

**HOMELITE®**

# OWNERS MANUAL

Supplied FREE to purchaser of chain saw. Extra copies available at \$1.00

## Model **150** Automatic CHAIN SAW



with **SAFE-T TIP®** (Pat. Pending)  
The new Homelite® Device Prevents Kickback when Properly Installed.

### SPECIFICATIONS and INFORMATION

Engine Type.....2-cycle, air cooled  
 Compression ratio.....6.25:1  
 Bore and Stroke.....1 1/16" x 1 3/8" (39.7mm x 34.9mm)  
 Displacement.....2.64 cu. in. (43.3cc)  
 Dry Weight.....9.06 lbs. (4.1 kg) less cutting attachments  
 Chain Speed.....43.76 ft/min per 100 rpm (13.3m/min) engine speed.  
 Engine Speed.....8500 rpm at maximum H.P. 6500 rpm average cutting speed.  
 Idle Speed range.....Just below clutch engagement speed (2500-2900 rpm)  
 Starting Speed (throttle latched).....5700-8000 rpm  
 Ignition Timing.....Non-adjustable, 28° BTDC  
 Breaker Point Gap......015" (0.4mm)  
 Coil Core-To-Rotor Air Gap......008"-.012" (0.2-0.3mm)  
 Spark Plug (original).....Champion #DJ-7J or AC #CS 45T  
 (alternate).....CJ-8 (gasket type)

Spark Plug Electrode Gap.....  
 Chain Oil Capacity.....  
 Oil Feed Rate.....  
 Carburetor.....HK-3C  
 Induction System.....  
 Fuel Tank Capacity.....1 pint (473 ml)  
 Continuous Operating Time per Filling.....20 minutes  
 Ratio Regular Gasoline to Oil in Fuel with HOMELITE 32:1 Engine Oil.....  
 with HOMELITE 16:1 Engine Oil.....  
 Recommended Gasoline.....Leaded  
 Disapproved Fuel Ingredients.....  
 Chain......59 drive link loop, Type  
 Guide Bar......16" Power Tip® #PT-16381-00

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

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# INTRODUCTION

## FACTS ABOUT YOUR MODEL 150AO CHAIN SAW

The Model 150 AO chain saw has a 2.64 cubic inch (43.3cc) engine, but weighs just a fraction over nine pounds (4.1kg). This provides power for the saw's 16-inch capacity Power Tip guidebar and 3/8 pitch saw chain in a lightweight, compact unit. The 150 Chain Saw's generous sized fuel and oil tanks provide up to 30 minutes of continuous operating time between refueling stops. The fuel is a mixture of 2-cycle engine oil and either leaded or unleaded regular grade gasoline. The chain can be lubricated either with specially formulated bar and chain oil products or any grade of clean motor oil. (See instructions for fuel and chain oil).

The chain saw models discussed in this Owner's Manual are not equipped with vibration reduction features and, accordingly, are intended for occasional use only.

It has been determined that certain individuals, after long periods of exposure to chain saw vibration possibly coupled with exposure to cold weather, experience a restriction of blood circulation through the fingers which often has the appearance of Frostbite. This reduction of the blood supply may result in an ailment sometimes referred to as **Raynaud's Disease**, the exact causes of which are presently unknown. Permanent damage may result when early symptoms are ignored.

There are certain measures which can be taken to minimize the risk of this ailment. These are as follows:

1. Wear gloves to keep the hands and wrists warm.
2. Limit your use of the saw to short and occasional periods. This means refraining from repeated and frequent use as well as operating only for short periods.
3. After each period of use, exercise to restore normal blood circulation.

## SPARK ARRESTORS

Model 150 W chain saws purchased in the states where the law requires the use of a spark arrester in the chain saw exhaust system contain a spark arrester and muffler shield assembled on the unit. The law also requires the owner/operator to maintain the spark arrester in good condition (intact) in the exhaust system at all times. Although made of stainless steel, the spark arrester is a very fine mesh. It is accordingly subject to warping, cracking and burn-out. Replacement spark arrestors and installation instructions may be ordered as Kit No. A-68666-1B. Replacement muffler shield may be ordered as Part No. 94071-1.

## 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."



## HOMELITE® SAFE•T•TIP™ (Pat. Pending)

This Homelite® anti-kickback device is supplied with your Model 150 AO chain saw at no extra charge. The instruction booklet (#17067) packed with the SAFE•T•TIP tells you how to install it on your guide bar, and how to operate with a SAFE•T•TIP. When properly installed, the SAFE•T•TIP prevents chain saw kickback, because it covers the chain at the upper 90° quadrant of the guide bar nose where kickback reaction could occur. The SAFE•T•TIP for the Model 150 is #A-70790.

# SAFETY PRECAUTIONS FOR CHAIN SAW USERS

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

## BASIC PRECAUTIONS FOR PERSONAL SAFETY

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

## BASIC PRECAUTIONS WITH CHAIN SAWS

- Always carry the chain saw with the engine stopped, the guide bar and saw chain to the rear, and the muffler away from your body. When transporting your chain saw, use the appropriate guide bar scabbard.
- Always use caution when handling fuel. Move the chain saw at least 10 feet (3 m) from the fueling point before starting the engine.
- Keep the handles dry, clean and free of oil or fuel mixture.

- Before you start the engine, make sure the saw chain is not contacting anything.
- Shut off the engine before setting down the saw. Do not leave the engine running unattended.
- Operate the chain saw only in well ventilated areas.
- Be sure that the chain stops moving when the throttle control is released.

## BASIC PRECAUTIONS IN CUTTING/WORK AREA

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

## BASIC PRECAUTIONS ABOUT MAINTENANCE

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

## 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 judgement. 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.

# PROTECTIVE ARTICLES, EQUIPMENT & SUPPLIES



## SECTION 1 — PREPARING FOR USE

### GUIDE BAR AND CHAIN ASSEMBLY

#### IMPORTANT:

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

1. Before doing anything else, oil the new chain. It needs oil to start off with, and the automatic oiler will not supply oil until the saw is revved up to cutting speed.
2. Remove the guide bar mounting nuts and the clutch cover. Lift off the **outer** guide bar plate. Discard the cardboard packing. Keep the **inner** guide bar plate on the bolts. (The inner plate has an oil slot which the outer plate does not have.)

**NOTE: If a guide bar having a part number with the suffix "D5" (stamped on bar) is to be used instead of the standard PT-16381-D3 guide bar, an S-clip #69966 must be used on the mounting bolts because the D5 bar slot is wider than the D3 slot.**

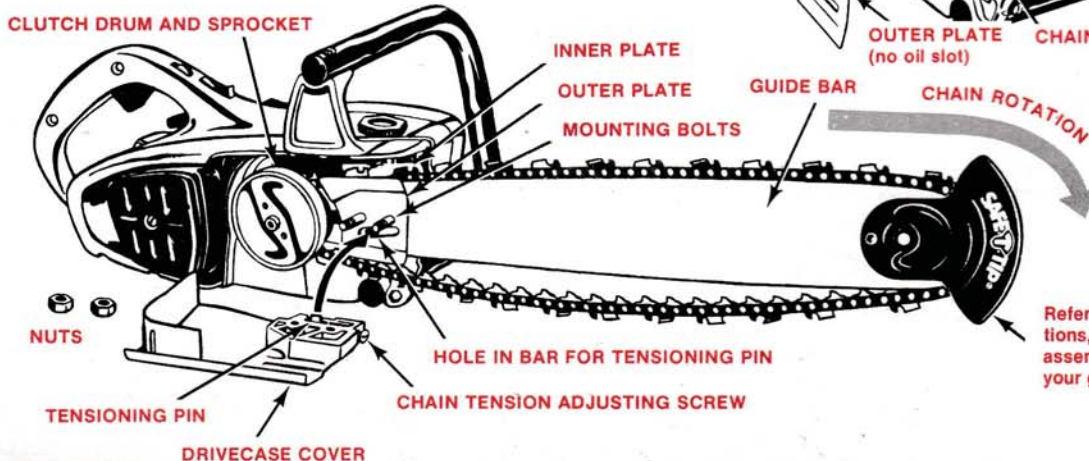
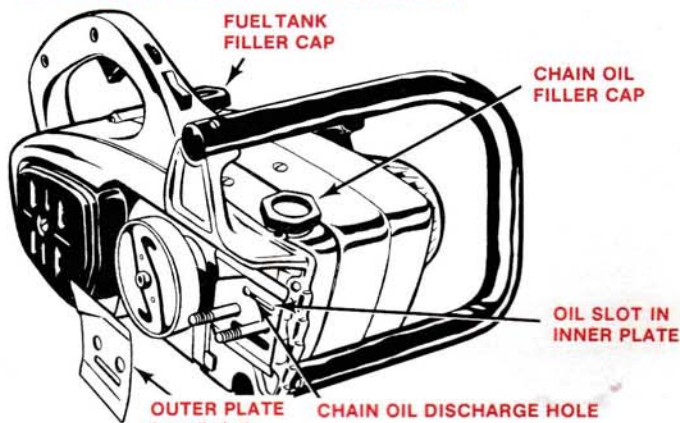
3. Slide the guide bar onto the bolts and flush against the inner plate and mounting pad. Put the outer plate back onto the bolts.
4. Hold the chain in the approximate mounting position and check the teeth. The teeth should **face** in the direction of chain rotation which is away from the sprocket along the top edge of the bar.
5. Loop and angle the chain to slide through the small space between the clutch drum and the sawdust shield (at about the 11 o'clock position relative to the clutch.) Fit the chain over the clutch and onto the sprocket. Then begin at the sprocket to feed the drive links into the top bar groove, continuing on around the bar nose until the chain is on the bar.
6. Turn tension adjustment screw in the clutch cover to place the tension adjusting pin where it will engage the hole in the guide bar when the cover is put in place.
7. Put the cover on the bolts against the outer bar plate and make sure the pin is in the hole. Hold assembly in place with the two nuts — finger tight to permit adjustment of the chain tension.

8. Follow directions in SAFE•T•TIP Instruction pamphlet #17067 for proper assembly of the SAFE•T•TIP® (Pat. Pending) on the guide bar.

### DAILY ATTENTION TO CHAIN AND GUIDE BAR

1. At the end of each day of cutting, remove the chain and guide bar.
2. Clean the sawdust from the guide bar mounting pad, the clutch area, and the clutch cover. Clean out the oil discharge hole in the guide bar mounting pad. Clean sawdust from the chain groove in the guide bar.
3. File and clean the saw chain. Then immerse the cleaned chain in a can of light oil until ready to reassemble on saw and operate.
4. Each time you remount the bar, reverse its position (top for bottom on the saw) to distribute the wear.
5. The sprocket nose of your Power-Tip Guide Bar should be given a daily grease change every day of cutting (see Maintenance Section). The proper time to change the grease is **while the bar nose is still warm from operation** and the old grease still soft.

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



Refer to SAFE•T•TIP® Instructions, booklet #17067, for proper assembly of the SAFE•T•TIP on your guide bar.

# CHAIN TENSION

Proper tension is extremely important. In order to avoid a false setting, follow the steps under "General Tensioning Procedure".

## GENERAL TENSIONING PROCEDURE

1. Leave mounting nuts finger-tight. Remove most of the droop (slack) from the chain.



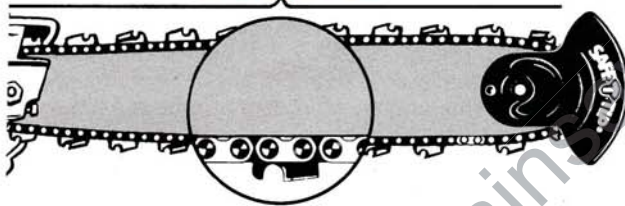
2. Pull the chain along the top of the bar toward the nose. Note that the amount of chain droop will vary (according to the sprocket position) as the chain moves. Pull the chain to where the chain has the least amount of

3. Set the chain to the tension prescribed for type of guide bar (sprocket nose or hard nose, see below).
4. While holding up the nose of the bar, tighten the nut to lock the assembly at the proper tension.
5. In use, the chain will begin to droop as it warms up and expands. Know these facts:
  - a) 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 a hot chain to cool for a few minutes before adjusting.
  - b) An underoiled chain gets hot and stiff and is likely to kink up. Kinking will cause it to become tight on the bar. Keep your chain well oiled.
  - c) A certain amount of droop is OK when the chain is warm. But it should be adjusted on the bar any time the chain droops to where the tangs hang almost out or completely out of the bar rail at the point shown.

