

OWNERS MANUAL

PART NO. 24904

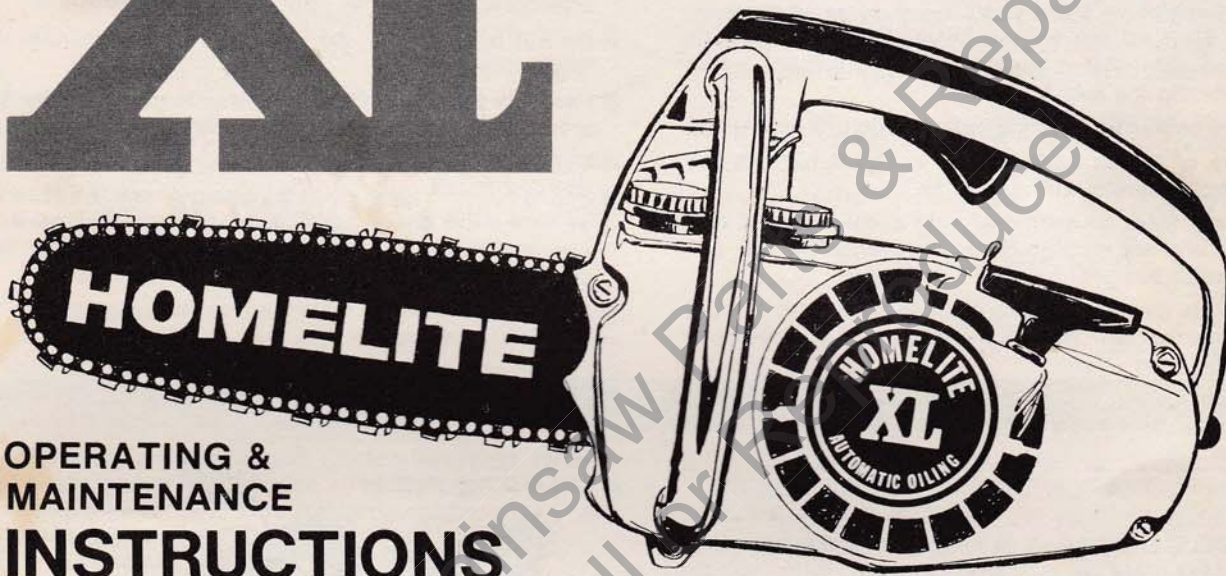
PRINTED IN U.S.A.

PRICE **\$100**

HOMELITE®

XL

CHAIN SAW with Automatic Chain Oiler



OPERATING & MAINTENANCE INSTRUCTIONS

HOMELITE® XL CHAIN SAW SPECIFICATIONS

ENGINE

Type: 2-cycle, loop-scavenged with Power Boost™ combustion chamber.

Dry Weight: 7 lb. 2 oz. (3.24 kg)

Displacement: 1.6 cu. in. (26.2 cc)

Bore and Stroke: 1-5/16" x 1-3/16"
(33.34 mm x 30, 16 mm)

Cutting Speed: 5,000-10,000 rpm

Idle Speed: 2900-3200 rpm

Bearings: Crankshaft, needle; connecting rod, aluminum and needle.

Connecting Rod: One piece, hardened steel.

Starter: Rewind, nylon rope, one piece pulley.

Clutch: One piece centrifugal automatic.

Muffler: Softone™ diffuser type.

Throttle Control: Top Handle Single Trigger.

IGNITION

Magneto: Conventional Breaker Point Magneto System.

Ignition Timing: 23° BTDC

Breaker Point Gap: .015" (0.38 mm)

Coil-to-Rotor Gap: .008" - .012"
(0.20 mm-0.30 mm)

Spark Plug: Champion DJ-7J

Spark Plug Gap: .025" (0.64 mm)

CHAIN OIL SYSTEM

Chain Oil Capacity: 6.1 U.S. fl. oz. (180 cc)

Chain Oil System: Automatic positive displacement, piston pump. Pressurized tank.

Chain Oil Filter: Cleanable, screen in tank.

CARBURETION AND FUEL

Air Filter: Polyurethane sponge (replace when dirty).

Carburetor Type: HDC-15 w/fuel pump.

Intake Valving: Stainless steel reed valve into crankcase.

Fuel Tank Capacity: 8.45 U.S. fl. oz. (250 cc)

Fuel Filter: Flexible pick-up, replaceable filter.

Continuous Operating Time per Filling: Up to 15 minutes.

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FOR YOUR SAFETY

- During starting, hold saw down firmly on the ground with one hand on the throttle handle, (see page 5) and steady the saw by placing your foot or knee over the left rear area of the engine.
- Always keep both hands on the saw when it is running.
- Be sure to use the proper grip on the handle bar (see page 5) and maintain your balance and control of the saw.
- Never let the chain contact any obstacle other than the work at hand. Never let it contact other limbs or touch the ground.
- Helpers and bystanders must be kept a safe distance from the operator and the cutting chain.
- Keep clear of a moving chain. Do not touch it. Shut engine off before making any saw repairs or adjustments.
- After completing a cut don't move away until chain stops. Shut off the engine before carrying the saw between cuts. Put a scabbard over the blade when transporting the saw.
- Select a path of safe retreat before making a felling cut.
- Beware of falling limbs. Wear a "hard hat" in the woods and during felling of large trees.
- Use a plastic or wooden wedge to control the fall of a tree or prevent binding during bucking. Do not use hard metal wedges.
- If there is anything wrong with the saw, get it fixed before further use. Keep the chain sharp and properly

- tensioned. A dull, misfiled or loose chain will chatter and buck, and can cause saw to kick back.
- Keep fuel in clearly labeled safety type cans. Fuel your saw over ground that presents no hazard of fire. Move at least 10 feet away from fueling spot before starting up the saw.
- Avoid spillage of fuel, and wipe saw down if fuel is spilled on it. Do not bring fuel where there is fire of any kind.
- Keep the saw clean and free of leaves, sawdust, pitch and oil. Keep the handles free of oil and grease.
- In areas of extreme fire hazard and where required by law, this saw must be equipped with a spark arrestor screen in addition to the standard muffler. Consult local authorities. PSMA and USFS approved spark arrestor is available as optional equipment.
- Do not operate with the fuel cap loose or muffler or filters removed.
- Use only the correct fuel mixtures made from the ingredients recommended in this manual.
- Keep a fire extinguisher handy.
- For 15 minutes after stopping work, check the area to be sure there are no smoldering embers. Put out any fires and report them, listing causes if known, to the proper authorities.
- Study this manual to learn the best and safest ways to use your chain saw.

The HOMELITE® XL chain saw, despite its lightness and compactness, has a powerful 2-cycle type engine equipped with a diffuser type exhaust muffler to dampen the engine noise, an automatic chain oiler, and a centrifugal type automatic clutch.

It will pay you to familiarize yourself with the saw and a few simple operating and maintenance principles. Maximum performance and life of this saw depend on your using it correctly right from the start. This manual tells you how to do this, and also how to maintain your saw.

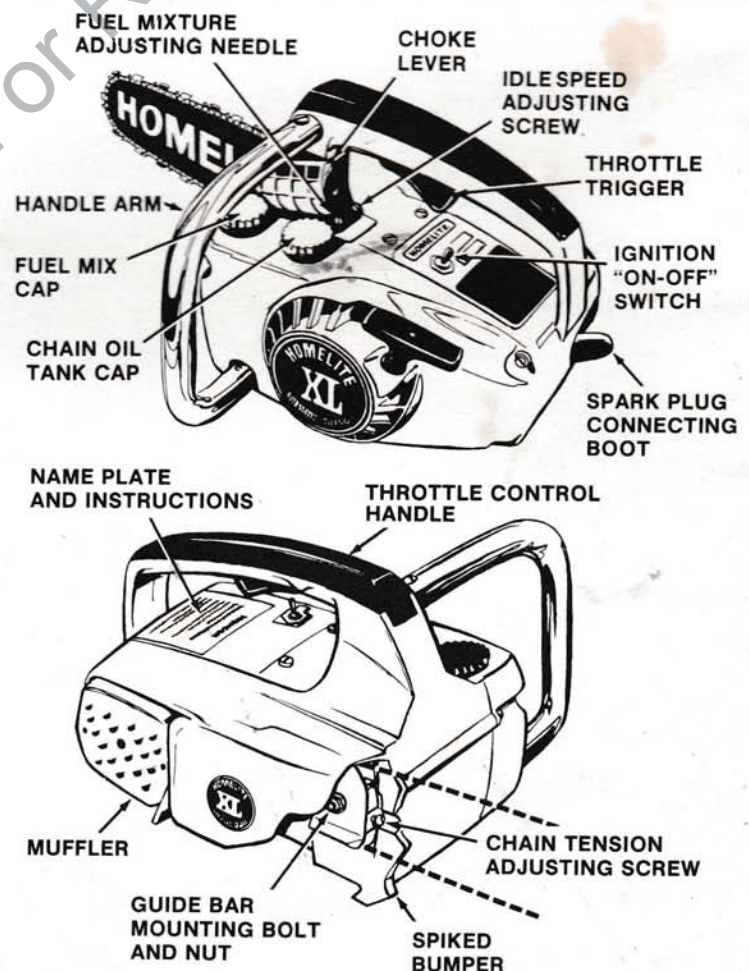
WARRANTY

The unit is warranted for the period and under the conditions stated on the warranty/registration card packaged with the unit. Please fill out the registration portion and mail it.



