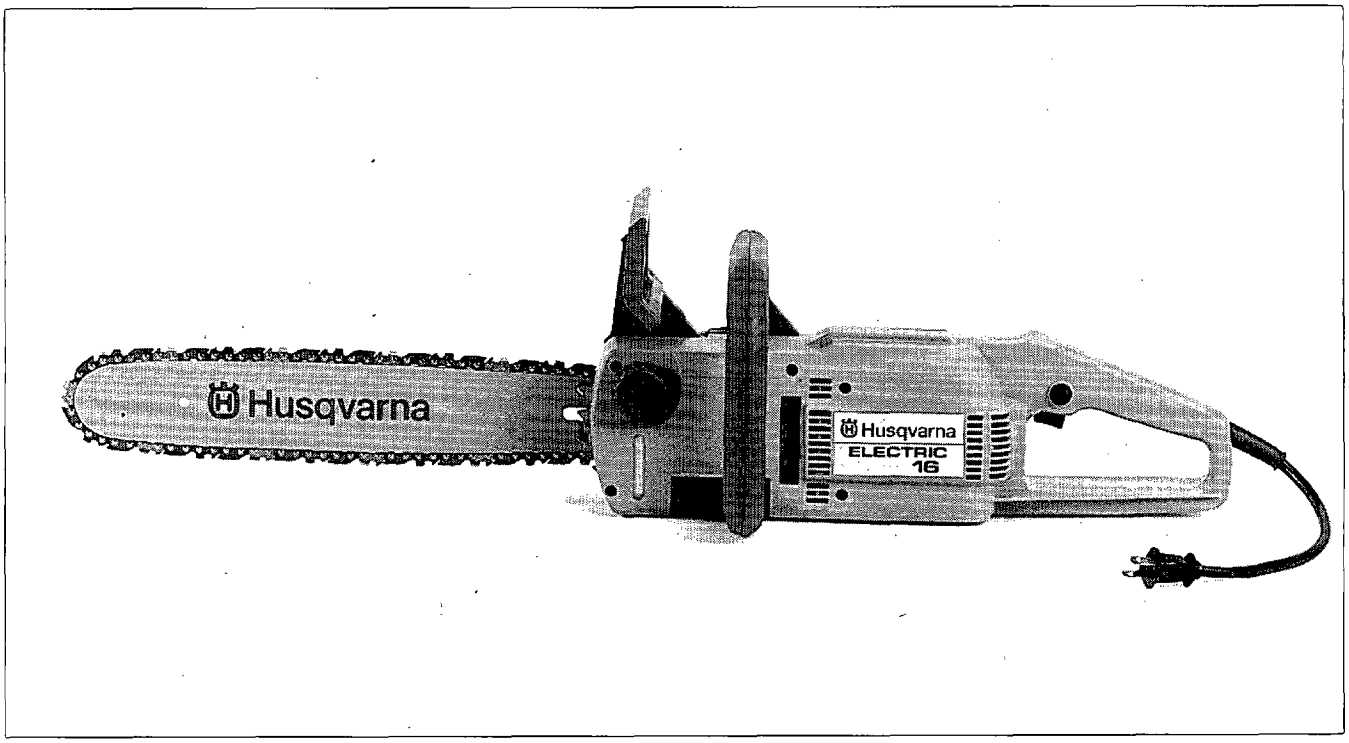
Husqvarna



Electric 16

Operator's manual
Manuel d'utilisation
Manual del operador
Manual do operador

101 87 32-61

Before using your new electric chain saw

- **Read the Operator's Manual carefully.**
- Check the assembly and adjustment of the cutting equipment.
- The electric chain saw is designed for use with a 120V AC mains supply. Always pull out the plug before fitting any parts or adjusting the saw.
- Do not start sawing until a sufficient amount of chain oil has reached the chain.

Index

Safety symbols

The following safety symbols are found throughout this manual and are designed to make you aware of potential hazards or unsafe practices.

WARNING

WARNING - Hazards or unsafe practices which could result in severe personal injury or death.

⚠ CAUTION

Caution - Hazards or unsafe practices which could result in minor personal injury.

IMPORTANT

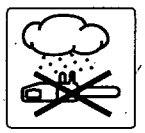
IMPORTANT - Hazards or unsafe practices which could result in product or property damage.

Symbols explaination

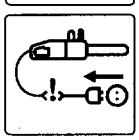
WARNING! The electric chain saw can be dangerous! Careless or improper use can cause serious or even fatal injury.

"Read All Instructions"
Read and Understand the Operator's Manual before using the electric chain saw.

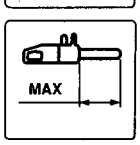
Always wear:
• safety helmet • ear protection • visor or goggles



Must not be subject to rain or damp.



Unplug immediately if cable is damaged.



Maximum permissible bar length.

WARNING! when using an electric chain saw, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following.

Safety Precautions

Safety precautions for electric chain saw users

Kickback safety precautions

WARNING!

KICKBACK may occur when the nose or tip of the guide bar touches an object, or when the wood closes in and pinches the saw chain in the cut.

- 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 personal injury.

Do not rely exclusively upon the safety devices built into your saw. As an electric chain saw user, you should take several steps to keep your cutting jobs free from accident or injury.

1. With a basic understanding of kickback, you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.
2. Keep a good firm grip on the saw with both hands, the right hand on the rear handle, and the left hand on the front handle, when the motor is running. Use a firm grip with thumbs and fingers encircling the electric chain saw handles. A firm grip will help you reduce kickback and maintain control of the saw. Don't let go.
3. Make sure that the area in which you are cutting is free from obstacles. Do not let the nose of the guide bar contact a log, branch, or any other obstacle which could be hit while you are operating the saw.
4. Cut at high motor speeds.
5. Do not overreach or cut above shoulder height.
6. Follow manufacturer's sharpening and maintenance instructions for the saw chain.
7. Only use replacement bars and chains specified by the manufacturer or the equivalent.

Kickback Safety Features

1. Reduced-Kickback Guide Bar, designed with a small radius tip which reduces the size of the kickback danger zone on the bar tip.
   A Reduced Kickback Guide Bar is one which has been demonstrated to significantly reduce the number and seriousness of kickbacks when tested in accableance with the safety requirements for electric chain saws as set by UL 1662.
2. Low-Kickback Chain, designed with a contoured depth gauge and guard link which deflect the kickback force and allow wood to gradually ride into the cutter. Low-Kickback Saw Chain is chain which has met the kickback performance requirements of ANSI B175.1
3. Handguard, designed to reduce the chance of your left hand contacting the chain if your hand slips off the front handle.
4. Position of front and rear handles, designed with distance between handles which provides better control, balance, and resistance if kickback occurs.
5. Chain Brake. The chain brake is designed to stop the saw chain if activated while the saw chain is running.

WARNING!

Do not mount any bow guide on the electric chain saw. Any electric chain saw equipped with a bow guide is potentially very dangerous. The electric chain saw is not designed for use with a bow guide. Use of a bow guide on an electric chain saw is more hazardous because the bow guide may contact the cable, causing loss of control and the potential for electric shock.

To enhance safe operation your electric chain saw is equipped with the following important safety devices:

- Chain brake
- Power trigger lockout
- Rear hand guard
- Chain catcher

Do not operate your saw unless all those safety devices are properly installed and operating. Operating your saw without any of those safety device increases the risk for injuries to yourself or others.

Do not use any other guide bar and chain combination that is not equivalent to the original equipment. Failure to follow these instructions can result in serious injury.

Worn or damaged saw chain or guide bar may break and cause serious injury or death. Replace entire saw chain if it is damaged or broken.

File and maintain saw chain according to manufacturer's instruction. A misfiled saw chain may increase the chains propensity for kickback. Kickback could lead to serious injury or death.

Safety Precautions

Other Safety Precautions

WARNING!

Do not operate an electric chain saw with one hand! Serious injury to the operator, helpers, bystanders or any combination of these persons may result from one-handed operation. An electric chain saw is intended for two-handed use.

1. Do not operate an electric chain saw when you are fatigued.
2. Use safety footwear; snug-fitting clothing; protective gloves; eye, hearing, and head protection devices.
3. Do not allow other persons to be near the electric chain saw when engaging the power trigger or cutting. Keep bystanders and animals out of the work area.
4. Do not start cutting until you have a clear work area, secure footing, and a planned retreat path from the falling tree.
5. Avoid body contact with the chain anytime the saw is plugged into a power source.
6. Before you start the motor, make sure that the saw chain is not contacting anything.
7. Carry the electric chain saw with the motor stopped, the finger **OFF** the power trigger, the guide bar and saw chain to the rear and away from your body.
8. Do not operate an electric chain saw that is damaged, or not completely and securely assembled.
9. Release the power trigger and make sure that the saw chain is stopped before setting the electric chain saw down.
10. 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.
11. 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.
12. Keep the handles dry, clean, and free of oil.
13. Consider work area environment. Keep work area well lit. Don't expose your electric chain saw to rain. Don't use this or any other electric power tool in damp or wet locations. Don't use electric power tools in presence of flammable liquids or gases.
14. Do not operate an electric chain saw in a tree unless you have been specifically trained to do so.
15. Do not operate an electric chain saw above shoulder height.
16. When transporting your electric chain saw, use the appropriate guide bar scabbard.
17. Cut wood only. Do not cut metal, plastics, masonry,non-wood building materials, etc. Do not use your saw to pry or shove away limbs, roots, or other objects.
18. Do not force the saw through a cut. Exert light pressure only. Pressure on the saw at the end of a cut could cause loss of control when the cut is completed.
19. Unplug the power connection when the saw is not in use.
20. Do not make any adjustment to your electric chain saw without disconnecting the saw from the power supply; also the power cable should be disconnected when saw is being carried any distance, or is not in use.
21. Connect electric chain saw to the correct voltage.
22. Make sure your extension cable is in good condition. The cable should be an approved outdoor type. When using an extension cable, be sure to use one heavy enough to carry the current your tool will draw. An undersized cable will cause a drop in the line voltage resulting loss of power and overheating. The wire gauge should not be less then 14 A.W.G/ 2 x 1 mm^2. A ground fault protector is recommanded.
23. Keep the cable clear of the chain and operator at all times. **NEVER** carry the electric chain saw by the cable.
24. **Defective power trigger and/or power trigger lockout. DO NOT** use the electric chain saw if these parts are defective and/or does not turn the electric chain saw **ON** or **OFF**. **Contact your Authorized Service Dealer.**
25. Unplug the saw before servicing or changing accessories.
26. Your electric chain saw is double insulated to help protect against electric shock.
27. Have all electric chain saw service (other then the service described in the maintenance section of this manual) performed by your Authorized Service Dealer.
28. Make certain that all hand tools are removed from the saw before connecting the saw to the power source.
29. Store the saw unplugged in a dry place out of the reach of children and with the appropriate guide bar scabbard mounted.
30. When servicing always use Husqvarna original spareparts.

Safety Precautions

Safety Precautions for Electric Tools

Double insulation

1. Your electric chain saw is double insulated to help protect against electric shock. A double insulated tool is constructed throughout with two separate "layers" of electrical insulation or one double thickness of insulation between the operator and the electrical system of the tool.
2. Tools that are double insulated do not use a grounded (three-pronged) plug. Your saw can be plugged into any conventional 120 Volt electrical outlet. We recommend a ground fault protector as an extra safety measure whenever you use your electric chain saw or any similar power tool.
3. Safety precautions must be observed when operating any electrical tool. The double insulation system only supplies added protection against injury resulting from a possible electrical insulation failure within the saw.

Power source and extension cable

1. Power source
   Use only an AC voltage supply identical to that shown on the name plate of the saw to power this electric chain saw.

> **STOP WARNING!**
> All electrical repairs to this saw, including housing, trigger, motor, etc., must be diagnosed and repair by your Authorized Service Dealer. Failure to do so can cause the double insulation construction to become ineffective and result in serious injury.

2. Extension cable
   The extension cable used to reach the power source must be:
   Specifically marked as suitable for outdoor use. The suffix, W-A, must be included on the cable label.
   Heavy enough (see table) **to carry the current from the power source to the distance at which the saw is to be used.** Otherwise, loss of power and overheating can occur causing damage to the unit.

Ext. cable lenght (feet)	25	50
Wire gauge	14	12

A cable length longer then 50 feet is not recommended.

In good condition. Cord insulation must be intact with no cracks or deterioration. Plug connectors must be undamaged.

