. Once worn in, however, it will return almost to the original setting when it cools. Shut down immediately whenever the chain droops to where the tangs are hanging almost out or all the way out of the bar rails.
8. Warm chain should have the tension increased to where the tangs are drawn halfway into the bar groove. Hot chain cannot be tensioned accurately and should be allowed to cool.

### CAUTION

After being tensioned while warm, chain may be too tight upon cooling. Check the "cold tension" before next use.

9. Tighten the mounting nuts when the tension has been set. Then you need not hold up the bar nose.

## DAILY ATTENTION TO CHAIN AND GUIDE BAR

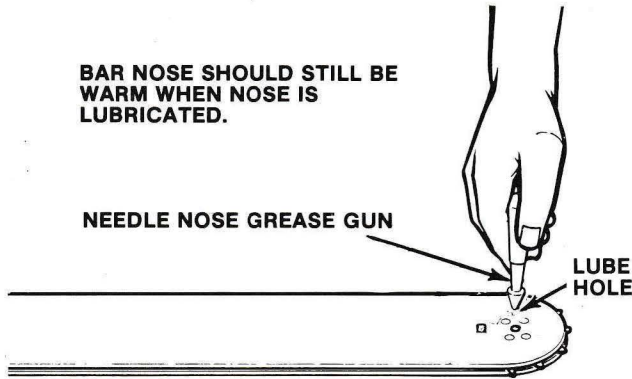
1. At the end of each day of operation remove the chain and guide bar. Clean the sawdust from the guide bar mounting pad, the clutch area and the drive case cover. Clean out the oil discharge hole in the guide bar mounting pad. Clean out the oil entry holes and the chain groove in the guide bar.

**NOTE:** When remounting a guide bar each day, it should be reversed top-for-bottom to equalize the wear.

2. The chain should be filed, cleaned and inspected, and then oiled.
3. Make sure before each day of use that the SAFE•T•TIP® screw is securely tightened on the saw.



BAR NOSE SHOULD STILL BE WARM WHEN NOSE IS LUBRICATED.



4. Sprocket nose guide bars must be lubricated while still warm from use, at the end of each day of cutting. Using needle nose of Lube Gun DA-52713-B filled with

Homelite® ALL-TEMP Multi-Purpose Grease, or our pre-packed lube gun, pump grease into sprocket nose bearing through the small grease hole in the side of the bar nose. Keep pumping until the dirty grease is forced out and fresh grease oozes out of the nose. This removes sawdust, dirt and moisture from the bearing. If bar is lubricated when cold, the old grease may not come out. Sprocket nose bars in continuous use should be lubricated on-the-job every 1 1/2 to 2 hours.

A sprocket nose bearing is good as long as it turns freely with no roughness or binding. However, it can be replaced with a new sprocket nose assembly whenever necessary. Both the chain drive and nose sprockets should be replaced whenever a new chain is being installed.

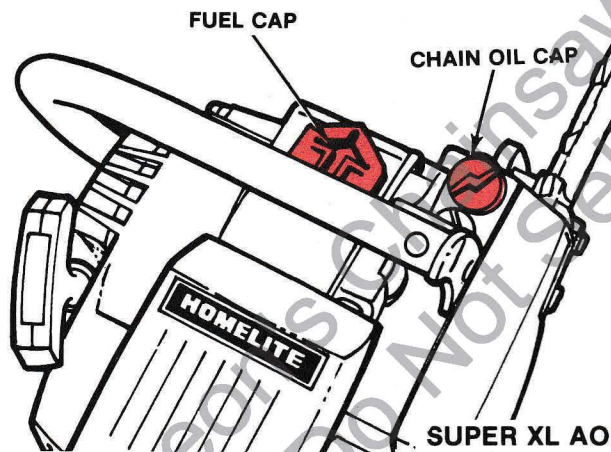
## TANK FILLER CAPS

### For Super XL® Automatic

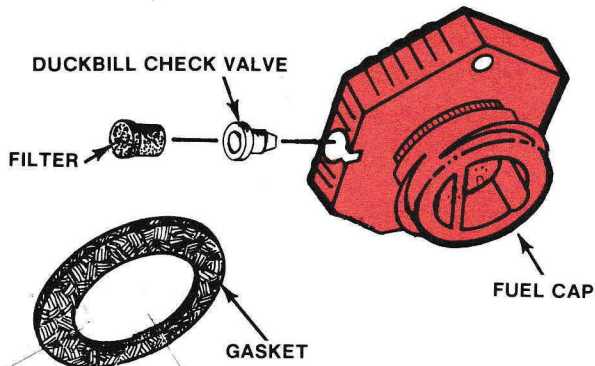
The red plastic fuel cap at top, front of the engine bears the legend "Mix Fuel & Oil." The chain oil cap is on the top of the drive case. The chain oil cap has the word "OIL" cast into it and is smaller than the fuel cap.

### Super XL® AO Saw

**CAUTION:** Whenever opening the fuel tank, always loosen the cap very slowly and wait for the tank pressure to be equalized before removing the cap.



Whenever storing the saw or stopping work, slowly crack the fuel cap loose for a few seconds to equalize the pressure. Then tighten the cap fully. The fuel cap contains a check valve protected by a porous filter. It is important that this valve and filter be in operating condition so that the proper pressure can be maintained in the tank. An inoperative check valve will result in a vacuum condition in the tank. Vacuum in the fuel tank will show up as "lean operation" (low power, overheating, poor idling ability).





# CHAIN OIL AND THE OIL PUMP

1. Before operating, fill the chain oil tank with **Homelite® Bar and Chain Oil** or any brand of clean engine oil (including reprocessed oil). Our bar and chain oil is formulated for performance over a wide temperature range. If you use ordinary engine oil, select SAE-30 weight. When necessary in cold weather dilute SAE-30 with kerosene until it flows freely, or switch to a lighter weight oil such as SAE-10.

## WARNING

**Use only petroleum base oils in this chain oiler. Do not use water base (synthetic) oils because they offer little lubrication and tend to clog the automatic oil pump.**

2. Wipe down the saw any time you spill oil or oily fluids on it. Be sure the saw handles are always clean.
3. The Super XL-AO has an automatic oiler as well as a manual oiler.
  - a) The **automatic oiler** output is according to the speed of the engine. It is designed to keep the bar and chain adequately lubricated under average cutting conditions.
  - b) The **manual oiler** is operated by "press-and-release" stroking of the oiler button at the left of the throttle control handle.

- c) Whichever oiler does the oiling, there should be enough oil applied that the chain always appears quite moist in the area of the connecting links and rivets.
4. The following special needs for oil can be met by using the manual oiler:
    - a) Pre-loading with oil after installing new chain or solvent-cleaned chain.
    - b) Extra-hard wood, or extra long duration cuts.
    - c) Boring cuts, or rip cuts with the wood grain.
    - d) Brushing out and debranching where it is difficult to hold the engine speed to what is best for the chain and bar.
  5. Tests of oil flow:
    - a) Automatic pump: Fill oil tank, operate saw continuously for a short measure of time. Measure amount of oil required to refill tank. Check chain for moistness.
    - b) Manual pump: If you do not get normal thumb pressure when oiler is stroked, tank may be empty. If tank is full, but there is no pressure after 5 to 10 pumping strokes, seek an authorized servicing dealer for service.

# FUELING THE SAW

## FUELING

This is a 2-cycle engine product and requires pre-mixing gasoline and 2-cycle oil.

## WARNING

**The fuel tank may be under pressure. Remove the cap slowly to avoid spurting of fuel.**

## CAUTION

**Select bare ground for fueling. DO NOT SMOKE or bring any flame or sparks near fuel. Move at least 10 feet (3m) from the fueling spot before starting the engine.**

### 1. Recommended Fuel:

- a) This engine will operate satisfactorily on any gasoline intended for automotive use. This includes gasolines blended with alcohols or ethers. If you are not satisfied with the performance of the product (running quality or startability) with these fuels, you may prefer to use unleaded gasoline that does not contain alcohol.
- b) We recommend the exclusive use of Homelite 2-cycle oils. Homelite 2-cycle engine oil, when mixed with gasoline according to the instructions on the oil package, will provide complete lubrication protection.
- c) All Homelite 2-cycle engine oils contain an anti-oxidant fuel stabilizer. Under average conditions, fuel mixed with Homelite oils will stay fresh up to 30 days.
- d) If Homelite oils are not used, we recommend stabilization of fuel with an anti-oxidant fuel stabilizer, such as STA-BIL, a product of Gold Eagle

Co., Chicago, IL 60632. Unstabilized fuel will stay fresh for only up to three months and should not be used after that time.

- e) We urge you to use Homelite 32:1 or **Homelite Premium Exact Mix** oil for best performance and customer satisfaction. Oils formulated for air cooled 2-cycle engines at 40:1 or 50:1 ratios can be used at the Homelite specified 32:1 ratio (4 oz./gal.). Oils formulated at less than 32:1 ratio or non 2-cycle oils should not be used. They can cause smoking, oily residues, spark plug fouling, combustion chamber deposits, hard starting, etc.

### 2. Do Not Use Automotive Motor Oil.

### 3. How To Mix Fuel Thoroughly:

- a) Measure out the quantities of gasoline and oil to be used.
- b) Put some of the gasoline into the mixing can.
- c) Pour in all of the oil and agitate contents by stirring or shaking the can.
- d) Pour in the remainder of the gasoline. Again stir or agitate—this time for at least one minute.

## HOW TO FUEL

### WARNING

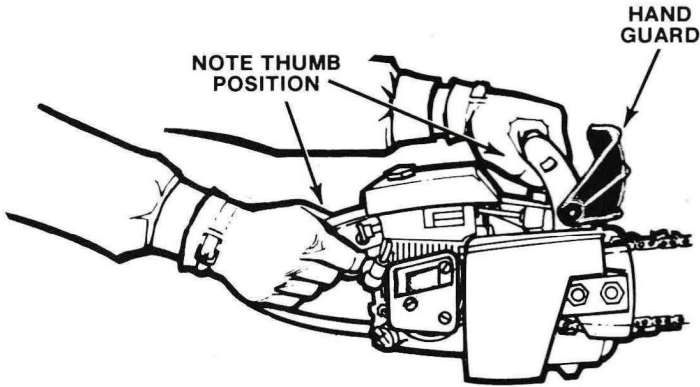
**Loosen fuel cap slowly to allow safe release of pressure from the fuel tank.**

1. Untwist and remove the fuel cap. Rest the cap on a clean surface so that it will not be a source of fuel contamination.
2. Pour in fuel carefully to the top. Avoid spillage by not overfilling.
3. Screw the fuel cap on tightly. Wipe up any fuel spillage immediately.

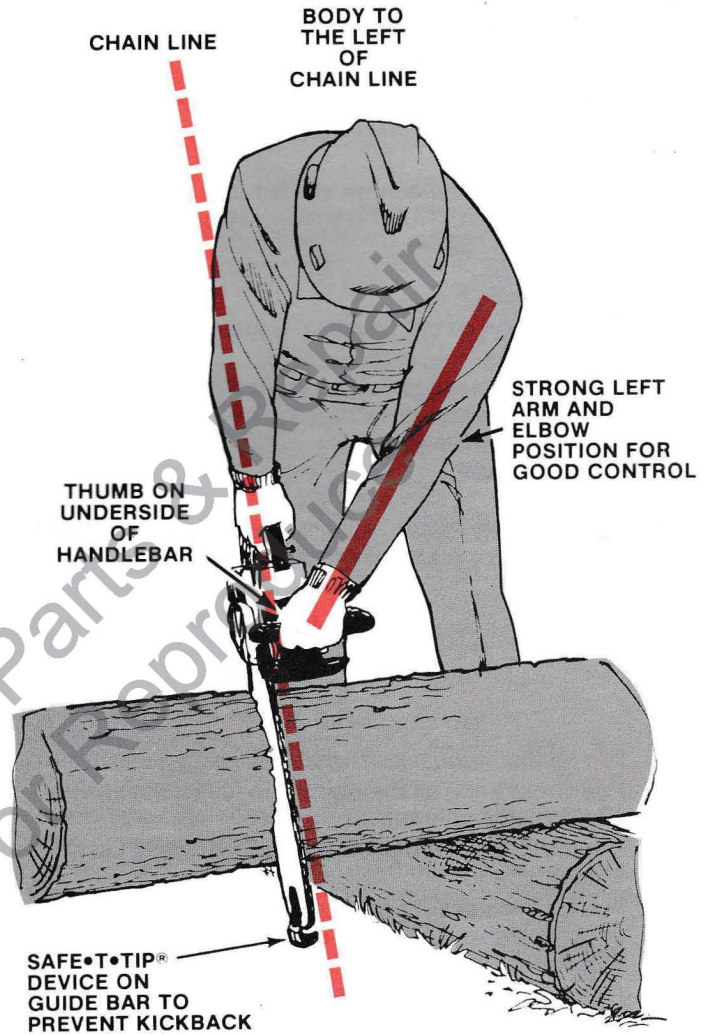


# PROPER GRIP ON THE HANDLES AND PROPER POSITIONING OF THE BODY

Practice these things before you start your saw.



