PART NO. 17079-D
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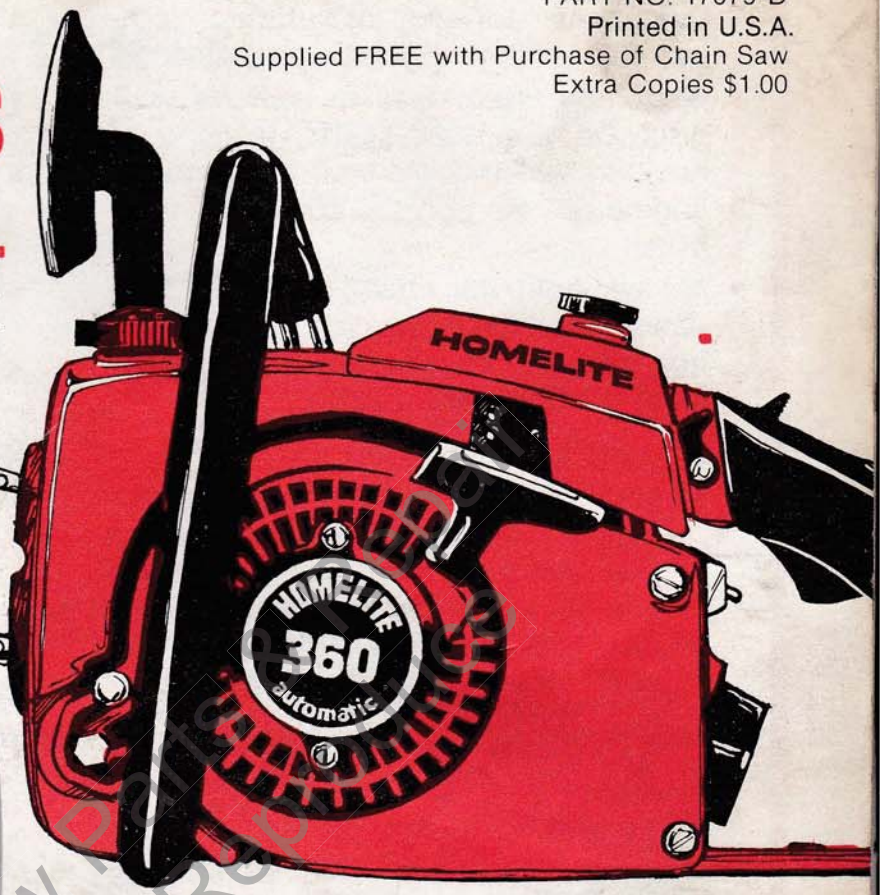
OWNERS MANUAL

READ NOW-
SAVE FOR REFERENCE

HOMELITE
POWER TIP BAR



360 SERIES CHAIN SAW

360W • 360HG • 360SL

WARNING: CHAIN SAWS CAN BE DANGEROUS. TO REDUCE DANGER FOLLOW ALL SAFETY PRECAUTIONS IN THE OWNER'S MANUAL BEFORE USING THE SAW.

NOTICE: KICKBACK IS THE MOST DANGEROUS OF THE REACTIONS WITH WHICH THE CHAIN SAW OPERATOR MUST CONTEND. KICKBACK AND THE OTHER REACTION FORCES ARE DISCUSSED IN THIS MANUAL ON PAGE 3.

HOMELITE TEXTRON
Homelite Division of Textron Inc.

SAFETY PRECAUTIONS FOR CHAIN SAW USERS

- 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*.
  c) Throttle up before letting the chain contact the wood. Do all cutting at full throttle.
  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.

ASIC 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 scabbard.
- 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.

*Pat. Pending

CONTENTS

INTRODUCTION

KICKBACK, PUSH, AND PULL

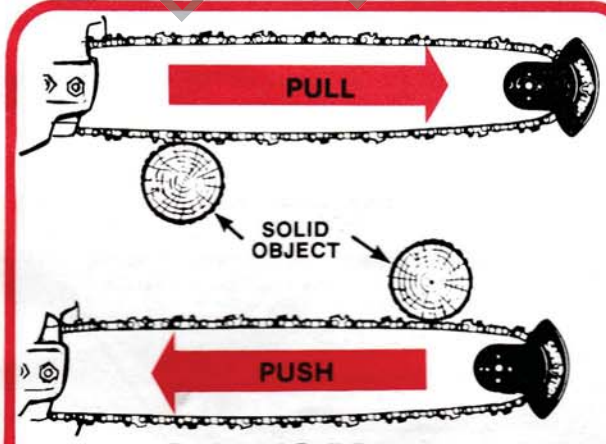
and how these reaction forces are best controlled.

NOTICE

When properly installed on your saw, the SAFE•T•TIP® Anti-Kickback Device will prevent kickback. The Raker III™ saw chain on your saw is added protection, helping you to control the reaction forces described below when the SAFE•T•TIP device must be removed. However, if you remove the SAFE•T•TIP device temporarily, even for just one cut, you must rely on the techniques described in this owner's manual as your first line of defense and control.

THE REACTION FORCES

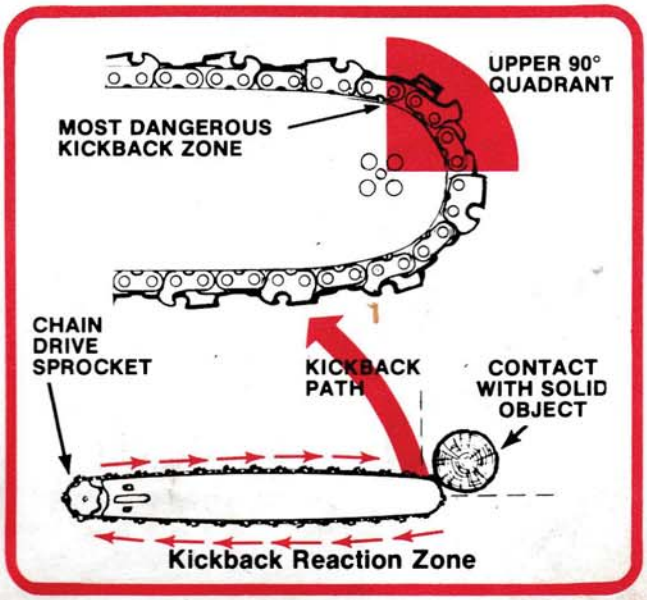
In the operation of a chain saw, engine torque is transferred to the chain. This energy is then used to cut wood. But to every force (action) there is always a reaction force in the opposite direction. Thus, if the chain contacts wood or any other obstruction where the chain is moving away from the operator, the operator will feel the saw being pushed toward him. And, when the work contact is made on the underside of the bar where the chain is moving toward the operator, the person will feel the saw being pulled away from him.



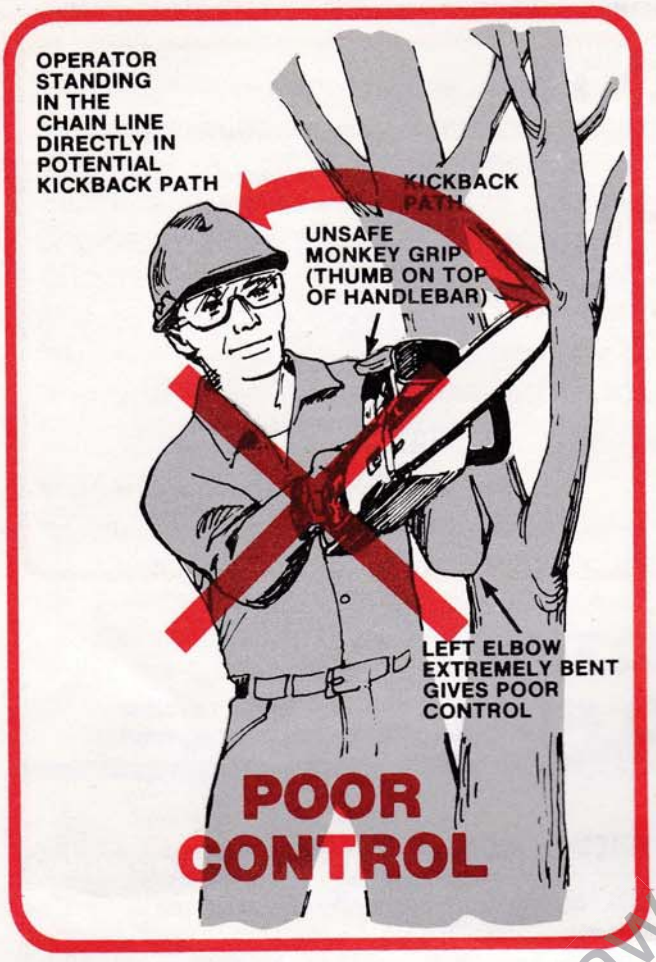
Push and Pull Reactions

KICKBACK

is another reaction, the most dangerous of these reactive forces. It occurs only when solid contact with the moving chain is made at the upper quadrant of the bar nose. A violent kickback 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 pinwheeling rotation of the chain, the saw, and the bar during which the bar nose *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.



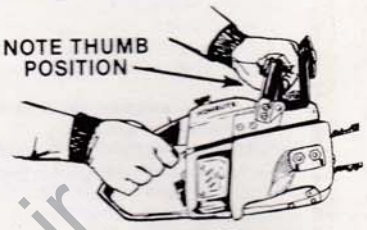
Kickback Reaction Zone



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.

INCORRECT "MONKEY" GRIP



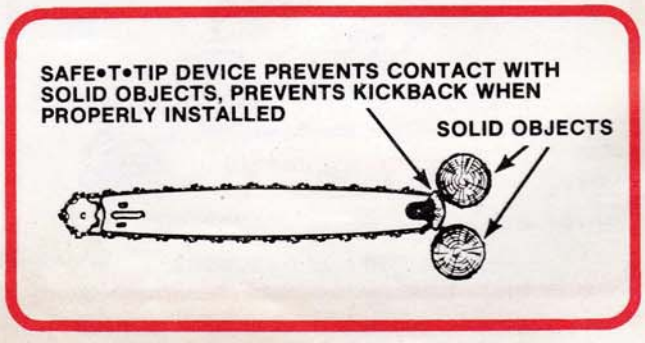
CORRECT GRIP

Do not use a "Monkey Grip" because your hand can slip.
Don't forget to wear your gloves.

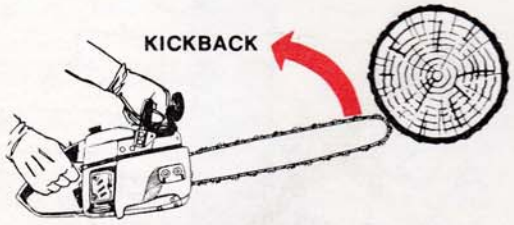
2. Hold the front handlebar close to the balance point of the saw (or where you can best oppose and absorb the push, pull and kickback forces of the saw without having it twist out of your grip).
Do not reverse right and left hand positions on the saw handles.
3. Get a good grip on the rear handle.
4. 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

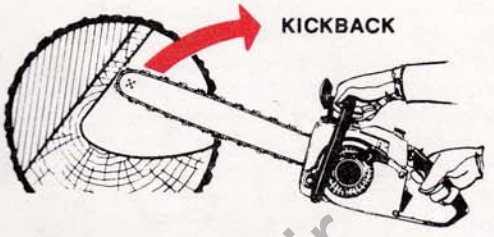
1. Avoid letting the nose section of the saw contact any object. Note: A SAFE•T•TIP® device, when properly installed on the bar nose, will prevent kickback.
2. Avoid use of the nose section of the saw for cutting. Cut well back on the straight section of the bar.
3. Be sure to keep your chain sharp and 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 19 for minimum risk of kickback.



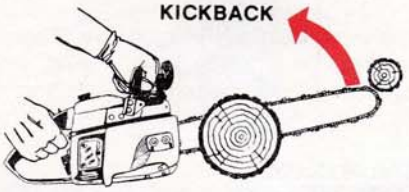
Without the anti-kickback device on your saw you would have to beware of these situations.



STARTING TO BORE WITH NOSE OF SAW

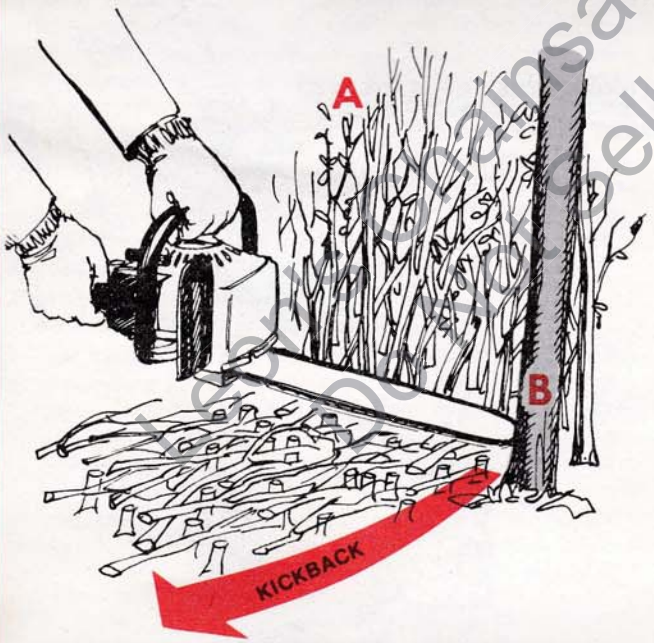


REINSERTING NOSE OF SAW INTO A PREVIOUS CUT



NOSE STRIKING ANY SOLID OBJECT (WILL CAUSE A KICKBACK)

CUTTING INTO THE GROUND (THIS HURTS YOUR CHAIN AND GUIDE BAR)



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.

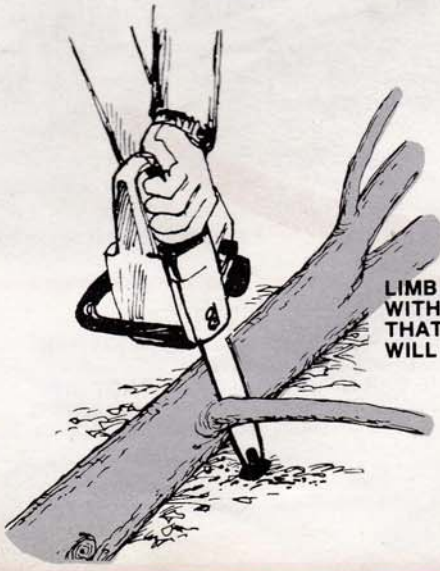
DEVICE RESTED AGAINST AN OBSTRUCTION TO PREVENT CHAIN DAMAGE

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

FACTS ABOUT YOUR MODEL 360 CHAIN SAW

INSTRUCTIONS SUPPLIED BY HOMELITE

Read this Owner's Manual before using your saw. The Owner's Manual covers preparation, safe operation and maintenance of your saw.

