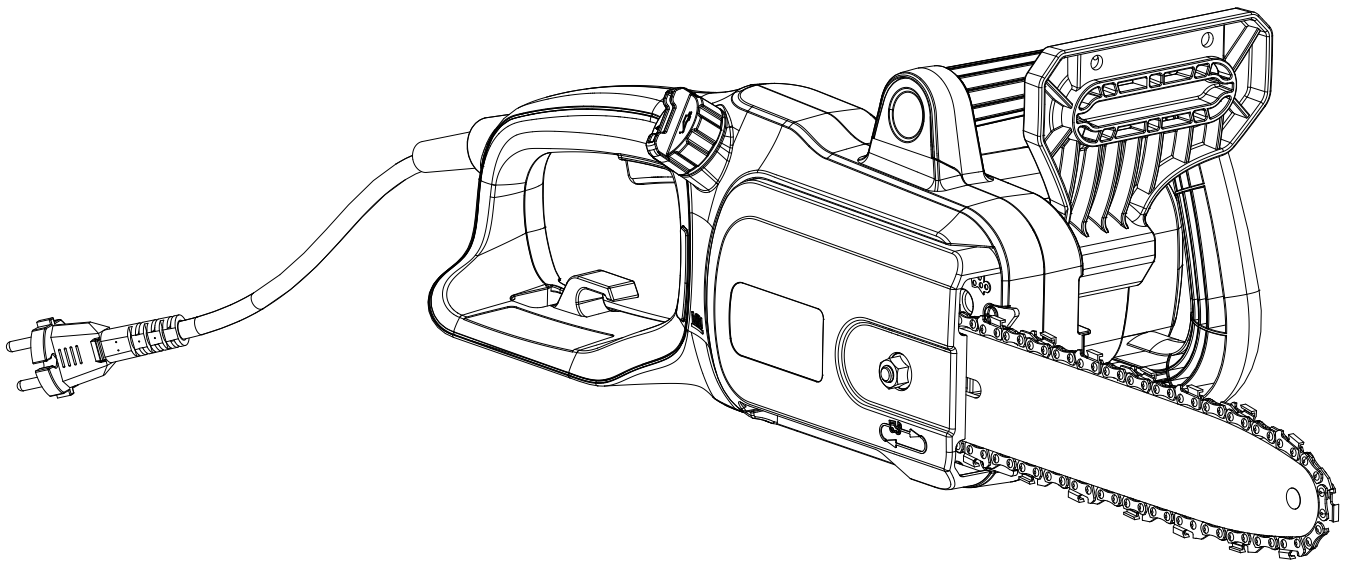




AC 1800W 

ELECTRIC CHAIN SAW



CAUTION: Before using this tool, please read this manual completely, and follow all operating safety measures.

EN

For customer service please find all information on www.senixtools.com.

CAUTION: BEFORE USING THIS PRODUCT, READ THIS MANUAL AND FOLLOW ALL ITS SAFETY RULES AND OPERATING INSTRUCTIONS.

ORIGINAL INSTRUCTIONS

SAFETY & INTERNATIONAL SYMBOLS

This operator's manual describes safety and international symbols and pictographs that may appear on this product. Read the operator's manual for complete safety, assembly, operating and maintenance and repair information.



Caution / Warning.



Read the instruction manual.



Wear eye protection.



Wear hearing protection.



Wear respiratory protection.



Wear safety helmet.



Wear face protection!



Wear protective gloves.



Wear safety footwear.



Switch the product off and disconnect it from the power supply before assembly, cleaning, adjustments, maintenance, storage and transportation.



Remove plug from the mains immediately if the power cord/extension cord is damaged or cut.



Beware of chain saw kickback and avoid contact with bar tip.



Always use chain saw two-handed.



Objects thrown by the product could hit the user or other bystanders. Always ensure that other people and pets remain at a safe distance from the product when it is in operation. In general, children must not come near the area where the product is.



Do not use in rain or wet conditions.



Correct direction of cutting teeth.




Correct direction of cutting-teeth.



Chain oil fill.



Chain brake (the  symbol shows the position in which the brake is released).



Guaranteed sound power level value in 111 dB(A)



Class II protection.



The product complies with the applicable European directives and an evaluation method of conformity for these directives were done.



Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

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SAFETY WARNINGS

General power tool safety warnings



WARNING:

Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. Save all warnings and instructions for future reference. The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

WORK AREA SAFETY

- 1. Keep work area clean and well lit.**
Cluttered or dark areas invite accidents.
- 2. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- 3. Keep children and bystanders away while operating a power tool.**
Distractions can cause you to lose control.

ELECTRICAL SAFETY

- 1. Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching

outlets will reduce risk of electric shock.

- 2. Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.**
There is an increased risk of electric shock if your body is earthed or grounded.
- 3. Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- 4. Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- 5. When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- 6. If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

PERSONAL SAFETY

- 1. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs,**

alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.

2. Use personal protective equipment.

Always wear eye protection.

Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

3. Prevent unintentional starting.

Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

4. Remove any adjusting key or wrench before turning the power tool on.

A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

5. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.

6. Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.

7. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.

8. Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles. A careless action can cause severe injury within a fraction of a second.

the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.

2. Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

3. Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.

4. Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.

5. Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

6. Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

7. Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

8. Keep handles and grasping surfaces dry, clean and free from oil and grease. Slippery handles and grasping surfaces do not allow for safe handling

POWER TOOL USE AND CARE

1. Do not force the power tool. Use

and control of the tool in unexpected situations.

SERVICE

1. **Have your power tools serviced by a qualified repair person using only identical replacement parts.** This will ensure that safety of the power tool is maintained.