1. Note that the proper grip to be used at all times is (the one illustrated) where the fingers encircle the handle and the thumb is wrapped on the opposite side from the fingers. This grip is less likely to be broken by a kickback or similarly sudden reaction of the saw. A "monkey grip," in which the thumb and fingers are on the same side of the handle, is dangerous because a slight kick of the saw can force it right out of your hands.
2. Always hold the saw firmly with both hands when the engine is running. Always keep your LEFT HAND on the front handlebar and your RIGHT HAND on the rear (throttle) handle, so that your body is to the left of the cutting line of the chain. Do not under any circumstance operate the saw with one hand. Never use a cross-handed grip, or any stance which would place your body and arm across the chain line.
3. The proper stance and saw placement for starting includes the following:
  - a) Hold saw down on a clear, level surface with the bar and chain in the clear.
  - b) Body to left of the chain. Never straddle the saw or lean across it past the chain line. Never use any technique or stance which would bring your foot or leg near the chain.
  - c) Hold the front handlebar on top, behind the hand guard.
  - d) Pull starter grip straight up with your right hand.
4. The proper stance for operating includes the following:
  - a) Weight balanced on both feet — both feet on solid ground.
  - b) Left arm kept in a "straight-arm" position with elbow straight to withstand any kickback force.
  - c) Body always to the *left* of the chain line.
  - d) Grip maintained on handles as described (above).
  - e) Avoidance of any off-balance or overextended cutting stance. Especially, do not reach above chest height with the saw, or way out in any direction to make a cut.



5. The proper procedure for cutting includes:
  - a) Starting up engine, then taking stance in front of the wood.
  - b) Positioning saw, but revving it to full speed before chain touches the wood. (Prevents violent reaction.)
  - c) Watching the progress and being ready to stop cutting pressure and hold up the saw so it won't pull you off balance as the chain cuts suddenly free.

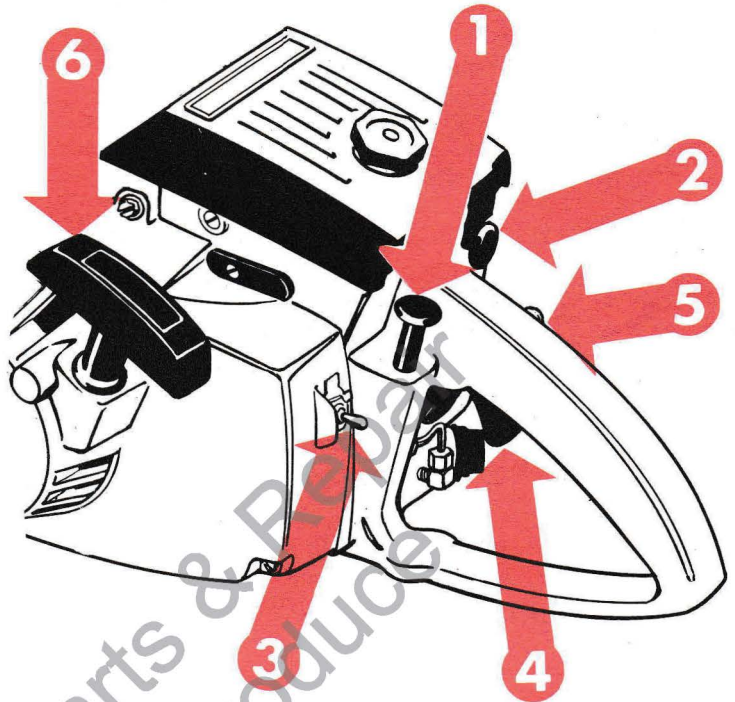
## REMINDER

Speed up engine before making wood contact. Do all cutting at full throttle so as not to slip the clutch. Get ready to throttle down so as not to overspeed the engine when it becomes load-free.



# THE OPERATING CONTROLS

- 1** **MANUAL OILER BUTTON;** Press and release button until oil flows onto saw chain. (See "Chain Oil and the Oil Pump," page 12.)
- 2** **CHOKE:** Pull out choke knob for "cold" starting.
- 3** **SWITCH:** Saw can be started and operated when switch is in "RUN" position. To stop engine, flip switch to "STOP."
- 4** **THROTTLE TRIGGER & TRIGGER LATCH:** To latch in starting position, hold trigger depressed and push in the trigger latch. Let go of trigger first. When ready to take control of throttle, unlatch by squeezing and releasing trigger.
- 5** **+**
- 6** **STARTER GRIP:** See "Starting and Stopping" (below) for cranking procedure.



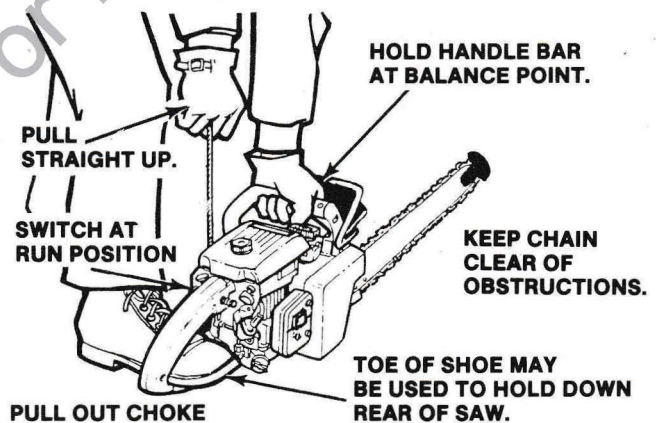
## STARTING AND STOPPING

1. Flip ignition switch to "RUN."
2. Pull choke knob all the way out to full choke position. (Cold engine only.)
3. Depress trigger and push in the trigger latch. Let go of trigger.
4. Pull starter grip out a short way until you feel the starter engage. Let rope rewind. Now, pull briskly on the grip to crank engine. Hold grip while rewinding.
5. Crank until engine fires. Normally a cold engine requires three to five pulls just to prime with fuel. Once primed, it normally will start on the first or second pull. In extremely cold weather considerable additional cranking may be required during priming.
6. When the engine fires (coughs two or three times on one pull) but does not run, push choke knob in to half choke position. Crank until engine starts.
7. When engine starts, keep it running by pushing the choke in to the fully open position to prevent stall-out as engine warms up. Grasp throttle handle. Squeeze and release the trigger. Then depress the trigger just enough to keep the engine running.
8. Idle the engine. Pick up the saw. Take your stance. Position saw for cutting. Just before letting the chain enter the wood, squeeze the trigger to open the throttle to operating speed.

### REMINDER

Speed up engine before making wood contact. Do all cutting at full throttle so as not to slip the clutch. Get ready to throttle down so as not to overspeed the engine when it becomes load-free.

9. To stop, flip switch to "STOP." (In an emergency, you can pull out the choke to flood engine to a stop.) When shutting down for a long period in extremely cold weather, choking the engine to stop (rather than



- shutting off the switch) may save you some cranking to get the cold engine primed.
10. When restarting a still warm engine, try first with no choking. Then try at half-choke. If engine has cooled too long, revert to full choking to start.
  11. When through using the saw and laying it up for any period of time, slowly loosen both the fuel cap and the oil cap. After waiting a few seconds to relieve the pressure, tighten both caps.

### NOTE

**Vapor-locked carburetor:** (This may happen on very warm days after a 5 to 10 minute shut-down of the saw, or when the saw has been in the hot sun or in a car trunk long enough to vaporize the fuel.) Dispel the vapor by cranking alternately at half-choke and full choke. When engine starts, let it run at half-choke for no more than 30 seconds. Repeat this sequence until the vapor lock is broken and engine runs normally without choke.



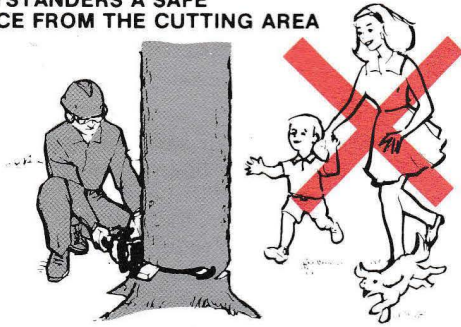
# THE WORKING AREA / SECTION 2

## WORKING AREA PRECAUTIONS

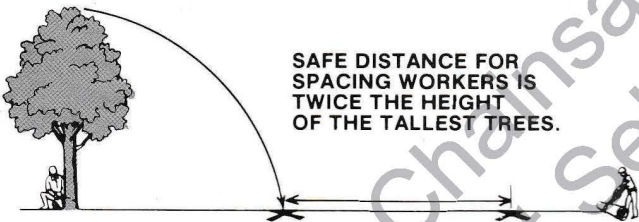
Cut only wood or materials made from wood; no sheet metal, no plastics, no masonry, no non-wood building materials.

Do not allow children to operate your saw, EVER. Allow no person to use this chain saw *who has not read this Owner's Manual* or received adequate instructions for the safe and proper use of this chain saw.

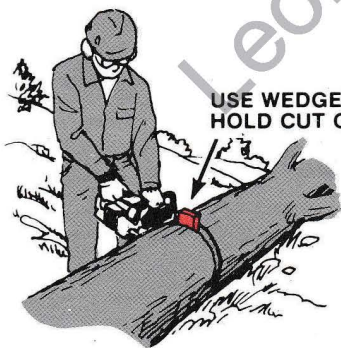
### KEEP BYSTANDERS A SAFE DISTANCE FROM THE CUTTING AREA



Everyone—helpers, bystanders, children and animals, and other operators—must be kept a safe distance from the cutting area. During felling operations, the safe distance should be at least twice the height of the largest trees in the felling area. During bucking operations, space buckers and limbers adequately so they cannot interfere with each other. Only one person should be working on a tree.



**SAFE DISTANCE FOR SPACING WORKERS IS TWICE THE HEIGHT OF THE TALLEST TREES.**



**USE WEDGE TO HOLD CUT OPEN**

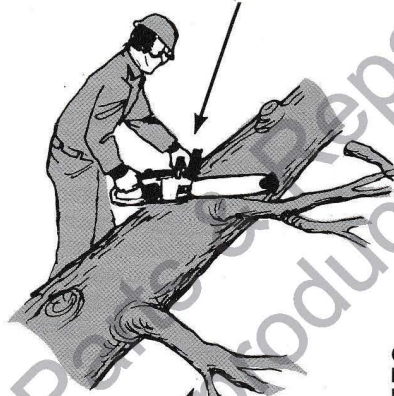
**STAND ON UPHILL SIDE WHEN CUTTING BECAUSE LOG MAY ROLL.**

During bucking operations always cut from the uphill side so that the cut-off section of the log will not roll over you. You can be pulled off balance if you have your weight all on one leg, so be sure to stand with both feet on solid ground. Make sure that cut-off wood will not fall on your toes or on your head. Do not cut straight overhead for this

**OPERATOR HAS POOR CONTROL OF SAW IF HE OVERREACHES OR CUTS ABOVE CHEST HEIGHT.**



**WHEN LIMBING, STANDING WITH THE LOG BETWEEN YOU AND THE WORK OFFERS MAXIMUM SAFETY.**



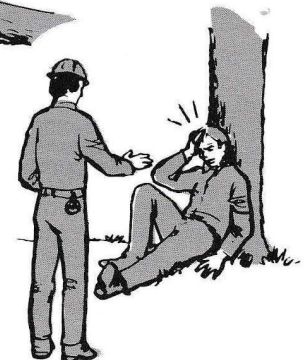
**LEAVE SOME SUPPORTING BRANCHES UNCUT. AFTER YOU HAVE BUCKED UP THE LOG SECTIONS YOU CAN CUT OFF THESE LAST FEW LIMBS**

In areas near roadways or power lines, do not operate until you have permission from the authorities. When working near roads, you must post flagmen to control traffic. If you accidentally knock down a power line or discover one that is down, **DO NOT GO NEAR IT**, but notify the power company as soon as you are able. A downed power line is a good illustration of why woodsmen should pair up and always keep within calling distance of one another. In the event of trouble such as this, one man can stand guard while the other summons help.



**DON'T GO NEAR DOWNED POWER LINES. SEND SOMEONE TO NOTIFY THE POWER COMPANY. STAND BY TO WARN OTHERS TO KEEP CLEAR.**

**KEEP WITHIN CALLING DISTANCE OF OTHERS IN CASE HELP IS NEEDED.**



**CUTTING ALOFT OR FROM LADDERS IS EXTREMELY DANGEROUS.**



Whenever there is a danger of pinching the saw blade and you have enough room behind the blade for a felling wedge, you should insert one. When felling large trees, wedges should also be used to control the fall. Never use hard metal wedges which could damage the saw chain. Clear your working area of all materials likely to trip you, snag the saw, catch fire from the hot exhaust, or block your safe retreat from a falling tree.

Before cutting limbs or felling trees, inspect the area to be sure the wood will not strike buried pipelines or damage property.

## UNUSUALLY HAZARDOUS CONDITIONS

Do not fell trees or go underneath them during periods of high wind or heavy precipitation. Take no chances during periods of extreme hazard. You can wait to do your cutting after the hazard has ended.

Do not use saws to cut down trees having an extreme lean or large trees that have rotten limbs, loose bark, or hollow trunks. Have these trees pushed or dragged down with power equipment. Then you can cut them up.

Work only when visibility and light are adequate for you to see perfectly what you are doing.

