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HOMELITE
JACOBSEN

OWNERS
Operating & Maintenance
MANUAL

READ NOW - SAVE FOR REFERENCE

245

VIBRATION-ISOLATED
CHAIN SAWS

WITH **SAFE•T•TIP®** ANTI-KICKBACK DEVICE / **RAKER III™** KICKBACK-REDUCING SAW CHAIN / **AUTOMATIC & MANUAL OILERS**

WARNING: Chain Saws can be dangerous. To reduce danger follow all safety precautions in the owners manual before using the saw.

NOTICE: Kickback is the most dangerous of the reactions with which the chain saw operator must contend. Kickback and the other reaction forces are discussed in this manual on page 3.

HOMELITE TEXTRON
Homelite Division of Textron Inc.

SAFETY PRECAUTIONS FOR CHAIN SAW USERS

BASIC PRECAUTIONS FOR PERSONAL SAFETY

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

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.

*Pat. Pending

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

BASIC PRECAUTIONS ABOUT MAINTENANCE

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

BASIC PRECAUTIONS IN CUTTING/WORK AREA

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

CONTENTS

INTRODUCTION

KICKBACK, PUSH, AND PULL

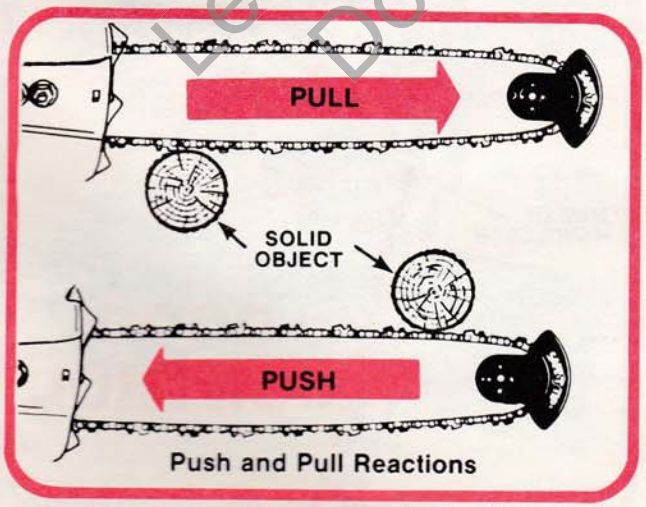
and how these reaction forces are best controlled.

WARNING

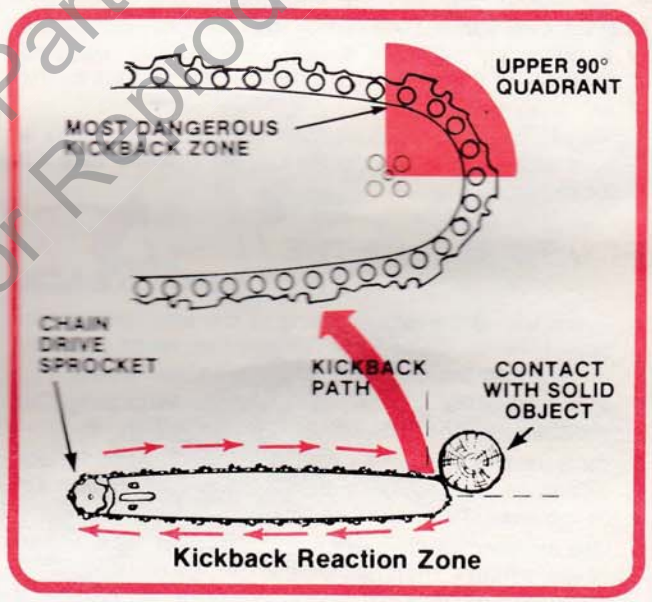
Your saw came with a SAFE•T•TIP® anti-kickback device installed on the guide bar. Remember that, for the few occasions where you may wish to work temporarily with this kickback preventive device removed, you must rely on using the techniques described in this owner's manual to maintain control of the saw. The saw's kickback-reducing RAKER III™ saw chain will also help you to maintain control, but only the SAFE•T•TIP device can prevent kickback from happening.

THE REACTION FORCES

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



Push and Pull Reactions

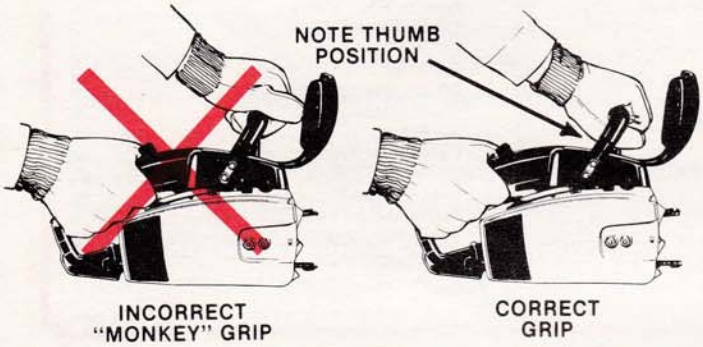


Kickback Reaction Zone

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

HOW TO MAINTAIN CONTROL

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

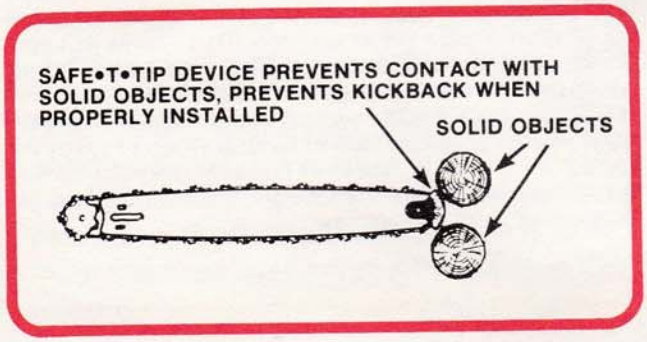


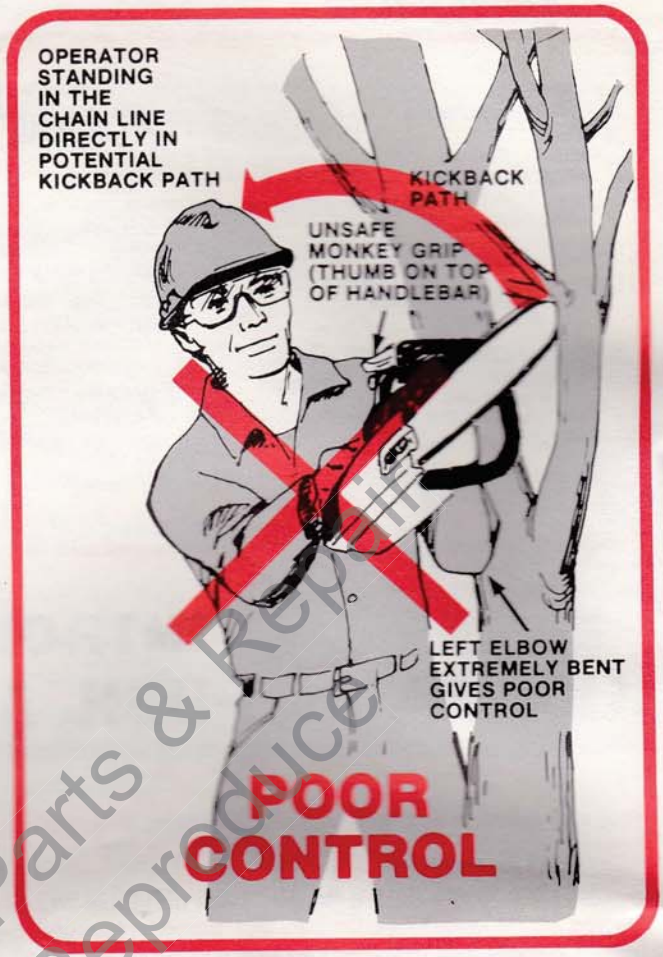
   Do not use a "Monkey Grip" (fingers and thumb on same side of handlebar) because your hand can slip.

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

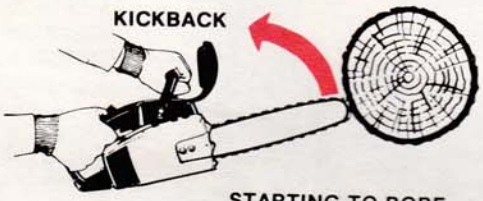
HOW TO REDUCE THE CHANCE OF KICKBACK

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





WITHOUT THE ANTI-KICKBACK DEVICE ON YOUR SAW YOU WOULD HAVE TO BEWARE OF THESE SITUATIONS.

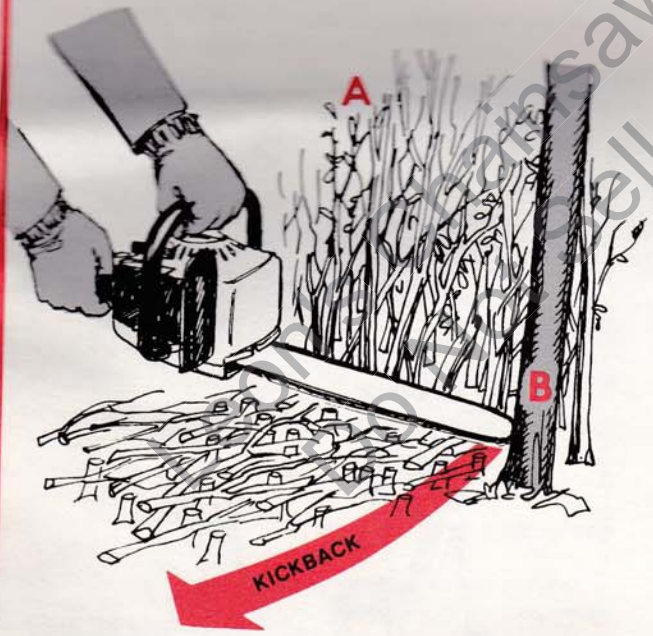


STARTING TO BORE WITH NOSE OF SAW

REINSERTING NOSE OF SAW INTO A PREVIOUS CUT

NOSE STRIKING ANY SOLID OBJECT (WILL CAUSE A KICKBACK)

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



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

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

DEVICE RESTED AGAINST AN OBSTRUCTION TO PREVENT CHAIN DAMAGE

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

CUTTING ONE TRUNK ONLY OF A DOUBLE-TRUNK SHADE TREE

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

USE A SCYTHING TECHNIQUE TO CLEAR LIGHT BRUSH

LIMB AND BUCK WITHOUT FEAR THAT THE SAW WILL KICK BACK

Facts About Model 245 HG and 245 SL Chain Saws

CUTTING ATTACHMENT

The 245 saw models are designed for use with 14-inch, 16-inch, and 18-inch capacity conventional guide bars. The model you choose will have one of these size bars and will be equipped with our kickback-reducing RAKER III™ , 3/8″ pitch type R37ME-50 saw chain. Equip this saw only with the types and lengths of guide bars listed for the 245 chain saw series in Homelite-published literature or price lists. Do not attempt to mount a bow guide to this engine, or adapt the engine to power any equipment or devices not recommended by Homelite for this saw.

From time to time new attachments or devices, or innovations of parts may be developed for this saw. You can learn of the latest developments by contacting our Manager of Customer Relations (address on back cover) at any time.

PROTECTION FROM VIBRATION

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

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

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

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

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

HEARING PROTECTORS

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

NOTICE

READ YOUR OWNER'S MANUAL and any other notices or instructions furnished with your saw. Proper first time assembly of the saw is as important to its future as are capable operating and timely maintenance. Your satisfaction with the saw and your safe use of it depend on your doing things properly — right from the start. So before putting a screwdriver and wrench to your saw, read the manual.

HAND GUARD

The 245 HG hand guard is an extension of the air filter chamber cover. The 245 SL hand guard is part of the chain brake mechanism.

SPARK ARRESTOR AND MUFFLER

The muffler is recessed into the drive case cover as a method of preventing close contact of flammable material with high-temperature muffler surfaces. The muffler contains a spark arrestor screen designed to ensure hot exhaust particles are of a quick cooling size before discharge. Whenever a spark arrestor is required by law, the owner/operator is required to maintain it in good condition. Since the spark arrestor is a very fine stainless steel mesh, it will clog, crack and burn out. Replacement spark arrestor screens are available from your Homelite dealer.

CHAIN BRAKE (MODEL 245 SL)

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

For your safety, rely on the SAFE•T•TIP® device to prevent kickback. And depend on using the proper grip and stance, and the safe cutting techniques recommended in this owner's manual to control the forces with tend to push or pull you and the saw during cutting.