3. Important points

a) **Secure the tool cable to the extension cable** by making a knot to prevent disconnection.

b) **Do not abuse cables.** Never carry saw by the power cable or yank it to disconnect. Keep tool cable and extension cable away from heat, oil, and sharp edges.

c) **Avoid entanglement.** Keep cables clear of operator, saw chain, and branches at all times.

d) **Inspect electric chain saw and extension cables before each use.** Do not use a unit with a damaged cable. Take the unit to your Authorized Service Dealer for repairs.

e) **Guard against electric shock.** Avoid body contact with any grounded conductor, such as metal pipes and wire fences.

f) **Consider work area environment.** Keep work area well lit. Don't expose your electric chain saw to rain. Don't use this or any other electric power tool in damp or wet locations. Don't use electric power tools in presence of flammable liquids or gases.

> **⚠ CAUTION!**
> Exposure to vibrations through prolonged use of hand tools could cause blood vessel or nerve damage in the fingers, hands, and wrists of people prone to circulation disorders or abnormal swellings. Prolonged use in cold weather has been linked to blood vessel damage in otherwise healthy people. If symptoms occur such as numbness, pain, loss of strength, change in skin color or texture, or loss of feeling in the fingers, hands, or wrists; discontinue the use of this tool and seek medical attention. Users who operate power tools on a continual and regular basis must monitor closely their physical condition and condition of this tool.
>
> If you experience any discomfort in your fingers, hands, wrists or arms, you should discontinue any work with ALL VIBRATING TOOLS. See your doctor for medical advice.

SAVE THESE INSTRUCTIONS

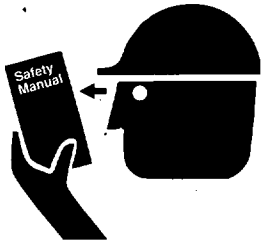
GENERAL SAFETY

General Safety Precautions

WARNING

A electric chain saw is designed to cut wood, and can be dangerous. Careless or improper use can cause serious or even fatal injury.

It is important that you fully understand the contents of this manual, and that you allow only competent adults who understand the information in this manual to operate your electric chain saw. It is your responsibility to make sure that any people who use your electric chain saw have read and understood this manual.



WARNING

Safety is your responsibility. Read and understand this manual before operating your electric chain saw. If you have any questions, see your local dealer.

WARNING

Do not modify the equipment for any reason. Altering the electric chain saw can result in operator injury or equipment failure.

WARNING

Never use equipment that is not functioning properly. If your electric chain saw is not working properly, have the saw repaired by qualified service personnel.

WARNING

Wear safety equipment when working.
Never wear loose clothing or jewelry that could get caught in moving parts.

⚠ CAUTION

Perform safety check before starting each day.

⚠ CAUTION

Know the requirements of each job and the terrain before using an electric chain saw.

WARNING!

When using an electric electric chain saw, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

INTRODUCTION

Electric chain saw Operator

This manual is primarily intended for the casual or occasional operator. These instructions are basic. It is not possible to cover every situation you may encounter while using your electric chain saw. Be careful at all times and avoid situations that may be too complicated for your experience. If you are unsure of a cutting situation, call a logging expert before continuing. We encourage you to seek instruction on the use of electric chain saw. Your local dealer, forestry school or library can tell you what instructional material and training course are available. The better prepared you are, the better and safer operation you will get from your electric chain saw.

Common Sense

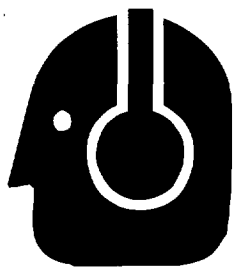
Your electric chain saw can be a very dangerous tool if improperly or carelessly used or if improperly equipped or maintained. The following instructions are basic and cannot cover all situations you might encounter while using your electric chain saw. Use common sense and caution at all times. Avoid situations that may be too dangerous or complicated for you. If you still feel you do not understand the dangers of using an electric chain saw after having read these instructions, you should not use the saw. Seek personal instruction from people qualified to instruct you on the use of electric chain saws. Your dealer can tell about training provided by local forestry schools. Should you have more questions about the use of your saw, don't hesitate to contact your dealer or us. We will be more than happy to provide you with any advice that will help you to use your saw in a better and safer way. New designs and techniques are introduced continously – designs that will increase your safety and productivity. Make a point of stopping by your servicing dealer to see how the latest designs can benefit you. It will be worth it. Safe Cutting.

INTRODUCTION

Your electric chain saw comes with the Operator's Manual containing general information in how to operate your electric chain saw in a safe way. It also gives you specific information on the technical design and maintenance regarding your particular model. Read the Operator's Manual very carefully before operating the electric chain saw.
We continously strive to improve all of our products. As a result, enginering changes and improvements are made from time to time. Written notices relating to such changes are sent to our dealers. Make a point of asking your electric chain saw dealer to show you the latest design.

STOP WARNING

Under no conditions should the electric chain saw be modified from its original design without permission of the manufacturer. Nonauthorized accessories should never be used. Nonauthorized modification and/or accessories can lead to serious injury or death to the operator or others.

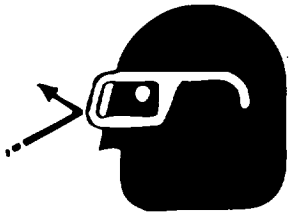


⚠ CAUTION!

A chain saw produces a noise level high enough to permanently damage your hearing after long or continuous exposure. Always wear hearing protection when operating a chain saw.

Thrown Objects

When the engine is running at cutting speed, the saw chain rotates at about 30-35 mph (14 m/s). It is capable of throwing objects, such as sawdust, small pieces of wood, etc., with great force, and can cause serious injury, especially to the eyes.



⚠ CAUTION

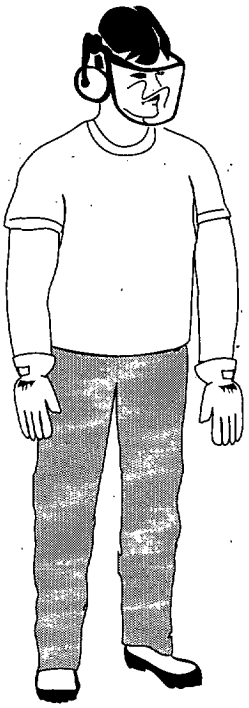
Always wear safety goggles or face shield to minimize the risk of injury from thrown objects.

Personal Equipment

Your Condition

Never operate an electric chain saw when you are tired, angry, emotionally disturbed, or under the influence of alcohol, drugs, medication, or anything that could affect your vision, alertness, coordination or judgment. Cutting wood can be strenuous - check with your doctor before undertaking this kind of work.

Clothing



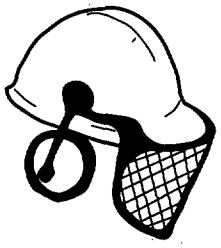
Proper clothing and equipment are intended to protect you from potential hazards such as lacerations, thrown objects, and hearing loss.
The proper clothing and equipment (as shown) protect you from many potential hazards such as lacerations, thrown objects, and hearing loss.
Always wear:
• ear protection • visor or goggles • non slip gloves
• safety pants or chaps • boots with steel toe caps and no-slip soles

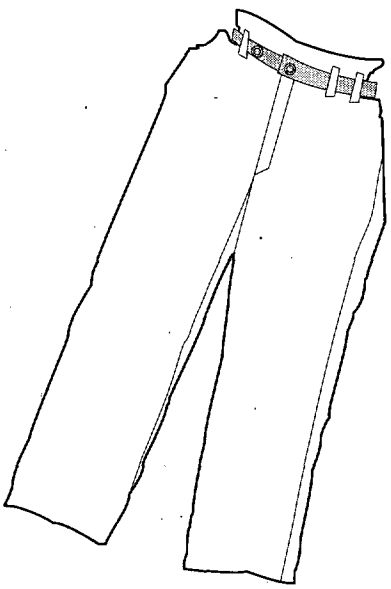
IMPORTANT

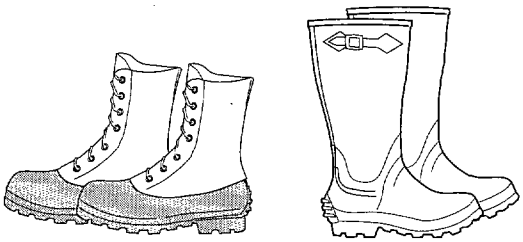
The personal safety equipment cannot prevent an accident but use of good personal safety equipment may minimize an injury in the event of an accident Ask your dealer to show you the latest safe forestry equipment available to help protect you. For example, a complete helmet with visor and earmuffs and safety pants or chaps.

Never wear loose fitting clothing, jewelry, etc., which could become entangled in the saw and cause serious injury. Wear protective hair covering to contain long hair.

INTRODUCTION







IMPORTANT

We strongly recommend the use of this safety equipment for all users at any time you use your electric chain saw. Because safety recables prove a decrease in injuries when equipment is used, most professional logging operations now demand that their operators wear these items. Take advantage of their experience. Your dealer will gladly assist in finding the right safety equipment for you.

Complete Protective Helmet

This consists of a lightweight helmet, built-in ear muffs and a face shield. Its main advantage is that everything you need is one piece rather than three. As the ear muffs are attached to the helmet, they also help in keeping the helmet more secure on your head.
The helmet or hard hat is intended to reduce risk of injuries from objects that may fall from a tree. Earmuffs reduce the risk of hearing injuries that can be the result of operating any noisy equipment over a prolonged period of time. The face shield protects the face from strikes from small branches and eyes from saw chips and dust.

Heavy Duty Gloves

Special gloves are available where the left glove is reinforced to help minimize injuries should your left hand inadvertently touch a rotating chain.

Protective Pants or Chaps

The protective material used in modern protective pants or chaps consists of several layers or synthetic fabric. Should you inadvertently hit your leg with a running saw chain, protective pants can reduce the chance of injury.

Boots

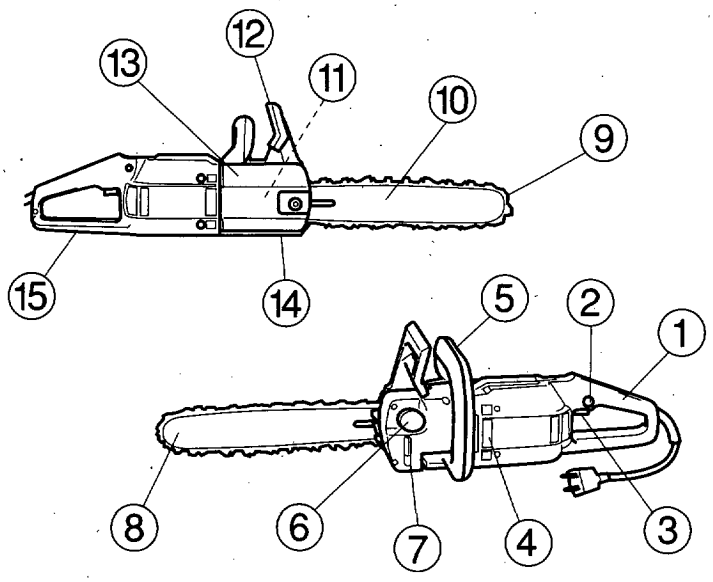
Special work boots with reinforced front and upper sides are available for loggers. Should you inadvertently hit the boot with the saw, these protective boots may protect you from injury.

First Aid Kit

A first aid kit approved by the Red Cross or an organization of similar stature should always be carried in case of injury in the field.

A kit should contain large dressings for lacerations, splints and slings for fractures, antiseptic and other optional items for your safety and convenience, such as insect repellent and a snake bite kit.

What is what on the saw



1. Rear handle
2. Power trigger lockout
3. Power trigger
4. Air vents
5. Front handle
6. Chain oil tank
7. Oil level window
8. Nose sprocket
9. Saw chain
10. Bar
11. Chain brake which is obscured by the clutch cover
12. Front hand guard
13. Clutch cover
14. Chain catcher - designed to catch the chain if the chain jumps or breaks
15. Chain guard - designed to protect the right hand in the event of the chain jumping or breaking.

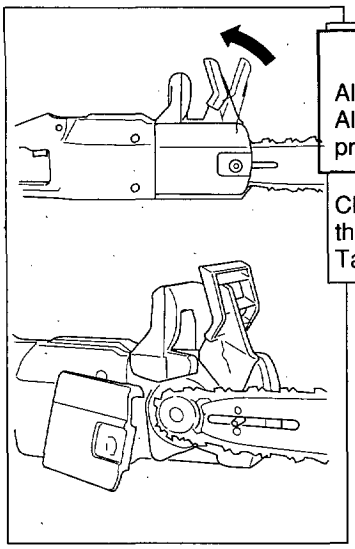
Technical specification

Motor		
Voltage	Volts AC	120
Rated Power	Watts	1600
Rated Current	Amps	13
Overload protection		Mechanical
Weight		
Without bar and chain	kg/lbs	3,7/8.2
With 13" bar and chain	kg/lbs	4,5/9.9
Chain lubrication		
Oil tank capacity	l/US. pint	0.1/0.21
Oil pump		Automatic
Chain/bar		
Standard bar length	inch/cm	14/35
Recommended bar lengths	inch/cm	12/29
	inch/cm	16/40
Chain speed unloaded	m/sec	14
Chain speed at max power	m/sec	10
Chain pitch	inch	3/8"
Thickness of drive links	mm	1.3
Number of drive links 14"/16"		52/56

Saw is double insulated and manufactured in accordance with the relevant safety regulations (ANSI B175.1 and UL1662).