**CAREFUL:** Chain tensioned while warm may be too tight on the bar after cooling down. Always re-adjust tension before the next use.

## TENSION SETTING FOR SPROCKET NOSE BARS

CENTER OF SPAN

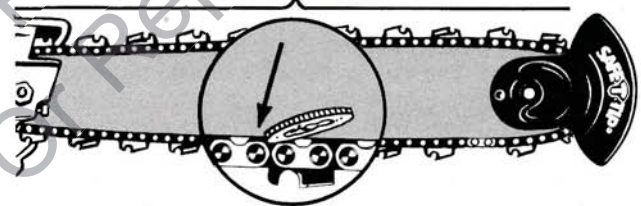


1. The "cold" tension should be "snug", or taut like a chalk line — as tight as possible without your feeling any binding as you pull the chain along the bar by hand.
2. The chain will expand and droop as it warms up in use. Under heavy duty cutting conditions it may droop until only the points of the tangs stay in the bar.
3. For extra long duration cutting, reset the tension to where the warm chain droops only to about half the depth of the chain tangs at the center of the chain span.

WHENEVER YOU HAVE TIGHTENED THE TENSION OF A WARM CHAIN, BE SURE TO SET PROPER "COLD CHAIN TENSION" AFTER CHAIN HAS COOLED.

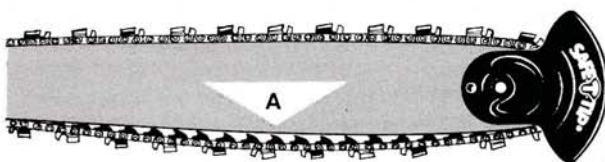
## TENSION SETTING FOR HARD NOSE BARS

CENTER OF SPAN

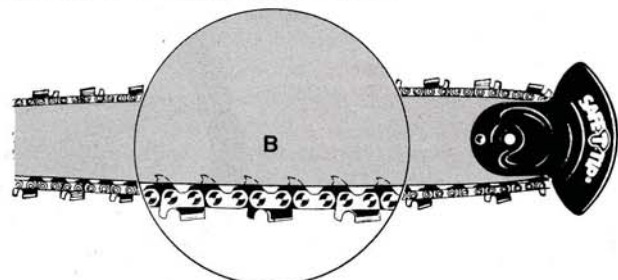


1. When "cold" tensioning, set the where the chain tie-straps do not quite touch the bar rails at the center of the chain span. The clearance with the bar should be the thickness of a small denomination coin (penny, dime, etc.).
2. Do not adjust overheated chain. Do not readjust "warm" chain unless the chain tangs hang all the way out of the bar groove.
3. When "warm" adjusting, set to where the chain tangs hang about halfway out of the bar groove at the center of the chain span. This setting leaves about a 1/8" (3.2mm) gap between the tie-straps and the bar rails.
4. When starting out with a cooled chain condition, always recheck that the "cold" tension is as described in step 1.

## WHEN TO READJUST TENSION OF WARM CHAIN



IF TANGS HANG OUT OR NEARLY OUT OF THE BAR GROOVE, ADJUST SO THEY HANG HALFWAY OUT AS IN ILLUSTRATION B.



**NOTE: DO NOT MAKE ANY CUTS UNLESS THE CHAIN TENSION IS CORRECT!**

## CHAIN OIL SYSTEM

The chain oil filler cap is located on top of the saw to the left of the guide bar mounting pad.

1. **TYPE OF OIL AND WEIGHT.** You can use Homelite® Bar and Chain Oil just as it comes from the container. This oil is formulated to flow freely at temperatures even below freezing, and exhibits minimum throw-off from the chain. You can also use any brand or type of engine oil including reprocessed oils. **BUT THE OIL YOU SELECT MUST BE CLEAN.** Use an SAE-30 weight engine oil in temperatures above 40°F (4.4° Celsius). Below 40°F, either switch to a lighter weight oil such as SAE-20 or SAE-10, or mix just enough kerosene with whatever weight oil you have until the mixture flows freely. No dirty oil or used oil should ever be put into the chain oiler as it may damage the oil pump.

2. **HOW OFTEN TO FILL THE CHAIN OIL TANK:** The tank should be filled with oil at the start. Thereafter, always be sure to fill the oil tank with chain oil whenever you add any fuel to the fuel tank. At the normal rate of oil flow, the saw should never run out of chain oil while you are cutting wood.
3. **HOW TO CHECK THE OIL SYSTEM:** The volume of oil discharged depends on the engine speed. The flow at operating speed is about 10cc per minute. Check the oil reservoir every few minutes, at first. Add oil whenever the level is low. To check whether the oil is getting to the chain: Shut engine off, and clean the SAFE•T•TIP®. Run engine at full throttle for a 5-second period. Shut engine off and examine the SAFE•T•TIP. The inside curve of the SAFE•T•TIP should be spattered with chain oil.

## FUELING THE SAW

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

**FUEL TANK:** The tank holds one pint of fuel (237 cc), enough fuel for about 30 minutes of continuous cutting. The fuel filler cap is at the left, rear of the engine cover. Always loosen the cap slowly about 1/4 to 1/2 turn and let the tank depressurize before you remove the cap. The fuel cap is valved to let air into the tank. During fueling, take precautions not to let sawdust or dirt enter the cap valve or the fuel tank.

1. **FUEL TO USE:** This 2-cycle engine requires 2-cycle engine fuel. The fuel is made by mixing thoroughly a quantity of recommended 2-cycle engine oil (for air-cooled engines) with a quantity of a recommended gasoline product. The proportions of oil and gasoline to be mixed together depend on the ingredients selected. These are given (below).
  - a) For best performance and longest possible service life, use **2-cycle HOMELITE® 32:1 Engine Oil**. Mix this in the ratio of 1 part oil to 32 parts of gasoline (1/4 pint per U.S. gallon of gasoline, or 3% oil).
  - b) Use **2-cycle HOMELITE® 16:1 Engine Oil**. Mix this in the ratio of 1 part oil to 16 parts of gasoline (1/2 pint per U.S. gallon of gasoline, or 6% oil).

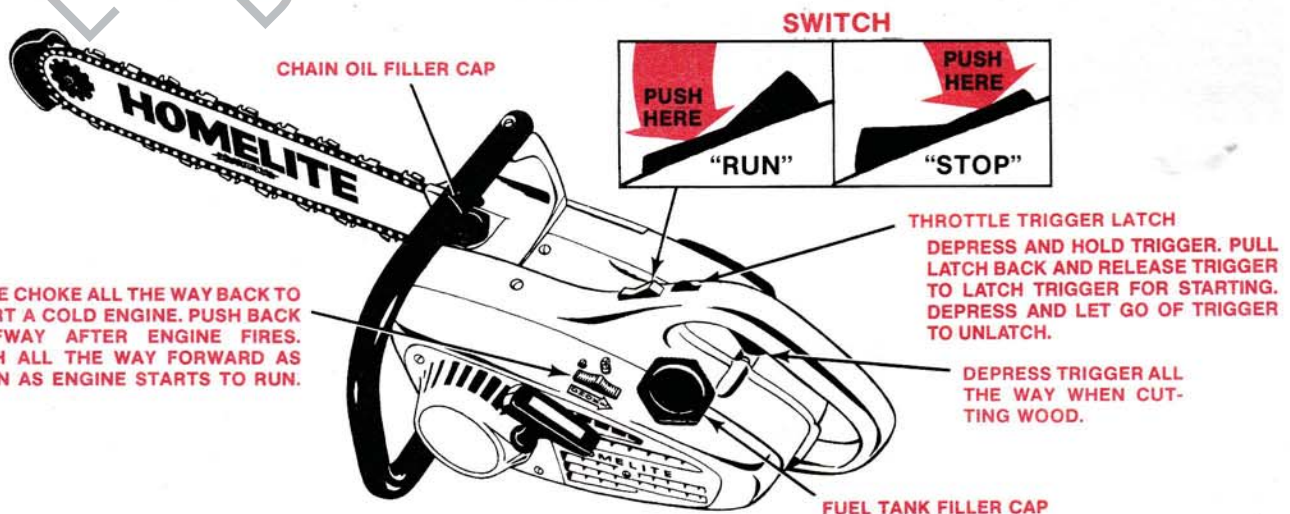
**NOTE:** If neither of these Homelite oils is available, use any oil designated for 2-cycle air-cooled engines

in the ratio of 16:1 only, as stated above. Avoid use of multigrade oil products (such as 10W-30) or any oils formulated for water-cooled or 4-cycle engines. Also avoid use of gasohol which absorbs moisture and tends to corrode small engines.

- c) We recommend use of fresh, clean regular grade automotive gasolines, either leaded or unleaded in Homelite engines. Automotive "High Test" grade can be used temporarily when regular grade gasoline is not available. Do not use gasohol.
- d) The gasoline must be *clean* and *fresh*. Preferably, it should be treated with an anti-oxidant type fuel stabilizer such as STA-BIL®\* as soon as purchased. Untreated gasoline or fuel should not be used in a chain saw engine after three months from day of purchase.

2. **HOW TO MIX FUEL PROPERLY:** Never mix fuel directly in the saw tank. Use a clean fuel can. Pour in half of the required amount of gasoline. Pour in the whole measure of oil. Stir or agitate can to mix the oil and gasoline. Pour in the remainder of the gasoline measure. Now stir or agitate mixture vigorously for one minute to be sure of a uniform mixture. Unless uniformly mixed, the fuel will cause excessive smoking and low power as well as overheating, excessive wear, and piston seizing.

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



# HOW TO START, STOP AND HOLD THE SAW

## GRIP AND BALANCE



PULL STARTER STRAIGHT UP TO CRANK ENGINE

### IMPORTANT:

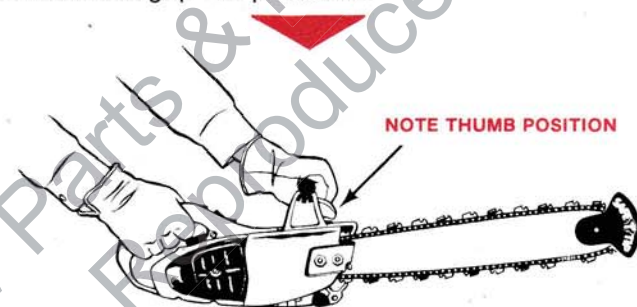
Know how to operate the saw controls, and how to hold the saw during both cranking and operating.

### 1. DURING STARTING:

Hold the saw down firmly on a level surface with the bar and chain in the clear. Use the side of one knee to hold down the rear handle, and one hand to hold down the front handle. Use the other hand for cranking the engine. Do not use any technique which would bring your foot or leg near the bar and chain.

### 2. WHENEVER ENGINE IS RUNNING:

The only way to hold the saw so that you can maintain control in case it jumps or kicks back toward you is to use the grip shown. Always use this grip and hold onto the saw firmly with both hands when the engine is running. Wear non-slip gloves for maximum grip and protection.



NOTE THUMB POSITION

USE PROPER GRIP — ALWAYS KEEP BOTH HANDS FIRMLY ON THE SAW.

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

## STARTING AND STOPPING

The trigger latch is on the top of the rear handle. The choke control button is on top left of the engine cover. The rocker type positive RUN/STOP control (ignition) switch is located on the rear handle where the operator can use it to shut off the engine without releasing his grip on the handle. To start or run, push front end of switch marked "RUN." When you want to stop, push rear end of switch marked "STOP."

1. Slide choke control button as far back as it will go (for cold start), and push down the front end of the ignition switch to "RUN" for starting.
2. Hold saw down firmly on a clean surface with guide bar and chain in the clear.
3. To open throttle partially for cold starting, depress and hold trigger. Pull trigger latch back and release trigger. CAUTION: when the trigger is depressed all or part way during starting, the chain will turn when the engine starts. A warm engine should require neither choking nor trigger latching.
4. Pull the starter grip as briskly as you can to give the engine a rapid spin. NOTE: To prevent damage to the starter, do not yank cord out to the very end; hold

grip and let cord rewind evenly instead of letting it snap back.

