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MEXICO

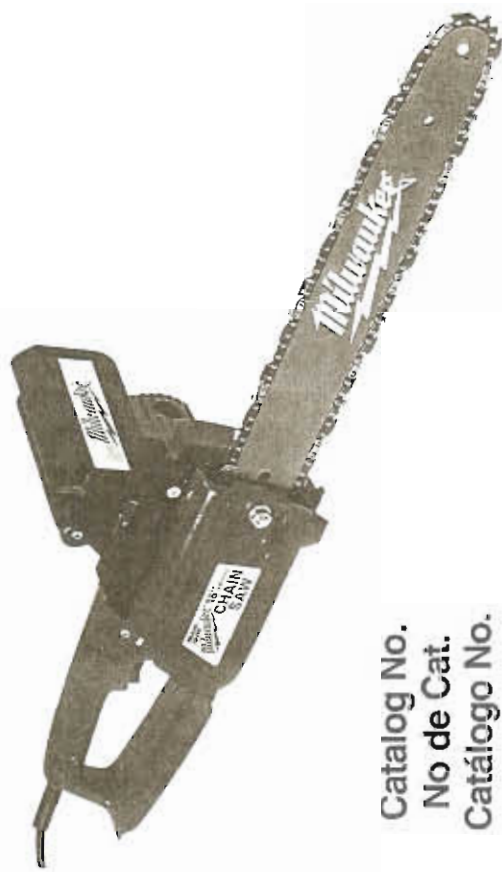
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Fracc. Industrial Puente de Vigas
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MILWAUKEE ELECTRIC TOOL CORPORATION
13135 West Lisbon Road • Brookfield, Wisconsin, U.S.A. 53005



**OPERATOR'S MANUAL
MANUEL DE L'OPÉRATEUR
MANUAL DEL OPERACIÓN**



**Catalog No.
No de Cat.
Catálogo No.**
6215

**HEAVY-DUTY CHAIN SAW
EXTRA ROBUSTE SCIE À CHAÎNE
HEAVY DUTY SIERRA DE CADENA**

TO REDUCE THE RISK OF INJURY, USER MUST READ AND UNDERSTAND OPERATOR'S MANUAL.

AFIN DE RÉDUIRE LE RISQUE DE BLESSURES, L'UTILISATEUR DOIT LIRE ET BIEN COMPRENDRE LE MANUEL DE L'UTILISATEUR.

PARA REDUCIR EL RIESGO DE LESIONES, EL USUARIO DEBE LEER Y ENTENDER EL MANUAL DEL OPERADOR.

GENERAL SAFETY RULES



WARNING!

When using an electric chain saw, always follow basic safety precautions to reduce the risk of fire, electric shock and personal injury.

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE USE. Before use, be sure everyone using this tool reads and understands this manual as well as any labels packaged with or attached to the tool.

- KEEP WORK AREA CLEAN.**
 - Cluttered areas invite injuries.
 - Do not start cutting until you have a clear work area, secure footing, and a planned retreat path from the falling tree.
- CONSIDER WORK AREA ENVIRONMENT.**
 - Use extreme caution when cutting small size brush and saplings because the slender material may catch the saw chain and be whipped toward you or pull you off balance.
 - Do not operate a chain saw in a tree unless specifically trained to do so.
 - When cuffing a limb that is under tension be alert for spring back so that you will not be struck when the tension in the wood fibers is released.
 - Do not expose chain saw to rain.
 - Do not use chain saw in damp or wet locations.
 - Do not use chain saw in presence of flammable liquids or gases.
- GUARD AGAINST ELECTRIC SHOCK.**
 - Prevent body contact with grounded surfaces such as metal pipes or wire fences.
- KEEP CHILDREN AWAY.**
 - Do not let visitors contact chain saw or extension cord.
 - All visitors should be kept away from work area.
- STORE IDLE CHAIN SAW.**
 - When not in use, chain saws should be stored in a dry, high or locked-up place, out of the reach of children.
- KEEP WORK AREA CLEAN.**
 - When storing saw, use a scabbard or carrying case.
- DON'T FORCE CHAIN SAW.**
 - It will do the job better and safer at the rate for which it was intended.
- USE RIGHT TOOL.**
 - Cut wood only.
 - Do not use chain saw for purpose not intended, for example, Don't use chain saw for cutting plastic, masonry, or non-wood building materials.
- DRESS PROPERLY.**
 - Do not wear loose clothing or jewelry. They can get caught in moving parts.
 - Rubber gloves and non-skid footwear are recommended when working outdoors.
 - Wear protective hair covering to contain long hair.
- USE SAFETY EQUIPMENT.**
 - Wear safety glasses, safety footwear, snug fitting clothing, protective gloves, hearing protection and head protection.
- CARRY THE CHAIN SAW BY THE FRONT HANDLE WITH THE SAW STOPPED, FINGER OFF THE SWITCH, THE GUIDE BAR AND SAW CHAIN TO THE REAR.**
- MAINTAIN CHAIN SAW WITH CARE.**
 - Inspect chain saw cords periodically and if damaged, have repaired by authorized service facility.