Manufacturer: Electrolux Motor A/S - 1701 Sarpsborg, NORWAY

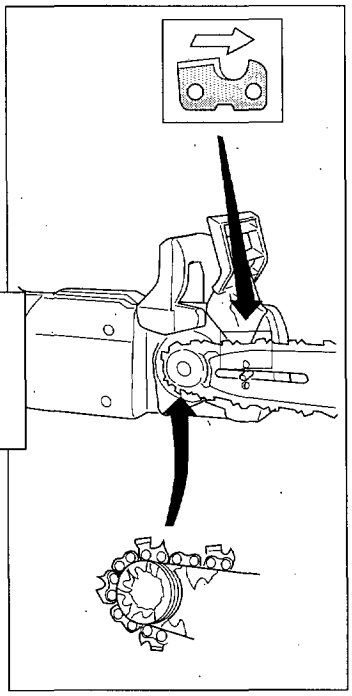
Mounting guide bar and chain



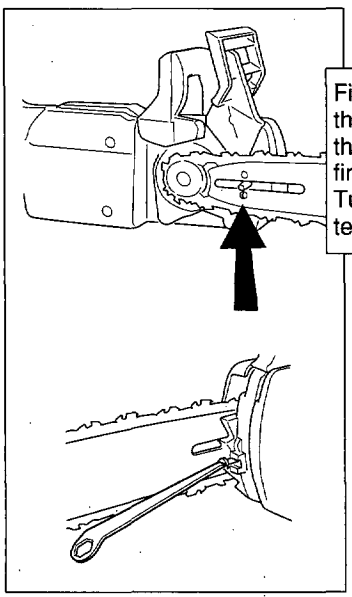
WARNING!

Always pull out the plug before fitting parts or adjusting the saw. Always wear gloves, when working with the chain, in order to protect your hands from injury.

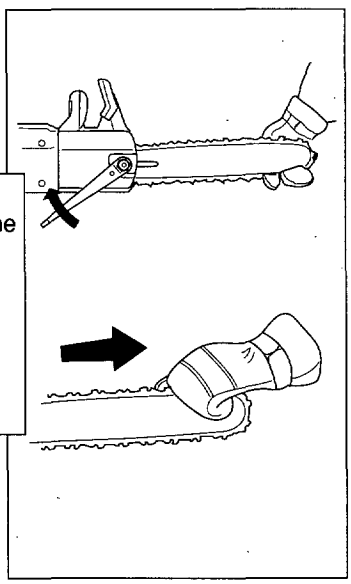
Check that the chain brake is in disengaged position by moving the front hand guard towards the front handle.
Take off the bar nuts and remove the clutch cover.



Fit the bar over the bar bolts. Place the bar in its rearmost position. Place the chain over the drive sprocket and in the groove on the bar. Begin on the top side of the bar. Make sure that the edges on the cutting links are facing forward on the top side of the bar.



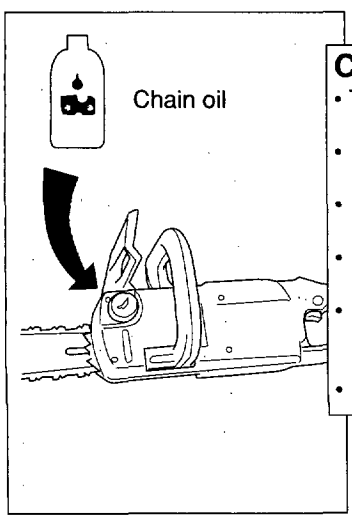
Fit the clutch cover and locate the chain adjuting pin. Check that the drive links of the chain fit correctly on the drive sprocket and that the chain is in the groove on the bar. Tighten the bar nuts finger tight. Tension the chain by using the combination wrench. Turn the chain adjuster screw clockwise. The chain should be tensioned until it fits snugly on the underside of the bar.



Hold up the tip of the bar and tighten the chain. The chain is correctly tensioned when there is no slack on the underside of the bar, but it can still be turned easily by hand. Hold up the bar tip and tighten the bar nuts with the combination wrench.
When fitting a new chain, the chain tension has to be checked frequently until the chain is run-in.

Check the chain tension regularly. A correctly tensioned chain gives good cutting performance and long lifetime.

Chain oil



Chain oil

- The chain lubrication system is automatic. Always use special chain oil with good adhesive characteristics.
- In countries where no special chain oil is available, gear box oil EP 90 can be used.
- Never use waste oil. This results in damage to the oil pump, the bar and the chain.
- It is important to use oil of the right viscosity according to the air temperature.
- In temperatures below 0°C (32°F) some oils become less viscous. This can overload the oil pump and result in damage to the oil pump components.
- Contact your servicing dealer when choosing chain oil.

Before each use

WARNING!

- Always pull out the plug before fitting parts or adjusting the saw.

- Make sure that the chain brake is operating properly and undamaged (see p.15).
- Check right-hand guard for damage.
- Check entire saw for loose fasteners and damaged or missing components. The cable insulation must be intact with no cracks or deterioration. Plug connectors must be undamaged.
- Make sure that the power trigger lockout and power trigger is undamaged.
- Use only an AC voltage supply identical to that shown on the same plate of the saw to power this electric chain saw.
- Secure the tool cable to the extension cable by making a knot to prevent disconnection.
- Make sure that the oiltank is refilled.
- Make sure that the saw chain has the correct tension.

WARNING!

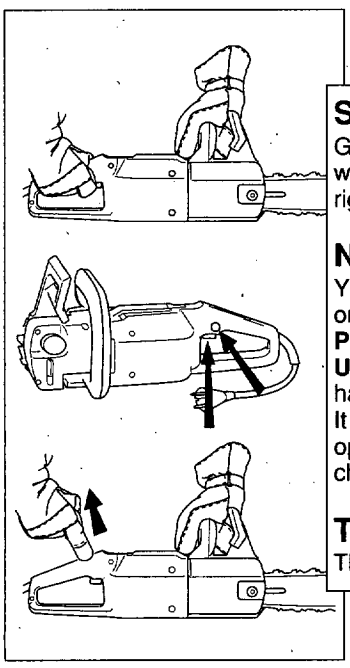
All electrical repairs to this saw, including housing, trigger, motor, etc., must be diagnosed and repair by your Authorized Service Dealer. Failure to do so can cause the double insulation construction to become ineffective and result in serious injury.

- NEVER carry the electric chain saw by the cable.
- Store the electric chain saw unplugged in a dry place out of the reach of children.
- Drain the oil tank before storing your electric chain saw for 30 days or more.
- Avoid dangerous situations. An electric power tool give sparks that could ignite an explosive mixture. DO NOT expose power tools to rain or use in damp, wet, gaseous or explosive locations. Keep work area well lit.

Start and stop

WARNING!

- Never start the saw motor without the bar, chain and clutch cover assembled - or else the clutch can come loose and cause personal injuries.
- Newer operate an electric chain saw holding it with one hand only. As the electric chain saw is not properly controlled, you can cut yourself. Always maintain a firm, solid grip with both hands on the handles.
- Make sure that the chain unintentionally contacts anything when you push in the power trigger and the chain starts to rotate. Also, make sure that you have a secure footing.
- Keep people and animals well away from the working area.
- Make sure your extension cable is in good condition. The cable should be an approved outdoor type. When using an extension cable, be sure to use one heavy enough to carry the current your tool will draw. An undersized cable will cause a drop in the line voltage resulting loss of power and overheating. The wire gauge should not be less then 14 A.W.G./2 x 1 mm^2. A ground fault protector is recommanded.



Starting up

Grasp the front handle with your left hand. Grasp the rear handle with your right hand. Push in the power trigger lockout using your right thumb and press the power trigger.

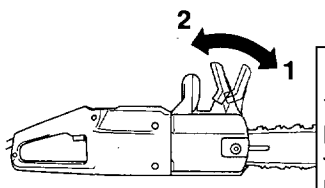
NOTE! If you are left handed.

Your electric chain saw is designed for a grip with your right hand on the rear handle and left hand on the front handle. **ALL PEOPLE, WHETHER RIGHT OR LEFT HANDED, SHOULD USE THIS GRIP.** Using the opposite grip, right hand - front handle, left hand - rear handle, gives you less control of the saw. It also brings the bar and chain closer to your body during normal operation. It is also possible you will not be able to activate the chainbrake if your **right hand is** holding the **front handle.**

To stop

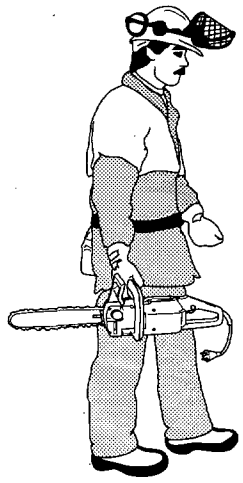
The saw will stop when you release the power trigger.

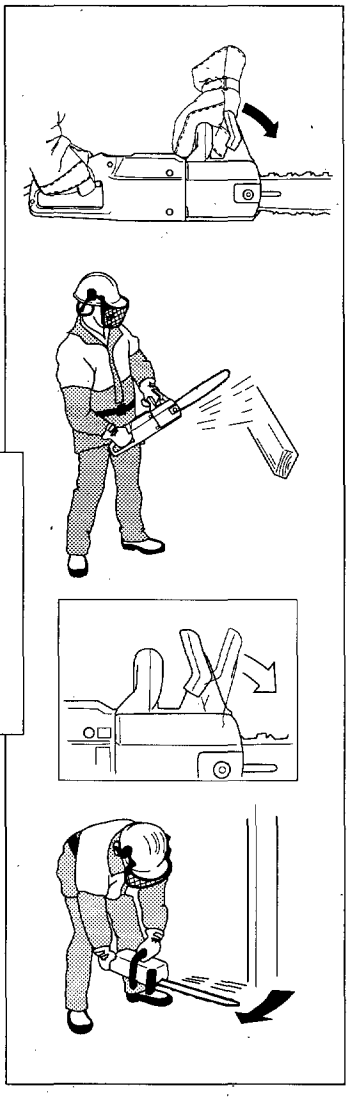
Chain brake



Chain brake

Your saw is equipped with a chain brake which can be activated both manually and by inertia force. The chain brake consists of the front hand guard, activating mechanism, spring and a brake band wrapped around the clutch drum. When the front hand guard is moved forward the mechanism releases the spring, which pulls the band tight around the clutch drum. When activated the chain brake is designed to stop a rotating saw chain immediately. The chain brake activates when the hand guard is pushed forward (1). If the chain brake is already activated,it is disengaged by pulling the front hand guard back towards the front handle (2). When working with the saw, the chain brake must be disengaged.





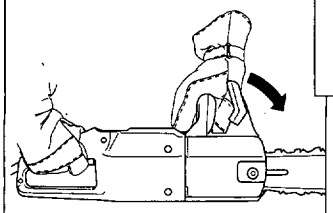
Manual activation

Move the front hand guard forward until the chain brake "clicks" on.

Inertia activation

If your chain saw is suddenly pushed rearward with strong enough force, the sudden movement can activate the chain brake. The advantage of the inertia function is that a **kick back** (see p.20) can have enough force to activate the chain brake without your left hand having to touch the front hand guard.

Control and maintenance of the chain brake

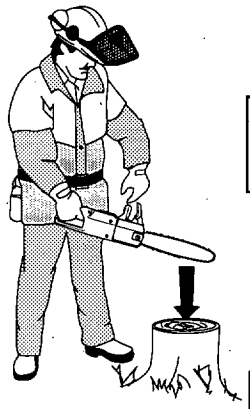


IMPORTANT!

Failure to test and maintain the chain brake may result in the chain brake failing to operate in the event of kickback.

Braking function control:

The chain brake must be checked several times daily. Place the saw on firm ground. Keep a firm grip on the saw with your right hand on the rear handle, your left hand on the front handle, and with your thumbs and fingers encircling the handle and apply throttle. Activate the chain brake by turning your left wrist against the hand guard, without releasing your grip around the front handle. The chain should stop immediately (illustr.).



⚠ WARNING!

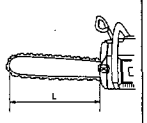
Always pull out the plug before fitting parts or adjusting the saw.