APPROVED ATTACHMENTS

The model 360 saws were designed for use with conventional "straight blade" guide bars of from 16-inch to 24-inch length, and dimensioned for 3/8" pitch saw chain. All models prepackaged with bar and chain have the new semichisel 3/8 pitch Raker III™ saw chain. This chain is recommended as original equipment as well as replacement for type 38 saw chain. Any replacement of the guide bar and chain on a model 360 should be made only from the types and sizes listed for model 360 in our sales literature and price lists.

No attempt should be made to adapt the power head for use with guide bars, bow guides, or any other attachments or devices not recommended specifically for the model 360 series of chain saws by Homelite.

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 pratices 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 "professional 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:

a) 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.
b) Refrain from smoking (another suspected contributing factor).
c) After each period of operation, exercise to increase blood circulation.
d) Take frequent work breaks. Limit the amount of exposure per day.
e) 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.

SPARK ARRESTOR

Although some 360 HG and 360 SL Models are sold or imported into the U.S.A., the 360W is the top seller of the series. It has a spark arrestor screen, a louvered muffler plate, and an extra-large sawdust-clearing drive case cover. Of the 360 series, only the 360W is marketed in states or localities where chain saw spark arrestors and other design features for fire prevention are required by law. The fine mesh spark arrestor screen will clog with deposits occasionally. Subject to repeated heating and cooling cycles, the screen will also burn out. It should be inspected at regular, frequent intervals, and changed as required. The replacement spark arrestor is #D-12270-A. The same screen is an accessory for Models 360 HG and 360 SL.

CHAIN BRAKE (MODEL 360 SL)

Even if you purchased a chain brake-equipped model, Homelite has supplied a SAFE•T•TIP® anti-kickback device for it. This is because a chain brake does not prevent kickback any more than a seat belt prevents collision. A chain brake can only stop chain rotation.

For your safety, rely on the SAFE•T•TIP® device to prevent kickback. And depend on using the proper grip and stance, and the safe cutting techniques recommended in this 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 lengthen a chain brake's stopping time. 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.

HAND GUARD

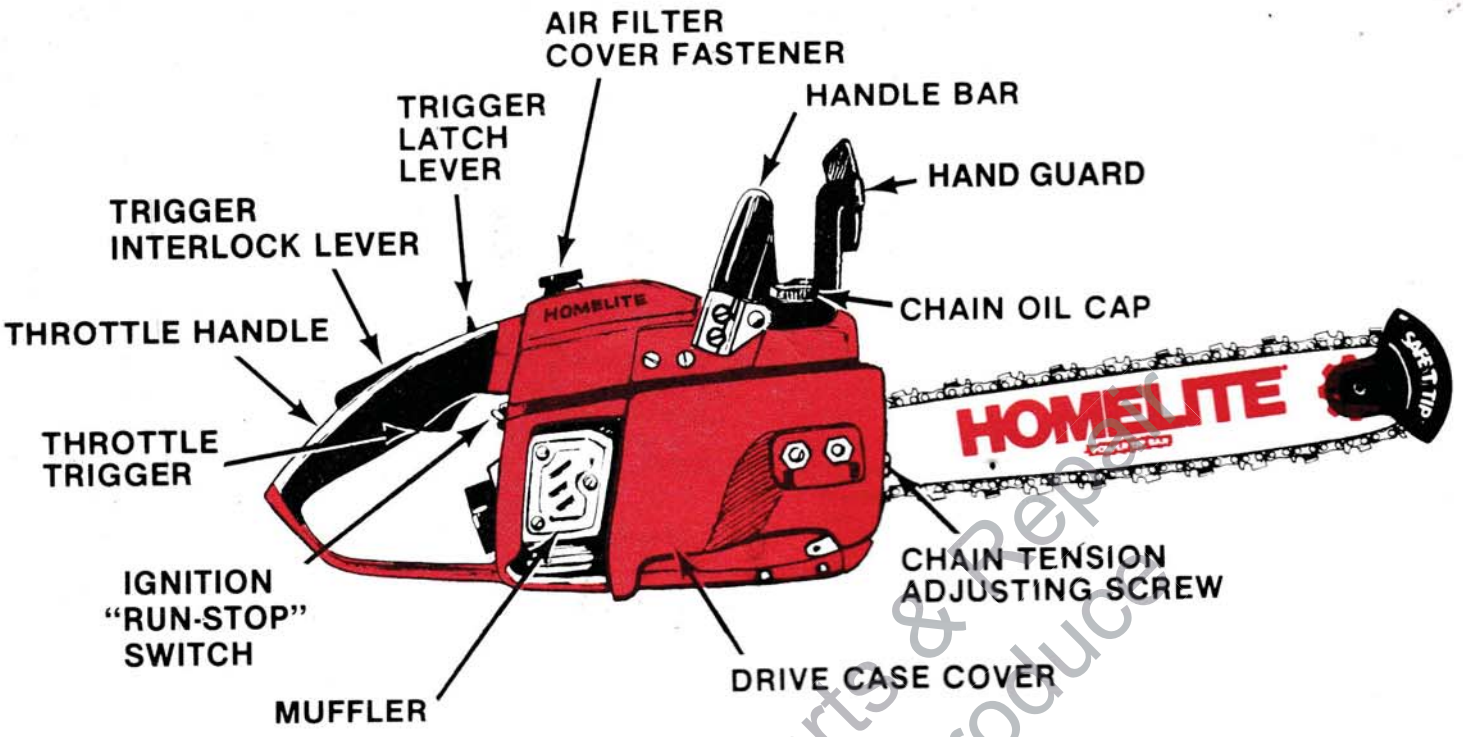
Your saw has a hand guard designed to guard your left hand from the chain in the event you lose your grip on the saw. The guard may be pivoted out of the way during fueling stops.

HEARING PROTECTORS

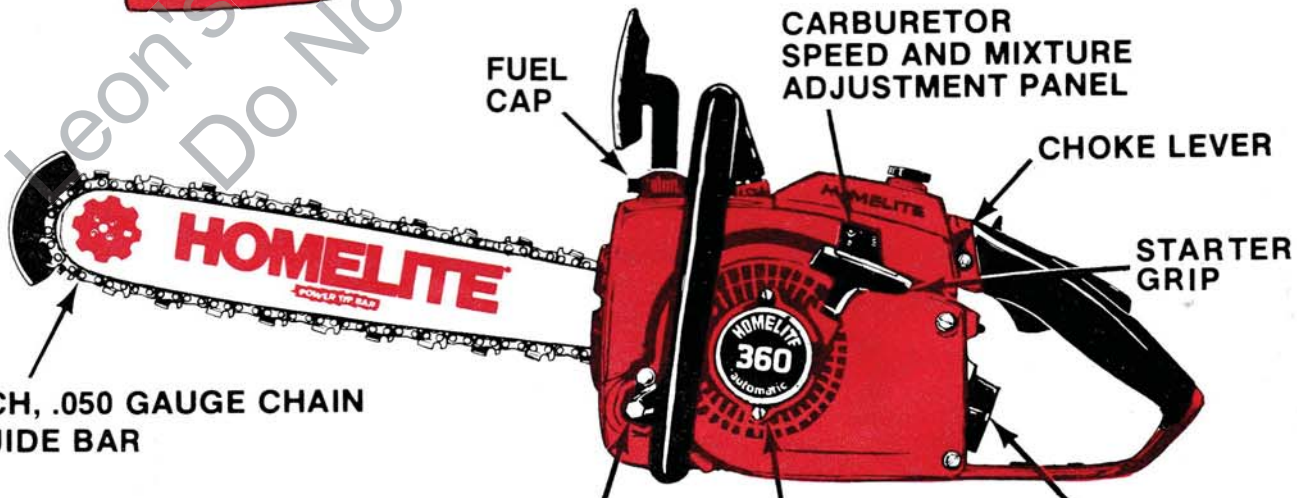
Long or continuous exposure to high noise levels, such as involved in the operation of a chain saw, may cause permanent hearing impairment or other possible effects. Hearing protection devices are available from your Homelite dealer or can be ordered through him. When ordering, specify "Homelite Hearing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

YOUR PHYSICAL CONDITION

Work relaxed but stay alert. Take a break from work whenever you begin to tire. Never operate when tired or under the influence of alcohol or any drugs which may affect your balance, coordination or judgment. If you have any serious ailments such as a heart condition, check with your doctor before doing any strenuous lifting, reaching, pushing, chopping, shoveling, etc. Always do any lifting job with your leg muscles, not your back.



MODEL 360SL DRIVE CASE COVER WITH AUTOMATIC CHAIN BRAKE AND HAND GUARD (Also available for Models 360W and 360HG)



SECTION 1 PREPARING FOR USE

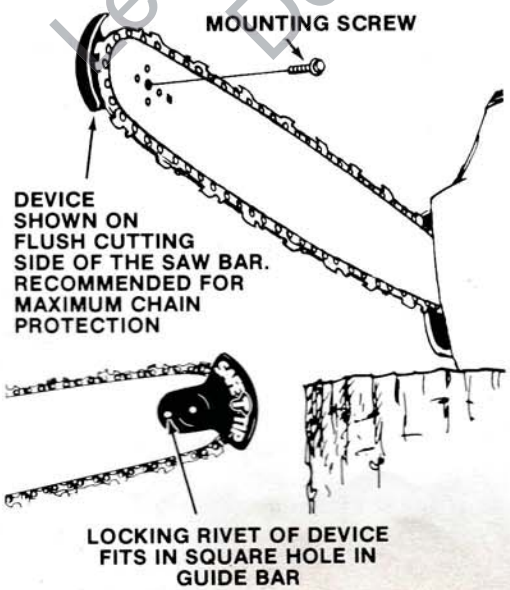
MOUNTING SAFE • T • TIP® DEVICE ON BAR

CAUTION

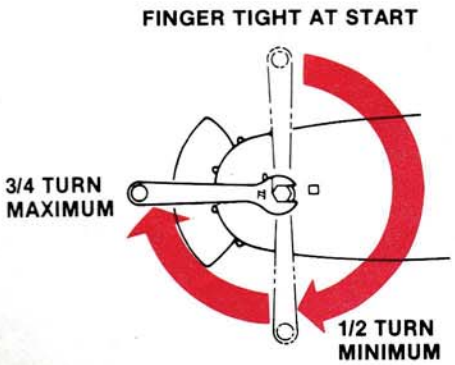
Always wear gloves to protect your hands when working on the chain. And be sure the switch is in the "STOP" position whenever you do any work on the saw.

A SAFE•T•TIP® anti-kickback device* is preassembled on every Homelite guide bar. Your attention is called to your need to maintain the proper tightness of this screw.

Before each period of operation, tighten the mounting screw of the device as instructed below. There are specially hardened screws. If the screw cannot be installed tightly, replace both the screw and the device before further operation. Do not replace with ordinary screws.



1. In addition to preventing chain contact with solid objects at the nose of the bar, the SAFE•T•TIP® device also helps keep the chain away from abrasive surfaces such as the ground. We recommend keeping the device on the righthand side of the bar, where it will be between the chain and the ground during FLUSH-WITH-THE GROUND cutting.
2. The device has a 1/4-20 x 5/8" mounting screw. It requires a 3/8" wrench (or adjustable wrench) to achieve the recommended tightness of 70 to 100 inch-pounds (8-11 Nm). A tightness within this range can be achieved by the following method.
   a) Chase the threads of the new device by tightening and loosening the screw in the hole several times.
   b) Mount the device on the bar nose (see illustration). Tighten the screw with your fingers.
   c) From the finger-tight position, tighten the screw 1/2 turn to 3/4 turn more with a wrench.



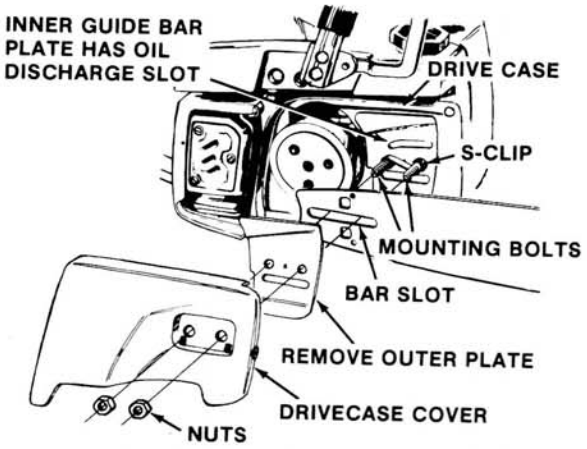
MOUNTING BAR AND CHAIN ONTO ENGINE

ASSEMBLING GUIDE BAR, CHAIN AND DRIVE CASE COVER ONTO ENGINE

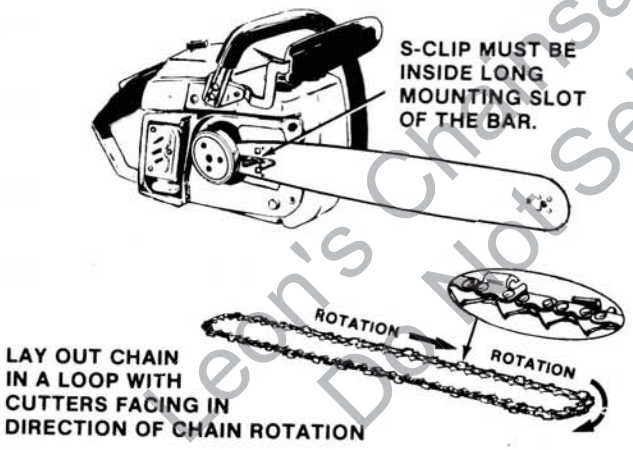
IMPORTANT

Wear gloves for protection against the sharp teeth whenever you are working on or near the saw chain.

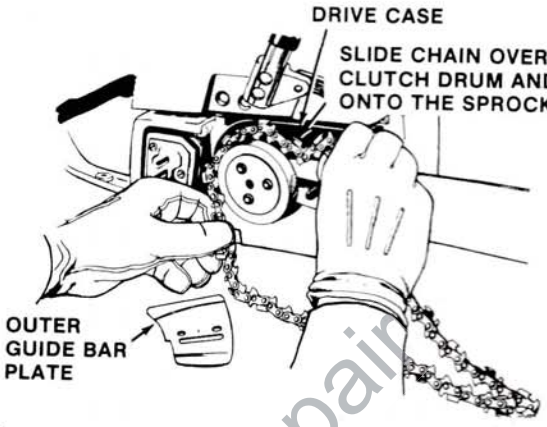
1. Turn the switch to "STOP". Remove the two hex nuts and lift the drive case cover off the guide bar mounting bolts.
2. Remove the outer guide bar plate, but leave the S-clip and the inner plate on the bolts.