Textron
DIVISION

PORT CHESTER, NEW YORK, U.S.A. 10573



PREPARING YOUR NEW SAW

GUIDE BAR AND CHAIN ASSEMBLY

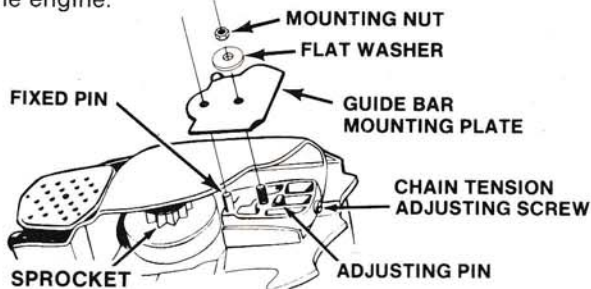
IMPORTANT: Protect yourself from cuts when working on or near the saw chain. Wear gloves or cover the sharp teeth with a rag.

1. Flip the ignition switch to "OFF."



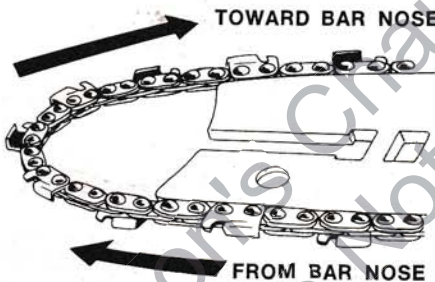
FLIP IGNITION SWITCH TO "OFF"

2. Remove the mounting nut and flat washer, and the guide bar mounting plate from the mounting pad of the engine.

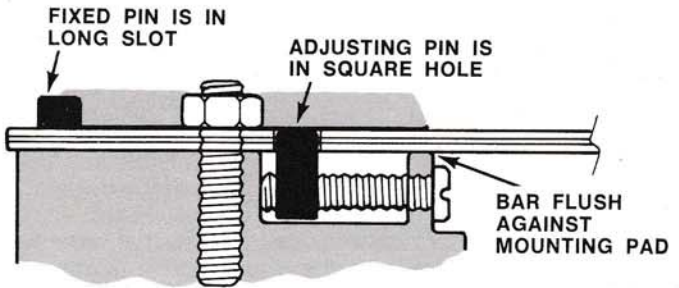
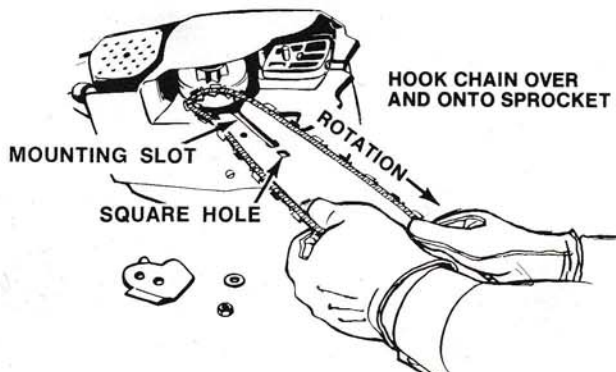


3. Place engine on work surface so guide bar mounting pad and sprocket are face up. Turn tension adjusting screw (counterclockwise) until adjusting pin is at rear of slot in mounting pad.

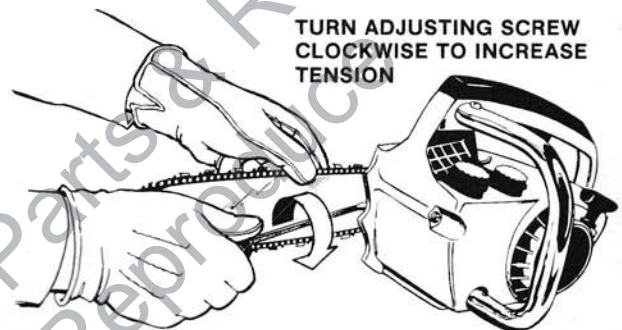
4. Unpack bar and chain. Straighten any kinks in the chain. Lay it out in a loop. Cutting edges of the teeth should face in the direction of chain rotation which is from bar nose toward engine along bottom edge of bar.



5. Put the chain drive link tangs into the bar groove and pull the chain so there is a loop at the rear of the bar. Holding the chain in place, pick up the bar and hook the loop of chain over and onto the chain drive sprocket. Fit the bar into place so that the fixed pin and mounting stud are in the long mounting slot of the bar, and the tension pin fits into the square forward hole.



6. CHECK that the bar is flush against the mounting pad. Check that the pin fits cleanly into the hole — HOLD BAR IN FLUSH POSITION and put the guide bar plate, flat washer and mounting nut back on the saw. (See illustration of correct flush-mounting of bar.) Turn down the nut with a wrench until the bar is flush with and snug against the pad, but is free enough to slide when the tension adjusting screw is turned.

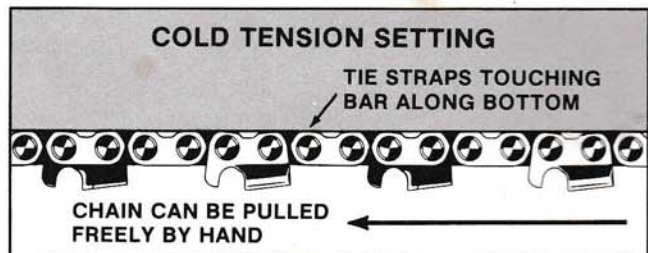


7. Turn the tension adjusting screw clockwise to move the bar away from the sprocket. Keep turning until nearly all of the chain slack is taken up. Now, adjust tension as instructed next.

CHAIN TENSION

COLD TENSION SETTING

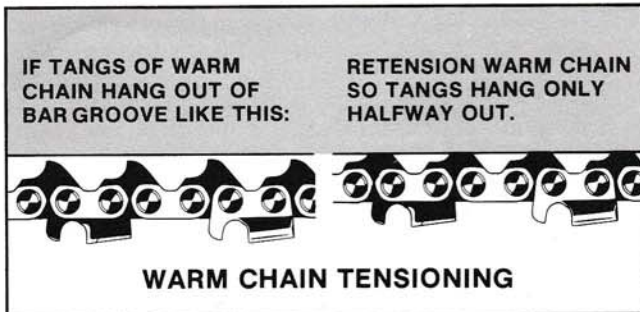
1. The mounting nut should be loose enough to permit movement of the bar. Hold up the nose of the bar during tension adjustment.
2. The initial or "cold" tension should be "snug" or taut like a chalk line. Increase the tension as much as possible without your feeling any binding as you pull the chain along the bar by hand.



3. "Snap" the chain to remove any kinks (pull away from bar and let go several times). If this causes the chain to develop slack, retension as in Step 2.
4. While holding up the bar nose, tighten the nut securely to lock the assembly at the proper tension. Check the tension. If it is correct, you are ready to make a few cuts with saw. See oiling, fueling, and starting instructions.