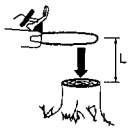
Inertia activating function control

The chain brake must be checked several times daily. Hold the electric chain saw approx. 45 cm (18") above a trunk or other firm object . Release your grip around the front handle and let the saw by its own weight rotate around the rear handle. When the tip of the bar hits the trunk, the brake should activate.

STOP WARNING!

Dirt and wear affect the function of the brake. Follow all maintenance instructions, carefully. If anything is incorrect with your chain brake contact your servicing dealer.

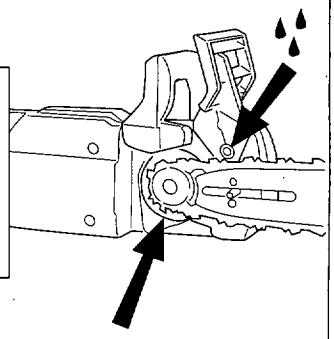




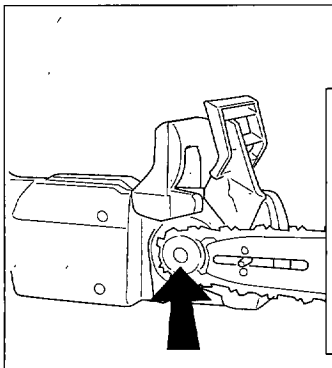
inch	inch / cm
12"	18" / 45 cm
14"	20" / 50 cm
16"	22" / 55 cm

Maintenance:

With the motor shut off, the hand guard can be moved back and forth, to ensure that the mechanism works freely and also that the brake activates. If necessary, clean the brake from resin and chips. Lubricate the mechanism and bearing surfaces with oil. Check that the brake band is at least 0.65 mm (.026 in) thick, at the most worn part.



min 0,65 mm

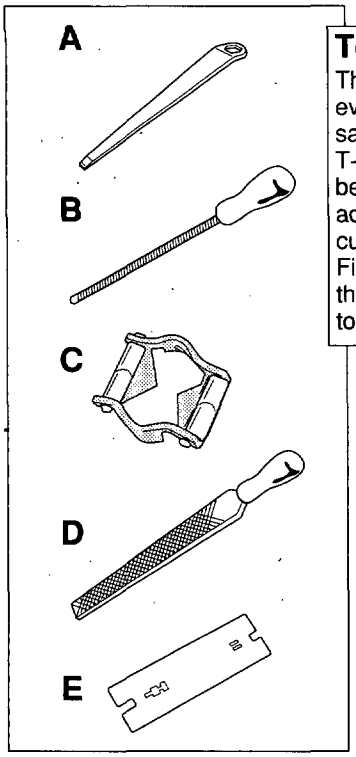


Motor overload protection

The saw is equipped with a slipping clutch. This protects it from overloading.

If the chain stops while the motor is running then the saw is overloaded. Ease up on the cutting pressure until the chain begins to turn again. If the blade has jammed stop the saw immediately and free the blade. If the chain stops frequently while cutting it may be because the chain is blunt. If so, sharpen the chain.

Maintenance



Tools and materials

The tools and material shown are absolutely essential for routine everyday safe operation and maintenance of an electric chain saw.
T-wrench (A) – This type of wrench or its equivalent should always be carried with your electric chain saw. The wrench is needed to adjust chain tension which must be correctly adjusted for safer cutting.
Files - You need one round file (B) with file gauge (C) to sharpen the cutting teeth of the chain and one flat file (D) and depth gauge tool (E) for filing the depth gauge.

Saw maintenance

The following are some general maintenance instructions. If you have any further queries contact your service workshop.

STOP WARNING!

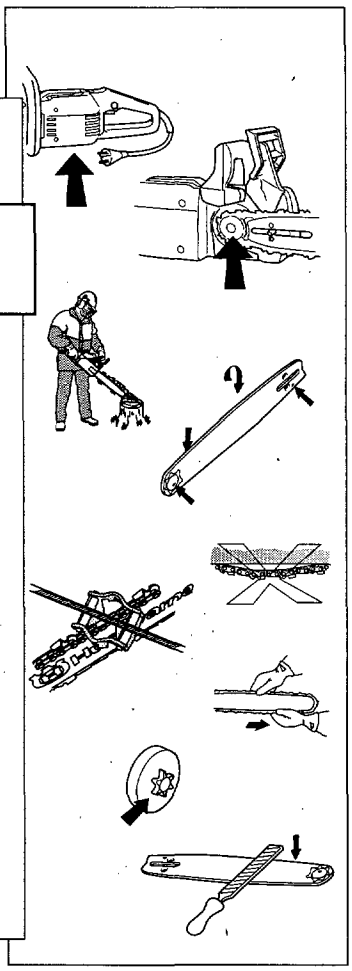
Always pull out the plug before fitting parts or adjusting the saw.

Daily maintenance

- Check the main cable and plug for damage or splitting. A worn or defective cable or plug should always be replaced with new items.
- Clean the chain brake and check that it works safely.
- Check that the chain catcher is in good condition; replace if necessary.
- Check the air intakes, if nescessary clean away dust and/or chips with a dry brush..
- Check that bar and chain are well oiled (see p.18).
- The bar should be turned daily to ensure even wear. Check that the oil hole in the bar is not blocked. Clean the chain guide.
- Sharpen the chain and check that it is correctly tensioned and in good condition.
- Check that there is no excessive wear on the chain drive sprocket. Replace if necessary.
- File off any burrs on the sides of the bar.

Slipping clutch

It may be necessary to clean the clutch after extended use. Contact your service workshop if it is necessary to clean the clutch.



Cutting equipment

Recommended cutting equipment

The combinations of powerhead, bar and chain have been investigated in accordance with the kickback requirements of ANSI B 175.1 – 1985.
The guide bar nose radius is determined by either the maximum number of teeth in the nose sprocket or the corresponding maximum nose radius of a solid bar.
The following list is the electric chain saw manufacturers recommendations. There may be other combinations available, which will also achieve kickback protection.
As we are listing the maximum guide bar nose radius, you may use a guide bar with smaller nose radius then in our list. For guide bars of the same length, all sprocket-nose guide bars of the same pich and having the same number of sprocket teeth may be considered to have equivalent kickback energy. A hard nose bar having the same length and nose radius as a sprocket-nose bar may be considered to have equivalent or less kickback energy then the sprocket-nose bar.
Low kickback saw chain is a chain which has met the kickback performance requirements of ANSI B 175.1 safety requirements for gasoline-powered chainsaws when tested on the representative sample of chain saws below 3.8 cu.in. specified in ANSI B 175.1 These are marked with an asterix ✻ in the table below. We recommend that you as replacement use the listed chains or "Low kickback saw chains" which are available at your dealer.
NOTE: The second number in the Oregon part number indicate the thickness of the drive link. You are free to choose between 0.050" and 0.058" drive link for the corresponding bar.
OREGON 33 indicates 0.050"/1.3 mm
OREGON 34 indicates 0.058"/1.5 mm

Saw chain	Length inch	Pitch inch	Max nose radius
Oregon 91VG ✻	12, 14 and 16	3/8	9t

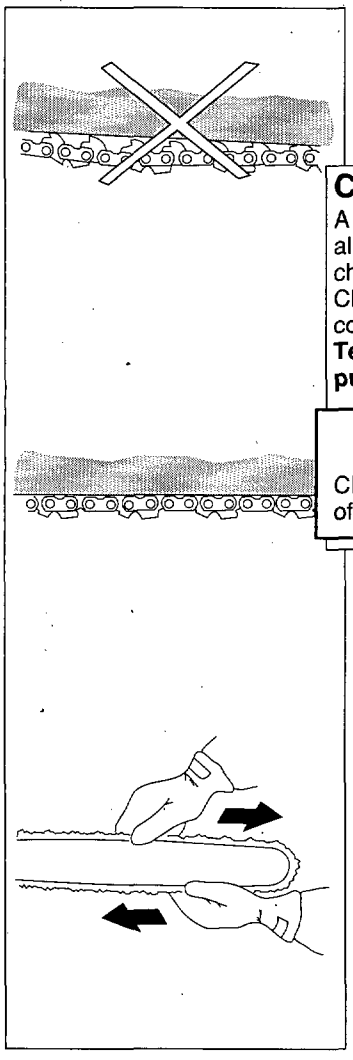
Chain maintenance

Chain maintenance - safety

For the personal safety, it is of great importance, that the bar and chain combinations of so called low kick type are used and that the cutting equipment is maintained correctly.
Important notes:
- Chain tension
- Sharpening
- Lubrication
- Check - maintenance

STOP WARNING!

Always pull out the plug before fitting parts or adjusting the saw.



Chain tension

A too loose chain may jump off the bar and cause injuries. This is also the most frequent cause of chain problems. A too loose chain can also ruin the chain, bar and drive sprocket.
Chain tension should be checked frequently during work and corrected if necessary.
Tension the chain as tight as possible, but so it can still be pulled easily along the bar by hand.

⚠ CAUTION!

Check after tensioning by pulling the chain in the normal direction of rotation. Always wear gloves to protect your hands from injury.

Chain lubrication

Refill chain oil regulary. Never run the chain dry. Insufficient oil may cause friction which leads to cracks in the links. Waste oil must be avoided for the same reason. Always use a proper chain oil which is off the non-fling type and stands the pressure of the cutters. Clean bar groove and oil filling hole regularly.

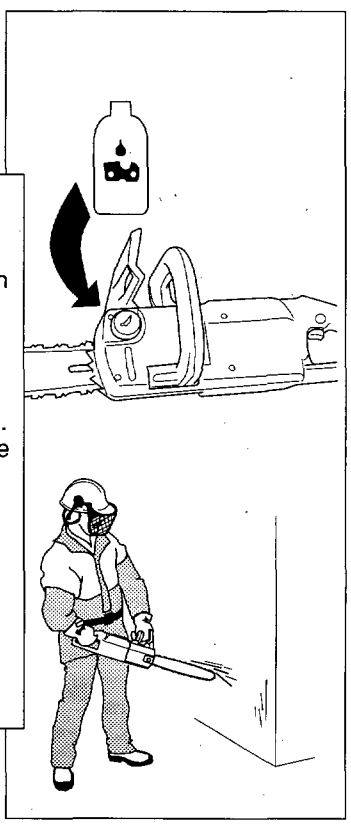
Checking the lubrication system.

Point the tip of the bar towards a light surface about 20 cm away. After the saw has been running for 1/2 - 1 minute there should be an obvious patch of sprayed oil on the surface.

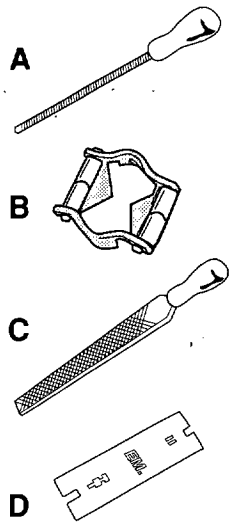
Check daily for:

- Cracks in rivets and links of the chain.
- Excessive wear on side links and cutters or stiffness in the chain.
- A cutter should never be filed to less than 5/32 inch or 4 mm.
- Correct depth gauge setting.

NOTE! Change the drive sprocket each time you fit a new chain.



Chain maintenance

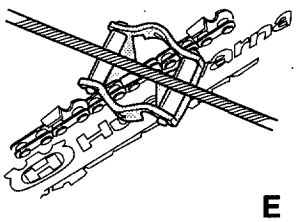


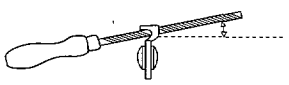
Sharpening

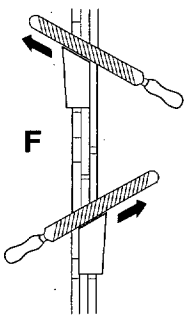
Never cut with a dull saw chain. A chain which does not cut unless you press it hard against the wood is damaged, dull or incorrectly filed. In order to file the chain correctly you need: round file (A), file gauge (B), flat file (C) and a depth gauge tool (D). By using the correct file size (see the table) and an file gauge with a marked filing angle, it is easier to receive a good result.
NOTE! *Check that the drive link does not have a too large play in* the bar groove. This can give an incorrect filing result. Note that for some chains the file is held level while for others the file handle is down at the angle indicated (E).
Always file from the inside of the teeth and out (F). Then turn the saw and file on the other side. In order to receive a straight cut in the wood, all the teeth should be filed to the same length (minimum length 0.15"/4 mm). If the chain is filed regularly, only a few strokes are needed on every saw tooth. For the best performance, every chain type has different cutting angles, file sizes and filing depth (see the table).

STOP WARNING!