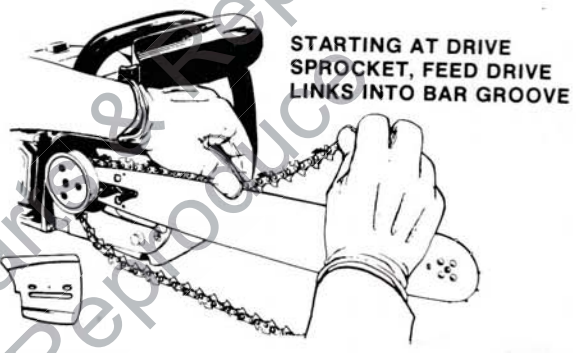


3. Put the guide bar on the mounting bolts and up against the inner plate so that the S-clip is inside the long mounting slot of the bar.



4. Remove the chain from the carton, lay it out in a loop and check the teeth. The teeth should face in the direction of chain rotation which is away from the clutch along the top edge of the bar.
5. Loop and angle the chain to slide through the small space between the drive case and the clutch (at 9 o'clock position relative to the clutch). Fit the chain over the clutch and onto the sprocket.
6. Begin at the top of the sprocket to feed the chain drive links into the top bar groove. Continue on around the nose of the bar until the chain is on the bar.
7. Remove slack from the chain by pulling the bar away from the drive sprocket. If any drive links have come out of the bar groove, put them back in the groove.



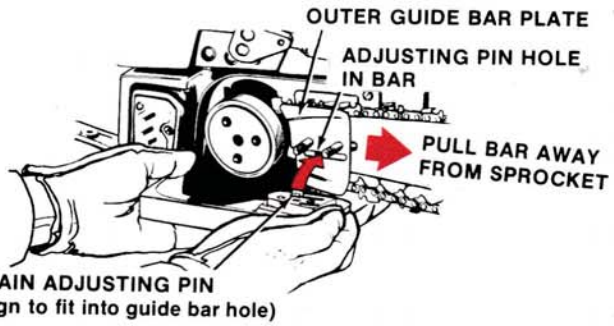


8. Put the outer guide bar plate back onto the bolts and up against the bar.

CHAIN BRAKE NOTE

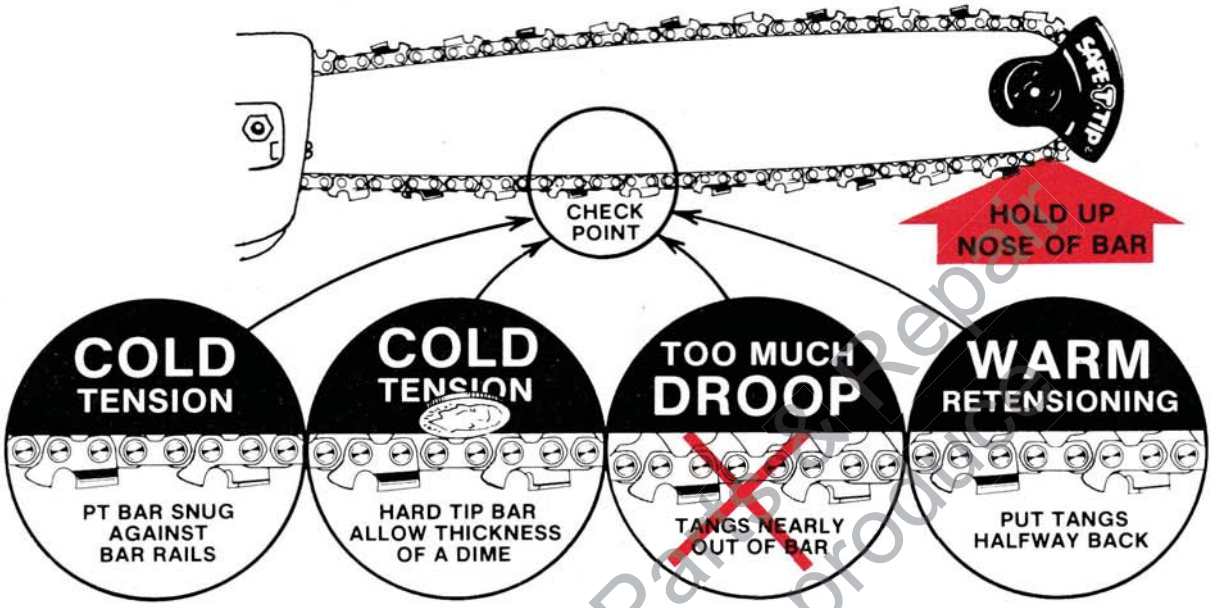
When assembling a drive case cover containing a chain brake, put the brake hand guard lever in the "RUN" position to relax the brake bands. Slide the bands around the clutch drum while performing step 9.

9. Position the drive case cover for mounting. Check the adjuster pin for alignment with the adjusting pin hole in the bar. Turn the tension adjusting screw as required to locate the pin for proper alignment. Slide the cover into place on the mounting bolts, and make sure the pin clearly engages the hole.
10. Hold the cover snugly in place. Put the nuts back on the bolts. For now, tighten them only with your fingers, because you must leave the bar free to slide during adjustment of the chain tension.



CHAIN TENSION

(Remember: Wear gloves)



AFTER WARM RETENSIONING ALWAYS RESET PROPER TENSION AFTER CHAIN HAS BECOME "COLD."

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.

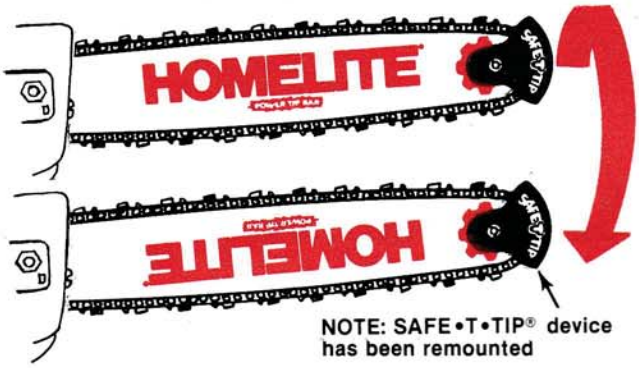
CAUTION

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

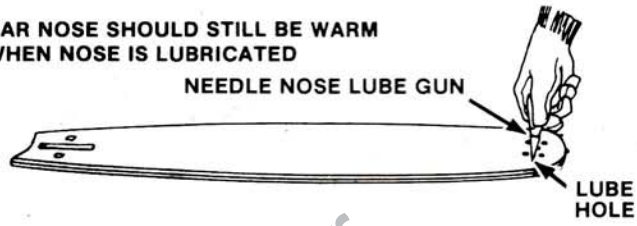
1. At the end of each day of cutting, clean the sawdust from the guide bar mounting pad, the clutch area and the clutch cover. Clean out sawdust from the chain groove in the guide bar.
2. File and clean the saw chain.
3. Each time you remount the bar, reverse its position (top for bottom on the saw)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



NOTE: SAFE•T•TIP® device has been remounted

REVERSING BAR ON SAW OCCASIONALLY HELPS TO DISTRIBUTE THE WEAR.

BAR NOSE SHOULD STILL BE WARM WHEN NOSE IS LUBRICATED



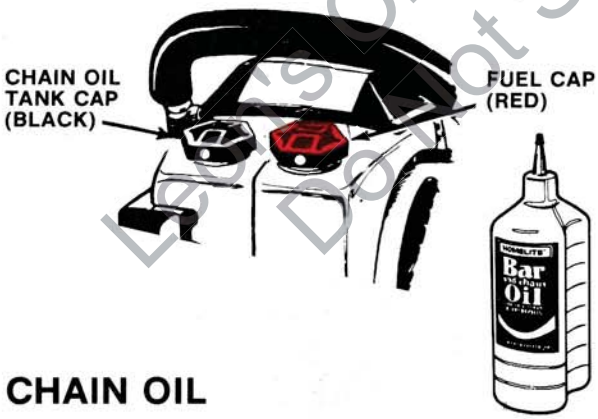
4. The sprocket nose of your Power-Tip® Guide Bar may need a grease change every day of cutting (see Maintenance Section). The proper time to change the grease is while the nose is still warm from operation and the old grease is still soft.

A nose sprocket is good as long as it turns freely, with no roughness or binding. However, it can be replaced as described in the Maintenance Section.

FLUIDS (FUEL AND CHAIN OIL)

NOTE

Always fill the chain oil tank with chain oil every time you put any fuel into the fuel tank. This assures you that the saw will always use up its fuel before it runs out of oil.



CHAIN OIL

1. **Approved chain oils:**
   Homelite® Bar and Chain Oil: Recommended because it is designed for chain oilers. Formulated with viscosity improvers, this oil remains free flowing in below freezing weather — needs no dilution.

   Any SAE-30 weight engine oil product that is clean. Reprocessed oil products are satisfactory as long as clean. In extremely cold temperatures, however, SAE-30 oils should be either replaced with lighter oils such as SAE-20 or SAE-10 weights or diluted with a quantity (up to 25%) of kerosene to flow freely. No dilution of SAE-30 oil is necessary above 40° F. (4.4° Celsius).
2. **Disapproved oils:**
   Used, dirty or otherwise contaminated oils, and any water based synthetic chain lubricants.
3. **How often to fill the chain oil tank:**
   Fill it at the start. Then refill every time engine is fueled.
4. **How to check the oil system:**
   The rate of oil discharged depends on the engine speed. The higher the RPM, the more oil is pumped. No oil is pumped during idling of the engine. When saw is new, shut saw off every few minutes and look at the chain. The chain should always be quite moist in the area of the connecting links.

NOTE

A SAFE•T•TIP® anti-kickback device mounted on the bar nose can be used to check the flow of oil to the chain: Shut off the engine with the switch. Wipe the device absolutely clean. After running the chain at high speed, no longer than five seconds, shut off the engine and see how much oil has been thrown off onto the SAFE•T•TIP device. The surface should be quite moist.

FUELING THE SAW

CAUTION

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

WARNING OF TANK PRESSURE

The fuel tank may be under enough pressure to cause fuel to spurt out when cap is unscrewed. To prevent this, always loosen fuel cap very slowly about 1/6 to 1/4 turn and wait for tank to depressurize before you remove the cap. The fuel cap is the red cap on top of the saw.

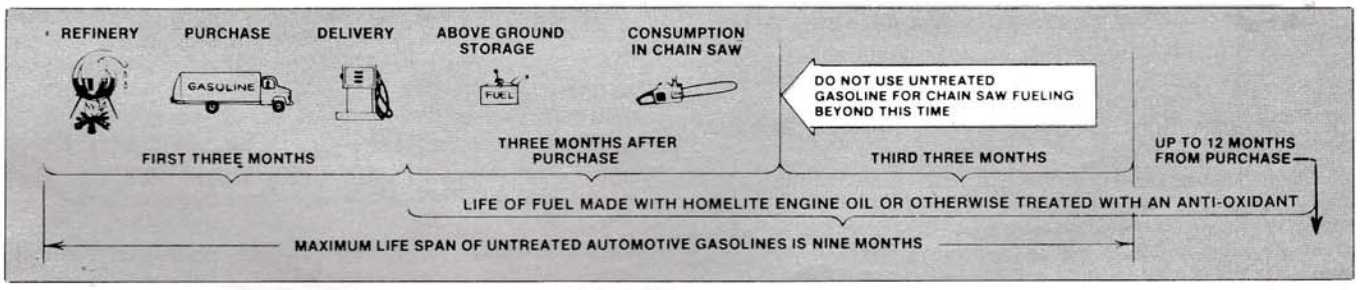
1. **Recommended Fuel Ingredients:**
   a) Unleaded gasoline is preferable as leaded gasoline will result in spark plug fouling at a faster rate.
   b) Your 2-cycle engine is lubricated by oil mixed with gasoline. We recommend the exclusive use of a Homelite® high quality 2-cycle engine oil. Any Homelite 2-cycle engine oil, when mixed with gasoline according to the instructions on the oil package, will provide complete lubrication protection for your new saw.
   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 12 months.
   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 Knox Laboratories, Chicago, Ill. 60616. Unstabilized fuel will stay fresh for only up to three months and should not be used after that time.
   e) If other than Homelite oils are used, mix in the ratio of 16 parts gasoline to 1 part 2-cycle oil (1 gallon: 8 oz.) regardless of the ratio given by the manufacturer of the oil.

WARNING

Never mix fuel directly in the saw tank. Always use clean fuel cans for both mixing and storage of fuel. Do not use glass bottles (which can shatter or explode) or plastic jugs (which were not intended for gasoline storage and might contaminate the fuel).

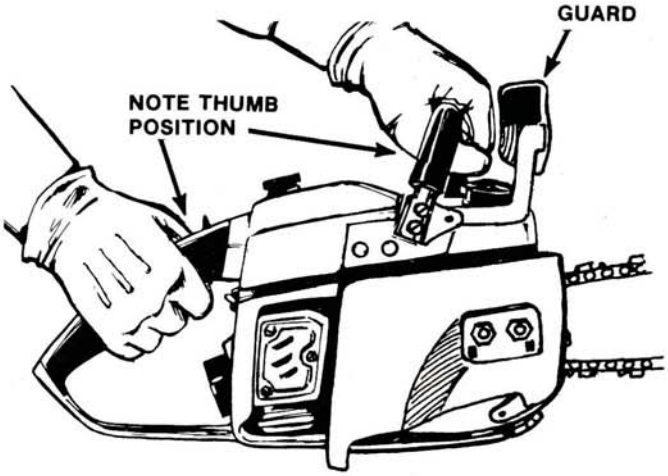
2. **How to Mix Fuel Thoroughly:**
   a) Measure out the quantities of gasoline and oil to be mixed.
   b) Put some of the gasoline into the mixing can.
   c) Pour in all of the oil and agitate contents by stirring or by shaking the can.
   d) Pour in all of the gasoline. Again stir or agitate — this time for at least one minute.

3. **Disapproved Fuel Ingredients:**
   a) GASOHOL. Alcohol draws moisture. Then "peroxides" and acids form in the fuel and the engine parts.
   b) MULTI-GRADE OILS or any other oils not expressly labelled for 2-cycle engine use. Products formulated for 4-cycle engines usually contain additives which are either harmful or of no value in 2-cycle engine service.