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

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

SECTION 1 / PREPARING FOR USE

NOTE

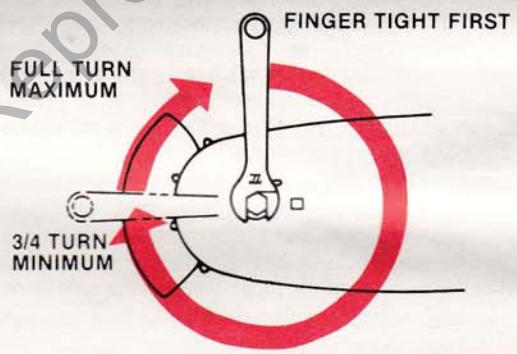
WEAR GLOVES TO PROTECT YOUR HANDS WHENEVER YOU ARE WORKING ON THE SHARP CHAIN OR GUIDE BAR. ALWAYS SEE THAT THE SWITCH IS IN THE "STOP" POSITION BEFORE YOU DO ANY MECHANICAL WORK ON THE SAW.

INSTALLING ANTI-KICKBACK DEVICE

NOTE

Even though the SAFE•T•Tip® anti-kickback device was put on your guide bar at the factory, you should know how to remove and remount the device on your guide bar, and how to set the proper tightness of the mounting screw. Tightness should be checked before each day of use.

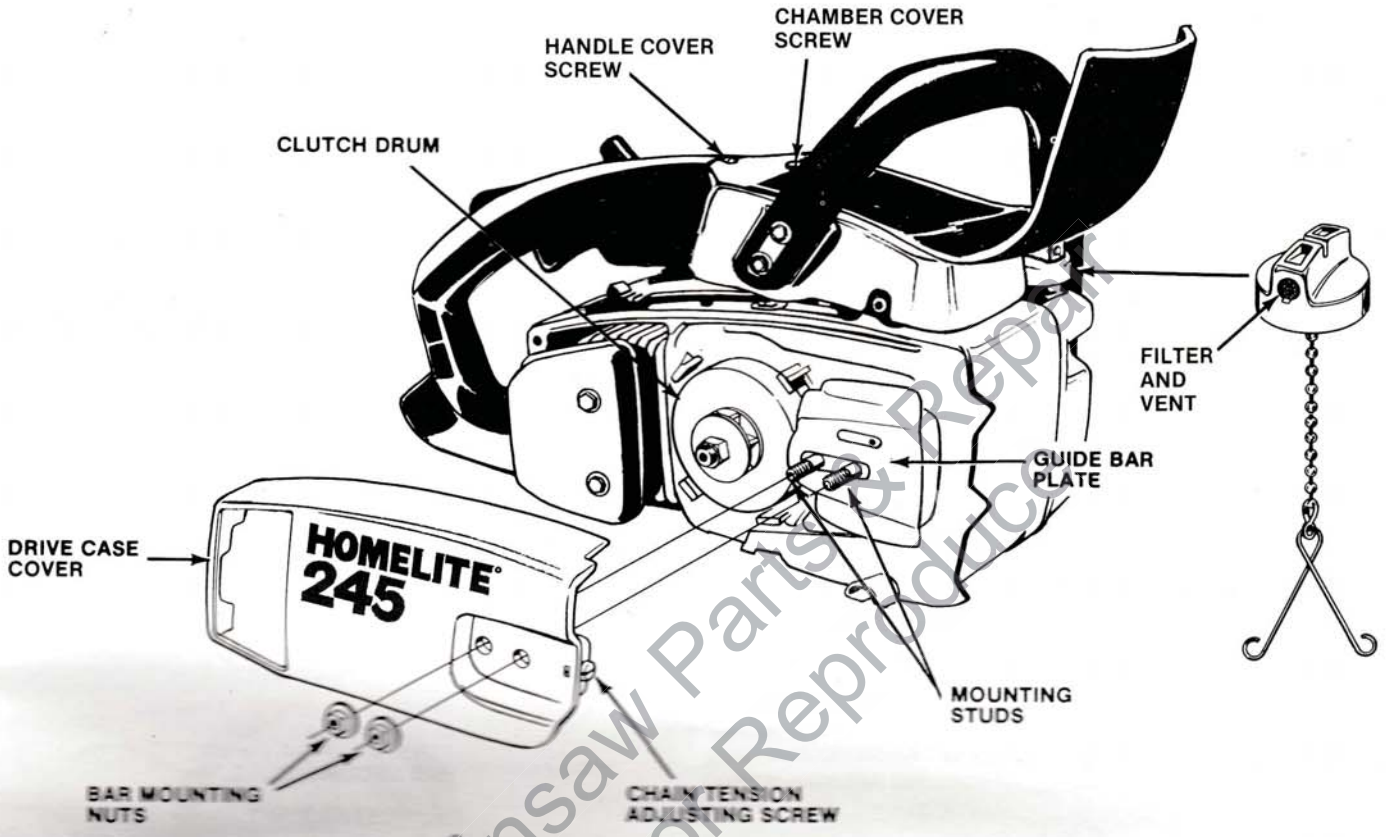
1. Regardless of which side of the bar you mount it, the device will protect you from kickback. We recommend your keeping it on the side which will be down during *flush-with-the-ground* cutting.
2. The proper screw tightness (torque) is important. The minimum is 35 inch-pounds (4 Nm) and the maximum is 45 inch-pounds (5 Nm). A torque wrench is not required. You can set the torque within this range with an ordinary 3/8" wrench or adjustable wrench. The specially-hardened screw has no screwdriver slot. No ordinary screw should ever be used to replace this special screw.
3. Position the device on the bar and install the screw. Make sure the locking rivet or tang of the device fits into the locking hole in the bar. Using only your fingers, make the screw as tight as you can.
4. After the screw is finger tight, tighten it only 3/4 to 1 turn more with a wrench (see illustration). This sets the torque within the specified range. Check that the device is locked flush in place against the bar.

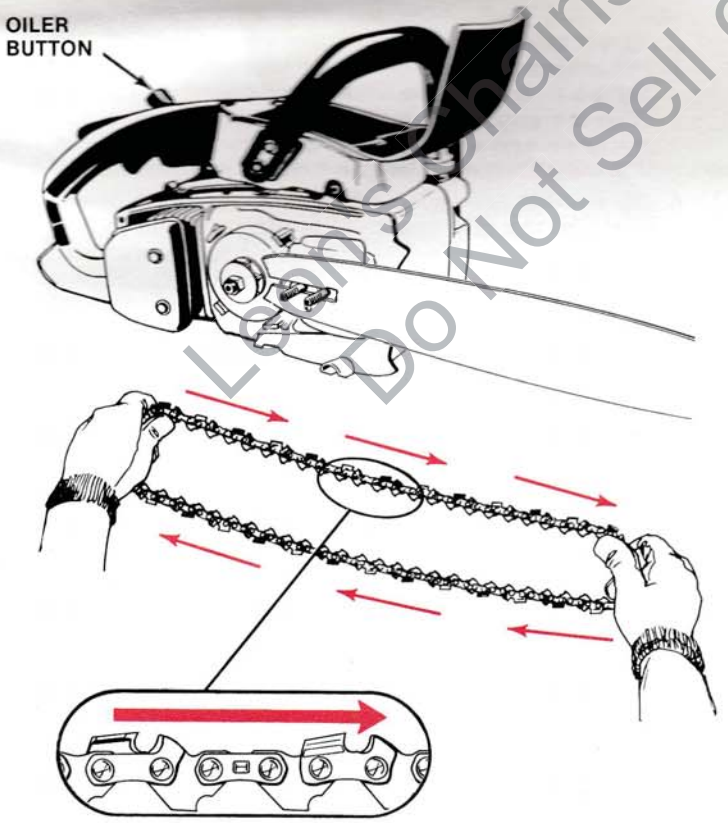


PROTECTIVE ARTICLES, EQUIPMENT & SUPPLIES

YOUR PHYSICAL CONDITION

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





MOUNTING GUIDE BAR AND CHAIN

1. Remove the two mounting nuts. Lift the drive case cover off the studs.
2. Leave the guide bar plate on the studs. Mount the bar on the studs, flush against the guide bar plate.
3. Hold the chain in a loop and straighten out any kinks. Check the drive links. They should point in the direction of rotation (clockwise as seen from right side of the saw). If they face wrongly, flop the loop over.
4. Fit the drive links over the clutch drum and onto the sprocket. From there, feed them between the top rails of the bar. Continue on around the nose and the chain will be on the bar.
5. Slide the bar away from the sprocket to remove as much slack from the chain as possible.

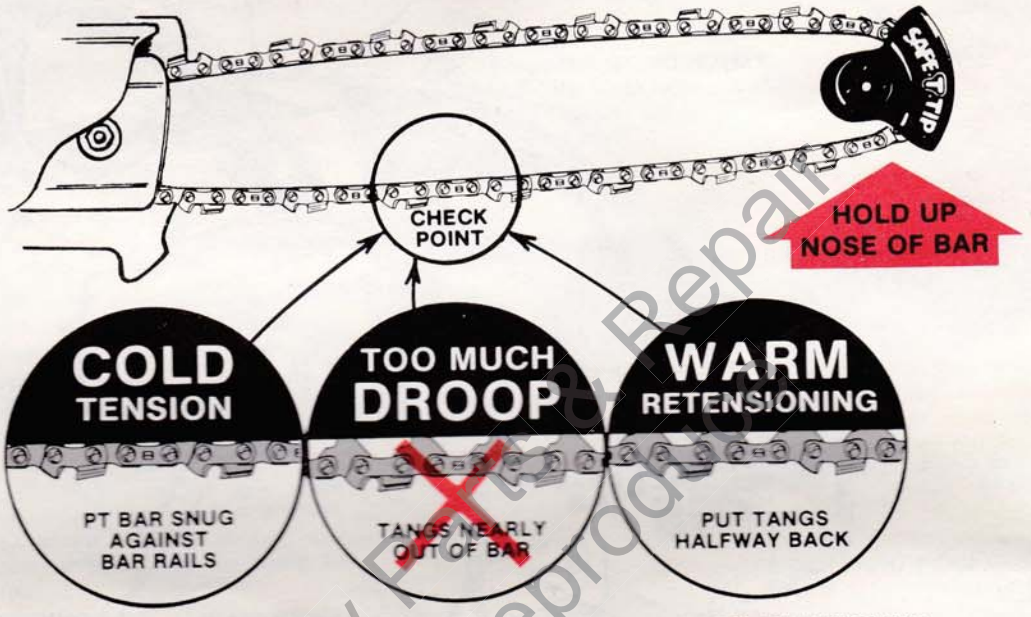
245-SL NOTE

Brake hand guard should be in forward (braked) position to avoid damage to brake band when drive case cover is put on the drive case.

6. Put the nuts back on the studs. But make them only finger-tight, because the bar must be free to slide for adjustment of the chain tension.

CHAIN TENSION

(Remember: Wear gloves)



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

CHAIN TENSION

Remember: Wear gloves!

1. Mounting nuts should be finger-tight. Turn the adjuster screw clockwise (↷) to remove slack in the chain. Guide the drive link tangs so they enter the bar groove at bottom of the bar. Tighten until the chain tie-straps come up close to the bottom rails.
2. With your gloved hand, pull the chain clockwise around the bar. Then "snap" the chain several times by pulling up and letting go of the chain. As this removes some of the stiffness, the chain may now hang or droop from the bar.

NOTE

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

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

3. Increase the tension until there is no clearance (zero droop) between the chain and bar. Pull chain along bar as you increase the tension. If you feel any binding, that is too tight.
4. While holding up the bar nose, tighten the nuts to lock the bar at the proper tension.
5. Pull chain around bar by hand to check that the assembly is o.k., and no drive links have slipped out of place. Start the engine. Hold saw free of obstructions. Let the chain turn at slow speed for a few seconds. Shut engine off and reset tension if droop has developed.
6. For the first few tankfuls of fuel, do not make heavy cuts with the saw. Watch the tension. Shut down and retension as soon as the chain drive link tangs hang more than halfway out of the bar. New chain stretches rapidly due to limbering up, warming up, and friction wear of both the chain and the bar surfaces.

Steps 7 and 8 are for retensioning a warm chain.

