FIRST EDITION
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HOMELITE®

550 Professional

Chain Saw

Models; 550, 550W, 550SL

OWNERS
Operation & Maintenance
MANUAL

This saw is designed for use by professionals. This Owner's Manual, accordingly, includes instructions to assist the professional in performing routine maintenance and adjustments.

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

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GLOSSARY OF WOODCUTTING TERMS

BACK CUT ____ The felling cut made in the backside of the tree towards the felling notch. See page 16.

BARBER CHAIR ____ The stump of a tree having long wood fibers attached at the hinge section. Usually results from poor cutting practice.

BORING CUT ____ A blind cut made into the wood, principally with the nose of the bar.
WARNING: Danger of kickback. See instructions for boring on page 17.

BUCKING CUT ____ Any cuts made to section up a felled tree or log.

FELLING CUT ____ The final back cut which causes the tree to fall.

FELLING NOTCH ____ A horizontal cut-out, often wedge-shaped, made on side tree is to fall, the inside edge of notch usually being 90° to line of fall. See page 18.

HINGE WOOD ____ Wood left uncut between the notch and back cut; hinge holds tree on stump, guides it over. See page 19.

KICKBACK ____ The rapid and dangerous movement of the saw toward the operator after the chain at the nose of the bar has contacted the wood or some other object. See page 12.

LEANER ____ A tree with extreme lean, requiring special notching and hinging technique to avoid "barber chair" or splitting during felling. See page 19.

LODGED TREE ____ Tree partially or wholly separated from its stump, or uprooted, but which has not fallen to the ground.

"NO LOAD" SPEED ____ RPM developed by running the engine or saw at wide open throttle without applying any work load.
CAUTION: Letting engine run at full throttle without a load should be avoided as much as possible to prevent saw damage.

OVERBUCKING ____ Using bottom edge of bar to cut downward through a log.

ROOT WAD ____ The roots and base of tree extending above ground level after a tree has been pushed over by wind or other means.

SAW KERF ____ The width of the saw blade or cutting chain including the set of teeth; also the cut made by a saw blade or chain.

SNAG ____ Any dead standing tree or portion thereof remaining standing.

SPRING POLE ____ Sapling bent and held down under tension by another fallen tree. See page 17.

UNDERBUCKING ____ Using top edge of bar to cut upward through a log. See page 16.

WIDOW MAKER ____ Any overhanging limb or section of a tree which could become dislodged and drop to the ground.

SAFETY PRECAUTIONS FOR CHAIN SAW USERS

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

BASIC PRECAUTIONS FOR PERSONAL SAFETY

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

BASIC PRECAUTIONS WITH CHAIN SAWS

- Always carry the chain saw with the engine stopped, the guide bar and saw chain to the rear, and the muffler away from your body. When transporting your chain saw, use the appropriate guide bar 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 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.

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.)

INTRODUCTION

FACTS ABOUT THE 550 CHAIN SAW

We strongly urge you to study the entire contents of this Owner's Manual even before you begin to assemble the unit. Proper assembly and maintenance go hand in hand with the operation of your saw. So do not wait until something goes wrong with your saw to find out how to care for it. This manual tells you how to operate and maintain your saw correctly, and also how to make emergency repairs.

The 550, 550W and 550SL chain saws have the following standard features and accessories:

Engine: 2-cycle, single cylinder, loop scavenged.

Displacement: 5.1 cu. in. (84cc.).

Cutting Speed: 6,000 — 12,000 R.P.M.

Fuel/Oil Mixture Ratio: 32:1 or 16:1 depending on oil.

Starting: HOMELITE automatic rewind starter. Adjustable starting speed throttle latch.

Clutch: 3-shoe lined centrifugal.

Ignition System: High voltage capacitor discharge. Automatic spark retard.

Carburetor: All position diaphragm type with integral fuel pump.

Fuel Tank Capacity: .92 liters (31 U.S. fl. oz.)

Chain Oil Capacity: .50 liters (17 U.S. fl. oz.)

Chain Oiling System: Automatic diaphragm-actuated pump with manual override.

ACCESSORIES

Hand Guard: (On model 550 and 550W). Made to be rugged and dependable, it provides added safety and control.

Chain Brake: (On model 550SL). In the event of kickback, HOMELITE'S Safety Lock Chain Brake is actuated by the pressure of the hand, stopping chain rotation in a fraction of a second.

Wrap Around Handle Bar: (On model 550W). Made primarily for west coast applications, it provides added side-cutting control.

Spark Arrester: (On Model 550W). Meets all U.S.F.S. and state muffler skin temperature and exhaust gas temperature regulations.

HOMELITE SAFE•T•TIP® (Pat. Pending)

Homelite® offers a variety of chains and bars for the 550 series chain saws. When ordering the bar and chain of your choice, ask your dealer for the optional SAFE•T•TIP that fits your Homelite guide bar. When properly installed on a Homelite guide bar, the SAFE•T•TIP prevents kickback from happening.

The 5-point vibration-isolation (VI) system reduces the amount of engine and cutting chain vibrations transmitted through the saw control handles to the operator. The user is warned, nevertheless, that the rubber isolators are subject to wear and deterioration. The saw should be brought to a Homelite Factory Service Center or servicing dealer for isolator replacements as soon as there is any noticeable increase in vibration through the handles, or if the unit begins to shake or rattle in operation.

Certain individuals, after long periods of exposure to chain saw vibrations possibly coupled with exposure to cold weather, experience a restriction of blood circulation through the fingers which often has the appearance of *frostbite*. There are certain measures which can be taken to minimize the risk of this ailment. These are as follows:

1. Wear gloves to keep the hands and wrists warm.
2. Use only vibration-isolated saw models, or limit the use of chain saws to short and occasional periods.
3. After each period of use, exercise to restore normal blood circulation.

CAUTION

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.

PROTECTIVE CLOTHING, EQUIPMENT AND SUPPLIES

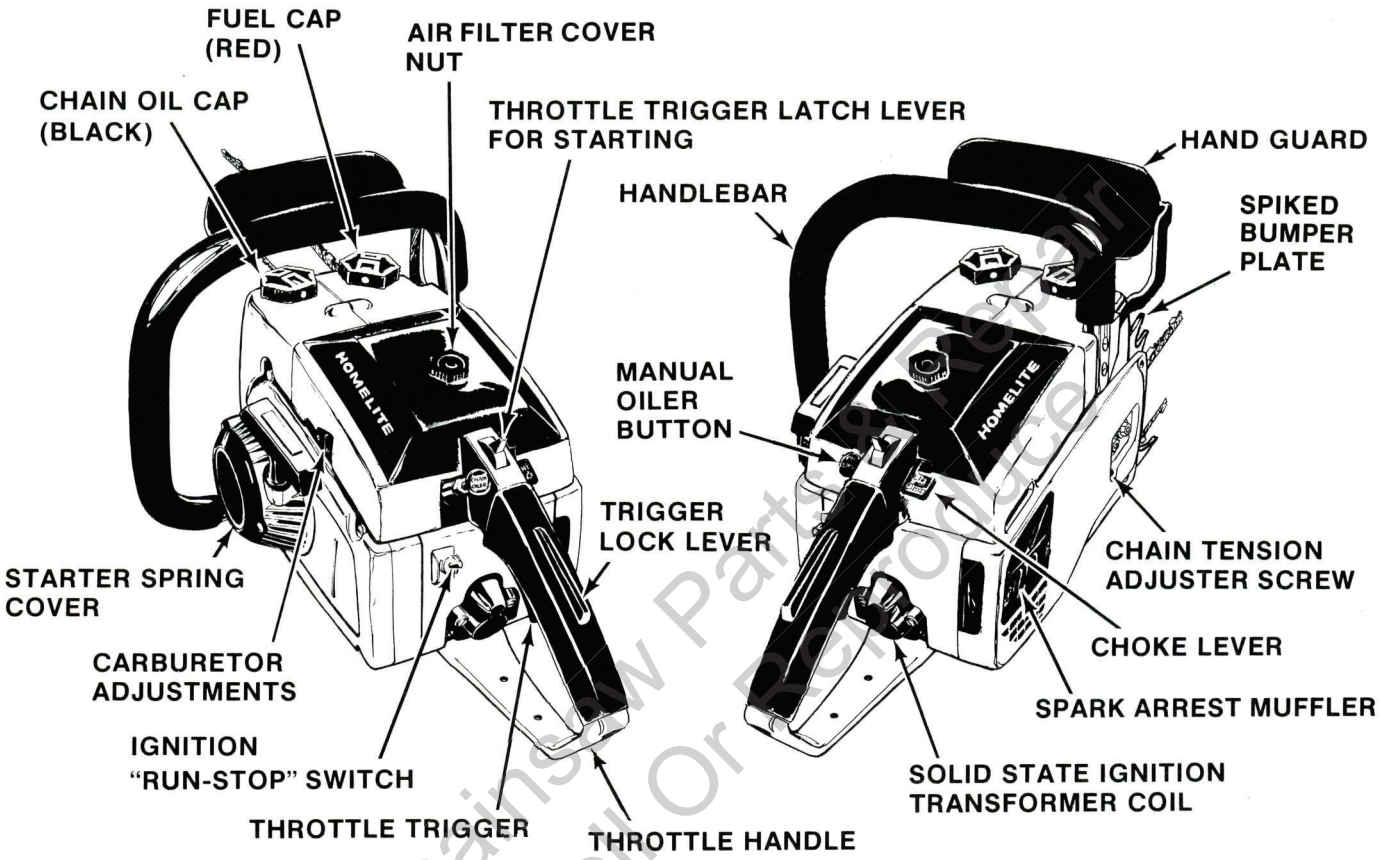
YOUR PHYSICAL CONDITION

Work relaxed but stay alert and maintain control of your saw. 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, alertness, or coordination or judgment. If you have any serious ailment such as a heart condition, check with your doctor before doing any strenuous lifting, reaching, pushing, chopping, shoveling, etc. Always do any lifting jobs with your leg muscles, not your back.

SECTION 1 — PREPARING YOUR SAW FOR OPERATION

FAMILIARIZE YOURSELF WITH YOUR NEW SAW

Take the saw in hand and familiarize yourself with the parts by comparing it with the illustrations in this manual.



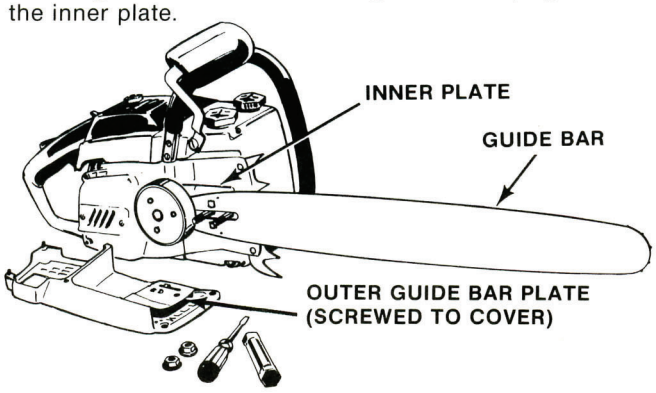
GUIDE BAR AND CHAIN ASSEMBLY

1. Push the ignition switch to "STOP". Remove the two guide bar mounting nuts and lift the drive case cover off the mounting bolts. Note that the outer guide bar plate is screwed to the drive case cover and comes off with the cover. Be sure to leave the inner guide bar plate on the mounting bolts.

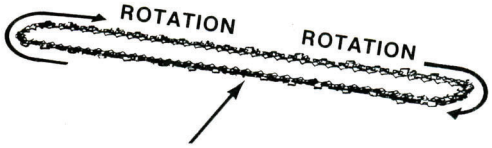
NOTE

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

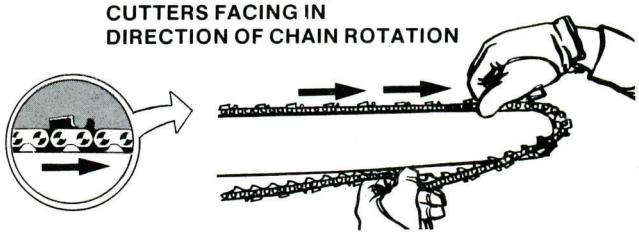
2. Put the guide bar on the mounting bolts and up against the inner plate.



3. Remove the chain from the carton, lay it out in a loop and check the teeth. The teeth should face in the direction of rotation which is away from the drive sprocket along the top edge of the bar.



LAY OUT CHAIN IN A LOOP WITH CUTTERS FACING IN DIRECTION OF CHAIN ROTATION

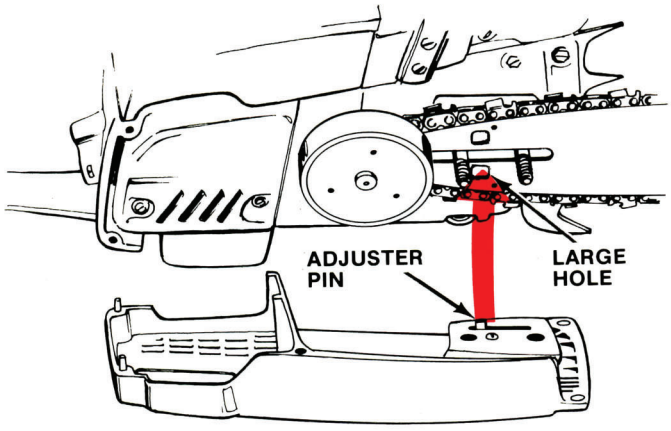


4. Fit the chain over the clutch and onto the sprocket. Now, beginning at the top of the sprocket, feed the chain drive links into the top bar groove, continuing around the nose of the bar until the chain is on the bar.

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

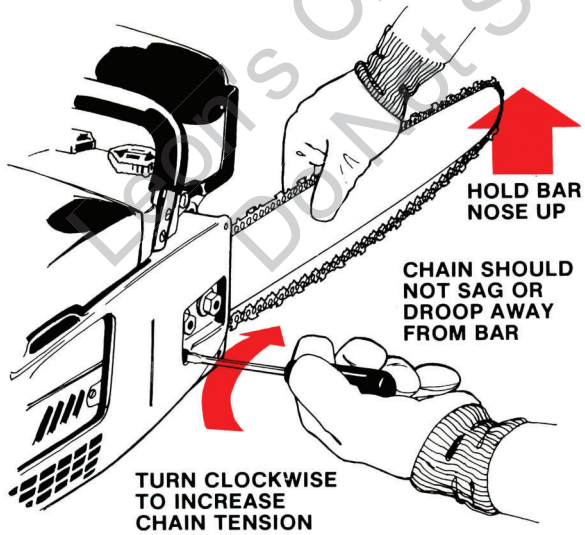
NOTE

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



LINE UP ADJUSTER PIN WITH LARGE HOLE IN GUIDE BAR

6. Slide the drive case cover loosely onto the mounting bolts. Turning the guide bar adjuster screw as required, align the adjuster pin in the cover with the large hole in the guide bar. Make sure that the pin engages in the hole. Press cover into place against the guide bar.
7. Put the mounting nuts back on. Make them only finger tight because the bar must be free to slide during adjustment of the chain tension.
8. Turn the guide bar adjuster screw clockwise to take out most of the slack in the chain. Again check that the drive link tangs are in the bar groove.
9. Adjust the chain tension as instructed under chain tension.



CHAIN TENSION

NOTE

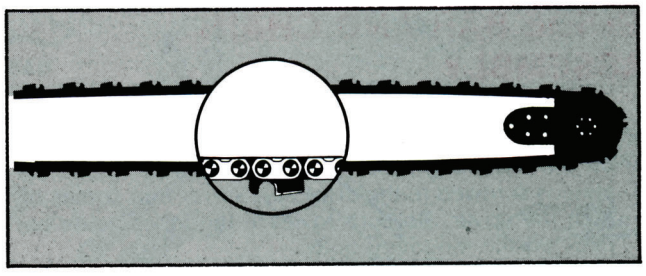
Proper tension is extremely important. In order to avoid a false setting, the tensioning procedure must include the following steps.

GENERAL TENSIONING PROCEDURE

1. With mounting nuts only finger tight, and most of the sag or slack removed from the chain, pull the chain along the top of the bar toward the nose. Note that the clearance between the chain tie-straps and the bar will fluctuate. Pull chain to where it sags the least.
2. Set the chain to the prescribed tension for the type of bar you are using (Sprocket Nose or Hard Nose).
3. "Snap" the chain to remove any kinks (pull away from bar and let go several times). If too much clearance develops, readjust the tension by turning the guide bar adjuster screw clockwise.
4. While holding up the nose of bar, tighten the mounting nuts securely to lock the assembly at the proper tension.
5. In use, the clearance will increase as the chain warms and expands. Know these facts:
   a) A hot chain — so hot that you cannot hold it without discomfort while counting to 20 — cannot be accurately adjusted because it will be contracting rapidly as you proceed. Always allow it to cool a few minutes before adjusting.
   b) An underoiled chain gets hot and stiff and is likely to kink up, becoming too tight on the bar. Keep the chain well oiled.

TENSION SETTING FOR SPROCKET NOSE BARS

1. The "cold" tension should be "snug" or taut — as tight as possible without your feeling any binding as you pull the chain along the bar by hand.