RETENSIONING OF WARM CHAIN

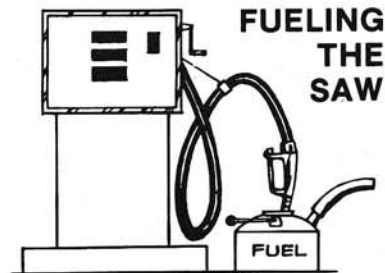
1. The chain will expand when warm and contract to the original setting as it cools. A hot chain — so hot that you cannot hold it without discomfort while counting to 20 — cannot be adjusted accurately because it will be contracting rapidly as you proceed. Always allow it to cool for a few minutes before making an adjustment.
2. A warm chain will hang down or sag. Leave it alone unless it hangs down so far that some of the drive link tangs hang right out of the bar groove. In this case, retension to where the warm chain tangs that were out of the groove enter it to about half of their depth.



CAREFUL: Upon cooling, the chain that was properly tensioned when warm may be too tight on the bar and should be retensioned per the above instructions under "Cold Tension Setting" before the next use.

CHAIN OIL AND THE OIL PUMP

1. Type of oil: HOMELITE® Bar and Chain Oil or any brand of clean SAE-30 motor oil including reprocessed oil may be used. In extremely cold weather, SAE-30 weight oil should be diluted with 1 part kerosene to 4 parts of oil so that its free-flowing property will be maintained. You can also switch to a lighter oil in cold weather. Never use dirty oil or used oil in the chain oil system, because dirty oil may damage the automatic oil pump.
 2. When to fill: Remove the oil cap now, and fill the oil tank up to the top. Refill to the top every time you fuel the saw. Wipe off any spilled oil. Keep the saw handles clean.
- NOTE:** The saw chain should always appear moist with oil in the area of the connecting links.
3. An under-oiled chain gets hot and stiff and is likely to kink up. If this occurs check as follows:
 - a) Shut off engine by flipping the switch to "OFF".
 - b) See that there is oil in the chain oil tank.
 - c) Check that the pick-up screen on the end of the oil line in the tank is in an open condition.
 - d) Let bar and chain cool, then remove and clean them.
 - e) Clean out the oil discharge hole in the guide bar mounting pad.
 - f) Start up and run the engine at full throttle for 30 seconds (maximum). If there is no oil discharge, or if the discharge is foamy or bubbly, have the saw checked at your nearest Homelite service outlet.



1. RECOMMENDED FUEL INGREDIENTS:

- a) Gasoline:
Fresh, clean, "regular grade"
(about 90 Octane rating).
- b) Motor Oils:
HOMELITE® PREMIUM 32:1 2-CYCLE MOTOR OIL (SAE-40)
HOMELITE® 16:1 2-Cycle Motor Oil (SAE-30)
Any high quality SAE-30 or SAE-40 2-Cycle Motor Oil.

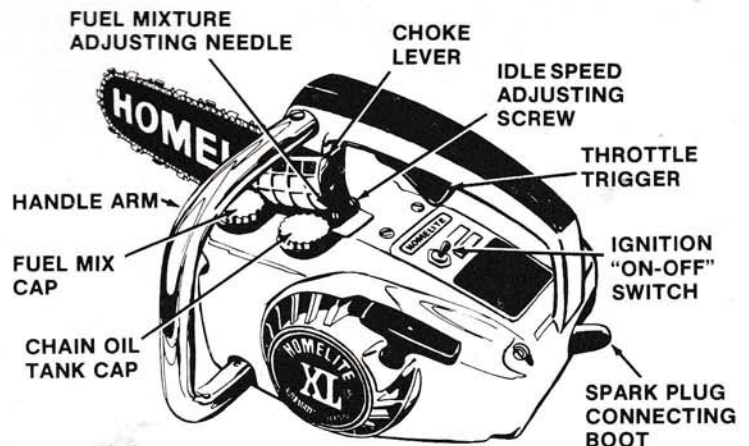
NOTE: Do not use leaded, high-test gasoline. Avoid use of multi-grade oil products (10W-30 for example) or any other oils formulated for 4-cycle engines. Do not use "Bar and Chain Oil" to make fuel.

2. PROPORTION OF OIL TO GASOLINE:

- a) If HOMELITE® PREMIUM 32:1 (SAE-40) 2-cycle motor oil is used, mix 1 part oil with 32 parts gasoline (1/4 pint oil per gallon of gasoline).
- b) If HOMELITE® SAE-30 (16:1) Motor oil or other high quality 2-cycle motor oil is used, mix 1 part oil with 16 parts of gasoline (1/2 pint oil per gallon of gasoline).

3. HOW TO MIX: Select a *clean* fuel container. (Never mix fuel directly in saw tank.) Measure out quantities of gasoline and oil accurately. Pour half the measure of gasoline into the container and all of the oil. Then pour in the remainder of the gasoline. Now, mix thoroughly by stirring or agitating vigorously for at least one minute.

4. FUELING THE SAW: Remove the fuel cap slowly. Fill the tank carefully to the top. Avoid spilling. Put cap back tightly on the tank. Wipe away any spilled fuel.

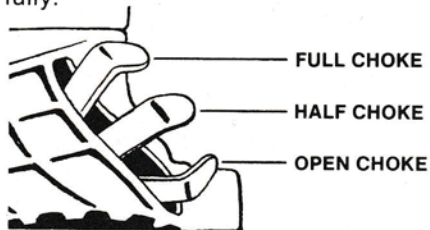


HOW TO START, STOP, AND HOLD THE SAW CORRECTLY

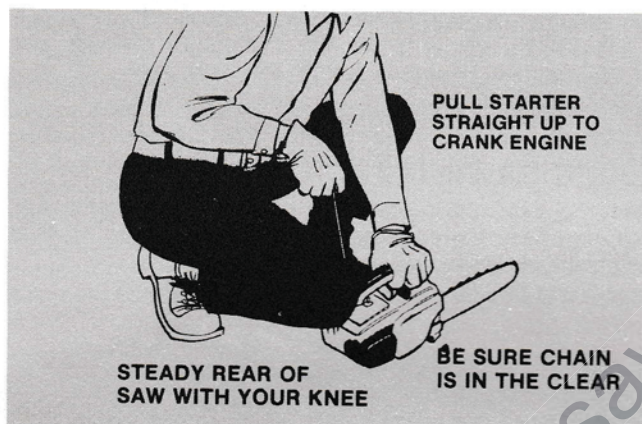
NOTE: Read this entire section before starting the saw.

STARTING THE SAW

1. Flip the ignition switch to "ON."
2. Push CHOKE LEVER all the way up to choke the cold engine fully.



3. Hold the saw down firmly on a level surface with the bar and chain in the clear. Never lean across the saw or straddle the guide bar.



4. When cranking, place your knee over the rear of the throttle control handle to help steady the saw. Hold down the throttle control handle with one hand and depress the trigger with one finger (see cranking illustration). Use your other hand for pulling the starter cord.
5. Pull STARTER GRIP out a short way until you feel the starter dogs engage. Then pull cord briskly to give a fast cranking spin to the engine. (Do not pull to the very end or you may damage the starter.) Hold onto the grip to let the cord rewind smoothly. Do not let it snap back.
6. CRANK UNTIL ENGINE FIRES. Normally, an engine that has just been fueled will require three to five cranks to prime with fuel. In cold weather, additional cranking may be required for initial prime. On the other hand, a recently run engine will usually start up on the first pull.
7. When the engine fires, it may not keep running. If this occurs, push the CHOKE LEVER halfway down and continue with cranking. When the engine starts and runs, keep it running at half choke long enough to warm it up (10-30 seconds), then flip the CHOKE LEVER down to the open position.

NOTE: Any engine which has fired several times at full choke will start at half choke.

8. Normally, a hot engine needs no choking to be restarted, and an engine which has cooled only a little should be started at half choke. Also, if the engine is warm enough, you may not have to depress the trigger to restart it.

STOPPING THE SAW

Flip SWITCH to "OFF" when you wish to stop the engine.