## HANDLING AND SECURING THE SAW

Inspect your saw every day before use. Keep the fuel cap, oil cap and air filter cover on tightly. Check condition of the fuel line, spark plug and spark plug wire. **DO NOT OPERATE IF THE ENGINE BACKFIRES OR THE SAW LEAKS FUEL.** Have your saw serviced by an authorized serviceman. Be sure to keep your saw chain in proper condition on the saw. Remember that a dull or loose chain snags more easily than a sharp, snug chain. Touch up the chain after two hours of steady cutting and sharpen it thoroughly after 8-10 hours of use. (See Chain and Bar Maintenance in Section 4.) If chain is damaged by abrasives or hits a stone or nail, put on a spare chain immediately and have the damaged chain repaired and sharpened.

If there is anything wrong with the saw have it fixed before further operation. The idle speed adjustment should be maintained so that the chain stops moving after the engine is brought back to idle. Adjust the idle speed whenever necessary (see Section 5).

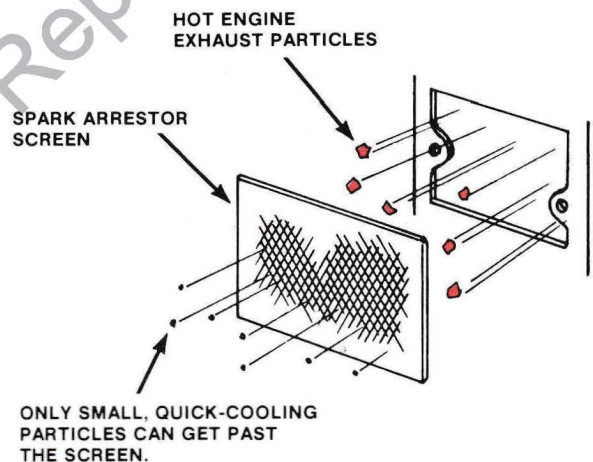
### NOTE

**Do not disassemble the rotor (flywheel). Special techniques are required (on a dealer level) for safe removal and installation of the rotor.**



**ALL EQUIPMENT MUST BE SECURED IN VEHICLES WITH STRAPPING OR TIE-DOWNS. PERSONNEL SHOULD NOT BE TRANSPORTED IN THE SAME COMPARTMENT AS EQUIPMENT AND FUEL SUPPLIES.**

Always use a muffler on your saw and keep it in good repair. A faulty muffler (or open exhaust) can cause hearing damage and is also a fire hazard. Be sure to use a spark arrestor on your muffler under dry woods conditions, and always when required by the law or local authorities. In states where a spark arrestor is required by law, it is the operator's responsibility to see that it is in good condition at all times. Check the muffler and spark arrestor at regular intervals. Careful! Never touch a hot muffler.



**A SPARK ARRESTOR IS ONLY ABOUT 90% EFFICIENT IN PREVENTING FIRES. LOCAL AUTHORITIES MAY CLOSE THE FOREST DURING EXTREMELY DRY PERIODS.**





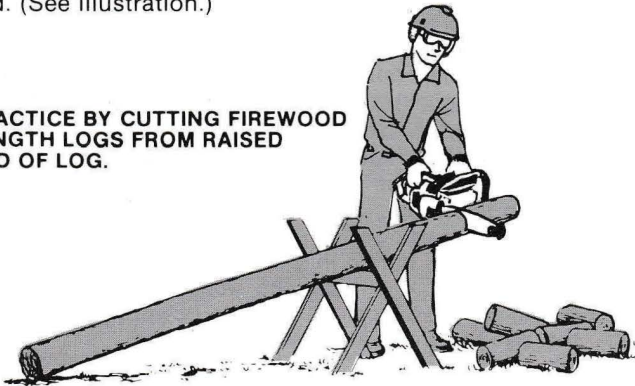
# TECHNIQUES OF CUTTING / SECTION 3

When you are going to cut wood — DO IT RIGHT!

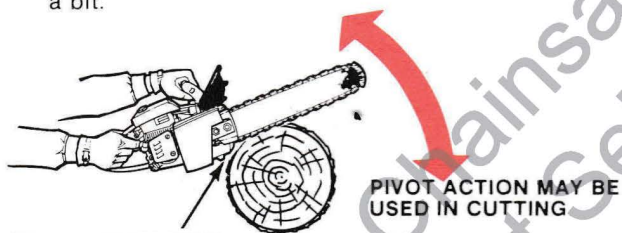
## BUCKING, LIMBING AND PRUNING TECHNIQUES

For your first cutting experience, set up a small log so that one end is off the ground. Practice your overbucking technique by cutting firewood length sections off the raised end. (See illustration.)

**PRACTICE BY CUTTING FIREWOOD LENGTH LOGS FROM RAISED END OF LOG.**

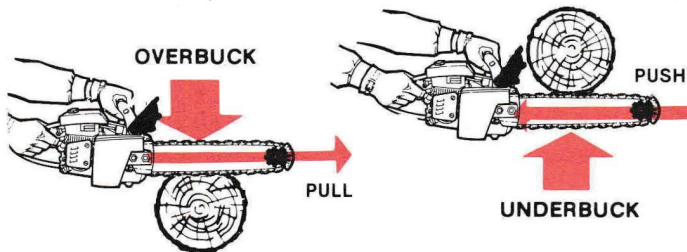


1. Position yourself and the saw for cutting. Hold the saw near the log and throttle up to full speed just before letting the chain touch the wood. Then exert moderate feed pressure to help the chain cut the wood. The chain must always be running at full throttle speed when it is contacting the wood, or you will burn out the clutch.
2. If desired you can pivot the saw blade back and forth during cutting. This often helps to speed up the cutting a bit.



**KEEP SAW BUMPER AGAINST THE WORK**

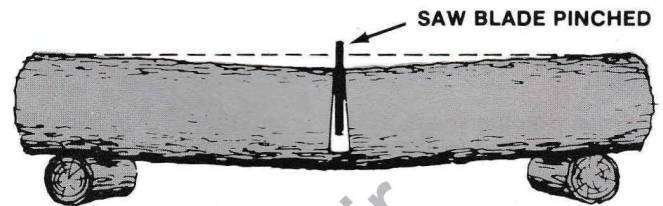
3. You will notice a slight amount of *pull* reaction during cutting. So be ready for the moment the saw breaks through the wood and *pull* ceases. You must be ready to stop pushing down on the saw and hold the saw nose up. The moment the chain breaks clear, release the throttle trigger so the engine will not overspeed.



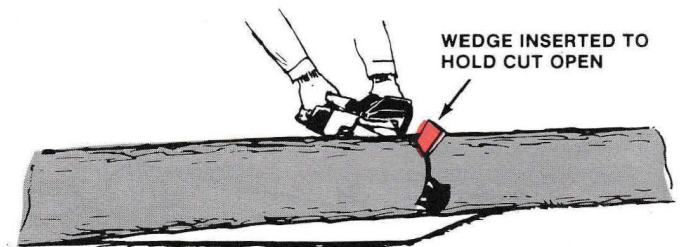
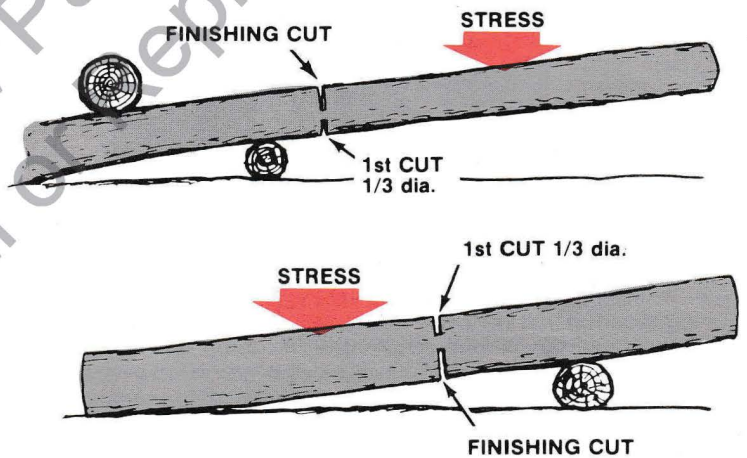
4. When you have mastered the overbucking technique, try underbucking to see what it feels like.

Place the saw blade under the log. Throttle up and exert upward pressure to cut clear through. Now you are ready to learn when to overbuck and when to underbuck in order to avoid pinching the chain in the wood.

## CUTTING VARIATIONS ACCORDING TO THE STRESS FACTORS

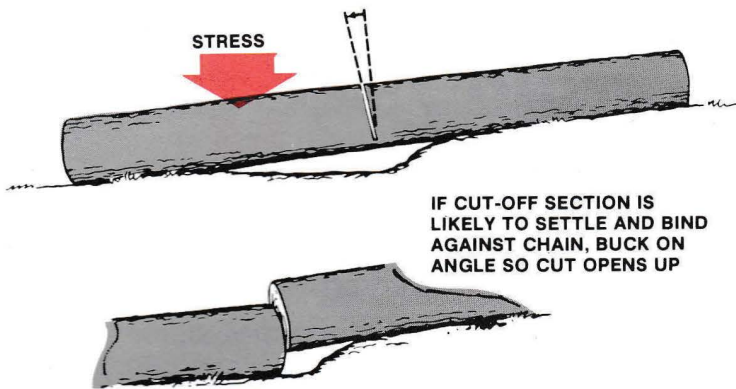


When the piece to be cut is supported on the ends, but not along the point where you want to cut, it will bend as you make your cut. If you are overbucking a log that will bend downward at the cut, your saw will be pinched if you cut more than 1/3 the log diameter. So overbuck 1/3, then remove the saw and finish with an underbucking cut from the bottom of the log. This 1/3-2/3 cutting technique helps to avoid pinching of the saw and splitting of wood that is under stress. With small diameter wood, you can make the whole cut by underbucking as long as you don't care if the wood splits. The reverse of the above is true when the log will bend upward at the cut. In this case, underbuck 1/3 through, and then overbuck so that the cut will open up instead of closing on the saw blade.



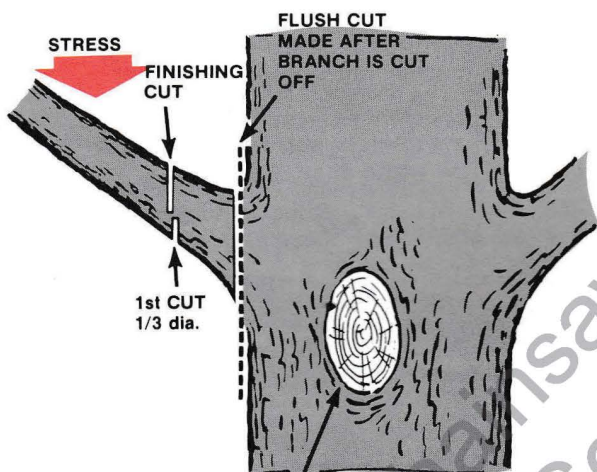
Sometimes it is impossible to avoid pinching (with just standard cutting techniques) or difficult to predict which way a log will bend when cut. You can do this to prevent pinching: If the wood diameter is large enough for you to insert a soft bucking wedge without touching the chain, you should use the wedge to hold the cut open. Sometimes a pocket in the ground will allow the cut section of log to settle, resulting in a pinch. The wedge is also useful here, but in this case you can cut on a slight angle (as illustrated) so that any settling of the log will result in increasing the gap between the cut log sections.





IF CUT-OFF SECTION IS LIKELY TO SETTLE AND BIND AGAINST CHAIN, BUCK ON ANGLE SO CUT OPENS UP

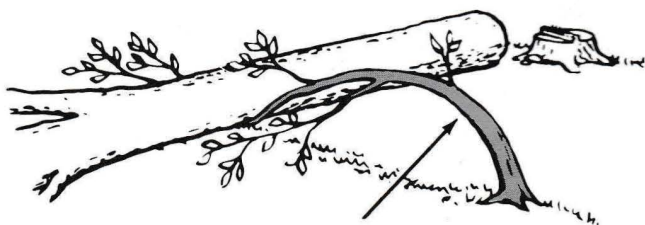
When pruning shade trees it is important not to make the flush cut next to the main limb or trunk until you have lopped off the limb further out to reduce the weight. This prevents stripping the bark from the main member. Unless the branch to be pruned is supported by another branch, the stress will be downward (see illustration). Underbuck the branch 1/3 through, then overbuck to drop the branch off. Now make your finishing cut smoothly and neatly against the main member so the bark will grow back to seal the wound.



WHEN BRANCHES ARE TRIMMED NEATLY FLUSH WITH THE TRUNK, THE BARK CAN GROW BACK TO SEAL THE WOUND

## SPRINGPOLES

A springpole is any log or branch or sapling which is bent under tension by other wood so that it will spring back if the wood holding it is cut or removed. Watch out for springpoles. They are potentially dangerous.



THIS IS A SPRINGPOLE BENT DOWN UNDER HIGH STRESS.

## BORING WITH THE NOSE SECTION

### KICKBACK DANGER

There is a great possibility that the saw will kick back during the start of the boring cut.

Boring should be attempted only by experienced operators because it requires extreme care and attention to proper technique. Do not bore unless there is no other way to make a cut. Boring is usually resorted to in order to avoid an obstacle or when it is necessary to make blind holes such as cut-outs for log cabin windows. The SAFE•T•TIP® anti-kickback device must be removed for a boring cut. Boring increases the chance of kickback and also wears the chain and bar at an accelerated rate. Although it may not prevent kickback from happening, the Dual Raker chain on your saw may help you to keep control by reducing the force of a kickback reaction.