CHAIN SAW SAFETY WARNINGS

1. **Keep all parts of the body away from the saw chain when the chain saw is operating. Before you start the chain saw, make sure the saw chain is not contacting anything.** A moment of inattention while operating chain saws may cause entanglement of your clothing or body with the saw chain.
2. **Always hold the chain saw with your right hand on the rear handle and your left hand on the front handle.** Holding the chain saw with a reversed hand configuration increases the risk of personal injury and should never be done.
3. **Hold the power tool by insulated gripping surfaces only, because the saw chain may contact hidden wiring or its own cord.** Saw chains contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
4. **Wear safety glasses and hearing protection. Further protective equipment for head, hands, legs and feet is recommended.** Adequate protective clothing will reduce personal injury by flying debris or accidental contact with the saw chain.
5. **Do not operate a chain saw in a tree.** Operation of a chain saw while up in a tree may result in personal injury.
6. **Always keep proper footing and operate the chain saw only when standing on fixed, secure and level surface.** Slippery or unstable surfaces such as ladders may cause a loss of balance or control of the chain saw.
7. **When cutting a limb that is under tension be alert for spring back.** When the tension in the wood fibres is released the spring loaded limb may strike the operator and/or throw the chain saw out of control.
8. **Use extreme caution when cutting brush and saplings.** The slender material may catch the saw chain and be whipped toward you or pull you off balance.
9. **Carry the chain saw by the front handle with the chain saw switched off and away from your body. When transporting or storing the chain saw always fit the guide bar cover.** Proper handling of the chain saw will reduce the likelihood of accidental contact with the moving saw chain.
10. **Follow instructions for lubricating, chain tensioning and changing accessories.** Improperly tensioned or lubricated chain may either break or increase the chance for kickback.
11. **Keep handles dry, clean, and free from oil and grease.** Greasy, oily handles are slippery causing loss of control.
12. **Cut wood only. Do not use chain saw for purposes not intended. For example: do not use chain saw for cutting plastic, masonry or non-wood building materials.** Use of the chain saw for operations different than intended could result in a hazardous situation.
13. **Do not attempt to fell a tree until you have an understanding of the risks and how to avoid them.** Serious injury could occur to the operator or bystanders while felling a tree.

CAUSES AND OPERATOR PREVENTION OF KICKBACK

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 sudden 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 a chain saw user, you should take several steps to keep your cutting jobs free from accident or injury. Kickback is the result of tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below:

- 1. Maintain a firm grip, with thumbs and fingers encircling the chain saw handles, with both hands on the saw and position your body and arm to allow you to resist kickback forces.** Kickback forces can be controlled by the operator, if proper precautions are taken. Do not let go of the chain saw.
- 2. Do not overreach and do not cut above shoulder height.** This helps prevent unintended tip contact and enables better control of the chain saw in unexpected situations.
- 3. Only use replacement bars and chains specified by the manufacturer.** Incorrect replacement bars and chains may cause chain breakage and/or kickback.
- 4. Follow the manufacturer's sharpening and maintenance instructions for the saw chain.** Decreasing the depth gauge height can lead to increased kickback.

ADDITIONAL CHAIN SAW SAFETY WARNINGS

1. We recommend the use of a residual current device with a tripping current of 30 mA or less.
2. Position the cord so that it will not be caught on branches and the like, during cutting.
3. We recommend that the first-time users should, as a minimum practice, cutting logs on a saw-horse or cradle.
4. The machine shall be used in a covered and dry area. The ambient temperature shall be included between 15°C and 30°C. The humidity level shall be less than 60%."

VIBRATION AND NOISE REDUCTION

To reduce the impact of noise and vibration emission, limit the time of operation, use low-vibration and low-noise operating modes as well as wear personal protective equipment.

Take the following points into account to minimize the vibration and noise exposure risks:

1. Only use the product as intended by its design and these instructions.
2. Ensure that the product is in good condition and well maintained.
3. Use correct application tools for the product and ensure they in good condition.
4. Keep tight grip on the handles/grip surface.
5. Maintain this product in accordance with these instructions and keep it well lubricated (where appropriate).
6. Plan your work schedule to spread any high vibration tool use across a number of days.

EMERGENCY

Familiarise yourself with the use of this product by means of this instruction manual. Memorise the safety directions

and follow them to the letter. This will help to prevent risks and hazards.

1. Always be alert when using this product, so that you can recognise and handle risks early. Fast intervention can prevent serious injury and damage to property.
2. Switch off and disconnect from the power supply if there is any malfunction. Have the product checked by a qualified specialist and repaired, if necessary, before you put it into operation again.

INTENDED USE AND NON-INTENDED USED

This electric chain saw is intended for basic limbing, felling, woodcutting, and remove buttress roots. All of the wooden objects intended to be cut with this chain saw should be no thicker than the guide bar's maximum cutting capabilities. Do not use it for cutting metals, plastic and other commercial use.

RESIDUAL RISKS

Even if you are operating this product in accordance with the provisions, residual risks will always still remain. The following dangers can arise in connection with the structure and design of this product:

1. Health defects resulting from vibration emission if the product is being used over longer period of time or not adequately managed and properly maintained.
2. Injuries and damage to property to due to broken accessories or hidden objects that are suddenly dashed.
3. Injuries and damage to property to due to thrown and fallen objects.
4. Prolonged use of this product expose the operator to vibrations and may produce 'whitefinger' disease. In order to reduce the risk, please wear gloves and keep your hands warm. If any of the 'whitefinger' symptoms appear,

seek medical advice immediately.

'Whitefinger' symptoms include:

numbness, loss of feeling, tingling, pricking, pain, loss of strength, changes in skin colour or condition.

These symptoms normally appear in the fingers, hands or wrists. The risk increases at low temperatures.



WARNING:

This product produces an electromagnetic field during operation! This field may under some circumstances interfere with active or passive medical implants! To reduce the risk of serious or fatal injury, we recommend persons with medical implants to consult their physician and the medical implant manufacturer before operating this product!