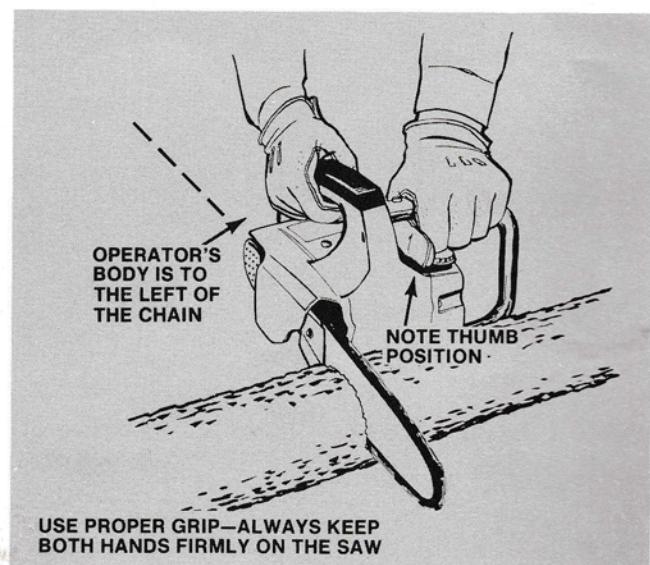
IMPORTANT: When you are through using the saw, relieve any tank pressure by slowly loosening the CHAIN OIL and FUEL MIX caps. Then retighten the caps.

PROPER GRIP AND HOLD ON SAW DURING OPERATION

Wear non-slip gloves for maximum grip and protection. Use the proper grip to hold onto the saw firmly with both hands when the engine is running.

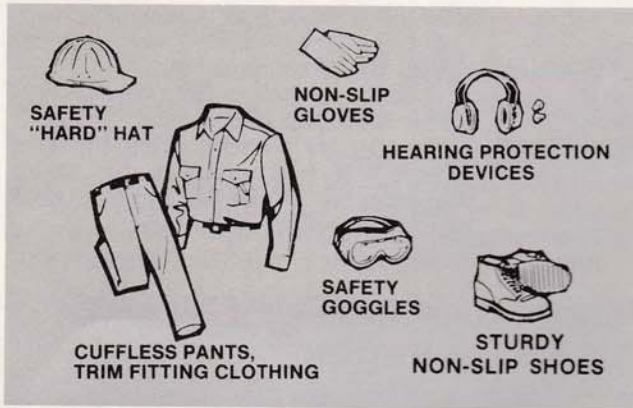


1. Grasp the THROTTLE CONTROL HANDLE with your right hand so you can control the TRIGGER. Grasp the front handlebar with your left hand. The grip maintained with your left hand on the handlebar is of utmost importance. The only grip with which you can maintain control of the saw in the event it jerks or kicks back toward you is the one (illustrated) where you wrap your fingers around the handlebar, keeping the handlebar diameter IN THE WEBBING BETWEEN YOUR INDEX FINGER AND THUMB.



2. Always keep your weight well balanced on both feet when cutting. Since you will be exerting moderate pressure to cut, guard against loss of balance by being ready to hold up on saw as it cuts through the material.

WOODCUTTING INSTRUCTIONS



PERSONAL ATTIRE

Select trim fitting garments that will not catch in the chain or underbrush, or be drawn into the engine air intake. Wear cuffless pants. Do not wear neckties, scarfs or jewelry. Your shoes should be sturdy with non-slip soles. Non-slip gloves will improve your grip and also keep your hands cleaner. Safety lens type eye protection should be worn. A hard hat should be worn whenever you are working under large trees or in a designated "hard hat area." Persons using a chain saw regularly for many hours a day should be fitted for and wear hearing protection devices (head set or ear plug types).

RECOMMENDED EQUIPMENT AND SUPPLIES

Except in the work area, always keep a scabbard over the saw chain and guide bar. Take along a supply of fuel mixture in safety type fuel cans, oil for the chain oiler, some plastic or wooden wedges (not hard metal) for bucking and felling; also a sharp axe or hatchet, and a few simple tools including touch up tools for chain maintenance. Under dry woods conditions, a fire extinguisher or shovel should be available in case of fire. We also recommend your keeping the following "spares" on hand: DJ-7J spark plug, air filters, starter cord, and a loop of sharpened saw chain.



WORK AREA PRECAUTIONS



Prepare immediate cutting area by cleaning out undergrowth likely to interfere with operator and saw, and by removing dead material which could cause fire. Prepare a path of safe retreat to the rear and diagonal to the line of fall. Keep all bystanders from the work area.

BASIC SAWING TECHNIQUES

Watch out for "spring poles" and other high stress conditions where a branch or tree could spring up or shift when the stress is relieved by cutting.

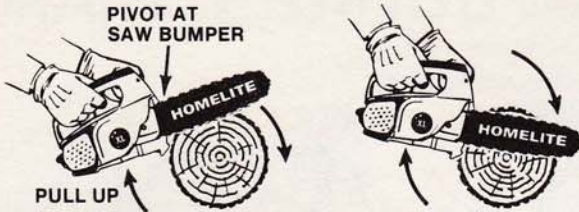


Always do all of the cutting at full throttle. Cutting at part throttle will allow the clutch to slip and burn. But be ready to throttle back to avoid racing the engine without a load.



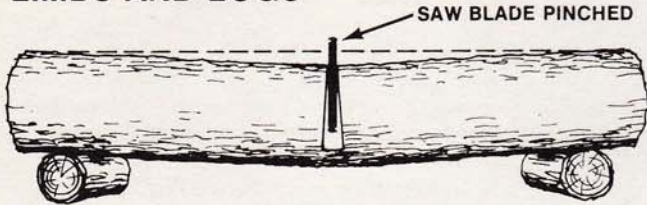
CUT STRAIGHT THROUGH SMALL LOGS THAT ARE NOT UNDER STRESS.

When cutting small logs and limbs, open the throttle fully just before letting the chain touch the wood. It is safest to cut with the saw bumper up against the wood. If you cut further out along the bar, the chain will have a tendency to pull you and the saw towards the work, so you must take care to brace yourself against this slight pull. (The reverse will be true if you are using the top of the bar to snip small limbs or "under" buck). Exert light feed pressure to cut straight through the wood, but be ready to ease off on the throttle the moment the cut is completed.



When cutting large logs or felling trees, do as above, but place the saw bumper right up against the wood so that you can pivot the saw at the bumper for best control and easy feeding.

CUTTING STRESSED TREES, LIMBS AND LOGS



Remember that wood is heavy and that it bends or flexes. Unless a log is lying flat on the ground it will bend under stress where you are cutting into it. To avoid pinching the saw in the cut always make the final or severing cut in the direction that will cause the cut to open rather than close on the chain. Study the illustrations of stressed log situations. When properly applied, the two-cut technique of cutting logs and limbs that are under stress will also help to prevent splitting of the wood and tearing of

the bark. When the wood is large enough in diameter that a soft plastic or wooden wedge can be inserted without contacting the saw chain in the cut you can use wedges to hold the cut open.

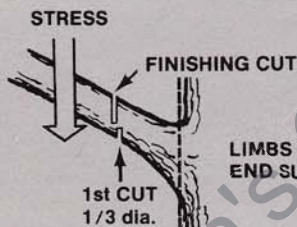
NOTE:

Do *not* use hard metal wedges when chain sawing. When large trees are being felled, it is desirable and often necessary to insert wedges into the back cut so that the tree cannot settle on the stump and saw blade. In fact, wedges driven into the back cut at the proper time (as described in "Notching and Felling") are often used to tilt the tree in the desired direction of fall. If you are cutting with the upper or nose section of the bar, you must be extra careful to protect yourself against the possibility that the saw may kick back. The saw will kick back any time the top or upper nose section of the rotating chain contacts any solid object such as the bottom of a previously started cut during reinsertion of the saw; the side of the saw kerf as you are withdrawing the saw; or any other logs, or branches or brush. The best safeguard against being injured when a saw kicks back is *always* to use the proper grip and stance. (see "Proper Grip and Hold on Saw During Operation," page 5.)

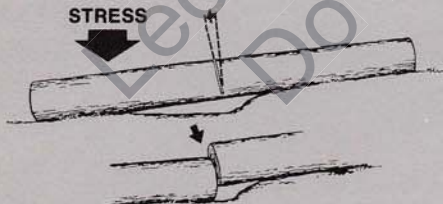
CAUTION:

Never let the chain at the top or nose section of the bar touch the ground or any object other than the log or branch being cut, as touching the ground will damage the chain, and accidental contact of the nose section of the bar with any object can cause kickback. (Study the illustrations under "Avoiding Kickback.")

STRESSED LOG AND LIMB SITUATIONS REQUIRING TWO CUTS TO AVOID SPLITTING WOOD, STRIPPING BARK, OR PINCHING SAW BLADE.



LIMBS AND LOGS HAVING END SUSPENDED IN AIR.



