



Electric Chain Saw

User's Guide



After Sales Support

Now you have purchased a Gardenline® product you can rest assured in the knowledge that as well as your 3 year parts and labour warranty you have the added peace of mind of dedicated helplines and web support:

AFTER SALES SUPPORT

UK / N.IRELAND HELPLINE NO 0905-1460005
(£ 0.06/min)

REP. IRELAND HELPLINE NO 1520-932626
(€ 0.15/min)

WEB SUPPORT www.heltec.eu

MODEL NUMBER: GCS-2000

Content

03	Introduction
04	Machine data
07	Safety instructions
19	Assembly instructions
22	Operation instructions
31	Maintenance
38	Warranty
39	Parts List
40	Exploded view

Introduction

1

2000W ELECTRIC CHAIN SAW

Congratulations on choosing to buy a Gardenline® product. By doing so you now have the assurance and peace of mind that comes with purchasing a product made by one of Europe's leading manufacturers. All products brought to you by Gardenline® are manufactured to the highest standards of performance and safety, and, as part of our philosophy of customer service and satisfaction, are backed by our comprehensive 3 Year Warranty.

Please fill in and return the Warranty Card to the address provided.

We hope you will enjoy using your purchase for many years to come.



For your own safety and that of others, we recommend that you read this instruction manual carefully before using this Electric Chain Saw. Keep this instruction manual and the documentation provided with the Electric Chain Saw for future reference.

Introduction

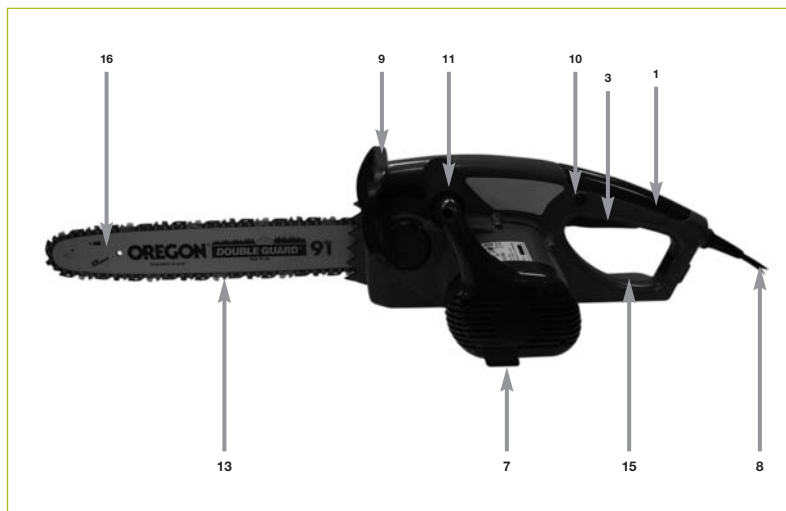
This unit is designed for occasional homeowner use and should not be used for commercial purposes or subjected to heavy continuous use. Your new chain saw can be used for a variety of projects such as cutting firewood, making fence posts, felling small trees, limbing, pruning at ground level, and light carpentry. Cut only wood or wood products with your saw.

Machine data

2

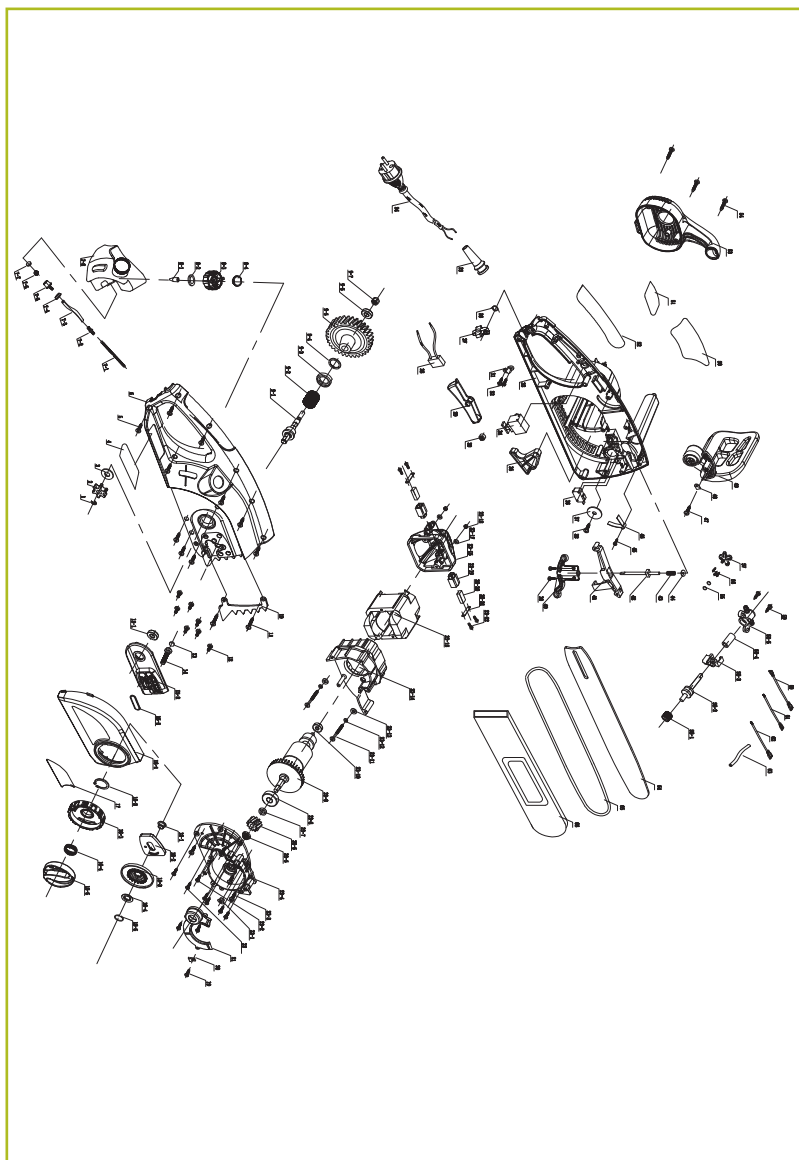
Specifications

Input	230V~, 50 Hz
Power	2000 W
No load speed	7800/min
Cutting speed	15 m/s (900 m/min)
Cutting length	400 mm
Net weight	5.4 kg
Oil capacity	200 ml
Braking time	< 0.15 sec
Vibration front handle	5.77 m/s ²
Vibration rear handle	4.89 m/s ²
Lpa (sound pressure)	91 dB (A)
Lwa (sound power)	105 dB (A)