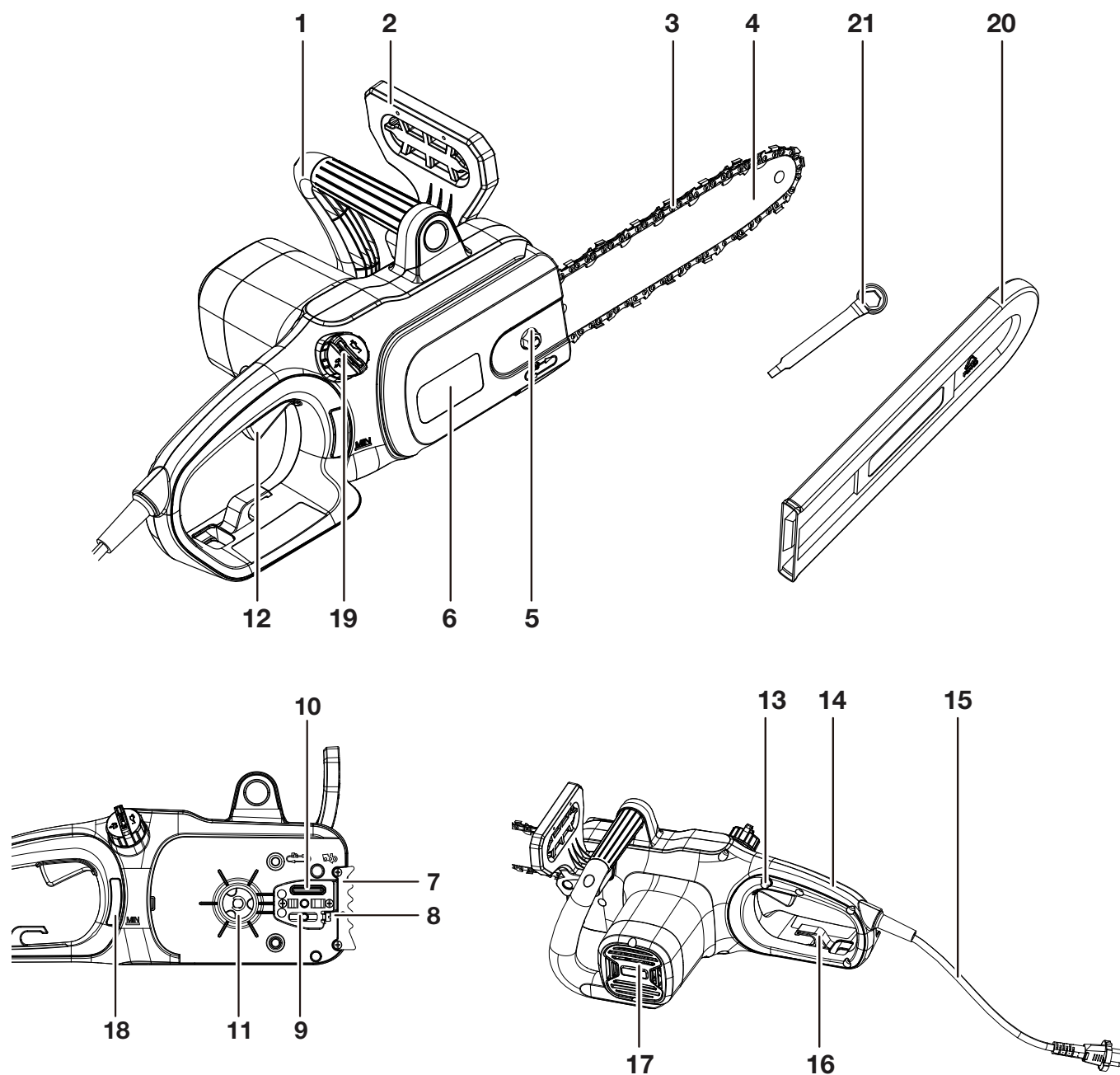
Attention!

Through poor conditions of the electrical MAINS, shortly voltage drops can appear when starting the EQUIPMENT. This can influence other equipment (eg. Blinking of a lamp). If the MAINS- IMPEDANCE $Z_{max} < 0.402 \text{ OHM}$ such disturbances are not expected. (In case of need, you may contact your local supply authority for further information).

KNOW YOUR UNIT

Model: CSE18-L-EU

For basic limbing, felling, woodcutting, and remove buttress roots.



1	Front Handle	12	On/off switch
2	Front hand guard (Chain brake lever)	13	Lock-off button
3	Saw chain	14	Rear handle
4	Guide bar	15	Power cord with plug
5	Retaining nut	16	Cable strain relief
6	Cover	17	Air vents
7	Spiked bumper	18	Oil level window
8	Tension screw	19	Chain oil tank cap
9	Bolt	20	Guide bar cover
10	Oiling port	21	Spanner
11	Drive sprocket		

SPECIFICATIONS*

Model	CSE18-L-EU
Rated Voltage	220V-240V/50Hz
Motor type	Universal Motor
Rated input power	1800W
No-Load speed	7500RPM
Maximum chain speed	14 m/s
Oil tank capacity	120 ml
Cutting length	35 cm
Sound pressure level (EN 60745-1, EN 60745-2-13)	$L_{PA}=96.3 \text{ dB(A)}$ $K_{PA}=3.0 \text{ dB(A)}$
Measured sound power level (EN 60745-1, EN 60745-2-13)	$L_{WA}=107.3 \text{ dB(A)}$ $K_{WA}=3.0 \text{ dB(A)}$
Guarantee sound power level (EN 60745-1, EN 60745-2-13)	111 dB(A)
Vibration level(EN 60745-1, EN 60745-2-13)	2.56m/s ² (Front handle) 3.90m/s ² (Rear handle) (K=1.5 m/s ²)
Weight	3.6 kg

Information:

The declared vibration and noise total value has been measured in accordance with a standard test method and may be used for comparing one tool with another;

The declared vibration and noise total value may also be used in a preliminary exposure assessment.

The vibration and noise emission during actual use of the power tool can differ from the declared total value depending on the ways in which the tool is used; and it may be necessary to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking into account all parts running idle in addition to the trigger time).

* All specifications are based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice.



WARNING:

- that the vibration and noise emission during actual use of the power tool can differ from the declared total value depending on the ways in which the tool is used; and
- of the need to identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

CHAIN SAW PREPARATION

UNPACKING



WARNING:

If any part of the Chain Saw is missing or damaged, do not connect the Chain Saw to the power source until the damaged part is repaired or replaced.

The Chain Saw comes fully assembled, including the Chain/Chain Bar Assembly. **DO NOT** discard box or packing material until all parts are examined.

NOTE: Chain and Bar Oil is not included.

You must fill the Chain Saw with SAE30 oil **BEFORE** use.

NOTE: Remove the Chain/Bar/Blade Protective Cover before use.

NOTE: The saw chain must be tensioned properly in order to ensure safe operation. The chain tension is optimal if the saw chain can be lifted 1/8 inch (3 mm) from the center of the chain bar. Since the saw chain heats up during operation, its length can therefore fluctuate. Check the chain tension every 10 minutes of operation and adjust as necessary, particularly for new saw chains. Slacken the saw chain after the work is completed since it shortens when cooling down. In doing so, you can elongate the chain's life and prevent damage.

TENSIONING THE CHAIN



WARNING:

Unplug chain saw from power source before adjusting saw chain tension.



WARNING:

Cutting edges on chain are sharp. Use protective gloves when handling chain.



WARNING:

ALWAYS Maintain proper chain tension. A loose chain will increase the risk of kickback. A loose chain may jump out of chainbar groove. This may injure operator and damage chain. A loose chain will cause chain, chain bar, and sprocket to wear rapidly. The chain life of the saw chain mainly depends upon sufficient lubrication and correct tensioning. Avoid tensioning the chain if it is hot, as this will cause the chain to become over tensioned when it cools down.