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

CAUTION

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

CHAIN OIL

1. **Approved oils for the chain oiler:**
   a) Homelite® Bar and Chain Oil — Recommended because of its minimum throw-off property, also because thinning with kerosene in cold weather is not required.
   b) Any clean motor oil including reprocessed oil. For warm climates use an SAE-30 weight oil. In cold weather (below 40° F. or 4.4° C.) either switch to a lighter weight oil such as SAE-20 or SAE-10 or Dilute SAE-30 weight with a quantity (up to 25%) of kerosene until it can flow freely.
2. **Disapproved oils:** Used oils, dirty oils or otherwise contaminated oils.

WARNING

Do not use water based synthetic chain oil products in this chain saw. They tend to clog the internal mechanisms of the automatic oil pump and give less protection than petroleum based oils.

3. **When to fill:** Fill the chain oil tank now, before filling the fuel tank with fuel. Thereafter, never refuel without also filling the chain oil tank with oil. The fuel tank and chain oil tank capacities are such that the saw will run out of fuel before running out of oil *provided* the manual oil pump is not used extensively. To check for enough oil, see paragraph 4.
4. **How often to check for enough oil:** A saw stops when it runs out of fuel, but not so when it runs out of chain oil. Running out of chain oil can cost you the bar and the chain. If you use the manual oiler a lot, shut off the engine at least once per tankful of fuel, and check the level of oil by looking into the oil tank. No matter how much you use the manual oiler, occasionally check the chain and bar for adequate lubrication while the engine is not running. The lubrication should be considered adequate as long as the chain is quite moist in the area of the connecting links. If you suspect blocked or scanty flow from the automatic oiler check as follows:
   a) With engine shut down, wipe the inside curved surface of the SAFE•T•TIP device clean and dry.
   b) Start and run the saw at full throttle for 5 seconds without any load. Then shut down and see how much oil has been thrown onto the device. If you make this test when the oiler output is normal, you will know how much oil should be thrown onto the device during a 5-second test.

FUELING THE SAW

WARNING

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

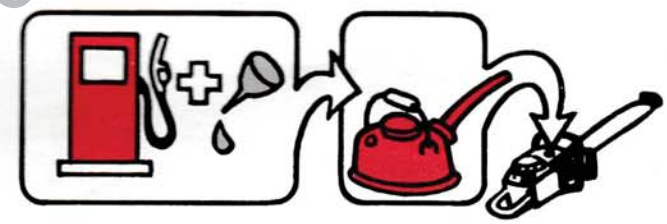
CAUTION

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

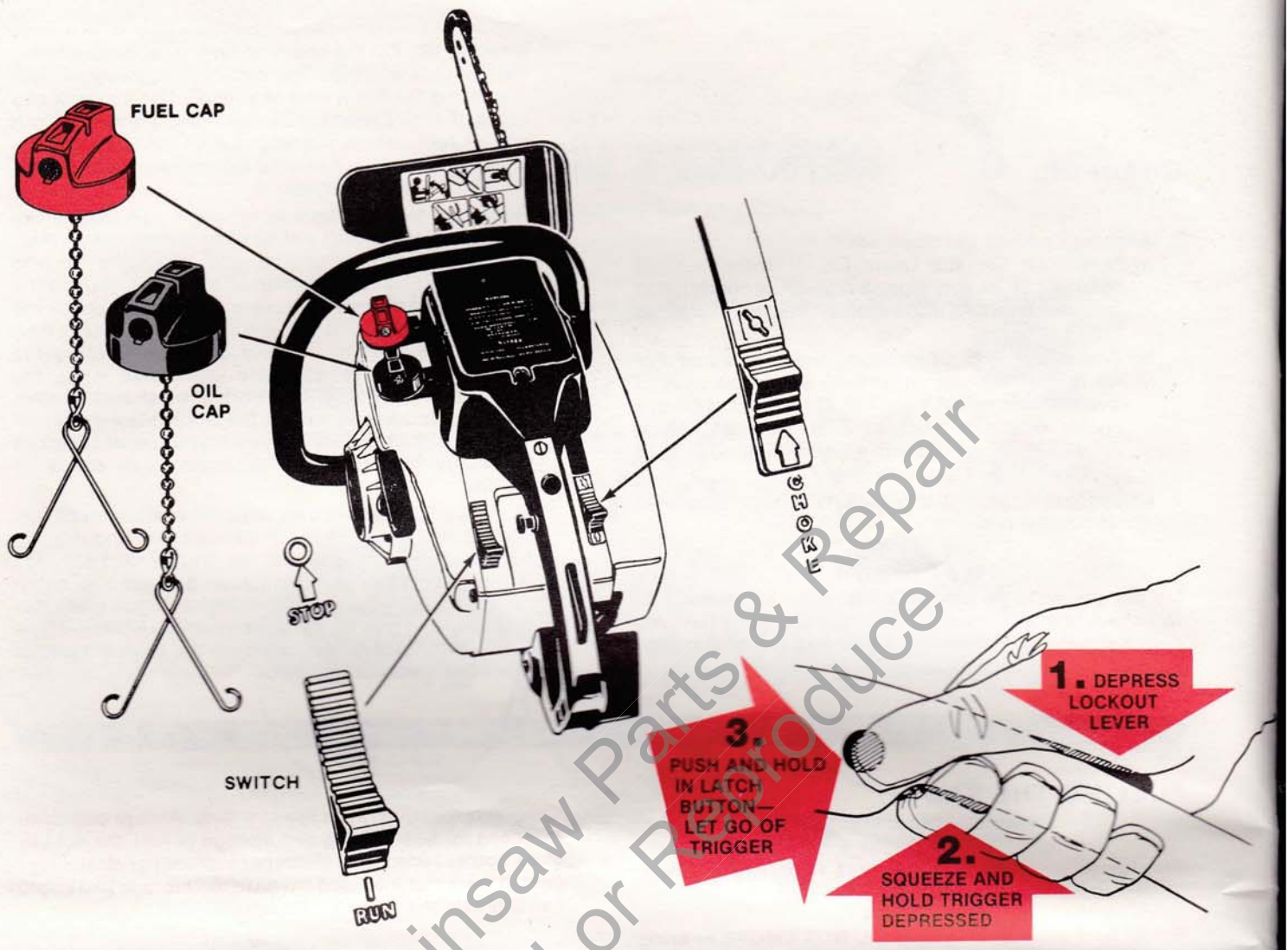
1. **Recommended Fuel Ingredients:**
   a) Unleaded gasoline is preferable as leaded gasoline will result in spark plug fouling at a faster rate.
   b) Your 2-cycle engine is lubricated by oil mixed with gasoline. We recommend the exclusive use of a Homelite® high quality 2-cycle engine oil. Any Homelite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

WARNING

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



2. **How to Mix Fuel Thoroughly:**
   a) Measure out the quantities of gasoline and oil to be mixed.
   b) Put some of the gasoline into the mixing can.
   c) Pour in all of the oil and agitate contents by stirring or by shaking the can.
   d) Pour in all of the gasoline. Again stir or agitate — this time for at least one minute.
3. **Disapproved Fuel Ingredients:**
   a) GASOHOL. Alcohol draws moisture. Then "peroxides" and acids form in the fuel and the engine parts.
   b) MULTI-GRADE OILS or any other oils not expressly labelled for 2-cycle engine use. Products formulated for 4-cycle engines usually contain additives which are either harmful or of no value in 2-cycle engine service.



READ THE REST OF THIS SECTION BEFORE STARTING YOUR NEW SAW

SETTING THE OPERATING CONTROLS

(1) Switch at "RUN"
Symbol = ▮

(2) Choke at Full Choke
Symbol =

(3) Grasp throttle handle to depress lockout lever.
This unlocks the trigger.

(4) Squeeze and hold trigger depressed — Push and hold in the latch button — Let go of trigger.
Throttle trigger is now latched in position for starting the saw.

(5) After cranking to start saw, grasp throttle handle to depress the lockout lever. Squeeze trigger, then release to idle engine.
You now have trigger control of the throttle.

(6) When you squeeze the trigger, the saw will speed up.
All cutting should be done at full throttle.

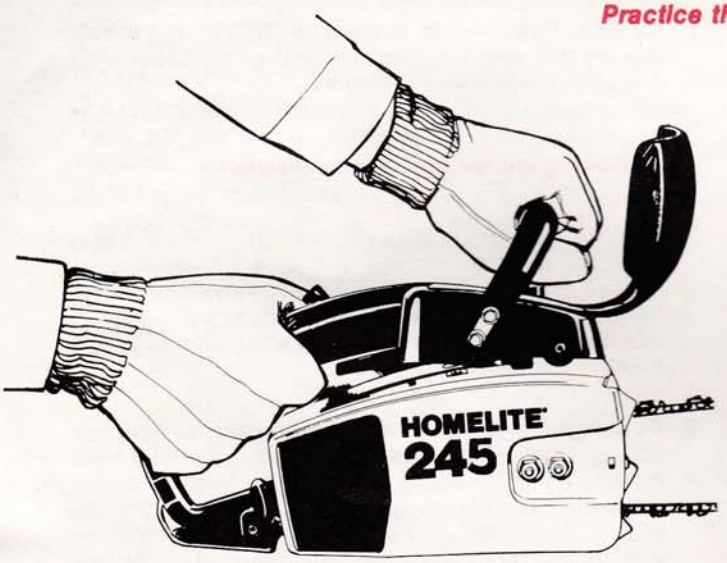
(7) If you let go of the trigger the saw will idle. If you let go of the throttle handle, the lever will rise up to lock out the throttle.
This prevents accidental acceleration of the saw.

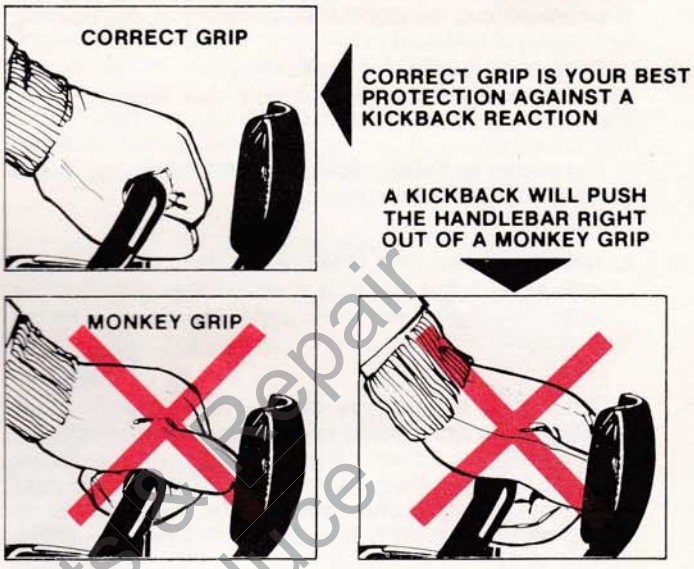
(8) Push switch forward to stop engine.
In an emergency the engine can be choked to a stop by pushing the choke forward.

PROPER GRIP ON HANDLES

POSITIONING OF THE BODY DURING BOTH STARTING AND OPERATING.

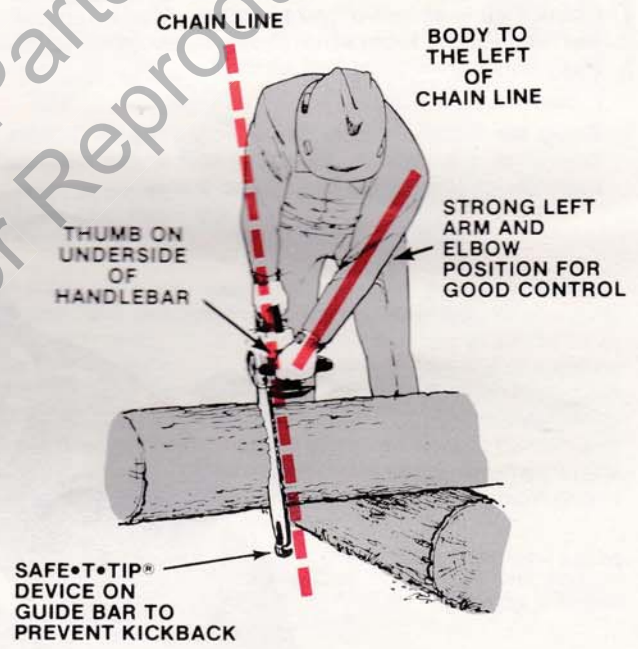
Practice these things before you start the saw!





Practice these things before you start the saw.

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



5. **The proper procedure for cutting includes:**
   a) Idle saw, then take your stance in front of the wood.
   b) Position saw, but rev saw to full speed before chain engages wood. (prevents violent reaction.)
   c) Watch your work. Be ready to stop cutting pressure and hold up the saw so it will not pull you off balance as the chain cuts itself suddenly free.