Study the panel illustrating a boring operation. As shown, the danger will be minimized if you can make first contact on the underside of the bar as far back from the bar nose as you can get. Then cut downward into the wood until the tip is buried in the cut. Gradually bring the saw level, then bore through the wood to full length of the blade. Now you can cut either upward or downward through the wood as shown in the panel.

**BORING TECHNIQUE**

- 1 MAKE FIRST CONTACT ON LOWER QUADRANT
- 2 CUT DOWNWARD TO BURY NOSE OF SAW IN THE WOOD AND ALIGN SAW FOR THE BORE
- 3 GRADUALLY SHIFT PRESSURE FORWARD TO BORE STRAIGHT IN
- 4 CUT UPWARD OR DOWNWARD AS REQUIRED

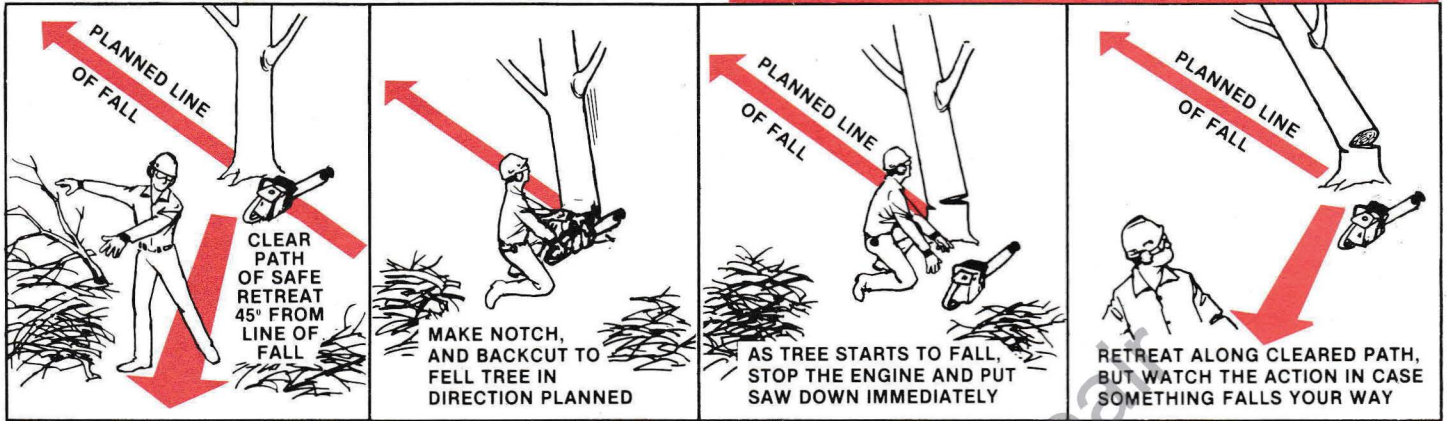
REPLACE THE SAFE•T•TIP® ANTI-KICKBACK DEVICE TO PREVENT INJURY DUE TO KICKBACK



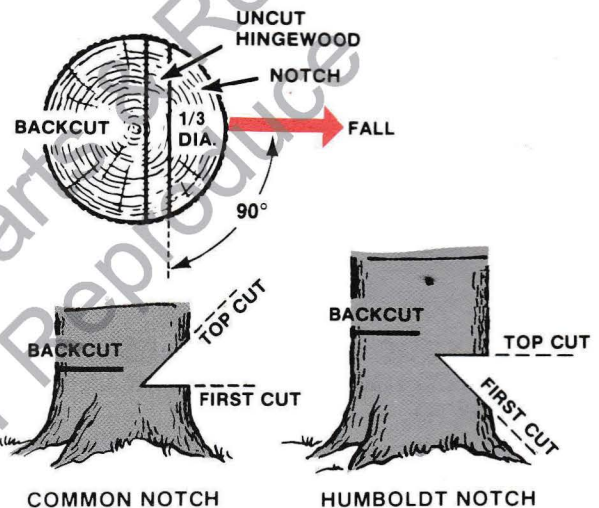
# TREE FELLING TECHNIQUES

## CAUTION

If the saw gets caught or hung up in a tree during felling, leave the saw and save yourself. The saw can be replaced and you cannot!

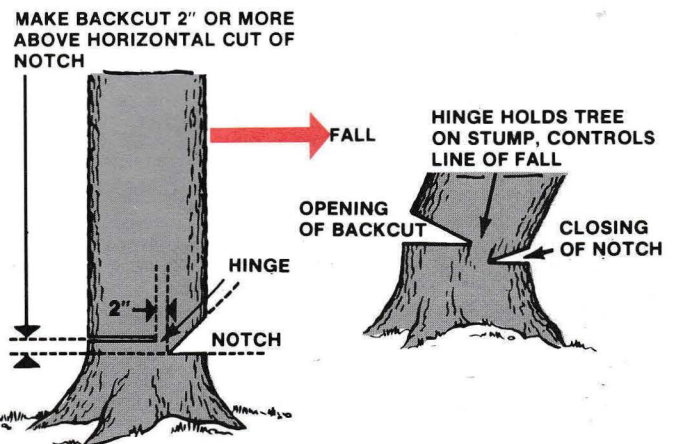


1. Pick your escape route (or routes in case the intended route is blocked). Clean the immediate area around the tree, and make sure there are no obstructions in your planned path of retreat.
2. Consider the factors of wind speed and direction, the natural lean and the balance of the tree, and the location of large limbs. These things influence the direction in which the tree will fall. Do not try to fell a tree along a line different from its natural line of fall until you have had considerable experience in felling trees which present no problem as to where they will fall.
3. Take into consideration whether the trunk is sound or so rotted inside as to snap and crash while being cut. Also look for broken or dead branches (widow makers) AND don't go below any widow makers.
4. In tight situations where a mistake in the direction of fall could ruin other trees or destroy property, attach a tether line to the tree as illustrated.



5. If the tree is not badly out of balance, cut a notch about 1/3 the diameter of the trunk. This notch whether standard or "Humboldt" is made in the side the tree is to fall. And the cuts of the notch are made so they intersect at a right angle to the line of fall. This notch should be cleaned out to leave a straight line. To keep the weight of the wood off the saw always make the lower cut of the notch before the upper cut. We illustrate a common notch made with a horizontal cut and an angular cut above it. A "Humboldt" notch, with the horizontal notch on top, is made when trees are to be cut for saw log processing.

6. The backcut is always made level and horizontal and at a minimum of 2 inches (51 mm) above the horizontal cut of the notch. As a guide to placing the back cut above the notch, figure 10% of the trunk diameter as the proper height. Be very careful to make a level back cut, as a slanted back cut can cause the tree to split or "barber chair" (see illustration).
7. You must never cut through to the notch. Always leave a band of wood uncut between the notch and back cut. This is called "hinge" or "hingewood." It controls the fall of the tree and prevents slipping or twisting or shoot-back of the tree off the stump. If the tree starts over in the wrong direction, or if the saw gets caught or hung up during the fall, leave the saw and save yourself!





8. On large diameter trees, it is proper to stop the back cut before it is deep enough for the tree to either fall or settle back on the stump. Then, soft wooden or plastic wedges (not hard metal) are inserted behind the saw so they do not touch the chain. The wedges can be driven in, little by little, to help jack the tree over.



USE WEDGE TO HOLD CUT OPEN

9. Trees larger than the saw can cut in one cut, can be both notched and back-cut in a series of cuts, as illustrated. Start the notching cuts from one side and draw the saw through to the other side of the notch. Start the back cut on one side of the tree, pivoting the saw through to form the desired hinge on that side. Then remove and reverse the saw for the second cut. Insert the saw in the first cut, very carefully so as not to cause kickback, and cut back toward and around the back of the trunk. Finish the back cut by cutting towards the notch to complete the hinge section.

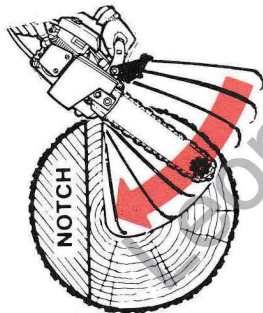
**NOTE**

Insert your felling wedges in the back cut. Remove the saw before tree is ready to fall and drive the wedges in to fell the tree.

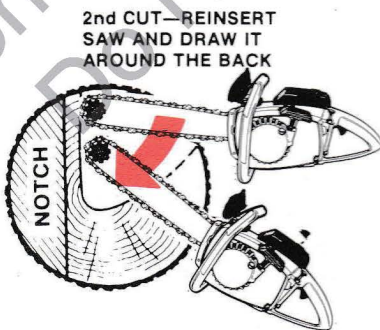
**NORMAL SEQUENCE USED TO FELL VERY LARGE TREES (UP TO TWICE BAR LENGTH IN DIAMETER)**

**DANGER**

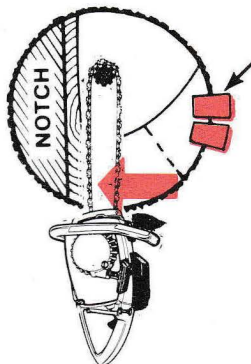
THE CHANCE OF A KICKBACK IS VERY GREAT DURING THIS SERIES OF CUTS BECAUSE THE BAR NOSE IS INSIDE THE WORK.



1st CUT—USE PIVOT ACTION



2nd CUT—REINSERT SAW AND DRAW IT AROUND THE BACK



FELLING CUT—INSERT FELLING WEDGES BEHIND BLADE. CONTINUE TO CUT FORWARD TOWARD NOTCH.

DRIVE WEDGES ALTERNATELY INTO BACKCUT TO HELP FORCE TREE OVER.

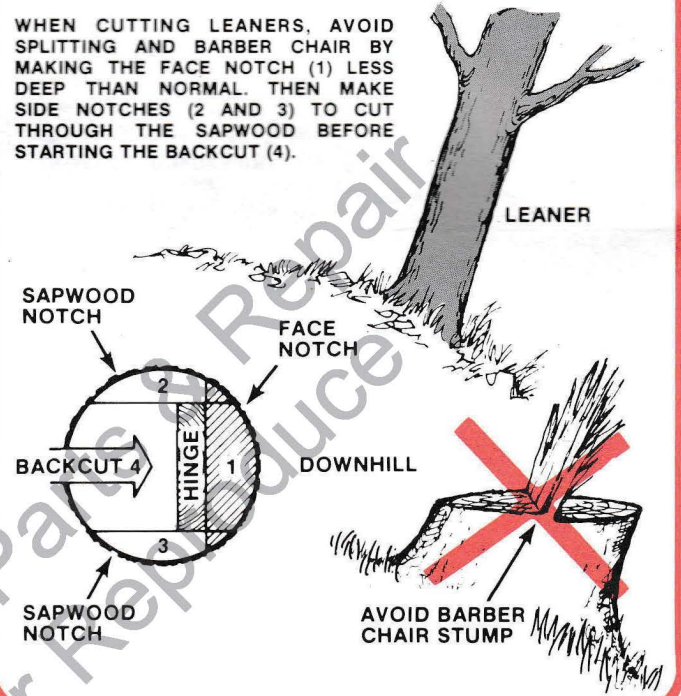
REMOVE SAW.

**FELLING LEANERS**

This variation is designed to prevent splitting and "barber chair" of leaners:

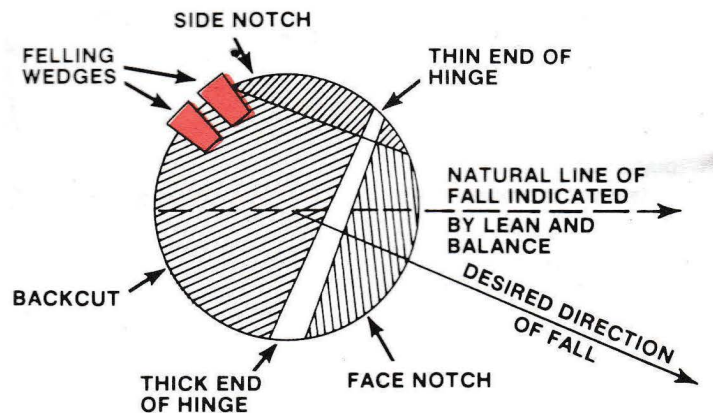
1. Make the directional control face notch shallower than usual.
2. Make shallow notches on both sides of the tree to cut through the outer layer (sapwood).
3. Now make your back cut to leave a parallel hinge.

WHEN CUTTING LEANERS, AVOID SPLITTING AND BARBER CHAIR BY MAKING THE FACE NOTCH (1) LESS DEEP THAN NORMAL. THEN MAKE SIDE NOTCHES (2 AND 3) TO CUT THROUGH THE SAPWOOD BEFORE STARTING THE BACKCUT (4).



**CHANGING THE DIRECTION OF FALL (from the natural line of fall)**

1. Where you would leave a parallel hinge (hingewood of equal thickness on both sides) the hinge is left thicker on the side toward which you want the tree to swing (away from the natural line of fall).
2. Place your wedges in the backcut between the back-center and the narrow side of the hinge. Drive in the wedges to force the tree over in the direction desired.