5. Crank until engine starts up or fires — if it does not keep going, move the choke button to a half-way position before cranking again.
6. IMPORTANT: As soon as engine runs, use throttle trigger to release throttle latch and control engine speed; at the same time, ease the choke button forward to open the choke as the engine warms up. Do not operate with engine choked or partly choked except briefly during warm-up.
7. Pick saw up, assume balanced cutting stance, and squeeze trigger to open throttle fully before the chain contacts the wood.
8. Apply light pressure on the saw to make it feed smoothly and rapidly. Always do the cutting at full throttle, but throttle back when the load is removed. IDLE SAW WHEN NOT ACTUALLY CUTTING WOOD. Do not cut at part throttle or force the saw to cut as this allows the clutch to slip and overheat.

# SECTION 2 — KICKBACK, PUSH AND PULL and how to control these reaction forces.



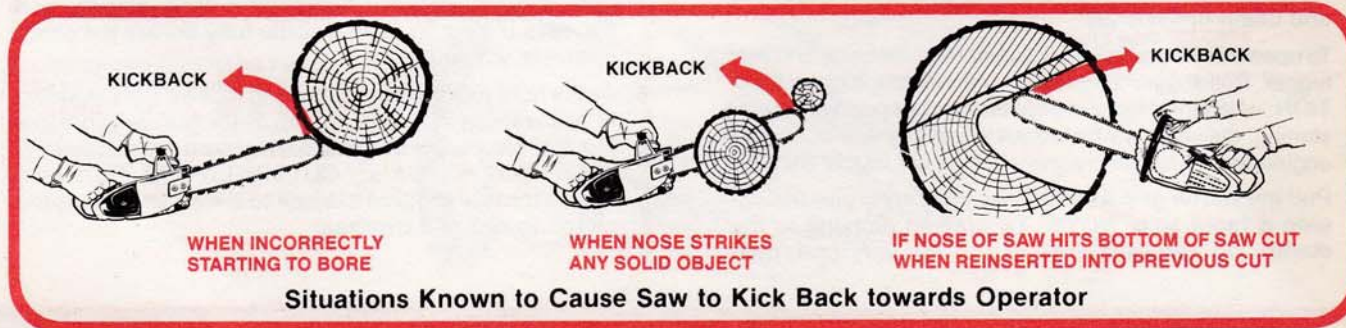
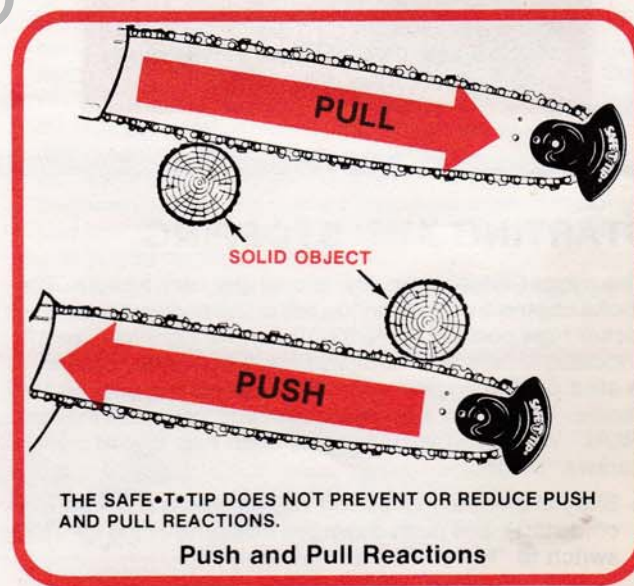
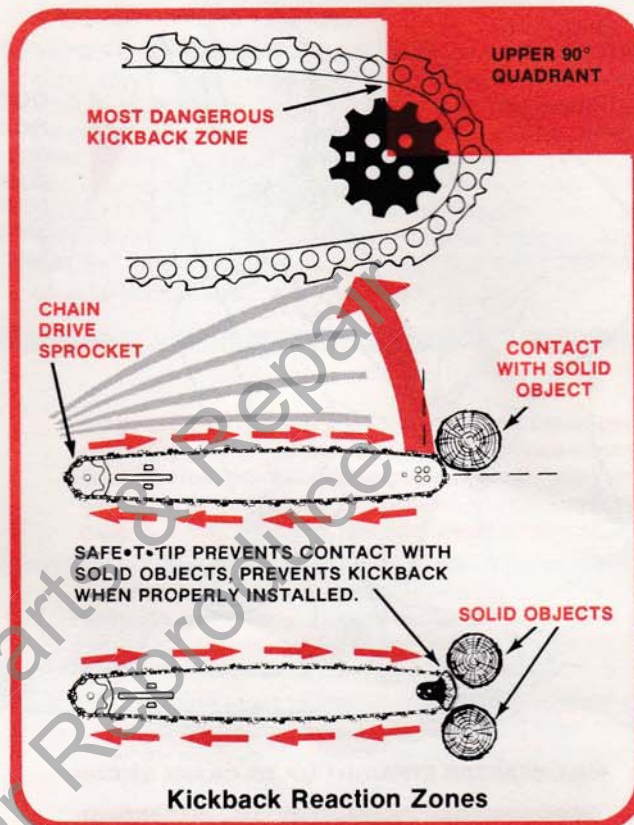
## WARNING:

Also read the instructions (#17067) which came with the SAFE•T•TIP®. We strongly urge your protecting yourself against chain saw kickback by using the SAFE•T•TIP®. But remember, that for the few types of cuts where a SAFE•T•TIP cannot be used, you should use the techniques described in this Owner's Manual.

## WHAT IS CHAIN SAW KICKBACK?

In the operation of a chain saw, engine torque is transferred to the chain. This energy is then used to cut wood. If the chain suddenly hits a solid object (or takes too large a cut) and is stopped for an instant, the engine torque is transferred to the guide bar and chain saw as a *rotation* around the center of mass. The direction of the reaction force depends on where the contact is made along the guide bar. *If made at the upper 90° quadrant of the bar nose, the reaction will be in an upward arc toward the operator.* This arcing movement of the saw blade is called *kickback*. Kickback is the most dangerous of the reactions which can cause loss of control. When properly installed, the SAFE•T•TIP® prevents kickback. *But it is not a general insurance against "accidents" with a chain saw.*

Besides kickback, the directional reaction forces which you must control are *push* and *pull*. *Kickback, push and pull* reactions are all illustrated on these pages.



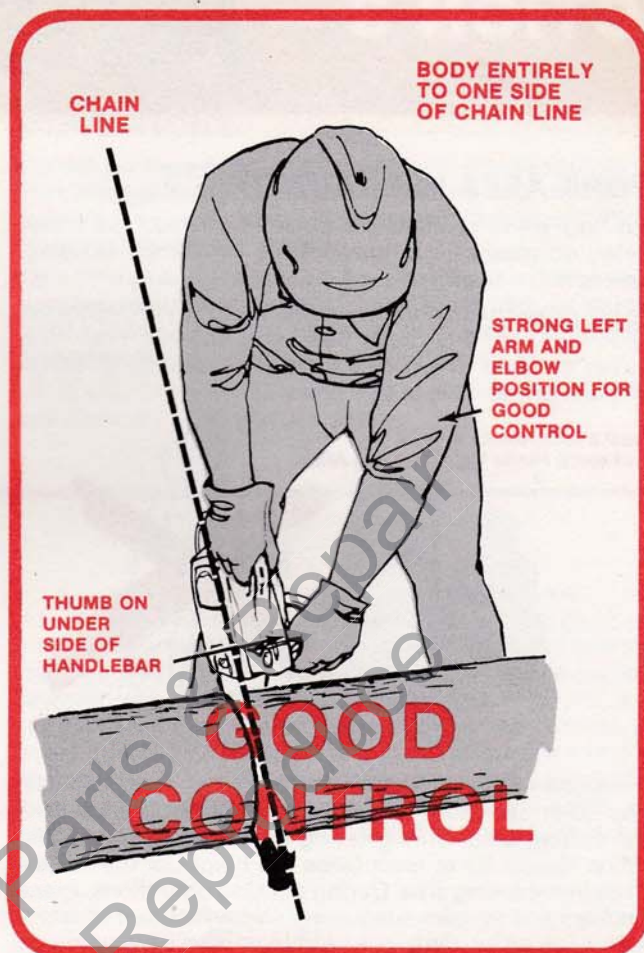


## HOW SHOULD YOU MAINTAIN CONTROL OF THE SAW?

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

## HOW SHOULD YOU REDUCE THE CHANCE OF KICKBACK?

1. Avoid letting the nose section of the saw contact any object. Note: A SAFE•T•TIP™ (pat. pending), 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, 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 13 for minimum risk of kickback.



# SECTION 3 — WORKING AREA PRACTICES

## WORK AREA PRECAUTIONS

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

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

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



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



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

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



**USE WEDGE TO HOLD CUT OPEN**



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

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

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

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



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

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

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

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



**KEEP CALM, JOE! I'LL GO FOR HELP.**

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



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

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

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

## UNUSUALLY HAZARDOUS CONDITIONS

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

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

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

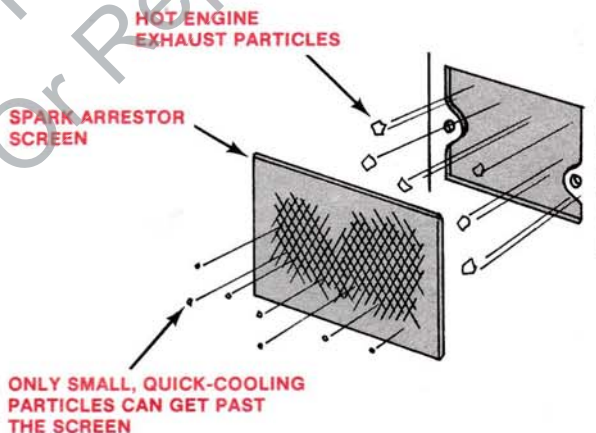
## HANDLING AND SECURING THE SAW

Inspect your saw every day before use. Keep the fuel cap, oil cap and air filter cover on tightly. Check conditions of the fuel line, spark plug and spark plug wire. **DO NOT OPERATE IF THE ENGINE BACKFIRES OR THE SAW LEAKS FUEL.** Have your saw serviced by an authorized serviceman. Be sure to keep your saw chain in proper condition on the saw. Remember that a dull or loose chain snags more easily than a sharp, snug chain. Touch up the chain after two hours of steady cutting and sharpen it thoroughly after 8-10 hours of use. (See Chain and Bar Maintenance in Section 5.) 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.

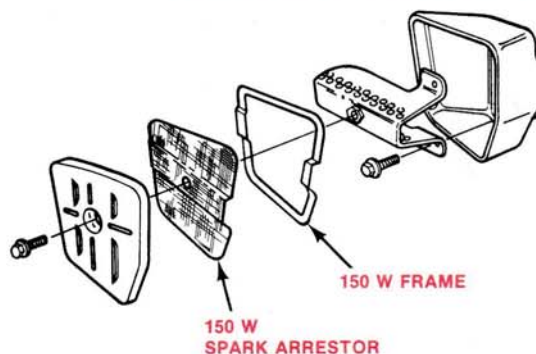
If there is anything wrong with the saw have it fixed before further operation. The idle speed adjustment should be maintained so that the chain stops moving after the engine is brought back to idle. Adjust the idle speed when ever necessary (see Section 5).