REMINDER

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

STARTING AND STOPPING

Please review all instructions on previous two pages for location and setting of the saw controls, and for the proper positioning of the saw, hands and body during starting.

NOTE
Steps 1 through 5 are for starting a cold engine.

1. **Put switch to "RUN", choke to full choke ( ), and latch trigger for starting.**

2. **Hold saw down with chain in the clear. Crank engine with smooth but vigorous pulls.** (Pull grip straight up out of rope hole.) Hold onto grip to reduce rope fraying during rewind.

3. **Crank until engine fires.** (A brief run, or two or three coughs are considered firing.) **Open choke halfway.** (Normally 3 to 5 cranks might be required to pump fuel to the cylinder. Many more might be required in cold weather, but only one crank may be necessary for an engine which already has fuel in the firing chamber.)

4. **Crank engine at half-choke to start it.** After an engine has fired several times at full choke, it should start right away when cranked at half-choke.)

5. **Grasp the throttle handle. Squeeze the trigger to gain control of the throttle. Smoothly pull choke back to open the choke before the engine falters.**

6. **To stop: Push switch forward to "STOP" ( ).** You can do this with your right thumb without releasing your grip on the throttle handle.

NOTE
The following are for special circumstances.

7. **To restart a warm engine:** Put switch to "RUN" ( ). Choking, and latching of the throttle usually are not needed. But if engine has cooled a bit, you may need a "half-choke" and "latched throttle" combination. If this does not work, use cold-starting settings (steps 1 - 4).

8. **To start a flooded engine:** A flooded engine (you can usually smell the excessive fuel vapors) should have the spark plug removed and dried. Before the plug is reinstalled, put switch to "STOP"( ), hold the throttle trigger wide open, and spin the engine several times with the starter to purge fuel from the cylinder. Follow Cold Starting Steps 1 - 4 to start the engine.

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

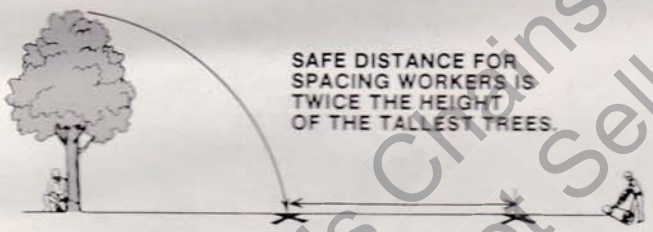
WORK AREA PRECAUTIONS

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

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

KEEP BYSTANDERS A SAFE DISTANCE FROM THE CUTTING AREA

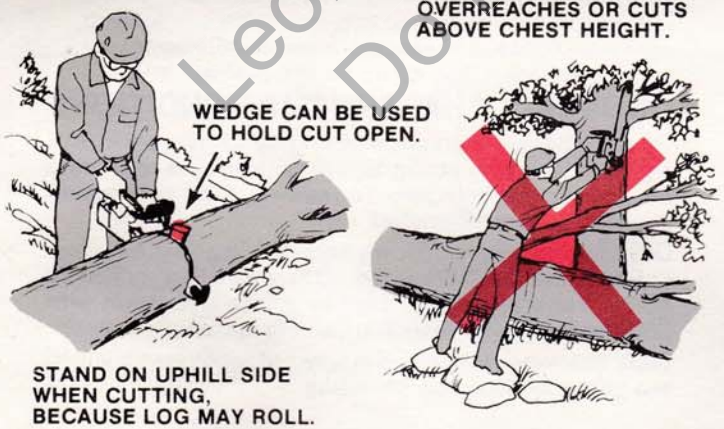
Everyone—helpers, bystanders, children and animals, and other operators—must be kept a safe distance from the cutting area. During felling operations, the safe distance should be at least twice the height of the largest trees in the felling area. During bucking operations, space buckers and limbers adequately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



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

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

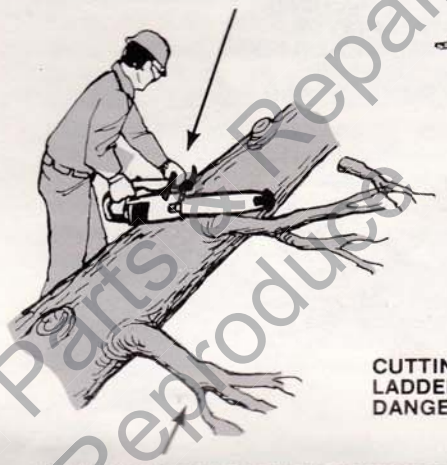
WEDGE CAN BE USED TO HOLD CUT OPEN.



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

During bucking operations always cut from the uphill side so that the cutoff section of the log will not roll over you. You can be pulled off balance if you have your weight all on one leg, so be sure to stand with both feet on solid ground. Make sure that cutoff wood will not fall on your toes or on your head. Do not cut straight overhead for this reason. In fact, we advise limiting your cutting to chest height, because a saw held higher than this is difficult to control against kickback forces. Limbing from off-the-ground positions, such as in trees or from ladders, is extremely dangerous. Ladders can slip—you can fall. Unless you have had specific training in cutting aloft, leave cutting aloft to experienced tree men.

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



CUTTING ALOFT OR FROM LADDERS IS EXTREMELY DANGEROUS.

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

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

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

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

When the diameter of the wood is large enough for a wedge to be inserted in the cut behind the saw chain, use a wedge to hold the cut open when there is a danger of pinching the saw blade. When felling large trees, wedges should also be used to control the fall. Never use hard metal wedges which could damage the saw chain.

Clear your working area of all materials likely to trip you, snag the saw, catch fire from the hot exhaust, or block your safe retreat from a falling tree.

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

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.

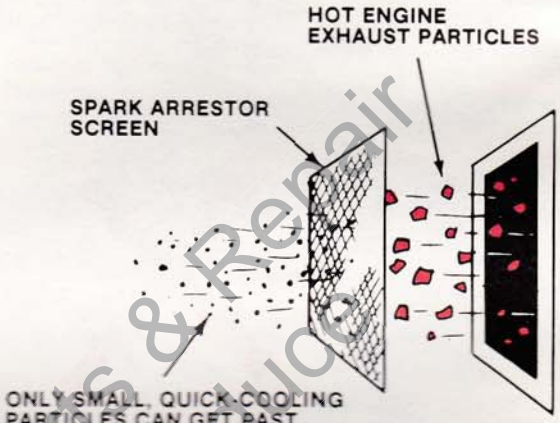
Inspect your saw every day before use. Keep the fuel cap, oil cap and air filter cover on tightly. Check condition of the fuel line, spark plug and spark plug wire. DO NOT OPERATE IF THE ENGINE BACKFIRES OR THE SAW LEAKS FUEL. Have your saw serviced by an authorized serviceman. Be sure to keep your saw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

If there is anything wrong with the saw have it fixed before further operation. The idle speed adjustment should be maintained so that the chain stops moving after the engine is brought back to idle. Adjust the idle speed whenever necessary (see Section 4).

NOTE

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

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



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

UNUSUALLY HAZARDOUS CONDITIONS

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

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

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

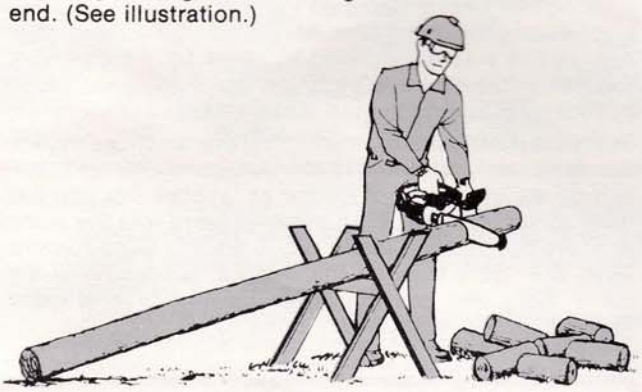
TECHNIQUES OF CUTTING

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

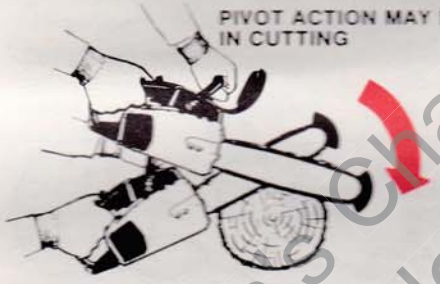
SECTION 3

BUCKING, LIMBING AND PRUNING TECHNIQUES

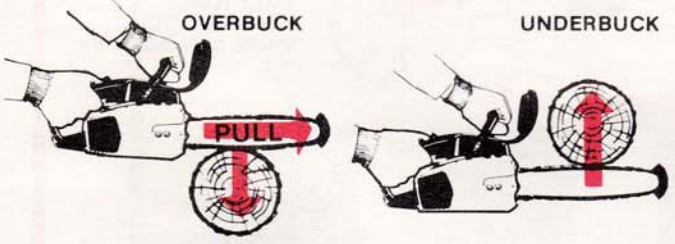
For your first cutting experience, set up a small log so that one end is off the ground. Practice your overbucking technique by cutting firewood length sections off the raised end. (See illustration.)



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



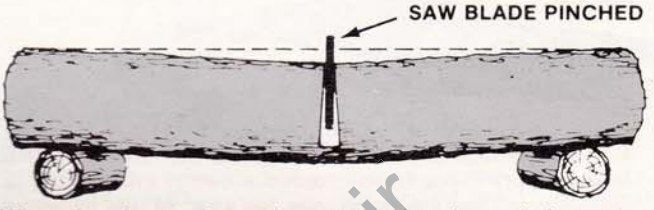
3. You will notice a slight amount of *pull* reaction during cutting. So be ready for the moment the saw breaks through the wood and *pull* ceases. You must be ready to stop pushing down on the saw and hold the saw nose up. The moment the chain breaks clear, release the throttle trigger so the engine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



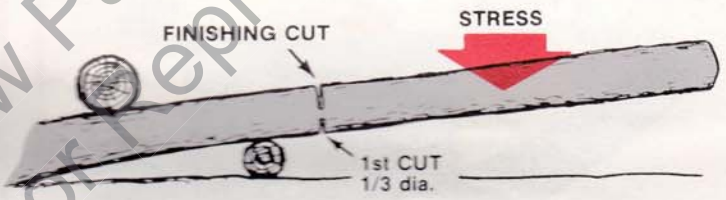
4. When you have mastered the overbucking technique, try underbucking to see what it feels like.

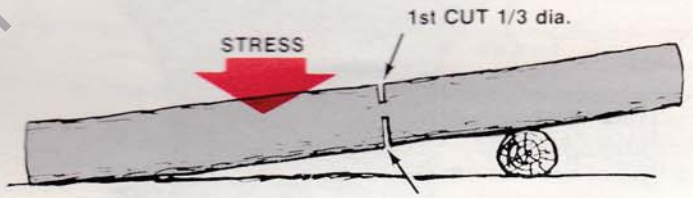
   Place the saw blade under the log. Throttle up and exert upward pressure to cut clear through. Now you are ready to learn when to overbuck and when to underbuck in order to avoid pinching the chain in the wood.