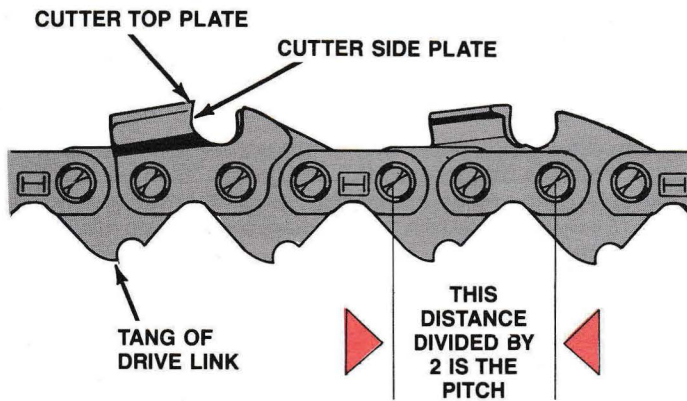




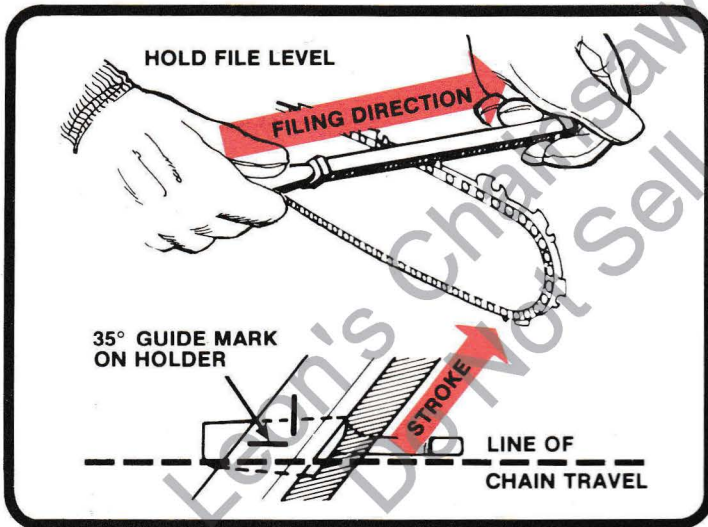
# MAINTENANCE AND REPAIR OF THE CUTTER UNIT

# SECTION 4

## HOMELITE DUAL RAKER SAW CHAIN



Kickback - reducing type 38MD-50 semi-chisel tooth, 3/8" pitch, Dual Raker saw chain has two depth gauges to guide the cutting tooth. With regard to smoothness of cutting as well as speed, Dual Raker chain needs proper maintenance for satisfactory results. Shut down the saw for chain filing or whenever the sawdust chips turn to powder and you have to bear down hard to make the chain cut. Follow our instructions for filing the cutters and resetting proper depth of the depth gauges.



### TOOLS FOR SHARPENING DUAL RAKER 38MD-50 SAW CHAIN

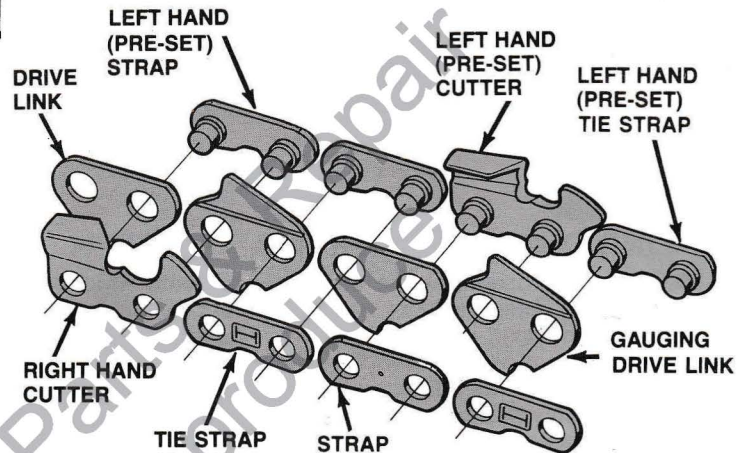
Use our standard 7/32" diameter "fast-cut" round file and file holder (our assembly DA-92615-A). When more than 1/2 of the original tooth steel has been filed away, you should switch to a 3/16" diameter file which will fit the same holder. The need for a smaller file is that the cutter tapers toward the rear.

The file holder has the required 35° top filing angles marked on it. It holds the file at the correct height (1/10 file diameter above top plate of tooth) to produce the required side plate angle of 85° (5° forward from 90°) and beveled cutting edge.

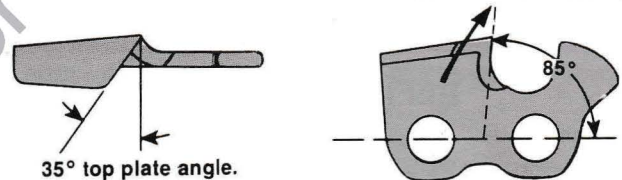
A chain filing vise to hold the cutters rock-steady during filing is good to have. But you can do a satisfactory job without one, provided you tighten up the chain tension to prevent the chain from wobbling, and do all the filing at the mid-point of the bar.

## REPAIR NOTE

Dual Raker chain construction is shown in exploded view form. Should replacement of damaged cutters be required we recommend using pre-set tie-straps in place of left-hand cutters and plain tie-straps in place of right-hand cutters. Because putting a few new cutters into an old chain loop can render the chain kickback-prone, we no longer include cutters in chain repair kits.



SIDE PLATE 85°-90° TO LINE OF CHAIN TRAVEL. BEVELED UNDER EDGE.



## HOW TO FILE CUTTERS

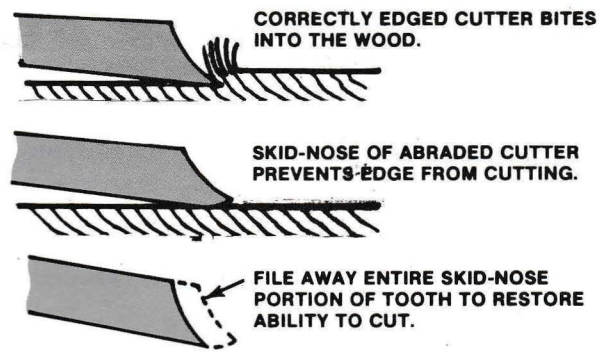
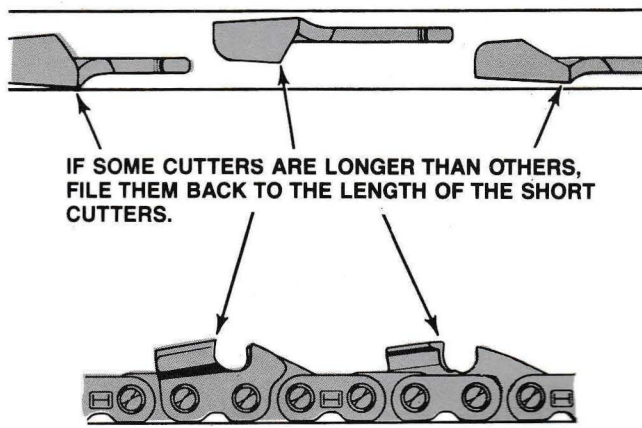
For fast cutting all cutters must be uniform in every detail—same length, same top plate angle, same side plate angle.

1. Hold file against cutter face and adjust filing angle to 35° (marked on holder).
2. Keep file level — do not let it dip or rock.
3. File in one direction towards front corner of tooth only. Move file away from tooth face on return stroke.
4. Use light but firm pressure, mostly towards back of tooth and very little downward pressure. With the correct pressure and correct angle you will let the file holder produce the desired edge for you.
5. Put a few firm strokes on every tooth. File all left hand cutters on one side, then all right hand cutters on the other. Rotate the file in the holder occasionally.
6. Check your filing job in strong light. A sharp edge will not reflect light. If an edge reflects light, refile the tooth.
7. If you are not satisfied with the performance of your chain, examine it (below) for skid-nose or one of the other common chain faults. Also be sure to keep the depth gauges filed to the proper clearance.





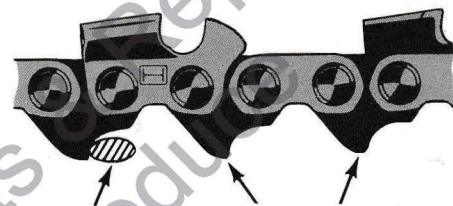
## CORRECTIVE FILING



Chain drive tangs must have sharp points to clean sawdust from the bar groove, and bar groove must be deep enough for the tangs to clear bottom all the way around bar. (Every fourth or fifth tang resharpened will do the job as the chain wears.)

## FILING OUT SKID-NOSE WEAR PATTERN

"SKID-NOSE" describes the edge area of teeth which have hit hard objects such as stones, nails, etc., or cut dirt, sand, etc. The "skid-nose" rides the wood surface keeping the sharp edges out of the wood. The friction at the skid-nose area overheats the cutter steel, and the chain gets "soft." The only way to restore the chain to good condition is to file away all of the skid-nose steel. And, then to adjust all cutters to the same length. As this may be tedious to do by hand-filing, consider having it done by your servicing dealer on an electric grinder.



REPOINT EVERY FOURTH OR FIFTH TANG WITH OVAL OR ROUND FILE.

POINTS OF TANGS WORN DOWN.

## REFILE ANY TEETH HAVING ONE OR MORE OF THESE FAULTS:



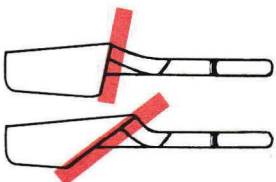
### Forward Hook

Chain will grab and jerk, producing rough cutting. Caused by excessive downward filing pressure, or tip of file held too low on tooth.



### Back Slope

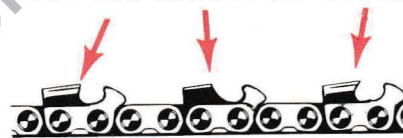
Chain resists entering wood (scrapes instead of cutting wood). Causes excessive heat and wear to bar and chain. Caused by lowering handle end of file or holding file too high on the tooth.



### Improper Top Plate Angles

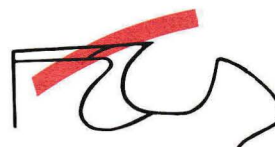
Too little an angle requires too much feed pressure. Too great an angle causes chain to bind, produces a rough cut, robs power from saw, and increases bar groove wear.

Caused by holding file at wrong angle or letting it drift or rock during the stroke.



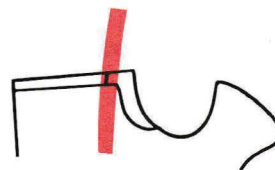
### Cutters Filed at Non-Matching Angles

Chain will not cut at its best. May cut off line or "run" to one side, drag may slow down engine. Caused by letting pressure and filing angle vary from tooth to tooth, or filing one side of chain differently from the other.



### Thin Feathered Edges

When they almost immediately break off, you have a dull chain. Usually found on chain filed with a hook (see "forward hook"). Caused by pressing down too hard on file.

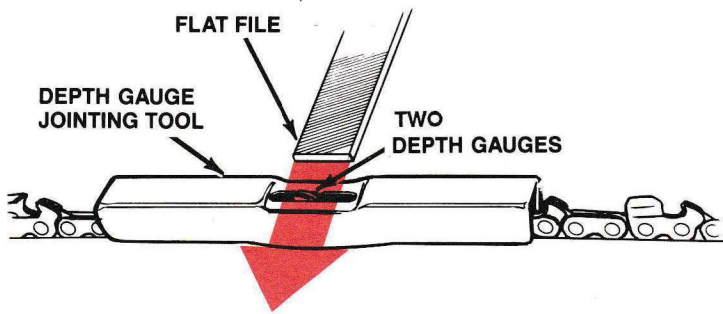


### Blunt Cutting Edges

Although edge is durable it won't cut properly; scrapes wood, robs power and produces dust instead of chips. Caused by holding file too high on face of tooth.



## HOW AND WHEN TO SET DEPTH GAUGE CLEARANCE



### SUGGESTED DEPTH FOR THIS SAW AND CHAIN

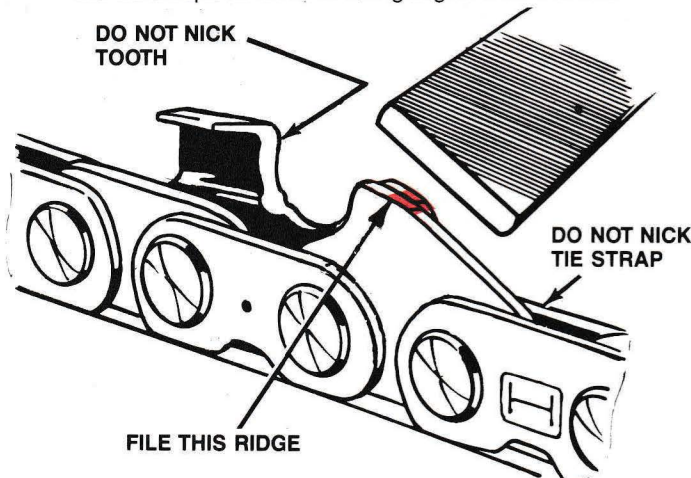
TYPE OF WOOD	DEPTH	TOOL NUMBER
HARDWOOD OR MIXED HARDNESS	.030"	92632-B
STRICTLY SOFTWOOD	.035"	92633-B

1. Depth gauge tools available for Dual Raker chain are listed above. You should also have a 6" flat file.
2. Every time the chain is filed, check one or two of the gauges. Fit the tool over the chain so a set of three gauges projects up into the slot in the tool (see illustration) and the tool protects the tooth from the file. File flush across the slot. If you take off any metal from the gauges, file all the gauges on the chain.