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

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.**



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

# SECTION 4 — TECHNIQUES OF CUTTING

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

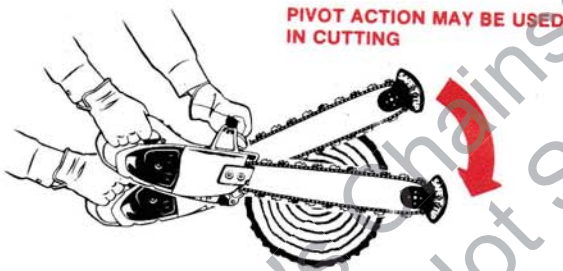
## BUCKING, LIMBING AND PRUNING TECHNIQUES

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

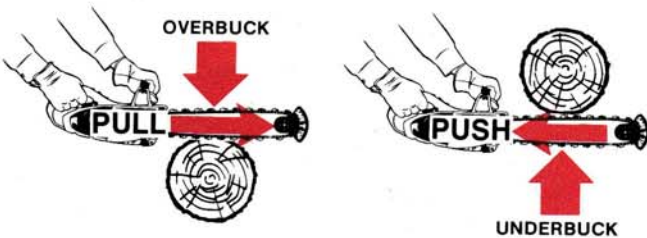
**PRACTICE BY CUTTING FIREWOOD LENGTH LOGS FROM RAISED END OF LOG.**



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



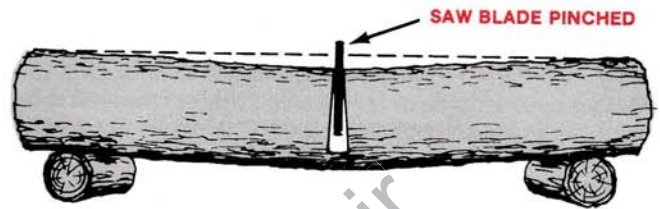
3. You will notice a slight amount of *pull* reaction during cutting. So be ready for the moment the saw breaks through the wood and *pull* ceases. You must be ready to stop pushing down on the saw and hold the saw nose up. The moment the chain breaks clear, release the throttle trigger so the engine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



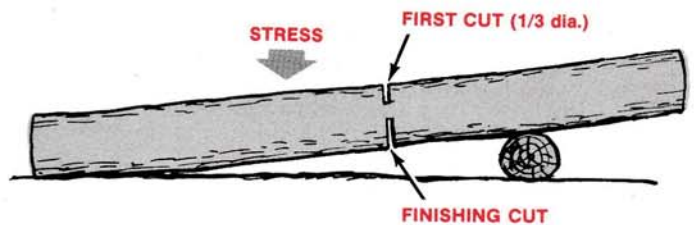
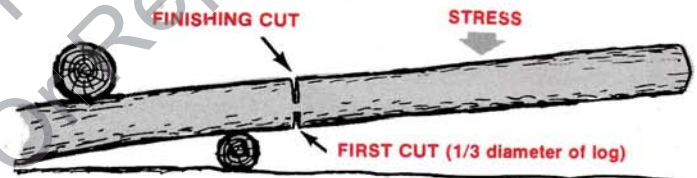
4. When you have mastered the overbucking technique, try underbucking to see what it feels like.

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

## CUTTING VARIATIONS ACCORDING TO THE STRESS FACTORS



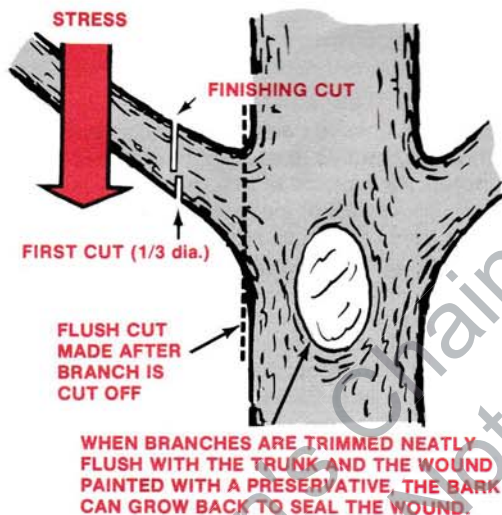
When the piece to be cut is supported on the ends, but not along the point where you want to cut, it will bend as you make your cut. If you are overbucking a log that will bend downward at the cut, your saw will be pinched if you cut more than 1/3 the log diameter. So overbuck 1/3, then remove the saw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

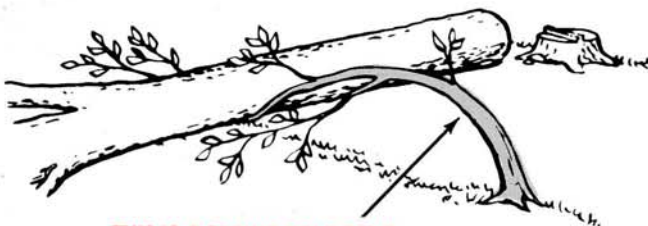
**NOTE: A wedge cannot be used with a SAFE•T•TIP® (Pat. Pending) on the bar, unless you are sure that you can either remove the wedge or roll the log so the saw can be retrieved from the cut.**

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



## 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 SPRING POLE BENT DOWN UNDER HIGH STRESS.**

## BORING WITH THE NOSE SECTION

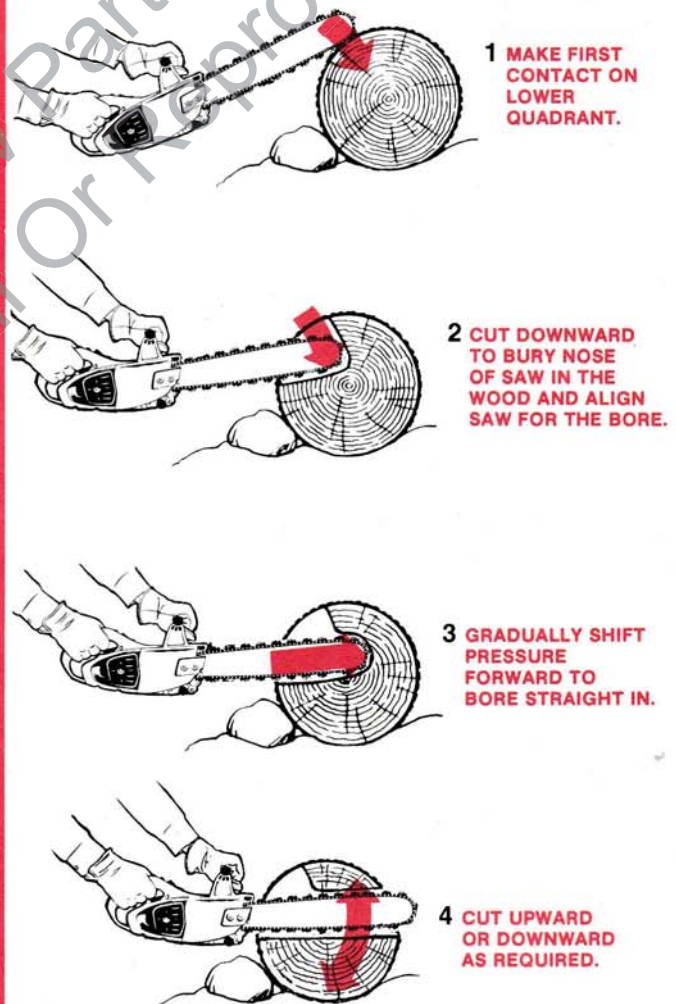
### KICKBACK DANGER

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

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

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

### BORING TECHNIQUE

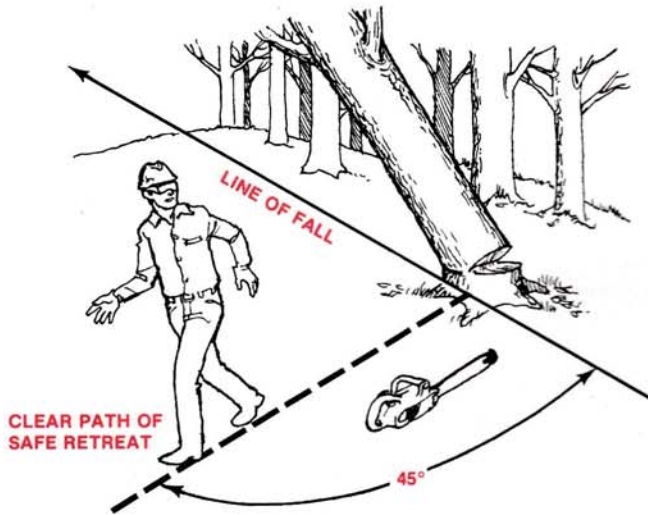


# TREE FELLING TECHNIQUES

## 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!

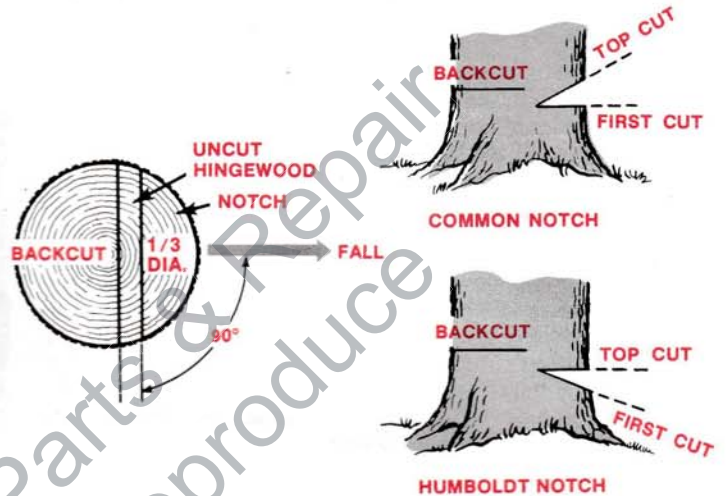
1. Pick your escape route (or routes in case the intended route is blocked). Clean the immediate area around the tree, and make sure there are no obstructions in your planned path of retreat.



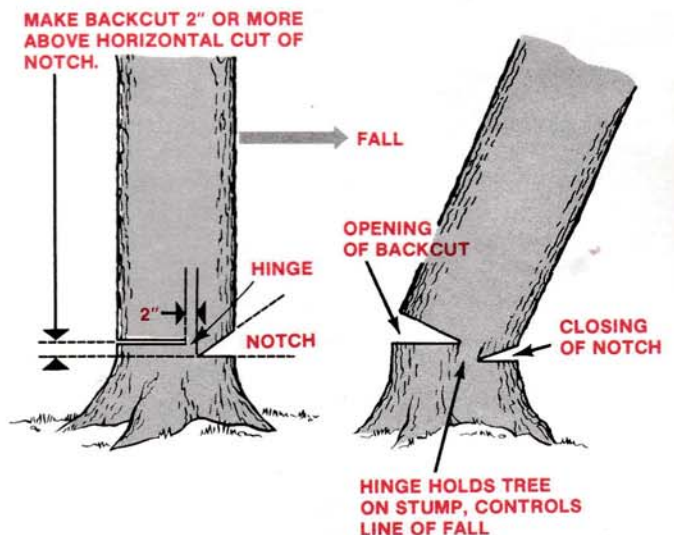
2. Consider the factors of wind direction and velocity, the natural lean and the balance of the tree, and the location of large limbs. These things influence the direction in which the tree will fall. Do not try to fell a tree along a line different from its natural line of fall until you have had considerable 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. If the tree is not badly out of balance, cut a notch about 1/3 the diameter of the trunk. This notch whether standard or "Humboldt" is made in the side the tree is to fall. And the cuts of the notch are made so they intersect at a right angle to the line of fall. This notch should be cleaned out to leave a straight line. To keep the weight of the wood off the saw always make the lower cut of the notch before the upper cut. We illustrate a common notch made with a horizontal cut and an angular cut above it. A "Humboldt" notch, with the horizontal notch on top, is made when trees are to be cut for saw log processing.