- Keep cord clear of the chain and operator at all times
- Never carry saw by the cord or pull it to disconnect from receptacle.
- Keep cord from oil and sharp edges.
- Inspect extension cords periodically and replace if damaged.
- Keep tools sharp and clean for better and safer performance.
- Follow instructions for lubricating and changing accessories.
- Keep handles dry, clean, and free from oil and grease.

12. DISCONNECT CHAIN SAW WHEN NOT IN USE, BEFORE SERVICING, AND WHEN CHANGING ACCESSORIES AND ATTACHMENTS, SUCH AS SAW CHAIN AND GUARD.

13. OUTDOOR USE EXTENSION CORDS.

- Use only extension cords intended for use outdoors and so marked.

14. STAY ALERT.

- Watch what you are doing.
- Use common sense.
- Do not operate chain saw when you are tired.
- Keep all parts of the body away from the saw chain when the motor is operating.
- Before you start the saw, make sure the saw chain is not contacting anything.

15. CHECK DAMAGED PARTS.

- Before further use of the chain saw, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function.
- Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation.
- A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual.
- Have defective switches replaced by

- authorized service center.
- Do not use chain saw if switch does not turn it on and off.
- Do not 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 trigger is released.
- When servicing use only identical replacement parts.

16. GUARD AGAINST KICKBACK.

- **WARNING: KICKBACK** may occur when the nose or tip of the guide bar louches an object (Fig. 1), or when

Fig. 1



the wood closes in and pinches the saw chain in the cut (Fig. 2).

Fig. 2



- Tip contact in some cases may cause a lightning fast reverse reaction, kicking the guide bar up and back towards the operator. Pinching the saw chain along the top of the guide bar may push the guide bar rapidly back towards the operator. Either of these reactions may cause you to lose control of the saw which could result in serious injury to user.
- The following precautions should be followed to minimize kickback:
 - A. Grip Saw Firmly.
 - B. Hold the chain saw firmly with both hands when the motor is running. Use a firm grip with thumbs and fingers encircling the chain saw handles. (Fig. 3)

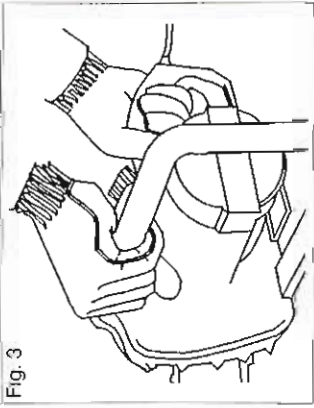


Fig. 3

- C. Do not over reach.
- D. Keep proper footing and balance at all times.
- E. Do not let the nose of the guide bar contact a log, branch, ground or other obstruction.
- F. Do not cut above shoulder height.
- G. Use devices such as low kickback chain, guide bar nose guards, chain brakes and special guide bars that reduce the risks associated with kickback.
- H. Only use replacement guide bars and chains specified by the manufacturer or the equivalent.

17. POWER SUPPLY

- Connect chain saw to correct voltage, that is, be sure that the voltage supplied is the same as that specified on the nameplate of the tool.

READ AND SAVE ALL INSTRUCTIONS FOR FUTURE REFERENCE.

DOUBLE INSULATED TOOLS: TOOLS WITH TWO PRONG PLUGS!