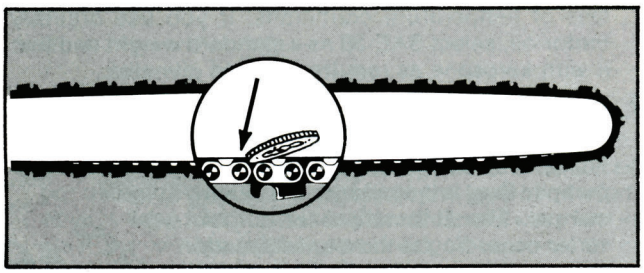
2. The chain will expand when warm and contract to the original setting as it cools. Under heavy duty cutting conditions, the sag may progress to where no more than the points of the tangs stay in the bar.
3. For extra long duration cutting, the tension should be reset where the warm chain hangs down about half the depth of the chain tangs at center of chain span.

CAUTION

Upon cooling, the chain will be too tight on the bar and should be readjusted before next use as in step 1 above.

TENSION SETTING FOR HARD NOSE BARS

1. When "cold" tensioning, set to where the chain tie-straps do not quite touch bar rails at center of chain span, but do not hang away more than the thickness of a small coin.



2. When "warm" adjusting, set to where the chain tangs hang about halfway out of the bar at the center of the chain span. This leaves a gap of about 1/8" (3.2mm), between tie-straps and bar rails.
3. Do not readjust warm chain unless tangs hang all the way out. Do not adjust overheated chain.
4. When starting out with cold chain condition, always recheck to see that tension is as in step 1.

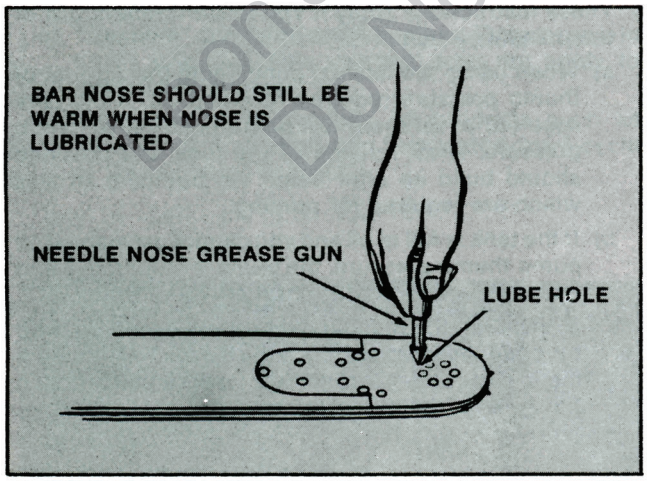
DAILY ATTENTION TO CHAIN AND GUIDE BAR

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

NOTE

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

2. The chain should be filed, cleaned and inspected, and then oiled.



3. Sprocket nose guide bars must be lubricated while still warm from use, at the end of each day of cutting. Using needle nose of Lube Gun #24258-1 filled with HOMELITE® ALL-TEMP Multi-Purpose Grease, or our pre-packed lube gun, pump grease into the sprocket nose bearing through the small grease hole in the side of the bar nose. Keep pumping until the dirty grease is forced out and fresh grease oozes out of the nose. This removes sawdust, dirt and moisture from the bearing. If bar is lubricated when cold, the old grease may not come out. Sprocket nose bars in continuous use should be lubricated on-the-job every 1-1/2 to 2 hours.

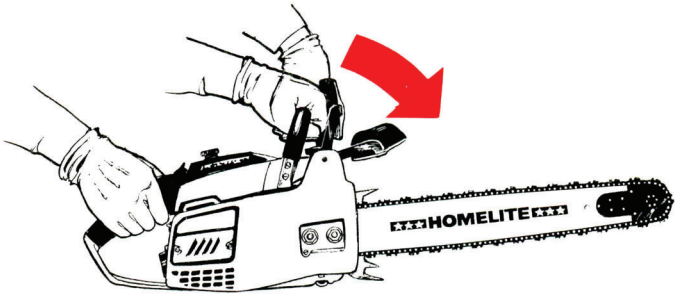
   A sprocket nose bearing is good as long as it turns freely with no roughness or binding. However, it can be replaced with a new sprocket nose assembly whenever necessary. Both the chain drive and nose sprockets should be replaced whenever a new chain is being installed.

550SL CHAIN BRAKE INSPECTION AND TESTING

It is very important that the chain brake be in good operating condition at all times. Daily, prior to cutting, the operator should remove the drive case cover and inspect the brake band for wear. If the band at any point along its entire length has worn to a thickness of .025 inch or thinner, a new brake band must be installed. Dirt, sawdust or oil will interfere with proper braking. So be sure to clean all surfaces and pockets around the inside of the drive case cover and clutch area.

With the drive case cover installed, make a daily operational check of the brake system.

1. Pull the hand guard back into the operating position.
2. Hold the saw down on the ground with the chain in the clear. Start and throttle up the engine until the chain is rotating.
3. With your left hand wrapped around the handle bar, as illustrated, rotate the back of your wrist forward and push the hand guard forward into the braking position. The chain should brake to a stop *instantly* (see note).



NOTE

When we say that the chain must be stopped *instantly* when the brake hand guard is thrown forward, we mean that braking must be so sudden that you cannot see the chain slow down before it stops. If the slowdown can be seen, it means that the stopping time is too long (in excess of 1/10 second).

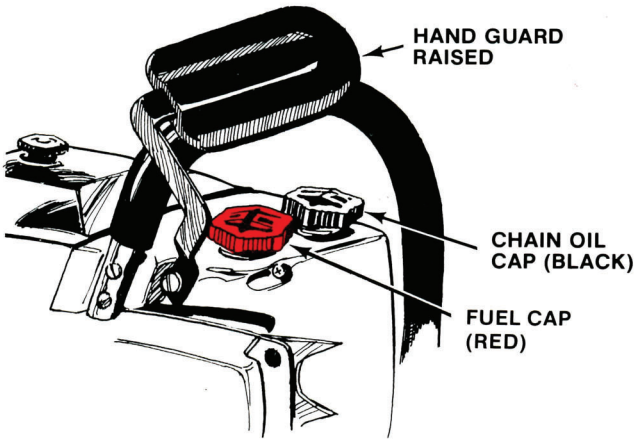
4. If the chain does not stop *instantly,* have the chain brake tested by a HOMELITE Servicing Dealer prior to using.

WARNING

Whenever the drive case cover is removed, be careful not to bend the brake bands or nick the clutch drum.

TANK FILLER CAPS

NOTE:
RAISE HAND GUARD FOR ACCESS TO TANK FILLER CAPS. LOWER HAND GUARD BEFORE OPERATING.

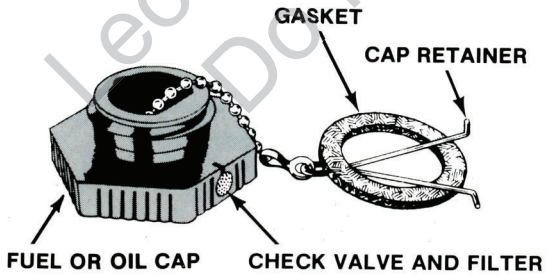


The red plastic fuel cap at top, front of the engine bears the legend "Mix Fuel & Oil". The chain oil cap is on the top of the drive case. The chain oil cap has the word "OIL" cast into it and is smaller than the fuel cap.

CAUTION

Whenever opening up one of the tanks, always loosen the cap very slowly and wait for the tank pressure to be equalized before removing the cap. Whenever you lay the saw aside after use, slowly crack both caps loose for a few seconds to equalize the pressure. Then tighten both caps fully.

Each cap contains a "duckbill" type check valve protected by a porous filter. It is important that these valves and filters be in operating condition so that the proper pressure can be maintained in the tanks. An inoperative check valve will result in a vacuum condition in the tank. Vacuum in the fuel tank will show up as "lean operation" (low power, overheating, poor idling ability). Vacuum in the chain oil tank will reduce the output from the automatic chain oiler.



CHAIN OIL AND THE OIL PUMP

1. Before operating the saw, fill the chain oil tank with HOMELITE® Bar and Chain Oil, or any brand of clean motor oil (including reprocessed oil). HOMELITE® Bar and Chain Oil is formulated with viscosity improvers designed to keep it free-flowing in the oil pump regardless of temperature conditions. If you use ordinary motor oil, select SAE-30 as a standard weight and thin it with kerosene as required in cold climates.
2. Wipe down the saw any time you spill oil or other oily fluids on it. Be sure the saw handles are always clean.
3. The 550 has two piston type chain oil pumps. One is automatic, the other manual. The automatic oiler output varies according to the engine speed, and is designed to satisfy the bar and chain lubrication requirements under average cutting conditions. The manual oiler is actuated by "press-and-release" stroking of the manual oiler button to the left of the throttle control handle. Each stroke pumps about 0.3cc of oil to the chain.

NOTE

You can check automatic oil pump output by filling the oil tank to the top, and operating the saw continuously for a measured time and measuring the amount of oil required to refill the tank. The minimum output should be 8cc per minute (a fraction over one ounce per 4-minute test).

4. The manual oiler should be used to satisfy the following conditions:
   a) To pre-load the bar groove with oil after installing a new or dry-cleaned chain.
   b) During extra long duration cuts, or extra-hard wood-cutting.
   c) When rip-cutting with the wood grain, or when boring with bar nose.
   d) When de-branching (trimming) logs where it is difficult to limit the rpm to that which is best for the chain and bar.
5. These instructions apply if you make frequent use of the manual oil pump:
   a) When using the manual pump, note the amount of thumb pressure required to pump oil. If the tank runs out of oil there will be no build-up of thumb pressure. After refilling of the tank, the pressure should build up after about ten pumping strokes which are required for priming.
   b) If the tank is full of oil and you cannot get manual oil pump thumb pressure, the pump is inoperative and must be repaired before further use of the saw.
   c) Even when the manual oiler output is not required for chain lubrication, it is a good idea to stroke the manual pump occasionally to be sure there is oil in the tank for the automatic oiler.

FUELING THE SAW

WARNING

This fuel tank may be under pressure. Remove cap slowly.

1. The red plastic fuel mix cap at the top of the saw is identified in raised letters. During fueling, take care that no sawdust or dirt enter the tank. Do not spill fuel.

CAUTION

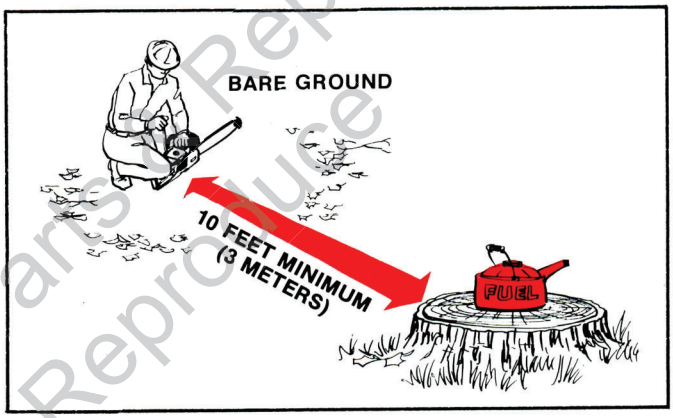
Select bare ground for fueling. Do not smoke or bring any fire or flame near the fuel. Move at least 10 feet (3 m) from fueling spot before starting engine.

2. Fuel to use: This 2-cycle engine is lubricated by oil mixed with gasoline. Use only oils and gasolines recommended in this manual. The amount of oil required per gallon of gasoline depends on the type of oil used. Always keep fuel in clean fuel cans. Do not keep fuel in glass containers (which can break or explode) or in plastic jugs (other than those specifically designed for gasoline storage).
   a) Acceptable 2-Cycle Engine Oils:
   Premium **HOMELITE® 32:1 ENGINE OIL**, in ratio of one part oil to 32 parts gasoline (1/4 pint per U.S. gallon of gasoline or 3% oil).
   Homelite® 16:1 Engine Oil in ratio of one part oil to 16 parts gasolien (1/2 pint per U.S. gallon of gasoline or 6% oil).
   If neither of these Homelite® Oils is available, use any engine oil designated for 2-cycle air-cooled engines in ratio of 16:1 only, as stated above. For best performance, however, use Homelite Oils in Homelite® Chain Saws.
   b) Acceptable Gasoline Products:
   We recommend that clean, fresh regular grade automotive gasoline, either leaded or unleaded, be used in Homelite engines. Automotive "High Test" premium* grade can be used when regular gasoline is not available.
3. Unacceptable Fuel ingredients:
   a) Any fuel made from untreated gasoline on hand for more than three months should not be used. However, treating fresh gasoline fuel supplies with STA-BIL®, an anti-oxidant type fuel stabilizer, can extend the life of fuel beyond this three month limit. Use according to directions on the STA-BIL can. STA-BIL is a product of Knox Laboratories, Chicago, Illinois 60616.
   b) "Gasohol" can harm small engines. Do not use it in chain saw fuel. This warning does not apply to automobile engines.
   c) Avoid use of multi-grade oil products such as 10W-30, or any other oils formulated for 4-cycle or water cooled engines.
4. How to Mix Fuel Thoroughly:
   You can get a uniform fuel mixture only by mixing the oil thoroughly with the gasoline. Measure out the required amounts of gasoline and oil accurately. Pour about half of the gasoline into the mixing can (never directly into the saw tank). Pour in the entire measure of oil. Agitate contents briskly by shaking or by stirring with a clean paddle. Pour in the remainder of the gasoline. Now agitate until sure of a uniform mixture.

**Leaded premium high-test may shorten spark plug life.*

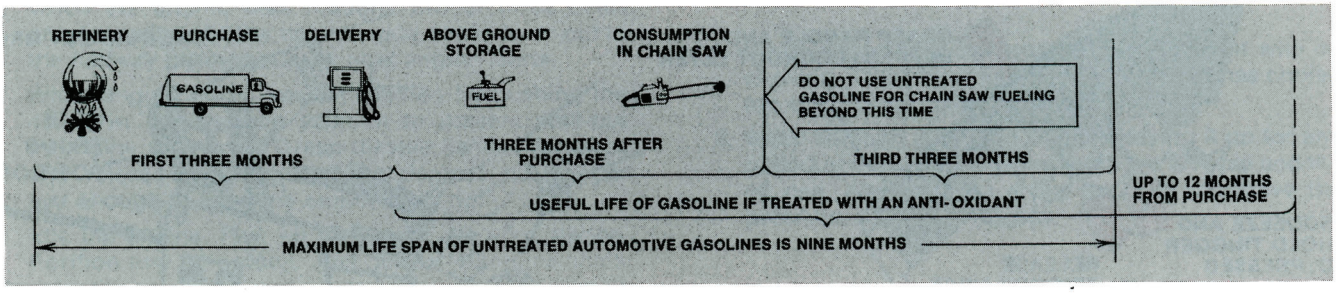
FIRE PREVENTION AND FUEL HANDLING

Do not smoke while fueling or operating. Do not bring fuel near sparks or flame of any kind.



Mix fuel and fill the saw tank over bare ground. If fuel is spilled on the saw, wipe it clean. Move at least 10 feet (3 m) away from the fueling site or fuel supply area before starting the engine. Remember that even friction sparks from the bar and chain can ignite gasoline vapors. Never set a hot saw down on dry ground or litter. (Use a log, or rock formation to set saw down when there is a fire hazard in the area. Always let the engine cool down before refueling or transporting it.

When working in the dry brush, have shovels and a fire extinguisher handy. Keep a fire watch for 15 minutes after cutting has stopped. Report all fires, no matter how small, to the proper authorities.



SECTION 2 — BASIC OPERATING INFORMATION

LOCATION AND OPERATION OF ENGINE CONTROLS

IGNITION SWITCH

Located to the left of the throttle handle. Switch positions are marked "RUN" and "STOP". Flip switch to "RUN" when starting and operating. Flip switch to "STOP" to stop the engine. In the "STOP" position, the switch grounds out the primary circuit to prevent ignition.

NOTE

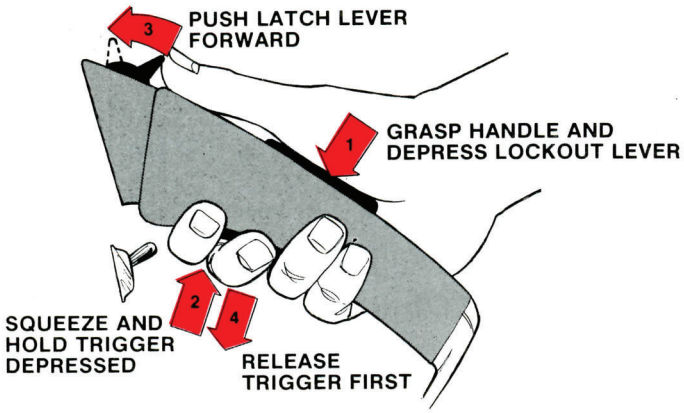
In an emergency, if switch fails to stop engine, you can use the choke to flood engine to a stop.

CHOKE LEVER

Located to the right of the throttle handle. Lift lever to choke a cold engine. Push lever all the way down to open choke for full power operation. (Always operate with choke wide open as soon as engine has warmed fully.) Put lever in a halfway position to start a partially warmed-up engine.

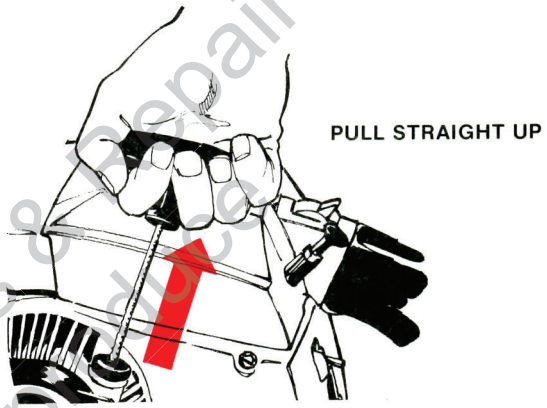
TRIGGER AND LATCH

The trigger is on the underside of the throttle handle. The latch lever is at top front. Set trigger for starting by squeezing trigger, pushing latch forward and releasing trigger first. After trigger has been latched, re-squeezing trigger will unlatch it to give you control of the throttle.