#### WARNING

**Do not exceed the depth gauge settings recommended above. With these gauge clearances, Dual Raker saw chain is smooth-cutting. If the clearance is increased beyond the recommended settings, the chain becomes rough-cutting and "grabby," losing the advantage that it has over other chain designs in the reduction of kickback reactions.**

3. If the depth gauges are too high, the chain teeth will get too shallow a bite; if too low, the teeth will take too large a bite and cause grabbing and jerking of the saw. If the gauges are not all the same height you may get the same results as when the cutters are not uniform in some other respect (such as shape, angle, length, etc.). Non-uniformity causes slow cutting, and the saw often goes off line.
4. After filing all gauges and removing the depth gauge tool, check that the gauges are smoothly contoured along the contact edge. If you recontour them, protect the cutters from the file and also be careful not to nick the tie-straps in front of the gauges with the file.



## DAILY ATTENTION TO CUTTING UNIT

1. At the end of each day of cutting, clean the sawdust from the guide bar mounting pad, the clutch area and the clutch cover. Clean out sawdust from the chain groove in the guide bar.
2. File and clean the saw chain.
3. Each time you remount the bar, reverse its position (top for bottom on the saw) to distribute the wear.

**REVERSING BAR ON SAW OCCASIONALLY HELPS TO DISTRIBUTE THE WEAR.**



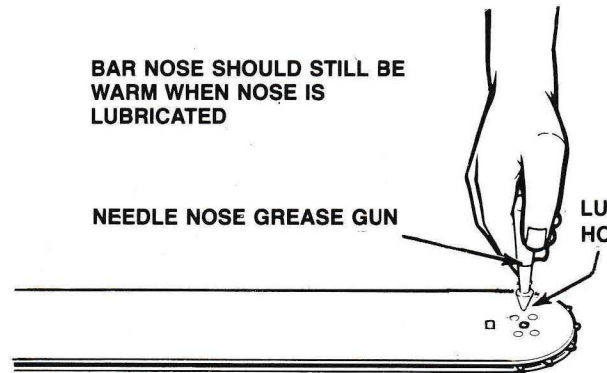
**AFTER FLOPPING THE BAR OVER REMOUNT DEVICE ON PROPER SIDE**

4. The sprocket nose of your PT or SP guide bar may need a grease change every day of cutting (see Maintenance Section). The proper time to change the grease is while the nose is still warm from operation and the old grease is still soft. Use needle nose Lube Gun DA-52713-B filled with Homelite® ALL-TEMP Multi-Purpose Grease #17193, or our pre-packed lub gun. Pump grease into the sprocket nose bearing, until dirty grease oozes out and clean grease appears.

**BAR NOSE SHOULD STILL BE WARM WHEN NOSE IS LUBRICATED**

**NEEDLE NOSE GREASE GUN**

**LUBE HOLE**

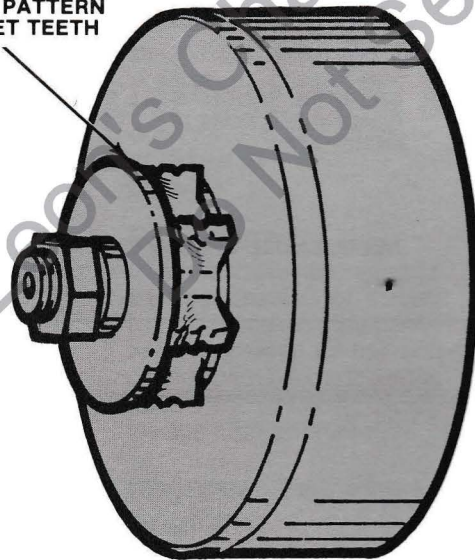




	Frequent Check	Check Daily	Only as Necessary	Every Week or 15 Hrs.	100 Hours Check
1. Touch-up Chain Cutters	✓				
2. Sharpen the Chain		✓			
3. Lower Depth Gauges Uniformly				TWICE	
4. Grease Guide Bar Nose Sprocket	✓				
5. Clean Bar Groove, Oil Discharge Hole, and Clutch Area		✓			
6. Clean. Inspect SL* Chain Brake. Lubricate Brake Levers.		✓			
7. Check That Chain is Getting Enough Oil.	✓				
8. Check Filters and Valves in Tank Caps.			✓		
9. Clean Oil Strainer					✓
10. Check Worn Sprocket and Drum (Change matched Set Drum and Brake Band if SL*)			✓		
11. Dress Down Bar Rails, Remove all Burrs.				✓	
12. Reverse Guide Bar Top for Bottom on Saw.			✓		
13. Disassemble Bow Guide Spurs. Reverse Bow Guide Top for Bottom Position.*				✓	
14. Clean and Lubricate Clutch Bearing.					✓
<i>*Optional Equipment</i>					

## CLUTCH, DRUM AND SPROCKET TROUBLE-SHOOTING

CHAIN WEAR PATTERN ON SPROCKET TEETH



### WARNING

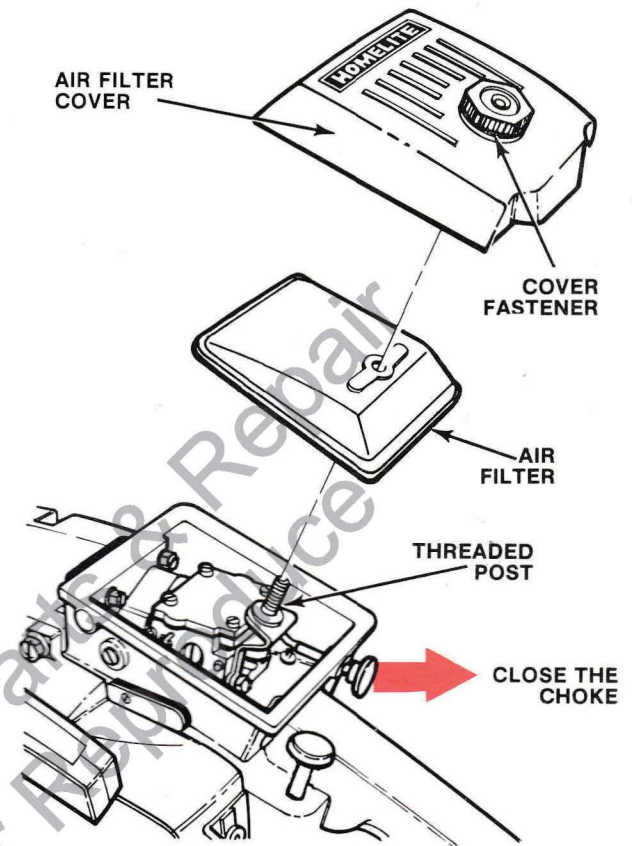
Proper disassembly and repair of the clutch is so important to the life of the engine and safety of the operator, that all clutch service should be done by an experienced repairman equipped with the required special tools. Do not disassemble the clutch unless you are a competent mechanic and have the proper clutch service tools.

1. The Drum and Sprocket assembly should be inspected every 15 hours or 15 weeks, whichever comes first. If the teeth on the sprocket are worn, replace the sprocket. Remember to use the required special tools and parts for repair or have an authorized Homelite service station do the repairs.
2. The clutch assembly requires disassembly and servicing only at 100 hour intervals, unless trouble develops or the drive sprocket is to be changed. During this 100 hours servicing, the clutch bearing should be cleaned, inspected for wear, and either replaced or repacked with a small amount of HOMELITE ALL-TEMP Multi-Purpose Grease (#17193) or a lithium base grease. Naturally, if the bearing needles are worn or missing, bent or burnt, or the bearing cage or inner race is worn or scored, change the entire complement.
3. Clutch trouble symptoms are: a) Failure to disengage; b) slipping so much that the saw cannot cut; and c) chattering during a load.
4. Clutch troubles may include: a) Overheated, stretched springs; b) worn or cracked spider or clutch plate; c) worn or broken shoes; d) oil, dirt or grease on the clutching surfaces; e) worn, bent, cracked or scored clutch drum; f) dry or worn bearing; g) and worn sprocket.



# POWER HEAD MAINTENANCE / SECTION 5

	Daily Check	Only as Necessary	Every Week	Every 50 Hrs.
1. Clean the Air Filter	TWICE			
2. Install New Air Filter		✓		
3. Check Fuel Filter				✓
4. Clean and Examine Exterior of Saw	✓			
5. Keep Air Openings of Fan Housing Clean	✓			
6. Adjust Carburetor		✓		
7. Adjust Starting Speed		✓		
8. Check and Clean Spark Plug		✓		
9. Adjust Spark Plug to .025" Gap		✓		
10. Clean Muffler and Spark Arrestor Discharge Openings		✓		
11. Clean Air Cooling System			✓	
12. Check and Tighten Loose Fasteners				✓
13. Adjust Starter for Proper Rewind		✓		



## THE AIR FILTER

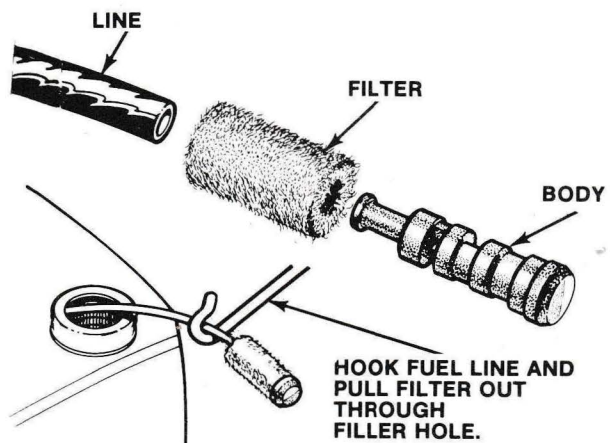
The air filter should be cleaned twice each full day of operation, or more frequently as required to preserve engine power when operating conditions are extremely dusty. When the air filter is dirty, the engine will lack power because it is being deprived of both air and fuel.

1. Close the choke. Give the cover fastener a half-turn to the left and remove the air filter cover and the filter. If there is any dirt or dust on the choke plate, invert the engine before brushing the choke area clean.
2. Cover the air intake opening of the carburetor while you clean all sawdust from the inside of the carburetor chamber and the outside surface of the carburetor. Also clean the air filter cover.
3. Clean the air filter by tapping it against a clean surface. Occasionally, give it a thorough cleaning in detergent and water or a non-oily solvent and let it dry thoroughly before use. You may find it practicable to keep some spare filters on hand for instant changing.
4. As cleaning never removes all of the dirt or wood slivers from the filter pores, the filter should be replaced after several months of continuous service or more than 100 cleanings.
5. Always put the air filter over the threaded post, making sure the filter completely covers the carburetor chamber. Replace the cover and tighten the captive nut.

**NOTE:** Never use the saw without the air filter.

## THE FUEL FILTER

The fuel filter will usually last a month or more before a new one is required. It should be checked at intervals of every 50 operating hours.





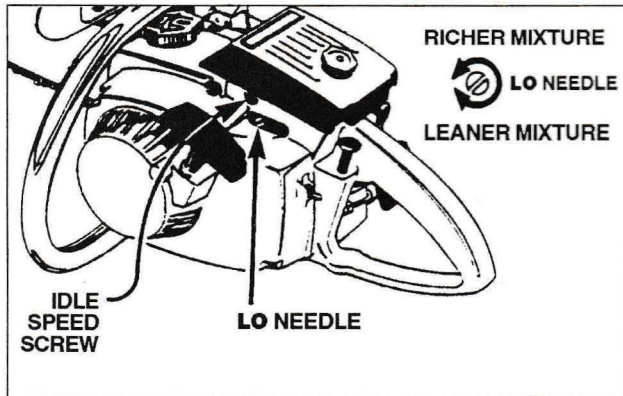
## CARBURETOR ADJUSTMENTS

The carburetor adjustment needles have been set at the factory. If the performance is not satisfactory, only slight adjustments should be necessary.

Homelite recommends that you have a qualified service dealer perform all carburetor adjustments. He has the training, experience and tools that are necessary to properly adjust your chain saw to meet our factory performance specifications. If a qualified service dealer is not available, then cautiously follow the instructions below.

Before any adjustments are made, check the following:

1. The air filter is clean.
2. Fuel is fresh and the correct 2-cycle oil mix is being used.
3. The spark arrestor screen in muffler is clean.
4. The cutting chain is sharp and adjusted properly.
5. The engine is warmed up. If not, cut for approximately 2 minutes prior to making any carburetor adjustments.

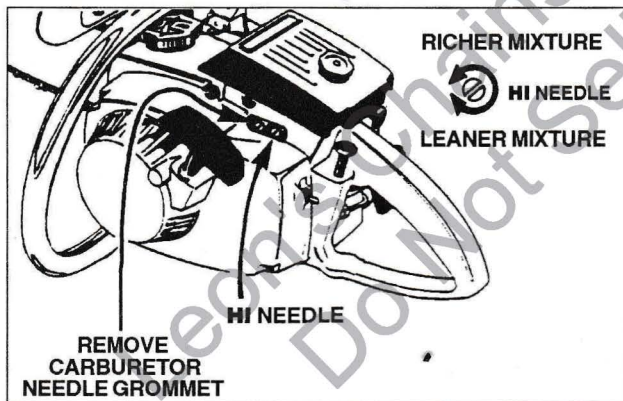


### IDLE SPEED ADJUSTMENT

Turn idle speed screw clockwise to increase speed until saw will idle. If chain continues to turn at idle, turn screw counterclockwise until chain stops.