DOUBLE INSULATED TOOLS are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.

Double Insulated tools may be used in either of the 120 volt outlets shown in figures A or B.



Fig. A

Fig. B

EXTENSION CORDS

Grounded tools require a three wire extension cord. Double insulated tools can use either a two or three wire extension cord. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. Refer to the table to determine the required minimum wire size.

The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. When using more than one extension cord to make up the total length, be sure each cord contains at least the minimum wire size required. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum wire size.

Recommended Minimum Wire Gauge for Extension Cords*

Nameplate Amperes	Extension Cord Length					
	25'	50'	75'	100'	150'	200'
0 - 5	16	16	16	14	12	12
5.1 - 8	16	16	14	12	10	--
8.1 - 12	14	14	12	10	--	--
12.1 - 15	12	12	10	10	--	--
15.1 - 20	10	10	10	--	--	--

*Based on limiting the line voltage drop to five volts at 150% of the rated amperes.

Guidelines for Using Extension Cords

- If you are using an extension cord outdoors, be sure it is marked with the suffix "W-A" ("W" in Canada) to indicate that it is acceptable for outdoor use.
- Be sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it.
- Protect your extension cords from sharp objects, excessive heat and damp or wet areas.

- Keep the extension cord away from the cutting area.
- Keep the cord from being tangled in branches or other things during cutting.

CHAIN SAW TERMINOLOGY

Bucking

The process of cross cutting a felled tree or log into lengths.

Chain Brake

A device used to stop the chain saw.

Chain Saw Powerhead

A chain saw without the saw chain and guide bar.

Clutch

A mechanism for connecting and disconnecting a driven member to and from a rotating source of power.

Drive Sprocket or Sprocket

The toothed part that drives the saw chain.

Felling

The process of cutting down a tree.

Felling Back Cut

The final cut in a tree felling operation made on the opposite side of the tree from the notching undercut.

Front Handle

The support handle located at or toward the front of the chain saw.

Front Handle Guard

A structural barrier between the front handle of a chain saw and the guide bar, typically located close to the hand position on the front handle and sometimes employed as an activating lever for a chain brake.

Guide Bar

A solid railed structure that supports and guides the saw chain.

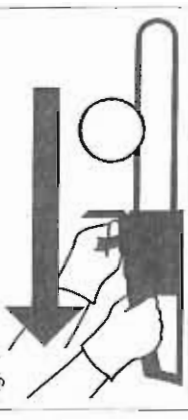
Kickback

The backward or upward motion, or both of the guide bar occurring when the saw chain near the nose of the top area of the guide bar contacts any object such as a log or branch, or when the wood closes in and pinches the saw chain in the cut.

Kickback, Pinch (Fig. 4)

The rapid push back of the saw which can occur when the wood closes in and pinches the moving saw chain in the cut along the top of the guide bar.

Fig. 4



Kickback, Rotational (Fig. 5)

The rapid upward and backward motion of the saw which can occur when the moving saw chain near the upper portion of the tip of the guide bar contacts an object, such as a log or branch

Fig. 5



Low-Kickback Chain

A chain that complies with the kickback performance requirements of ANSI B175.1-1991 when tested on a representative sample of chain saws.

Normal Cutting Position

Those positions assumed in performing the bucking and felling cuts.

Notching Undercut

A notch cut in a tree that directs the tree's fall.

Oiler Control

A system for oiling the guide bar and saw chain.

Rear Handle

The support handle located at or toward the rear of the saw

Reduced Kickback Guide Bar

A guide bar which has been demonstrated to reduce kickback significantly.

Replacement Saw Chain

A chain that complies with the kickback performance requirements of ANSI B175.1-1991 when tested with specific chain saws. It may not meet the ANSI performance requirements when used with other saws.

Saw Chain

A loop of chain having cutting teeth, that cut the wood, and that is driven by the motor and supported by the guide bar.

Spiked Bumper (Spike) (Fig. 6A)

The pointed tooth or teeth for use when felling or bucking to pivot the saw and maintain position while sawing.