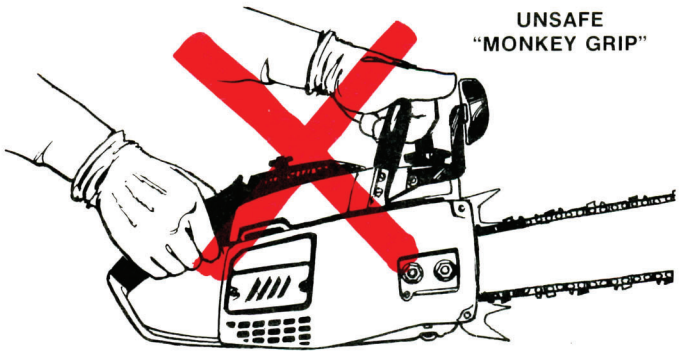
REWIND STARTER GRIP

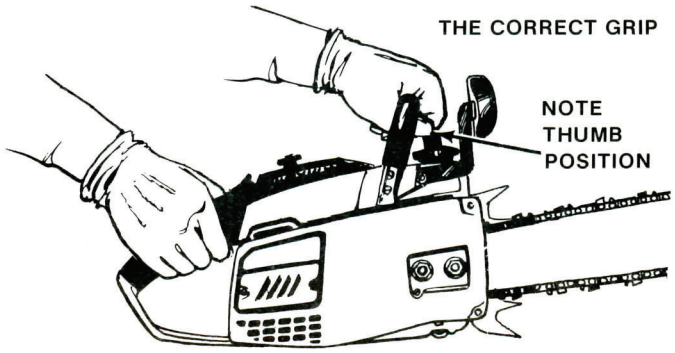
A brisk pull on the grip is required for a strong spark. Note position of hand in illustration of starting. Note that the starter cord is being pulled upward, not backward. Pull cord out as far as possible (without pulling to the end of the rope, as this might damage the mechanism). If you pull at the wrong angle, you will fray the cord and cut into the cord insert in the housing. Also, hold onto the grip to let it rewind smoothly. Letting go of the grip will cause fraying of the rope during rewinding.



FRONT HANDLE BAR

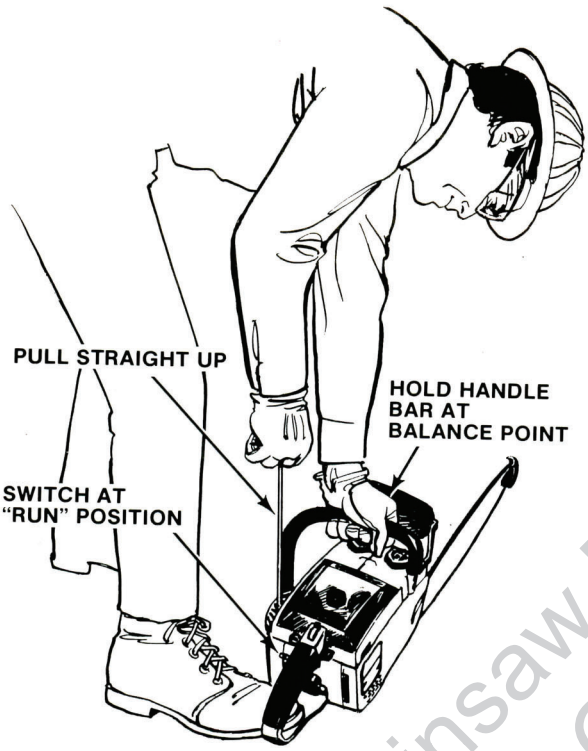
The safest grip to help you maintain control of the saw if it jerks out of a cut or kicks back toward you is to keep the handlebar diameter in the webbing between your index finger and thumb. You should also use this same grip with your other hand on the throttle handle, adjusting as necessary for operation of the saw controls.





STARTING AND STOPPING

During starting, hold the saw down firmly on a level surface with the bar and chain in the clear. Keep your left hand at the balance point of the handlebar. Keep on the left side of the saw. Never lean across the saw or straddle the guide bar. Do not use any technique or stance which would bring your foot or leg near the chain, or place any



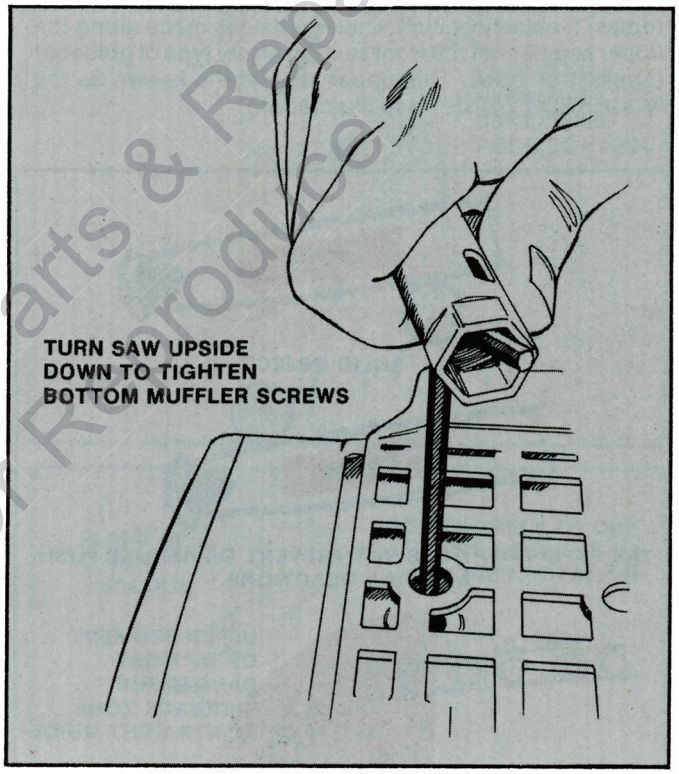
part of your body in a direct line with the line of chain rotation. When the engine is running, it is always best to keep to one side of the line of chain rotation.

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

Never operate the saw at less than full throttle, because the clutch will slip and burn at part throttle speeds. Prevent overspeeding the engine by being ready to throttle back to idle as soon as the chain cuts itself out of the wood.

NOTE

Always inspect all fastening parts for looseness. The muffler screws are especially subject to loosening, because of changes in temperature. Check and tighten the muffler screws (with the hex wrench and spark plug tool provided in the owner's kit) after 15 minutes of initial run-in and after the first five hours of operation. (See illustration.) If you have a torque wrench, tighten to 150 in.-lbs.



9. To stop, flip *switch* to "STOP". (In an emergency, you can pull up the *choke* to flood engine to a stop.) When shutting down for a long period in extremely cold weather, choking the engine to stop (rather than shutting off the switch) may save you some cranking to get the cold engine primed.

RESTARTING THE ENGINE

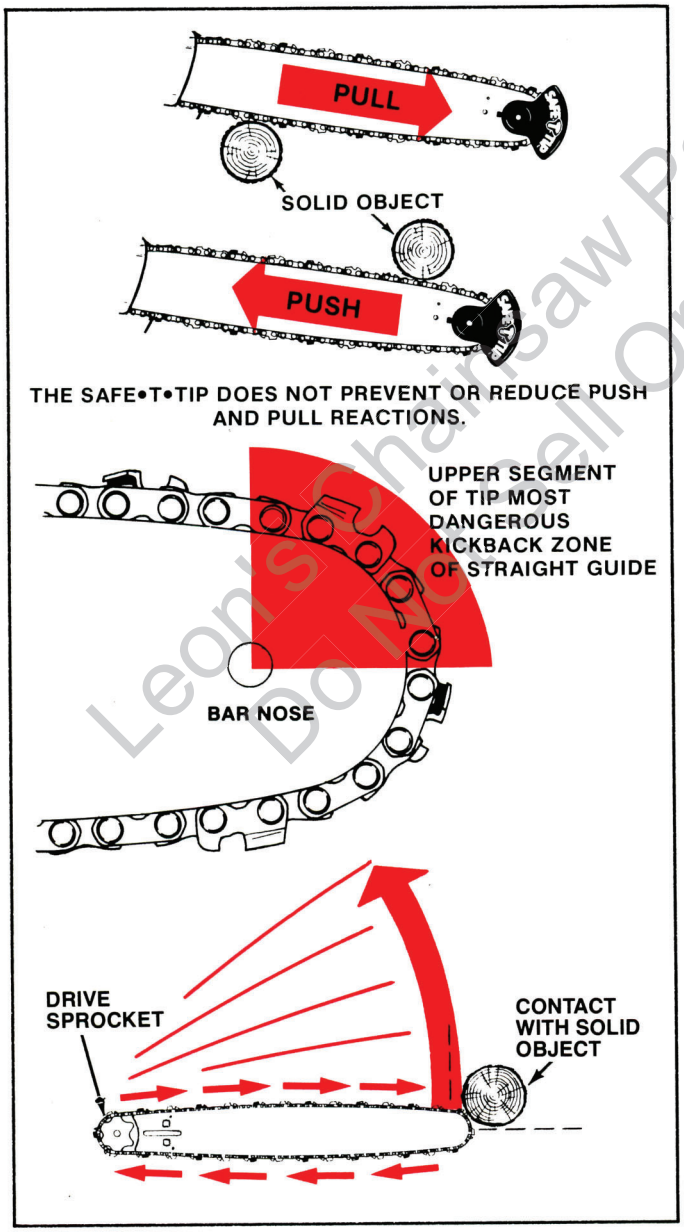
1. When restarting a still warm engine, try first with no choking. Then try at half-choke. If engine has cooled too long, revert to full choking to start.
2. When through using the saw and laying it up for any period of time, slowly loosen both the fuel cap and the oil cap. After waiting a few seconds to relieve the pressure, tighten both caps.

SECTION 3 — KICKBACK, PUSH AND PULL (It can cut You!)

WHAT IS CHAIN SAW KICKBACK?

Whenever a moving chain contacts any solid object there is always a reaction. This reaction force will occur in a direction opposite that of the chain rotation at the point of contact along the guidebar. Contact along the top rails of the guidebar (whether a straight or bow type) results in a "PUSH" movement of the saw towards the operator. When contact occurs on the bottom or underside of the guidebar, it results in a "PULL" movement of the saw from the operator.

KICKBACK may occur if contact is made along the front section of the guidebar. KICKBACK is a violent and sudden "PUSH" reaction which causes the guidebar to pitch up in an arc toward the operator. This violent reaction makes KICKBACK the most dangerous of the reactive forces. It usually occurs when contact is made along the upper segment of the front section of any type of guidebar (straight or bow). This upper segment is known as the "KICKBACK ZONE" (see illustration).



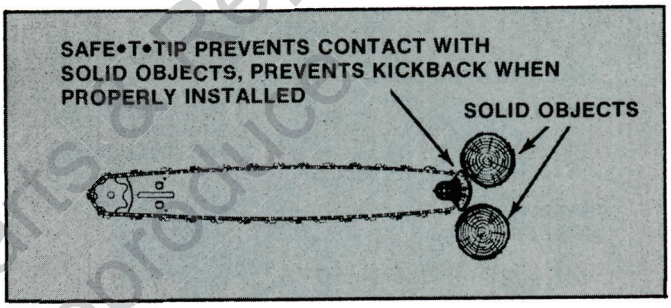
WARNING

We strongly urge you to protect yourself against chain saw kickback by using the SAFE•T•TIP®*. But remember for the few types of cuts where a SAFE•T•TIP cannot be used, you should use the work techniques described in this Owner's Manual.

NOTE

The SAFE•T•TIP does not fit on a bow saw.

***Pat. Pending**

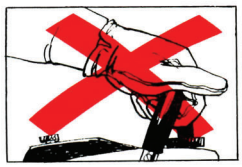


HOW TO CONTROL THE REACTIVE FORCES OF A CHAIN SAW

1. First of all, maintain proper grip on the saw handles at all times.
2. Maintain a balanced stance. Keep both feet on the ground.
3. Make initial contact with the wood only after the chain reaches cutting speed (full throttle).
4. Anticipate "PUSH" and "PULL" reaction from the saw and adjust stance to compensate for these reactions before they occur.
5. Be aware of the need to maintain balance after the cutting operation ceases.
6. Do not reach above chest height with a chain saw, or reach so far forward that you could be drawn off balance by the saw's reactions.
7. Stand a bit to one side so that no part of your body is behind the saw (in the line with the kickback arc).

NOTE THUMB POSITION

THE CORRECT GRIP

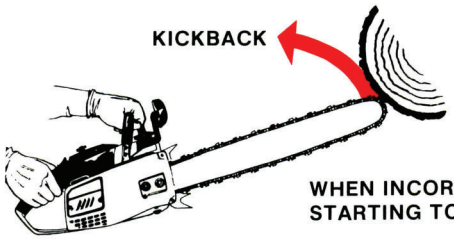


UNSAFE "MONKEY GRIP"

HOW TO REDUCE THE CHANCE OF KICKBACK

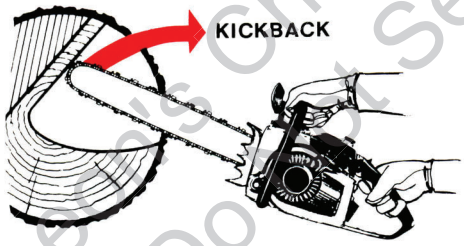
1. Use the proper guards to protect hands, and lower extremities in case KICKBACK causes loss of balance or control.
2. Whenever possible use an Anti-KICKBACK device (such as SAFE•T•TIP Pat. Pending) to prevent chain contact in the KICKBACK ZONE of a "straight blade" chain saw.
3. Always use the plunging spurs of the bow saw to control kickback.
4. Keep chain sharp and properly tensioned on the guide so as to hold reaction forces to a minimum.
5. Maintain the saw in good working condition, enabling the operator to focus his attention on the cutting operation, rather than on engine performance.
6. Never bore with the nose section of a "straight blade" saw unless you absolutely have to.