1. Check the chain tension by pulling the saw chain away from the chain bar. A properly tensioned chain should have roughly 1/8 inch (3 mm) of distance between itself and the bar guide (Fig. 1).
2. If adjustments are needed, turn the tension screw with the spanner.
3. To adjust the saw chain tension, rotate the tension screw (Fig. 2). Rotating the tension screw upwards increases the tension while rotating it downwards decreases tension. A properly tensioned chain should have no sag (Fig. 3) and should only be able to be pulled 1/8 inch (3 mm) away from the chain bar of the saw.
4. **DO NOT** over-tension the chain: this will lead to excessive wear and reduces the life of both the bar and chain.

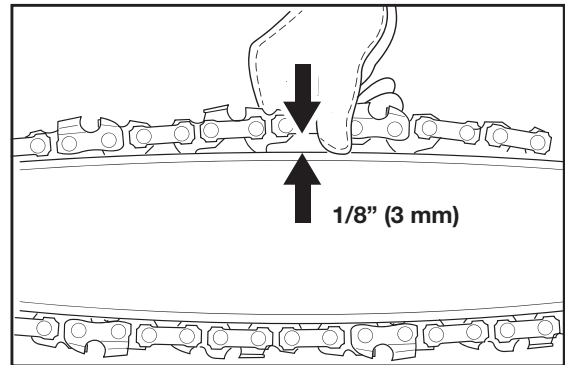


Fig. 1

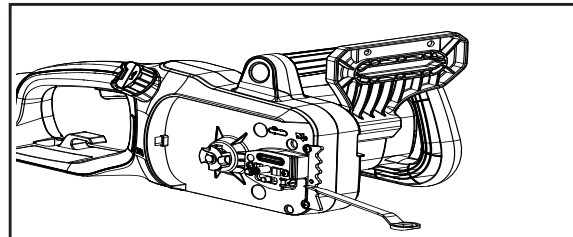


Fig. 2

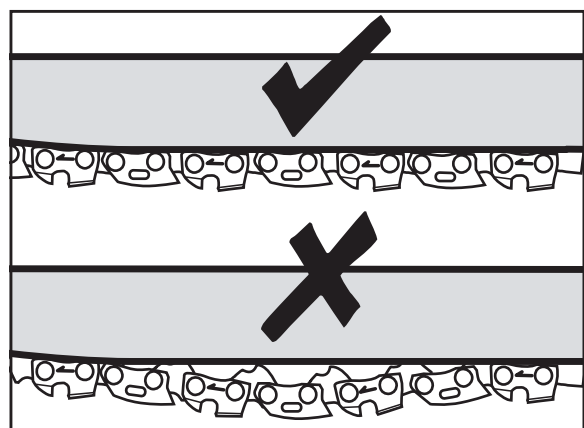


Fig. 3

FILLING THE AUTO OIL SYSTEM

CAUTION!

The chain saw is **NOT** supplied filled with oil. It is essential to fill with oil before use. Never operate the chain saw without chain oil or at an empty oil tank level, as this will result in extensive damage to the product. Chain life and cutting capacity depends on optimum lubrication. Therefore, the chain is automatically oiled during operation via the oil outlet.

This chain saw features an auto-oiling system to keep the chain and chain bar properly lubricated. The oil level indicator shows the remaining oil in the chain saw. If the oil level decreases to below one quarter capacity, refill it with the proper bar and chain oil.

To fill the oil reservoir:

1. Remove the oil cap (Fig. 4). Fill the reservoir with bar and chain oil (SAE30) until the oil level has reached full capacity.
2. Put the oil cap back on. Make sure to check the oil level after every 10 minutes of use. Unplug the chain saw before checking oil levels or filling the oil reservoir.

CAUTION!

To prevent oil leakage, ensure machine is left in a horizontal position (oil filler cap upright) when not in use. Use only the recommended oil to avoid damage to the chain saw. Never use recycled/old oil. Use of non approved oil will invalidate the warranty.

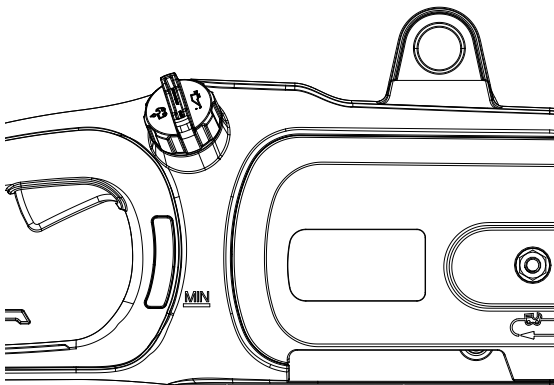


Fig. 4

ASSEMBLE THE GUIDE BAR AND SAW CHAIN

1. Place the unit on a suitable flat surface with the front handle facing upward.
2. Loosen the retaining nut with the spanner and remove it together with the cover (Fig. 5).
3. Ensure the tension pin is positioned to the left side, adjust it turning the tension screw anticlockwise with the multitool if required.
3. Spread the saw chain out with the cutting edges of the chain pointing in the rotational direction and slide the chain into the groove around the guide bar.
4. Align the guide bar and saw chain assembly with the drive sprocket and bolt. Lay the saw chain around the drive sprocket and then lower the guide bar to install it to the bolt (Fig. 5).
5. Tighten the retaining nut to fix the cover.
6. Pull the saw chain along the top of the guide bar by hand from one end to the other, several times. The chain should feel tight but still move freely.

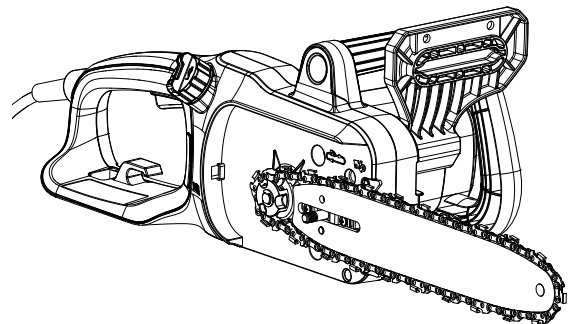
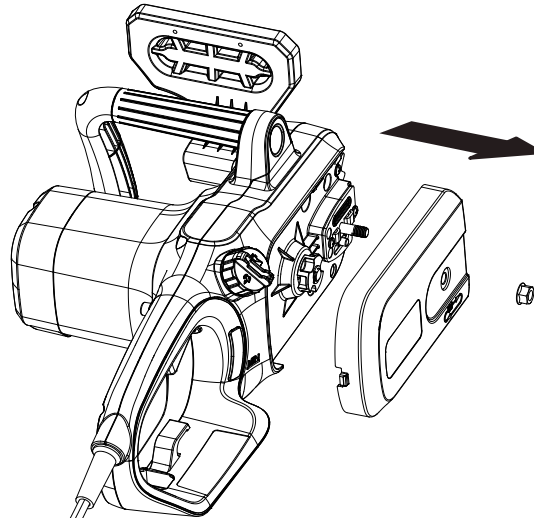


Fig. 5

OPERATION

PREPARATION

Before each use, check the following items to ensure safe working conditions.