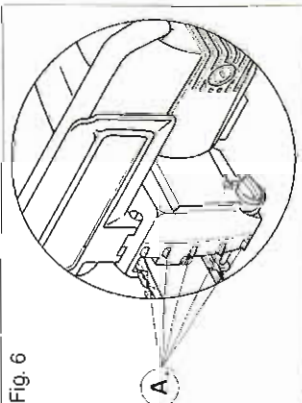


Fig. 6

Switch Linkage

The mechanism that transmits motion from a trigger to the switch.

Switch (Fig. 7A)

A device that when operated will complete or interrupt an electrical power circuit to the motor of the chain saw.

Switch Lockout (Fig. 7B)

A movable stop that prevents the unintentional operation of the switch until manually actuated.

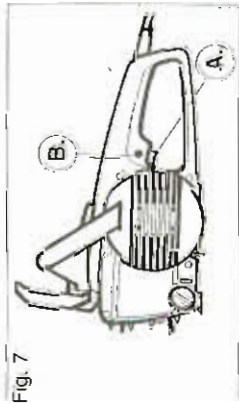


Fig. 7

ASSEMBLY

WARNING!

Always unplug the saw before performing any assembly, adjustments, maintenance or service. Contact a MILWAUKEE service facility for ALL repairs.

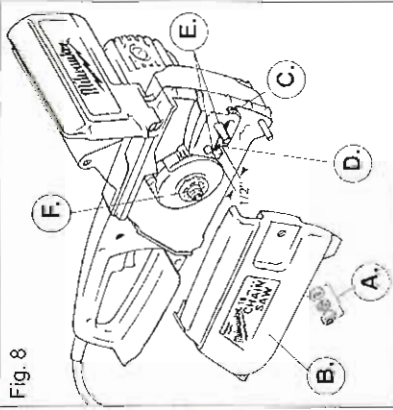
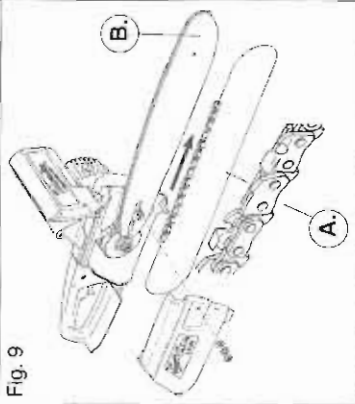


Fig. 8

Mounting the guide bar and chain to the power head unit

1. Remove retaining nut and washers (Fig. 8A) and remove the sprocket cover (Fig. 8B).
2. Adjust the chain tensioning screw (Fig. 8C) so that the chain tensioning pin (Fig. 8D) is about 1/2" from the sprocket side of the slot as shown.
3. Fit guide bar onto the two mounting studs (Fig. 8E) and fit the chain tensioning pin (Fig. 8D) into the smaller hole in the guide bar.
4. Fit chain over the drive sprocket (Fig. 8F) with the cutting edges facing the direction of rotation (Fig. 9A).
5. Fit the chain into the groove in the top of the guide bar, start from the back and work toward the front. Rotate the nose sprocket (Fig. 9B) if necessary.
6. Replace sprocket cover.

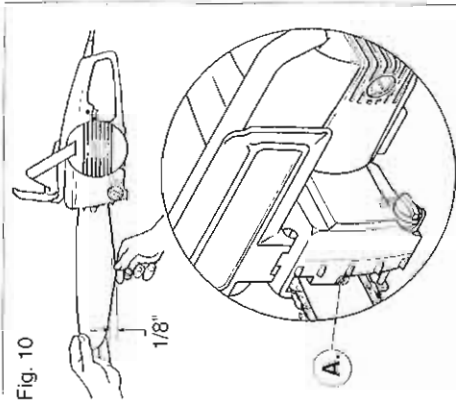
Fig. 9



Adjusting chain (Fig. 10)

1. Loosen retaining nut on sprocket cover and retighten finger tight.
2. Remove slack in chain by pulling up on nose and adjusting the tensioning screw (Fig. 10A) so that the chain touches the bottom of the guide bar along the entire length.
3. While supporting the saw by the nose, pull down on chain. If the chain will clear the guide bar by about 1/8" and snap back to the bottom of the guide bar, the chain is properly tensioned. Tighten retaining nut firmly with the wrench provided.
4. Run the saw without cutting, unplug the saw and recheck the tension before use.