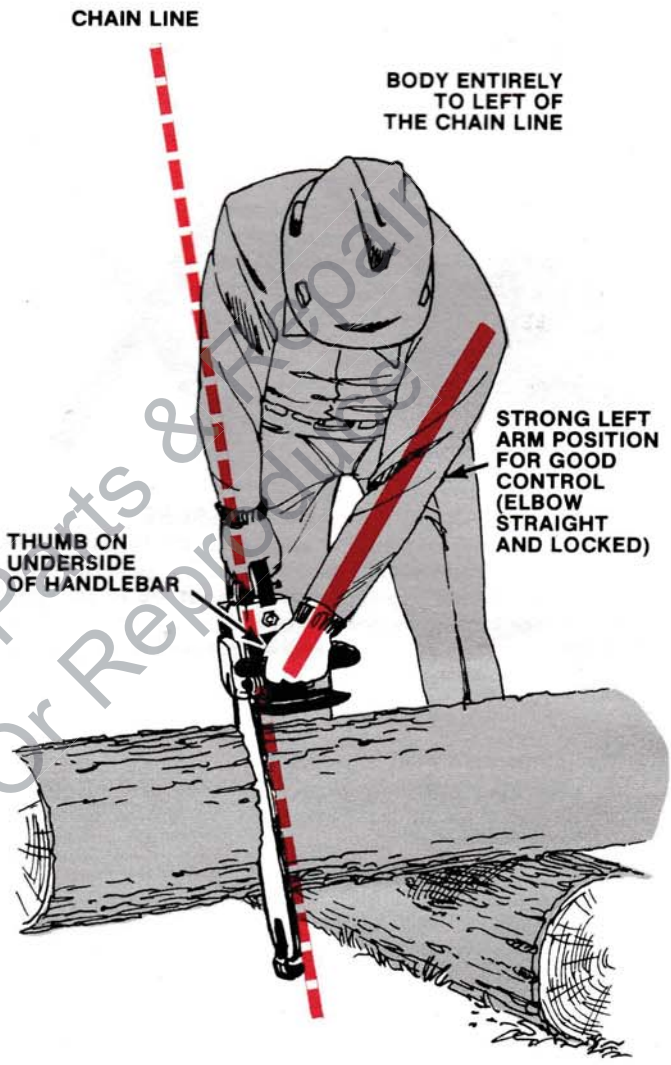


PROPER GRIP AND STANCE

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 cutting line of the saw chain.
3. 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.
4. 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 line. (Never straddle the saw or lean across it past the chain line.
   c) Hold the front handlebar on top, behind the chain guard.
   d) Put toe of shoe over the rear chain guard platform to hold down the rear.
   e) Pull starter grip straight up with your right hand.

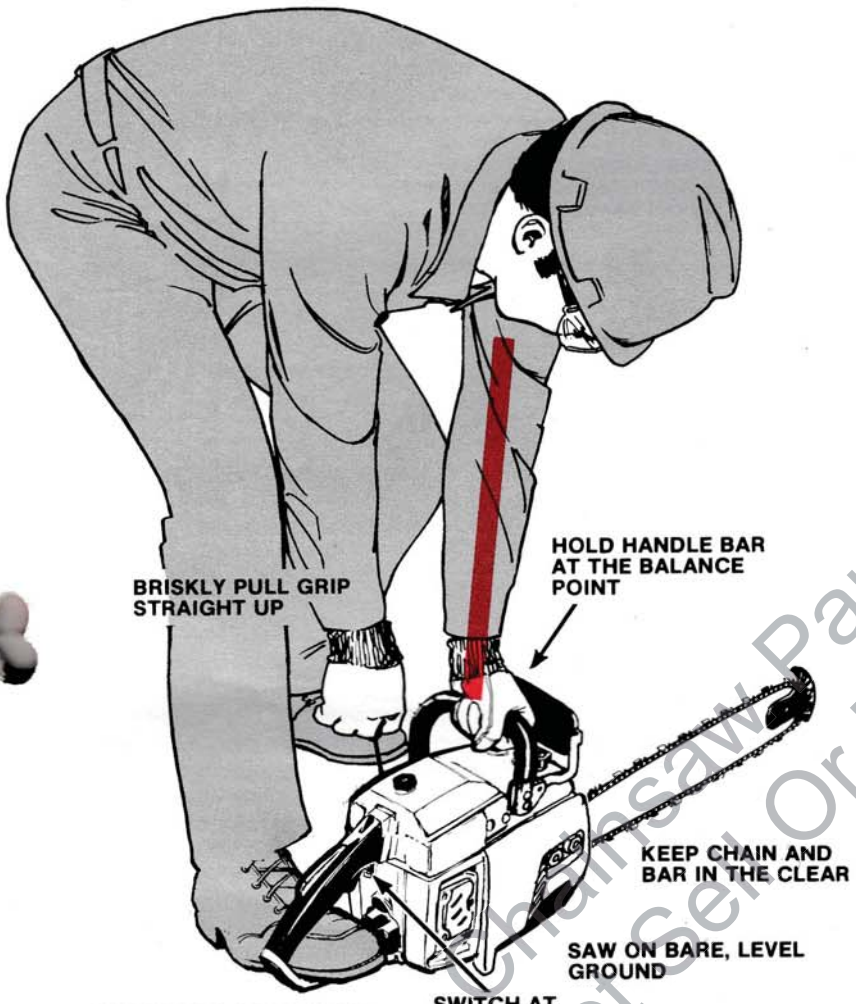


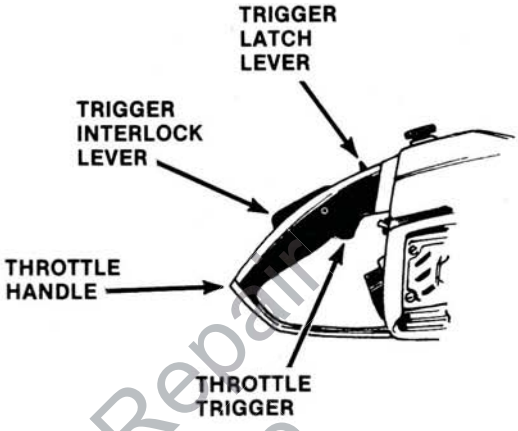
5. The proper procedure for cutting includes:
   a) Starting up engine, then taking stance in front of the wood.
   b) Positioning saw, but revving it to full speed before chain touches the wood. (Prevents violent reaction.)
   c) Watching the progress and being ready to stop cutting pressure and hold 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.

STARTING AND STOPPING





LATCHING TRIGGER

A. Grasp Throttle Handle. Squeeze Interlock Lever.
B. Hold Trigger depressed.
C. Push Latch forward. Let go of Handle and crank engine.

THROTTLING UP

A. Depress Interlock.
B. Squeeze Trigger to accelerate engine.

RETURNING TO IDLE

A. Release Trigger. If you let go of Handle to release Interlock, saw cannot be accelerated until throttling-up process is repeated.

NOTE

Steps 1 through 6 are for starting a cold engine.

1. Put ignition switch to "RUN", and twist choke knob clockwise to full choke position (see illustration of controls).
2. Latch trigger for starting (see illustration).
3. Hold saw down properly. Pull the rope slowly to engage the starter. Then crank engine with smooth but vigorous pulls on the starter grip. (Pull rope straight up out of the rope hole). Hold onto grip during each rewind, to reduce kinking and fraying of the rope.
4. Crank the engine until engine fires. (Coughs two or three times, or runs briefly.) Then open the choke halfway. (Normally, 3 to 5 cranks are required to prime the engine with fuel. Many more might be required in cold weather, but only one crank may be needed to fire an engine which already has fuel in the chamber).
5. Crank engine at half choke to start it. Smoothly open choke (counterclockwise) in time to keep engine running. NOTE: Any engine which has fired several times at full choke will start when cranked right away at half choke.
6. Switch your hand from the starter grip to the throttle handle. Squeeze the trigger and you will have control of the throttle. When saw is warm enough, let it idle while you take your stance for cutting.

NOTE

The following are for the special circumstances mentioned.

7. To restart a warm engine turn the switch to "RUN" and crank to start. Choking and latching of the throttle are usually not needed unless the engine has cooled a bit.
8. If a warm engine has begun to cool, first try *half-choke.* If it does not fire or start at half-choke, use the cold-starting control settings (steps 1 - 5).
9. If an engine has been flooded (you can usually smell the excessive fuel vapors) remove and *dry off the spark plug.* Put the switch to "STOP," hold the throttle wide open, and spin the engine over quite a few times with the starter rope to purge fuel from the cylinder. Reinstall the spark plug and follow steps 1 through 6 to start the engine.

SECTION 2 / THE WORKING AREA

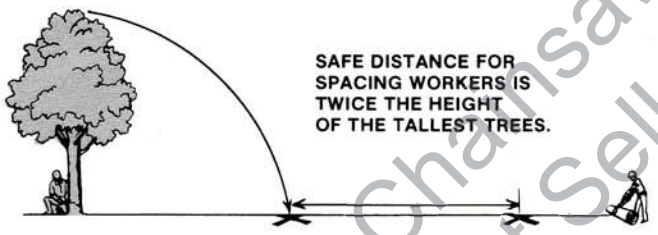
WORK AREA PRECAUTIONS

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.

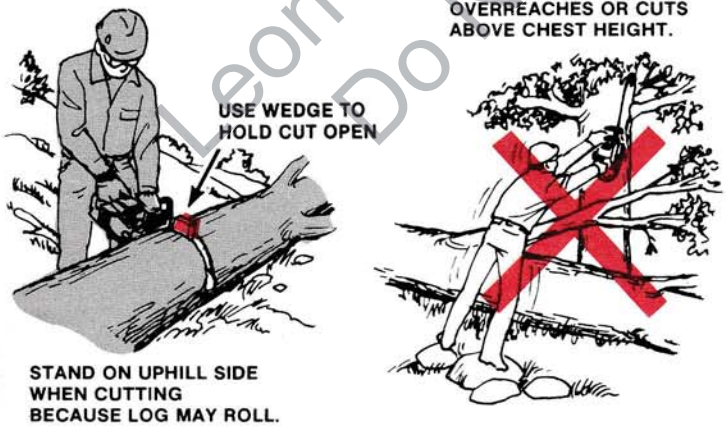
Everyone — helpers, bystanders, children and animals, and other operators — must be kept a safe distance from the cutting area. During felling operations, the safe distance should be at least twice the height of the largest trees in the felling area. During bucking operations, space buckers and limbers 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.

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

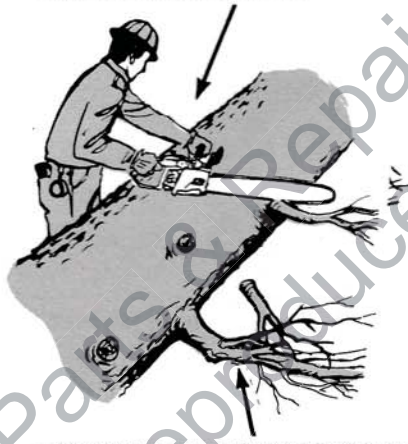
USE WEDGE TO HOLD CUT OPEN



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 reason. In fact, we advise limiting your cutting to chest height, because a saw held higher than this is difficult to control against kickback forces. Limbing from off-the-ground positions, such as in trees or from ladders, is extremely dangerous. Ladders can slip—you can fall. Unless you have had specific training in cutting aloft, leave cutting aloft to experienced tree men.

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

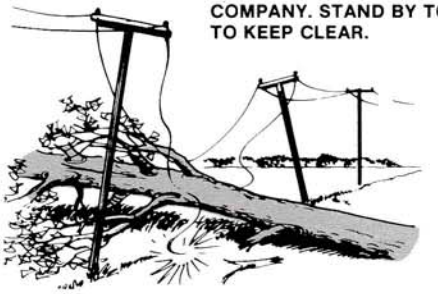


LEAVE SOME SUPPORTING BRANCHES UNCUT. AFTER YOU HAVE BUCKED UP THE LOG SECTIONS YOU CAN CUT OFF THESE LAST FEW LIMBS

CUTTING ALOFT OR FROM LADDERS IS EXTREMELY DANGEROUS.

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.

When the diameter of the wood is large enough for a wedge to be inserted in the cut behind the saw chain, use a wedge to hold the cut open when there is a danger of pinching the saw blade. 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 ofter 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.

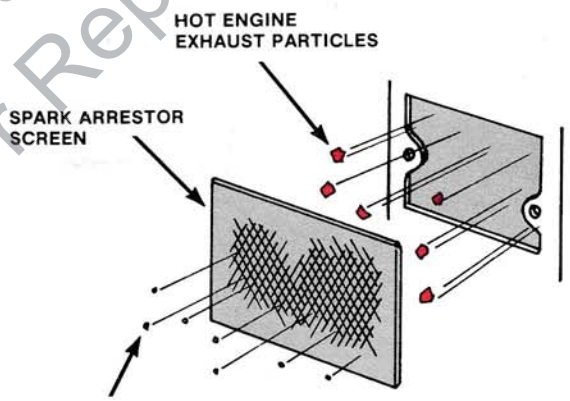
If there is anything wrong with the saw have it fixed before further operation. The idle speed adjustment should be maintained so that the chain stops moving after the engine is brought back to idle. Adjust the idle speed whenever necessary (see Section 5).

NOTE

Do not disassemble the rotor (flywheel). Special techniques are required (on a dealer level) for safe removal and installation of the rotor. Never start up your engine unless the guide bar and chain are installed. Without the guide bar in place, the clutch can fly off or explode.

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.



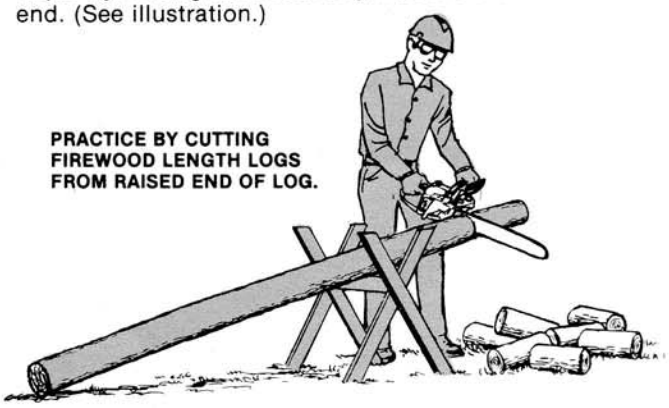
A SPARK ARRESTOR IS ONLY ABOUT 90% EFFICIENT IN PREVENTING FIRES. LOCAL AUTHORITIES MAY CLOSE THE FOREST DURING EXTREMELY DRY PERIODS.