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



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

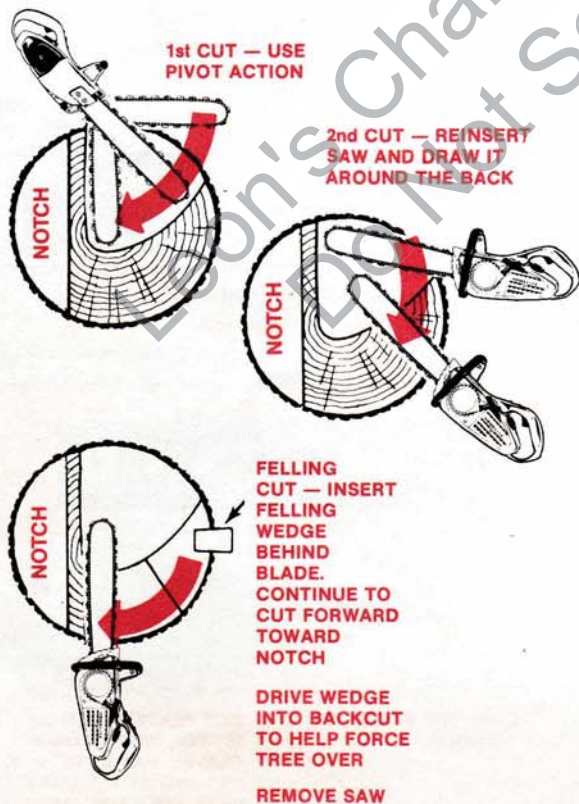


9. Trees larger than the saw can cut in one cut, can be both notched and back-cut in a series of cuts, as illustrated. Start the notching cuts from one side and draw the saw through to the other side of the notch. Start the back cut on one side of the tree, pivoting the saw through to form the desired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

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

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

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



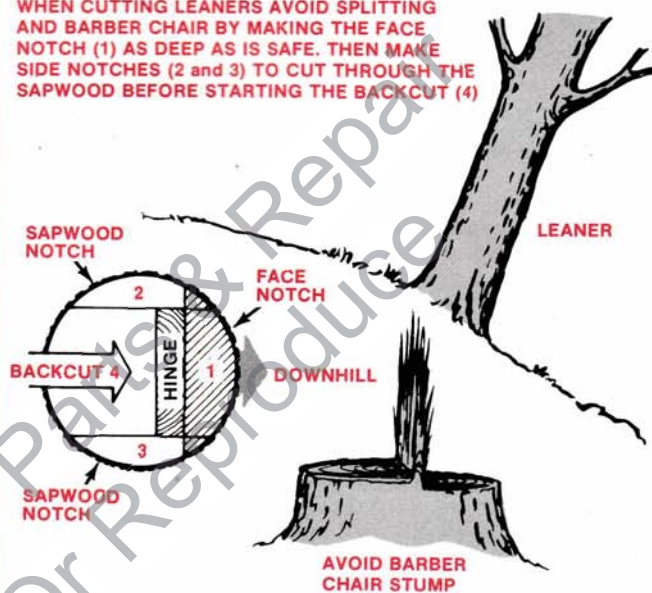
### FELLING LEANERS

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

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

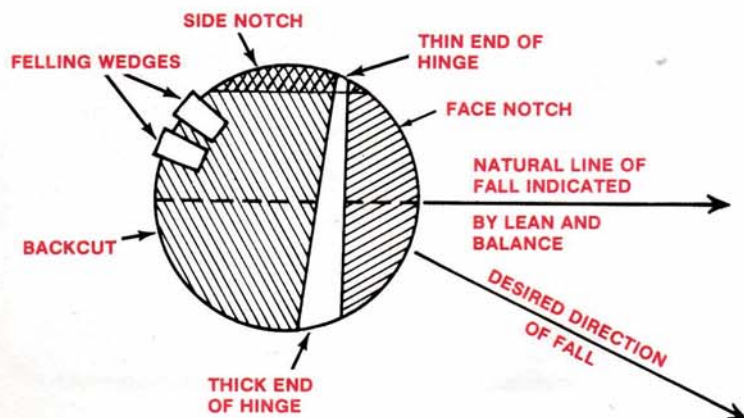
1. Make the directional control face notch shallower than usual.
2. Make shallow notches on both sides of the tree to cut through the outer layer (sapwood).
3. Now make your back cut to leave a parallel hinge.

**WHEN CUTTING LEANERS AVOID SPLITTING AND BARBER CHAIR BY MAKING THE FACE NOTCH (1) AS DEEP AS IS SAFE. THEN MAKE SIDE NOTCHES (2 and 3) TO CUT THROUGH THE SAPWOOD BEFORE STARTING THE BACKCUT (4)**



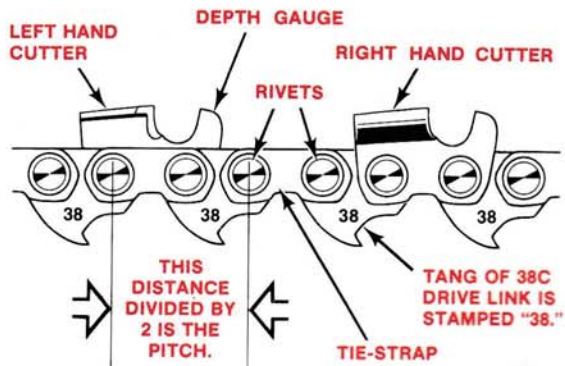
### CHANGING THE DIRECTION OF FALL (from the natural line of fall)

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



# SECTION 5 — MAINTENANCE AND ADJUSTMENT

## HOMELITE® SAW CHAIN



**NOTE:** Always wear gloves to protect your hands when working on the saw chain.

Type 38C Saw Chain, supplied with Model 150 Chain Saws, is stamped "38" on its drive link tangs. Type 38C is a 3/8" pitch (.375" or 9.53mm) chain. It has longer, larger cutters than the Type 37 or 375 chains with which we equip saws smaller than your Model 150.

The loop of 38C chain for your saw's 16-inch Power Tip Guide Bar (#PT-16381-D3) is #J1-92059-A. It contains 59 drive links. The 3/8 pitch sprocket and drum assembly for this saw and chain combination is #A-65033. Whenever you are having a new chain installed you should also have the clutch drum and sprocket assembly replaced. A worn sprocket will pound and stretch some of the life out of a new chain. However, a certain amount of sprocket wear can be tolerated as long as the chain is not being replaced (see "Replacing Worn Chain and Sprocket").

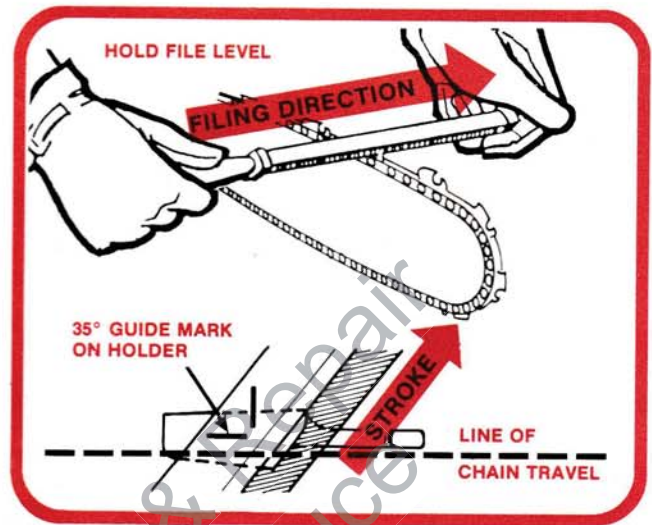
Always keep your saw chain in such sharp condition that bearing down hard to make the saw cut is unnecessary. When the sawdust turns from large chips into a fine powder, and you find yourself pressing hard to cut, SHUT OFF THE ENGINE IMMEDIATELY and file the chain.

### FILING EQUIPMENT FOR TYPE 38C SAW CHAIN

You will need our file holder #DA-92615 to begin with. This consists of holder and a 7/32" diameter (5.5mm) "fast-cut" round file #D-92601. The holder has the required 35 degree top plate filing angles marked on it. It holds the file at the correct height (1/10 of file diameter above tooth top plate). This produces the correct side plate angle and cutting edge automatically.

When about half of the cutter steel has been filed away, you should switch to a 3/16" diameter (4.8mm) round file #92603, which fits the same file holder. The smaller size file is needed because the teeth are tapered. They get smaller as they are filed back.

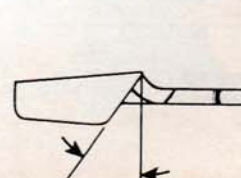
For filing the depth gauges, you will need a flat file #92609, and either an adjustable type depth gauge tool (#23056) or one of the fixed-depth type tools. An .025" (0.64mm), tool available as #D-92631, is for a mixed hardwood/softwood diet. An .030" (0.76mm) depth gauge tool, available as #92632, can be used if you are cutting mostly softwood.



### HOW TO FILE THE CUTTERS

Tighten up the chain tension a bit so the chain does not wobble on the bar during filing. Do all of your filing near the midpoint of the bar. Be sure to file all cutters to the same length. If you replace worn or broken cutters in a loop of chain, file the new ones back until they are the same length as the old cutters so that all of the teeth will get a chance to cut.

1. Hold file against cutter face at the 35° angle marked on the file holder.
2. Keep file level. Do not let file dip or rock during stroke.
3. File in one direction only. Stroke the tooth from outside edge of top plate towards front corner (see illustration). Move file away from tooth face on return strokes.
4. Use firm but light filing pressure, mostly towards back of tooth. Avoid heavy downward pressure which will undercut the edges. The holder (used with proper amount of filing pressure) will keep 1/10 to 1/5 of the file diameter above the top plate. This will produce a beveled, hollow-ground under-edge automatically.
5. Put a few firm strokes on every tooth. File all cutters on one side of the chain. Then file all cutters on the opposite side of the chain. Rotate the file occasionally in the file holder.
6. A sharp edge will not reflect light. Examine the edge in bright light to see if the dulled area has been removed.



1. 35° TOP PLATE ANGLE

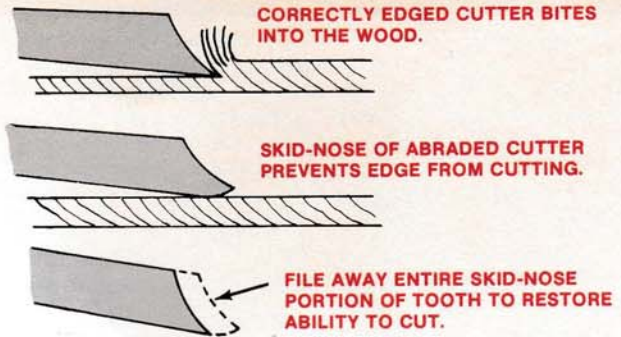


2. SIDE PLATE ANGLE OF 85° TO LINE OF CHAIN TRAVEL. MAY BE 85° TO 90° AS LONG AS ALL CUTTERS HAVE THE SAME ANGLE.

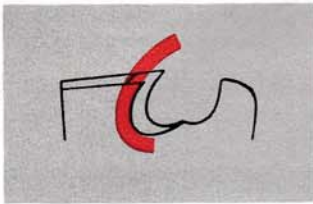


## FILING OUT SKID-NOSE WEAR PATTERN

A sharp edge does not alone make for good cutting. You have to put the edge on the outside of the tooth. "SKID-NOSE" describes the edge area of teeth which have hit hard objects such as nails and stones, or have been abraded by mud and sand on the wood. The skid-nose rides the wood, keeping the sharp edge from biting in. The friction at the skid-nose area overheats the 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 your chain "trued" to proper cutter length, contour, and edge by your servicing dealer on an electric chain grinder.

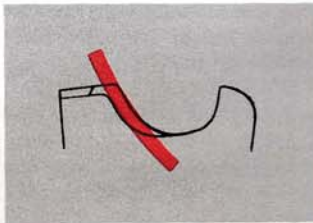


## REFILE ANY TEETH HAVING ONE OR MORE OF THESE FAULTS



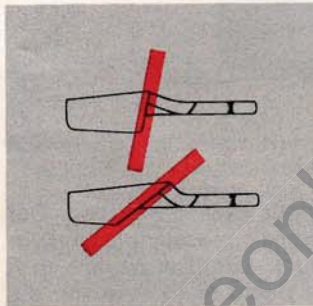
### Forward Hook

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



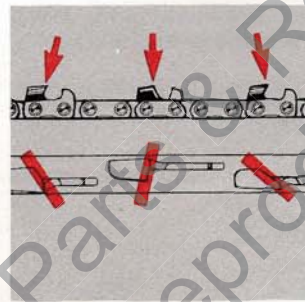
### Back Slope

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.



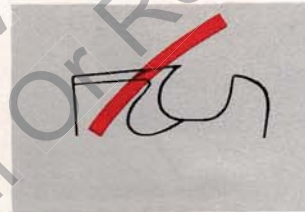
### Improper Top Plate Angles

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.



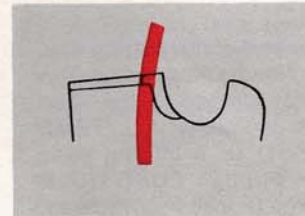
### Cutters Filed at Non-Matching Angles or Lengths

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.



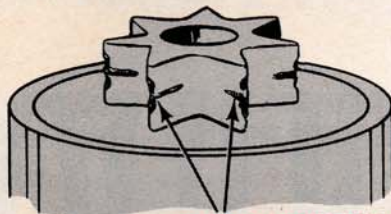
### Thin Feathered Edges

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.



**REPLACE SPROCKET AND DRUM IF WEAR PATTERN'S ON BOTH SIDES OF THE SPROCKET TEETH.**

## REPLACING WORN CHAIN AND SPROCKET

The sprocket and drum assembly #A-65033 contains a grease-packed needle bearing and inner race. This lubricant has a service life estimated to be 100 hours under normal conditions of use. Sprocket and clutch work requires proper procedures and special tools, and should be performed by an authorized dealer. Together, the chain and sprocket can stand quite a bit of wear and remain acceptably "in pitch." Wear becomes visible on the driving surfaces of the sprocket teeth. It is a good idea to change the sprocket and drum when this wear approaches a depth of 1/32 inch (0.8mm), or when both faces of the sprocket teeth exhibit deep wear from drive link contact.