If a too small filing size is used or the file is kept too deep in the cutting tooth, the chain will be dangerously aggressive. This means that the chains propensity for kick back increases and the chain becomes more dangerous to use.







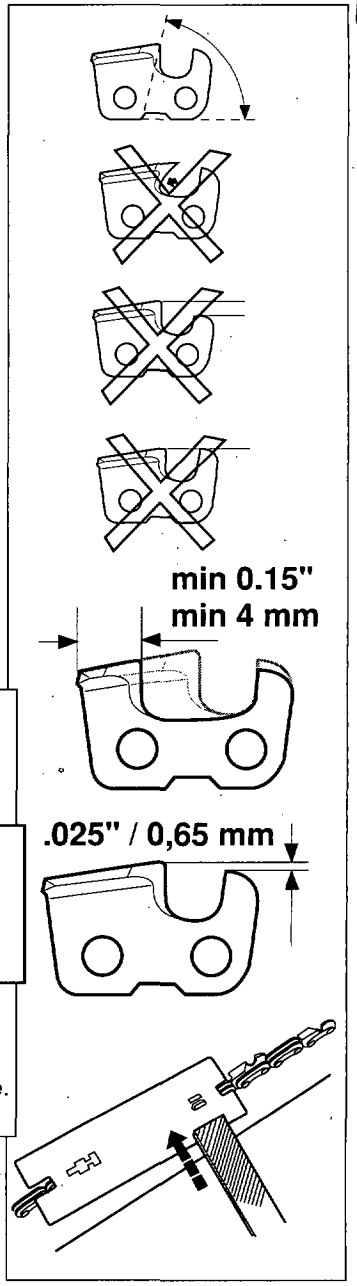
Depth gauge

In order to receive the best performance and life time of the chain, always keep the prescribed depth gauge setting (.025"/ 0,65 mm).

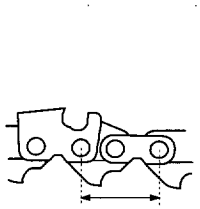
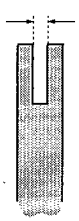
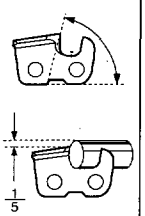
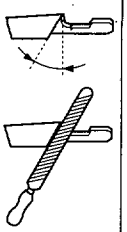
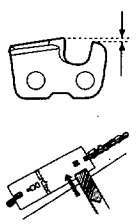
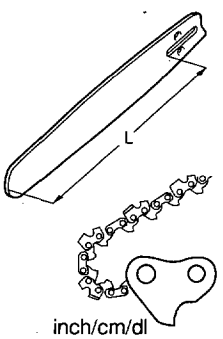
STOP WARNING !

A too big depth gauge setting makes the chain dangerously aggressive. This means that the chains propensity for kick back increases and the chain becomes more dangerous to use.

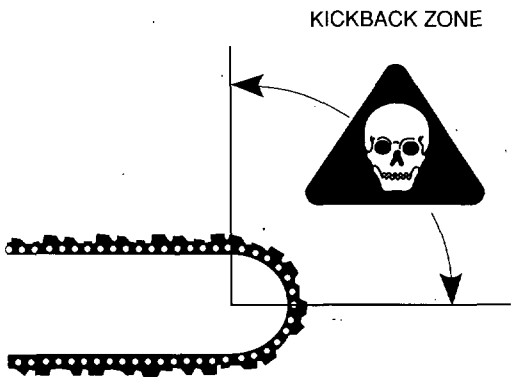
The depth gauge of the cutting tooth is checked with a depth gauge tool (measurement, see table).
NOTE! The chain should be filed before the depth gauge is checked. An adjustment of the depth gauge is done with a flat file. *Round off the corner of the depth gauge, afterwards.*



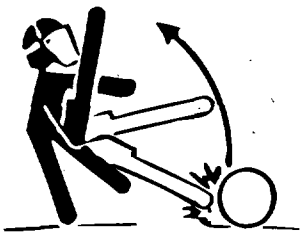
Kickback approved bar/chain combinations

 inch	 inch/mm	 inch/mm	 °	 °	 °	 inch/mm	 inch/cm/dl
91VG 3/8"	0.050/1,3	5/32"/4,0	85°	30°	0°	.025/0,65	12/30/48 14/35/52 16/40/56

General working instruction



What is Kickback?



STOP WARNING

Kickback can be sudden and violent, and may throw the bar and saw chain back at you, inflicting serious or fatal injury. A good understanding of this phenomenon and how it can be avoided is a must when working with an electric chain saw.

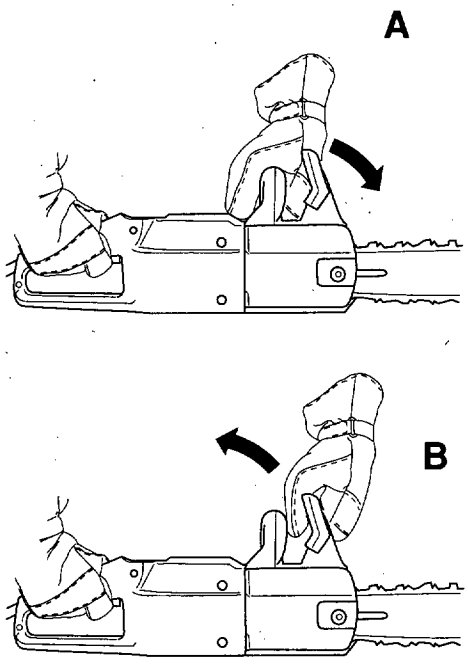
Kickback is the sudden, rearward motion of the saw that can occur if the kickback zone of the bar touches an object. Most kickbacks are small. They can cause the bar tip to jump only a few inches and pose little danger. However, a kickback can also be very powerful. If you are not paying attention and/or have a poor grip, the saw can be thrown all the way back at you. **If the chain is still running, and it hits you, it will severely cut you.**

Rotational Kickback

Kickback can occur when the upper tip of the guide bar, the kickback zone, touches something, such as a trunk, branch or other object.

When the nose is used, only one or two cutters engage the wood at a given time. As a result, the chain might grab or jam. When the chain gets blocked and stops, the reaction will cause the guide bar to kick back. It can be a lightening fast, reverse action, kicking the guide bar back at you.

General working instruction



⚠ CAUTION!

A chain brake may not always activate during a kickback. A chain brake can give you its intended protection only if it is properly maintained. A neglected and abused chain brake might not work when you need it most. Test the chain brake periodically to be sure it will work for you if you have a kickback. We recommend that you test the chain brake after each work break. If the chain brake does not activate, clean it and check that the mechanism is not damaged. If the chain brake still does not work, take you chain saw to your servicing dealer for repair.

Please refer to your Operator's Manual for proper testing procedure of the chain brake on your saw.

Chain Brake

One safety feature of the chain saw is the chain brake. It will not prevent a kickback, but is designed to reduce the severity of certain kickbacks. When the chain brake is triggered, a mechanism which locks the clutch drum is activated and stops the saw chain almost instantly. The mechanism can be reset by moving the hand guard back against the front handle (B).

The chain brake is triggered when the hand guard is moved forward (A). This may occur when your left hand/ wrist touches the hand guard during a kickback.

Will My hand Always Activate the Saw Chain Brake During a Kickback?

No. It takes a certain force to move the handle forward. If your hand only lightly touches the front guard or slips over it, the force may not be enough to trigger the chain brake. It is important that you maintain a firm grip of the chain saw handles while working. If you do and experience a kickback, your hand might not leave the front handle to activate the chain brake or the chain brake will be activated by your wrist only after the saw has swung around a considerable distance. In such instances, it might not be enough time for the chain brake to stop the chain before it touches you.

Does a Chain Brake Work in All Situations and Positions?

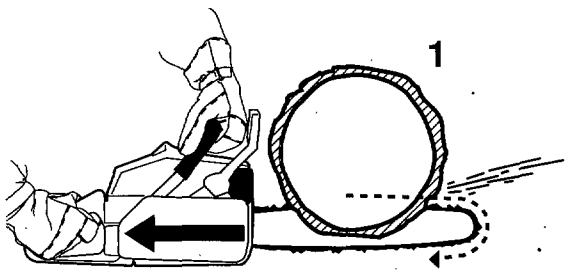
No. First, the chain brake must be properly maintained to work. Second, there are certain positions in which the chain brake may not activate. Third, the chain brake must be activated to stop the chain. If it is not activated, the chain will continue to run. Fourth, the chain brake might not have enough time to stop the saw chain to a standstill before it reaches your body. If the saw chain is too close to you because you are using an inproper working procedure.

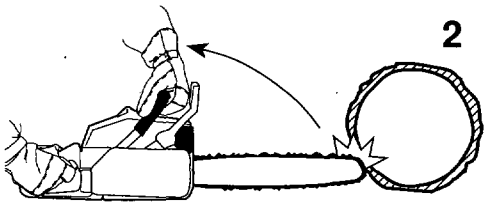
IMPORTANT!

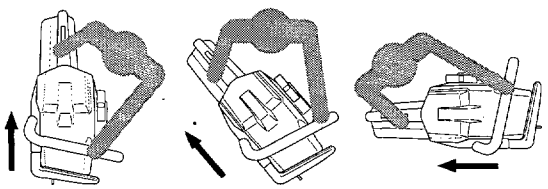
Kickback and its possible consequences can be avoided.

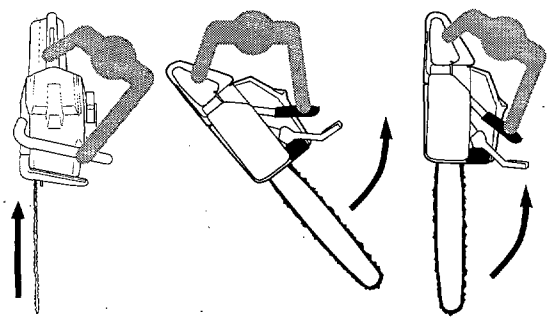
- Use proper working techniques.
- Do not use the kickback danger zone of the bar
- Avoid unsafe positions.
- Use proper grip.
- Cut at high speed.
- Have control over your work piece.
- Be alert.

General working instruction









Pinch Kickback

1. Pinching the saw chain along the top of the guide bar may push the saw back at you.
2. If the bar is pushed back far enough so that the kickback zone hits an object, a rotational kickback may develop.

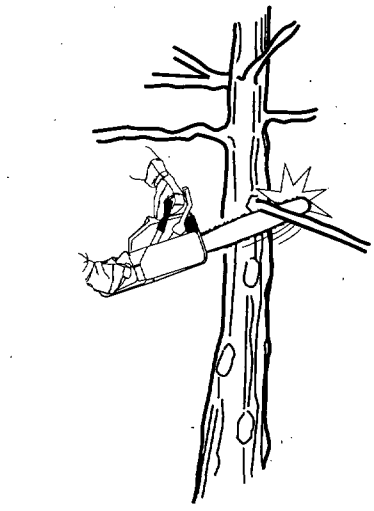
Direction of Kickback

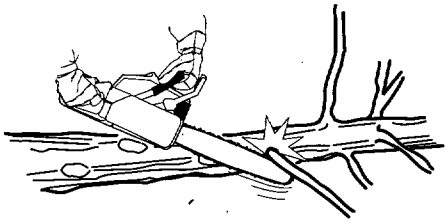
A kickback always travels in the plane of the bar. Depending on how you hold the electric chain saw a kickback may come up and back at you or move in any angle you happened to hold the electric chain saw in. For example, if you experience a kickback during felling, the electric chain saw will move in the horizontal plane and can swing around and hit your leg.

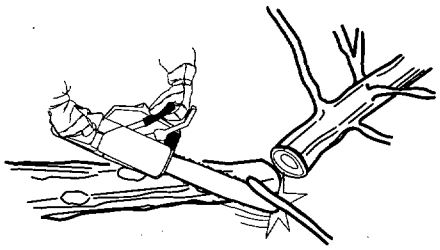
IMPORTANT

- Kickback can only occur if the kickback danger zone of the bar touches an object.
- A kickback can be lightning fast.
- Although most kickbacks are small, sometimes a kickback can be very violent.

General working instruction







Avoiding Kickback

Following the rules listed below will help to avoid kickback:

- Use proper working techniques.
- Do not use the kickback danger zone of the bar.
- Use proper grip.
- Avoid unsafe and off-balance working positions.
- Cut at high speed.
- Keep work piece secure.
- Make sure working area is free of obstructions.
- Be alert.