SECTION 3 TECHNIQUES OF CUTTING

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

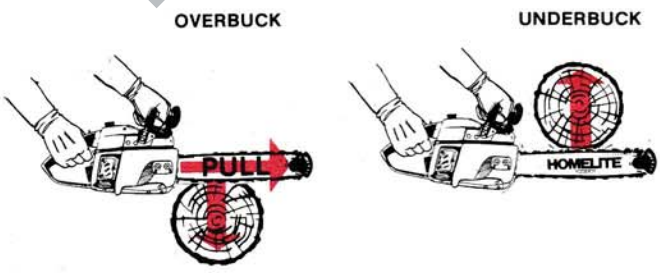
BUCKING, LIMBING AND PRUNING TECHNIQUES

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.)



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.

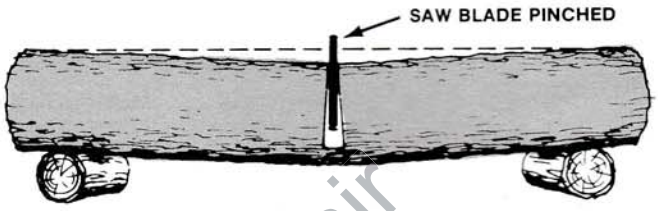
3. You will notice a slight amount of *pull* reaction during cutting. So be ready for the moment the saw breaks through the wood and *pull* ceases. You must be ready to stop pushing down on the saw and hold the saw nose up. The moment the chain breaks clear, release the throttle trigger so the engine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



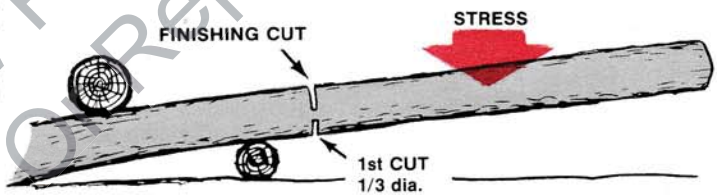
4. When you have mastered the overbucking technique, try underbucking to see what it feels like.

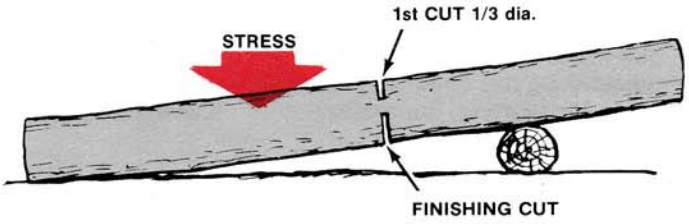
   Place the saw blade under the log. Throttle up and exert upward pressure to cut clear through. Now you are ready to learn when to overbuck and when to underbuck in order to avoid pinching the chain in the wood.

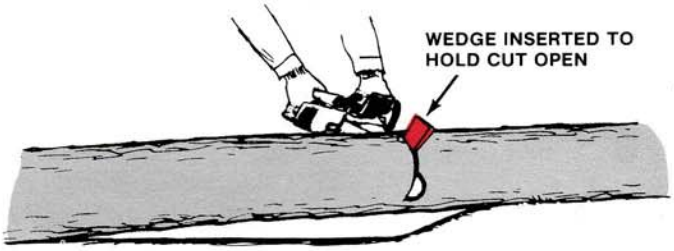
CUTTING VARIATIONS ACCORDING TO THE STRESS FACTORS



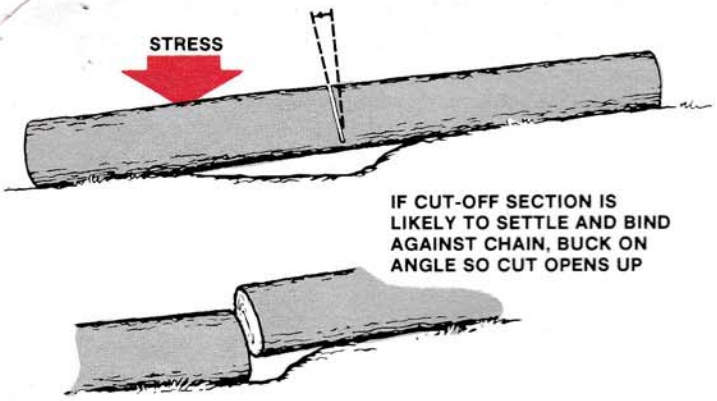
When the piece to be cut is supported on the ends, but not along the point where you want to cut, it will bend as you make your cut. If you are overbucking a log that will bend downward at the cut, your saw will be pinched if you cut more than 1/3 the log diameter. So overbuck 1/3, then remove the saw 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 lie is such that 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.



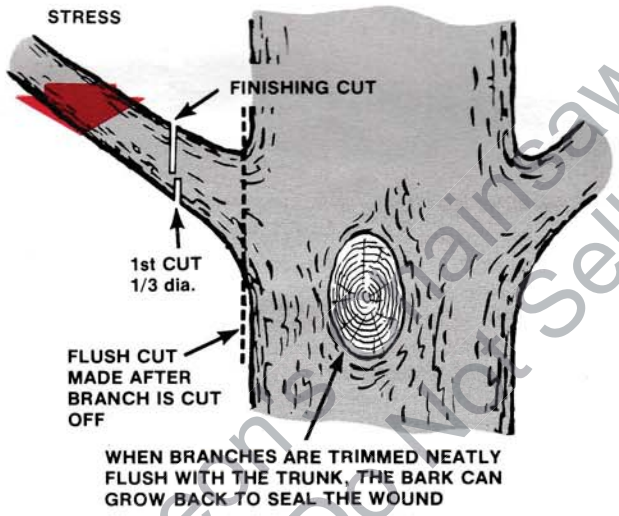




Sometimes it is impossible to avoid pinching (with just standard cutting techniques) or difficult to predict which way a log will bend when cut. You can do this to prevent pinching: If the wood diameter is large enough for you to insert a soft bucking wedge without touching the chain, you should use 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.



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.



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.

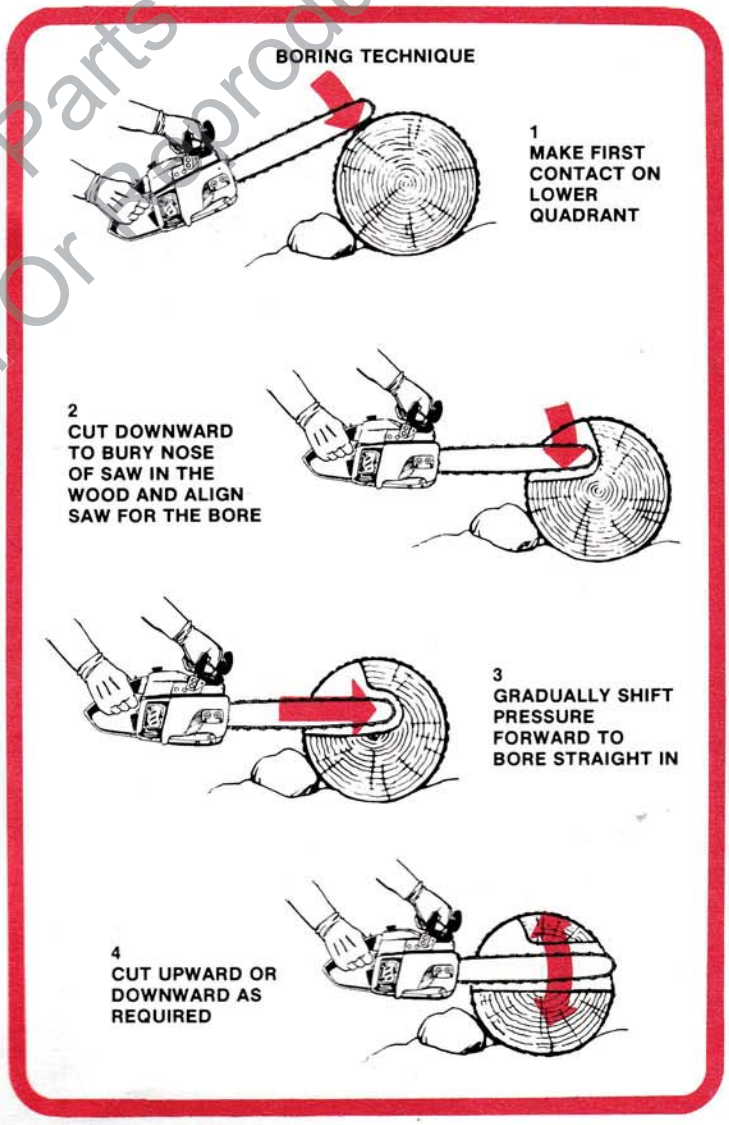
BORING WITH THE NOSE SECTION

KICKBACK DANGER

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

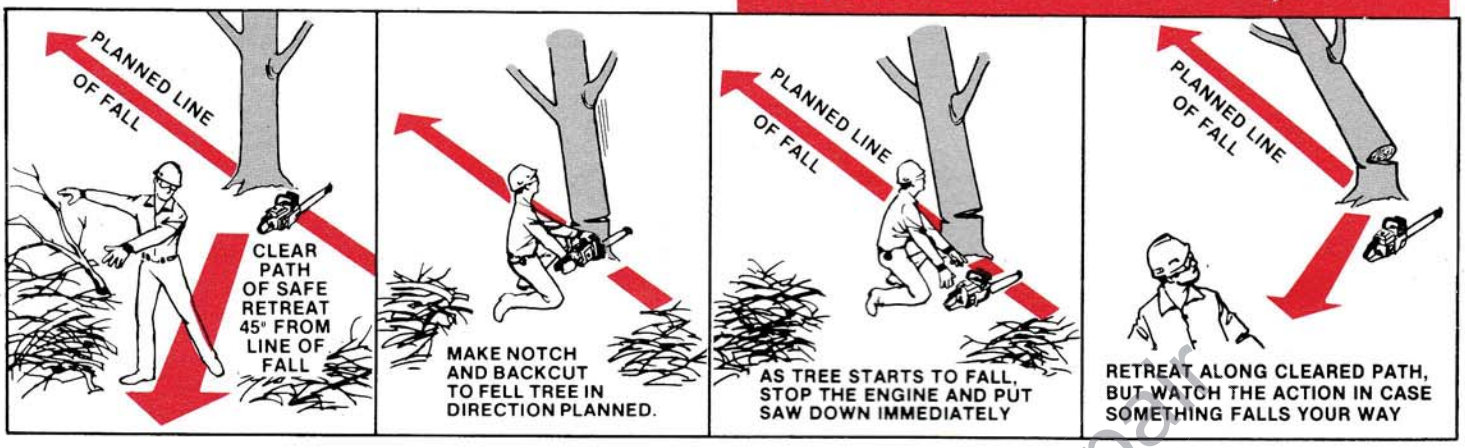
Boring should be attempted only by experienced operators because it requires extreme care and attention to proper technique. Do not bore unless there is no other way to make a cut. Boring is usually resorted to in order to avoid an obstacle or when it is necessary to make blind holes such as cut-outs 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.

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 the full length of the blade. Now you can cut either upward or downward through the wood as shown in the panel.

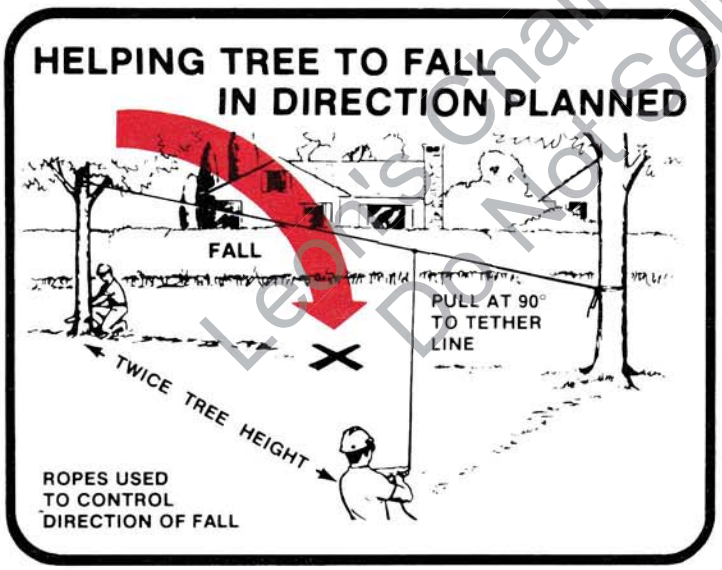


TREE FELLING TECHNIQUES

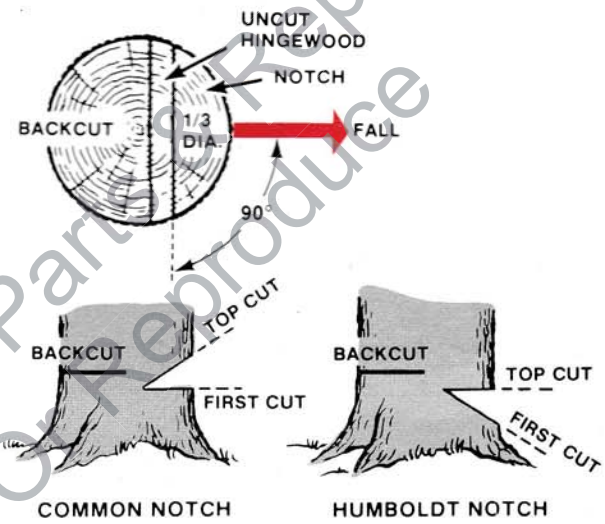
CAUTION
If the saw gets caught or hung up in a tree during felling, leave the saw and save yourself. The saw can be replaced and you cannot!



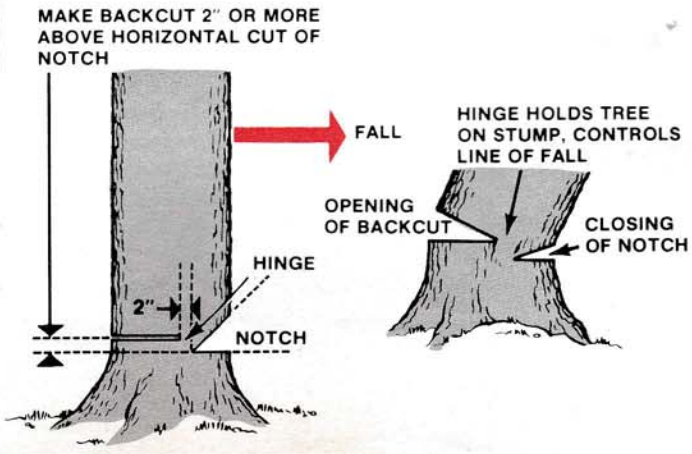
1. Pick your escape route (or routes in case the intended route is blocked). Clean the immediate area around the tree, and make sure there are no obstructions in your planned path of retreat.
2. Consider the factors of wind speed and direction, the natural lean and the balance of the tree, and the location 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.