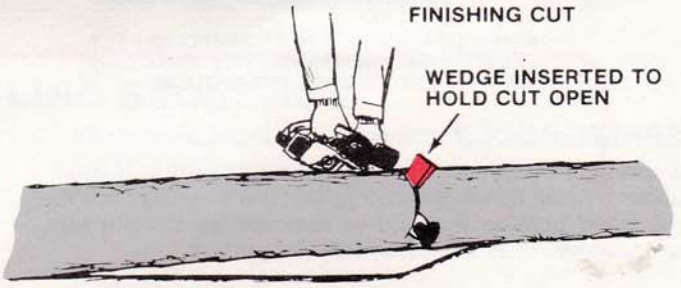
CUTTING VARIATIONS ACCORDING TO THE STRESS FACTORS



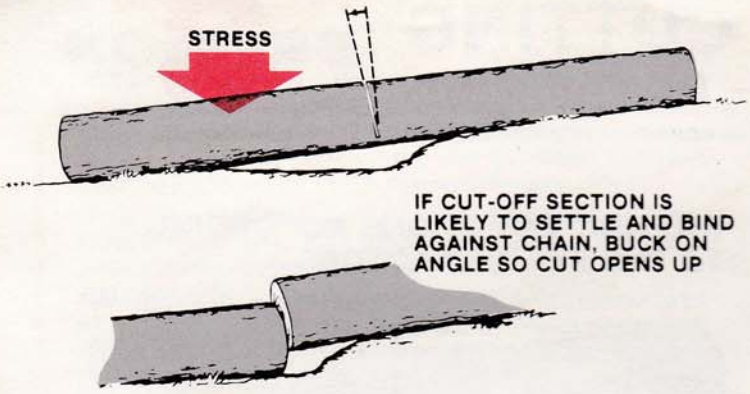
When the piece to be cut is supported on the ends, but not along the point where you want to cut, it will bend as you make your cut. If you are overbucking a log that will bend downward at the cut, your saw will pe pinched if you cut more than 1/3 the log diameter. So overbuck 1/3, then remove the saw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







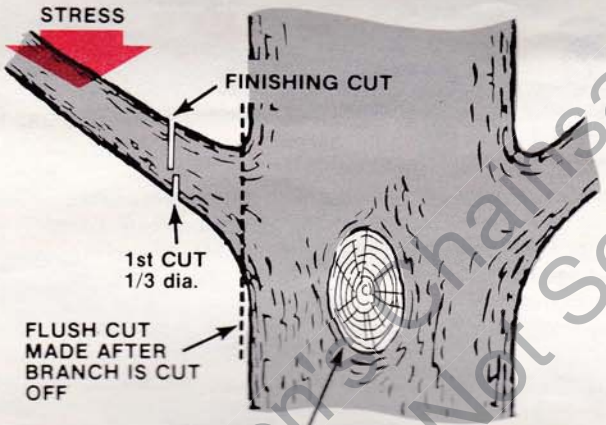
Sometimes it is impossible to avoid pinching (with just standard cutting techniques) or difficult to predict which way a log will bend when cut. You can do this to prevent pinching: If the wood diameter is large enough for you to insert a soft bucking wedge without touching the chain, you should use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



NOTE

If you misjudge the lie of the log and the saw is pinned in the cut, or if you have inserted a wedge and the bar is trapped: roll the log to remove the saw; or use leverage to raise the log to free the blade; or remove the engine from the bar and use another saw or an axe to free the bar and chain.

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



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

SPRINGPOLES

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

THIS IS A SPRINGPOLE BENT DOWN UNDER HIGH STRESS

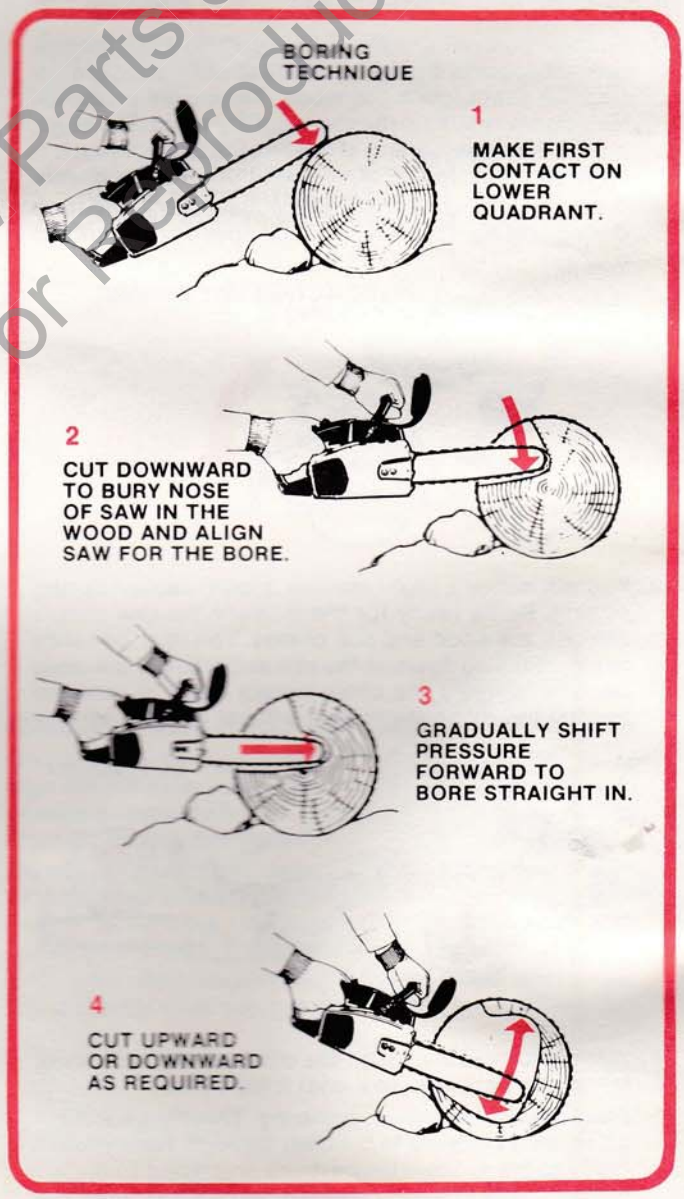
BORING WITH THE NOSE SECTION

KICKBACK DANGER

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

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

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



TREE FELLING TECHNIQUES

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

1. Pick your escape route (or routes in case the intended route is blocked). Clean the immediate area around the tree, and make sure there are no obstructions in your planned path of retreat.
2. Consider the factors of wind direction and velocity, the natural lean and the balance of the tree, and the location of large limbs. These things influence the direction in which the tree will fall. Do not try to fell a tree along a line different from its natural line of fall until you have had considerable experience in felling trees which present no problem as to where they will fall.
3. Take into consideration whether the trunk is sound or so rotted inside as to snap and crash while being cut. Also look for broken or dead branches (widow makers) AND don't go below any widow makers.
4. In tight situations where a mistake in the direction of fall could ruin other trees or destroy property, attach a tether line to the tree as illustrated.
5. Cut a level notch in the trunk on the side the tree is to fall. Unless the tree is leaning over obviously out of balance, cut this notch to a depth equal to the tree diameter. Make the cuts so they intersect at a right angle (90°) to the line of fall. Clean out the notch to leave a straight line at the intersection, whether you make a common notch with the angled cut above the horizontal cut, or a "Humboldt" notch with the angled cut below, always make the higher cut last so that the weight of the cut wood will not be on the saw blade.

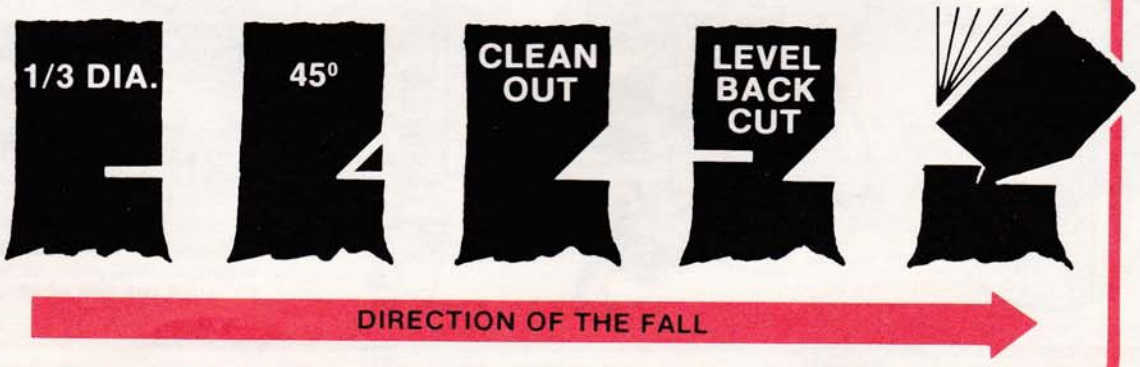
HELPING TREE TO FALL IN DIRECTION PLANNED

6. The backcut is always made level and horizontal and at a minimum of 2 inches (51mm) above the horizontal cut of the notch. 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).

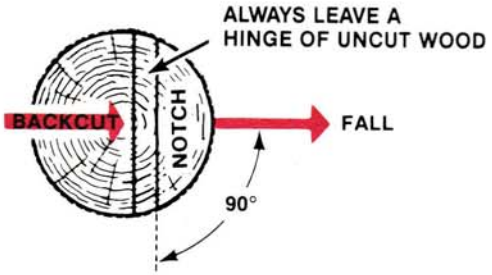
THE TREE-FELLING SEQUENCE

NOTCH TREE 90° TO LINE OF FALL. MAKE THE BOTTOM CUT FIRST

TWO INCHES ABOVE NOTCH INTERSECTION MAKE LEVEL BACK CUT WHICH COMES PARALLEL TO NOTCH TO FORM A HINGE



7. *You must never cut through to the notch.* Always leave a band of wood uncut between the notch and back cut. This is called "hinge" or "hingewood." It controls the fall of the tree and prevents slipping or twisting or shoot-back of the tree off the stump. If the tree starts over in the wrong direction, or if the saw gets caught or hung up during the fall, leave the saw and save yourself!



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

9. Trees larger than the saw can cut in one cut require removing the SAFE•T•TIP® anti-kickback device. They 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.

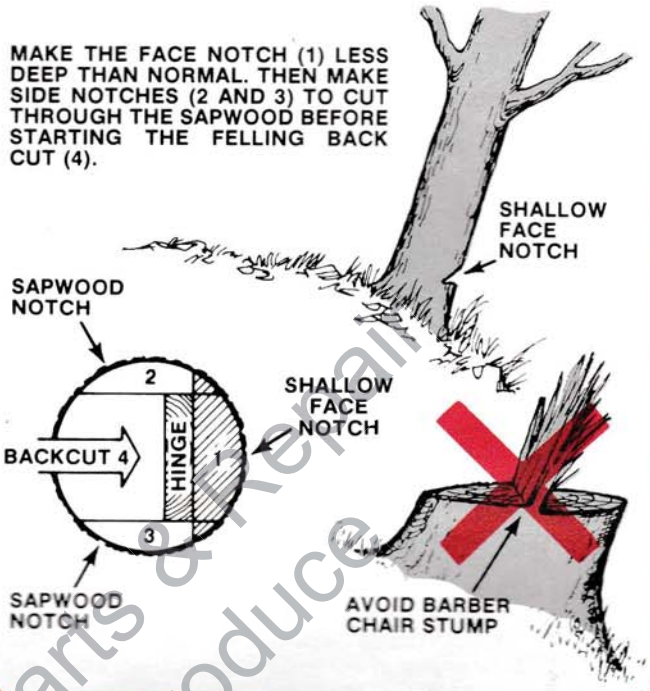
   Then remove and reverse the saw for the second cut. Insert the saw in the first cut, very carefully so as not to cause kickback, and cut back toward and around the back of the trunk. Complete the back cut by cutting towards the notch to complete the hinge section.

NOTE

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

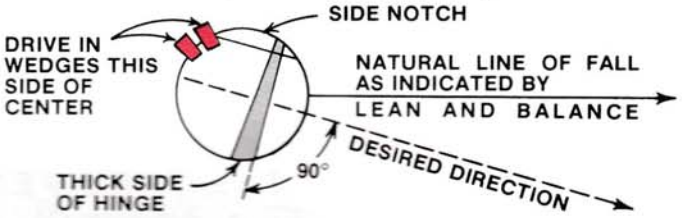
FELLING LEANERS

This variation of the normal felling technique is employed to prevent splitting and "barber chair" of leaners.

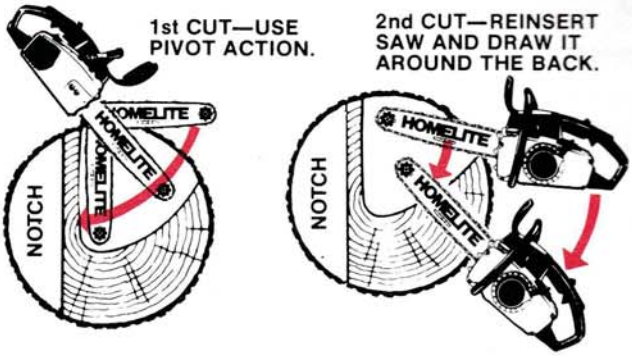


CHANGING THE DIRECTION OF FALL (from the natural line of fall)

1. Where you would leave a parallel hinge (hingewood of equal thickness on both sides) the hinge is left thicker on the side *toward* which you want the tree to swing (away from the natural line of fall). 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.