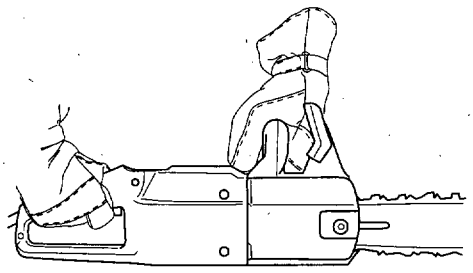
Proper Working Technique

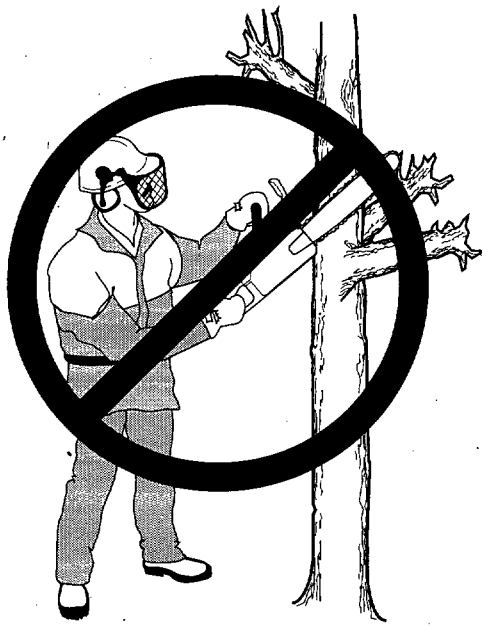
The only sure way to avoid kickback and other dangers associated with electric chain saws is through proper working technique.

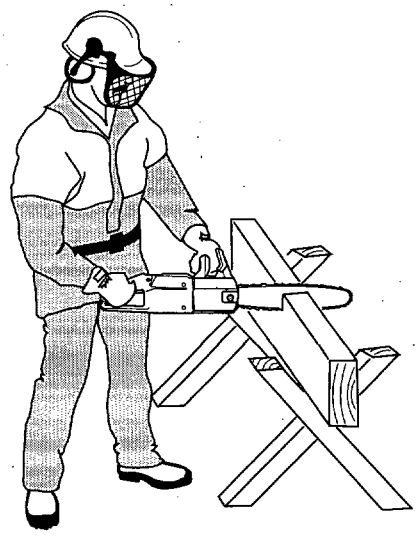
Avoid These Situations

Do not use the kickback danger zone when cutting. **As kickback can only occur when the kickback danger zone on the tip of the bar touches an object, kickback can be completely avoided by not cutting with that part.** Make sure that the area in which you are working is free from obstructions. Do not let the nose of the guide bar inadvertently contact a log, branch, or other obstruction which could be hit while you are operating the saw.

General working instruction







Use Proper Grip

When the motor is running, keep a good, firm grip on the saw, always with both hands. The **right hand** should be on the **rear handle**, and the **left hand** on the **front handle**. All people, whether right or left handed, should use this grip. Use a firm grip with thumbs and fingers encircling the electric chain saw handles. **Never use your saw while holding it with only one hand.** A firm grip will help you reduce kickback and maintain control of the saw.

NOTE! If you are left handed.

Your electric chain saw is designed for a grip with your right hand on the rear handle and left hand on the front handle. **ALL PEOPLE, WHETHER RIGHT OR LEFT HANDED, SHOULD USE THIS GRIP.** Using the opposite grip, right hand - front handle, left hand - rear handle, gives you less control of the saw. It also brings the bar and chain closer to your body during normal operation. It is also possible you will not be able to activate the chainbrake if your **right hand is** holding the **front handle.**

Avoid Unsafe Positions

Do not use your saw above shoulder height or use the saw in a nose-high position. The saw is harder to control in these positions, and with the bar closer to your face/ upper body, even a small kickback may have enough speed and force to reach you. Also, your chain brake may not have enough time to slow down the saw chain if the kickback starts from an unsafe position close to your body, even if the brake is activated.

Do not overreach or work from an unsafe position, such as ladders, in a tree, or a pile of wood. In such situations, your footing is insecure, and you can easily cut yourself, either through a simple distraction or through a kickback because your control of the saw is insufficient.

Use Proper Speed

Cut at high motor speed. At higher speeds, the saw chain is less likely to become stuck.

Have Control Over Work Piece

If the pieces you cut are small and light, the saw chain can catch and throw them at you. Although not necessarily dangerous in itself, you can be startled and lose control of the saw. Never cut logs or branches that are stacked without first pulling them apart. Cut only one log or piece at a time. Remove the pieces you have cut to keep your work area clear.

General working instruction

Avoiding Kickback - Your Equipment

IMPORTANT

This equipment is for extra protection. It cannot fully prevent kickback, only minimize it. Never rely entirely on these safety devices for your protection. Rely on your safe working technique.

As explained previously, kickback can be avoided by using safe cutting techniques, where at all times you avoid cutting with the tip of the bar. However, certain items on your electric chain saw are also designed to minimize the kickback itself or possible injuries should you encounter a kickback.

Low Kickback Saw Chains

Modern saw chains are designed to reduce the force of kickback. Your Operator's Manual lists low kickback saw chains that have been tested and selected for your saw.

⚠ CAUTION

The saw chain can give its intended protection only if it is filed and maintained according to the manufacturer's instructions. As the cutting tooth on a saw chain is filed away when it is sharpened, it slowly becomes more aggressive. At the end of its life, it is more kickback prone than when it is new.

Your saw chain has been designed to reduce the possibility of kickback. If the chain is not filed according to the manufacturer's directions, you may remove some of the saw chain's kickback features. Such a chain is more dangerous to use. Always follow the saw chain manufacturer's filing instructions.

When your saw chain has to be replaced, you should replace it with a low kickback chain. Follow our recommendation in the Operator's Manual, or your dealer's advice. Be sure that you get a chain which will give you the same or better protection as the original equipment.

Small Nose Radius Bar

The smaller the nose radius, the smaller the kickback zone, and the less likely it is that a severe kickback will occur. Your Technical Manual specifies small nose radius bars available for your saw.

IMPORTANT!

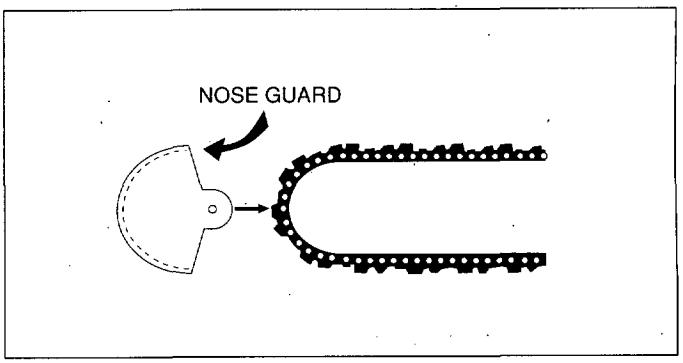
To minimize the risks of kickback through your bar and chain combination, you should always:

- Use small nose radius bar and low kickback saw chain.
- Check and adjust saw chain tension.
- Maintain the correct depth gauge and sharpness of the chain.
- Replace worn-out or damaged bar and chain with approved replacement combinations.

Nose Guard

A metal nose guard is attached to the bar tip covering the kickback danger zone while allowing the chain to rotate under it.
With a properly installed nose guard, a kickback cannot occur. However, a nose guard also limits the use of your saw.

When using a nose guard, the bar has to be more than 2 inches longer than the thickest log you intend to cut, making certain felling and bucking techniques impossible. Due to this drawback and others, we do not manufacture or market nose guards. If you feel that a nose guard will offer the best protection for you, your dealer will be able to assist you in installing one.



BASIC WORKING TECHNIQUES

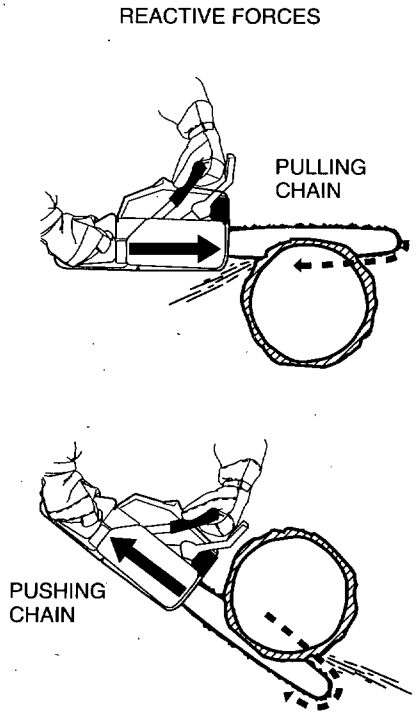
IMPORTANT!

This information does not cover all specific situations. They may depend on differences in terrain, vegetation, type of wood, form and size of trees, etc. Consult your servicing dealer, forestry agent or local forestry schools for advice on specific woodcutting problems in your area.

This will make you more efficient and your work safer.

General Rules

1. Avoid cutting in adverse weather conditions, such as dense fog, heavy rain, bitter cold, high winds, etc. Adverse weather is often tiring to work in and creates potentially dangerous conditions such as slippery ground. High winds may force the tree to fall in an unexpected direction causing proper damage or personal injury.
2. Avoid stumbling on obstacles, such as stumps, roots, rocks, branches and fallen trees.
3. Watch out for holes and ditches.
4. Be extremely cautious when working on slopes or uneven ground.
5. Turn saw off before moving from one place to another.
6. If you are not completely sure a cutting situation is safe, or you require assistance, get help before continuing.



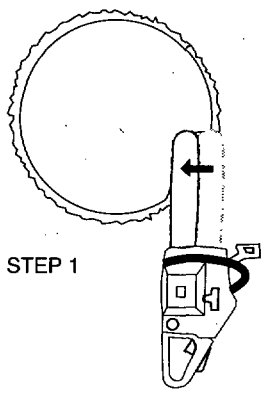
Reactive Forces

When you are cutting, the chain in the kerf forces your saw in a direction opposite to the chain movement. This is called a reactive force. One such reactive force previously covered is kickback. With any chain saw, the energy used to cut wood can be reversed and work against the operator. If a rotating chain stops suddenly because the chain is pinched or if the chain suddenly hits a solid object, reactive forces occur instantly and may make you lose control of the saw.

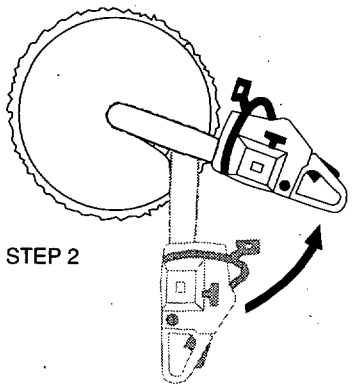
1. Be especially alert during limbing operations when it is easier to pinch the chain or to touch a limb by mistake.
2. Keep your feet firmly planted, in a wide, balanced stance.
3. Keep the saw body close to your body to improve control and to reduce strain.
4. When cutting with the bottom part of the chain, the reactive force will pull the saw away from you towards the wood you are cutting. The saw will control the feeding speed and sawdust will be directed toward you.
5. When cutting with the upper part of the chain, the reactive force will push the saw toward you and away from the wood you are cutting.
6. Cut with the bottom part of the chain as much as possible.

WARNING!

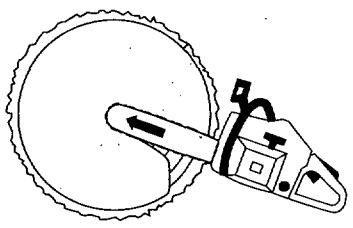
If you are cutting with a pushing chain and allow the saw to be pushed back far enough to engage the tip of the bar, a kickback may occur. See page 17. Be especially cautious regarding nearby objects when cutting with a pushing chain or "under up". The kickback zone will move INTO such objects during "under up" cutting, increasing the possibility of kickback.



STEP 1



STEP 2



STEP 3

Boring Cut

A boring cut is used to fell large trees. Follow the steps listed below when performing a boring cut.

1. Cut, using the bottom portion of the guide bar tip, until the depth of the cut is equal to the width of the guide bar and deep enough to stop a kickback during steps 2 and 3.