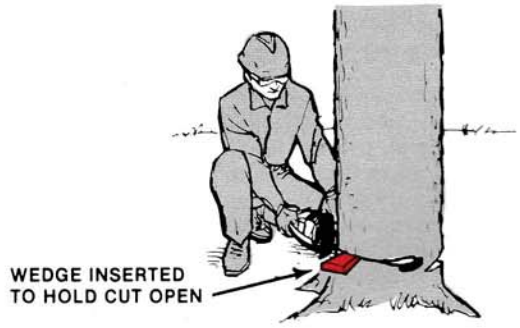
5. If the tree is not badly out of balance, cut a notch about 1/3 the diameter of the trunk. This notch whether standard or "Humboldt" is made in the side the tree is to fall. And the cuts of the notch are made so they intersect at a right angle to the line of fall. This notch should be cleaned out to 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.

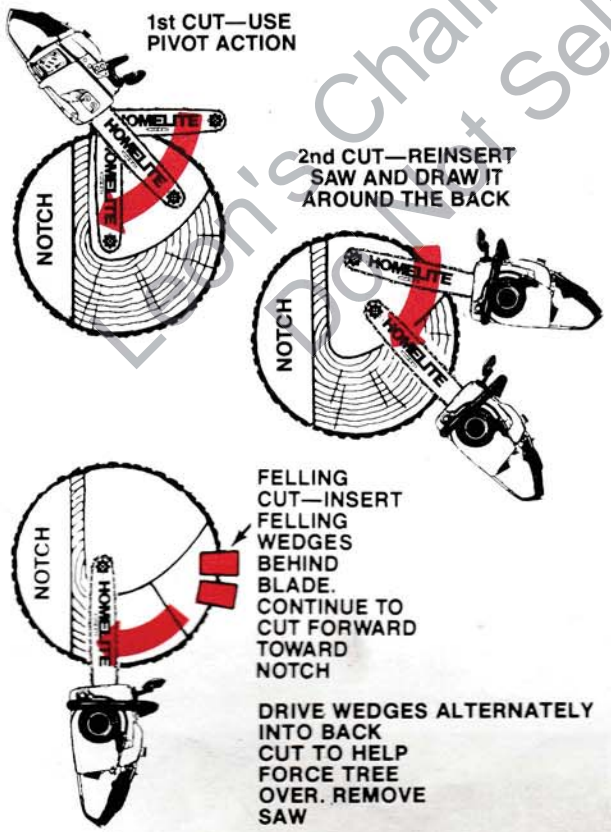


9. Trees larger than the saw can cut in one cut, can be both notched and back-cut in a series of cuts, as illustrated. Start the notching cuts from one side and draw the saw through to the other side of the notch. Start the back cut on one side of the tree, pivoting the saw through to form the desired 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. Complete 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)

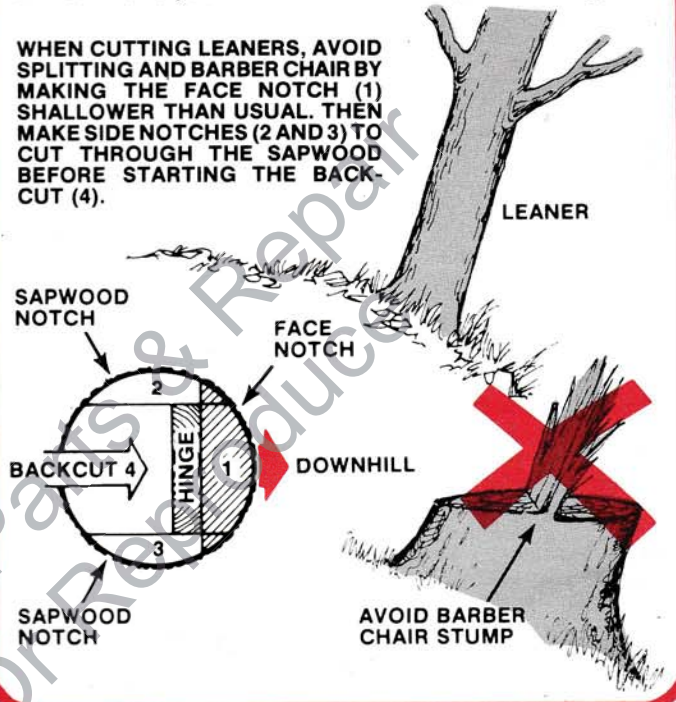


FELLING LEANERS

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

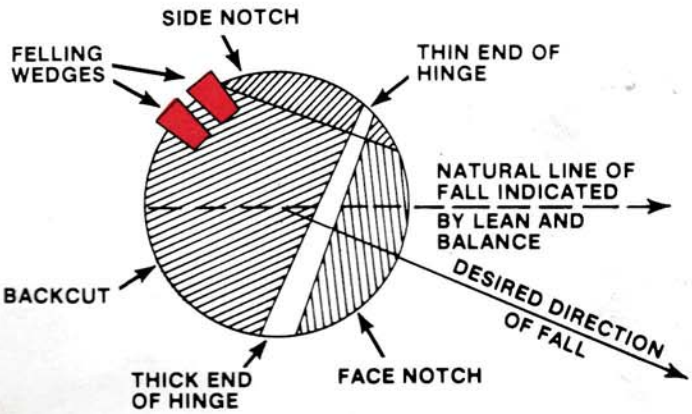
All standard felling techniques apply to leaning trees except as follows:

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.

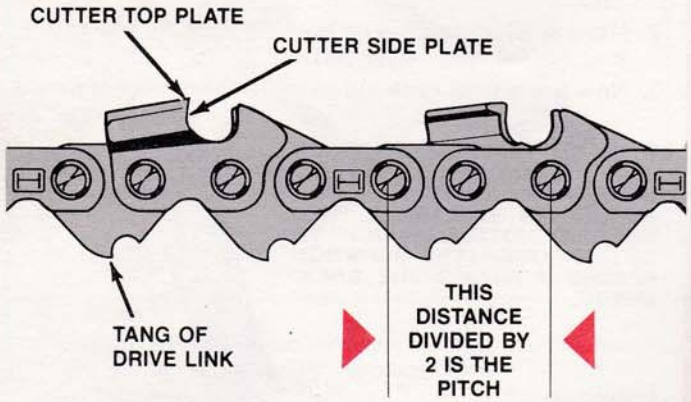


CHANGING THE DIRECTION OF FALL
(from the natural line of fall)

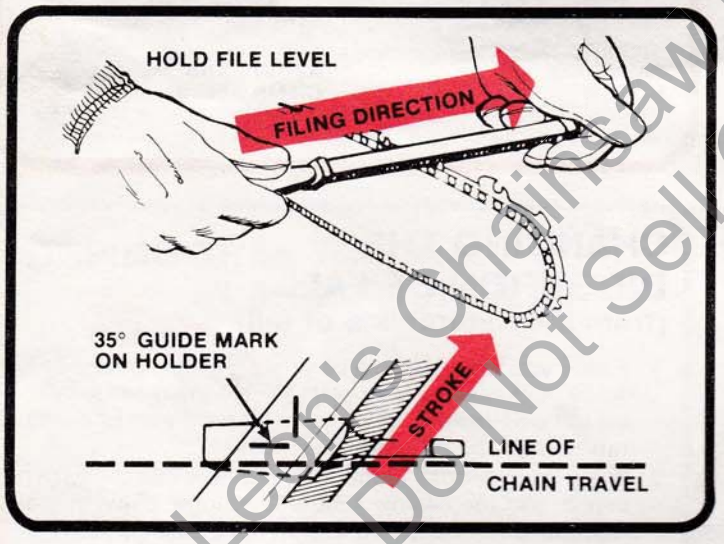
1. Where you would leave a parallel hinge (hingewood of equal thickness on both sides) the hinge is left thicker on the side *toward* which you want the tree to swing (away from the natural line of fall).
2. Place your wedges in the back cut *between the back-center and the narrow side* of the hinge.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



HOMELITE® RAKER III™ SAW CHAIN



3/8" pitch, semi-chisel tooth, **Raker III™ saw chain** has three depth gauges to guide the cutting tooth. With regard to smoothness of cutting as well as speed, Raker III 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

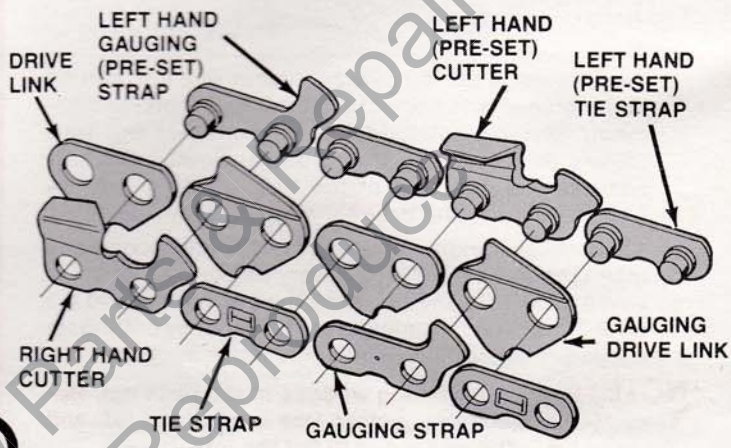
Use our standard 7/32" diameter "fast-cut" round file and file holder (our assembly DA-92615). When more than 1/2 of the original tooth steel has been filed away, you should switch to a 3/16" diameter file which will fit the same holder. The need for a smaller file is that the cutter tapers toward the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

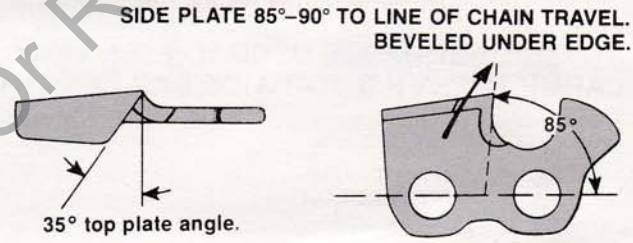
The file holder has the required 35° top filing angles marked on it. It holds the file at the correct height (1/10 file diameter above top plate of tooth) to produce the required side plate angle of 85° (5° forward from 90°) and beveled cutting edge.

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

Raker III 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.



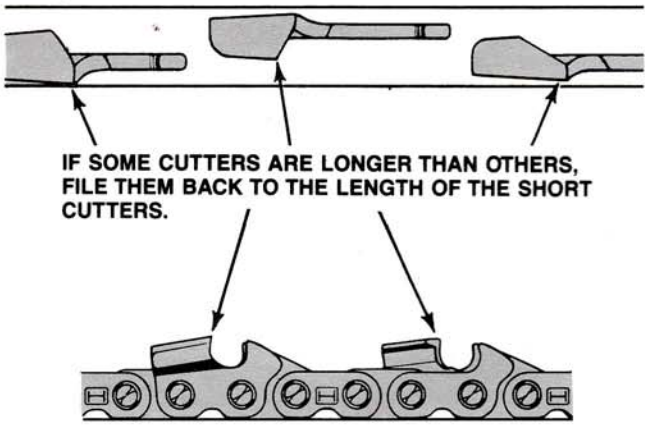


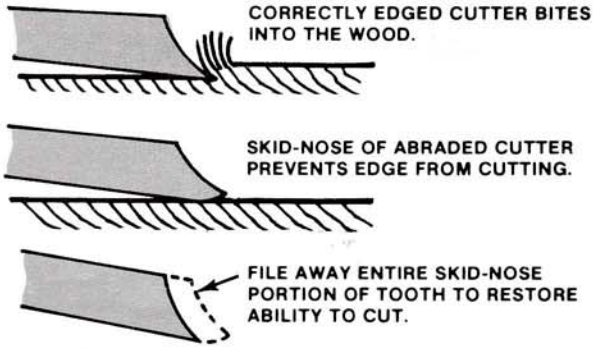
HOW TO FILE CUTTERS

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

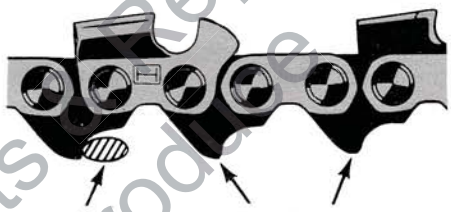
1. Hold file against cutter face and adjust filing angle to 35° (marked on holder).
2. Keep file level — do not let it dip or rock.
3. File in one direction towards front corner of tooth only. Move file away from tooth face on return stroke.
4. Use light but firm pressure, mostly towards back of tooth 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.

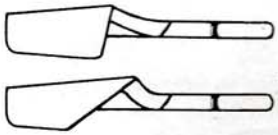
REFILE ANY TEETH HAVING ONE OR MORE OF THESE FAULTS:

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

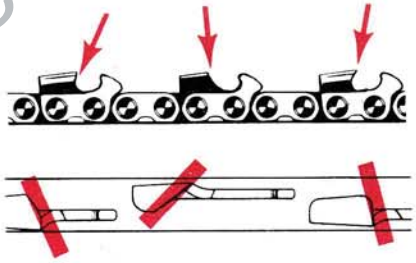
Chain resists entering wood (scrapes instead of cutting wood). Causes excessive heat and wear to bar and chain. Caused by lowering handle end of file or holding file too high on the tooth.



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.



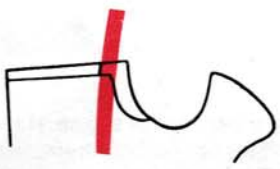
Cutters Filed at Non-Matching Angles

Chain will not cut at its best. May cut off line or "run" to one side, drag may slow dawn 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.

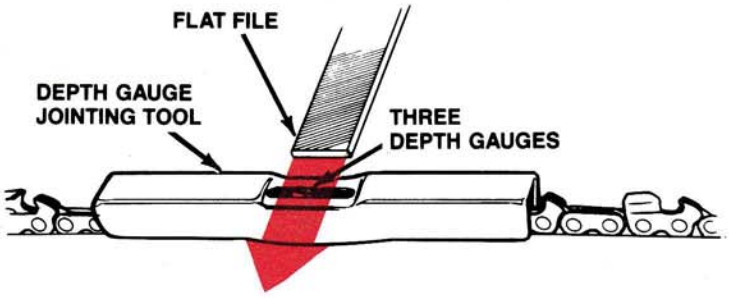


Blunt Cutting Edges

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.