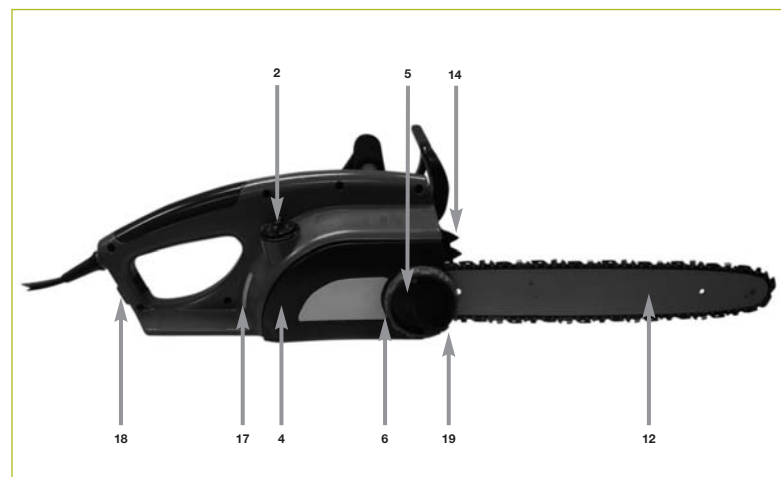


Exploded View

9



Machine data



General Information

Page 2

1. Rear handle
2. Oil tank cap
3. Trigger start
4. Sprocket cover
5. Chain cover control knob
6. Chain tension ring
7. Electric motor
8. Electric cord
9. Chain brake lever/hand guard
10. Lock / button
11. Front handle
12. Guide bar
13. Saw chain
14. Spiked bumper
15. Rear hand guard
16. Guide bar nose
17. Oil tank inspection window
18. Cord retainer
19. Chain catcher

Machine data

Safety features

Numbers preceding the descriptions correspond with the numbers above to help you locate the safety feature.

3 Trigger start / stop switch

Stops saw motor when released.

9 Chain brake lever / hand guard

Activates the chain brake and protects the operator's left hand in the event it slips off the front handle while saw is running.

7 Electric motor

Is double insulated for added safety.

10 Lock / off button

Prevents accidental acceleration of the saw motor. The trigger cannot be squeezed unless lock/off button is pushed forward to end.

13 Low-kickback chain

helps significantly reduce kickback, or the intensity of kickback, due to specially designed depth gauges and Guard links.

19 Chain catcher

Parts list

8

Position	Description	No.
409725	Sprocket wheel	1 till 3
409726	Oiler cap	8
409727	Spring	9-2
409728	Gear (set)	9-5 + 23-6
409729	Gripping teeth	10
501534	Insert plate	15
409737	Chain tension adjustment	16 + 18
409730	Rotor	23-9
409731	Carbon brush holder	23-19
409732	Carbon brush (set)	23-20
409733	Carbon brush cap	23-21 + 23-22
409735	Switch + button	29 + 34
409734	Switch junction rod	35
409736	Micro switch	36
409738	Guard	49
KZA1004	Chain guide bar, 40 cm	64
KZA1005	Saw chain, 40 cm	65
501543	Chain bar cover	66

Warranty

7

Warranty

The guarantee conditions can be found on the separately enclosed guarantee card.

CE DECLARATION OF CONFORMITY (GB)

We declare under our sole responsibility that this product is in conformity with the following standards or standardized documents:

GCS-2000 Chain Saw

**EN 50144-1, EN 50144-2-13, EN55014-1, EN55014-2,
EN 61000-3-2, EN 61000-3-11**

In accordance with the regulations:

**98/37/EC, 2000/14/EC, 2006/95/EC, 2004/108/EC,
2002/95/EC, 2002/96/EC**

from 01-09-2005

ZWOLLENL

J.A. Bakker - van Ingen
CEO Ferm BV

J. Lodewijk
Quality Manager Ferm Global

It is our policy to continuously improve our products and we therefore reserve the right to change the product specification without prior notice.

Servotool BV. Lingenstraat 6. 8028 PM Zwolle. The Netherlands

Safety Instructions

3

Meaning of symbols marked on the product

The following pictograms are used in these instructions for use:



Read the user manual before using the machine



In accordance with essential applicable safety standards of European directives



Class II machine – Double insulation – You don't need any earthed plug.



Whenever the machine is in use, safety goggles must be worn to safeguard against flying object, as must ear protectors, such as a soundproof helmet, in order to protect the operator's hearing. If the operator is working in an area where there is a risk of falling objects, a safety helmet must also be worn.



Wear gloves to protect your hands



Warning! Danger



Do not expose to rain



Remove plug from the mains immediately if cable is damaged or cut



Wear safety boots to protect against electric shock



Sound power level 105 dB (A)



Faulty and/or discarded electrical or electronic apparatus have to be collected at the appropriate recycling locations.

Safety Instructions



Keep bystanders away



Warning! When using electric tools, basic safety precautions, including the following, should always be followed to reduce the risk of fire, electric shock and personal injury. Read all these instructions before operating this product and save these instructions.



Warning! Take care not to expose this tool to rain and remove plug from mains immediately if the supply cable is damaged.

Warning!

Read all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term “power tool” in all of the warnings listed below refers to your mains operated (corded) power tool or battery operated (cordless) power tool. Save these instructions.

1) Work area

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

2) Electrical safety

- a. Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs which earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- b. 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.
- c. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- d. 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

Maintenance

1. Place switch in “off” position and unplug the power supply before the appliance is serviced, cleaned, or maintenance is performed.
2. Keep the air intake clean and air vents free of debris to avoid overheating the motor.
3. Clean with a damp sponge and mild soap. Do not squirt with a water hose or douse with water or other liquids.
4. Inspect the saw chain for proper tension before each use and frequently during cutting. Sharpen as required.
5. Clean the guide bar and bar pad to ensure free path for oil.
6. Turn the bar over after each use to achieve even wear.
7. No motor lubrication is necessary. The motor is equipped with lifetime lubricated bearings.
8. If the saw does not operate, turn switch to OFF position and disconnect the extension cord, first from the power supply, then from the saw. Check the power supply for blown fuses or tripped circuit breakers. If it still does not operate, contact your local dealer. Do not attempt to repair it yourself. No serviceable parts are inside.

Maintenance

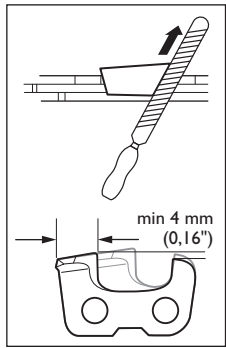


Fig. 18

Chain tension

Check the chain tension frequently and adjust as often as necessary to keep the chain snug on the bar, but loose enough to be pulled around by hand. (See Section Saw Chain Tension Adjustment).