CHAIN SAW: Before beginning work, inspect the chain saw for damage to the housing, the extension cord, the saw chain and the chain bar. Never use an obviously damaged machine.

OIL TANK: Check the fill level of the oil tank. Also check whether there is sufficient oil available while working. Never operate the saw if there is no oil or the oil level has dropped below the minimum oil level mark in order to prevent damage to the chain saw. On average, an oil filling is sufficient for approximately 10 minutes of cutting operation (depending the duration of pauses and the density of the work piece).

SAW CHAIN: Check the tension of the saw chain and the condition of the blades. The sharper the saw chain is, the easier and more manageable operations will be. The same applies to chain tension. Check the tension every 10 minutes of operation to maximize safety. New saw chains in particular are subject to changes due to the heat created by operation.

PROTECTIVE CLOTHING: Make absolutely sure to wear the appropriate close-fitting protective clothing such as protective pants, gloves and safety shoes. Wear a safety helmet with integrated hearing protection and a face guard to provide protection against falling and recoiling branches.

SAFETY WARNINGS

1. In order to ensure safe work, **DO NOT** operate the saw above shoulder height.
2. Position the cord so that it will not be caught on branches and the like, during cutting.
3. Never stand below a branch that is being sawed.
4. Exercise caution when sawing both branches under tension or branches that are splintering.
5. Make sure to safe guard against the risk of injury from falling branches and flying wood projectiles.
6. If the machine is in operation, keep persons and animals away from the danger area.
7. The machine is not protected against electric shock when coming into contact with high-voltage lines. Maintain a minimum clearance of 30 feet from current-carrying power lines to avoid life-threatening electric shock.
8. When working on an incline, always stand above or to the side of the branch being sawed.
9. Allow the chain to cut for you. Keep the saw running at full speed for the entire duration of the cut. First-time user should, as a minimum practice, cutting logs on a saw-horse or cradle.

PREVENTING KICKBACK

The term kickback refers to when the saw suddenly jumps up and back. This is usually caused by the work piece coming into contact with the chain bar tip or the clamping of the saw chain.

A kickback generates an abrupt powerful force. The saw usually reacts in an uncontrolled manner, creating the possibility of injury to the user.

The danger of a kickback is greatest when attempting to cut near or with the chain bar tip. Always apply the saw as flatly as possible in order avoid a loss of control during operation.



WARNING:

DO NOT cut down trees in high wind conditions. This can result in injury and should only be performed by a trained professional.

ON/OFF SWITCH

To turn the tool ON: press the safety button and then squeeze the trigger (Fig. 6). After the tool has started, you can release the safety switch without turning the tool off.

To turn the tool OFF: release the trigger switch (Fig. 6).

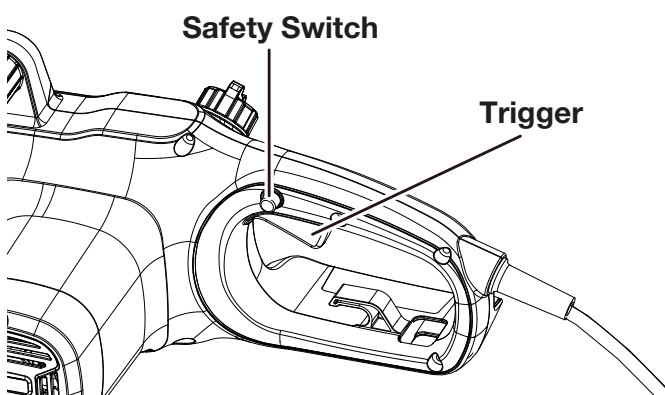


Fig. 6

KICKBACK BRAKE

The kickback brake is a safety mechanism activated by the front hand guard. When kickback occurs, the saw chain stops immediately (Fig. 7).

The following function check should be carried out before each use. The purpose of the chain brake testing is to reduce the possibility of injury due to kickback:

1. Push front hand guard forward and try to start the chain saw. The chain must not start.
2. To deactivate the kickback brake, release On/Off switch and pull hand guard backwards.

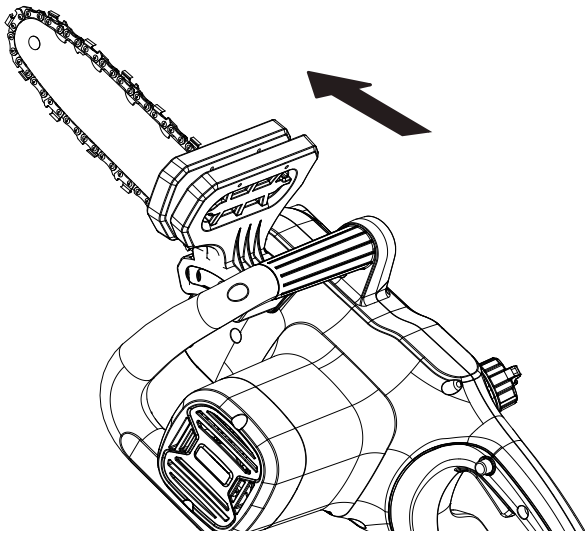


Fig. 7

SAWING TECHNIQUES

IMPORTANT: It is recommended that first-time user should, as a minimum practice, cutting logs on a saw-horse or cradle.

- Saw off the lower branches on the tree first. By doing so, it is easier for the cut branches to fall to the ground.
- At the end of the cut, the weight of the saw suddenly increases for the user since it is no longer being supported by a branch. There is a risk of losing control of the saw, so make sure to stay alert during the entire sawing operation.
- Only pull the saw out of a cut while the saw is running. By doing so, you prevent the chain from jamming in the wood.
- DO NOT saw with the tip of the chain bar. DO NOT saw into the branch formations (where the tree branches outwards). This will impede the tree's ability to heal.
- For sawing off smaller branches, place the stop face of the saw on the branch. This prevents unwanted movements of the saw at the beginning of the cut. While applying light pressure, guide the saw through the branch from top to bottom.
- For sawing off larger branches, first make a relief cut. Saw through 1/3 of the branch diameter from the bottom to top using the top side of the chain bar. Then saw from top to bottom for the other 2/3 using the bottom side of the chain bar. Saw off longer branches in sections in order to maintain control over the location of impact.