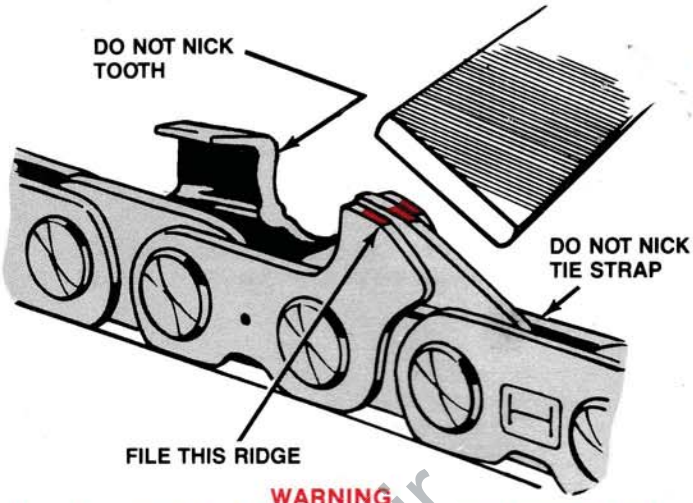
DEPTH GAUGE CLEARANCE



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 Raker III™ 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.
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.



WARNING

Do not exceed the depth gauge settings recommended above. With these gauge clearances, Raker III 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.

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.

GUIDE BAR MAINTENANCE

The guide bar should be cleaned periodically. Use a putty knife or stiff wire to clean packed sawdust out of the chain grooves. Also clean out the chain oil holes so that oil can

flow freely to the chain. Rotating the bar top-for-bottom on the saw every day or two helps to equalize the wear.

Hard nose bars ground from solid steel (GW Series) can very often be repaired by grinding down the worn or cracked bar rails, welding new rail metal to the bar, and re-grooving. All of this must be done by bar shop specialists. However, replacement of short length bars may be more economical. Laminated construction bars can not be welded. They *must be replaced*. Sprocket nose bars in both the PT and SP series can be fitted with replacement sprocket nose assemblies when necessary. The nose sprocket bearing is good as long as it turns smoothly and freely. Examine the bar rails. If burred or feathered, file the edges smooth. Small straight cracks in the rails probably have little effect on performance, but rails with hooked cracks will cause trouble. If the bar rails are burned blue it indicates either that the rails were pinched together or that the chain was run with too little oil or under too much pressure.

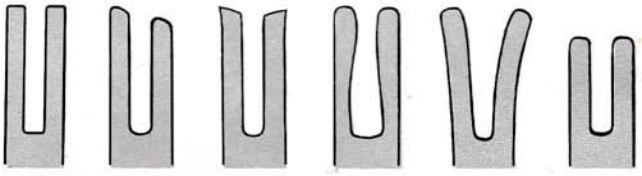
NOTE

Do not use any guide bar which is bent out of shape. Have bent bars straightened, if possible, or replace them.

FLOP (TURN OVER) BAR EACH TIME IT IS REMOUNTED.

NOTE: SAFE•T•TIP® device has been remounted

WEAR PATTERNS IN GUIDE BAR GROOVE AND BAR RAILS:



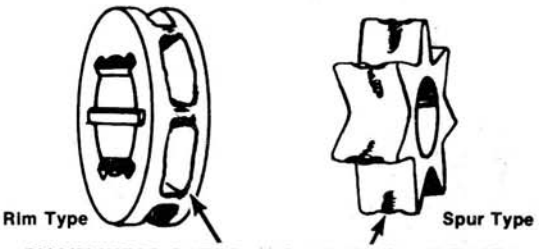
Most of these will cause the chain to flop over sideways and either not cut at all or cut in a curve. Sometimes the bar rail will be exposed to one side and will hang up against the side of the cut so the chain cannot feed.

CLUTCH, DRUM AND DRIVE SPROCKET

WARNING

Proper disassembly and repair of the clutch is so important to the life of the engine and the 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 small engine mechanic and have the proper clutch service tools.

1. The owner should clean the clutch drum and sprocket and the surrounding area daily, at the same time as he is cleaning and remounting the bar and chain. At these times, a check should be made to see that the clutch drum turns freely and smoothly.
2. Whenever a new chain is to be installed, the drive sprocket should be replaced also, for full life expectancy of the chain. At these times, the clutch bearing should be checked and either replaced or repacked with grease (see below).
3. The clutch requires full inspection and service at 100 hour intervals. You are again reminded that this should be done by a competent serviceman. If any of the bearing needles are missing, have developed flat spots, or are burnt or bent; or if the bearing cage or inner race is worn or scored, change the entire bearing complement. If the bearing seems to be in good shape, repack it with a small amount of HOMELITE® All-Temp Multi-Purpose Grease #17193 or a lithium base grease.
4. Clutch trouble symptoms are: a) failure to disengage (chain rotates during idling and the idle cannot be adjusted low enough to stop chain rotation); b) slipping so much that the saw cannot cut; and c) chattering during a load.
5. Causes of clutch trouble may include: a) overheated, stretched springs; b) worn or cracked spider or clutch plate; c) worn or broken clutch shoes; d) oil, dirt or grease on the clutching surfaces; e) worn, bent, cracked or scored clutch drum; f) dry or worn bearing and g) worn sprocket.



CHAIN WEAR PATTERN ON SPROCKET TEETH

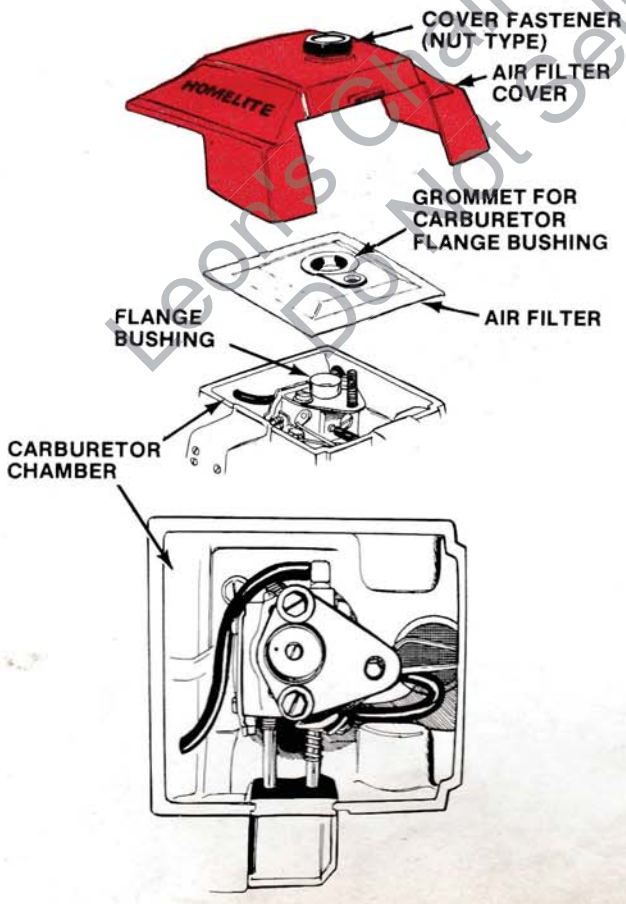
CHAIN BRAKE MAINTENANCE

All surfaces of the chain brake assembly in the drive case cover, as well as the drive case and clutch area of the saw, should be cleaned before each day of cutting. Then the user should make a careful inspection for wear of the brake mechanism parts. If there is any detectable wear, the saw should be brought to your servicing dealer for inspection. The chain brake checkup should be included in any 50-hour service work performed by your dealer.

REMEMBER

There is no test available to assure effectualness of the chain brake.

AIR FILTER AND THE CARBURETOR SYSTEM



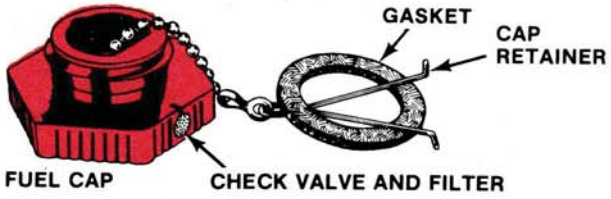
The air filter should be cleaned twice each full day of operation, or more frequently as required to preserve engine power when operating conditions are extremely dusty. Each time the filter is removed, you should inspect the carburetor chamber and the air intake screen in the floor of the chamber, also cleaning these whenever you see any sawdust or dirt accumulation.

NOTE

During disassembly and cleaning, you must have the carburetor choke closed. And you should block off or place your fingers over the flange bushing so as not to let dirt enter the engine.

1. Close the choke. Remove the cover and the filter.
2. Cover the flange bushing while wiping, brushing or blowing the carburetor chamber clean.
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 practical to keep some spare filters on hand for instant changing.
4. As cleaning never removes all of the dirt particles from the filter pores, the filter should be replaced after several months of use or more than 100 cleanings.
5. Always fit the flange bushing carefully through the grommet in the air filter and align the filter carefully on the chamber. Secure the filter in place with the cover. Never operate unless a clean filter is in place.

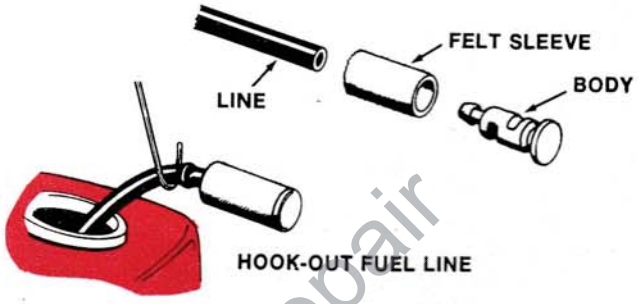
FUEL TANK AND THE FUEL LINE



The fuel cap contains a check valve protected by a porous filter. This valve lets air into the tank. If it clogs up, the saw will either start up and lose power, or refuse to start. Whenever this occurs, see if the engine will start up and run with good power after you have temporarily loosened the fuel cap 1/6 turn. If the saw does have its power restored, shut it off. Installing a new fuel cap assembly should clear up your problem.

If under the conditions described above, the performance is not improved when the fuel cap is loosened, the FELT FILTER on the fuel pick-up line may be clogged, or the line may be kinked shut or cracked and leaking air.

To remove the filter, remove the fuel cap and fish for the "rubber" fuel line with your finger or a hook (as shown in the sketch). Pull the line and filter out through the filler hole. Remove the filter body from the line, and pull the felt sleeve from the line. Slide a clean new felt sleeve onto the body. Push the body back into the end of the line, and drop the pick-up into the tank.



CHAIN OILER

Except for cleaning out the oil discharge hole daily, or often enough that it does not clog with sawdust, periodic maintenance of the oil system is not required.

Should the oil output not be sufficient to oil the chain, suspect the following reasons:

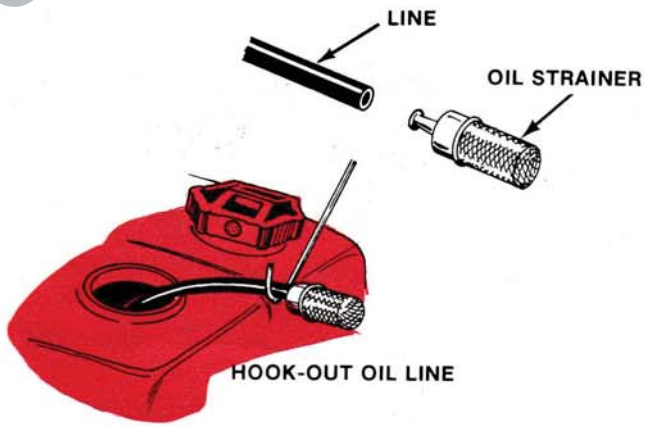
a) Oil in cold weather needs to be diluted with kerosene.
b) Filter and vent valve in oil cap are clogged.
c) Oil strainer in tank is clogged.
d) Oil line is leaking.
e) Dirt in oil pump.
f) Oil pump seals leaking.

OIL CAP TEST AND REPAIR

Remove the chain from the guide bar and put the drive case cover back on the saw. Operate the engine for a 10 second burst and see how much oil is discharged. Then, loosen the oil cap 1/6 turn (from one hex face of cap to the next is 1/6 turn) and compare the oil output after another 10 second burst with the first one. If you get more oil with the cap loosened, the check valve or filter in the cap are inoperative. Proper performance can be restored by installing a new oil cap assembly.

OIL STRAINER CLOGGED

Hook the oil line and fish the line and strainer out through the oil filler hole. Remove the strainer. You can clean it in solvent and/or blow it clear. In an emergency pick it clean with a pin point.

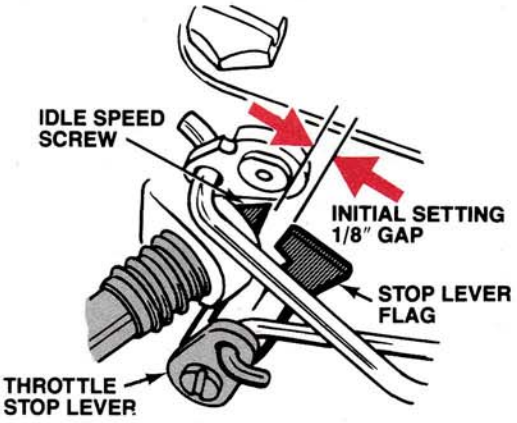


OIL PUMP OUTPUT LOW OR PUMP NOT PUMPING

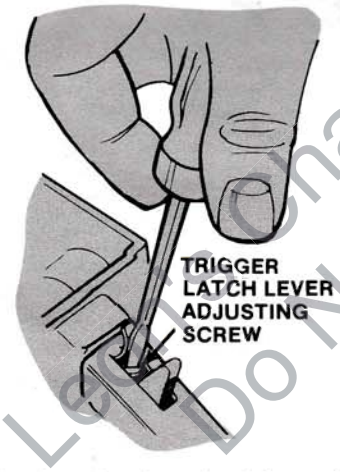
If you suspect that the pump output is too low for proper chain lubrication, have the saw checked by a Homelite Servicing Dealer prior to using.

CARBURETOR ADJUSTMENT

INITIAL ADJUSTMENTS
(Make only if engine will not start. Otherwise begin with adjustment of idle mixture and speed.)



1. Remove air filter and cover so that you can see carburetor and adjustments.
2. Slowly and gently close (clockwise) both the HI and LO NEEDLES. Then open the HI NEEDLE 1-1/4 turns and the LO NEEDLE 1-1/4 turns to the left (CCW).
3. Turn the IDLE SPEED SCREW to the left until you can see that it no longer touches the flag of the throttle stop lever. Turn the screw back to the right until it just makes contact with the flag but does not move it.