Breaking in a new saw chain

A new chain and bar will need readjustment after as few as 5 cuts. This is normal during the break-in period, and the interval between future adjustments will begin to lengthen quickly. Over a period of time, however, the moving parts of the saw chain will become worn, resulting in what is called chain strength. This is normal. When it is no longer possible to obtain correct chain tension adjustment, a link will have to be removed to shorten the chain. See your Authorized Service Center to have this repair performed.




Warning! Never have more than 3 links removed from a loop of chain this could cause damage to the sprocket.

Chain lubrication

Always make sure the automatic oiler system is working properly. Keep the oil tank filled with special chainsaw oil. Adequate lubrication of the bar and chain during cutting operations is essential to minimize friction with the guide bar. Never starve the bar and chain of lubricating oil. Running the saw dry or with too little oil will decrease rapid cutting efficiency, shorten saw chain life, cause rapid dulling of the chain, and lead to excessive wear of the bar from overheating. Too little oil is evidenced by smoke or bar discoloration.

Preventative maintenance servicing a double insulated appliance

In this double insulated appliance, 2 systems of insulation, instead of earthed, are provided. No earthed means is provided on a double insulated appliance, nor should a means for earthed be added to the appliance. No serviceable parts are inside. A double insulated appliance is marked with the words, "Double Insulation" or "Double Insulated". The symbol  may also be marked on the appliance.

Safety Instructions

or moving parts. Damaged or entangled cords increase the risk of electric shock.

- e. 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. Always use tool in conjunction with a residual circuit breaker device.
- f. Take extra care not to sever or snag the electrical cord. Unplug the cord immediately.

3) Personal safety

- a. 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.
- b. Use safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- c. Avoid accidental starting. Ensure the switch is in the off position before plugging in. Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.
- d. 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.
- e. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- f. 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.
- g. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of these devices can reduce dust related hazards.
- h. Use clamps or a vice to hold work. It's safer than using your hand and it frees both hands to operate tool.

4) Power tool use and care

- a. Do not force the power tool. Use 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.
- b. Do not use the power tool if the switch does not turn it on and off. Any

Safety Instructions

power tool that cannot be controlled with the switch is dangerous and must be repaired.

- c. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d. 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.
- e. Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation.
If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- f. Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g. Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from intended could result in hazardous situation.
- h. Damaged switches must be replaced at a customer service repair centre. Do not use power tools that cannot be switched on and off.
- i. Do not leave power tools unattended while they are switched on.
Always switch off the tool and wait until it has come to a full standstill before leaving.
- j. If the mains cable has been damaged, it must be replaced with a special mains cable. These can be obtained from the manufacturer or the manufacturer's customer service department. The mains cable may only be replaced by the manufacturer, the manufacturer's customer service department or equally qualified persons.

5) Service

- a. Please use a qualified expert who uses original replacement parts to repair your power tool. This will ensure proper functioning of the power tool.
- b. Caution! The use of any accessories or additional tools other than those recommended in this manual may lead to an increased risk of injury. Only use original replacement parts.

Maintenance

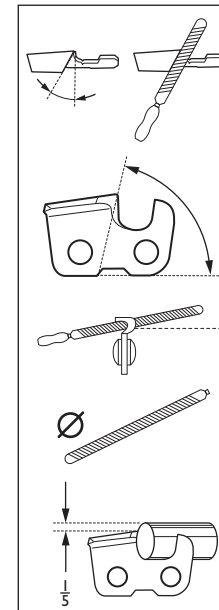


Fig. 17



Warning! The risk of kick-back increases when:

- file-angle is too big
- cutting-angle is too small
- diameter of round file is too small

B. Sharpening the tooth

To sharpen the teeth of the saw you need a round file and a file mould. Consult a specialist store in chain saws for these items.

1. Check if the chain is stretched out completely. Otherwise the chain is not stable enough and cannot be sharpened correctly.
2. Always file from the inside of the tooth to the outside. Always lift up the file when you start sharpening another tooth. First file all teeth on one side, turn round the chain saw and then file the teeth on the other side.
3. After filing, the teeth should all have the same length. When the length of the teeth is only 4 mm, the chain is worn and should be replaced.

C. The cutting-depth

When you sharpen the teeth, the cutting-depth will decrease. To maintain the maximum saw capacity, the ridge (B) has to be lowered. To attain a perfect cutting-depth you should use also a depth-mould. Consult a specialist store in chain saws for the specific tool and measurements. Adjusting the cutting-depth has to be done directly after the teeth are sharpened. You use a flat file and a depth-mould for this. The cutting-depth is correct when you don't feel resistance anymore, while moving the file across the mould.

Maintenance



Warning! Always wear heavy duty protection work gloves and disconnect the extension cord when working on the saw chain.

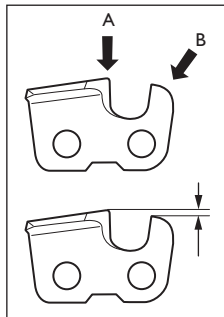


Fig. 16

Chain sharpening

A. General information about sharpening the chain

Never saw with a blunt chain. The chain is blunt when you have to push the chain saw into the tree and the chips are very small. The saw-link is the part of the chain which does the sawing (fig. 16). The height-distance between the tooth A and the ridge B is the cutting-depth. When sharpening the chain you have to consider the next points (fig.17):

- File-angle
- Cutting-angle
- File-position
- Diameter of round file
- File-depth

For correct sharpening of the chain you need good tools; for example a mould to obtain a correct file-angle. If in doubt consult a specialist service centre. Consult specialist assistance and advice if you are at all unsure about task.

Safety Instructions

Chain Saw safety warnings:

- **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.
- **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.**
- **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.
- **Do not operate a chain saw in a tree. Operation of a chain saw while up in a tree may result in personal injury.**
- **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.**
- **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.
- **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.**
- **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.**
- **Follow instructions for lubricating, chain tensioning and changing accessories. Improperly tensioned or lubricated chain may either break or increase the chance for kickback.**
- **Keep handles dry, clean, and free from oil and grease. Greasy, oily handles are slippery causing loss of control.**
- **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.**

Safety Instructions

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:

- **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.
- **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.
- **Only use replacement bars and chains specified by the manufacturer.** Incorrect replacement bars and chains may cause chain breakage and/or kickback.
- **Follow the manufacturer's sharpening and maintenance instructions for the saw chain.** Decreasing the depth gauge height can lead to increased kickback.
- **Power supply**
Connect the chain saw to correct voltage; be sure that the voltage supplied is the same as that specified on the nameplate of the tool.
- Do not operate a chain saw that is damaged, improperly adjusted, or not completely and securely assembled. Be sure that the saw chain stops moving when the trigger is released.
- Do not attempt operations beyond your capacity or experience.
- Do not operate a chain saw with one hand! Serious injury to the operator, helpers, or bystanders may result from one-handed operation. A chain saw is intended for two-handed use.