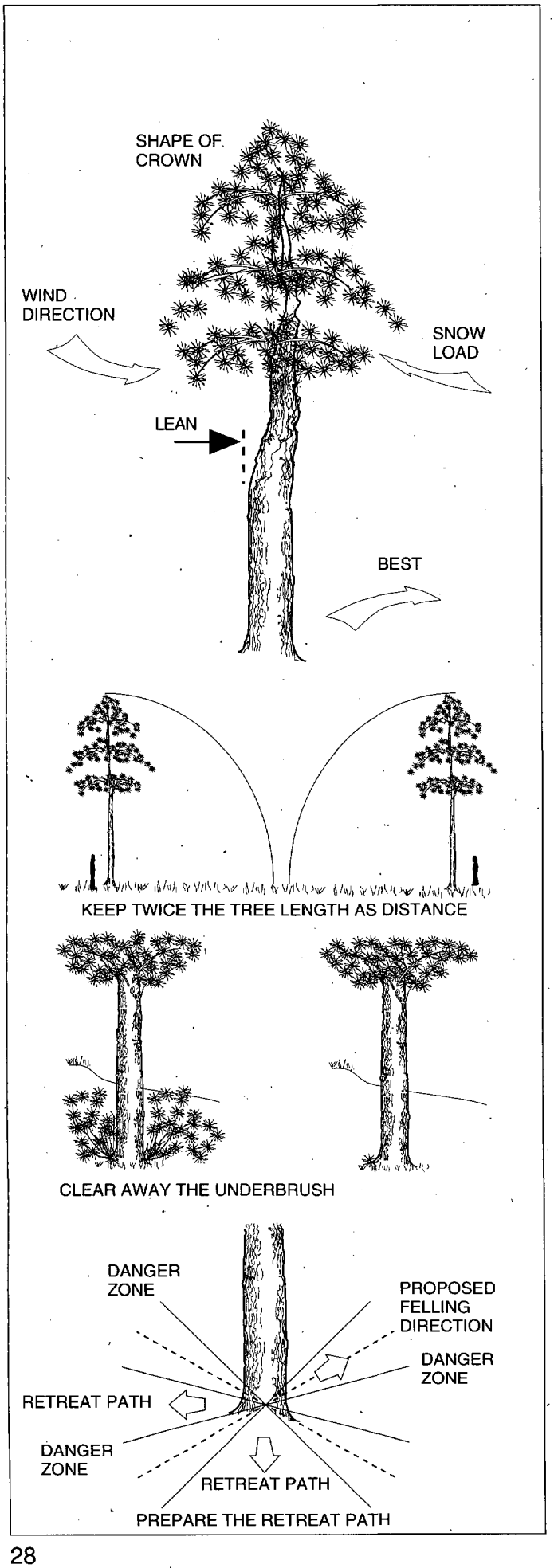
2. Operating at full throttle, align the saw with the direction of cut.

3. With saw at full throttle, press the guide bar straight into the trunk.

WARNING!

Making a boring cut can be dangerous if improperly performed. Only properly trained operators should attempt this technique.

BASIC WORKING TECHNIQUES



Felling

Felling is more than cutting down a tree. You must also bring it down as near to an intended place as possible without damaging the tree or anything else.

Before Felling

Carefully consider all conditions which may affect the intended direction of fall, including:

1. Inclination of tree.
2. Shape of crown.
3. Snow load on crown.
4. Wind direction.
5. Obstacles within tree range: e.g., other trees, power lines, roads, buildings, etc.

⚠ CAUTION!

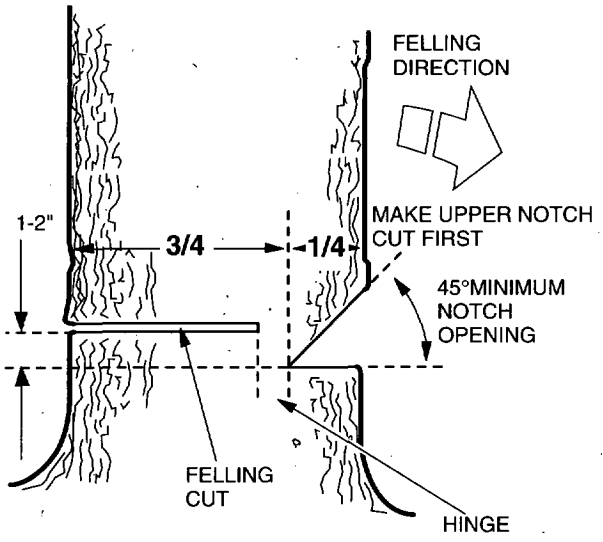
Always observe the general condition of the tree. Look for decay and rot in the trunk, which will make it more likely to snap and start to fall before you expect it. Look for dry branches, which may break and hit you when you are working.

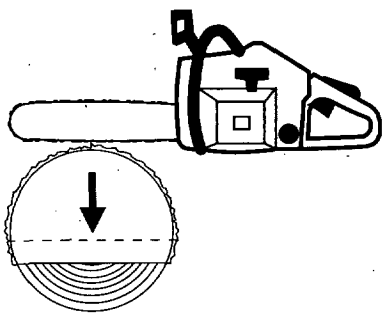
Always keep animals and people at least twice the tree length away while felling.

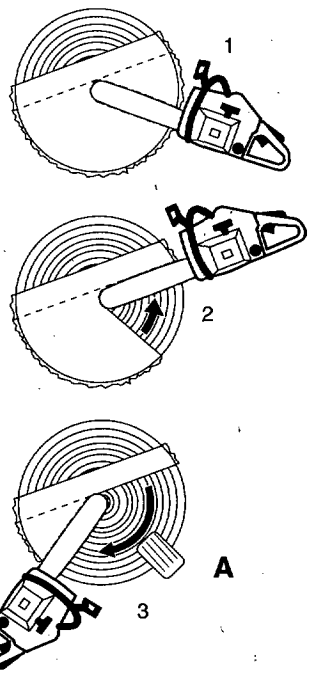
Clear away shrubs and branches from around the tree.

Prepare a path of retreat diagonally away from the felling direction.

BASIC WORKING TECHNIQUES







Basic Rules for Felling Trees

Normally, the felling consists of two main cutting operations - notching and making the felling cut.

1. Make the upper notch cut on the side of the tree facing the felling direction. Look through the ker-as you saw the lower cut so you do not saw too deeply into the trunk. The notch should be deep enough to create a hinge of sufficient width and strength. The notch opening should be wide enough to direct the fall of the tree as long as possible.
2. Saw the felling cut from the other side of the tree between one and two inches (3-5 cm) above the edge of the notch.
3. Never saw completely through the trunk. Always leave a hinge. The hinge guides the tree. If the trunk is completely cut through, you can lose control over the felling direction.
4. Insert a wedge or a felling lever in the cut well before the tree becomes unstable and starts to move (A). This will prevent the guide bar from binding in the felling cut if you have misjudged the falling direction. Be sure no people have come into the range of the falling tree before you push it over.

Felling Cut - Trunk Diameter Less than Guide Bar Length

Saw with a pulling chain (bottom of guide bar).

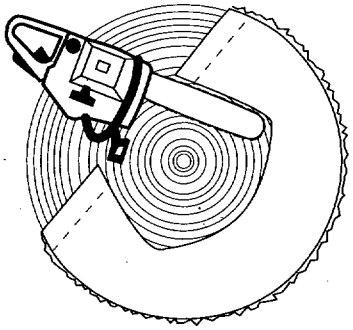
Felling Cut - Trunk Diameter Greater than Guide Bar Length

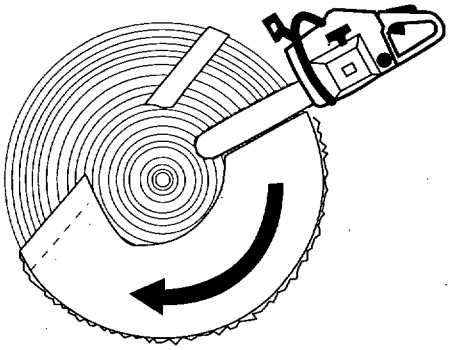
⚠ CAUTION!

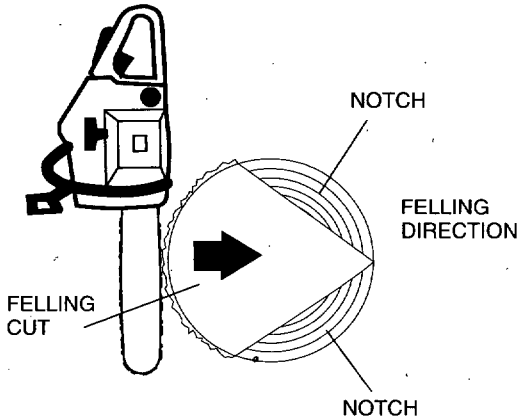
Watch out for kickbacks. Do not use the upper tip quadrant of the guide bar tip.

1. Make a boring cut.
2. Saw with a pushing chain. Leave sufficient hinge.
3. Saw around trunk with a pulling chain to complete felling cut.

BASIC WORKING TECHNIQUES







Felling Cut - Trunk Diameter More than Twice Guide Bar Length

1. Cut a large, wide notch.
2. Cut a recess into center of notch.

IMPORTANT!
Always leave a hinge on both sides of center cut.

3. Saw around trunk with a pulling chain to complete felling.

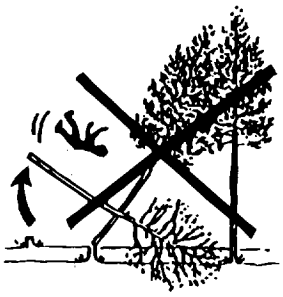
Felling Leaning Trees

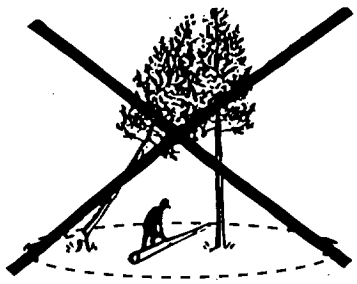
⚠ CAUTION!
Excessively leaning trees are under tension and may split easily, causing root end to rise up or be thrown rearwards.

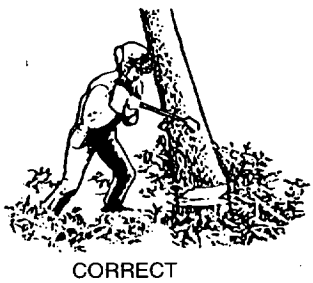
1. Make two notches. The tip formed where the notches meet should point toward the felling direction.
2. Make the felling cut straight from behind, a bit at a time.

This method will slow the fall of the tree and allow you to get clear.

BASIC WORKING TECHNIQUES







CORRECT

WRONG

Lodged Trees

STOP WARNING!

A lodged tree is a dangerous situation. Do not try to fell a tree in which another tree is lodged.

Do not fell another tree onto a lodged tree.

Do not work inside the danger area of a lodged tree and do not allow people inside danger area.

Some Suggestions as to How You can Take Down a Lodged Tree

If the tree you have felled gets hung up, do nothing hastily. Take a rest and give some thought to the situation in peace and quiet. Consider various alternatives and always choose a safe method even if it takes a little longer.

Simple Hang-Ups Rolling the Tree

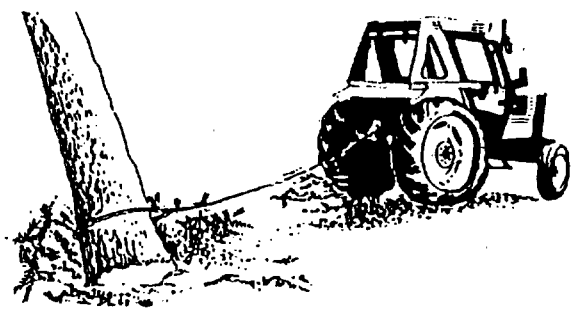
1. Determine direction tree can most easily be rolled down.
2. Cut tree loose from hinge, leaving a little on the side you intend it to roll down on.
3. Using a cant hook or similar tool, roll the tree away from you.
4. Lift with a straight back.

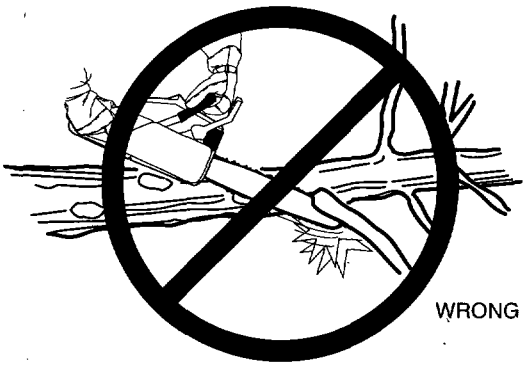
⚠ CAUTION!

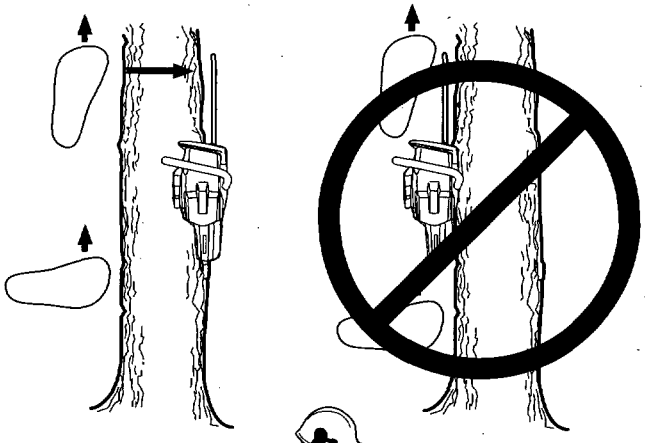
If you are not properly positioned when the tree starts to move, you might get caught by the cant hook or the tree itself.