SITUATIONS KNOWN TO CAUSE SAW TO KICK BACK TOWARDS OPERATOR

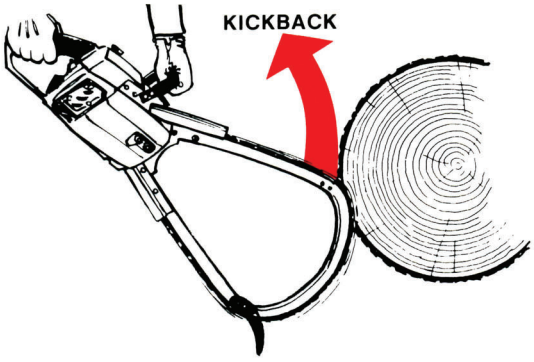


WHEN INCORRECTLY STARTING TO BORE

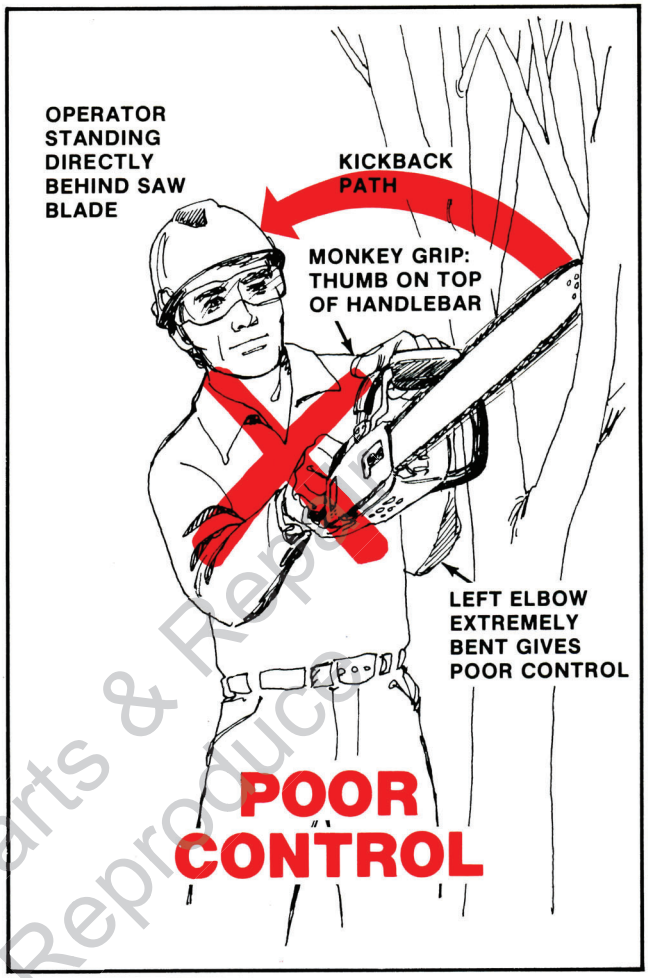
WHEN NOSE STRIKES SOLID OBJECT

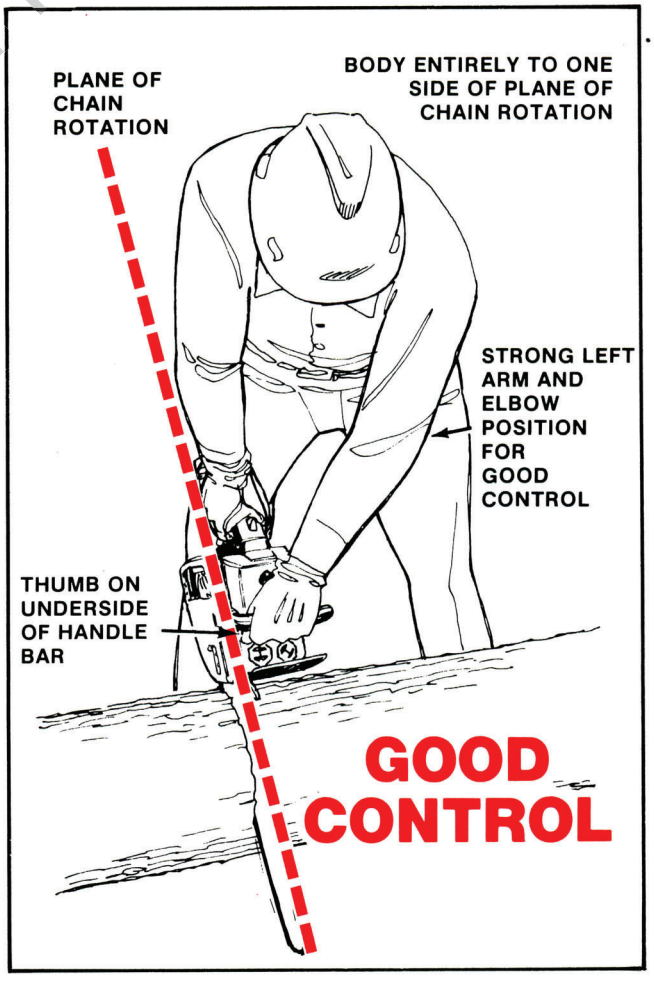


WHEN NOSE OF SAW STRIKES BOTTOM OF SAW CUT WHEN REINSERTED INTO PREVIOUS CUT



WHEN INCORRECTLY CUTTING IN KICKBACK ZONE

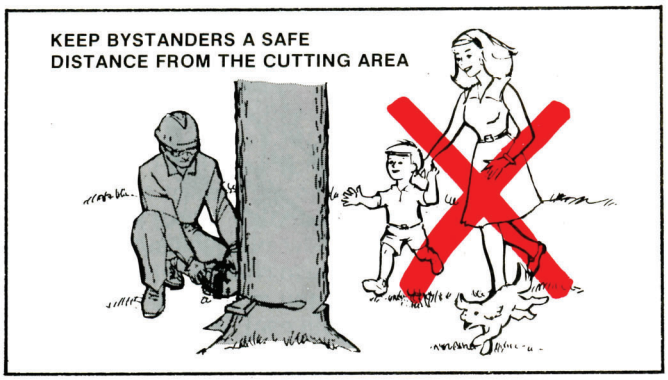




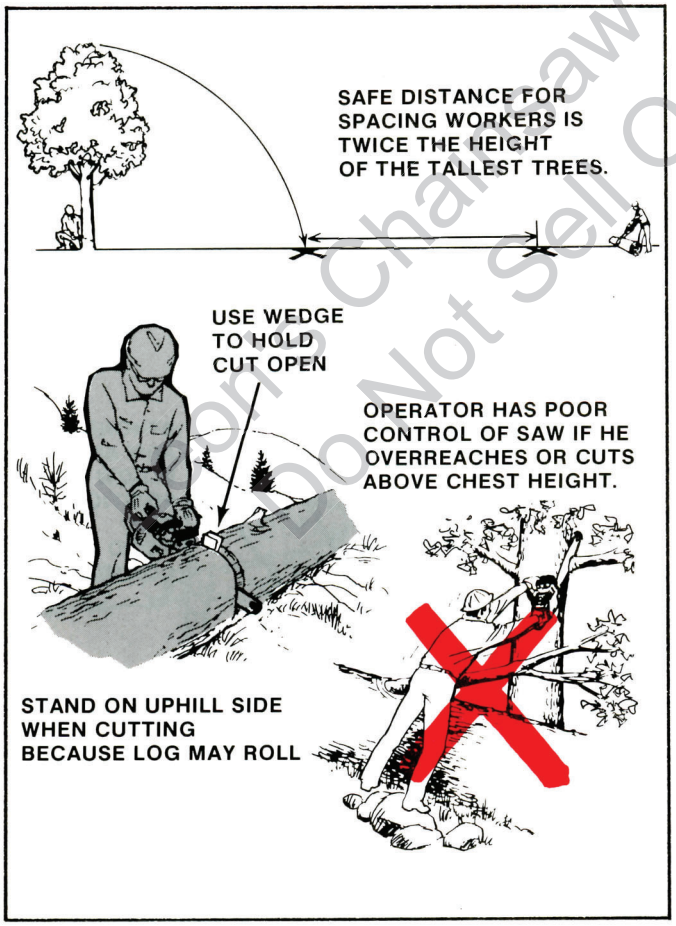
SECTION 4 — THE WORKING AREA

WORK AREA PRECAUTIONS

Cut only wood or materials made from wood; no sheet metal, no plastics, no masonry, no non-wood building materials. Never allow children to operate your saw. Do not allow any 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.

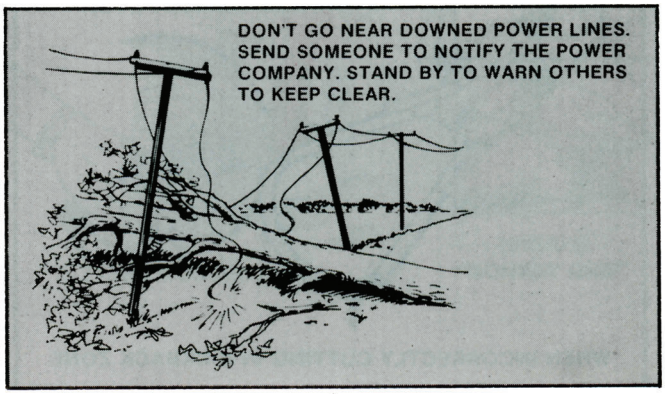


Everyone — helpers, bystanders, children and animals, and other operators — must be kept a safe distance from the cutting area. During felling operations, the safe distance should be at least twice the height of the largest trees in the felling area. During bucking operations, space buckers and limbers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



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 all your weight 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.

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 dis-



KEEP WITHIN CALLING DISTANCE
OF OTHERS IN CASE HELP IS NEEDED

cover 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.

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 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.

HANDLING AND SECURING THE SAW

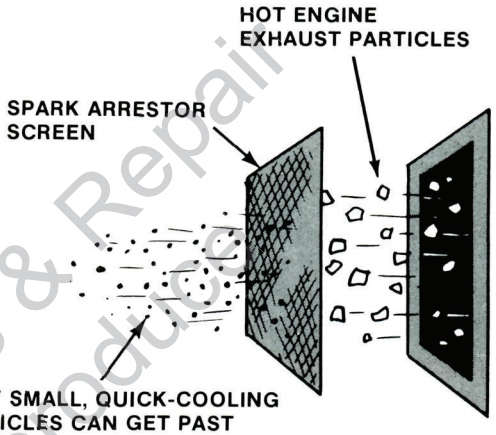
ALL EQUIPMENT MUST BE SECURED IN VEHICLES WITH STRAPPING OR TIE-DOWNS. PERSONNEL SHOULD NOT BE TRANSPORTED IN THE SAME COMPARTMENT AS EQUIPMENT AND FUEL SUPPLIES.

Inspect your saw every day before use. Keep the fuel cap, oil cap and air filter cover on tightly. Check conditions of the fuel line, spark plug and spark plug wire. DO NOT OPERATE IF THE ENGINE BACKFIRES OR THE SAW LEAKS FUEL. Have your saw serviced by an authorized serviceman. Be sure to keep your saw chain in proper condition on the saw. Remember that a dull or loose chain snags more easily than a sharp, snug chain. Touch up the chain after two hours of steady cutting and sharpen it thoroughly after 8-10 hours of use. (See Chain and Bar Maintenance in Section 6.) 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.

Always use a muffler on your saw and keep it in good repair. Be sure to use a spark arrestor in your muffler under dry woods conditions. In some states, a spark arrestor is required by law and it is the operator's or owner's legal responsibility to see that the spark arrestor is in good condition at all times. Check the muffler and spark arrestor at regular intervals. Never touch a HOT muffler.

NOTE

Anytime you replace the muffler or when the muffler has been taken off the saw, always torque the muffler screws as outlined of page 11.



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

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 abated.

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.

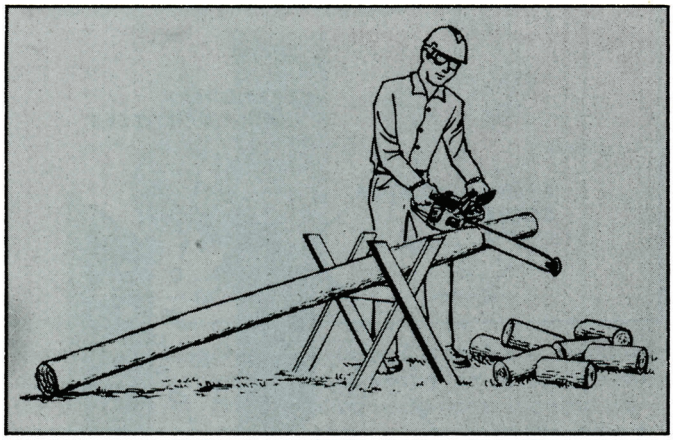
Work only when visibility and light are adequate for you to see perfectly what you are doing.

SECTION 5 — TECHNIQUES OF CUTTING

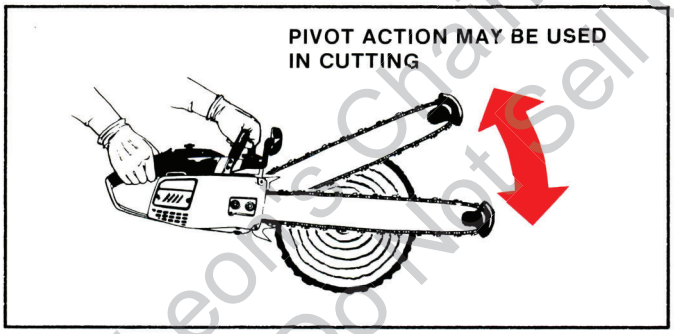
When you are going to cut wood — DO IT RIGHT!

BUCKING, LIMBING AND PRUNING

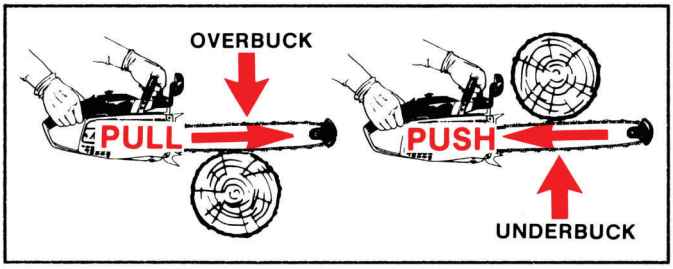
For the first cutting experience, set up a small log so that one end is off the ground. Practice your overbucking technique by cutting firewood length sections off the raised end. (See illustration.)



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.



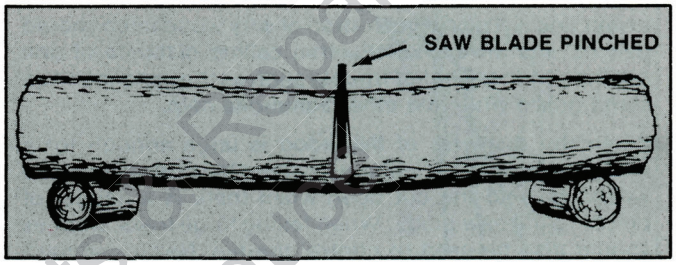
3. You will notice a slight amoung of *pull* reaction during cutting. So be ready for the moment the saw breaks through the wood and *pull* ceases. You must be ready to stop pushing down on the saw and hold the saw nose up. The moment the chain breaks clear, release the throttle trigger so the engine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



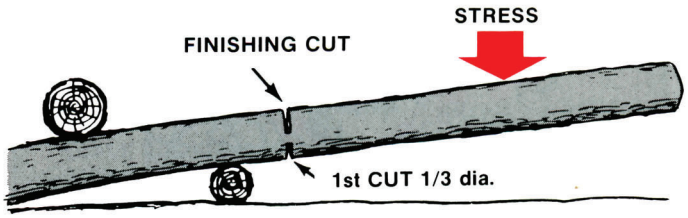
4. When you have mastered the overbucking technique, try underbucking to see what it feels like.

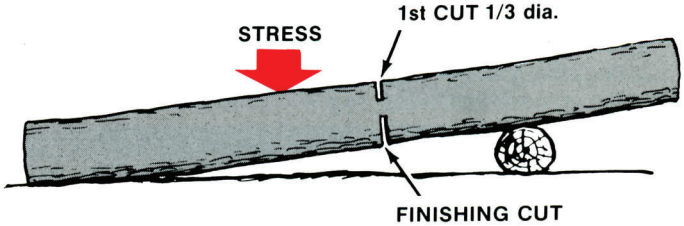
Place the saw blade under the log. Throttle up and exert upward pressure to cut clear through. Now you are ready to learn when to overbuck and when to underbuck in order to avoid pinching the chain in the wood.

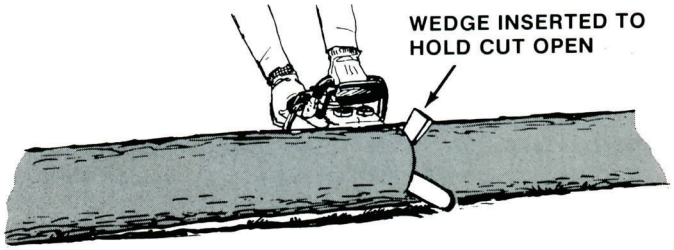
CUTTING VARIATIONS ACCORDING TO THE STRESS FACTORS



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 lot, 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 so that the cut will open up, instead of closing on the saw blade.

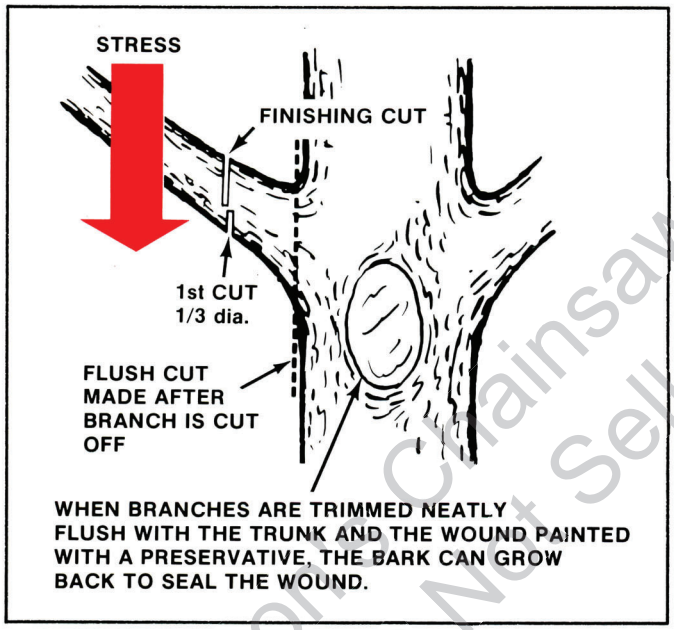






Sometimes it is impossible to avoid pinching (with just standard cutting techniques) or difficult to predict which way a log will bend when cut. You can do this to prevent pinching: If the wood diameter is large enough for you to insert a soft bucking wedge without touching the chain, you should use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

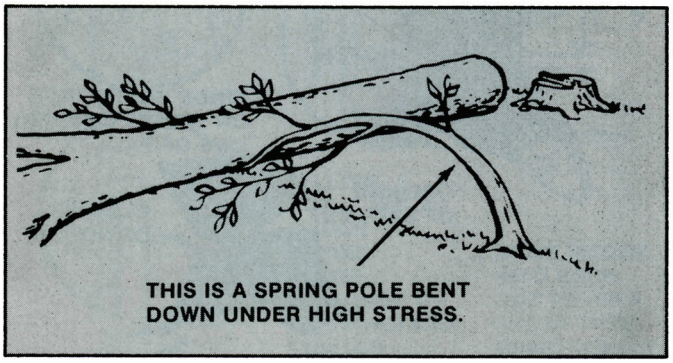
When pruning shade trees it is important not to make the flush cut next to the main limb or trunk until you have lopped off the limb further out to reduce the weight. This prevents stripping the bark from the main member. Unless the branch to be pruned is supported by another branch, the stress will 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. Don't forget to paint the wound with a tree preservative to prevent insect attacks and rot.



WHEN BRANCHES ARE TRIMMED NEATLY FLUSH WITH THE TRUNK AND THE WOUND PAINTED WITH A PRESERVATIVE, THE BARK CAN GROW BACK TO SEAL THE WOUND.

SPRINGPOLES

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


THIS IS A SPRING POLE BENT DOWN UNDER HIGH STRESS.