4. Latch the throttle trigger latch in position for starting. This should result in a 1/8" gap between the flag and the IDLE SPEED SCREW (see illustration). If necessary, turn the adjusting screw in the trigger latch lever as required to adjust to a 1/8 inch (3.2 mm) gap.
5. Unlatch trigger. Now turn IDLE SPEED SCREW two turns to right (clockwise).

NOTE

As now adjusted, you should have no trouble starting the saw unless there is some other trouble such as faulty spark plug or ignition, wrong fuel, etc.

CAUTION

The chain will rotate when the engine is started.

6. Tension the saw chain correctly on the bar and be sure that it is lubricated properly. Put the air filter and the cover back on the engine. Follow instructions in your owner's manual to start the saw. Latch the trigger before cranking. When engine runs, unlatch the trigger and idle the engine.

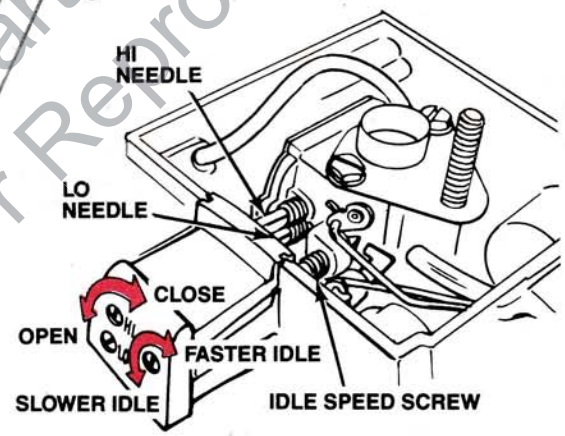
ADJUSTMENT OF IDLE MIXTURE AND SPEED
(Throttle closed)

1. After warming up the engine at part throttle for three minutes, clear it out with a 3-second burst at full throttle. Then idle the engine.
2. If the chain rotates, turn the IDLE SPEED SCREW to the left (CCW) until the chain stops.
3. Turn the LO NEEDLE slowly to the right (CW) to find the fastest engine speed. If this adjustment causes chain rotation, repeat step 2 to stop the chain from turning. Then repeat the beginning of step 3.

NOTE

If smooth, dependable idling cannot be obtained without chain rotation, have the centrifugal clutch assembly checked.

4. Latch the trigger to check the starting speed setting. If the chain rotates rapidly with the trigger latched, the setting is a bit too high. To lower the starting speed setting, stop engine and turn the trigger latch adjusting screw to the left as required. Do not set starting speed lower than necessary to prevent chain rotation during starting.



HIGH SPEED ADJUSTMENT AT NO LOAD
(Throttle wide open)

1. With the HI NEEDLE set 1-1/4 turns open, check for smooth acceleration by opening the throttle wide for three seconds. If the saw stumbles or "4-cycles," turn the HI NEEDLE to the right (CW) 1/8 turn at a time until smooth acceleration is obtained.
2. Make a saw cut to check that adequate power is available.
3. Continue making 1/8 turn adjustments to the right (CW) until the saw shows a power drop when asked to cut. (This indicates a too lean mixture setting).
4. From the setting in step 3, turn the HI NEEDLE 1/4 turn to the left (CCW). Check the cutting ability of the saw again. (This should be your best HI NEEDLE setting for your particular altitude, temperature and humidity conditions.)
5. Re-check for smooth idling as instructed under "Adjustment of Idle Mixture and Speed."

STARTING SPEED ADJUSTMENT AND THROTTLE CONTROL INTERLOCK REPAIR

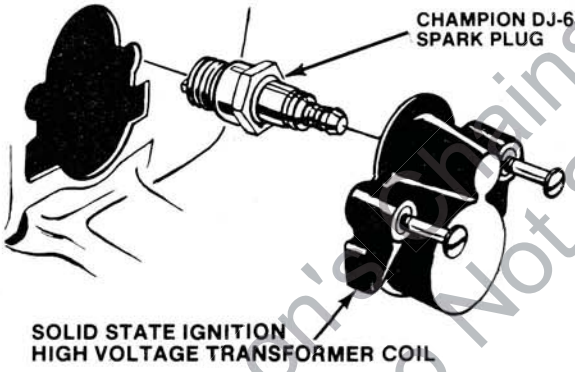
The starting speed was adjusted at the factory for a speed of 3000 rpm with the trigger latched in starting position. However, readjustment may become necessary to compensate for wear of the interlock contact surfaces or slight bending of the throttle rod, or a slight difference in the starting speed after some parts have been replaced. Disassembly and cleaning will be required if the mechanism becomes "sticky" in operation.

STARTING SPEED ADJUSTMENT

1. With a screwdriver blade, lift the flap (of the rubber grip) in front of the trigger latch. Note the slotted head adjustment screw in the trigger latch.
2. To increase the starting speed setting, turn this screw to the right, a little at a time, until the desired speed is reached.

SPARK PLUG AND IGNITION

1. Whenever your saw refuses to start, change to a clean, dry, and properly gapped spark plug, preferably a new one. Then if the engine does not start, you can go back to check other things like proper fuel, carburetor settings, etc. But always leave the new plug in while trouble-shooting.
2. To remove spark plug, first remove the high voltage coil, held by two slotted head screws. Use a 5/8" spark plug wrench to loosen the spark plug.

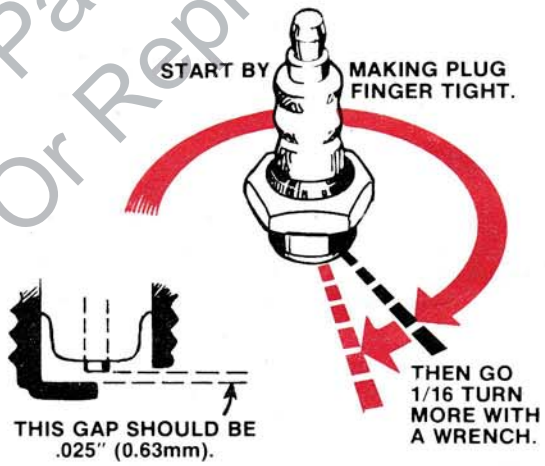


3. The saw uses a 14mm, 5/8" hex, tapered-seat (gasketless) 2-cycle electrode type Champion DJ-6J (our part #65130-S) or any equivalent of the same configuration and heat range. At time of installation, check that the electrode gap is .025" (0.63mm). Always install for a gas-tight seal without overtightening. The proper tightness can be achieved by making the plug fingertight and then tightening 1/16 turn more with a 5/8 spark plug wrench.
4. Fouled plugs often can be restored by cleaning them, then resetting the firing gap. All deposits between the center porcelain insulation and the metal plug body must be removed.

NOTE

Cleaning by hand-brushing or hydro-honing followed by a rinse in solvent is recommended. Power brushing and sandblasting are not recommended, as these methods drive into the plug harmful particles which cannot be removed with solvent.

The metal electrodes should be filed or scraped down to bare metal, then gapped to .025" (0.63mm) by bending the side electrode toward the center electrode.

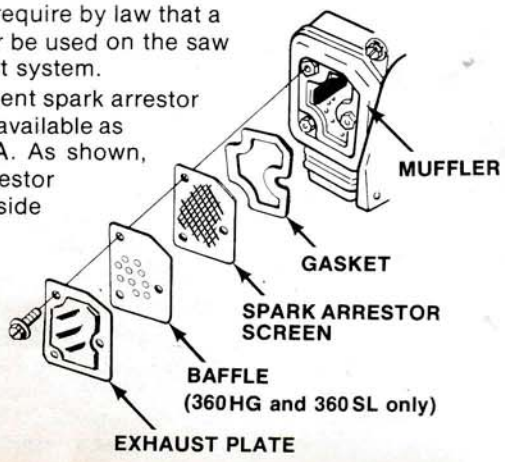


EXHAUST SYSTEM

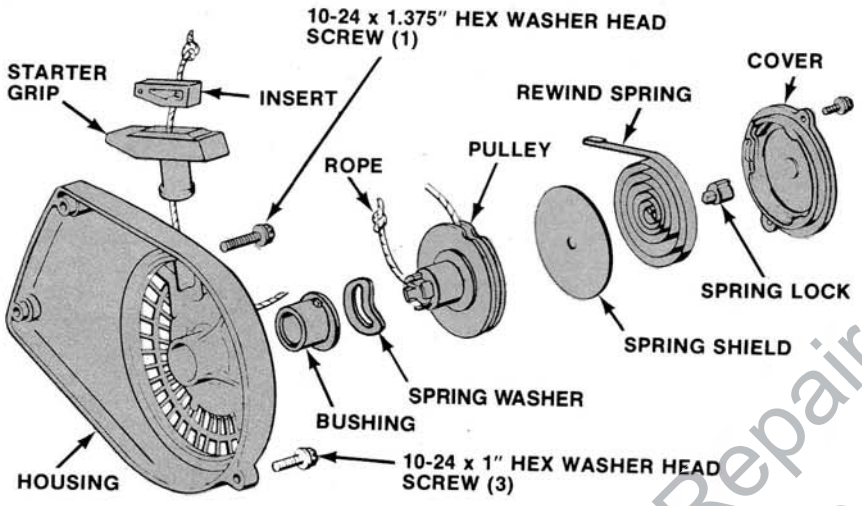
Always use a muffler on your saw and keep it in good repair. A faulty muffler (or open exhaust) can cause hearing damage and is also a fire hazard.

Some states require by law that a spark arrestor be used on the saw in the exhaust system.

The replacement spark arrestor for the 360 is available as Kit #D-12270-A. As shown, the spark arrestor screen fits inside the muffler.



STARTER/FAN HOUSING MAINTENANCE



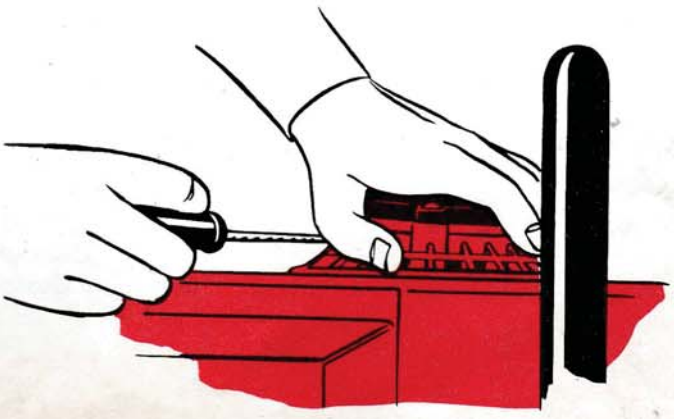
No regular maintenance beyond cleaning of the air intake openings is required. However it may be necessary to add a turn or two of starter spring tension if the rope fails to rewind all the way to the housing. Removal of the starter/fan housing is not required for disassembly or assembly of the rope, spring and pulley.

1. To add spring tension, place the starter housing starter-cover-up. Hold the cover from turning and remove the two hex washer head screws in the cover. Turning the cover to the right (clockwise) 180° at a time, set the tension to where the grip stays in place against the housing when rope is allowed to rewind. Then reinstall the two screws, tightening them to 32 pound-inches (3.6 Nm).
2. To repair or replace the starter spring in the starter cover, remove the two cover screws, let the cover rotate (counterclockwise) until the spring tension is relieved. Then lift off the cover. Remove the plastic spring shield and the spring lock. Unhook the outer loop of the spring from the notch in the rim of the starter cover and lift out the spring carefully.

CAUTION

If the old spring is to be discarded, unwind the coils so they cannot fly apart. If the old spring is to be reinstalled, coils should not be oiled, as oil attracts dirt. However, rubbing a very small amount of HOMELITE® ALL-TEMP *MULTI-PURPOSE* GREASE or a lithium base grease onto the sides of the coiled spring will provide the correct amount of lubrication. Fit the spring into the cover. Drop in the spring lock and snap the plastic spring shield into place over the spring.

3. To install a new starter rope, remove the pulley from the housing and remove the old rope. Push one end of the new rope through the square hole of the pulley hub insert, and pull the end out through the long notched hub. Tie a simple knot tightly in this end of the rope and trim the end to within 1/8" (4 mm) of the knot. Heat the knot to set it, or coat it with acetone type cement. Pull the other end of the rope to draw the knot tightly into the hub recess. Push the free end of the rope through the elongated slot and hole in the back side of the pulley and pull it through between the pulley sheaves. Push the rope through the rope insert in the housing. Thread the end of the rope through the starter grip from the bottom, then through the hole in the grip insert. Knot, dress and set this end of the rope as you did the other. Then draw the knotted end into the insert and assemble the insert in the starter grip.
4. To complete the assembly, put the spring washer onto the long hub of the pulley. Drop the pulley and washer into place in the housing. Pull out the rope so that it runs straight from the pulley through the housing insert. Turn the pulley clockwise to wind all of the rope onto the pulley. Now, fit the starter cover assembly in place and rotate it until the spring lock in the cover engages the square hole in the pulley. Set the proper amount of rewind tension and secure cover in place as in paragraph 1.
5. If the starter/fan housing was removed from the saw, use care in reassembling as follows: Position housing and press it lightly against the engine. Pull the starter grip out slowly until the toothed hub pushes the starter pawls out of the way and the housing drops flush into place against the engine. Then secure with two 10-24 x 3/4" hex washer head screws at the rear and one 10-24 x 1 1/4" hex washer head screw at the front. Tighten all three of these screws to 45 pound-inches (5 Nm).



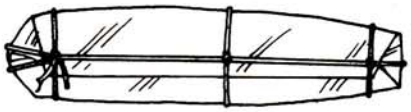
STORING THE SAW

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 by either method A or method B:

   Method A) Fill the saw tank with fresh fuel which contains an anti-oxidant stabilizer. (See fuel mixing instructions.) Run the saw on this mixture for ten seconds and use the choke instead of the switch to stop the engine. This will put a lot of stabilized fuel into the crankcase and cylinder. Refill the saw tank right to the top to keep air out.

   Method B) 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.

CHAIN CAN BE STORED IN OIL



WRAP BAR IN OILED PAPER

3. Remove bar and chain and clean them throughly. 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.

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
Charlotte, N.C. 28217
Attention: Customer Relations Manager

SPARK PLUG ~~A10~~ – [redacted] DJ6J Bevel Type

FILL IN THIS INFORMATION FOR YOUR RECORD

MODEL NO. Homelite 360
UT NO. 10501A
SERIAL NO. 6F1100112
DATE OF PURCHASE
NAME OF DEALER
ADDRESS
INVOICE NO.

Homelite Division of Textron Inc.
P.O. Box 7047
14401 Carowinds Boulevard
Charlotte, N.C. 28217

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