Fig. 10



NOTE: Too much tension will burn the guide bar and damage the chain. Too little tension will allow the chain to leave the guide bar and may cause personal

injury. A new chain will stretch when used and will require readjustment later

OPERATION

WARNING!

Always unplug the saw before attaching or removing accessories. The use of any accessory other than those specifically recommended for use with this saw may be hazardous.

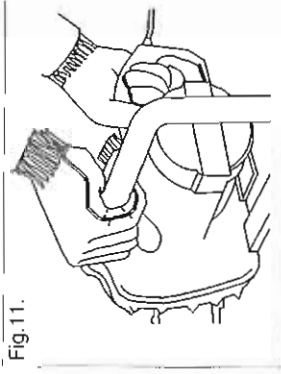
Cutting with the chain saw

This chain saw is designed to cut wood and wood products only. Do not use this saw to cut wood or wood products if nails, screws, metal plates, or any other material other than wood is in the material. You may damage the tool and may cause personal injury.

Holding the chain saw

Always grip each handle with the thumb and fingers encircling the handle as shown in Fig. 11.

Fig. 11.



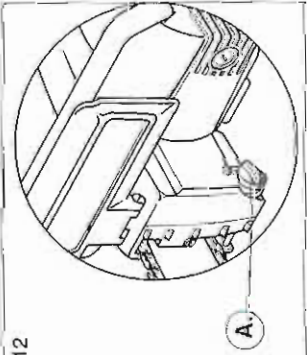
Using the chain saw

Always be sure of your footing and hold the chain saw firmly with both hands while the motor is running.

Chain oil

Proper lubrication prolongs chain and guide bar life. In warm weather use a SAE-30 weight oil. In colder weather use SAE-20 or SAE-10 weight oil. Use only clean oil to prevent damage to the automatic oiler. Un-screw the cap (Fig. 12A) and fill oil tank before use.

Fig. 12



Automatic oiler

Catalog number 62115 Chain Saw is equipped with an automatic oiler. The oiler is preset at the factory to provide continuous guide bar lubrication while the saw is running. To check if oiler is working properly, hold the nose of the chain saw about 4" from the log and run the chain saw. If the oiler is working properly the log should be spotted with oil.

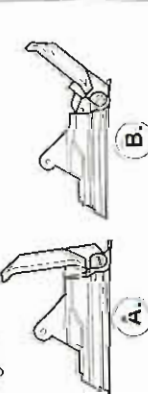
Chain brake

The chain saw is equipped with a brake that is actuated by the movement of the hand guard/brake. The movement of the hand guard/brake opens a spring loaded switch that interrupts the power and mechanically stops the chain until the hand guard/brake is returned to the operating position.

NOTE: Do not attempt to remove the chain brake from the saw. Using the chain saw without a chain brake will prohibit the user's ability to stop the chain abruptly and may increase the risk of personal injury.

- Fig. 13A shows the hand guard/brake in the operating position.
- Fig. 13B shows the hand guard/brake in the braking position.

Fig. 13



Adjusting chain brake

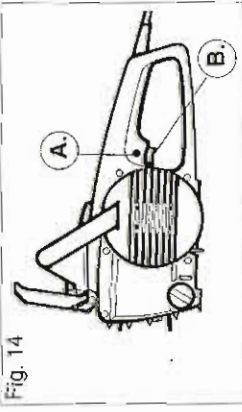
The brake should be checked for normal operation before each period of use. Simply push the hand guard/brake into the braking position.

If the brake doesn't stop the chain abruptly when it is applied, the brake needs adjusting. Take the saw to an authorized MILWAUKEE service center for repair and/or adjustment.

Starting and stopping the chain saw

- To start the chain saw, push in the lock-out button (Fig. 14A) and pull the trigger (Fig. 14B).
- To stop the chain saw, release the trigger.