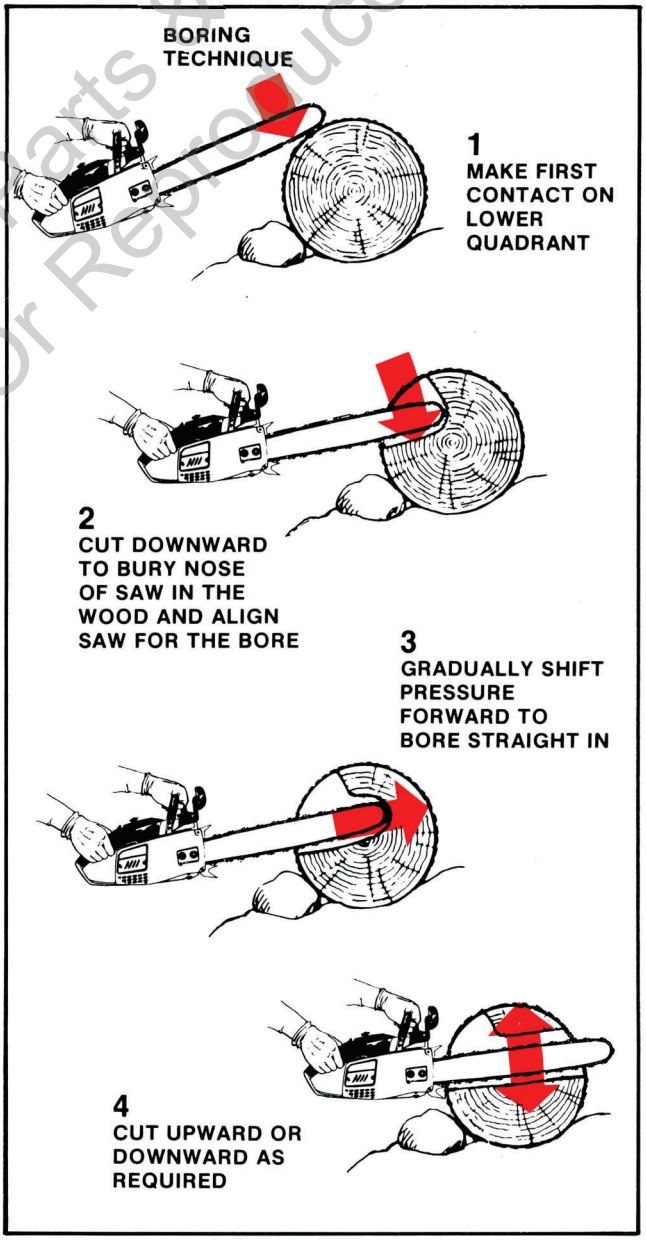
BORING WITH THE NOSE SECTION

KICKBACK DANGER

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

Boring should be attempted only by experienced operators because it requires extreme care and attention to proper technique. Do not bore unless there is no other way to make a cut. Boring is usually resorted to in order to avoid an obstacle or when it is necessary to make blind holes such as cut-outs for log cabin windows. The SAFE•T•TIP® (Pat. Pending) must be removed for a boring cut. Boring increases the chance of kickbacks 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.

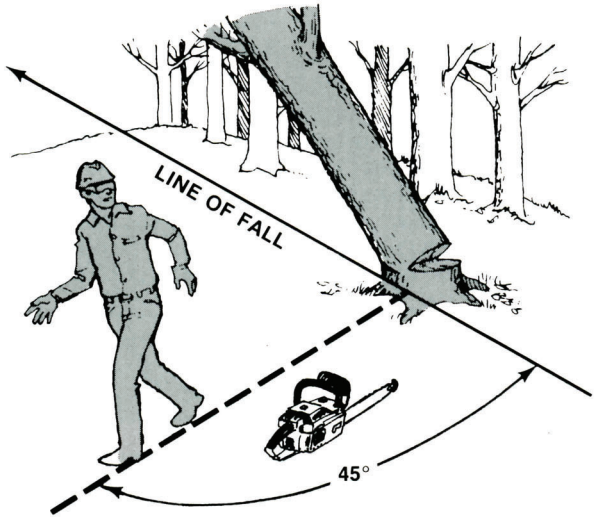


TREE FELLING TECHNIQUES

CAUTION

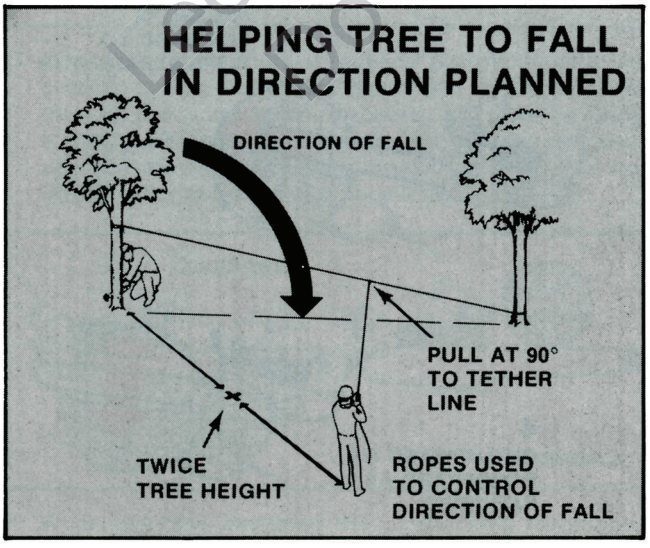
If the saw gets caught or hung up in a tree during felling, leave the saw and save yourself. The saw can be replaced and you cannot!

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.

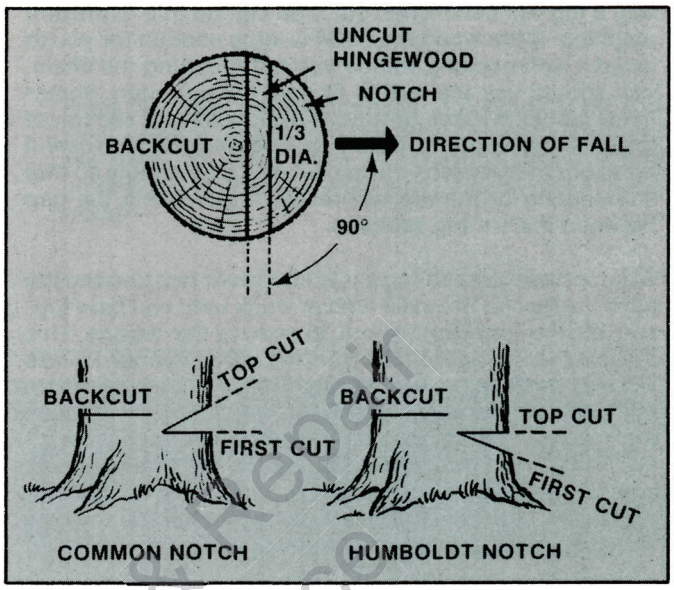


CLEAR PATH OF SAFE RETREAT

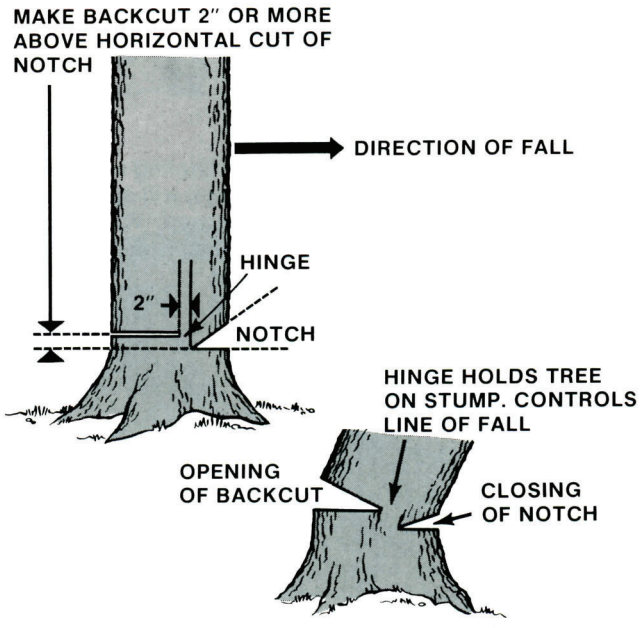
2. Consider the factors of wind direction and speed, the natural lean and the balance of the tree, and the location of large limbs. These things influence the direction in which the tree will fall.
3. Do not try to fell a tree along a line different from its natural line of fall until you have had considerable experience in felling trees.
4. Take into consideration whether the trunk is solid or rotted inside. If it is rotted inside it could snap and crash while being cut. Also look for broken or dead branches (widow makers) which could vibrate loose from the tree and fall during cutting.



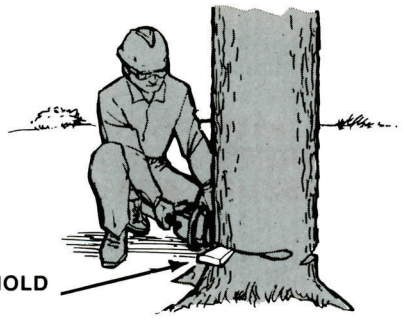
5. In tight situations where a mistake in the direction of fall could ruin other trees or destroy property, attach a line to the tree as illustrated or have the tree removed by professionals.



6. 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 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.
7. The backcut is always made level and horizontal and at a minimum of 2 inches (51mm) above the horizontal cut of the notch. As a guide to placing the back cut above the notch, figure 10% of the face 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).



8. 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 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!



9. 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.

NOTE

A wedge cannot be used with a SAFE•T•TIP® (Pat. Pending) on the bar, unless you are sure that you can either remove the wedge or roll the log so the saw can be retrieved from the cut.

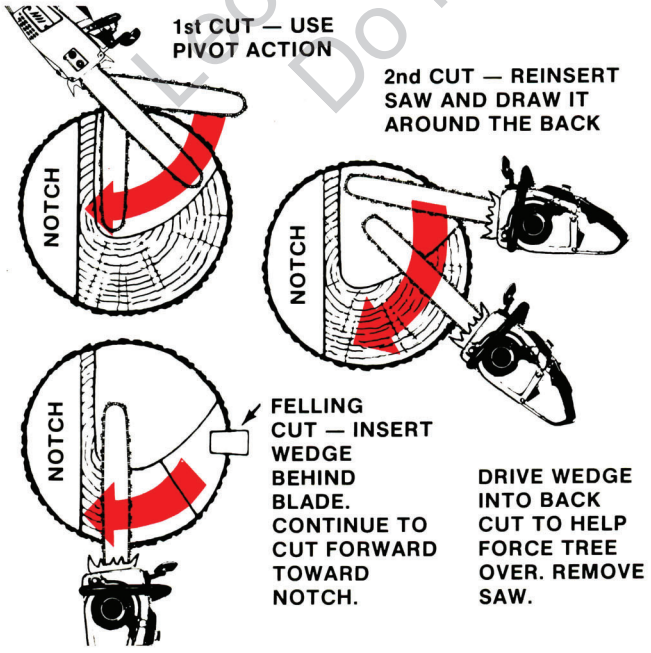
10. Trees larger than the saw can cut in one cut, can be both notched and back cut in a series of cuts, as illustrated. Start the notching cuts from one side and draw the saw through to the other side of the notch. Start the back cut on one side of the tree, pivoting the saw through to form the desired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

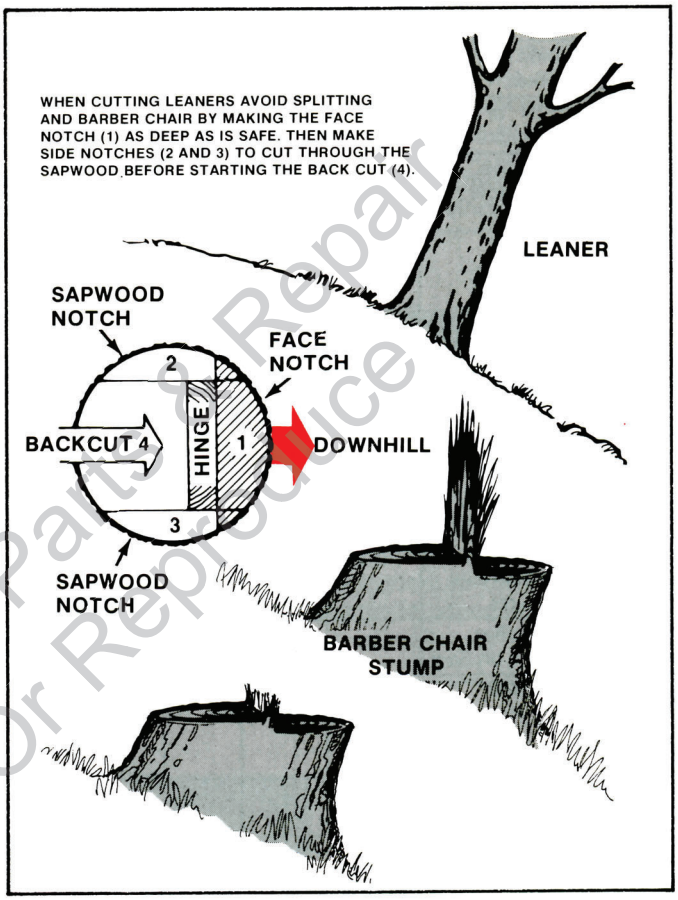


FELLING LEANERS

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

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

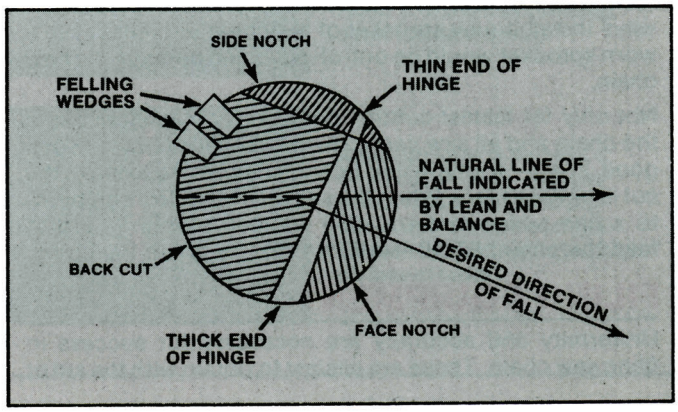
1. Make the directional control face notch shallower than usual.
2. Make shallow notches on both sides of the tree to cut through the outer layer (sapwood).
3. Now make your back cut to leave a parallel hinge.



CHANGING THE DIRECTION OF FALL

(From the natural line of fall)

1. The direction of fall can be changed by varying the hinge thickness (see illustration). Make the hinge thicker on the side toward which you want the tree to fall. The thicker hinge on that side will hold up the fall so that the tree will fall to that side.
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.

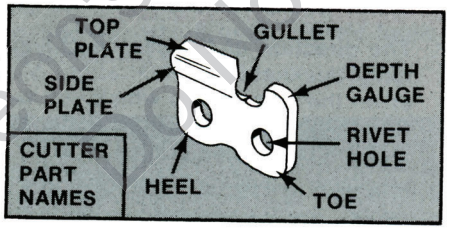


SECTION 6 — MAINTENANCE AND REPAIR OF THE CUTTING UNIT

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

*Optional Equipment

HOMELITE SAW CHAIN



Your saw has fast-cutting chain with a sprocket which matches it in pitch. When the chain is to be replaced, always install a new sprocket of matching pitch because a worn sprocket would be out-of-pitch and damage the new chain.

Not only for fastest cutting, but also for maximum life of the chain and all saw parts, always keep the chain in such good, sharp condition that bearing down hard to make the cut is unnecessary. When the sawdust turns from chips into a fine power and you find yourself pressing hard to feed the chain, STOP IMMEDIATELY and file the chain.

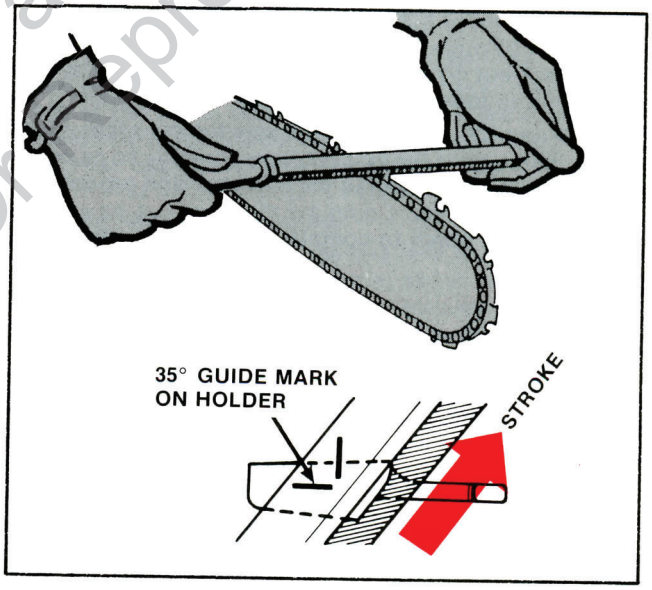
FILING EQUIPMENT

Uniformity and accuracy are necessary for success in filing saw chain. These are easiest to obtain with the aid of a file holder which has the required 35° top filing angles marked on it, and also holds the file at the correct height (1/10 of file diameter above top plate of tooth) to produce the required side plate angle and beveled cutting edge.

ALL YOU HAVE TO DO IS MAINTAIN THE CORRECT FILING ANGLE, HEIGHT AND PRESSURE AGAINST THE TOOTH.