## HOW AND WHEN TO SET DEPTH GAUGE CLEARANCE

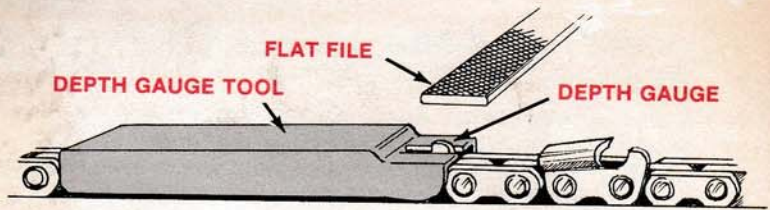
The depth gauges of this chain should be kept uniform in depth. New chain has the gauges set to .025" depth for a mixed hardwood/softwood diet. If you cut mostly softwood, you may find a depth setting of .030" more suitable. Bear in mind, however, that gauges which are too high will cause the operator to press down hard to cut. This will shorten the chain life by wearing the rivets and rivet holes. On the other hand, chains with gauges set too low will grab and jerk. A "grabby" chain can be a cause of kickback.

You must use a depth gauge tool to set all gauges uniformly. Otherwise the chain will cut off line, favoring the side having the lowest gauges.

Some experts recommend filing the depth gauges every time the chain is sharpened. You should do it at least after every third or fourth sharpening, and every time you have done corrective filing and removed a lot of tooth steel.

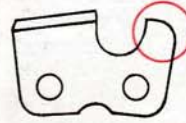
Lay the gauge tool over the chain so that depth gauge projects up through the slot in the tool (see illustration). Use the flat file to file the gauge flush with the level of the tool. File every gauge in this manner.

Now round off the front third of every gauge to facilitate smooth entry of all gauges into the cut.



### SHAPE OF GAUGES:

ORIGINAL AND CORRECT CONTOUR



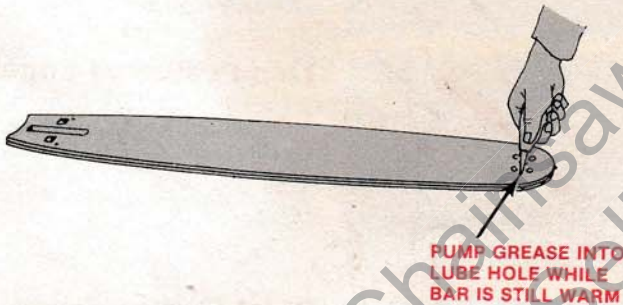
WRONG: TOO BLUNT TO FEED SMOOTHLY



WRONG: TOO POINTED TO ACT AS A DEPTH GAUGE



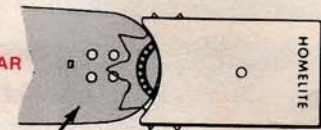
## GUIDE BAR MAINTENANCE



sink into the bar groove should be closed to the normal .056" clearance by inserting a metal strip of .050" (1.3mm) thickness and hammering the rails lightly with a flat hammer.

SLIDE REPLACEMENT SPROCKET INTO PLACE RIGHT OFF THE SHAPED MOUNT

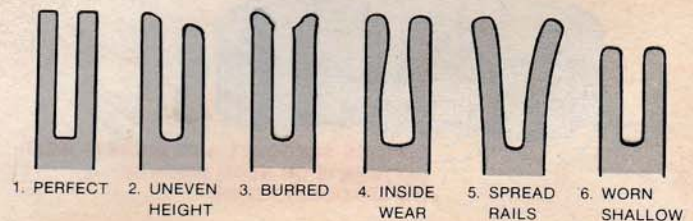
SPROCKET NOSE BAR



RVETS AND OLD SPROCKET REMOVED

1. Grease the nose sprocket at the end of the cutting day, while the bar is still warm. Our Needle Nose Lube Gun #D92680 comes pre-filled with grease. Lube Gun #24258-1 requires filling with Homelite ALL-TEMP Multi-Purpose GREASE (#24551) or a lithium base grease product. Pump grease through LUBE HOLE into bar nose until the grease which oozes out is clean.
2. Remove the guide bar for cleaning and inspection each day. Clean sawdust from the chain oil entry holes and the chain groove. Then inspect the bar as explained below.
3. Burrs along the rails will slow up cutting. Dress the rails lightly with a flat file to remove burrs.
4. If the chain flops over sideways during cutting, wear inside the bar rails is usually the cause. Inside wear will require bar replacement. Rails worn to unequal height can be filed to an even height. But after filing down the rails, check for chain clearance with the bottom of the bar groove. Shallow grooves can be deepened, but bar replacement is usually less expensive.
5. Overall burning of the bar rails usually is the result of too little chain oil or too much chain tension. But a burnt short section of the bar rails indicates a pinch. Open up pinches by spreading the rails with a screwdriver blade. Spread rails which allow the tie-straps to

6. Rough-turning nose sprockets can be replaced. Our nose sprocket #A-69496 comes pre-assembled and lubricated on a shaped mount. Grind down the rivet heads and punch out the rivets to remove the old sprocket nose. Slide the new nose right off the mount into the bar. Secure with three rivets from the replacement nose package. Form rivet heads by peening lightly. Then strike several blows with a flat hammer to expand rivets inside the holes.
7. Each time the bar is removed, reverse its position (top for bottom) on the saw when remounting. This distributes the wear.

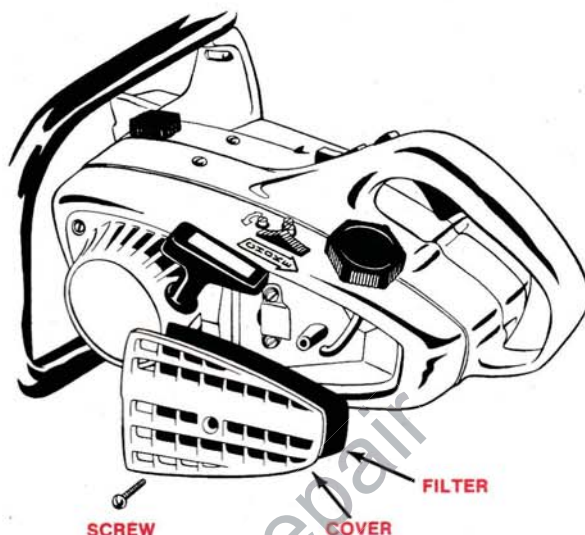


## AIR FILTER MAINTENANCE

The air filter should be removed and cleaned twice each day of operation, or more frequently if extremely dirty operating conditions are encountered. A dirty filter causes saw to run excessively rich, smoking excessively, using fuel at a fast rate and lacking in power.

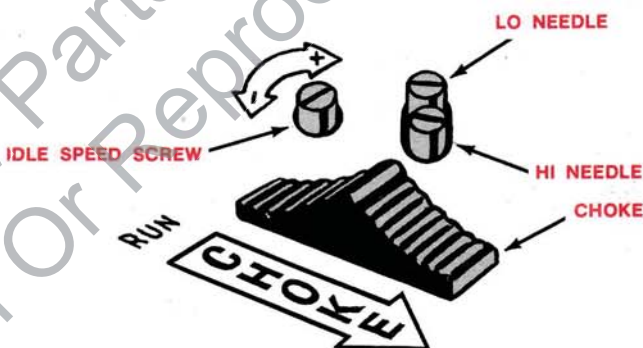
Never attempt carburetor adjustment until the air filter has been checked and cleaned or replaced.

1. Remove air intake cover (left rear side of saw) by taking out the cover mounting screw. Clean sawdust from air intake area of saw before removing the filter.
2. Clean filter by tapping it against a clean surface. Occasionally, give it a thorough cleaning in a non-oily cleaning solvent and let it dry before further use. Filters do not cost much so you may find it practical to keep a few spares on hand for instant changing.
3. Cleaning does not remove all dirt particles from the filter pores. Therefore, replace the filter after several months of use or more than 30 cleanings.



## CARBURETOR ADJUSTMENT

The carburetor was adjusted at the factory. It is seldom necessary to make major adjustments. Minor "trimming" is all that is usually necessary. Discourage all persons from turning the adjustment needles experimentally. Adjusting the carburetor cannot restore performance lost because of low compression, poor spark, or faulty fuel delivery or air intake. In any event, *always be sure the air filter is clean, before you make any carburetor adjustments.*



## ADJUSTMENT IF ENGINE CANNOT BE STARTED

1. With a small screwdriver, turn the HI and LO mixture adjustment needles slowly clockwise until both are gently seated. (Careful! Forcing needle into seat can render carburetor unadjustable, requiring carburetor replacement.) Then turn the HI needle out 1 full turn and the LO needle 3/4 turn.
2. Latch the trigger for starting, and follow instructions to start the saw. Unlatch the trigger to let the saw idle. **CAUTION: CHAIN WILL TURN WHEN ENGINE STARTS AND MAY NOT STOP WHEN ENGINE IS IDLED.**
3. If chain turns at idle throttle, turn the idle speed screw slowly counterclockwise until the chain stops. Now make final adjustments as instructed below.

## ADJUSTMENTS AFTER ENGINE IS AT OPERATING TEMPERATURE

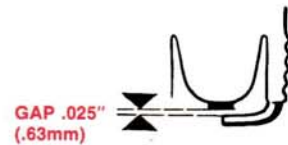
1. Run the saw for a few minutes to get the engine warm, then idle the engine and do the following:
  - a) Turn the idle speed screw clockwise until the chain begins to turn. Note this screw setting.

- b) Turn the idle speed screw in the other direction until the engine starts to falter. Note this screw setting.
  - c) Set the idle speed screw midway between the settings noted in a) and b).
2. **ADJUST FOR PROPER IDLE:** Adjustment of both the LO needle and the idle speed screw are required for fine tuning of the idle. Adjust the LO needle slowly in one direction, then in the other, to find where the engine idles the *fastest* on this temporary setting of the idle speed screw. NOW, if this speed is faster or slower than desired: if so fast that the chain turns, or so slow that the engine falters, change the idle speed by re-adjusting the idle speed screw. THEN, readjust the LO needle for the fastest idling at *this* idle speed screw setting. NOTE: for fine tuning, this sequence may need to be repeated several times.
  3. **ADJUST HI NEEDLE FOR MAIN OPERATION:** With bar and chain clear of all obstacles, turn the HI needle clockwise until the saw cannot accelerate from idle to wide open throttle at no load. Now turn the HI needle the other way, a little at a time, until the engine accelerates smoothly from idle to wide open throttle without a cutting load. **IMPORTANT:** From this point, *turn the HI needle another 1/2 turn counterclockwise.*

# IGNITION, COOLING AND EXHAUST SYSTEM MAINTENANCE

These are grouped together here because the maintenance can be done at the same time.

1. **SPARK PLUG:** The engine has a miniature, self-sealing tapered seat type Champion #DJ-7J or AC #CS45T. Always check to make sure that the connector boot is firmly pressed on the spark plug. Incorrect engine oil, incorrect fuel mixing, wrong carburetor adjustments or excessive flooding of the engine during starting, will cause deposits to form on the plug electrodes. After many hours of use the plug may also require cleaning and regapping of the electrodes. The firing gap is .025". Always clean the insulator and the electrodes prior to setting the gap. Always bend the side electrode toward the center electrode when setting the gap. Rounded or pitted electrodes should be filed smooth and square to induce the spark to jump the gap.

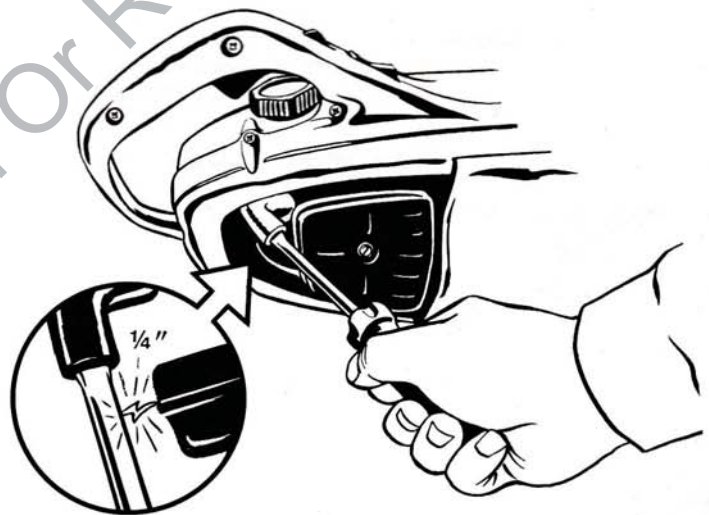


If the spark plug is suspected of being faulty, try a new one in its place. If the new one works, discard the old one. However, the condition of the old plug tells a story about your engine:

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. Keep air intake clean. Also check carburetor adjustment and look for an air leak in fuel system or in engine walls.
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.