Fig. 14



APPLICATIONS

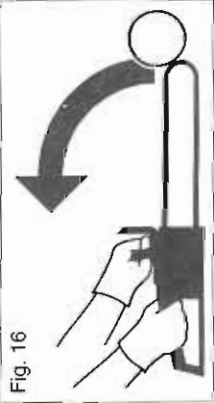
Beware of Kickback

"Kickback" is the term used to describe the sudden, rapid backward and/or upward motion of the chain and guide bar. Pinch Kickback (Fig. 15) is the rapid backward movement of the saw which can occur when the wood closes in and pinches the moving saw chain in the cut along the top of the guide bar. Rotational Kickback (Fig. 16) is the rapid upward and backward motion of the saw which can occur when the moving saw chain near the upper portion of the tip of the guide bar contacts an object, such as a log or branch.

Fig. 15



Fig. 16



Reducing the chance kickback

- Use recommended guide bar and chain, others may not reduce kickback.
- Make sure chain is sharp and properly lubricated. Dull, improperly sharpened, and/or unlubricated chains can cause kickback.
- Allow saw to come to full speed before applying it to the cut.
- Keep saw running when removing it from the cut.

Reducing the chance of pinch kickback

Always try to cut in a downward motion, with the bottom side of the chain and guide bar. This will reduce the chance of kickback in two ways:

- If you are cutting downward on branches or bucked logs, the cut will tend to open up as you go and reduce the chance of pinching the chain and guide bar
- If the guide bar and chain are pinched the saw will tend to be pulled into the wood and not thrown toward you.

Reducing the chance of rotational kickback

- Do not cut with the tip of the guide bar.
- Check the work area and avoid accidentally brushing the tip against wood. Cut one piece of wood at a time and check to make sure that while cutting one piece that the nose doesn't accidentally come in contact with another piece of wood or other obstruction.

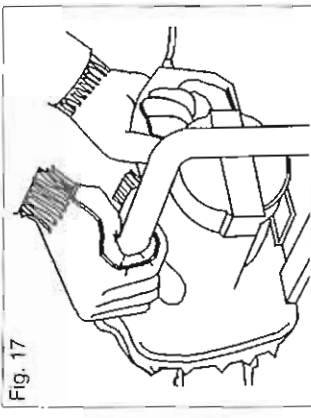
Preparing for Kickback

The operator should do everything possible to reduce the chance of kickback (see above). The operator should also do everything possible to be prepared for kickback if it occurs.

Correct grip

The correct grip will help the operator keep control of the saw. Fig. 17 shows the correct grip on the saw with the thumb and fingers encircling the front handle.

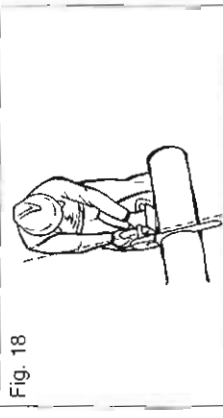
Fig. 17



Body position (Fig. 18)

- Plant feet firmly on solid ground.
- Hold saw with left arm straight with elbow locked.
- Stand to left side of cut, out of the kickback path of the saw.
- Cut within a comfortable controlled reaching distance at chest height or below.

Fig. 18



Basic cuts

1. Support log in a stable position.
2. Check for adequate clearance for cut.
3. Allow saw to come to full speed before cutting.

Overbucking, or cutting down through log (Fig. 19)

1. Place lower end of spiked bumper against the log.
2. Pivot saw into the cut and allow it to cut its way down.

3. Reposition spiked bumper lower down and repeat working down the log until through the cut.



Underbucking, or cutting up from the bottom of a log (Fig. 20)

Most cuts should be made according to the overbucking instructions. But, in some situations, it may be necessary to cut with the top of the guide bar.

1. Be prepared for a "pushing" action from the saw. Keep in mind instructions listed under "preparing for kickback".
2. Allow saw to come to full speed.
3. Lift the saw into the cut in a controlled motion.



Felling a Tree

Work area

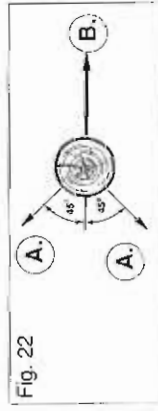
- Do not fell trees by roads, power lines, or buildings without permission from appropriate authorities. Traffic control or other preparations may be necessary. If a felled tree contacts a power line do not go near it. Notify the power company and provide a warning for others.
- Keep bystanders, coworkers, pets etc. at a distance at least twice the height of the tallest tree being felled (Fig. 21).