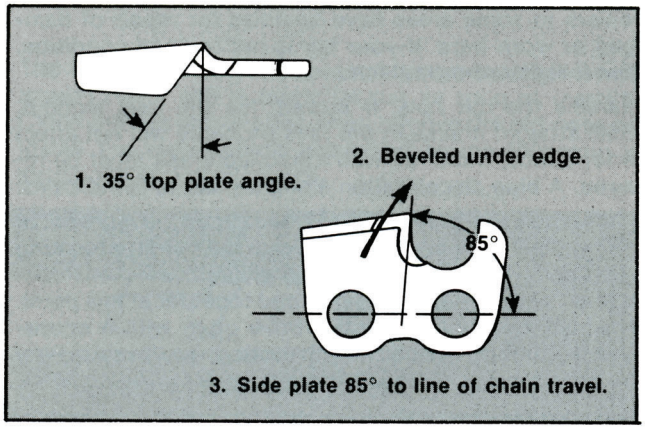
For new 3/8 pitch chain, a 7/32" diameter "fast-cut" round file and holder (our Assembly DA-92615) is required. When more than half of the original tooth steel has been filed away, you should switch to a 3/16" diameter file which you can use in the same holder. The reason for using a smaller size file on a "short-filed" tooth is the slight taper of the tooth's top plate which reduces the size of the tooth.

A chain filing vise can hold the cutters rock-steady during filing, but you can do a satisfactory job "on the bar" if you tighten up the tension enough that the chain doesn't wobble, and do all of the filing at the mid-point of the bar. WEAR GLOVES FOR PROTECTION. Be sure to file all cutters to the same length. If you replace damaged cutters, file the new cutters back to the same length as the rest of the old cutters so that each cutter has the same biting chance.



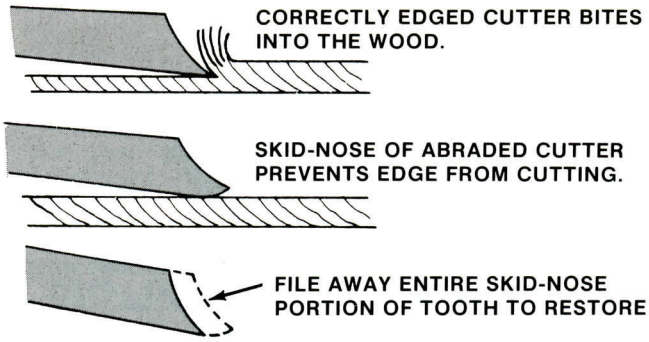
HOW TO FILE CUTTERS

1. Hold file against cutter face at 35° angle (marked on file holder).
2. Keep file level — do not let it dip or rock.
3. File in one direction only — towards front corner of the tooth. Move file away from tooth face on return stroke.
4. Use light but firm pressure, mostly towards back of tooth. Avoid heavy downward filing pressure. The holder will keep 10% of the file above the top plate, automatically producing a beveled hollow-ground under edge.
5. Put a few firm strokes on every tooth, filing all cutters on one side of the chain, then all cutters on the other. Rotate file in holder occasionally.
6. A sharp edge will not reflect light. Examine the edge to see if the dulled area has been removed.

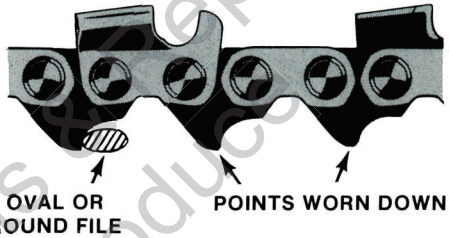


FILING OUT "SKID-NOSE" WEAR PATTERN

"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.

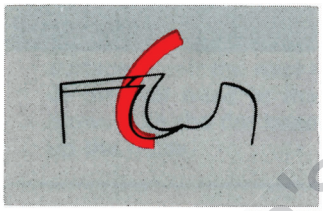


When teeth have hit hard objects such as stones, nails, etc., or cut dirt, sand, etc., the damaged area must be filed away before the tooth will cut or have the proper set. NOTE: All cutters must be filed equally back to this point. This can be done by hand, but it is less expensive and easier to have it done on an electric chain grinder at your dealer or HOMELITE factory service office (see "Yellow Pages"). This is an extra advantage since it "trues" the chain to original factory shape.



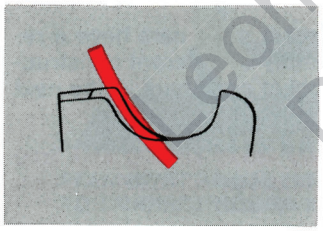
Chain drive tangs must have sharp points to clean sawdust from the bar groove, and bar groove must be deep enough for the tangs to clear bottom all the way around bar. (Every fourth or fifth tang resharpened will do the job as the chain wears.)

REFILE ANY TEETH HAVING ONE OR MORE OF THESE FAULTS



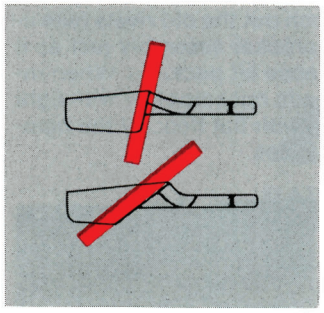
Forward Hook

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



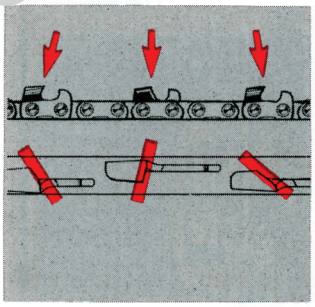
Back Slope

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



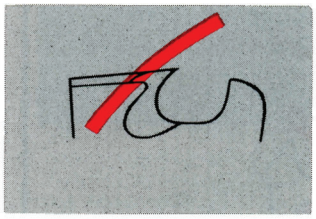
Improper Top Plate Angles

Blunt angle requires too much feed pressure to cut. Too sharp an angle causes binding. Produces a rough cut, robs power from saw, and increases bar wear. Caused by holding file at wrong angle or letting it drift or rock during the stroke.



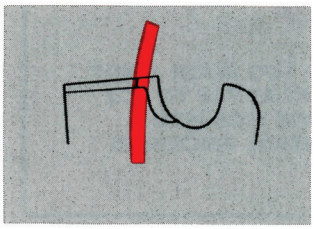
Cutters Filed at Non-Matching Angles or Lengths

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



Thin Feathered Edges

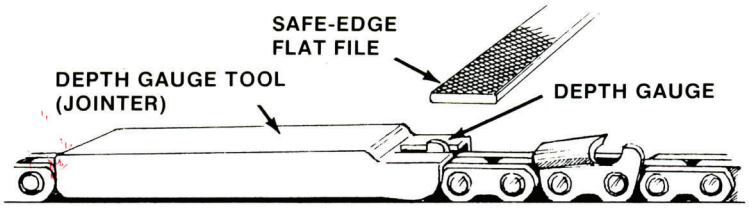
When they almost immediately break off, you have a dull chain. Usually found on chain filed with a hook (see "Forward Hook"). Caused by pressing down too hard on file.



Blunt Cutting Edges

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

HOW AND WHEN TO SET DEPTH GAUGE CLEARANCE



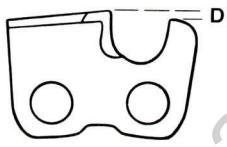
Every second or third time the teeth are sharpened, or if a large amount of steel is removed from the cutters, the depth gauges should be jointed to correct depth.

SUGGESTED DEPTHS FOR THIS SAW AND CHAIN ARE:

HARDWOOD TO MIXED HARD/SOFTWOOD DIET	.025" (factory setting of new chain).
STRICTLY SOFTWOOD DIET	.030"

Use a depth gauge tool (jointer) and a safe-edge (no teeth on edge) flat tile. Fit the tool over the chain so that the slotted end of the tool points toward the bar nose and the depth gauge projects up through the slot. File the depth gauge flush with the top of the tool. File all gauges to this height.

If the gauges are too high, the chain teeth will not get a good bite; if too low, the teeth will take too large a bite, causing the chain to grab and jerk. If some gauges are higher than others, the chain will cut off line, favoring the side having the lowest gauges.



TOP FILED FLAT AND THE FRONT HALF ROUNDED OFF

FILED FLAT BUT NOT ROUNDED OFF — TOO SQUARE TO SLIDE SMOOTHLY

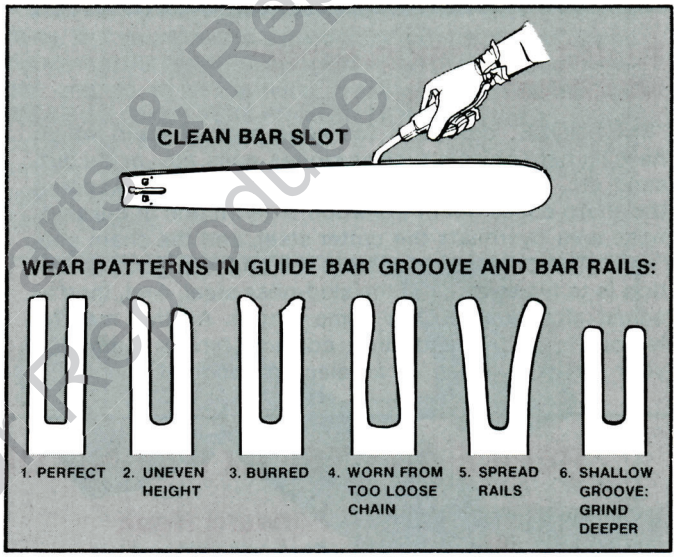
POINTED OR ROUNDED OFF TOO MUCH — NOT ENOUGH FLAT SECTION LEFT AT TOP TO ACT AS A DEPTH GAUGE — GAUGE DIGS INTO WOOD AND DOES NOT CONTROL THICKNESS OF CHIPS

GUIDE BAR MAINTENANCE AND REPAIR

The guide bar or bow guide should be cleaned periodically. Use a putty knife or stiff wire to clean the packed sawdust out of the chain groove. Also clean out the chain oil holes. A clogged hole will block oil flow to the chain. Dealers in some areas have facilities for repair of damaged or worn bars. If your bar is not in good condition, have it repaired or replaced.

Examine the bar rails. If burred, file the rails smooth. Small straight cracks in the rails probably will not affect performance, but a rail with a hooked crack must be repaired. A blue discoloration along the bar rails indicates:

a) that the bar and chain should have been fed more oil, or
b) that you have been bearing down too hard for too long trying to make dull chain cut, or
c) that the rails have been pinched together at this point. (You can carefully pry the groove open with a screwdriver.) Rotating the bar top-for-bottom on the saw every day or two helps to equalize the wear.



NOTE:
Do not use any guide which is bent out of shape. Have bent guides straightened or replaced.

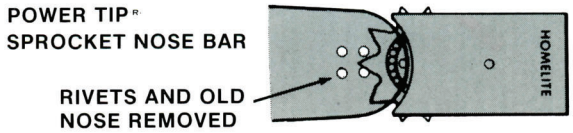
SPROCKET NOSE OF POWER TIP® GUIDE BARS

The Power Tip series of sprocket nose bars have a replaceable nose sprocket assembly of different construction than those of the SP sprocket nose bars in the next topic.

NOTE

When saws are used for heavy wood cutting and land clearing, the sprocket nose requires lubrication every second or third refueling.

To change a Power Tip nose sprocket, drill through the centers of rivet heads and punch out the old rivets (see illustrations). Install the new sprocket assembly just as it comes from the replacement nose kit package. When installing the rivets, peen the heads out smoothly with light taps, then strike several blows with flat head of the hammer until the rivets fill up the holes.



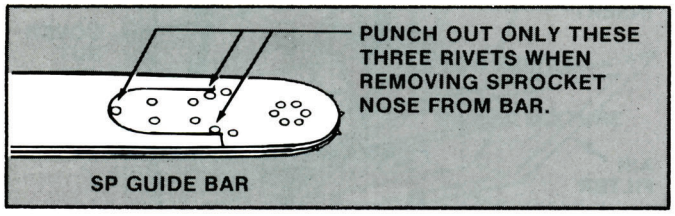
SLIDE REPLACEMENT SPROCKET INTO PLACE RIGHT OUT OF KIT PACKAGE

SPROCKET NOSE OF SP GUIDE BARS

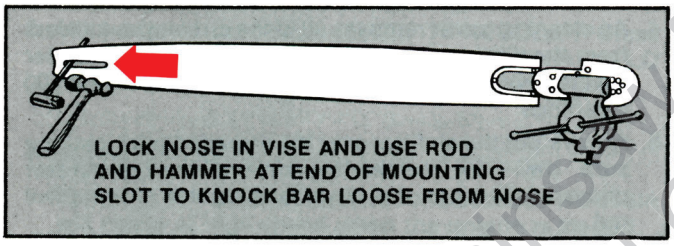
NOTE:

SP guide bars can be fitted for use with either 3/8 pitch — .050 gauge or .404" pitch .063 gauge saw chain by installing the appropriate pitch and gauge replacement nose sprocket assembly. Be sure to select the nose assembly which has the same pitch and gauge as the saw chain.

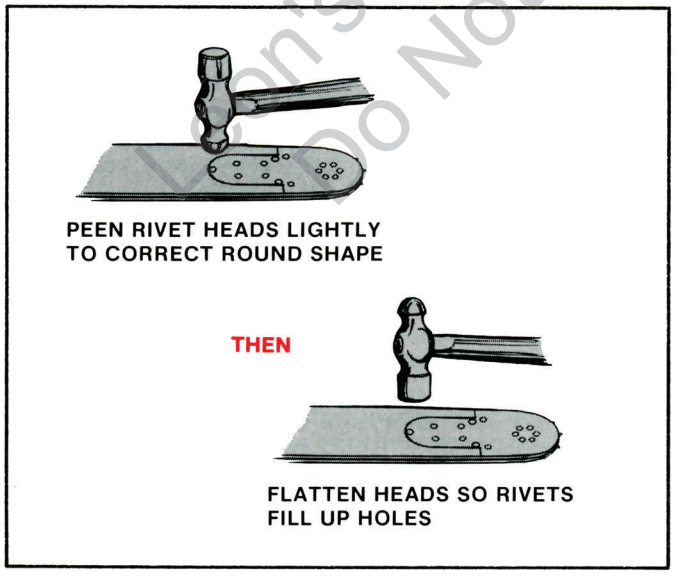
The SP replacement nose assembly comes with three aluminum rivets and is ready for use as soon as installed. Clean the bar thoroughly. Then remove the old nose and install the replacement according to the following instructions and illustrations.



1. Drill through the centers of the three rivets called out in the illustration (do not remove the other rivets) and punch them out of the holes.
2. Clamp the bar nose right over the rivet heads in a vise, and strike the end of the guide bar mounting slot with a rod and hammer to free up and remove the nose.
3. Slide the replacement nose into place until the rivet holes in bar and nose line up.



4. Insert the three rivets and place bar on a supporting surface. Peen the rivet heads smoothly with light taps of the ball head of the hammer, then strike several blows with the flat head of the hammer until rivets fill up the holes.



5. Assemble bar and chain on the saw, pre-oil the chain with the manual oiler and run-in for one minute or more at slow speed without cutting.

CLUTCH, DRUM AND SPROCKET TROUBLE-SHOOTING

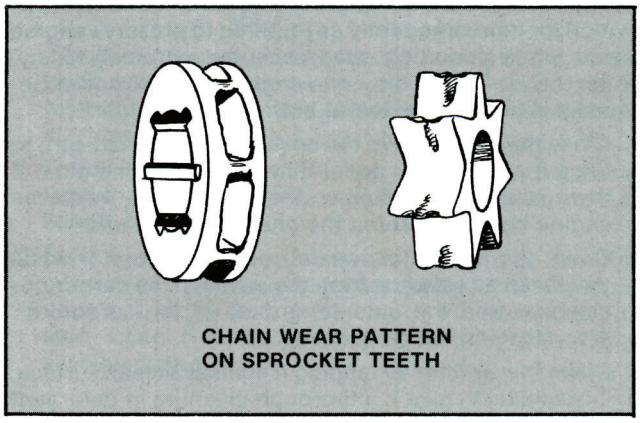
Trouble shooting information which applies to both saws are given below. For more information consult your HOMELITE repair station.

1. The Drum and Sprocket assembly should be inspected every 15 hours or 15 weeks, whichever comes first. If the teeth on the sprocket are worn, replace the sprocket. Remember to use the required special tools and parts for repair or have an approved HOMELITE service station do the repairs.

WARNING

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

2. The clutch assembly requires disassembly and servicing only at 100 hour intervals, unless trouble develops or the drive sprocket is to be changed. During this 100 hours servicing, the clutch bearing should be cleaned, inspected for wear, and either replaced with a small amount of HOMELITE ALL-TEMP Multi-Purpose Grease (#24551) or a lithium base grease. Naturally, if the bearing needles are worn or missing, bent or burnt, or the bearing cage or inner race is worn or scored, change the entire complement.
3. Clutch trouble symptoms are: a) Failure to disengage; b) slipping so much that the saw cannot cut; and c) chattering during a load.
4. Clutch troubles may include: a) Overheated, stretched springs; b) worn or cracked spider or clutch plate; c) worn or broken shoes; d) oil, dirt or grease on the clutching surfaces; e) worn, bent, cracked or scored clutch drum; f) dry or worn bearing; g) and worn sprocket.