FELLING A TREE

When bucking and felling operations are being performed by two or more persons at the same time, the felling operations should be separated from the bucking operation by a distance of at least twice the height of the tree being felled.

Trees should not be felled in a manner that would endanger any person, strike any utility line or cause any property damage. If the tree does make contact with any utility line, the company should be notified immediately.

The chain saw operator should keep on the uphill side of the terrain as the tree is likely to roll or slide downhill after it is felled. It is necessary before cuts are started.

The escape path should extend back and diagonally to the rear of the expected line of fall (Fig. 8).

Description of felling: escape routes

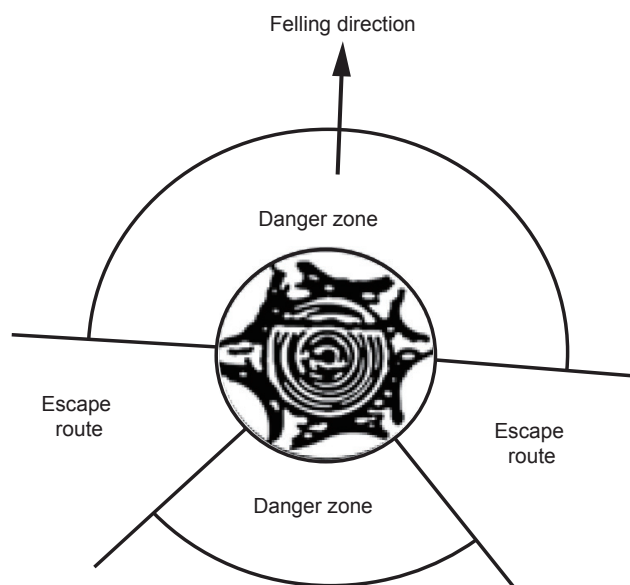


Fig.8

Before felling is started, consider the natural lean of the tree, the location of larger branches and the wind direction to judge which way the tree will fall. Remove dirt, stones, loose bark, nails, staples and wire from the tree. Make the notch 1/3 the diameter of the tree, perpendicular to the direction of falls (Fig. 9).

Description of felling: undercutting

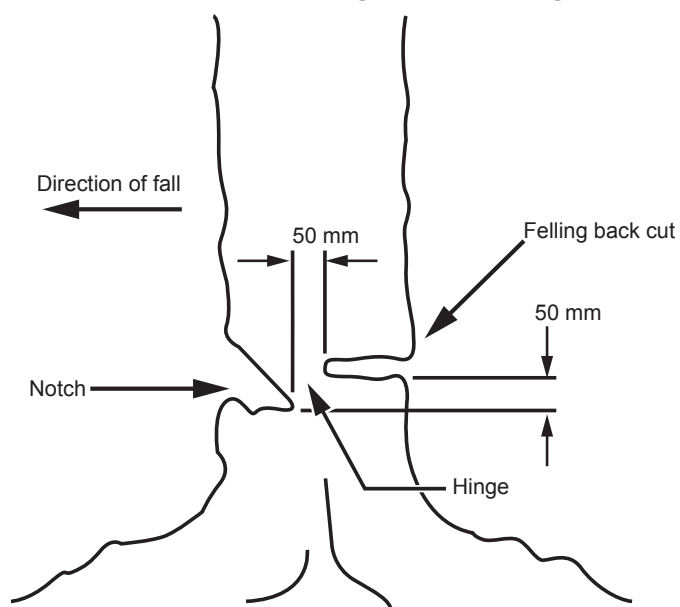


Fig. 9

Make the lower horizontal notching cut first. This will help to avoid pinching either the saw chain or the chain bar when the second notch is being made.

FELLING BACK A CUT

Make the felling back cut at least 50 mm higher than the horizontal notching cut (Fig. 9). Keep the felling back cut parallel to the horizontal notching cut. Make the felling back cut so enough wood is left to act as a hinge. The hinge wood keeps the tree from twisting and falling in the wrong direction. **DO NOT** cut through the hinge.

As the felling gets close to the hinge, the tree should begin to fall. If there is any chance that the tree may not fall in desired direction or it may rock back and bind the saw chain, stop cutting before the felling back cut is complete and use wedges of wood, plastic or aluminium to open the cut and drop the tree along the desired line of fall.

When the tree begins to fall remove the chain saw from the cut, stop the motor, put the chain saw down, then use the retreat path planned. Be alert for overhead limbs falling and watch your footing.

LIMBING A TREE

Limbing is removing the branches from a fallen tree. When limbing leave larger lower limbs to support the log off the ground. Remove the small limbs in one cut (Fig. 10).

Branches under tension should be cut from the bottom up to avoid binding the chain saw.

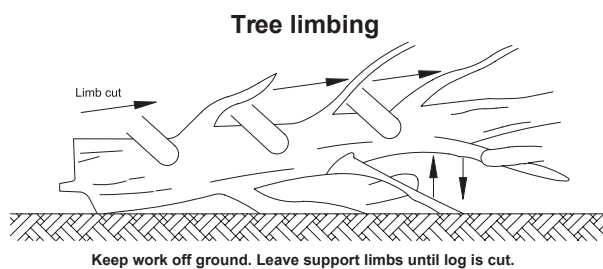


Fig. 10

BUCKING A LOG

Bucking is cutting a log into lengths. It is important to make sure your footing is firm and your weight is evenly distributed on both feet. When possible, the log should be raised and supported by the use of limbs, logs or chocks. Follow the simple directions for easy cutting. When the log is supported along its entire length, it is cut from the top (overbuck) (Fig.11).

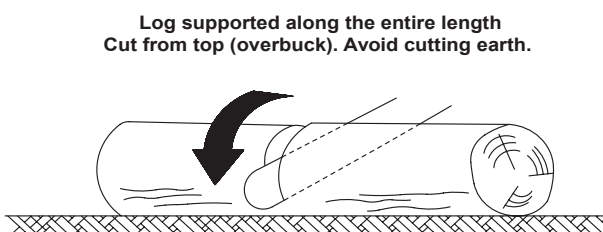


Fig. 11

When the log is supported on one end, cut 1/3 the diameter from the underside (underbuck) (Fig. 12). Then make the finished cut by overbucking to meet the first cut.