Maintenance

Oil passages

Oil passages at bar pad should be cleaned to ensure proper lubrication of the bar and chain during operation. This can be done using a soft wire small enough to insert into the oil discharge hole or stiff brush.

Note: The condition of the oil passages can be easily checked. If the passages are clear, the chain will automatically give off a spray of oil within seconds of starting the saw. Your saw is equipped with an automatic oiler system.

Chain maintenance instructions



Warning! Unless you have experience and specialized training for dealing with kickback (see Safety Precautions), always use a low-kickback saw chain, which significantly reduces the danger of kickback. Low-kickback saw chain does not completely eliminate kickback. A low-kickback or "safety chain", should never be regarded as total protection against injury.

A low-kickback saw chain should always be used in conjunction with other kickback protection devices such as the chain brake / Hand Guard furnished with your unit. Always use a replacement saw chain designed as "low-kickback" or a saw chain which meets the low-kickback performance. A standard saw chain (a chain which does not have the kickback reducing guard links) should only be used by an experienced professional chain saw operator.

What is a Low-Kickback Saw Chain

A low-kickback saw chain is a chain which has met the kickback performance requirements of ISO 9518.

By keeping the chain brake and saw chain in good working condition and correctly serviced as recommended in this manual, you will be able to maintain the safety system of your chain saw over the life of the product.



Warning! Never remove, modify or make inoperative any safety device furnished with your unit. The Chain Brake/Hand Guard and low-kickback saw chain are major safety features provided for your protection.

Maintenance

Note:

It is not necessary to remove the saw chain to lubricate the guide bar sprocket tip. Lubrication can be done on the job.

2. Clean the guide bar sprocket tip.
3. Using disposable Lube gun, insert needle nose into the lubrication hole and inject grease until it appears at the outside edge of the sprocket tip (Fig.14).
4. Make sure that the chain brake is deactivated. Rotate the saw chain by hand. Repeat the lubrication procedure until the entire sprocket tip has been greased.

To Clean Guide Bar Rails

1. Remove sprocket cover, bar and chain.
2. Using a screwdriver, putty knife, wire brush or other similar instrument, clear residue from the rails on the guide bar. This will keep the oil passages open to provide proper lubrication to the bar and chain. (Fig. 15)
3. Reinstall the bar, chain (and adjust tension) and sprocket cover. (See Section Guide bar / saw chain installation).

Guide bar maintenance

Most guide bar problems can be prevented merely by keeping the chain saw well maintained. Incorrect filing and non-uniform cutter and depth gauge settings cause most guide bar problems, primarily resulting in uneven bar wear. As the bar wears unevenly, the rails widen, which may cause chain clatter and difficulty in making straight cuts. Insufficient guide bar lubrication and operating the saw with a chain that is too tight will contribute to rapid bar wear (see Section Chain maintenance instructions). To help minimize bar wear, the following guide bar maintenance is recommended.

Bar wear

Turn guide bar frequently at regular intervals (for example, after 5 hours of use), to ensure even wear on top and bottom of bar.

Bargrooves

Bar grooves (or rails which support and carry the chain) should be cleaned if the saw has been heavily used or if the saw chain appears dirty. Rails should always be cleaned every time the saw chain is removed.

Safety Instructions

- To reduce potential for electric shock, do not operate the saw on wet or slippery surfaces, or during snow storms, rain storms, and other adverse weather conditions.
- Keep the handles dry, clean, and free of oil or grease.
- Do not allow dirt, debris or sawdust to build up on the motor or outside air vents.
- Follow the manufacturer's sharpening and maintenance instructions for the saw chain, how to sharpen the saw.
- Cut at high motor speeds.
- Operation of a chain saw should be restricted to adults, properly instructed individuals.
- Your chain saw is intended for occasional homeowner use. It is not made for heavy continuous use.
- Do not force a small saw to do a job requiring a heavier duty unit.
- Examine the electrical switches. Do not use the chain saw if the switches do not properly turn on and off. Do not attempt to make any repairs to the electric switches. Take your saw to a Authorized Service Center.
- Maintain extension cords. Inspect the extension cords periodically and replace if damaged. Only use power cords that are suitably marked for outdoor use (wiring $\geq 1,5 \text{ mm}^2$).
- Do not operate your chain saw near or around flammable liquids or gases, whether in or out of doors. An explosion and/or fire may result.
- All chain saw service, other than the items listed in the user manual safety and maintenance instructions should be performed by competent chain saw personnel. Do not attempt to repair it yourself; there are no user serviceable parts inside.
- Never remove, modify or make inoperative any safety device furnished with your unit. The Chain Brake®/Hand Guard is a major safety feature. The saw will not run when the Chain Brake® is tripped.
- It is intended for infrequent use by homeowner's, cottagers and campers, and for such general applications such as clearing, pruning, cutting firewood, etc. It is not intended for prolonged use. If the intended use involves prolonged periods of operation, this may cause circulatory problems in the user's hands due to vibration. It may be appropriate to use a saw having an anti-vibration feature.
- Safety clothing required by your safety organizations, government regulations, or your employer should be used; otherwise, snug fitting clothing, safety footwear, eye and face protection and hand and ear protection should be worn.

Safety Instructions

- When felling, keep at least 2 tree lengths between yourself and your fellow workers.
- Keep everyone, especially children and pets, away from the area of operation. Never allow children to operate the appliance. Turn off unit immediately if you are approached.
- Avoid sawing in the soil, in fences and in wiring. The chain saw also is not developed to saw young/thin trees and prepared balks.
- Do not allow children or young persons to operate the chain saw. The chain saw for use for over 18's only.

Highly Recommended:

- The appliance should be supplied via a Residual Current Device (RCD) with a tripping current of not more than 30 mA.
- The first time user should have practical instruction in the use of the chainsaw and the protective equipment from an experienced operator. The initial practice should be cutting logs on a saw horse or cradle.

Important safety

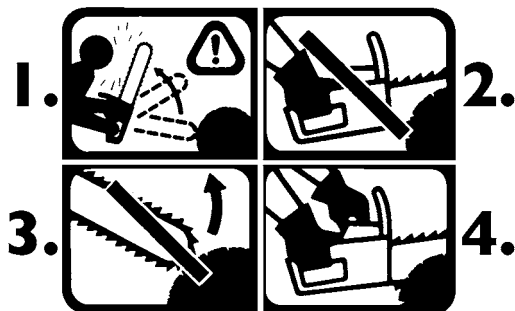
How to read symbols

Fig. 1



Warning! Used to warn that an unsafe procedure should not be performed.