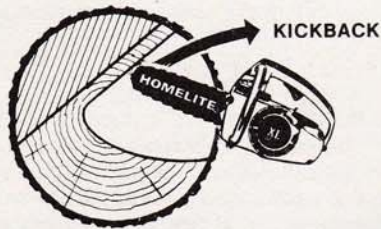
IF CUT-OFF SECTION IS LIKELY TO SETTLE AND BIND AGAINST CHAIN, BUCK ON ANGLE SO CUT OPENS UP



STAND ON UPHILL SIDE WHEN CUTTING BECAUSE LOG MAY ROLL.

FIREWOOD LENGTH LOGS CUT FROM RAISED END: DON'T WORRY ABOUT STRESSES—NO NEED TO UNDERCUT.

AVOIDING KICKBACK

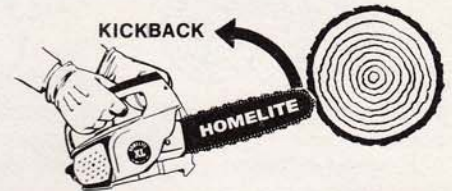


DURING REINSERTION INTO A PREVIOUSLY BEGUN CUT, WHEN TOP OR NOSE OF BLADE HITS BOTTOM OR SIDE OF THE KERF (the cut)

SITUATIONS CAUSING SAW BLADE TO KICK BACK TOWARD THE OPERATOR



WHEN NOSE STRIKES SOME OBJECT SUCH AS ANOTHER LOG



WHEN INCORRECTLY STARTING TO BORE

NOTCHING AND FELLING OPERATIONS

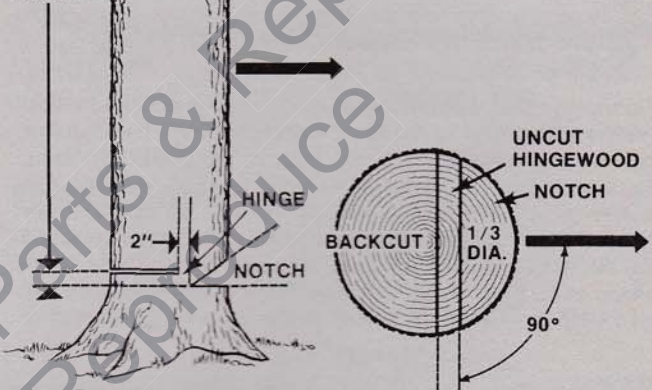
Consider the factors of wind direction and velocity, the natural lean and balance of the tree, and the location of large limbs. All of these things influence the direction in which the tree would naturally fall. Do not try to fell a tree along a line different from its natural line of fall until you have had considerable experience in felling trees which present little problem as to direction of fall.

Also take into consideration whether the trunk is sound or hollow, or partially rotted. Watch for loose bark and dead limbs overhead, as they may come crashing down while you are working on the tree. They are properly called "widow makers."

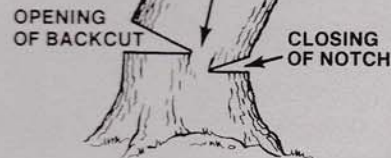
If the tree is not badly out of balance, cut a notch 1/3 the diameter of the trunk. Always form this notch by making the lower cut before the upper cut. The inside line of the notch should be made at a right angle (90°) to the intended line of fall (as illustrated), and the outside width of the notch about 1/5 the diameter of the trunk. Make the back cut at least 2" higher than the notch and leave a hinge of uncut wood to guide the tree over (see hinging note). If there is any chance that the tree might not go over in the direction planned, or may rock back and bind the saw, STOP CUTTING before completing the back cut. Drive the soft wedges into the back cut to jack the tree up toward the intended direction of fall. Then drive the wedges in more deeply to force the tree over.

HINGING NOTE: The hinge wood is what controls the fall of the tree. If the hinge wood has the same thickness from end to end (back cut is parallel to the inside cut of the notch), the tree should fall at a right angle (90°) to the notch. If the hingewood faces are not parallel, the tree will

MAKE BACKCUT 2" OR MORE ABOVE HORIZONTAL CUT OF NOTCH

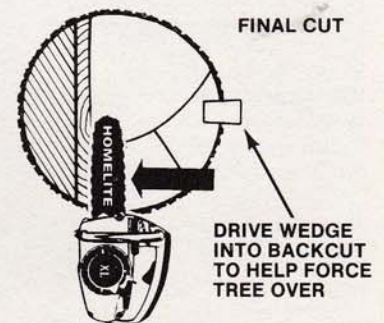
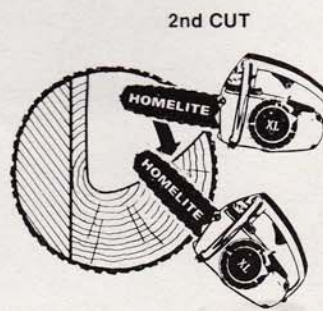


HINGE HOLDS TREE ON STUMP, CONTROLS LINE OF FALL



be influenced to fall more in the direction of the thicker end of the hinge. If hingewood is not left to control the fall, the tree may fall in any direction and might twist off the stump.

SEQUENCE USED TO FELL TREES UP TO TWICE BAR LENGTH IN DIAMETER



MAINTENANCE AND ADJUSTMENT

THE AIR FILTER



The spongy element removes dirt from the air. When it clogs up, the saw will smoke excessively and lose power. The filter should be changed when dirty, but in an emergency, can be cleaned in detergent and water or a cleaning solvent and allowed to dry. The normal life expectancy of the element is 10 to 15 hours of operation. However, extremely dirty operating conditions may cause the filter to clog in four or five hours. You should keep some spares on hand for quick-changing.

TO INSPECT OR CHANGE THE AIR FILTER:



1. Refer to the illustrations. Use the slot at the top of the black plastic filter cover to pry off the cover.
2. Clean the area around the filter before removing filter.
3. Fit clean filter in place carefully.
4. Before operating, reinstall plastic cover as follows: Start cover on by putting choke lever through the slot and placing tabbed bottom and rear edges into position. Press cover into place. **WARNING:** Never run the engine without the filter.

NOTICE

Carburetors of saws which bear this circular sticker have had the standard circuit plate replaced with a high-altitude plate for optimum performance at high altitudes. **WARNING:** At low altitudes this modification will cause lean operation and overheating. **DO NOT OPERATE SAW BELOW 5000 FEET UNLESS CARBURETOR CONTAINS THE STANDARD PLATE.** If changing back to standard plate, remove the high altitude sticker from the saw.

NOTICE

THIS SAW CONTAINS A HIGH ALTITUDE CARBURETOR PLATE AND SHOULD NOT BE USED BELOW 5,000 ft. ALTITUDE UNLESS A STANDARD PLATE IS FIRST INSTALLED

24780
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SPARK PLUG AND IGNITION SYSTEM

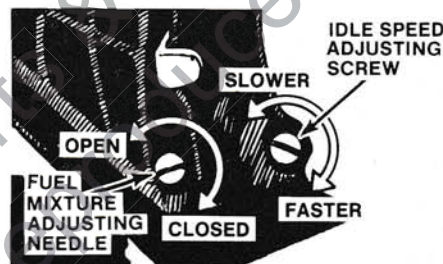
CARBURETOR ADJUSTMENTS

The XL carburetor has a factory-calibrated, high-speed fuel/air system which automatically supplies the correct mixture for high speed performance as well as for starting the engine as described on page 5. The high speed system is not adjustable. The idle system is fully adjustable for both speed and mixture. The two adjustments and their functions are:

IDLE MIXTURE

ADJUSTING NEEDLE — adjusts mixture of fuel and air for smooth stable idling.

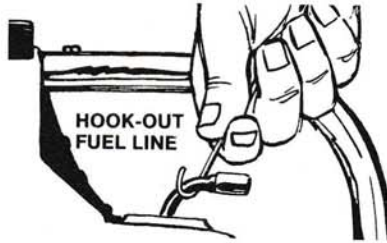
IDLE SPEED SCREW — adjusts the idle speed, which should be 2900 - 3200 rpm, fast enough for dependable idling, but not so fast as to result in rotation of the chain.