Log supported one end

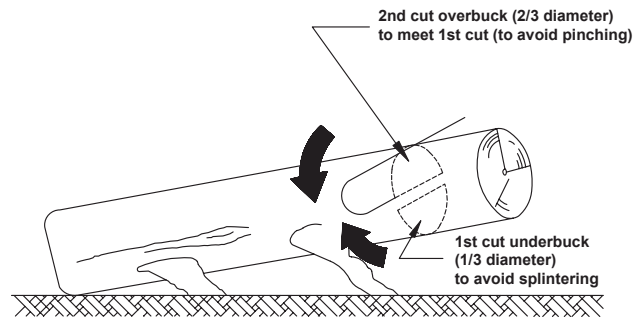


Fig. 12

When the log is supported on both ends, cut 1/3 the diameter from the top (overbuck) (Fig.13). Then make the finished cut by underbucking the lower 2/3 to meet the first cut.

Log supported both ends

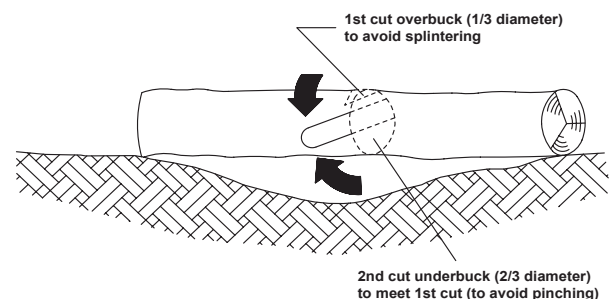
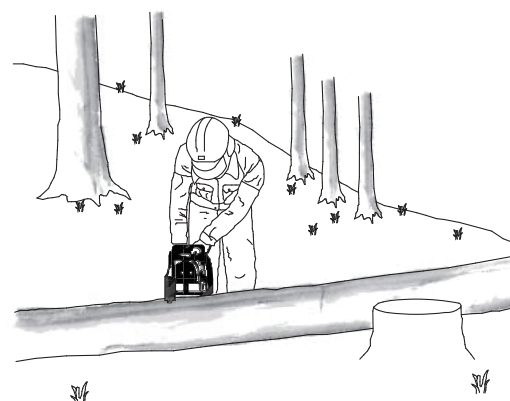


Fig. 13

When bucking on a slope always stand on the uphill side of the log (Fig.14).

Bucking a log



Stand on uphill side when cutting because log may roll

Fig. 14

To maintain complete control when cutting through a log, release the cutting pressure near the end of the cut without relaxing your grip on the chain saw handles. Don't let the chain contact the ground. After completing the cut, wait for the saw chain to stop before you move the chain saw. Always stop the motor before moving from tree to tree.

MAINTENANCE AND ADJUSTMENTS

CLEANING/STORAGE

- Clean the moulded plastic housing of the chain saw using a soft brush and clean cloth.
- **DO NOT** use water, solvents or polishes.
- Remove all debris, especially from the motor cooling vents.
- Remove and brush clean the cover, chain and chain bar after 1 to 3 hours of use.
- Clean the area under the cover, the drive sprocket and chain bar assembly using a soft brush.
- Clean oil outlet with a clean cloth.
- If the chain saw is to be stored for a longer period of time, clean chain and chain bar.
- **STORE IN A SECURE, DRY PLACE OUT OF THE REACH OF CHILDREN.**
- **DO NOT** place other objects on the chain saw.
- To prevent oil leakage, ensure machine is left in a horizontal position.
- When storing machine in original packaging the oil tank must be completely emptied.

CHECKING THE AUTOMATIC CHAIN LUBRICATION

Regularly check the functionality of the automatic chain lubrication in order to prevent overheating and the subsequent damage to the chain bar and saw chain associated with it. For this purpose, align the chain bar tip against a smooth surface (board, cut-in of a tree) and allow the chain saw to run. If an increasing amount of oil appears, the automatic chain lubrication functions properly.

LUBRICATE SPROCKET



WARNING:

Wear heavy duty gloves when performing any maintenance or service to this tool.
Always unplug the tool before performing any service or maintenance on this tool.

ON/OFF SWITCH

NOTE: It is not necessary to remove the chain or bar when lubricating the sprocket.

1. Clean the bar and sprocket.
2. Using a grease gun, insert the tip of the gun into the lubrication hole and inject grease until it appears at the outside edge of the sprocket tip (Fig. 15).
3. To rotate the sprocket release the chain stop and pull the chain by hand until the ungreased side of the sprocket is in line with the grease hole. Repeat the lubrication procedure.

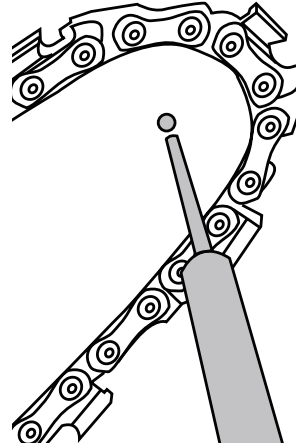


Fig. 15

SHARPENING THE SAW CHAIN



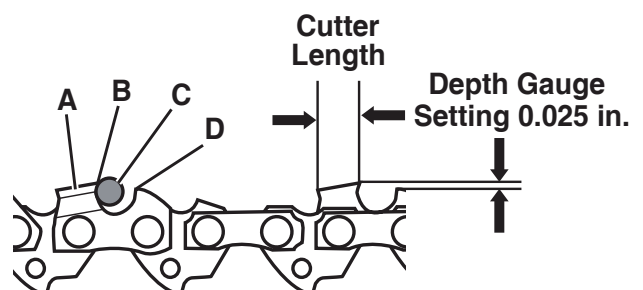
WARNING:

Unplug chain saw from power source before servicing. Severe injury or death could occur from electrical shock or body contact with moving chain. Cutting edges on chain are sharp. Use protective gloves when handling chain.

Keep chain sharp. Your saw will cut faster and more safely. A dull chain will cause undue sprocket, guide bar, chain, and motor wear. If you must force chain into wood and cutting creates only sawdust with a few large chips, then chain is dull.

Purchase a new chain, have your chain sharpened professionally at a qualified service center, or sharpen the chain yourself using a proper sharpening kit. The height difference between the cutting tip and the ridge is the depth gauge setting (Fig. 16).

When you sharpen the cutting tip, the depth gauge setting between the tip and the side plate ridge will decrease. To maintain optimal cutting performance, the ridge has to be filed down to achieve the recommended depth gauge setting.