Recommended: Recommended cutting procedure.



Maintenance

6

Guide bar maintenance



Warning! Ensure that the power cord is disconnected before performing any maintenance on your saw.

Proper maintenance of the guide bar, as explained in this section, is essential to keep your saw in good working order.

Sprocket tip lubrication

For units supplied with sprocket tip guide bars only.



Caution! Failure to lubricate the guide bar sprocket tip as explained below will result in poor performance and seizure, voiding the manufacturer's warranty.

Lubrication of the sprocket tip is recommended after each saw use. Always thoroughly clean the guide bar sprocket tip before lubrication.



Warning! Wear heavy duty work gloves when performing this application to reduce risk of personal injury.

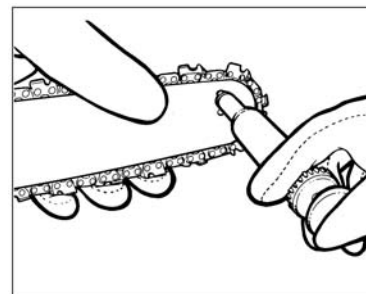


Fig. 14

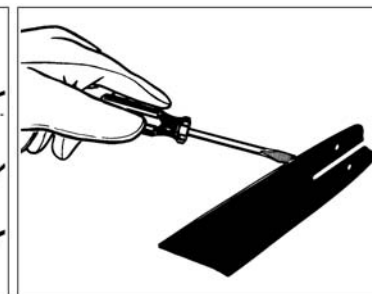
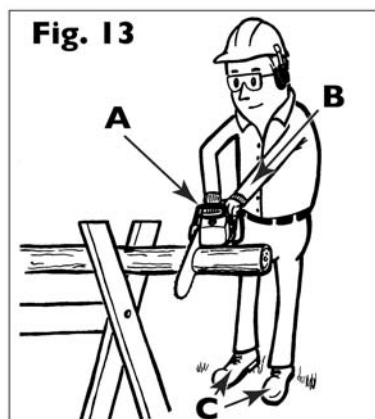


Fig. 15

To Lubricate Sprocket Tip:

1. Unplug the chain saw from the power source.

Operations instructions



Bucking using a sawhorse

For personal safety and ease of cutting, the correct position for vertical bucking is essential (Fig. 13).

Vertical cutting:

- A. Hold the saw firmly with both hands and keep the saw to the right of your body while cutting.
- B. Keep the left arm as straight as possible.
- C. Keep weight on both feet.



Caution! While the saw is cutting, be sure the chain and bar are being properly lubricated.

Safety Instructions

Warning!

1. Beware of kick back.
2. Do not attempt to hold saw with one hand.
3. Avoid bar nose contact.

Recommended

4. Hold saw properly with both hands. Never use the machine with one hand: the chain brake does not work!

Danger! Beware of kickback!

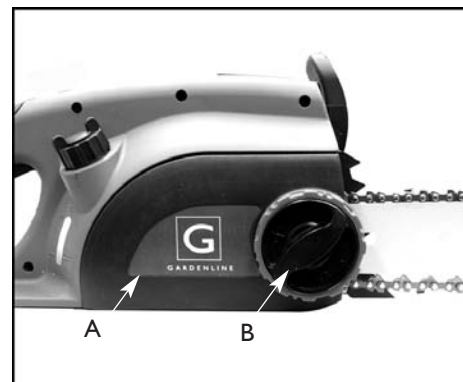


Fig. 3A

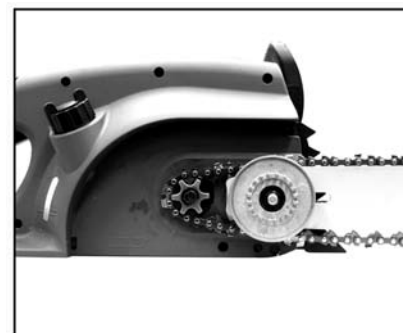


Fig. 3B

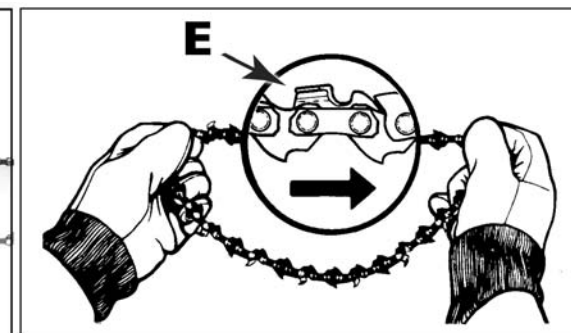


Fig. 3C

Safety instructions

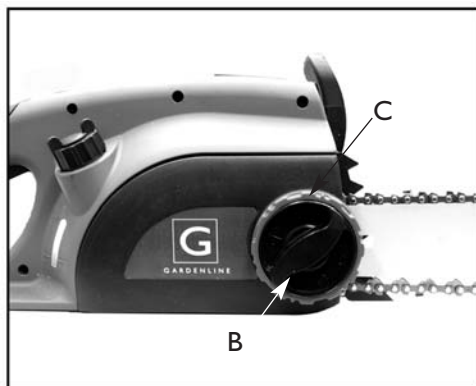


Fig. 3D

Guide bar/saw chain installation

To install guide bar & saw chain:

1. Place power unit on flat surface.
2. To remove the side cover (A), turn the knob (B) counter-clockwise.(Fig. 3A).
3. Slide the bar on to the saw, and place the chain correctly on the sprocket wheel (Fig. 3B).
4. Spread the chain out with the cutting edges (E) of the chain pointing in the direction of rotating (Fig. 3C).
5. Place the side cover back in its place and turn the knob (B) clockwise.
6. Turn the tension ring (C) until the chain tension is correct (Fig. 3D + 4).
7. After running the chain saw for 1 hour, check the chain tension again and adjust when necessary.

Saw chain tension adjustment

Proper tension of the saw chain is extremely important and must be checked before starting, as well as during, any cutting operation. Taking the time to make needed adjustments to the saw chain will result in improved cutting performance, prolonged chain life and safety.

Operations instructions

Limbing

Limbing a tree is the process of removing the branches from a fallen tree. Do not remove supporting limbs (A) until after the log is bucked (cut) into lengths (Fig. 11). Branches under tension should be cut from the bottom up to avoid binding the chain saw.



Warning! Never cut tree limbs while standing on tree trunk.