- When bucking and felling operations are being performed by two or more persons at the same time, the felling operation should be separated from the bucking operation by a distance of at least twice the height of the tree being felled.
- Check intended cut area for nails, fence wire, stones etc. and remove these materials before cutting.

Retreat path

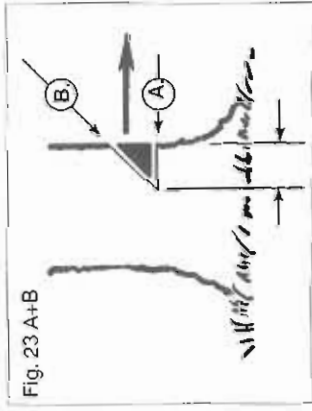
- Before beginning to fell a tree, clear retreat paths (Fig. 22A) at 45° angles to the line of the fall (Fig. 22B).



- The operator should be on the uphill side of the terrain when felling a tree. Toward the end of the cut, be prepared for the tree to roll or slide down the hill.
- The wind speed and direction and the shape of the tree and its limbs will affect the direction of the fall. If unsure of any this information, call a professional for help.

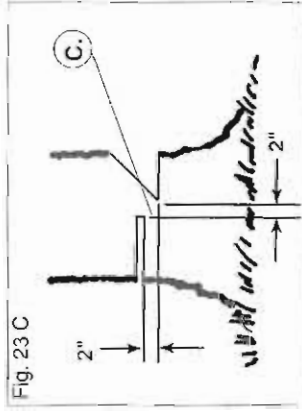
Notching

1. Make a lower horizontal notching cut about 1/3 of the way through the tree (Fig. 23A). This will help to avoid pinching of the saw chain or guide bar when the second cut is made.
2. Make an angled cut to finish the notch (Fig. 23B).



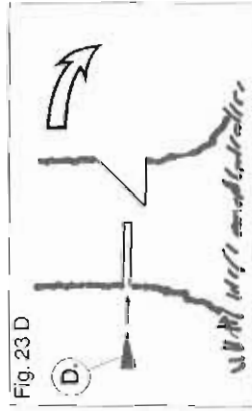
Felling back cut

1. Make a horizontal felling back cut 2" above the initial notching cut so that there will be a 2" "hinge" (Fig. 23C) created in the tree. Do not cut through the hinge. The hinge prevents the tree from twisting and falling in the wrong direction when felled



NOTE: When cutting larger diameter trees, as the felling back cut progresses, drive nonmetallic (wood or plastic) wedges into the felling back cut (Fig. 23D). These wedges help to keep the felling back cut open and reduce the risk of the tree "leaning back" onto the guide bar and chain. Continue to add wedges as needed until felling back cut creates the 2" "hinge" as shown in Fig. 23C.

2. Usually the tree will begin to fall as you complete the felling back cut. However if it does not, remove the saw and drive nonmetallic wedges (Fig. 23D) into the felling back cut until the tree begins to fall.



3. Remove the saw from the cut, stop the motor and put the saw down. Watch out for falling limbs and move away from falling tree following the retreat path. Watch your footing as you move away from the tree.

Limbing a tree

"Limbing" is removing the branches from a fallen tree.

1. Cut the smaller upper limbs of the tree first and let the larger lower limbs hold the tree off of the ground.
 2. Cut limbs under tension in a direction so that the tension causes the cut to open up rather than pinch the chain and guide bar.
- Usually this means cut limbs under tension from the bottom as shown in Fig. 24A.



3. Do not remove the larger supporting limbs until the tree is bucked into shorter logs. See directions below.

Bucking a log

When bucking a log, (cutting it into lengths) it is important to make sure your footing is firm and your weight is evenly distributed. In general, try to have the log raised and supported near the cut. Having the log raised and supported near the cut will reduce binding and kickback.

If bucking log on hill (Fig. 25)

The operator should be on the uphill side of the cut so when the cut off piece rolls, it rolls away from the operator. Do not let the chain come into contact with the ground. Toward the end of the cut reduce cutting pressure, maintain firm grip, and be prepared for log to roll away from the saw and the operator.