SEQUENCE FOR VERY LARGE TREES (up to twice bar length in diameter)



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

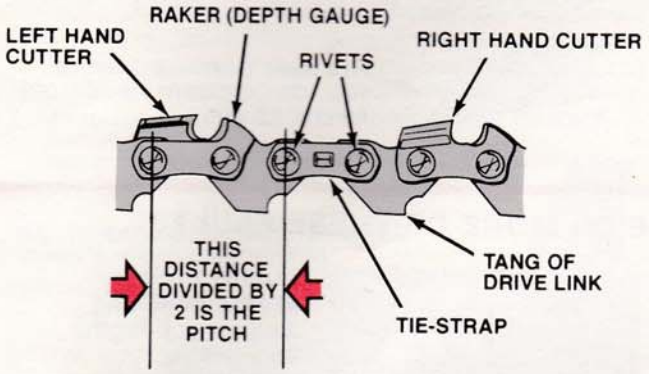
DRIVE WEDGES ALTERNATELY INTO BACKCUT TO HELP FORCE TREE OVER. REMOVE SAW.

DANGER

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

SECTION 4 MAINTENANCE & ADJUSTMENT

HOMELITE® RAKER III™ SAW CHAIN



Kickback-reducing type R37ME-50 semi-chisel tooth, 3/8" pitch, Raker III saw chain has three rakers (depth gauges) instead of just one gauge preceding each tooth. When chain contact is made within the kickback zone of a guide bar nose, the three rakers provide sufficient support to prevent the cutters from pulling themselves deeply into the wood. Thus the tendency toward a violent kickback reaction is reduced.

For smooth and fast cutting, RAKER III chain needs to be maintained properly. Shut down the saw for filing whenever the sawdust turns from chips to a fine powder and you have to bear down hard to make the saw cut. Follow our instructions for filing the cutters and maintaining the rakers at proper depth.

TOOLS FOR FILING RAKER III TYPE R37ME-50 CHAIN

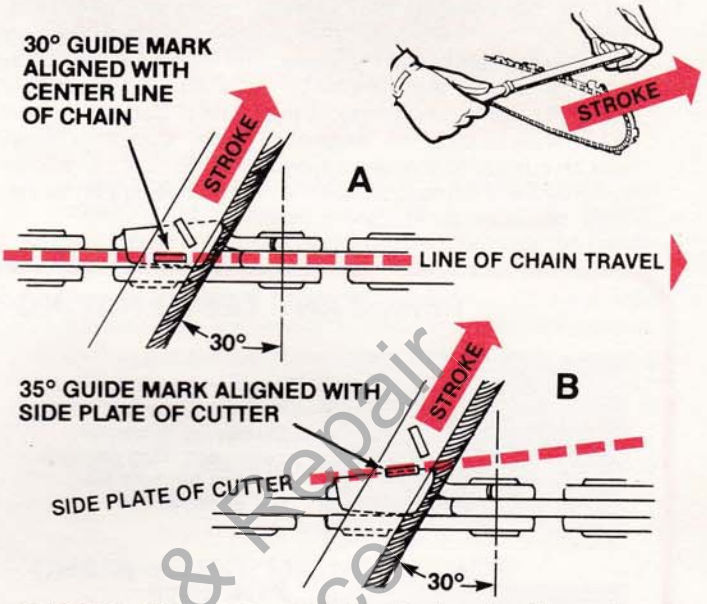
Our file holder (#DA-92617) comes with a 5/32" diameter (4 mm) round file. Late production models of this file holder have both 35° and 30° guide marks. The 30° mark should be used when filing RAKER III chain. If you have an earlier model #DA-92617 holder having only 35° marks, you can modify your technique, per our instructions, to obtain the required 30° top plate filing angles.

After repeated sharpenings, when the teeth are reduced to a bit less than half their original length, replace the 5/32" diameter file (in the same holder) with a 1/8" diameter (3.2 mm) file. The smaller diameter file is necessary because the teeth taper to a lower height towards the rear.

You will need .020" (0.5 mm) depth gauge filing tool (#D92630-B), the filing slot of which is wide enough for the three rakers of RAKER III chain. The rakers should be filed and shaped with a 6" flat file (#92609).

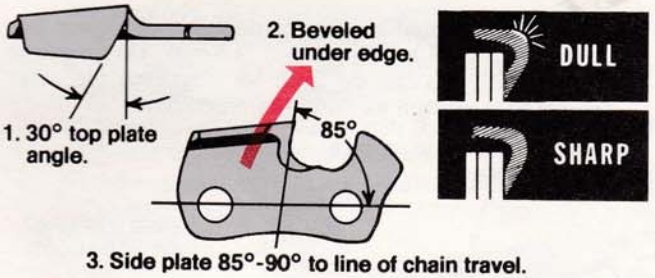
HOW TO FILE THE CUTTERS

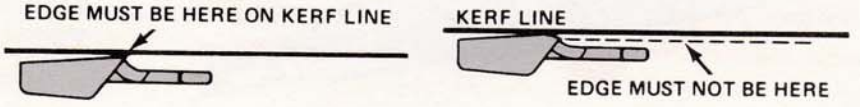
If you do not have a chain filing vise, you can do a satisfactory job "on the bar" if you tighten the chain tension enough that the chain doesn't wobble. And, do all of your filing at the mid-point of the bar. Wear gloves for protection. Be sure to file all cutters to the same length. This must be done because of the taper of the teeth; if some cutters are shorter than others only the longer cutters will get a chance to cut. Also be careful to file all cutters to the specified angles, as fast cutting can be obtained



only when all cutters are uniform. Each cutter then gets a chance to cut.

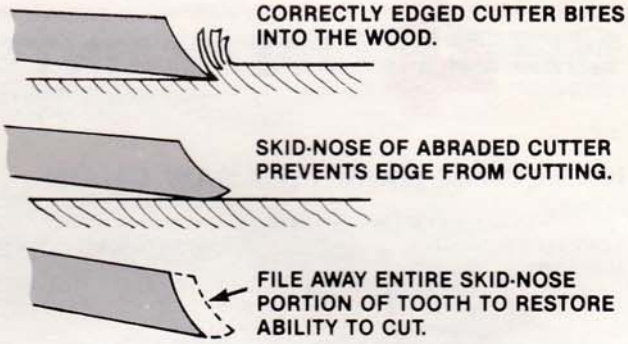
1. Any top plate filing angle from 30° to 35° will work well as long as every cutter is filed to the selected angle. However, the angle recommended for best results is 30°. We show two diagrams for achieving a 30° angle.
   Diagram A shows a 30° guide mark aligned with the center line of the chain to produce a 30° angle.
   Diagram B shows a 35° guide mark aligned with the side plate line of the cutter to produce a 30° angle.
2. Keep the file level with the top plate of the tooth. Do not let the file dip or rock.
3. Stroke only towards the front corner of the tooth. Lift file away from the steel on each return stroke.
4. Use light but firm pressure — mostly towards back of tooth and very little downward. With the correct angle and pressure maintained by you, the file holder will produce the desired edge.
5. Put a few firm strokes on every tooth. File all left hand cutters on one side. Then move to the other side and file the right hand cutters. Occasionally rotate the file in the holder.
6. Check your filing job in strong light. A sharp edge does not reflect light. Put a few more strokes on edges which reflect light.
7. If you are not satisfied with the performance of your chain after it has been filed, examine it for "skid-nose" and one or more of the common chain faults illustrated in this section. Also be sure to check the depth of the rakers frequently as instructed under "Raker Clearance."



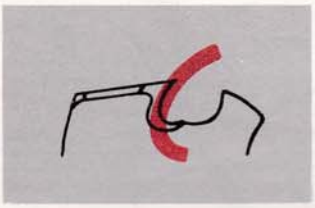


FILING OUT "SKID-NOSE" WEAR PATTERN

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



REFILE ANY TEETH HAVING ONE OR MORE OF THESE FAULTS

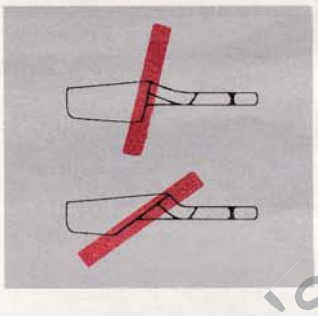


Forward Hook

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

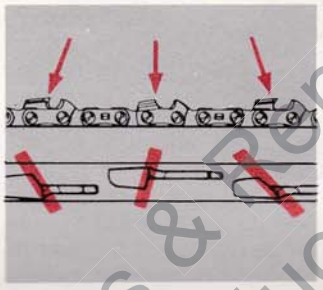
Back Slope

Chain resists entering wood. Scrapes instead of cutting. 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.

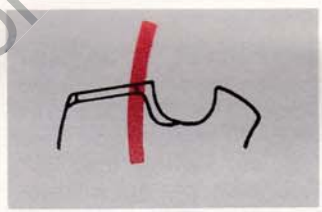


Cutters Filed at Non-Matching Angles or Lengths

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

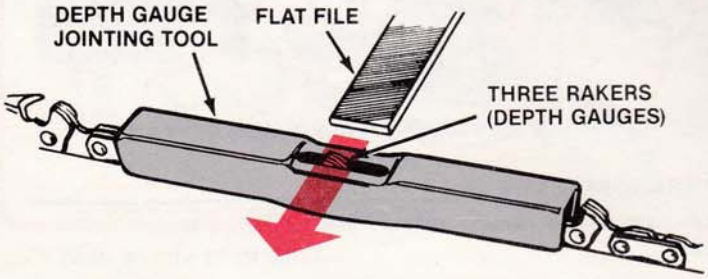
Although edge is durable, it won't cut properly. Scrapes wood, robs power, and produces dust instead of chips. Caused by holding file too high on face of tooth.

RAKER CLEARANCE

WARNING

Whenever the SAFE•T•TIP® anti-kickback device is not present on the bar nose, the kickback-reducing ability of RAKER III™ saw chain may be defeated by any one or all of the following conditions: a) rakers filed lower than recommended, b) chain tension too loose, and c) forward hook (misfiling) of cutters.

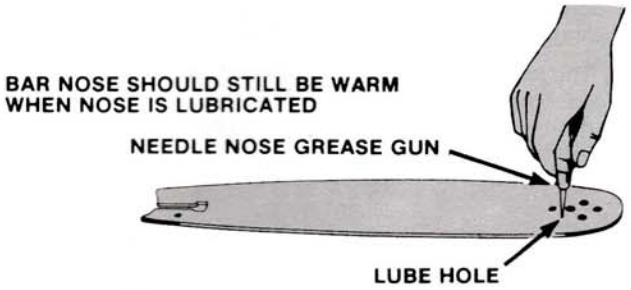
1. The rakers should be maintained at a clearance between .020" (0.5 mm) and .018" (4.6 mm). Depth gauge tool #D92630-B can be used for checking the raker clearances as well as filing them uniformly.



2. Every time the chain is filed, check one or two sets of rakers. Locate the set to be checked along the flat portion of the bar rails. Fit the tool over the chain so that a set of rakers projects up into the filing slot in the tool (see illustration). Put one or two strokes across the filing face of the tool with a 6" flat file. If you take off any metal from the rakers, they are too high, and all sets of rakers on the chain should then be filed to .020".
3. If the rakers are too high (less than .018" clearance) the teeth will get only a shallow bite. If they are too low, the chain will cut too deeply into the wood and the saw will grab and jerk. If all rakers are not filed to the same clearance you will get the same poor results as from non-uniform cutters. Non-uniformity causes slow cutting and the saw often goes off line.
4. After the rakers have been filed, they should be contoured to their original pattern. When doing this with the flat file fit the depth gauge tool over the tooth on an angle to protect the cutting edge.

GUIDE BAR MAINTENANCE

1. This guide bar needs a change of the nose grease at regular intervals. How often this should be depends on conditions of use. We suggest daily greasing just before the saw is laid up. Always grease while the bar nose is warm from operation, so that the old grease is soft enough to come out. Pump grease through the small lube hole in the bar nose until the grease that is driven out changes from dirty to clean. Our dealers sell two-needle nose grease guns for guide bars. One gun comes loaded with grease. The other (a refillable type) requires packing with Homelite® All-Temp Multi-Purpose grease or a lithium base grease product.



2. Should the nose sprocket suffer damage, or become stiff and rough-turning (and a grease-change does no good) your authorized Homelite servicing dealer can replace the sprocket.
3. For maximum life, the bar should be removed from the saw, cleaned every day of use, and checked for wear and damage. When remounting, always reverse the bar top for bottom (see illustration). This distributes the wear along both edges of the bar.

REVERSING BAR ON SAW OCCASIONALLY HELPS TO DISTRIBUTE THE WEAR.