Bucking

Bucking is cutting a fallen log into lengths. Make sure you have a good footing and stand uphill of the log when cutting on sloping ground. If possible, the log should be supported so that the end to be cut off is not resting on the ground. If the log is supported at both ends and you must cut in the middle, make a downward cut halfway through the log and then make the undercut. This will prevent the log from pinching the bar and chain. Be careful that the chain does not cut into the ground when bucking as this causes rapid dulling of the chain. When bucking on a slope, always stand on the uphill side.

1. Log supported along entire length: Cut from top (overbuck), being careful to avoid cutting into the ground (Fig. 12A).
2. Log supported on 1 end: First, cut from bottom (underbuck) 1/3 diameter of log to avoid splintering. Second, cut from above (overbuck) to meet first cut and avoid pinching (Fig. 12B).
3. Log supported on both ends: First, overbuck 1/3 diameter of log to avoid splintering. Second, underbuck to meet first cut and avoid pinching (Fig. 12C).

Note: The best way to hold a log while bucking is to use a sawhorse. When this is not possible, the log should be raised and supported by the limb stumps or by using supporting logs. Be sure the log being cut is securely supported.

Operations instructions

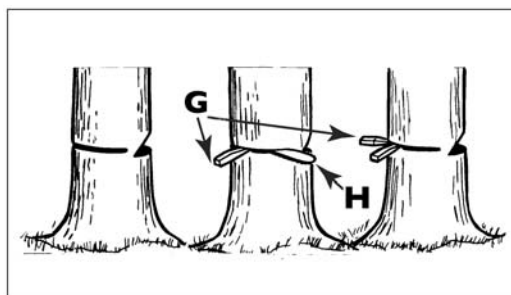


Fig. 10C



Fig. 10D

Felling cut

1. Use wooden or plastic wedges (G) to prevent binding the bar or chain (H) in the cut. Wedges also control felling (Fig. 10C).
2. When diameter of wood being cut is greater than the bar length, make 2 cuts as shown (Fig. 10D).



Warning! As the felling cut gets close to the hinge, the tree should begin to fall. When tree begins to fall, remove saw from cut, unplug, put chain saw down, and leave area along retreat path (Fig. 10A).



Fig. 11

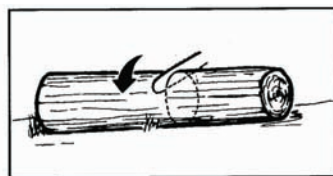


Fig. 12A



Fig. 12B



Fig. 12C

Safety instructions

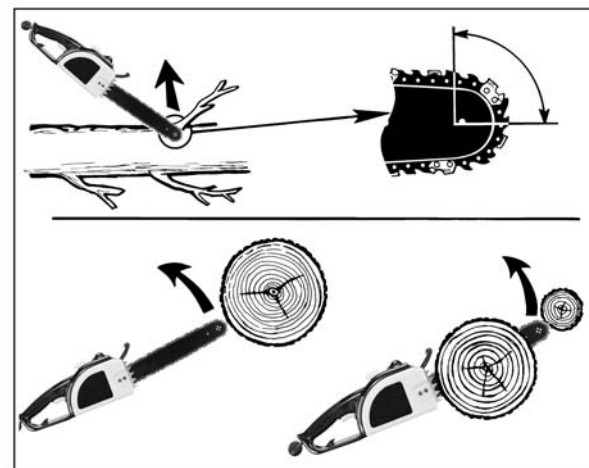


Fig. 2A

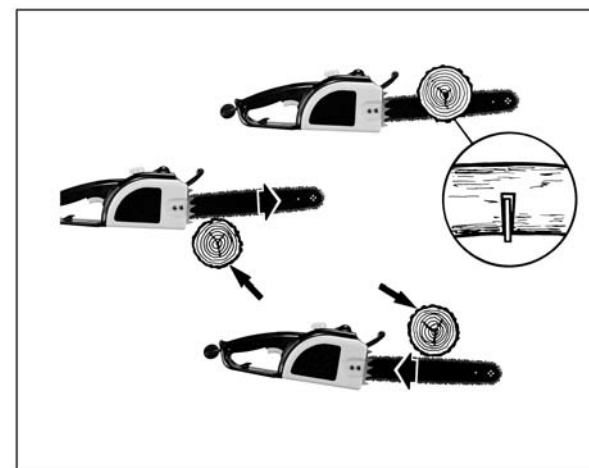


Fig. 2B

Safety instructions

Beware of rotational kickback

Fig. 2A

A = Kickback path

B = Kickback reaction zone

The push (pinch kickback) and pull reactions

Fig. 2B

A = Pull

B = Solid objects

C = Push

Kickback may occur when the nose or tip of the guide bar touches an object, or when 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 toward the operator. Pinching the saw chain along the bottom of the guide bar may pull the saw forward, away from the operator. Pinching the saw chain along the top of the guide bar may push the guide bar rapidly back toward the operator. Any of these reactions may cause you to lose control of the saw, which could result in serious personal injury.

Operations instructions

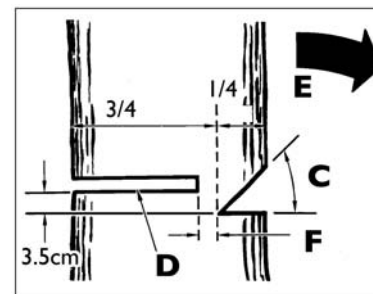


Fig. 10B

General guidelines for felling trees

Normally felling consists of 2 main cutting operations, notching (C) and making the felling cut (D). Start making the upper notch cut (C) on the side of the tree facing the felling direction (E). Be sure you don't make the lower cut too deep into the trunk. The notch (C) should be deep enough to create a hinge (F) of sufficient width and strength. The notch should be wide enough to direct the fall of the tree for as long as possible.



Warning! Never walk in front of a tree that has been notched. Make the felling cut (D) from the other side of the tree and 3-5cm above the edge of the notch (C) (Fig. 10B).



Warning! Don't use the saw above shoulder-height, because of difficult handling of the chainsaw which can cause serious injury. Take care of a stable position so you have good control on the chain saw.

Never saw completely through the trunk. Always leave a hinge. The hinge guides the tree. If the trunk is completely cut through, control over the felling direction is lost. Insert a wedge or felling lever in the cut well before the tree becomes unstable and starts to move. This will prevent the guide bar from binding in the felling cut if you have misjudged the falling direction. Make sure no bystanders have entered the range of the falling tree before you push it over.