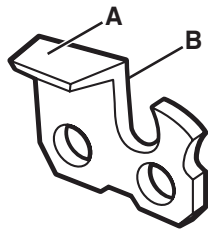


- A - Top Plate
- B - Cutting Tip
- C - File Position
- D - Ridge

Fig. 16

To sharpen the chain:

1. Using protective gloves, ensure the chain is correctly tensioned on the guide bar.
2. Use a round file with a diameter 1.1 times the cutting tooth depth. Make sure 20% of the file diameter is above the cutter's top plate (Fig. 17).

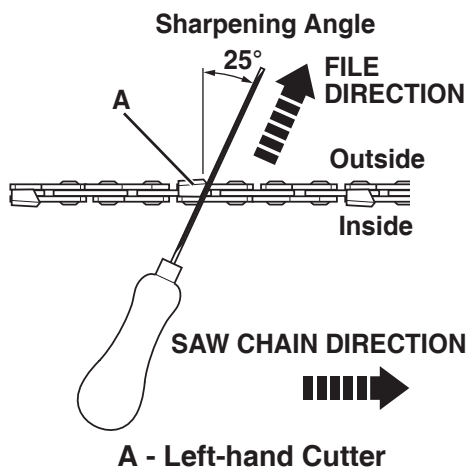


A - Top Plate
B - Side Plate

Fig. 17

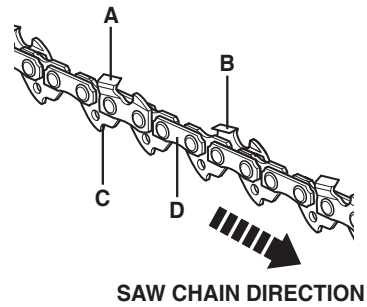
NOTE: A file guide is available from most chainsaw retailers and is the easiest way to hold the file at the correct position.

3. File at an angle perpendicular to the bar, and at an angle of 25° to the direction of travel (Fig. 18).
 4. File each tooth from the inside towards outside only. File one side of the chain first then turn the saw around and repeat the process.
- Sharpen each tooth equally by using the same number of strokes.
 - Keep all cutter lengths equal (Fig. 19). Each time the cutting tip is sharpened the cutting length is reduced. When the cutter length is reduced to 0.16 inch (4 mm), the chain is worn out and should be replaced.
 - The depth gauge setting is also reduced with each sharpening. Every 5 sharpenings use a depth gauge measuring tool to check the height between the cutting tip and the ridge (Fig. 16). When necessary, use a flat file to file down the ridge to achieve the .025 inch depth gauge setting. Depth gauge measuring tools are available from most chainsaws retailers.
 - If the saw is not functioning properly, take it to a qualified chainsaw service center to have the saw inspected. Use only identical parts as listed in this manual.



A - Left-hand Cutter

Fig. 18



A - Right-hand Cutter
B - Left-hand Cutter
C - Bumper Drive Link
D - Tie Strap

Fig. 19

REPLACING THE SAW CHAIN AND CHAIN BAR



WARNING:

Do not connect the chain saw to extension cord and power source before it is completely assembled. Always use gloves when handling the chain.



WARNING:

When handling saw chains, always wear protective gloves.

APPROVED SAW BAR/SAW CHAIN:

Replace chain when cutters are too worn to sharpen or when chain breaks. Only use replacement chain noted in this manual.

Always include new drive sprocket when replacing chain. This will maintain proper driving of chain.

1. Place the saw body on a firm and level surface.
2. Rotate the retaining nut counterclockwise (Fig. 19) to remove the cover from the saw's body.
3. Wearing protective gloves, wrap the saw chain around the chain bar, making sure that the teeth are aimed in the direction of rotation. The chain should be properly set in the slot running along the entire outside edge of the chain bar.
4. Place the saw chain around the sprocket (Fig. 20) while lining up the slot in the chain bar with the internal bolt at the base of the saw and the chain tensioning pin in the chain bar's pin hole. The chain tensioning pin may need adjustment to properly align with the hole in the chain bar. Use the spanner to adjust tension screw until saw chain fits in the chain bar.
5. While holding the bar still, place the cover back onto the saw. Make sure the tab properly lines up with the slot on the body of the saw. Lock the cover in place with the retaining nut by turning it clockwise until it engages. Adjust the chain tension.

REPLACING THE POWER CORD

If the supply cord of this power tool is damaged, it must be replaced by a specially prepared cord. Inspect the power cord and plug often. If damaged, have to be replaced by a qualified service dealer.

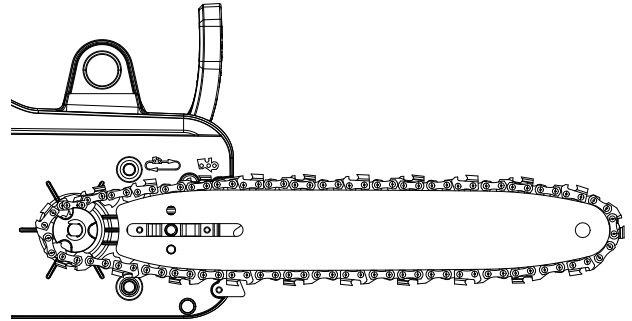
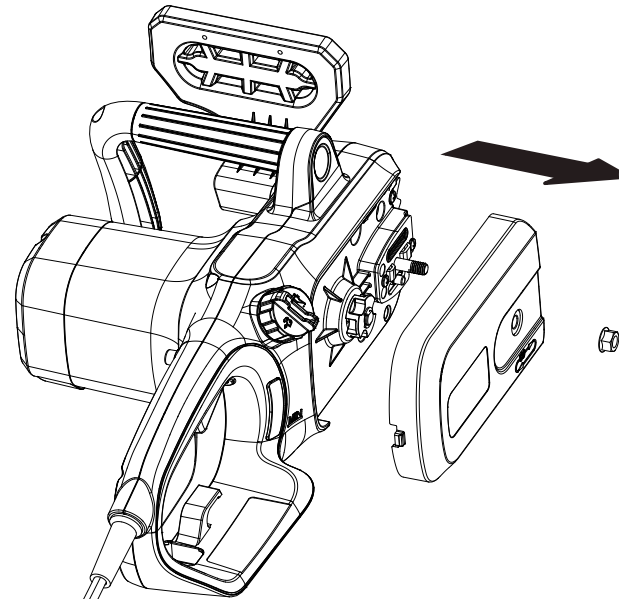


Fig. 20