SECTION 7 — MAINTENANCE & REPAIR OF READILY ACCESSIBLE POWER HEAD GROUPS OR COMPONENTS

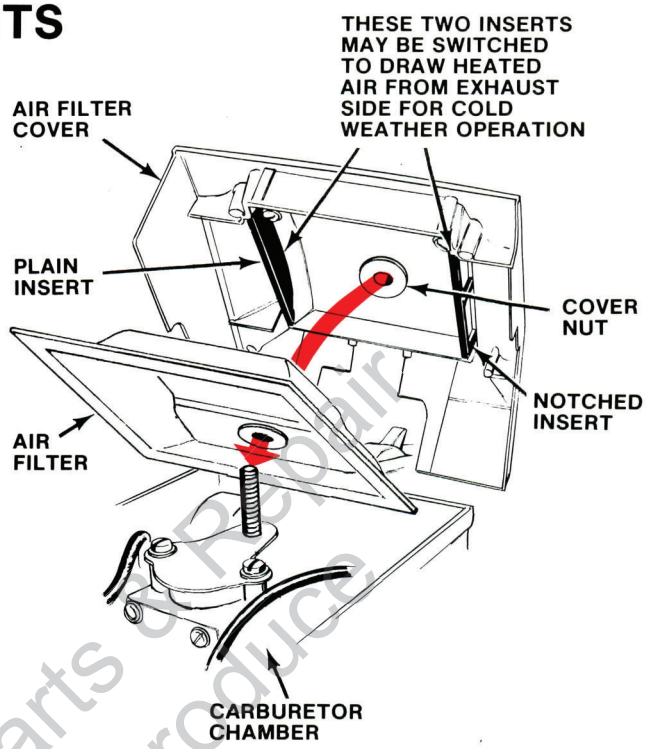
	Daily Check	Only as Necessary	Every Week	Every 50 Hrs.
1. Clean the Air Filter.	✓ TWICE			
2. Install New Air Filter		✓		
3. Check Fuel Filter				✓
4. Clean and Examine Exterior of Saw.	✓			
5. Keep Air Openings of Fan Housing Clean	✓			
6. Adjust Carburetor		✓		
7. Adjust Starting Speed		✓		
8. Test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

THE AIR FILTER

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

1. Close the choke. Give the cover fastener a half-turn to the left and remove the air filter cover and the filter. If there is any dirt or dust on the choke plate, invert the engine before brushing the choke area clean.
2. Cover the air intake opening of the carburetor while you clean all sawdust from the inside of the carburetor chamber and the outside surface of the carburetor. Also clean the air filter cover.
3. Clean the air filter by tapping it against a clean surface. Occasionally, give it a thorough cleaning in detergent and water or a non-oily solvent and let it dry thoroughly before use. You may find it practicable to keep some spare filters on hand for instant changing.

CLEAN AIR FILTER BY TAPPING SHARPLY ON CLEAN SURFACE TO DISLODGE DIRT AND DUST

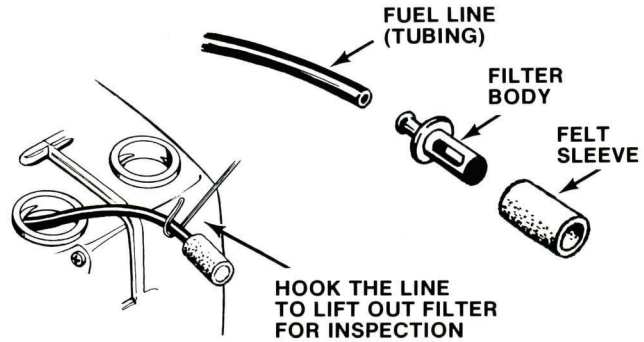


4. As cleaning never removes all of the dirt or wood slivers from the filter pores, the filter should be replaced after several months of continuous service or more than 100 cleanings.
5. Always put the air filter over the threaded post, making sure the filter completely covers the carburetor chamber. Replace the cover and tighten the captive nut.

NOTE: Never use the saw without the air filter.

THE FUEL FILTER

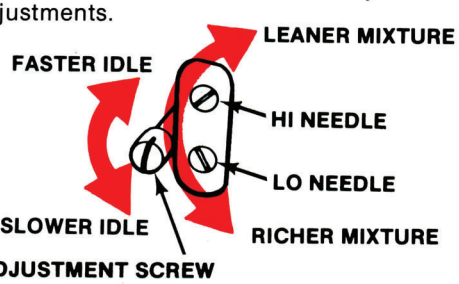
The fuel filter will usually last a month or more before a new one is required. It should be checked at intervals of every 50 operating hours.



To check condition slowly crack the fuel tank cap loose and wait for tank pressure to be relieved. Then remove the cap. With a bent wire, hook the fuel line and pull the end of the line and filter out of the tank for inspection. Roll and compress the felt filter sleeve in your fingers. If it feels hard or "crusty" to the touch, it is loaded with dirt and should be replaced with a new felt sleeve. Also inspect the fuel line; if split at the end, cracked, or showing signs of deterioration, have it replaced.

CARBURETOR ADJUSTMENT

The carburetor on this saw is fully adjustable for both idling and high speed performance. It is seldom necessary to make major adjustments. Minor trimming to adapt the saw to altitude and other local conditions is all that is usually necessary. Carburetor adjustment cannot restore performance lost because of low compression, faulty spark plug, or faulty fuel or air intake. In any event, always be sure the air filter is clean before you make carburetor adjustments.



PRELIMINARY SETTINGS

1. Idle speed adjustment screw: Remove the air filter cover and the air filter. Turn the idle speed adjustment screw to the left (CCW) until the screw tip does not touch the stop lever. Turn it slowly back (to the right) until it just makes contact with the stop lever. Then turn it one full turn to the right (CW).
2. Idle mixture adjustment needle (called "LO NEEDLE"): Turn LO NEEDLE gently clockwise until it bears against its seat. DO NOT FORCE INTO SEAT! Open needle one full turn to the left.
3. Main adjustment needle (called "HI NEEDLE"): Close needle gently against its seat as you did with the LO NEEDLE. Open the needle one full turn to the left.

TUNING THE IDLE MIXTURE AND SPEED

1. Put the air filter and cover back on the saw.
2. Keep the saw clear of obstructions because the chain will rotate at high speed when the engine is started.
3. Start the saw and let it warm up. Then let the engine idle.
4. Set the idle mixture *first* as follows:
   a) Turn the LO NEEDLE slowly to the right (CW) to slow down the idle until the engine falters. NOTE THE POSITION OF THE NEEDLE. If the engine dies out, open the needle just a bit, then restart and idle the engine.
   b) Turn the LO NEEDLE slowly to the left (CCW) until the engine speeds up and then begins to falter. NOTE THIS POSITION OF THE LO NEEDLE.
   c) Set the LO NEEDLE halfway between the two needle positions noted in a) and b).
5. With the idle mixture properly adjusted as in step 4, the idle speed is apt to be too slow or too fast. It should be low enough (3300 rpm maximum) that the chain does not rotate, BUT high enough (2400 rpm minimum) to produce stable idling conditions.
6. Try to accelerate the saw. If it accelerates smoothly, the idle adjustment is O.K. If there is a tendency to stall out, increase the idle mixture by opening the LO NEEDLE 1/8 turn more. Then adjust the IDLE SPEED SCREW again for the desired speed.

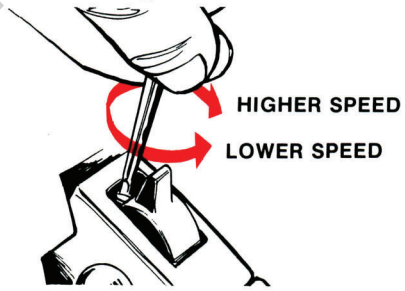
ADJUSTMENT FOR POWER

This carburetor is designed for adjustment to produce a full clutch-slipping load ability. This is how to adjust it properly:

1. Cut some wood for four or five minutes to bring the engine to operating temperature.
2. At full throttle operation, exert pressure for a short moment to jam the chain into the wood.
   a) If the engine falters, the HI NEEDLE setting is too lean. Open the needle 1/8 turn at a time (CCW) until the saw can carry a clutch-slipping load.
   b) If the engine carries a clutch-slipping load the very first time, or you have opened the needle (as in step a), you will not know whether it is adjusted properly. So close the HI NEEDLE 1/8 turn at a time and keep trying to slip the clutch. Keep on closing the needle until the engine stalls out.
   c) Now open the HI NEEDLE 1/4 turn to the left. This is the setting producing maximum power, and at which the engine will not smoke excessively.
3. Adjustment for power may have thrown your idle speed and mixture adjustments off very slightly. So, go back and readjust for the proper idle speed if necessary.

ADJUSTMENT OF STARTING SPEED

The starting speed (with trigger latched for starting) should never be so fast as to cause chain rotation. As the clutch is designed to first engage the chain at about 3100 rpm, you have a range of anywhere between the lowest satisfactory idle speed of about 2400 rpm to just a bit lower than clutch engaging speed within which to set the starting speed. Set it anywhere in between where you can obtain consistent starting.



1. The starting speed is adjusted by means of the slotted head adjustment screw in the trigger latch (see illustration). Turning this screw to the right raises the starting speed, and turning it to the left lowers it.
2. Follow instructions in Section 2 for starting the saw. With the trigger latched, adjust to the desired starting speed.
3. Start and stop the engine several times to be sure that consistent starts can be obtained and that the chain does not rotate during starting. If the saw is hard to start when it is cold, readjust for a slightly faster starting speed.

CHECK VALVES IN TANK CAPS

The same valves and filters are used in the fuel cap as in the chain oil cap. The flow of fluid from a tank will be reduced or stopped entirely if the tank cap fails to let in air. Inoperative valves and the filters covering them can be changed. They can be tested for proper operation as follows:

1. Clean all dirt and petroleum residues from the cap.
2. Place lips against underside of cap and blow into cap. The check valve should close so that you cannot blow air through it.
3. With the lips applied in the same manner, try to suck air through the check valve. You should be able to do so.
4. If valve and filter do not pass the above test, pry them out carefully and install replacements.

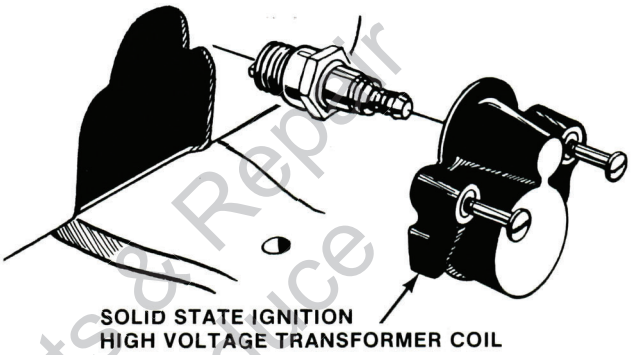
SPARK PLUG AND IGNITION

If the engine will not start, do the following:

1. See that the fuel tank is filled with fresh, clean fuel mixture.
2. Replace the spark plug.
3. Visually check for broken electrical leads or connections.
4. If your engine still cannot be started, take your saw to a HOMELITE Servicing Dealer.

SPARK PLUG REMOVAL AND REPLACEMENT

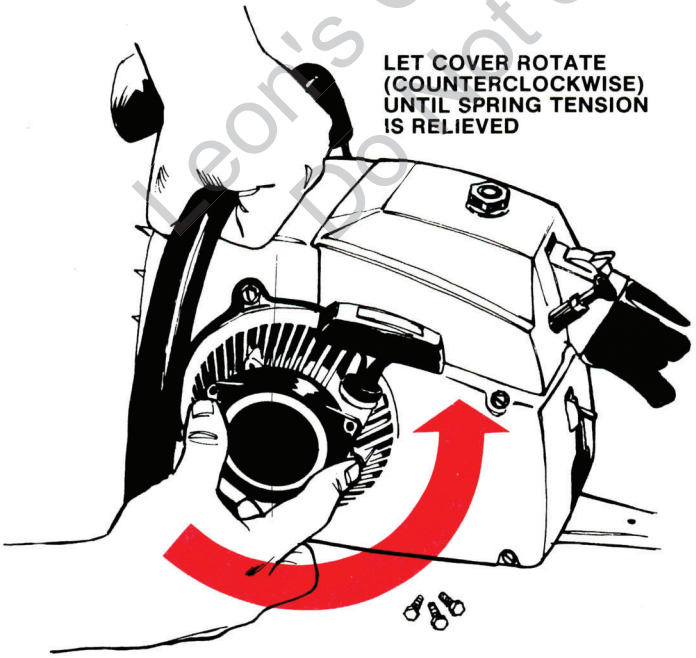
1. To remove the spark plug, first remove the high-voltage coil, held by two slotted head screws. Then use the large hex end of the guide bar wrench (supplied in owner's kit) to unscrew the spark plug.
2. For nearly all combinations of climate and operating conditions, the original heat range #6, J-gap type Champion DJ-6J should be installed. Only when necessary for extreme heavy duty operation in hot climates should a CJ-4 heat range #4 spark plug be substituted.
3. At time of installation, check that the electrode gap is .025". When the engine is cold, torque the plug to 150 pound-inches.



STARTER/FAN HOUSING

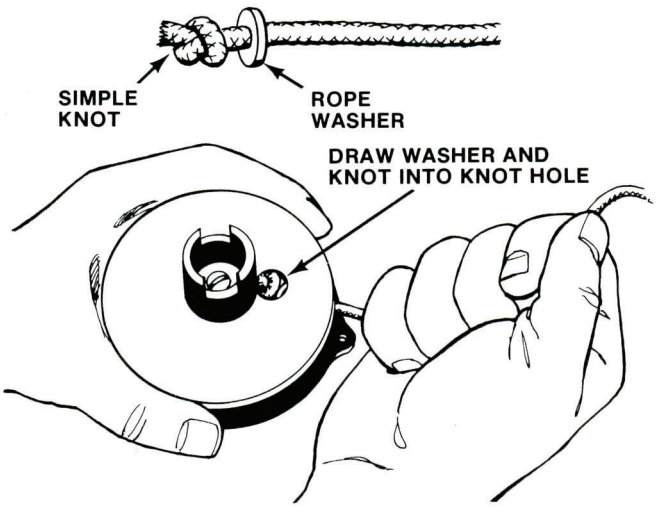
The air intake openings of the starter/fan housing should be cleaned daily or whenever they become clogged by leaves, grass or sawdust.

No regular maintenance of the starter assembly is required. However, it may be necessary to adjust the rewind tension, or install a new starter rope or rewind spring from time to time. Removal of the starter/fan housing is not required for these jobs.

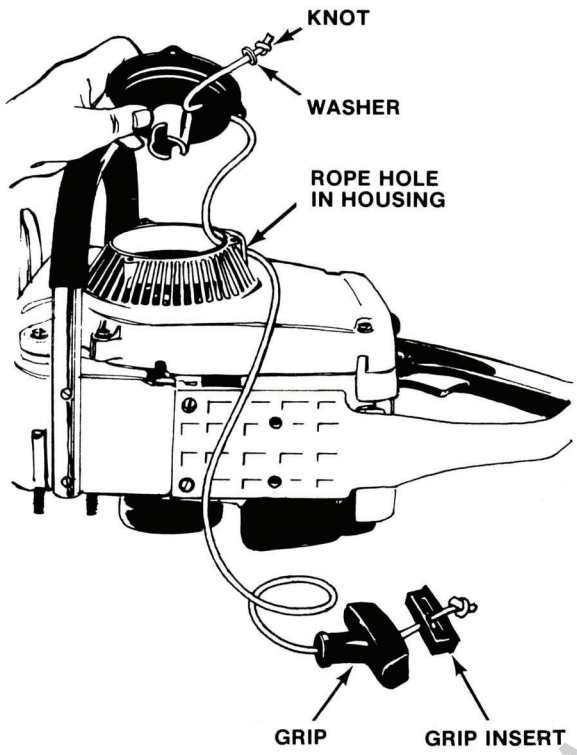


REPLACING STARTER ROPE

1. Hold the starter cover from turning and remove the three starter cover screws. Let the cover rotate (counterclockwise) until the spring tension is relieved. Then lift off the cover.
2. Remove the old rope, cutting it if necessary. Remove and save the rope washer for the new rope.
3. Tie a simple knot as tightly as you can at one end of the new rope. Set the knot with heat or with nail polish or model cement. When knot is dry, slide the rope washer (take from old rope) onto the new rope right up to the knot. Trim the short end of the rope right up to the knot.
4. Thread the rope through the rope hole in the side of the pulley and draw the end out through the pulley slot. Pull hard on rope to draw the washer and knot into the rope hole so that no rope protrudes from the hole.



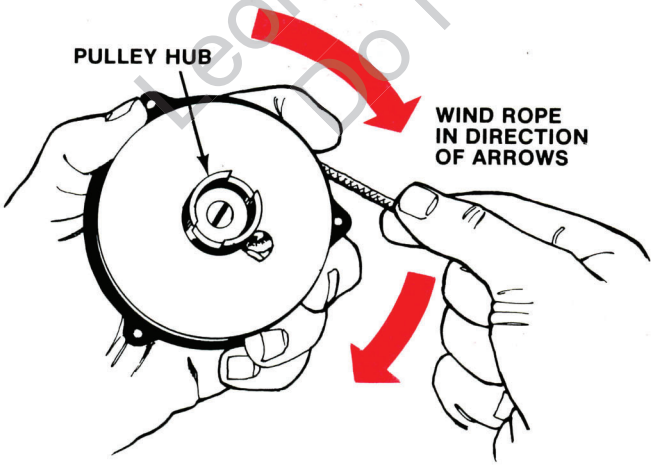
5. Thread rope through the rope hole in the starter/fan housing from inside to outside. Pull out the end.
6. Thread rope through the starter grip and then through the grip insert.