4. Feathering or burring of the bar rails is a normal process of bar wear. But these burrs will slow your cutting, and should be removed by dressing the rails with a stone or file. Also check that the bar rails are parallel (of equal height). If not, file them parallel. Pinched rails can be opened by prying them apart carefully with a screwdriver. Spread or broken rails cannot be repaired. Bent bars of this type must be replaced.
5. If nothing else does it first, hourglass, a hard-to-see wear inside the bar rails eventually will take the life of your bar. This and all other types of bar rail wear can be minimized by maintaining correct chain tension and cutter sharpness.

CLUTCH AND SPROCKET MAINTENANCE AND INSPECTION

WARNING

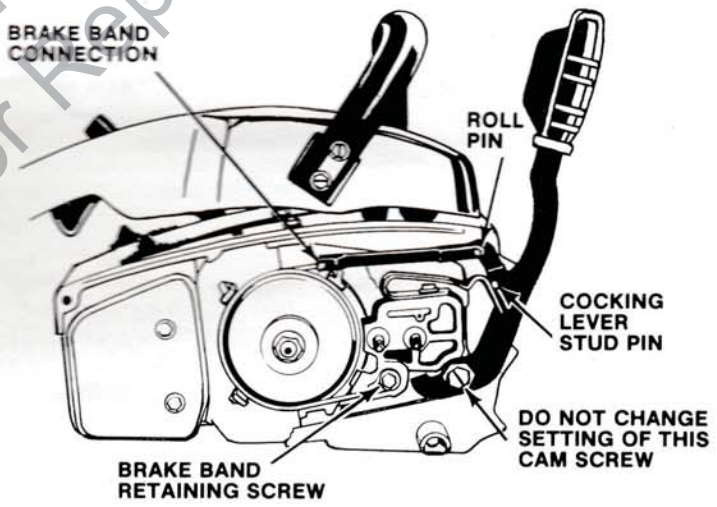
It is important to the safety of the operator and the life of the saw that the clutch functions properly. Clutch service should be performed by one of our Homelite servicing dealers or service centers. DO NOT DISASSEMBLE THE CLUTCH unless you are a competent small-engine mechanic equipped with the proper clutch service tools and replacement parts.

1. Clean the sprocket and clutch drum whenever you are cleaning the bar and chain (or the 245 SL chain brake).
2. Whenever a new chain is installed, replace the clutch drum and sprocket for full life expectancy of the chain.
3. The clutch should be inspected and serviced every 50 hours of use, by an authorized Homelite serviceman.
4. Clutch troubles can result from overheating (slipping and burning), loss of bearing grease, grease or dirt on clutching surfaces, etc.
5. Clutch trouble symptoms are a) when idle cannot be made low enough to stop chain rotation; b) chattering during a load; and c) slipping so that the saw cannot cut.

CHAIN BRAKE MAINTENANCE

WARNING

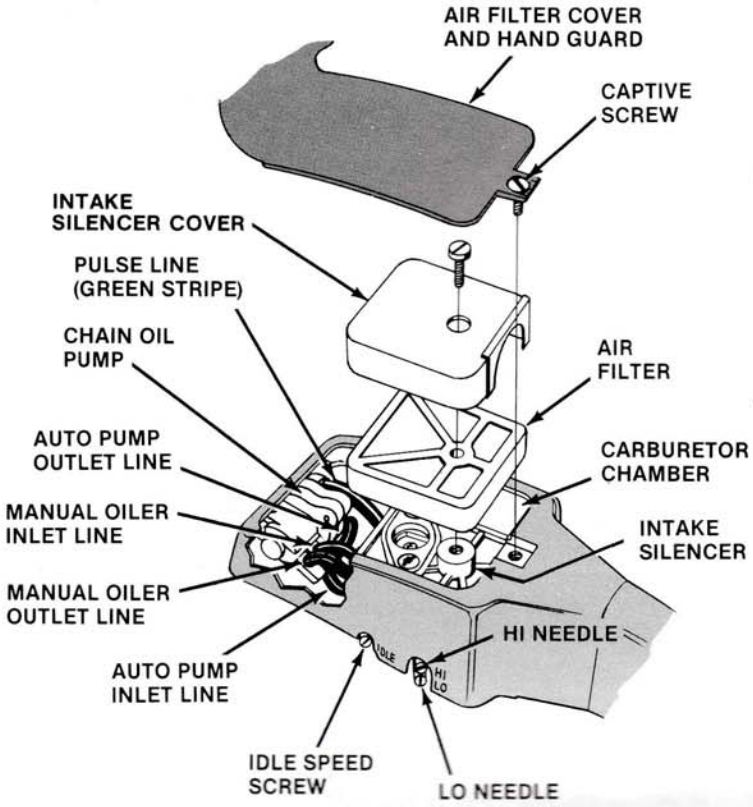
The chain brake mechanism should be serviced only by an authorized Homelite servicing dealer or service center. The chain brake should be included in a 50-hour service check-up of the saw.



1. The 245 SL brake mechanism and nearby surfaces should be cleaned. Then a careful inspection of the brake should be made before each period of use. Pay particular attention to the critical areas of wear. These are the pivot points, the clutch drum surface, and the brake bands. Any detectable wear should be brought to the attention of your authorized serviceman.
2. Before each period of use make this test of the brake's ability to stop chain rotation:
   a) Idle the engine. Then push the brake hand guard forward into the braked position.
   b) With chain in the clear, accelerate the engine. The chain brake MUST be able to hold the chain from turning.

NOTICE

The above test indicates merely whether the chain can be stopped, not how long it takes to stop it. There is no test available to assure effectualness of a chain brake.



AIR FILTER CHAMBER GROUP MAINTENANCE

The air filter chamber is integral with the throttle handle. The cover can be removed from the chamber after the captive screw has been loosened. Inside the chamber are the carburetor which is hidden by the intake silencer, the air filter which is inside the silencer, and the automatic oil pump up forward.

AIR FILTER:

1. For access to the air filter, unscrew the captive screw, remove the intake silencer cover, and lift out the air filter. The bottom piece of the silencer should be left secure on the carburetor.
2. The fine mesh (60 micron rating) filter screen can be cleaned repeatedly, and will remain serviceable as long as the fabric is free of tears, holes, runs and catches.
3. A gentle brushing removes most of the dirt and debris. You can also rinse the element in a non-oily solvent, or blow it gently with air.
4. Before reinstalling the filter, always check the condition of the fabric on both the top and underside of the filter. Replace if damaged. Fit the filter in place in the bottom piece of the intake silencer. Fit and snap silencer cover into place over the filter, and secure by tightening the captive screw.

CARBURETOR ADJUSTMENT

NOTE

If the saw gives the following signs, check out these things before considering a need for carburetor adjustment.

1. **Starts up o.k., but dies out or cannot stand a load — Loosen fuel cap temporarily and restart engine. If symptoms disappear, leave carburetor alone. Inoperative vent valve in tank may be the trouble. Valve can be replaced by your servicing dealer.**
2. **Seems to have less power than usual — Check for a clogged air filter, and see that the muffler and spark arrestor screen are clean.**
   a) IDLE SPEED SCREW (marked IDLE) — Adjusts the throttle position for speed of idling.
   b) IDLE MIXTURE NEEDLE (marked LO) — called "LO NEEDLE" for short, adjusts mixture for smooth idling and acceleration.
   c) MAIN ADJUSTMENT NEEDLE (marked HI) — called "HI NEEDLE" for short, adjusts mixture for high speed, full power.
3. **The ranges of the HI and LO mixture adjustments are each about one turn open (counterclockwise) from the gently closed position. If you are having trouble starting the engine, set both needles about 1 to 1 1/8 turn open. Otherwise skip this step.**

CAUTION

The chain will rotate when engine starts, so keep the chain free of all obstructions.

4. Start the engine with the throttle latched, then let it idle. If it will not idle, turn the *Idle Speed Screw* clockwise 1/8 turn at a time until the saw will keep idling.
5. Turn the *LO NEEDLE* slowly to right, and then back to the left, and note the positions (left and right) where the speed falls off. Put the *LO NEEDLE* right between these extremes. Then start and idle the engine. Try to accelerate. If the saw hesitates, open the *LO NEEDLE* (counterclockwise) a little at a time until the engine is able to accelerate.
6. Now use the *Idle Speed Screw* to adjust the idle speed for a stable idle at which the chain does not turn.

   Cut some wood with the saw to bring the engine to full operating temperature. Start the chain into a cut, and pull up on the rear handle to jam the chain into the wood.
   a) If the engine falters, the mixture is too lean. Open the *HI NEEDLE* 1/8 turn (counterclockwise) and repeat this procedure until the saw can carry a full load. (On a full load, the clutch will slip.) But do not jam the chain more than a moment, because the clutch will burn if it slips very long.
   b) Idle the saw, then make a cut with the saw in a horizontal (felling) position. If the saw accelerates and carries a full clutch-slipping load the *HI NEEDLE* adjustment is satisfactory.

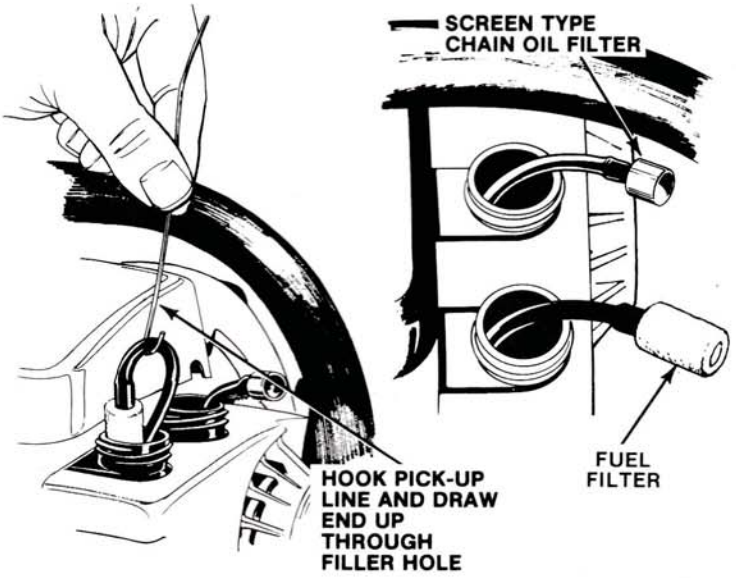
NOTE

It is essential that the idle speed be high enough for stable idling regardless of the engine attitude (the position), but never so high that the chain turns during idling.

CHAIN OIL PUMPS

1. Instructions for testing the automatic oiler output are in Section 1 under "Chain Oil." The automatic pump is located forward in the air filter chamber. If the pump is faulty, it can be replaced speedily and quite inexpensively.
2. The manual oil pump in the throttle handle can be tested by stroking the pump plunger and observing whether oil flows to the guide bar from the oil discharge hole in the guide bar-mounting pad. It is recommended that the saw be running at idle when testing the manual oiler output. If the saw is not running it may take an excessively high number of pumping strokes to prime the manual oil pump.

FUEL AND CHAIN OIL PICK-UPS



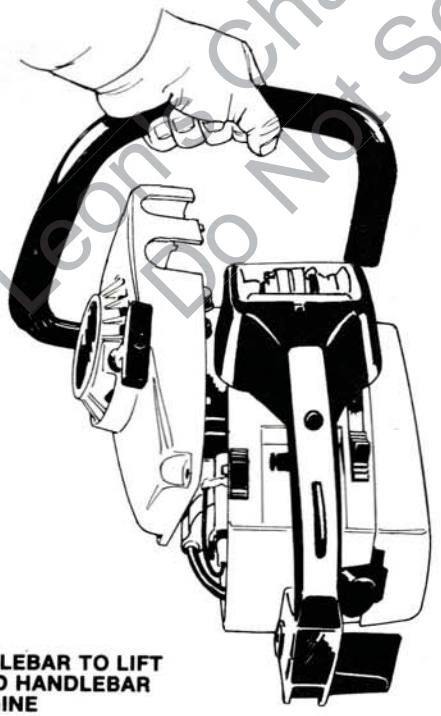
The filters on these lines normally last quite a long time before clogging, unless operating conditions, or the fluids put into the tank, are very dirty. Inspection at monthly intervals usually is sufficient.