Operations instructions

General cutting instructions

Felling

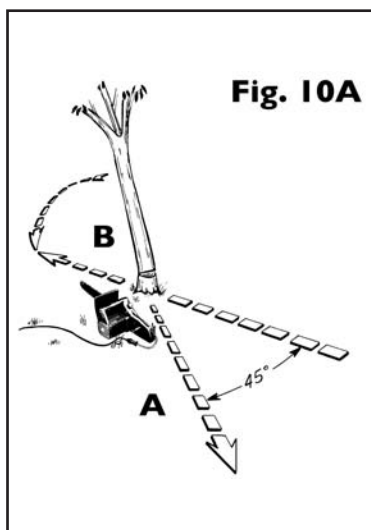
Felling is the term for cutting down a tree. Small trees up to 15-18cm in diameter are usually cut in a single cut. Larger trees require notch cuts. Notch cuts determine the direction the tree will fall.



Warning! A retreat path (A) should be planned and cleared as necessary before cuts are started. The retreat path should extend back and diagonally to the rear of the expected line of fall, as illustrated in Fig. 10.



Warning! If felling a tree on sloping ground, 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.



Felling a tree

Note: Direction of fall (B) is controlled by the notching cut. Before any cuts are made, consider the location of larger branches and natural lean of the tree to determine the way the tree will fall.



Warning! Do not cut down a tree during high or changing winds or if there is a danger to property. Consult a tree professional. Do not cut down a tree if there is a danger of striking utility wires; notify the utility company before making any cuts.

Assembly instructions

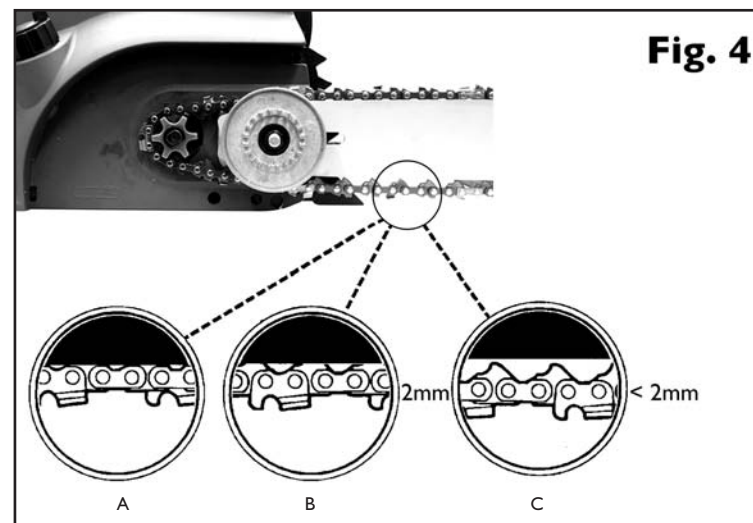
4

Assembly requirements

Your new chain saw may require installation of the guide bar, saw chain, sprocket cover, adjustment of chain, and filling the oil tank with lubricating oil, before the chain saw is ready for operation. Do not start the saw motor until the unit is properly assembled. Read all instructions carefully. Do not install any other size bar and chain than what is recommended for your model.



Warning! Whenever handling the saw chain, wear work gloves for protection against sharp cutting edges.



Note: A new chain and bar will need readjustment after as few as 5 cuts. This is normal during the break-in period, and the interval between future adjustments will lengthen quickly (Fig. 4).



Caution! If a chain is too loose or too tight, the bar chain and saw bearings will wear more rapidly. Study Fig. 4 for information concerning correct cold tension (A), correct warm tension (B), and as a guide for when saw chain needs adjustment (C).

Assembly instructions



Caution! If the chain is too loose, more than 3mm after applying down force with finger, as shown in Fig. 4. It needs to be adjusted, otherwise the stopping time might result in safety hazard.

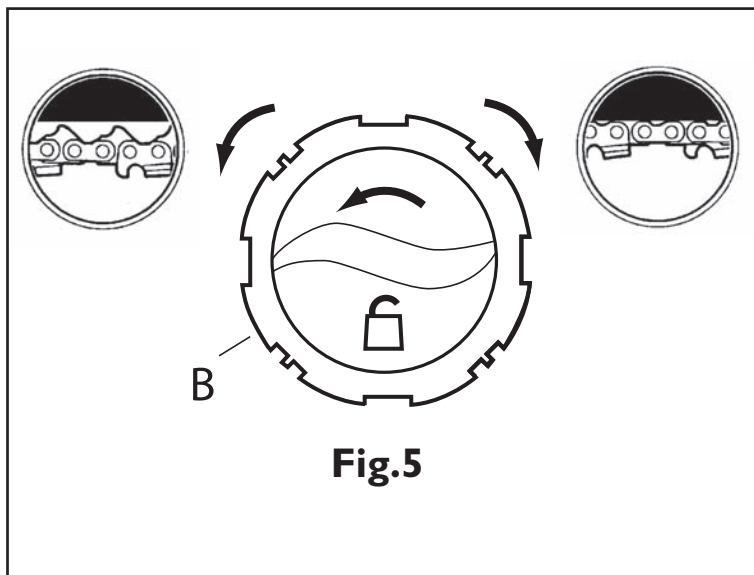


Fig.5

To adjust saw chain tension:

1. To adjust the chain is simple, turn the knob (B) clock wise. To loosen the chain just turn anticlockwise. (Fig. 5)
2. After adjustment and while wearing heavy duty work gloves, move the saw chain back and forth on the guide bar to be sure the chain moves freely and is properly engaged with socket.

Note: If the chain is difficult to rotate or if it binds on the guide bar, too much tension has been applied and must be adjusted. To decrease tension, turn the tension ring anticlockwise slowly. Move the chain back and forth until it moves freely.

Operations instructions

activated if pressure is applied against the guard or when, in the event of kickback, the operator's hand strikes the lever. When the chain brake is activated, chain movement abruptly stops and the power supply to the motor is immediately cut off. The purpose of the chain brake is to reduce the possibility of injury due to kickback. The chain brake cannot, however, provide the measure of intended protection if the saw is carelessly operated. The chain brake is disengaged (chain can move) when the brake is pulled back and locked. This is the normal running position (Fig. 9A). The chain brake is engaged (chain cannot move) when the brake is in forward position (Fig. 9B).

Note: The motor will not start if the chain brake is in the engaged position.



Caution! The chain brake should not be used for starting and stopping the saw during normal operation.

Chain brake test:

Before cutting with your saw, the chain brake should be tested as follows:

- A. Make sure the chain brake is disengaged (Fig. 9A).
- B. Place the saw on a firm, flat, dry surface that is clear of any debris. Do not let the saw come in contact with any objects.
- C. Plug the unit into the power source 230 V.
- D. Grasp the front handle (not the Chain Brake / Hand Guard Lever) with your left hand. Thumb and fingers should encircle the handle.
- E. Grasp the rear handle with your right hand. Thumb and fingers should encircle the handle.
- F. Depress the lock / off button with your right thumb. Squeeze the trigger with your index finger. (Fig. 7D, page 13)
- G. While the motor is running, activate the chain brake by rolling your left hand forward against the lever.
- H. Chain and motor should stop abruptly.