2. While the plug is out, the ignition system should be checked to see whether there is a good spark being generated by the magneto:

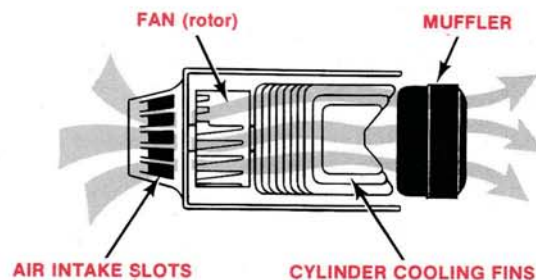
- Using a screwdriver with an insulated handle, insert the tip into the spark plug boot to contact the spring connector inside. If the tip is too wide to fit into the connector, slide it between the connector and the boot.
- Holding the screwdriver well back on the insulated handle, position the screwdriver so there will be an air gap of 1/4" (6mm) between the screwdriver shaft and a metal edge of the muffler.
- With switch turned to "RUN", crank the engine briskly and observe whether a spark jumps the test gap. NOTE: In bright sunlight you can hear the "snap" of a strong spark even though you may not be able to see it.



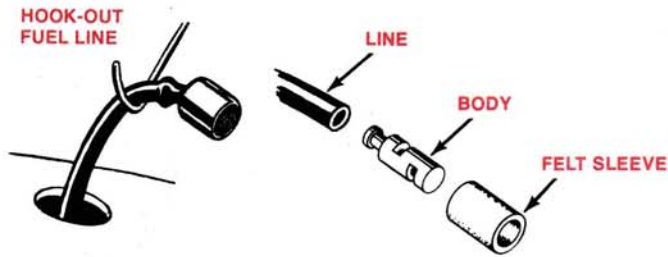
<b>STRONG SPARK</b>	Magneto is O.K.
<b>WEAK OR INTERMITTENT SPARK</b>	Magneto output may be low, or there may be an insulation leak.
<b>NO SPARK</b>	Have ignition checked by your dealer.

4. 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 muffler is reassembled.

3. Cooling air drawn in by the fan, flows between the cylinder fins and is discharged around the muffler. In order for the engine heat to be transferred from the fins to the air, the fins must be clean and the air passage open. Do not let sawdust, leaves and dirt build up in this area. If engine appears heavily clogged, remove the engine cover assembly for complete cleaning (as described on page 16).



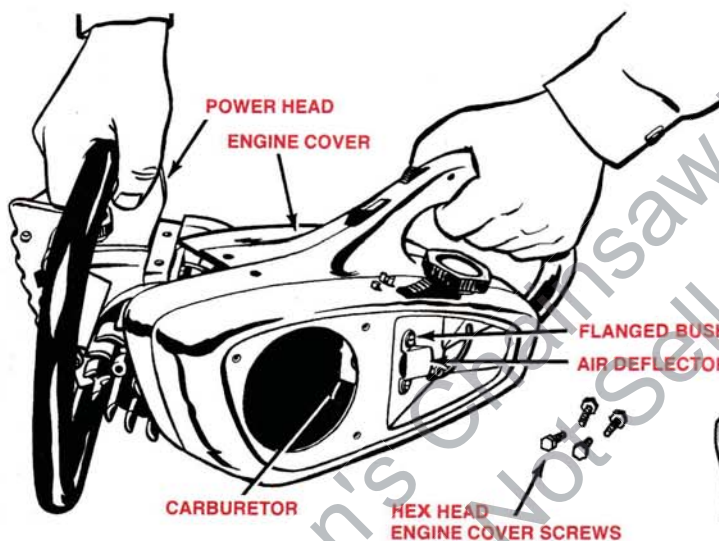
## FUEL TANK AND FILTER



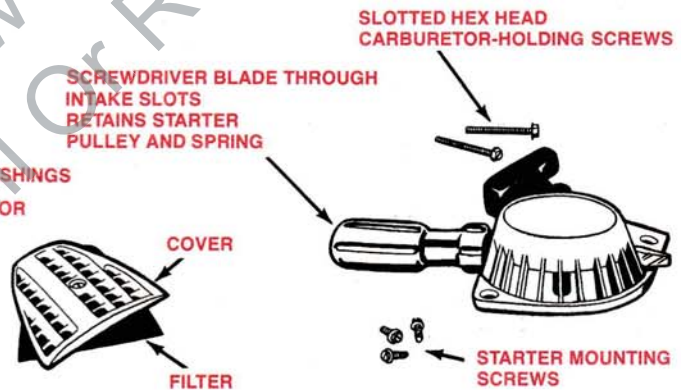
The fuel tank is vented through the fuel filler cap. If passages to or from the valve become plugged, the valve will not operate and the engine will not get enough fuel. The inlet opening is located under the lip of the cap below the aluminum plug on the edge of the cap. Whenever the saw refuses to start, or starts and then loses power, see if

loosening the cap temporarily improves performance. If it does, replace vented cap; if it does not, check for a clogged fuel filter, or for improper carburetor adjustment. The FELT FILTER on the end of the flexible fuel line may be expected to last for many months without clogging. Under unusually dirty operating conditions or if water enters the fuel tank, however, inspect the filter and change as necessary. To remove the filter, remove the fuel cap and fish for the flexible pick-up tube with a hook as shown in the sketch. Gently pull the fuel pick-up out through the filler hole. Pull the fuel pick-up body and sleeve off the flexible fuel line. Then pull the sleeve off the fuel pick-up body. Clean the filter pick-up body, then slide a clean filter sleeve onto the body. Assemble body onto fuel line and drop into the tank.

## REMOVAL AND INSTALLATION OF POWER HEAD



**NOTE:** To avoid unnecessary wear of the threaded holes for the four cover screws, the cover and power head should be separated only when it is necessary to get at the parts inside the cover, or make repairs to the power head or components attached to it.



1. Place a screwdriver blade through the air intake slots of the starter to retain the pulley mechanism in the starter housing. **NOTE:** The starter may be removed if desired, but removal is not required.
2. Remove the air cleaner and cover. Remove the two slotted hex head screws inside the air filter chamber, but **DO NOT REMOVE** the two brass bushings and the deflector because the bushings hold the carburetor and spacer in place inside the engine cover.
3. Using a screwdriver that fits properly, remove the four hex head engine cover screws (two top and two bottom).
4. Nothing else need be done before removal of the engine cover. Grasp the saw by the two handles and exert pressure to work the cover off the engine assembly. The cover contains the fuel system with throttle and choke controls and the fuel line attached to the carburetor. The power head has the chain oiler, clutch and handle bar and the magneto assembly attached to the short block.

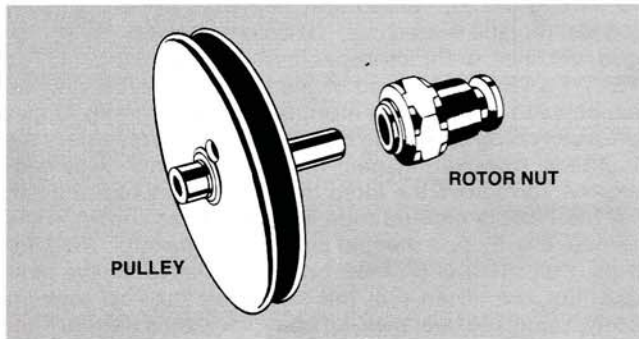
5. To reassemble cover to engine, slide the right, front corners of the cover onto the engine block at top and bottom. Push cover as far forward into place as possible, angle cover to slide it between the handle bar and the magneto. Now jiggle and push it past the magneto into place.

**NOTE:** If the starter assembly was not removed from the engine cover, it may be necessary to guide the starter pulley into the rotor nut while sliding the cover into place.

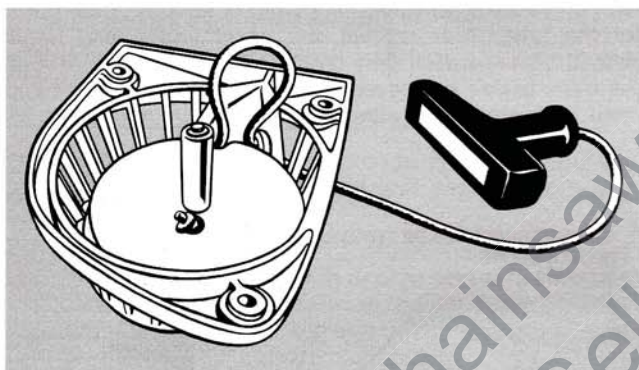
6. To fasten cover to engine, treat the four cover screws with Loctite prior to installation. Torque these screws to 45 pound-inches (52 kg-cm), or about as much as you can hand-tighten them with a blade screwdriver. Now install the two hex head screws to lock the carburetor in place. Tighten these screws to 20 pound-inches (23 kg-cm) minimum. Be sure to fit the air filter and cover back into place properly before tightening the air filter cover screw.

# STARTER REPAIRS

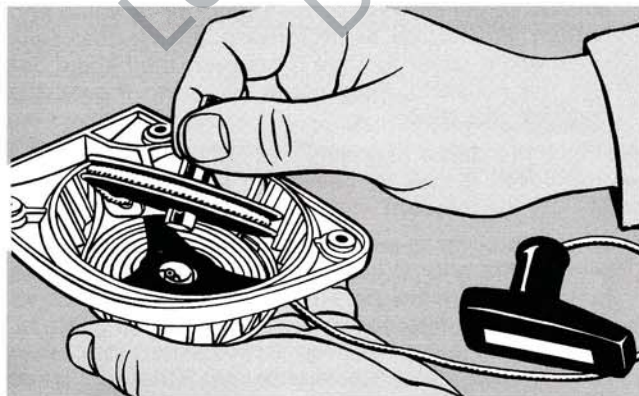
1. Before removing starter, slide a screwdriver blade through the air intake slots to retain the pulley mechanism in the housing. Take out the three slotted, hex head screws and lift starter assembly off the saw.



**NOTE:** Be careful not to let any dirt or sawdust fall into the starter clutch bearing inside the rotor nut on the engine shaft. Whenever the starter is removed, wipe the starter pulley shaft clean and lubricate it with a light film of **HOMELITE ALL-TEMP Multi-Purpose GREASE**. Do not over-grease as this could affect operation of the starter clutch bearing.

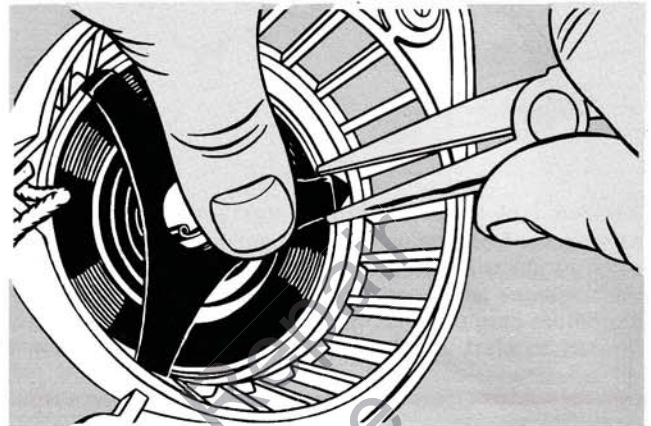


2. To re-tension the starter rope, pull the rope out a short way and hold the pulley from turning. Using the notch in pulley for clearance, pull the rope up between pulley and housing. Wind one or more extra turns onto the pulley and pull rope back into place so it will rewind when pulley is released. **NOTE:** Do not wind more turns on pulley than necessary to draw starter grip up against housing.