1. For access to either pick-up. Remove the filler cap from the tank. Hook the pick-up line and draw the filter out through the filler hole.
2. The fuel filter should be changed when there is a condition of lean operation which is not due to a need for carburetor adjustment. Lean operation is when the saw can start off at normal high speed, but doesn't get enough fuel, and the engine soon dies out.
3. Lean operation (as in Step 2) or scanty feeding of chain oil can be caused by conditions other than mentioned above. These include inoperative air vents in the filler caps, deteriorated or kinked pick-up lines, and air leaks. All of these can be diagnosed and attended to by a Homelite Service Center or authorized Homelite servicing dealer.
4. Any time inspection shows that the chain is not getting enough oil, either clean or change the oil pick-up filter. It can be cleaned with air or solvent or by picking the mesh with a pin.

STARTER REPAIRS

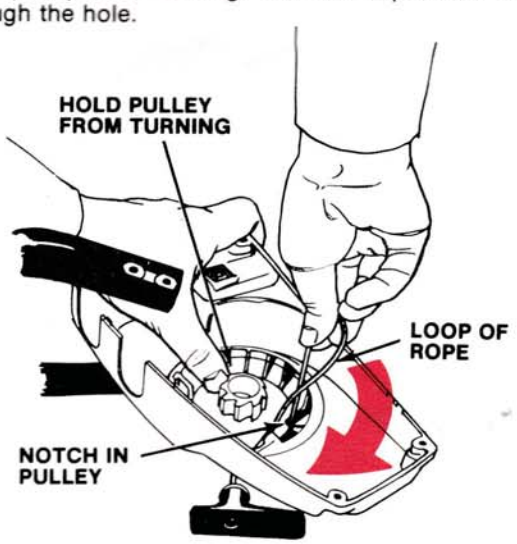
The starter rope is subject to stretching and fraying, and eventually to breaking. Increasing the rewind tension and replacing the starter rope are things the owner may find convenient to do himself.

1. Remove the guide bar and chain.
2. The two hex washer head screws in the recess at top of the handlebar are not slotted. Use a 5/16 socket wrench to remove them.
3. Remove the four slotted hex washer head screws which hold the starter fan housing to the engine housing. Angle the plastic handlebar as required and lift the starter and handlebar off the engine.



ANGLE HANDLEBAR TO LIFT STARTER AND HANDLEBAR OFF THE ENGINE

4. TO ADD MORE SPRING TENSION: If the grip does not rewind all the way to the housing and stay in place, it may need another turn of tension. Note the rounded notch in the edge of the pulley. Pull out the grip about one foot and hold the pulley from rewinding. Turn the pulley to locate the notch at the rope entry hole in the housing. Hook up a loop of rope between the housing and the pulley. Grasp the loop and wind one turn tension (or more if necessary) in a clockwise direction. Hold pulley from turning. Pull the rope back out through the hole.



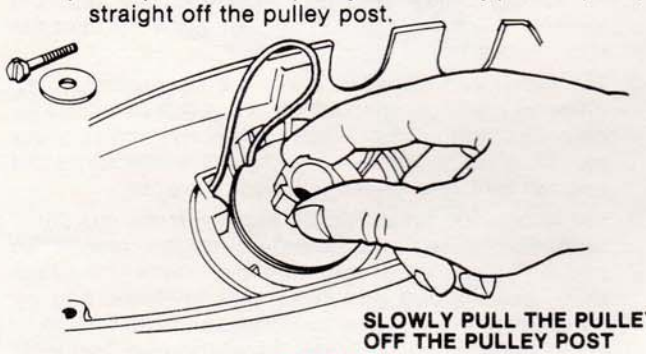
5. DISASSEMBLING TO REPLACE THE STARTER ROPE: If the old rope did not break, hold the pulley from turning and cut the rope. Then let the pulley turn slowly until there is no longer any spring torque on the pulley.

WARNING

Put on safety glasses and gloves before removing the pulley.

a) Remove the hex washer head plastite screw and the large flat washer from the pulley post (inside pulley hub).

b) Grasp the toothed pulley hub. Slowly pull the pulley straight off the pulley post.



SLOWLY PULL THE PULLEY OFF THE PULLEY POST

CAUTION

The starter spring in its protective retainer rests in the spring recess of the starter/fan housing. Do not dislodge this spring and retainer, because the spring can inflict injury should it fly out of its retainer. If this spring is broken, it can be replaced by your Homelite servicing dealer or factory service center.

c) Remove all of the old rope.

6. TO REBUILD WITH NEW ROPE:

a) Clean the post and pulley. Inspect pulley for wear (rough spots, sharp edges) which could fray or cut the rope. Smooth such spots out with a file or knife blade.

b) Tie a simple knot tightly right at one end of the new rope. Push the unknotted end through rope hole in side of pulley and draw rope out between the pulley rims.

c) Thread the rope through the eyeleted hole from the inside of the starter housing. Then put the starter grip onto the rope. Knot this end of the rope as you did the other.

d) Set both knots by dipping in acetone type cement or nail polish. Trim excess rope right near the knot. Pull knots into pulley recess and into starter grip.

e) Clean the pulley post.

f) Hold pulley in position to mount on post. Turn pulley counterclockwise (not the rope) until all but about 10-inches (25 cm) of rope is coiled onto the pulley.

g) As you slide the pulley onto the post, locate the pulley notch at the housing eyelet. Pull up a loop of rope there for setting the starter prewind tension.

h) Lightly twist the pulley to and fro until the inner loop of the spring engages the locking cam of the pulley, and pulley settles into place.

i) Put the large washer in the pulley recess and start the plastite screw into the pulley post. Use care to start the screw threads into the old threads — DO NOT CROSS-THREAD. Make screw snug but not overly tight since this is plastic.

j) Pick up the loop. Let pulley and loop turn together — wind four turns of tension clockwise onto pulley. Pull out the starter grip so the rope runs straight from the pulley out of the housing eyelet.

k) If there is not enough spring tension to draw the grip into place against the housing, follow Step 4 to increase the tension.

7. REASSEMBLY: Fit the fan housing roughly into place. Press starter housing lightly against the engine and slowly pull out the starter grip a few inches until the starter pawls move out to engage the starter pulley. Now fasten the housing together with the four slotted hex washer head plastite screws. Again be careful not to cross-thread the plastite screws. Now install the two handlebar screws. Tighten these securely, as they go into steel nuts and must be made tight.

SPARK PLUG, COOLING AND EXHAUST

CHAMPION DJ-7Y SPARK PLUG

.025" (0.63mm) AIR GAP

1. The saw uses a 14 mm, 5/8" hex, tapered-seat (gasketless) type Champion DJ-7Y spark plug (our part #96169-S) or any equivalent of the same configuration and heat range. When installing the spark plug, check that the electrode gap is .025" (0.63 mm). Always install for a gas-tight seal without overtightening. The proper tightness is achieved by making the plug finger-tight and then tightening 1/16 turn more with a 5/8" spark plug wrench.

2. Whenever the saw refuses to start, change to a clean and dry, properly gapped spark plug, preferably a new one. Then, if the engine does not start, you can check other things, like proper fuel, carburetor settings, etc. But always leave the new plug in while trouble-shooting.

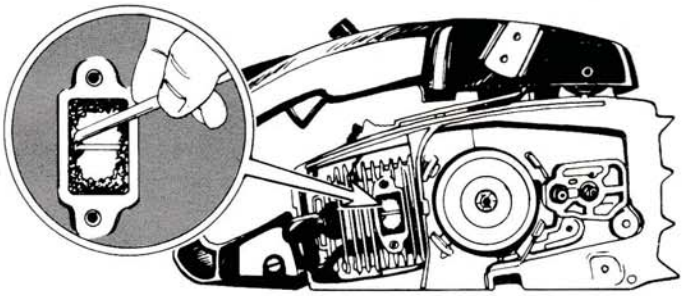
3. Fouled plugs often can be restored by cleaning them and resetting the firing gap.

NOTE

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

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

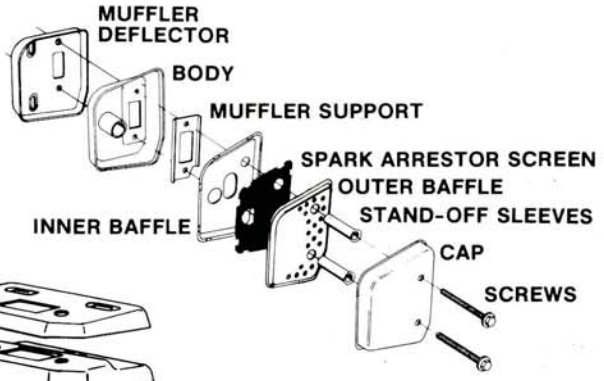
4. The air intake slots of the starter housing should be kept clear of grass, leaves and sawdust. The cooling air discharge spaces around the muffler should also be kept clear.
5. Occasionally, perhaps every 50 operating hours, the muffler and starter assemblies should be removed for a thorough cleanout of the cooling air passages including the slots formed by the cylinder cooling fins. Engine heat which travels to these fins cannot be carried off in the air if the passage is restricted or the fin surfaces dirty.
6. Whenever the muffler is removed, check the cylinder exhaust port openings for deposits. (See illustration.) If the openings are more than 1/3 clogged with carbon, close the port by putting the piston to top dead center. Using a plastic or wooden scraper so as not to scratch the piston or the edges of the port, remove the deposits. Then brush or blow away all loose particles.

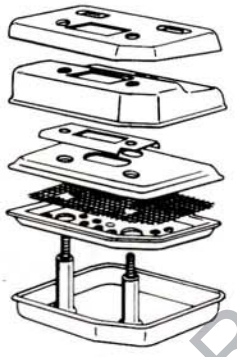


EVERY 50 HOURS OF OPERATION:

STARTER AND MUFFLER SHOULD BE REMOVED. AIR COOLING PASSAGES AND CYLINDER COOLING FINS SHOULD BE CLEANED. CYLINDER EXHAUST PORT MAY NEED CLEANING ALSO.

7. Always keep the muffler and spark arrestor on your saw in good condition. Even though you wear hearing protection, a faulty muffler (or open exhaust) can cause hearing damage. In areas of high forest fire incidence where it is mandatory for saws to meet standards intended to help prevent forest fires, you will be required to maintain the muffler and spark arrestor in good (intact) condition.
8. For inspection, remove the drive case cover, guide bar and chain. Take out the two hex head Sems screws and lift the muffler assembly off the engine. (See illustrations for parts identification and order of assembly.)
9. Clean the inner and outer baffle plates. The spark arrestor screen may or may not be cleanable. Replace if not cleanable or if it is the least bit cracked or otherwise deteriorated. Replace all or any of the parts including sleeves and screws, if you find cracking or metal deterioration.
10. Follow our illustration for ease of aligning the parts for correct reassembly. Start by putting the cap onto the screws. Slip on the spacers, *flared-ends-toward-cap*. Fit the outer baffle, the screen and the inner baffle onto the screws. Drop the muffler support, then the body and, finally, the muffler deflector onto the screws. Fit the assembly together neatly, and screw the muffler securely to the cylinder exhaust flange. Reinstall bar, chain and drive case cover.





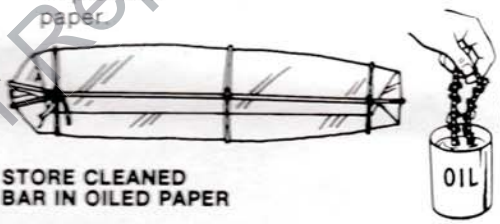
EASIEST WAY TO REASSEMBLE MUFFLER IS TO PUT SCREWS INTO THE CAP, THEN ASSEMBLE PARTS ONE AT A TIME ONTO THE SCREWS.

NOTE

Be sure to retighten the two muffler screws after engine has cooled down following the first 15 to 30 minutes of running.

OFF-SEASON STORAGE

1. Remove bar and chain and clean them thoroughly. Let chain dry and store in a small container of engine oil to prevent rust. Oil the dried bar and wrap it in oiled paper.



2. Prepare the engine internally for storage by either method A or method B:

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

   METHOD B: Drain as much fuel from the saw tank as possible, then start and run the engine until it runs dry and quits. Remove the spark plug to pour in a teaspoonful of a rust inhibitor product or a detergent oil. Install the spark plug and crank the engine enough times to distribute the oil over the cylinder and piston walls as a vapor.
3. All local regulations for the safe storage of fuel supplies must be observed. Non-stabilized fuel supplies should be used up in other equipment or discarded.
4. Clean all foreign material from the outside surfaces of the engine. The finish can be preserved with a coat of auto wax.
5. Store the saw in a well-ventilated place where it is inaccessible to children and away from corrosive agents such as garden chemicals and de-icing salts.

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NOTICE

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

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

Attention: Customer Relations Manager

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