The IDLE SPEED SCREW should be adjusted whenever the idle speed is so fast that the chain rotates, or so slow that the engine falters when idled; the IDLE MIXTURE ADJUSTING NEEDLE should be adjusted whenever the mixture is so poor that the engine idles roughly and oscillates or "hunts" in idle speed, or smokes heavily when idled. When the carburetor is adjusted properly for both idle speed and idle mixture, it is usually possible to restart a warm saw without having to depress the throttle trigger. Always make the idle speed and mixture adjustments as follows:

1. Turn IDLE MIXTURE ADJUSTING NEEDLE slowly and gently clockwise to close it against its seat (do not force needle into seat). Then open it 1-1/4 turns (ccw).
2. Start the engine at full throttle (trigger depressed). Make a few cuts to get the engine warm, then release the trigger to idle.
3. If the engine fails to idle, turn the IDLE SPEED SCREW *clockwise* 1/2 turn at a time, and each time restart and idle the engine until it keeps idling. Now set the proper idle mixture and speed as follows:
4. Turn IDLE MIXTURE ADJUSTING NEEDLE slowly in one direction and then the other and leave it set where the engine idles the fastest. This will give you the proper idle fuel mixture. Now adjust for correct speed.
5. If the chain turns when the saw is idled, slowly turn IDLE SPEED SCREW to the left (ccw) until the chain stops. Do not adjust any slower than required for stable idling without chain rotation. If the idle speed is too slow for a stable idle, turn the IDLE SPEED SCREW slowly as much to the right (cw) as required for smooth idling (without chain rotation).

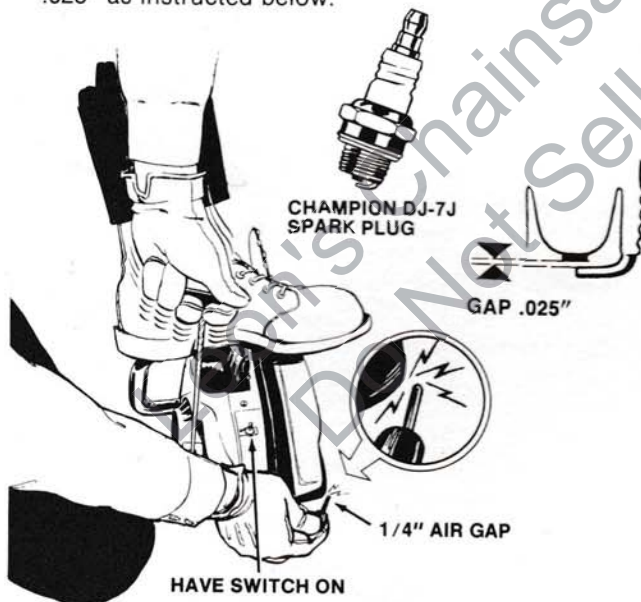
TANKS, CAPS and PICK-UP FILTERS



1. The only regular maintenance steps to be performed are cleaning of the screen type oil pick-up filter hanging inside the chain oil tank, and changing of the fuel pick-up filter in the fuel tank. Both should be done once each year or every 50 hours of operation.
2. For access to the oil or fuel pick-up, unscrew the tank cap. Bend a piece of wire (or straighten out a paper clip) to form a hook. Reach inside the tank to hook the pick-up line. Draw the pick-up end of the line carefully out of the tank and pull off the filter.
3. Change the fuel filter, and clean the oil screen.
4. Whenever the engine develops symptoms of fuel starvation (falters on application of a load and lacks power), and the fuel filter has been changed, have the saw checked at the Homelite service outlet nearest you.

CARBURETOR ADJUSTMENTS

1. The engine has a miniature, self-sealing tapered seat type Champion #DJ-7J spark plug. Always replace with this same type plug, and be sure to set the firing gap to .025" as instructed below.



BROAD, BLUE OR WHITE SPARK
Magneto is O.K.

WEAK SPARK
Magneto output may be low, or there may be an insulation leak.

NO SPARK
Have ignition checked by your dealer.

2. The spark plug always should be left in the engine unless trouble develops. If the engine cannot be started, you should temporarily install a replacement plug. If the old plug was causing the trouble, the engine should run properly with the new spark plug.
3. But while the plug is out, test the ignition system to see whether good spark is being generated (refer to the illustration):
 - a) Using a 1/4" diameter metal rod (a screw works nicely), insert the rod into the spark plug boot to contact the spring connector inside.
 - b) Holding the boot well back on the insulation, position the rod so there will be an air gap of 1/4" between the rod and a metal edge of the muffler.
 - c) With the switch flipped to "ON" crank the engine to observe whether a spark jumps the 1/4" gap. NOTE: In bright sunlight you can hear the "snap" of a strong spark even though you may not be able to see it. Refer to the analyses and dispositions printed below the spark test illustration.
4. If changing the spark plug seems to have corrected ignition difficulties, examine the old plug and compare its appearance to those described in the large tinted panel. You may learn the underlying condition which caused the plug to fail.
5. Dirty plugs often can be restored to firing condition by cleaning and regapping of the electrodes. Always clean insulator and electrodes before setting the gap.

Dry, black or light gray to tan appearance.

This is a normal appearance of plug after considerable service.

Sooty, oily black carbon on bottom and electrodes.

Engine has been getting too much fuel or too much oil in the fuel; or ignition voltage may be low; or wrong heat range plug has been used.

White to light gray powdery deposits, or burnt gray blistered look of the center electrode porcelain insulator. Center electrode appears melted and insulator burned.

Engine running too hot. There may be an air leak, either in the fuel system or in the engine seals.

Yellow ash deposit. Core bridging or gap bridging with carbon or other deposits.

Caused by additives in gasoline or oil; use proper ingredients when mixing fuel. Engine in need of overhaul due to prolonged usage; or wrong oil or incorrect fuel mixture.

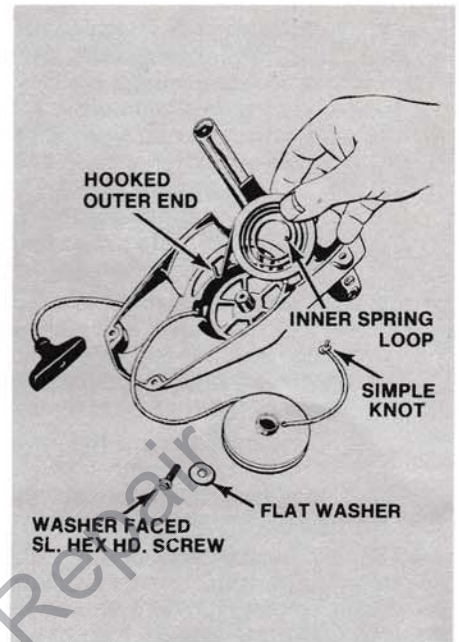
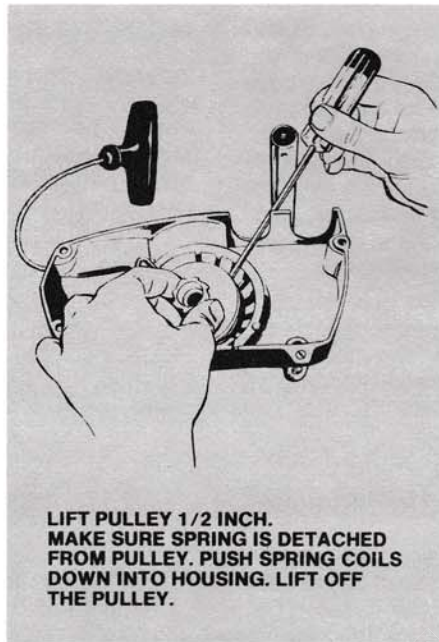
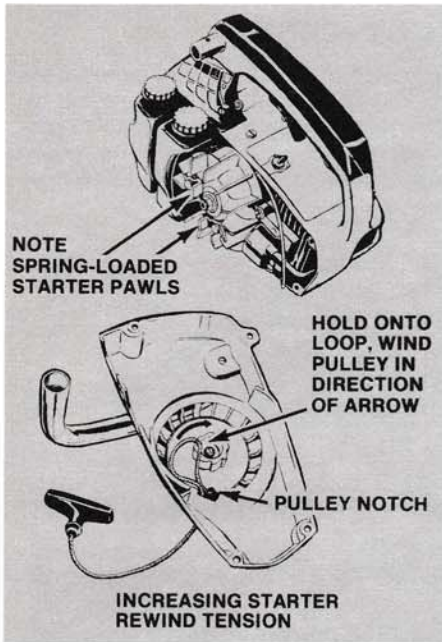
WARNING:

Sand-blast or power-brush-cleaned plugs should never be used in this engine as it is virtually impossible to wash off all of the abrasive particles. It is preferable to hand-brush, hand-file or "hydro-hone" the electrodes.