### LOW SPEED ADJUSTMENT

If engine starts but will not accelerate, then turn "LO" Needle counterclockwise 1/16 turn at a time until engine accelerates smoothly.



### HIGH SPEED ADJUSTMENT

#### NOTE:

Remove the carburetor needle grommet to expose the "HI" needle. After completion of adjustment, securely re-install the grommet. If the grommet is not properly installed, dirt can enter the carburetor and cause catastrophic engine failure.

If the saw has speed out of the cut but lacks power in the cut, then turn the screw 1/16 of turn counterclockwise. Test in cut. Repeat above steps only until the saw has power and runs smoothly in cut.

If the saw smokes excessively, then turn the screw 1/16 of turn clockwise. Test in cut. Repeat above steps only until the saw has power and runs smoothly in cut.

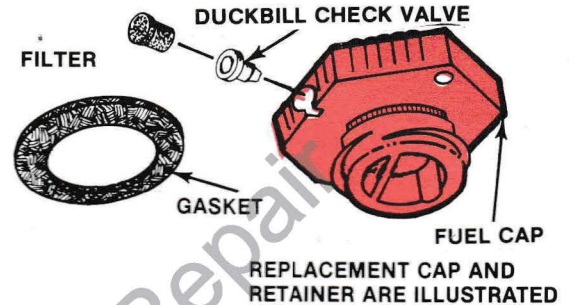
#### CAUTION:

The "HI" needle must be set a minimum of 3/4 of a turn counterclockwise from the closed position. A needle setting of less than 3/4 of a turn will cause catastrophic engine failure.

NOTE: The carburetor adjustment needle seats can be easily damaged by overtightening the needles. To determine the closed position, slowly turn the needle clockwise only until a slight resistance is felt.

## CHECKING THE FUEL TANK CAP

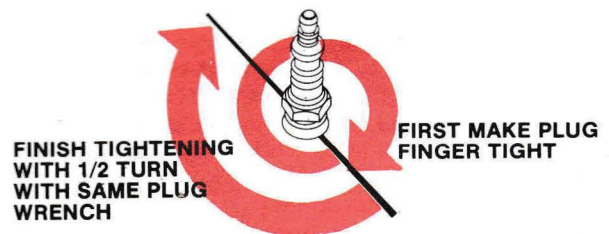
As explained in Section 1, the flow of fluid from the fuel tank will be reduced if the check valve in the tank fails to let in the air. The fuel cap can be checked by comparing the performance of the saw with the cap tightly on the tank, and then with it loosened just enough for air to leak around the cap into the tank. If the saw sounds as if it has more power or increase of performance with the cap loose, install a new cap assembly.



## SPARK PLUG



When the engine cannot be started, always check that the tank has fresh, properly mixed fuel. Then change to a new spark plug at least long enough to find out whether the engine can be started. The proper size, type and heat range plug is the gasketed type 14mm, non-resistor Champion CJ-6 for the Super XL<sup>®</sup>. It is important that this plug be tightened enough for a gas-tight seal without overtightening. To do this, screw it in finger tight and then take up 1/2 turn with the spark plug wrench.



Fouled spark plugs often can be restored by cleaning to remove deposits and short-causing bridges, scraping the electrodes down to bare metal, and then regapping the electrodes to .025" (0.63mm) by bending the side electrode toward the center.

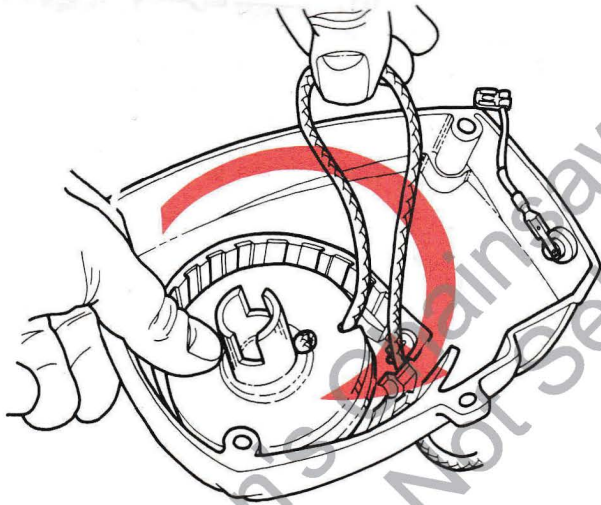
If you are not satisfied with the cleaned plug's performance, replace it with a new one. Should the saw not start after the new plug has been installed, take the saw to the nearest authorized Homelite servicing dealer.



## STARTER MAINTENANCE

No regular maintenance is required beyond cleaning the air intake slots whenever leaves or sawdust begin to build up. Instructions are given below to enable the owner to compensate for rope stretch (by increasing the rewind spring tension) or to change the rope.

1. Remove the four screws which hold the starter housing to the engine housing.
2. While removing the starter housing, disconnect the "Run-Stop" switch ground wire.
3. **To add more spring tension:** If the grip does rewind, but lacks enough spring tension to be drawn snugly against the housing, more tension is needed. Note the notch in the edge of the pulley. Pull out the grip about a foot (30cm) and hold the pulley from rewinding. Turn the pulley to locate the notch at the rope entry hole in the housing. Pull up a loop of rope between the housing and pulley and anchor the rope in the notch. Grasp the loop and wind in a clockwise direction, letting the pulley rotate one turn with the loop. Hold the pulley from turning. Pull the starter grip until the rope runs straight from pulley through the entry hole. Then let the starter rewind. If this is not enough tension to draw the grip in place, repeat this procedure to add one more turn of tension. Do not add more turns than necessary to draw the grip into place.



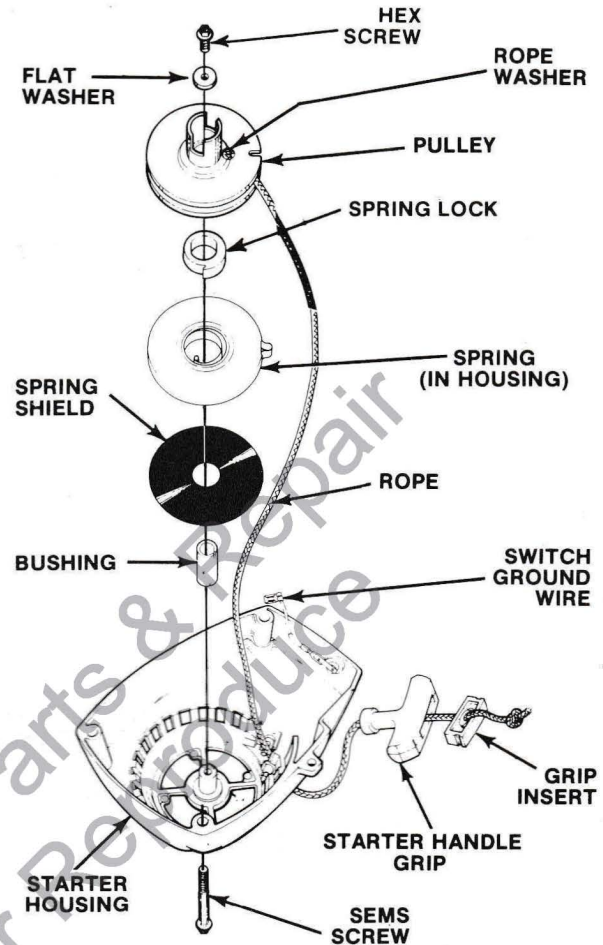
**TO ADD SPRING TENSION HOLD LOOP OF ROPE. WIND LOOP AND PULLEY CLOCKWISE 1 TURN.**

4. **To remove worn starter rope:** Hold pulley from turning. Cut rope between housing and starter grip. Let pulley rewind slowly to relieve the spring tension which we call the "prewind tension."

### WARNING

**Put on safety glasses and gloves before removing the pulley. If you lift the pulley out before detaching the spring, the spring may fall out and the coils may fly apart. They are relatively difficult to rewind.**

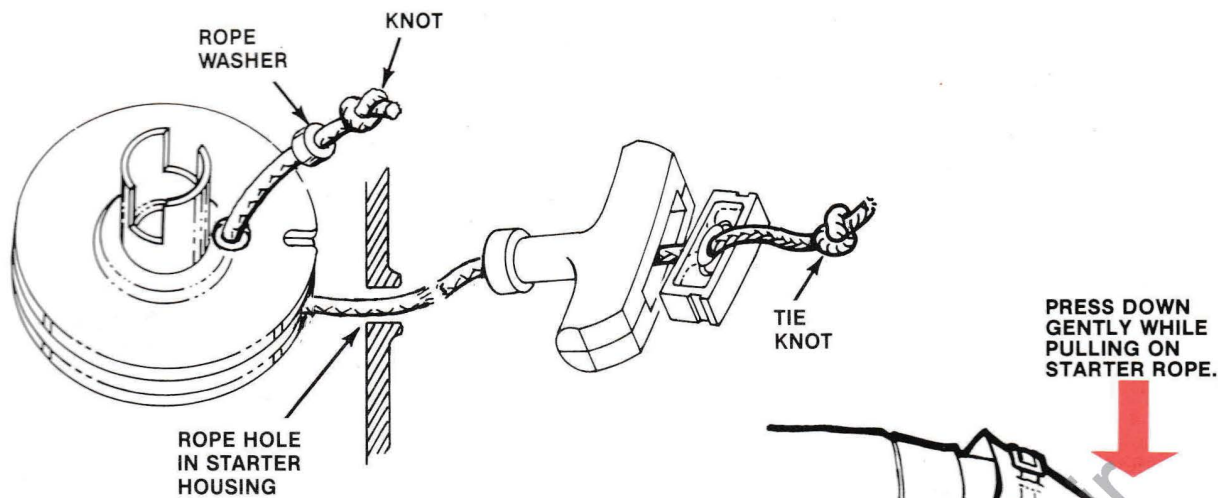
Make sure there is no prewind tension on the spring. Then remove the Sems screw and flat washer by lifting them straight up, not by dumping them out. Grasp the



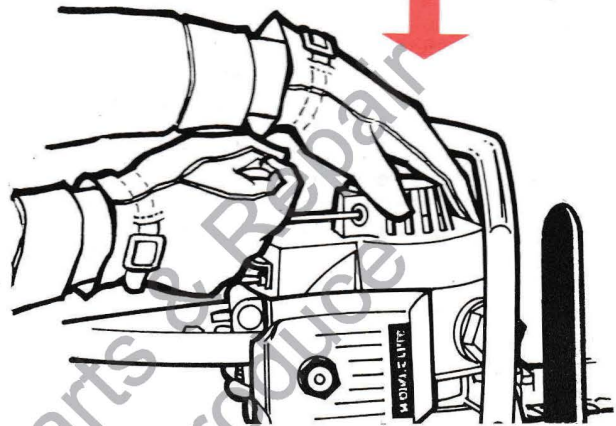
pulley hub and pull the pulley out of position about the width of your little finger. Then insert a thin-bladed screwdriver between the pulley and the starter housing to free the pulley from the spring. Remove the pulley. Remove pieces of the old rope. Be sure to save the rope washer from the pulley end for use on the new rope. Leave the springlock in position where it engages the inner loop of the spring.

5. **To install new rope:** Tie a simple knot tightly at one end of the rope. This knot should be set by dipping in nail polish or model cement, or otherwise prevented from loosening by heating the short end past the knot. Trim the rope right up close to the knot. Slide the rope washer onto the rope. Refer to the exploded view drawing. Thread the unknotted end of the rope through the hole in the pulley and draw the end out between the sheaves at the rim. Thread the rope through the eyelet at the starter housing rope entry hole and pull it out through the housing. Put the starter grip on the rope and then the grip insert (as shown). Now, knot and set this end of the rope as you did the other. Pull the knot into the insert, and the insert into the grip. Hold pulley in position to install on the pulley post. Rotate pulley in a counterclockwise direction to wind the rope onto the pulley. Then slide the pulley onto the post. Jiggle and turn the pulley one way or the other until you can feel that spring is engaged. Fasten the pulley in place with the flat washer and Sems screw.





6. **TO SET PREWIND TENSION FROM SCRATCH:** Refer to step 3 for the method of looping the rope and adding turns of tension. But when starting with no tension, add three full "prewinds" of tension and test for rewind. If insufficient to draw rope into place, add one more turn.
7. **TO REASSEMBLE AFTER ROPE SERVICE:** Hold pulley in position for reassembly, and rotate it in a counter-clockwise direction to wind the rope onto the pulley. Slide pulley onto the post. Turn it one way and the other until you feel that the pulley has engaged the spring lock. Then secure with the flat washer and Sems screw. Follow step 6 to "prewind" the correct tension on the spring. When the starter rewinds properly, position the housing near the engine and reconnect the "ON-OFF" switch ground wire to the ignition. Very gently press starter housing against the engine while you slowly pull out the starter grip. Pull until the



slotted pulley seats itself in the starter pawls located on the engine rotor. When this happens and the starter housing is seated flush against the engine housing, you can secure with the four Sems screws previously removed. Tighten these screws to 40-50 inch-pounds (4.5-5.7 Nm).