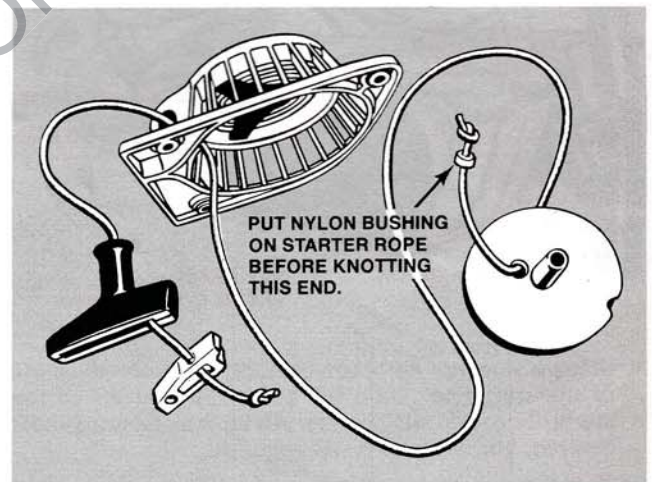


3. If the starter mechanism is to be replaced, pull rope up between pulley and housing and let pulley unwind slowly (or cut rope and unwind pulley if new rope is

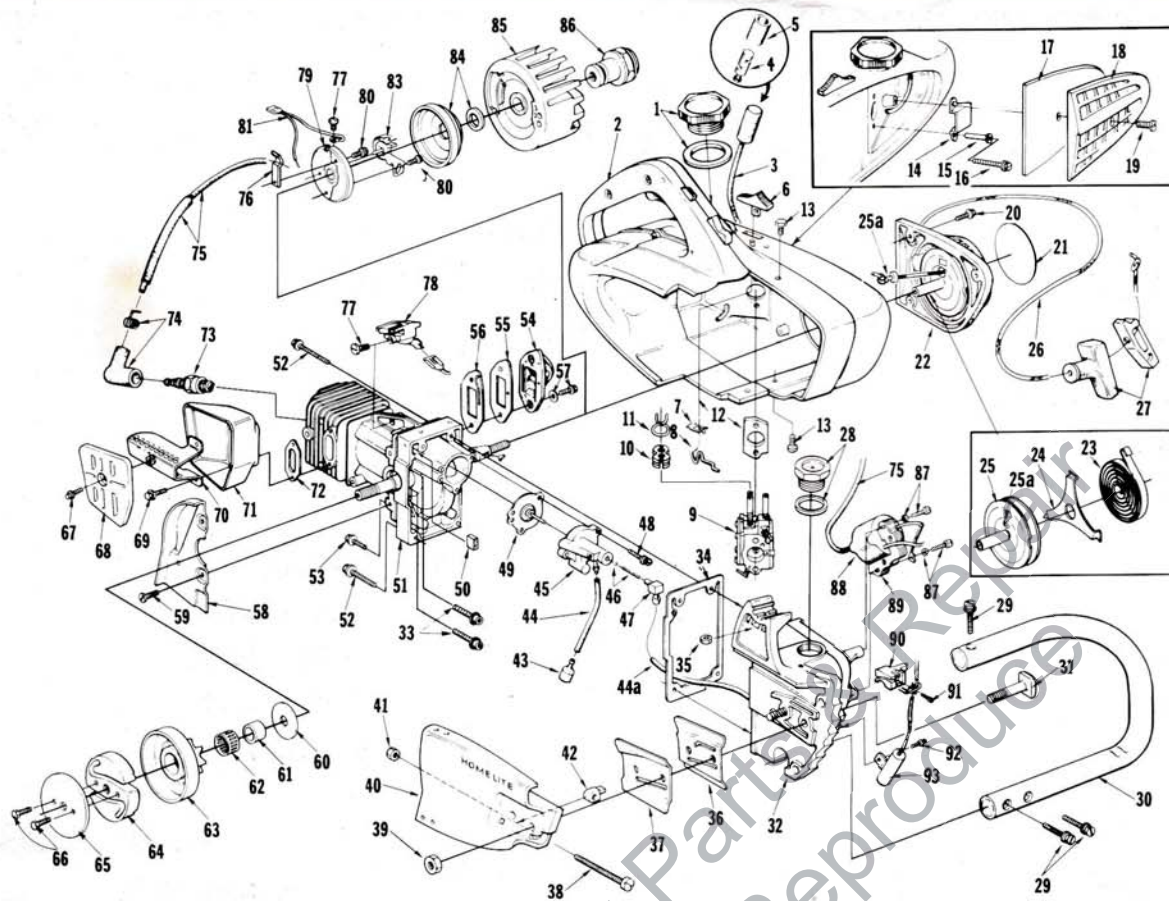
being installed). When all pretension is removed, lift out pulley as follows: Pull out and angle pulley just enough that you can see where inner spring loop engages the pulley. Then push pulley toward loop and angle it until pulley comes free.



4. To remove the spring retainer, press down hard on the center and grasp one of the retainer legs as close to the end as possible (using long nose pliers as shown). Pull this leg out of position, then free the other legs and lift out the retainer. Next, unhook and lift out the rewind spring. **CAUTION:** Tape or tie the spring coils together before disposing of the old spring. Install the new spring so the outer loop points to the left when housing is as shown in the drawing. When installing the spring retainer, press the legs in a little to one side of the original assembly position in the housing.



5. Replace starter components as necessary. To install a new rope, thread rope through knot hole in pulley and tie a simple knot tightly in the pulley end. Pull rope so knot enters the knot hole; and trim off any excess past knot neatly. With pulley *shaft-side-up*, wind rope clockwise onto pulley. Line up inner spring loop with retaining groove of pulley and *angle, push and press* the pulley into position. (You can tell by fit and ability to get tension by rotating pulley whether spring is engaged.) Pass rope through hole in housing, thread rope through starter grip and grip insert. Knot end of rope and pull knot into insert. Draw insert into the grip. Tension starter as in paragraph 2 above. Altogether about 9 turns of tension are required.



- |  |  |   |
|--|--|---|
| 1 FUEL FILLER CAP & GASKET                     | 32 OIL TANK  | 63 SPROCKET & DRUM                              |
| 2 ENGINE COVER                                 | 33 SCREW-socket hd., 8-32 x 1 and washer (4) 40        | 64 "S" CLUTCH 275                               |
| 3 FUEL LINE                                    | 34 OIL TANK GASKET                                     | 65 CLUTCH PLATE                                 |
| 4 FUEL PICKUP BODY                             | 35 NUT-hex center lock, 10-24                          | 66 SCREW-hex hd., stainless, 10-32 x 1/2 (2) 35 |
| 5 FELT SLEEVE                                  | 36 PLATE-inner guide bar                               | 67 SCREW-hex washer hd., 8-32 x 1/2 36          |
| 6 CHOKE BUTTON                                 | 37 PLATE-outer guide bar                               | 68 MUFFLER CAP                                  |
| 7 CHOKE SPRING                                 | 38 SCREW-guide bar adjusting                           | 69 SCREW-hex washer hd., 8-32 x 1/2 (2) 36      |
| 8 CHOKE ROD                                    | 39 NUT-hex, 5/16-18 (2)                                | 70 MUFFLER BAFFLE                               |
| 9 CARBURETOR                                   | 40 DRIVECASE COVER                                     | 71 MUFFLER BODY                                 |
| 10 ADJUSTMENT NEEDLE DETENT                    | 41 NUT-hex center lock, 10-32                          | 72 MUFFLER GASKET                               |
| 11 ADJUSTMENT NEEDLE CLAMP                     | 42 GUIDE BAR ADJUSTING PIN                             | 73 SPARK PLUG-Champion DJ-7J 150                |
| 12 CARBURETOR SPACER                           | 43 OIL FILTER  | 74 SPARK PLUG TERMINAL                          |
| *13 SCREW-hex hd., 10-24 x 1/2 (4) 45          | 44 OIL PICK UP LINE                                    | 75 HI-TENSION LEAD W/SLEEVE                     |
| 14 AIR DEFLECTOR                               | 44a OIL DISCHARGE LINE                                 | 76 HI-TENSION LEAD CLAMP                        |
| 15 FLANGED BUSHING (2)                         | 45 OIL PUMP  | 77 SCREW-pan hd., Plastite, 6 x 3/8 8           |
| 16 SCREW-hex washer hd., 8-32 x 1 1/4 (2) 20   | 46 CHECK VALVE SPRING & BALL                           | 78 INSULATOR with BUSHING & TERMINAL            |
| 17 AIR FILTER                                  | 47 OIL FITTING, 90°                                    | 79 BREAKER BOX with lead wires Installed        |
| 18 COVER-air filter                            | *48 SCREW-hex washer hd., 8-32 x 1/2 (2) 36            | *80 SCREW-pan hd. Plastite, 6 x 3/8 (2) 18      |
| 19 SCREW-cover retaining                       | 49 OIL PUMP PLUNGER                                    | 81 SWITCH GROUND LEAD                           |
| *20 SCREW-hex washer hd., 8-32 x 1/2 (3) 36    | 50 FELT PACKING  | 82 BREAKER POINTS                               |
| 21 DECAL-150 Automatic                         | 51 "SHORT BLOCK" ENGINE                                | 83 BREAKER BOX COVER with SEAL                  |
| 22 STARTER HOUSING                             | *52 SCREW-hex washer hd., 8-32 x 1 1/4 (4) 36          | 84 ROTOR  |
| 23 REWIND SPRING                               | 53 SCREW-hex washer hd., 8-32 x 1/2 (2) 36             | 85 ROTOR NUT                                    |
| 24 REWIND SPRING RETAINER                      | 54 INTAKE MANIFOLD                                     | 86 SCREW for coil & core (2)                    |
| 25 STARTER PULLEY                              | 55 PULSE COVER   | 87 IGNITION COIL                                |
| 25a BUSHING-rolled nylon                       | 56 INTAKE GASKET                                       | 88 COIL CORE                                    |
| 26 STARTER ROPE-48" long                       | *57 SCREW-hex washer hd., 8-32 x 1/2 and washer (2) 36 | 89 JUNCTION BLOCK                               |
| 27 STARTER GRIP & INSERT                       | 58 SAWDUST SHIELD                                      | 90 SCREW-pan hd., 6 x 3/8                       |
| 28 OIL FILLER CAP & GASKET                     | *59 SCREW-pan hd., Taptite, 8-32 x 5/16 (3) 36         | 91 SCREW-pan washer hd., 6-32 x 3/8             |
| *29 SCREW-hex washer hd., 10-24 x 1 1/4 (3) 45 | 60 THRUST WASHER                                       | 92 CONDENSER                                    |
| 30 HANDLE BAR                                  | 61 RACE  |   |
| 31 GUIDE BAR BOLT (2)                          | 62 NEEDLE BEARING                                      |   |

NOTE: NUMBERS PRINTED IN RED GIVE PROPER TIGHTNESS OF FASTENERS IN POUND-INCHES. ASTERISKS DENOTE SCREWS REQUIRING TREATMENT WITH LOCTITE®.

## 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 pulling back the choke button. 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. Do not use any fuel or gasoline older than three months from day of gasoline purchase, unless the gasoline was treated with Sta-Bil® when still fresh. If fuel does not contain Sta-Bil®, drain fuel tank completely of fuel prior to storage.

### TANKFULS OF FUEL CONSUMED IN ENGINE

	1	3	5	15	50	150	300
1. CLEAN THE AIR FILTER	■		●				
2. GREASE POWER TIP BAR NOSE	■			●			
3. SHARPEN CHAIN		■			●		
4. CLEAN GUIDE BAR MOUNTING AREA & OIL DISCHARGE HOLE		■		●			
5. SET DEPTH GAUGES OF CHAIN		■			●		
6. REVERSE GUIDE BAR TOP BOTTOM ON SAW				■		●	
7. CHECK & TIGHTEN LOOSE SCREWS			■		●		
8. CHECK & CLEAN SPARK PLUG				■			●
9. GAP SPARK PLUG TO .025" (.63mm)					■		
10. CHANGE AIR FILTER					■		
11. CHANGE FUEL FILTER					■		
12. CLEAN & GREASE STARTER PULLEY SHAFT					■		
13. CLEAN AND GREASE STARTER REWIND SPRING						■	
14. CLEAN MUFFLER & SPARK ARRESTOR					■		●
15. REMOVE POWER HEAD, AND CLEAN UP EXTERIOR (cylinder fins, etc.)					■		
16. CHECK CLUTCH, CLEAN & GREASE CLUTCH BEARING						■	

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# HOMELITE **TEXTRON**

Homelite Division of Textron Inc.