Set the firing gap to .025" by bending the side electrode toward the center electrode. Never bend center electrode.

COOLING AND EXHAUST SYSTEMS

1. The owner should keep watch of the small louvred discharge holes in the muffler, and should pick them clean whenever deposits are noted. Occasionally, the muffler should be removed from the engine and the cylinder fins cleaned down to bare metal. At the same time, deposits should be scraped from all surfaces of the muffler and the scrapings removed before the muffler is reassembled.



2. Spark arrestors, when used, must be in good condition; otherwise they will not break up large carbon particles if any are discharged from the engine.
3. Do not let sawdust, leaves or dirt clog either the air intake screen in the starter/fan housing, or the area around the muffler. Cooling air drawn by the fan, flows between the cylinder fins and is discharged around the muffler. If the cooling passage is blocked and the cylinder fins are dirty, the engine may overheat.

RECOIL STARTER REPAIRS

The starter has few parts and can be disassembled and repaired under field emergency conditions such as when the cord breaks.

1. TO REMOVE THE STARTER:

Remove the screw through the top of the handlebar and the four screws through the starter/fan housing to the engine housing. Lift the starter/fan housing and the handlebar off the engine. Remove the plastic air filter cover.

2. TO REMOVE THE PULLEY:

Unscrew the starter screw and remove the flat washer from the recess in the pulley hub. Carefully raise the pulley about a half-inch above its installed position on the post. If the pulley cam section will not disengage from the inner loop of the recoil spring, insert a screwdriver blade between the pulley and the housing to free the pulley from the spring. Lift the pulley off the post. Then be sure to push the spring coils back into position to bottom of the housing (see caution note).

CAUTION: If you do not detach the spring before lifting off the pulley, the coils may fly apart. The spring is difficult to rewind.

3. TO CHANGE THE RECOIL SPRING:

- a) Remove the pulley as in step 2. Then slap the engine side of the starter/fan housing down on a flat surface, sharply enough to dislodge the old spring. (NOTE: Immediately tape or tie together the coils of the removed spring so that they cannot fly apart. Always tape the coils together before disposing of old springs.)

- b) Put the new spring into place in the housing. Refer to the illustration for position of the hooked outer end of the spring in the notch in the housing wall.
- c) If the old spring has been removed for cleaning and lubrication, clean in a non-oily solvent and drain the spring. Then put a thin film of Homelite® ALL-TEMP Multi-Purpose Grease or a lithium base grease on your fingertip and rub the grease into the coils on both sides of the spring. Use only this tiny amount of grease, because a thick film of grease will retain dirt particles which may damage spring.

4. TO INSTALL A NEW STARTER CORD:

- a) Remove the starter/fan housing and the pulley as in steps 1 and 2.
- b) Remove the old cord, cutting it if necessary.
- c) The new cord should be 30 inches long. If of this specified length, a total of eight turns onto the pulley as specified herein, are required to set the proper rewind tension. If the cord is either four or five inches shorter, only seven turns will be required; and if four or five inches longer than specified, nine turns will be needed.
- d) Tie a simple knot tightly at one end of the cord. Dip the end in acetone type cement or nail polish to set it. After the cement dries, trim off the end right near the knot.
- e) Push the unknotted end through the small hole in the pulley and pull the cord out between the sheaves (slot of the pulley). Thread the unknotted end through the cord hole in the housing. Then put the starter grip on the cord, knot this end and pull the new knot into the grip. Pull the cemented end of the cord through the pulley to draw the knot on that end into the pulley hole.
- f) Slip the pulley onto the pulley post in the housing. Rotate the pulley until you can feel that the inner loop of the spring has engaged the pulley. Then secure with the flat washer and starter screw that were removed in step 2.

5. TO SET SPRING TENSION FOR STARTER REWIND:

- a) Pull the starter cord out to the end. Then turn the pulley until the notch in its rim is adjacent to the cord hole in the housing.

- b) Hold pulley from turning. Push the cord back through the housing hole so that it starts to bunch up between housing and pulley notch. Pull up a loop of the cord here and hold it. Now, wind five turns of cord onto the pulley by holding the cord at the notch and winding the pulley five turns clockwise. Hold the pulley from rewinding. Pull the starter grip to the full extent of the cord to get rid of the loop and to wind up the spring, then hold the hand grip while letting the pulley rewind as far as it wants to.
- e) Pull the cord out about one foot. Then hold the pulley from rewinding and make another cord loop as in step 5b), but this time, wind the following number of turns onto the pulley as required according to length of the cord.

standard 30" cord length—clockwise 3 turns
 shorter cord length — clockwise 2 turns
 longer cord length — clockwise 4 turns

6. TO READJUST TENSION:

Should "cord stretch" or other factors necessitate adding more tension, use the procedure in step 5b) to add one clockwise turn at a time of additional tension. Do not add more tension than necessary for the rewind spring to pull the grip into place on the housing.

HOMELITE® SAW CHAIN



NOTE: The instructions in this section for chain sharpening and for depth gauge filing and contouring apply only to standard construction HOMELITE® Saw Chain. Should your saw be equipped with any type of chain other than the present standard HOMELITE® Saw Chain, specific instructions for the sharpening and maintenance of that type of chain will be provided.

Your saw has a .050" gauge HOMELITE® saw chain with a sprocket which matches it in pitch. When the chain is to be replaced, always have a new sprocket of matching pitch installed because a worn sprocket would be out-of-pitch and damage the new chain.

Always keep the chain in such good, sharp condition that bearing down hard to make the saw cut is unnecessary. When the sawdust turns from chips into a fine powder and you find yourself pressing hard to feed the chain, STOP IMMEDIATELY and file the chain.

FILING EQUIPMENT

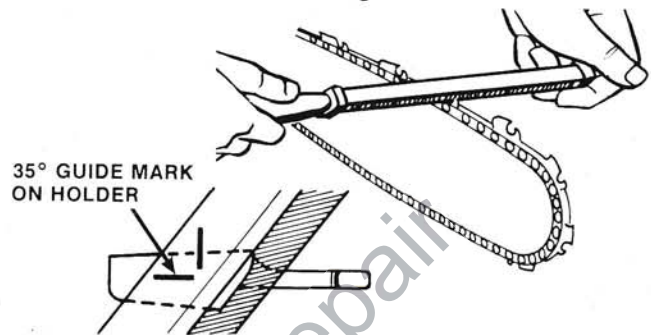
Uniformity and accuracy are necessary for success in filing saw chain. These are easiest to obtain with the aid of a file holder which has the required top filing angles marked on it, and also helps you to hold the file at the correct height (1/10 of file diameter above top plate of tooth) to produce 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 chain, a 5/32" diameter (4mm) round file is required. When about half of the original tooth steel has been filed away, you should switch to a 1/8" diameter (3.2mm) file. The reason for switching to the smaller diameter file on a "short-filed" tooth is the slight taper of the tooth's top plate which reduces the size of the tooth.

HOW TO FILE CUTTERS

Wear gloves for protection. Tighten up the tension enough that the chain doesn't wobble, and do all of the filing at the mid-point of the bar. Be sure to file all cutters to the same length. If you replace damaged cutters, file them back to the same length as the rest of the cutters so that each cutter has the same biting chance.



1. Hold file against cutter face at the 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.

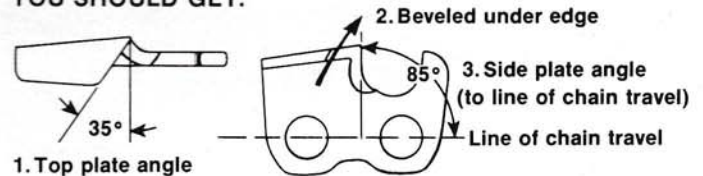


DULL



SHARP

NOW EXAMINE YOUR FILING JOB — HERE'S WHAT YOU SHOULD GET:



1. Top plate angle

2. Beveled under edge

3. Side plate angle (to line of chain travel)

Line of chain travel

CORRECTIVE FILING



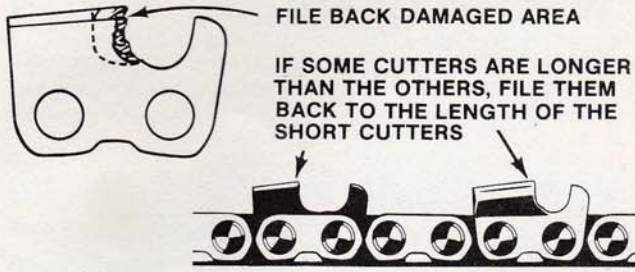
OVAL OR ROUND FILE

POINTS WORN DOWN

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).