## MUFFLER AND CYLINDER

CYLINDER FINS and fan housing should be cleaned occasionally to prevent engine from running too hot.

The muffler should be kept clean and open, but the saw should never be run without the muffler. If local regulations require use of a spark arrestor screen, check condition periodically, and replace when clogged or deteriorated.

**Scraping Carbon:** While muffler is off, check the condition of the cylinder ports (and piston and rings through the ports.) If ports are more than 1/3 clogged, it will be necessary to first put the piston to top dead center, then remove carbon carefully with a wooden scraper. Do not scratch the piston or damage edges of the ports.

### STORING THE SAW

1. All local regulations for the safe storage of fuel supplies must be observed. Non-stabilized fuel supplies should be used up in other equipment or discarded.

2. Prepare the engine internally for storage. Drain as much fuel from the saw tank as possible, then start and run the engine until it runs dry and quits. Remove the spark plug to pour in a teaspoonful of a rust inhibitor product or a detergent oil. Install the spark plug and crank the engine enough times to distribute the oil over the cylinder and piston walls as a vapor.
3. Remove bar and chain and clean them thoroughly. Let chain dry and store it in a small container of engine oil to prevent rust. Oil the dried bar and wrap it in oiled paper.
4. Clean all foreign material from the outside surfaces of the engine. The finish can be preserved with a coat of auto wax.
5. Store the saw in a well-ventilated place where it is inaccessible to children and away from corrosive agents such as garden chemicals and de-icing salts.



# ATTACHMENTS AND DEVICES / SECTION 6

Other than standard equipment.

## BOW SAW ATTACHMENTS

### NOTICE

Homelite does not recommend the use of bow saws. This bow saw information is provided for those who will insist on adapting their SXL-AO chain saw to a bow guide.

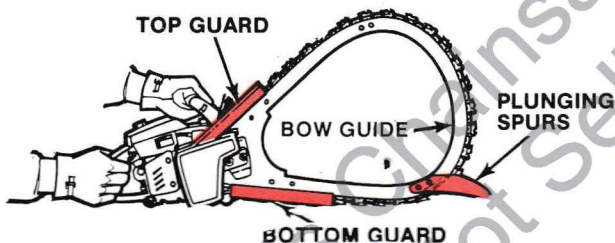
### WARNING

Extreme caution must be taken to use a bow saw safely. When used carelessly, or when not used properly (as outlined in this manual) the bow saw could cause serious injury from KICKBACK. DO NOT operate a bow saw without reading and understanding ALL of the information pertaining to bow saws and KICKBACK given below and on pages 3 and 4 of the manual.

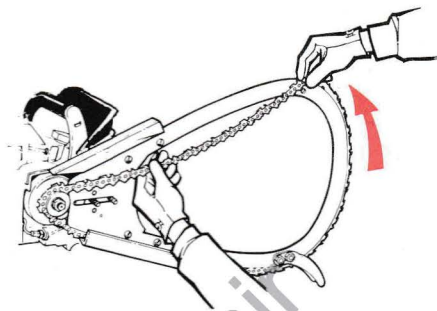
Any Bow Guide Kit you select for the SXL-AO contains detailed instructions for any adaptations or modifications of the chain saw or the attachment parts required for a proper fit.

### IMPORTANT

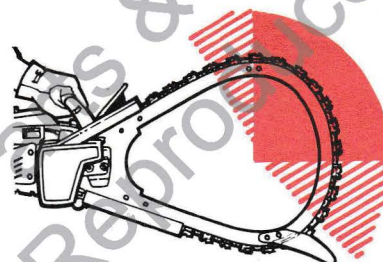
Be sure the ignition switch is in the "STOP" position. And wear gloves for protection whenever you are working on or near the saw chain.



Do not use any attachment or adapt your SXL-AO for any device or attachment not specifically recommended by Homelite for the SXL-AO.



CHAIN MUST BE PUT BETWEEN THE PLUNGING SPURS. WHEN CHAIN IS NEW, IT IS EASIEST TO GET ON THE BOW BY WORKING UPWARD FROM THE SPURS.



## BOW SAW KICKBACK

KICKBACK from a bow saw is similar to KICKBACK from any other chain saw. But the KICKBACK DANGER ZONE of a bow saw (see illustration) is much larger than that of a straight blade saw. The danger of KICKBACK from a bow saw is, accordingly, greater.

As discussed under "Kickback, Push and Pull," on page 3 the reaction of kickback will occur any time solid contact in the KICKBACK DANGER ZONE is made with the rotating chain.

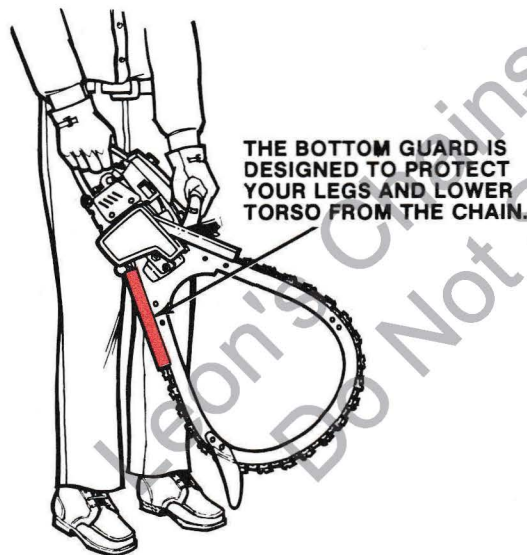
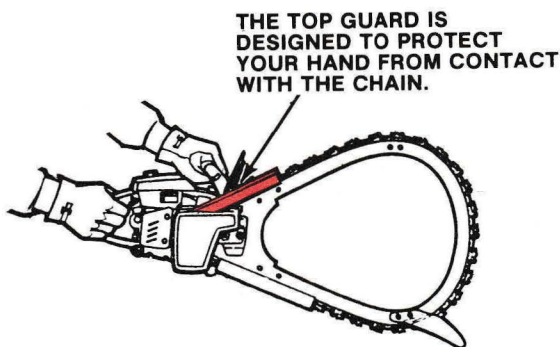
### NOTE

Maintenance of proper tension is important. Loose chain invites KICKBACK. Keep the chain tension as tight as possible without causing any binding.



## HOW TO MAINTAIN CONTROL OF A BOW SAW

1. Refer to page 3 under "How to Control the Reactive Forces of a Chain Saw."
2. In addition to step 1, do the following:
  - a) Hold the front handlebar with your left hand, close to the balance point of the saw. Keep your left arm rigid with (elbow locked), for good control and to prevent injury from KICKBACK.
  - b) Get a good grip on the rear handle with your right hand.
  - c) Start all cuts near the plunging spur which is designed to prevent kickback when used properly.



### WARNING

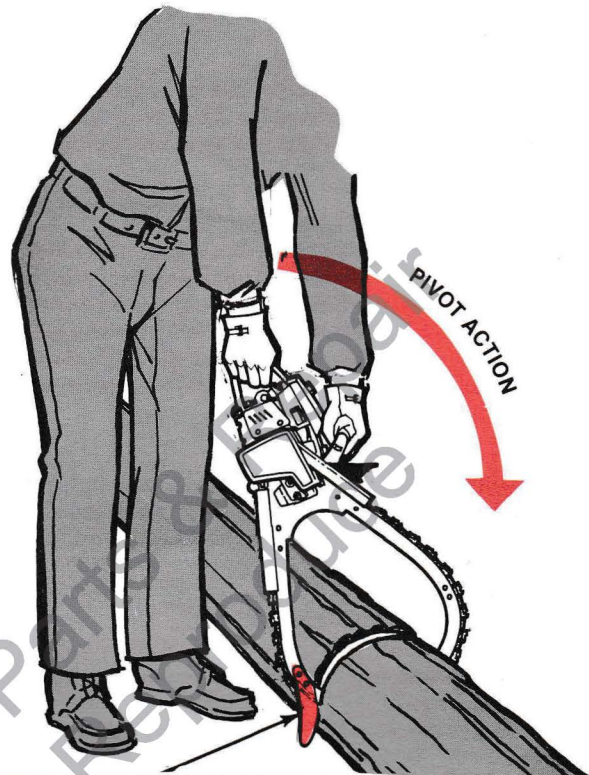
Do not operate a bow saw unless the plunging spurs and the bottom and top chain guards are in place. Serious injury may result if any of these parts are left off the bow guide.

## BOW SAW DO'S AND DON'TS

Not all of the techniques of cutting, as outlined in Section 4, apply to the bow saw. The following informa-

tion will be helpful and should be followed when cutting with a bow saw.

The chief advantage of the bow saw is its ability to cut through wood without the bow guide becoming pinched.



THE SPURS ARE DESIGNED AS A WORK STOP. ALWAYS MAKE INITIAL CONTACT WITH THE WOOD NEAR THE SPURS SO THAT THE SPURS PREVENT THE SAW FROM "WALKING" UP THE SIDE OF THE LOG.

Thus, in situations where two cuts (as overbuck and an underbuck) would be required with a "straight blade" saw to avoid a pinch, the bow saw can do it in one cut. The basic cut made with a bow saw is the "plunge cut," made by placing the plunging spurs against the side of the log or tree trunk, and plunging the tapered front of the guide into the wood.

Another cut made with a bow saw (illustrated top of page) is the "pivot cut," useful in bucking logs flat on the ground. When bucking logs on the ground, anchor the spur by placing it on the ground next to the log. Rev up the engine and pivot the saw on the spur. Initial contact should be made near the spur.

Some professionals prefer to use the top section of the bow (between kickback zone and the top guard) for lopping off small branches. If you intend to use the bow in this manner, take extreme care not to let the chain at the kickback zone contact any object.

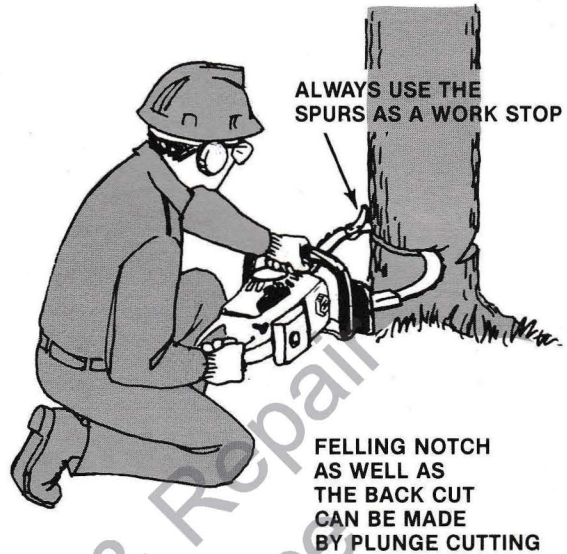
Here are some disadvantages of a bow saw: It is a heavier, more cumbersome tool than a conventional chain saw. The higher friction drag (greater chain-bar contact surface) uses up more of the engine's power than the same capacity "straight blade" does. The wide bow configuration puts the saw chain closer to your body, hands, face and legs. And at the end of a plunge cut, the cut log sections may come back together inside the bow, preventing its removal.



No matter what type of cutting you do, make sure your left arm is rigid with your elbow "locked". In the event of a kickback, a "locked" elbow may prevent injury. Balance is a very important part of cutting. Make sure you have a firm stance. Do not work with your head or body directly over the saw. When cutting, always stand to one side of the potential kickback path.

## BOW SAW MAINTENANCE

1. At the end of each day of operation, remove the chain and bow guide. Clean the drive case cover, the drive case and the oil discharge hole in the guide bar mount-pad. Clean the oil entry holes in the bow guide.
2. The chain should be filed, cleaned, inspected, and then oiled. (Daily or as required.)
3. The assembly should be inspected before each day of use. Loose top guard, bottom guard and spur fasteners should be retightened. Remember to use proper torque values for each fastener.
4. Once a week or so, the guards and spurs should be removed and the guide reversed, top-for-bottom. Then the guards and spurs should be reassembled. This procedure, when regularly followed, will distribute the wear on the top and bottom rails of the bow. It will last a lot longer.



### FILL IN THIS INFORMATION FOR YOUR RECORD

MODEL NO. \_\_\_\_\_

UT NO. \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

DATE OF PURCHASE \_\_\_\_\_

NAME OF DEALER \_\_\_\_\_

ADDRESS \_\_\_\_\_

INVOICE NO. \_\_\_\_\_

### NOTICE

Technology changes with the times. Homelite strives not only to create new products, but also to refine and improve existing designs. By contacting our manager of customer relations (see address below) you can learn of any improvements or new devices which have been developed since you purchased your chain saw.

**Homelite Division of Textron Inc.**  
 P.O. Box 7047  
 14401 Carowinds Boulevard  
 Charlotte, N.C. 28241  
 Attention: Customer Relations Manager



## **CUSTOMER ASSISTANCE**

FOR THE LOCATION OF YOUR NEAREST HOMELITE SERVICING DEALER  
IN THE UNITED STATES, PUERTO RICO, AND THE VIRGIN ISLANDS,

**CALL: 1-800-242-4672**

### **HEADQUARTERS**

**Homelite, Inc.**  
P.O. BOX 7047  
CHARLOTTE, N.C. 28241

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#### **Homelite Canada Limitée**

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20-D Voyager Court South  
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