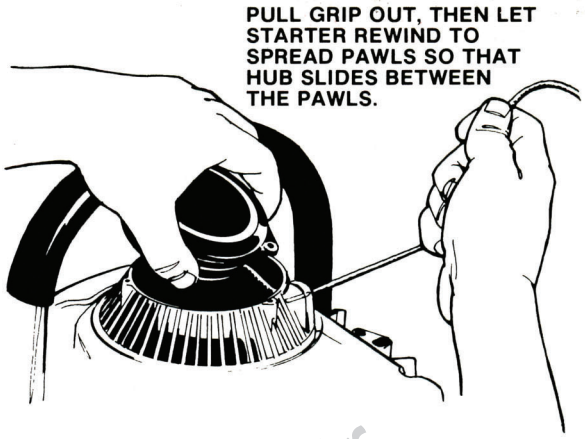


7. Knot this end of the rope as you did the other end. And draw the knot into the grip insert. Then push the insert into position in the starter grip. (Rope is now installed and ready for tensioning.)

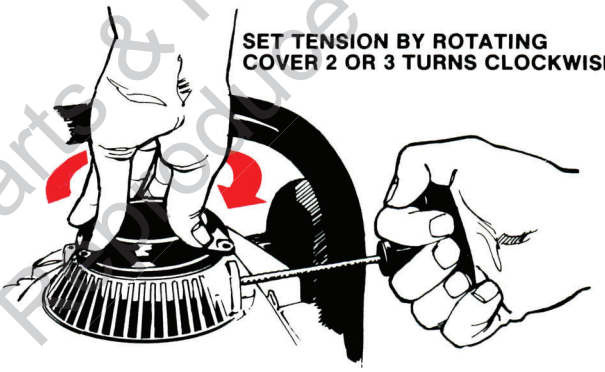
TENSIONING STARTER ROPE

1. After installing a new rope or spring:
   a) Hold starter cover hub-side-up. Wind rope snugly onto pulley in a clockwise direction.





   b) Set the cover into place in the fan housing: Pull starter grip a short way and let it rewind to spread the starter pawls so the pulley hub slides between them into place. Rotate the cover 2 or 3 turns to the right (clockwise) to set the required spring tension.



2. When a slight adjustment is needed:
   (If tension does not pull grip into place.)
   a) Hold starter cover from turning. Remove the three pan head screws from the cover.
   b) Rotate the cover one turn to the right (clockwise). If this produces enough spring tension to draw the grip up against the housing, reinstall the three screws. If not, add more tension by rotating the cover as required.
   c) Check that the starter rewinds freely, drawing the grip into place against the housing. Fasten the starter cover in place with three 8-32 x 1/2" hex Sems screws.

NOTE

After making the minimum number of turns to draw the starter grip lightly against the housing, make one or more additional turns BUT NEVER MORE THAN FIVE for proper rewind action.

SECTION 8 — ASSEMBLY AND OPERATION AS A BOW SAW

WARNING

Extreme caution must be exercised when using a bow saw. When not used properly (as outlined in this manual) or when used carelessly, this attachment could cause serious injury from KICKBACK. Do not operate a bow saw without reading and understanding ALL of the information pertaining to bow saws, found in this Section and Section 3.

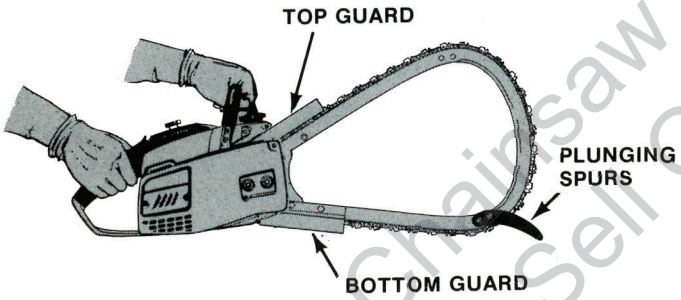
HOW IS THE BOW GUIDE AND CHAIN ASSEMBLED ON ENGINE?

Kits are available from your HOMELITE Dealer which will enable you to convert your 550 Chain Saw to a Bow Saw.

IMPORTANT

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

1. The engine should not be running. Ignition switch must be in the "STOP" position.
2. Remove the drivecase cover and the outer guide bar plate from the engine.
3. Follow the instructions (supplied in the Bow Guide Kit) for any adaption work, such as notching the drivecase cover to accept the bow.
4. Be sure to install the top and bottom chain guards, and plunging spurs properly on the bow guide (see illustration).

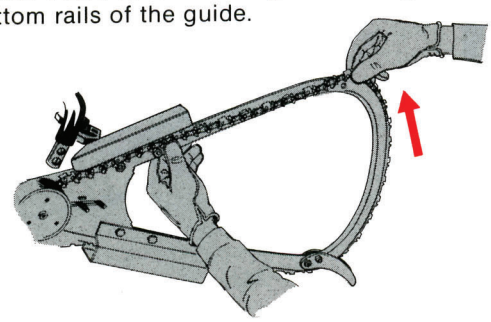


5. Unpack the chain. Straighten out any kinks in the links. Lay out the chain so that the teeth face in the direction of chain rotation (downward along the front cutting edges of the bow guide).

NOTE

See dealer for proper chain length and size to fit your Bow Saw.

6. Pick up the chain and loop it over the drive sprocket. Then, fit it between the two plunging spurs at the front of the guide.
7. Begin at the sprocket to feed the chain drive links into the groove along the top of the guide. Continue forward toward the front of the guide. When nearing the front curved section of the guide, it may help to rotate the chain by hand to get it on past the curve of the guide. Then, fit it into the groove along the front and bottom rails of the guide.



8. Check your assembly to be sure that the chain drive links are in the groove all the way around the bow. Slide the guide away from the sprocket to make the chain as taut as possible on the guide.
9. Slide the drivecase cover loosely onto the mounting bolts. Turning the guide bar adjuster screw as required, align the adjuster pin in the cover with the large hole in the bow guide. Make sure that the pin engages in the hole. Put the outer guide bar plate back in place against the bow guide.
10. Replace the cover and put the mounting nuts back on. Make them only finger tight because the bar must be free to slide during adjustment of the chain tension.
11. Turn the guide bar adjuster screw clockwise to take up most of the slack in the chain. Then, check again to see that the drive link tangs are in the bar groove.
12. Adjust the chain tension as instructed under "Chain Tension" in Section 1.

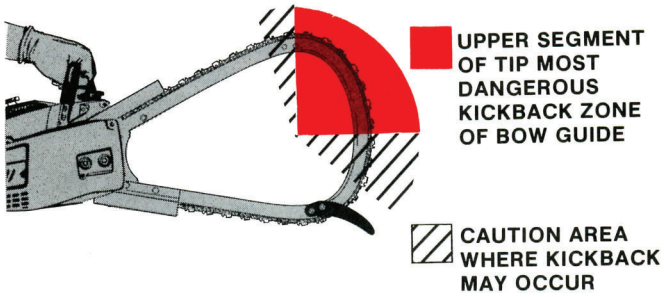
BOW CHAIN TENSION ADJUSTMENT

The tension of "cold" and "warm" chain is discussed in this manual (SECTION 1 Page 6) and should be followed. For tension of a "cold" chain, follow the instructions given in regard to "Hard Nose Bars." Do not forget to keep the bow guide nose held in the upward position until after you have tightened the mounting nuts.

WHAT IS BOW SAW KICKBACK?

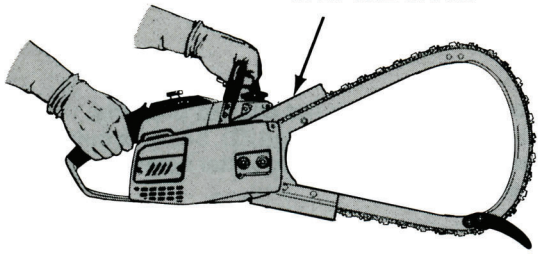
KICKBACK from a bow saw is similar to kickback of any other chain saw. The only noticeable difference is that the KICKBACK DANGER ZONE of a bow guide is wider than the danger zone of a conventional straight guide bar.

As discussed in SECTION 3 (under Kickback, Push and Pull), the reaction of kickback will occur when the rotating chain comes in contact with a solid object at the described danger zone.

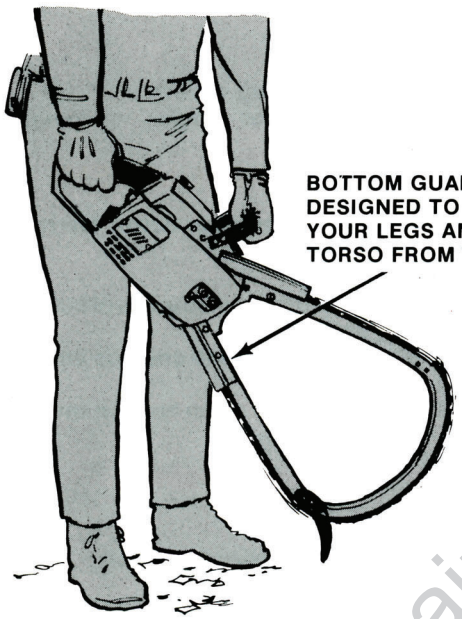


HOW TO MAINTAIN CONTROL OF A BOW SAW

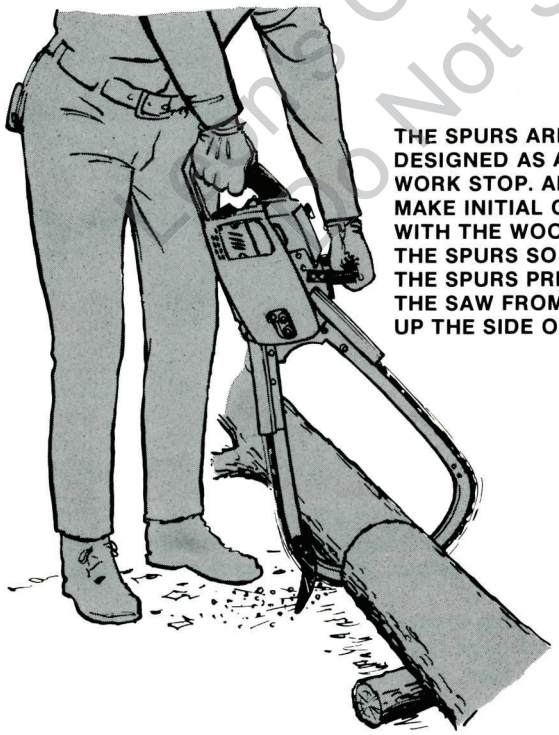
1. Refer to Section 3 under HOW TO CONTROL THE REACTIVE FORCES OF A CHAIN SAW.
2. In addition to step 1, do the following:
   a) Hold the front handlebar with your left hand, close to the balance point of the saw. Keep your left arm rigid with (elbow locked), for good control and to prevent injury from KICKBACK.
   b) Get a good grip on the rear handle with your right hand.



TOP GUARD IS DESIGNED TO PROTECT YOUR HAND FROM CONTACT WITH THE CHAIN



BOTTOM GUARD IS DESIGNED TO PROTECT YOUR LEGS AND LOWER TORSO FROM THE CHAIN



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

DO'S AND DON'TS OF CUTTING WITH A BOW SAW

WARNING

Do not operate the bow saw without the bottom guard, top guard and spurs mounted in their proper places. Serious injury may result if any of the above parts are left off the bow guide.

Not all of the techniques of cutting, as outlined in Section 5, apply to the bow saw. The following information will be helpful and should be followed when cutting with a bow saw.

The chief advantage of the bow saw is its ability to cut through wood without the bow guide becoming pinched. Thus, in situations where two cuts (an overbuck and an underbuck) would be required with a "straight blade" saw to avoid a pinch, the bow saw can do it in one cut. The basic cut made with a bow saw is the "plunge cut," made by placing the plunging spurs against the side of the log or tree trunk, and plunging the tapered front of the guide into the wood.

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

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

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

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

DAILY AND WEEKLY MAINTENANCE OF CHAIN AND BOW GUIDE

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

SECTION 9 — TROUBLE SHOOTING AND STORAGE

ENGINE CANNOT BE STARTED

- Switch off.
  Turn switch to "RUN".
- Tank dry; or bad fuel.
  Fill tank with fresh clean, properly mixed fuel.
- Spark plug not firing.
  Install new plug; gap to .025".
- Fuel not getting to carburetor.
  See that the choke is closing. Check for plugged fuel filter. Check for kinked or split fuel line.
- Starting speed adjusted too low.
  See if engine will start with the throttle held open. If it does, adjust throttle trigger latch mechanism for correct starting speed.

ENGINE STARTS, RACES WITHOUT LOAD, QUITS UNDER LOAD

- Fuel cap not venting properly.
  Test by operating with cap loosened 1/6 turn. Install a new fuel cap assembly.

ENGINE SMOKES EXCESSIVELY, LACKS SPEED AND POWER

- Check air filter.
- Use properly mixed, fresh fuel.

ENGINE CANNOT IDLE SMOOTHLY

- Improper idle adjustment.

ENGINE RUNS TOO HOT

- Wrong fuel mixture. Mix fuel thoroughly using only recommended oil and gasoline.
- Wrong type or heat range spark plug.
  Install Champion DJ-6J.
- Wrong spark plug gap.
  Clean electrodes; gap to .025".
- Clogged air cooling passages or surfaces.
  Clean the air intake slots in fan housing. Install clean air filter and clean out carburetor chamber.

NOT ENOUGH OIL FOR CHAIN LUBRICATION

- Sawdust clogging oil discharge.
  Remove bar; clean oil entry hole and slot in guide bar mounting pad.
- Check oil cap vent.
- Check oil tank filter.

CLUTCH SLIPS OR GRABS

- Cutting at less than full throttle has worn or glazed the clutch.
  Repair clutch as required. Cut at full throttle.
- Clutch worn, dirty, scored, bent or cracked.
  Repair or replace.
- Chain and bar problems including wrong tension, burred rails, faulty chain maintenance, etc.
  Read and follow chain and bar assembly and tensioning instructions and chain and bar maintenance instructions.

CHAIN CHATTERS OR BUCKS, OR GRABS AND CUTS ROUGHLY

- Tention too loose.
  Readjust (page 6).
- Depth gauges too low, or not shaped properly.
  Round gauges correctly (page 22). Sharpen cutters to raise gauge heights relative to cutter height (page 22).
- Worn drive sprocket.
  Replace.
- Incorrect filing angles, particularly a hooked side plate.
  Refile.

CHAIN DOES NOT CUT FAST

- Dullness.
  Sharpen.
- Wrong filing angles.
  Refile.
- Gauges too high.
  Lower gauges after sharpening cutters.
- Cutters non-uniform in either angles or length.
  Correctively refile.
- Too much chain tension.
  Adjust tension.
- Chain binding on pinched or spread or burred bar rails.
  Repair bar and smooth out burrs.
- Abrasion damage to cutters.
  File back past abraded or dechromed areas of cutters. Refile all cutters to same length.
- Bar groove worn inside; chain rides to one side and bar rail hangs up in the cut.
  Replace bar. Maintain proper chain tension on new bar.

CHAIN DULLS RIGHT AFTER SHARPENING

- Cutters filed wrong.
  Refile (page 21).
- Too much top plate angle or side plate hook.
  Refile.
- Chain was overheated because of running too tightly, abrasion damage, or too little oil.
  Replace chain. Check oil pump output. Maintain proper tension.

CHAIN GETS TOO LOOSE ON BAR

- New chain is wearing in. Too much pressure put on the saw to cut.
  Keep adjusting. It will stop stretching. Sharpen chain properly.
- Burred bar rails.
  Smooth rails.
- Clean oil discharge hole in guide bar pad. Adjust oiler for more oil.
- Chain filed wrong.
  Refile.

CHAIN RIDES HIGH IN BAR GROOVE

- Sawdust-packed groove.
  Clean out groove.
- Bar rails worn down.
  Replace bar.

SAW DOES NOT CUT STRAIGHT

- Cutters damaged on one side of chain.
  Sharpen damaged cutters to remove entire damaged area, then sharpen the other cutters to the same length.
- Unequal filing angles or lengths of cutters.
- All cutters must have the same angles and lengths.
- Guide bar bent.

STORING YOUR CHAIN SAW

If no operating is to be done for more than a month or two, add a fuel stabilizing chemical (STA-BIL®, available from Knox Laboratories, Chicago, Ill. 60616) to any fuel or gasoline to be stored, according to directions on the stabilizer can. Fill the saw tank with this stabilized fuel and idle the engine for a period of time to insure that this fuel is in the carburetor, fuel lines and engine. Then stop the engine by using the choke. Refill the tank.

Remove the bar and chain and clean them. Oil the bar and wrap it in oiled paper. Submerge the chain in a can or jar of oil for storage. Clean the engine thoroughly and apply auto wax to the painted exterior surfaces.

Store the engine and bar in a well-aired, cool and dry place away from de-icing salts, garden chemicals and fertilizer. Do not store where warm or damp air or corrosive particles in the air can attack the saw.

NOTE

If a stabilized fuel is not available, prepare engine for storage as follows: Drain fuel tank. Start engine and allow it to run until it uses up all fuel and quits running. Remove spark plugs and pour one teaspoonful of a detergent oil into the cylinder (as a rust inhibitor). Reinstall spark plug and crank engine several times to distribute the oil over the engine surfaces.

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