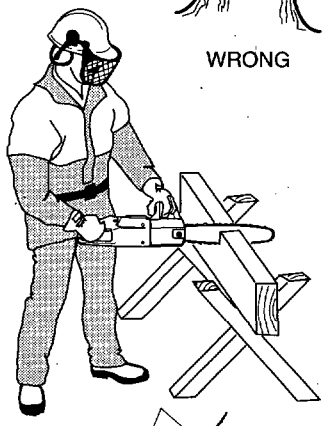
If the tree is wedged in another tree's branches, you can exert more rolling force using a cant hook and a long pole. Remember to lift correctly with a straight back.

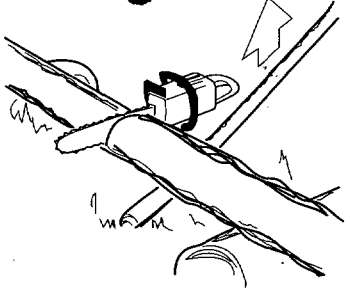
BASIC WORKING TECHNIQUES











More Difficult Hang-Ups

Use a portable or tractor-mounted winch and pull the tree down.

> **⚠ CAUTION!**
> Do not abandon a leaning, hung or lodged tree. It must be taken down, or it can become a danger to other people. Mark off the area if you temporarily have to leave to get assistance.

Limbing

Limbing is removing the branches from a felled tree.

> **STOP WARNING!**
> A majority of kickback accidents occur during limbing. Do not use the kickback zone of the guide bar. Be extremely cautious and avoid contacting the log, other limbs or objects with the nose of the guide bar. Be extremely cautious of limbs under tension. They can spring back toward you and cause loss of control resulting in injury.

1. Stand on the left side of the trunk.
2. Maintain a secure footing and rest the saw on the trunk.
3. Maintain full control, by holding saw close to you.

> **STOP WARNING!**
> Keep well away from chain.

4. Move only when the trunk is between you and the chain. As shown.

> **⚠ CAUTION!**
> Watch out for springback from limbs under tension.

Cutting timber/wood.

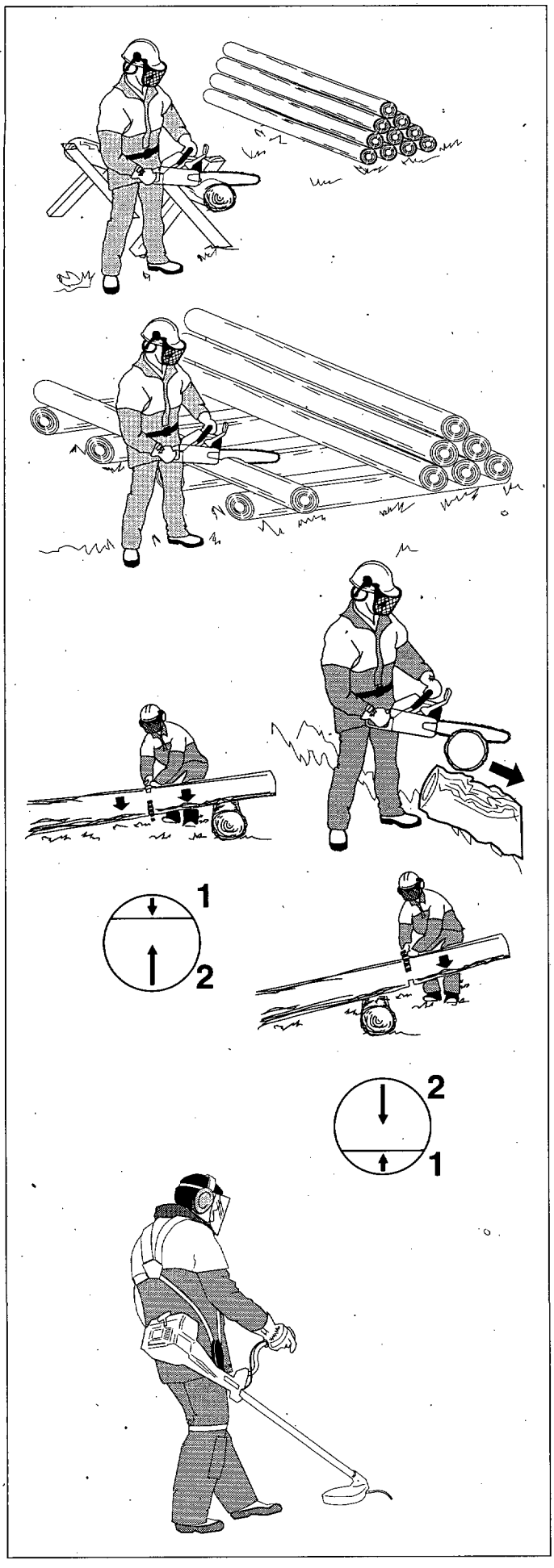
Support the wood on a saw trestle or the like. Never cut through a piece of wood that is lying on the ground. The chain will be blunted if it meets sand, stone or earth.

If the saw gets stuck

Stop the engine.
Raise the log or change its position, using a thick branch or pole as a lever.

> **STOP WARNING !**
> Do not try to pull the saw free. If you do, you can deform the handle or be injured by the saw chain if the saw is suddenly released.

BASIC WORKING TECHNIQUES



Cutting Logs

STOP WARNING!

Never attempt to cut logs while they are in a pile or when a couple of logs are lying together. Such procedures drastically increase the risk of kickback which can result in a serious or fatal injury.

If you have a pile of logs, each log you attempt to cut should be removed from the pile, placed on a saw horse or runners and cut individually.

Remove the cut pieces from the cutting area. By leaving them in the cutting area, you increase the risk for inadvertently getting a kickback, as well as increasing the risk of losing your balance while working.

Cross cutting/bucking

Before starting to cut through the log, try to imagine what is going to happen. Lock out for stresses in the log and cut through in such a manner that the guide bar will not get pinched. When bucking on a slope always stand on the uphillside of the log because the log may roll.

Cross cutting logs, pressure on top

Firm stance. Begin with an upper cut. Do not cut too deeply - about 1/3 of the log diameter is enough. Finish with a bottom cut. The saw cuts should meet.

Cross cutting logs, pressure on bottom

Firm stance. Begin with a bottom cut. The depth of the cut should be about 1/3 of the log diameter. Finish with an upper cut. The saw cuts should meet.

Cutting Shrubs, Brush, etc.

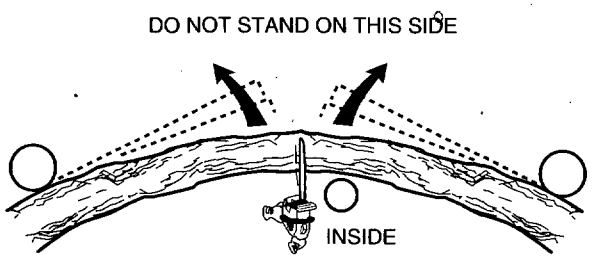
STOP WARNING!

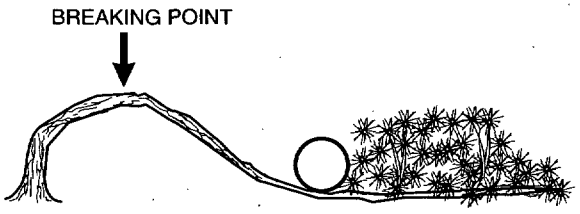
Do not use a chain saw to cut shrubs, brush, etc. The possibilities of kickback are high. A kickback can cause severe injury. Use a brush cutter or other tool that has been designed for the purpose.

Do not use your chain saw to cut shrubs, brush, etc. The possibility of kickback is high. If the stands are close together, it might be impossible to avoid contact with the kickback zone.

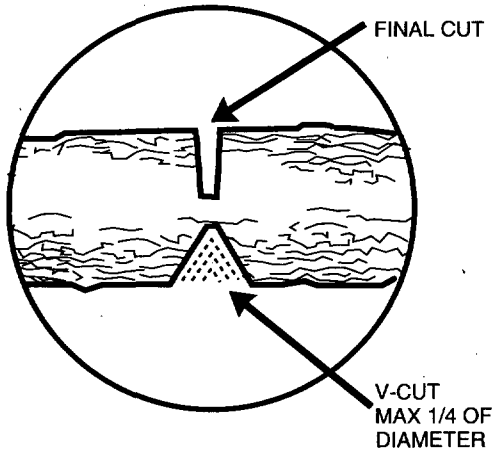
A brush cutter has been specially designed for this purpose and can be used safely for all kinds of clearing operations. Your dealer will be happy to show how a brush cutter can be of value to you.

BASIC WORKING TECHNIQUES





TREE UNDER TENSION



Cutting Trees or Limbs Under Tension

⚠ CAUTION!

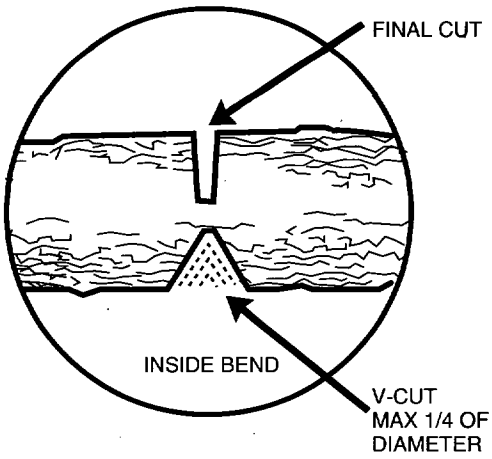
Cutting trees or limbs under tension involves special hazards and must be done with care and planning. If the cut is made improperly, or you are in the wrong position, the tree may spring back at you and cause severe injury.

The cut should be made at the tree's breaking point: i.e., the point where the tree would break if it was bent further. That point is normally where the bend is most pronounced. At the breaking point, the forces are mainly trying to push the tree outward. If you are not cutting at the breaking point, the longest section of the stem, besides trying to push outwards, will also try to push along the trunk after it has broken. That makes the forces harder to predict and increases the danger.

STOP WARNING!

Using improper techniques while cutting trees or limbs under tension can be extremely dangerous. The instructions above cover basic procedures but do not cover all possible situations you may encounter, such as multiple trees entangled in each other, dry wood, etc. Use extreme caution. Improper use may cause severe injury. Do not hesitate to get help if necessary.

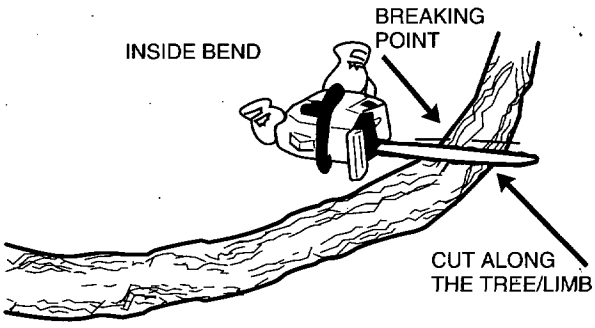
BASIC WORKING TECHNIQUES



1. Position yourself inside the bend.
2. Start to cut a V-cut on your side, inside the bend. Cut up to 1/4 of the diameter of the trunk. Watch so the saw does not get pinched.
3. Remaining on the inside of the bend, move the saw over to the opposite side.
4. Cut slowly to reduce tension.

IMPORTANT!

To avoid pinching the saw when the first cut is made, it is recommended to make a V-cut. Make it in small steps as the illustration shows. This will cause the tree to break slowly, giving you time to back out of the way.

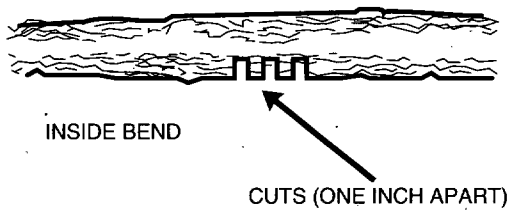


Small Trees and Limbs Under Tension

1. Always stay on the inside of the bend.
2. Make your cut at the breaking point.
3. If possible, cut along the tree/limb.
4. Cut slowly to relieve tension.

⚠ CAUTION!

Stay clear of tree/limb path.



5. If you must cut across tree/limb, make two to three cuts, one inch apart, one to two inches deep.
6. Continue to cut deeper until tree/limb bends and tension is released.
7. Cut tree/limb from outside the bend, after tension has been released.