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.

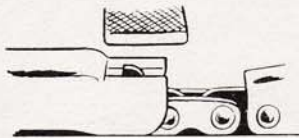
NOTE: All cutters must be filed equally back to this point. This can be done by hand. It is less expensive and easier to have it done on an electric chain grinder at your Home-lite service outlet. This is an extra advantage since it "trues" the chain to original factory shape.



FILE BACK DAMAGED AREA

IF SOME CUTTERS ARE LONGER THAN THE OTHERS, FILE THEM BACK TO THE LENGTH OF THE SHORT CUTTERS

HOW and WHEN TO SET DEPTH GAUGE CLEARANCE

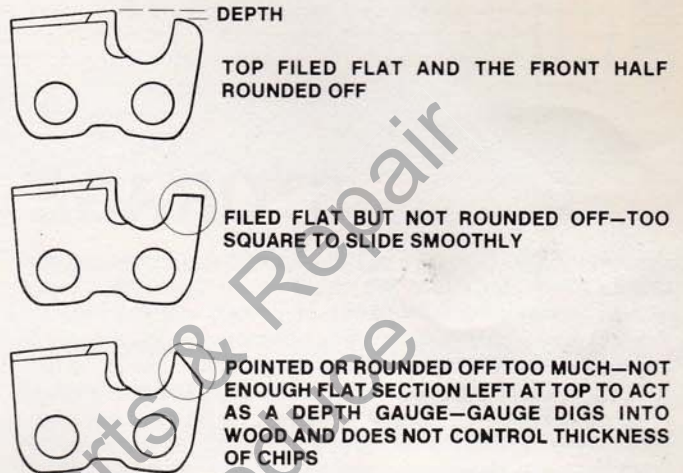


Every second or third time the teeth are sharpened, or if a large amount of steel is removed from the cutters, the depth gauges should be jointed to a uniform depth.

Use a depth gauge tool and a safe-edge (no teeth on edge) flat file. 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. Then remove the tool and round off the fronts of all gauges to the original contour.

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.



DEPTH

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

REFILE ANY TEETH HAVING ONE OR MORE OF THESE FAULTS:



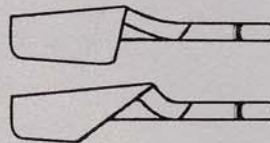
FORWARD HOOK

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



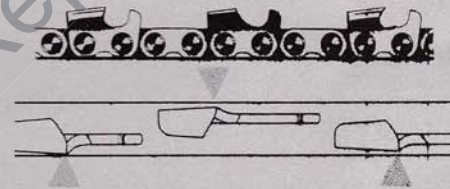
BACK SLOPE

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



IMPROPER TOP PLATE ANGLES

Blunt chain requires too much feed pressure. This top plate angle causes chain to bind, produces a rough cut, robs power from saw, and increases bar groove wear. *Caused by holding file at wrong angle or letting it drift or rock during the stroke.*



CUTTERS FILED AT NON-MATCHING ANGLES

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

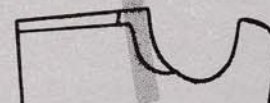
Caused by letting pressure and filing angle vary from tooth to tooth or one side filed with different angles and lengths than the other.



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 holding file with handle too low, or 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, or keeping file handle too high.

CLUTCH SPROCKET AND DRUM and "S" CLUTCH

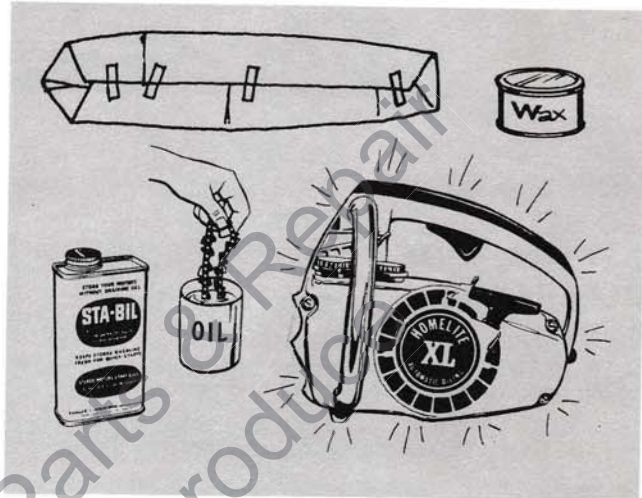
1. Because worn sprocket teeth will prematurely wear a new chain, always have your Homelite service outlet check the sprocket and drum assembly when you are having a brand new chain installed. At this time, you should also request inspection of the clutch needle bearing and the "S" configuration centrifugal clutch.

2. The clutch can be serviced properly only when special tools and methods of assembly are employed. **DO NOT REMOVE THE SPROCKET AND DRUM** — take the saw to our service outlet for inspection whenever the clutch slips to prevent cutting at full throttle, or fails to disengage when the engine is throttled back to proper idle speed. Always cut at full throttle because cutting at part throttle will wear out clutch and drum rapidly.

STORAGE

Chemicals and moisture in the atmosphere will attack an unprotected saw. Store the chain in oil. Clean the guide bar and wrap it in oiled paper or an oily rag. Add STA-BIL* to fuel (according to directions on the Sta-Bil can) and fill fuel tank to the top. Run engine for a few seconds on this mixture and stop engine by pushing the choke lever all the way up. Apply auto wax to painted external surfaces of the engine. Store saw in a cool, dry place away from garden chemicals, fertilizers and de-icing salts.

*STA-BIL® — available from Knox Laboratories, Chicago Ill. 60616.



MAINTENANCE CHART

JOB	Daily Check	Every 5 Hours Operation	Every 15 Hours Operation	Every 50 Hours Operation
1. EXAMINE AND CLEAN EXTERIOR OF SAW	✓			
2. SHARPEN CHAIN		✓		
3. REVERSE GUIDE BAR TOP FOR BOTTOM ON SAW		✓		
4. CHECK SCREWS, TIGHTEN LOOSE FASTENERS		✓		
5. CLEAN GUIDE BAR, MOUNTING PAD AREA, AND OIL DISCHARGE HOLE		✓		
6. CHECK AIR FILTER		✓		
7. CHECK MUFFLER LOUVRES: PICK CLEAN ANY CLOGGED LOUVRES		✓		
8. LOWER CHAIN DEPTH GAUGES		✓	✓	
9. CHECK FUEL FILTER			✓	
10. CLEAN SPARK PLUG AND GAP TO .025"				✓
11. DISASSEMBLE MUFFLER, AND CLEAN MUFFLER AND CYLINDER EXHAUST PORT.				✓
12. CLEAN CYLINDER FINS, AIR INTAKE AND ENGINE COOLING PASSAGEWAYS.				✓

NOTE: Figure that each hour of operating time requires 4 tankfuls of fuel.

PERFORMANCE LOG

Keep track of the use made of your saw by recording the number of times saw is refueled.

	5	10	15	20	25	30	
							60
							90
							120
							150
							180
							210
							240
							270
							300
							330

FILL IN THIS INFORMATION FOR YOUR RECORD



MODEL NO. _____
 SERIAL NO. _____
 DATE OF PURCHASE _____
 NAME OF DEALER _____
 ADDRESS _____
 INVOICE NO. _____

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LIMITED WARRANTY

We warrant each new Homelite Chain Saw to be free from defects in material and workmanship under normal use and service. Our obligation under this warranty is to repair this chain saw free of charge during the first ninety (90) days if it is defective. However, if the saw is used to produce any income (commercial or rental use) this warranty is in effect for the first 30 days only.

To exercise your warranty return the saw prepaid to a Homelite Branch Office or to an authorized Homelite dealer.

ANY OTHER WARRANTIES WHICH MAY BE EXPRESSED OR IMPLIED BY LAW ARE LIMITED IN DURATION TO THE PERIODS REFERRED TO ABOVE. IN NO EVENT SHALL HOMELITE BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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