Warning! If the chain and motor fail to stop when the chain brake is engaged, take the saw to the nearest authorized dealer. Do not use the saw if the chain brake is not in proper working order.

Operations instructions

tank level can be checked in the inspection window (A) provided on the right side of the saw. Tank is full when oil is at the top of the slot (Fig. 8).



Caution! Never starve the bar and chain of lubrication oil. Running the saw dry or with too little oil will decrease cutting efficiency, shorten chain saw life, and cause rapid dulling of the chain and excessive wear of the bar from overheating. Too little is evidenced by smoke or bar discoloration.

Note: The saw chain stretches during use, particularly when it is new, and occasional adjustment will be needed. A new chain requires more frequent adjustment during the break-in period. This is normal. See Section for Saw Chain Tension Adjustment instructions.



Caution! A loose chain can jump off the bar while you are cutting, as well as wear the bar and chain. A chain that is too tight can damage the saw. Either situation, chain too loose or too tight, could cause serious personal injury.

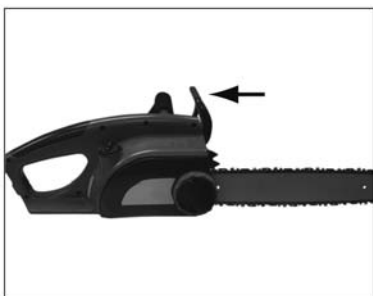


Fig.9A

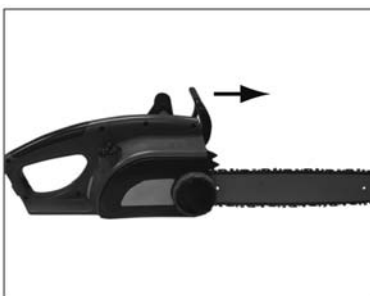


Fig.9B

Chain brake/ hand guard

All Gardenline chain saws are equipped with a Chain brake /Hand guard which stops a moving chain in milliseconds, helping to reduce the hazard of kickback, a fast upward motion of the guide bar which occurs when the saw chain at the nose of the bar accidentally strikes an object or is pinched in the cut. The Hand Guard also protects your left hand in the event it slips off the front handle. The chain brake is a safety feature which is

Assembly instructions

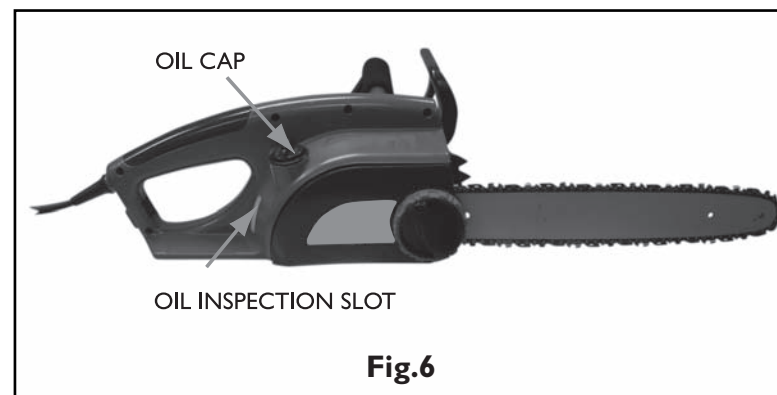


Fig.6

Filling oil tank

Using a funnel, fill oil tank with special chainsaw oil. Wipe up any spills. Make sure no dirt gets into the oil tank. The saw chain requires lubrication while in use to minimize friction with the guide bar. The oil tank holds 110ml of oil, enough to lubricate the chain for 15-20 minutes of sawing. We recommend using special (supplied) chainsaw oil, which contains additives to reduce friction wear, reduce resin residue formations and is biodegradable. The replacement oil should be available at a reliable hardware supplier.



Caution! The oil tank level should be frequently checked during operation to avoid starving the bar and chain of lubrication.

Note: Your chain saw is equipped with an Automatic Oiler system and is the only source of lubrication for the bar and chain (Fig. 6)

Operations instructions

5

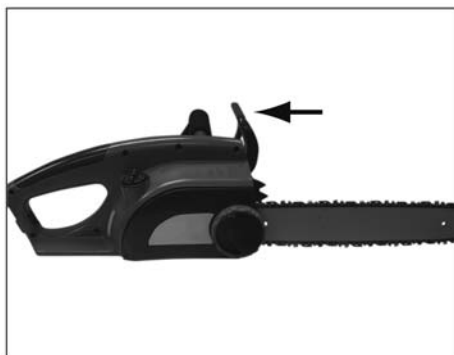


Fig. 7A



Fig. 7B

To start the saw

1. Make sure the chain brake is disengaged whilst in a forward position. The motor will not start if the chain brake is in the engaged position. Disengage the chain brake by pulling backward toward the motor (Fig. 7A).



Fig. 7C

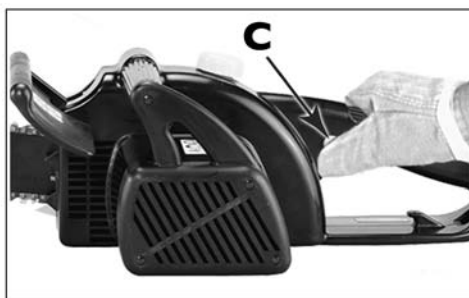


Fig. 7D



Warning! Ensure the extension cord is of the proper size and type for your saw ($\geq 1,5 \text{ mm}^2$)

Operations instructions

2. An extension cord retainer is built into the switch handle that prevents the extension cord from pulling out of the handle. To use this feature, simply double the extension cord, about a foot from the end, and insert it into the end of the handle. Hook the loop formed by doubling the cords over the tab. Gently tug on the cord to ensure that it is firmly retained in the saws handle. Plug the receptacle end of the extension cord into the tool's power supply cord. (Fig. 7B)
3. Grip the saw with both hands, left hand holding the front /handle (do not hold chain brake) and the right hand holding the rear handle. Thumbs and fingers should encircle both handles (Fig. 7C).
4. With your Right thumb, push the Lock/Off button (C) forward at end the top of the rear handle, and at the same time squeeze the trigger. To stop the saw, release the trigger (Fig. 7D).

Note: It is not necessary to maintain pressure on the Lock/Off button once the trigger is squeezed and the motor is running. The lock / off button is a safety device to avoid accidental starting.

To stop the motor

The saw motor will automatically stop when the trigger is released. The lock/ off button will have to be depressed and the trigger squeezed to restart the motor.

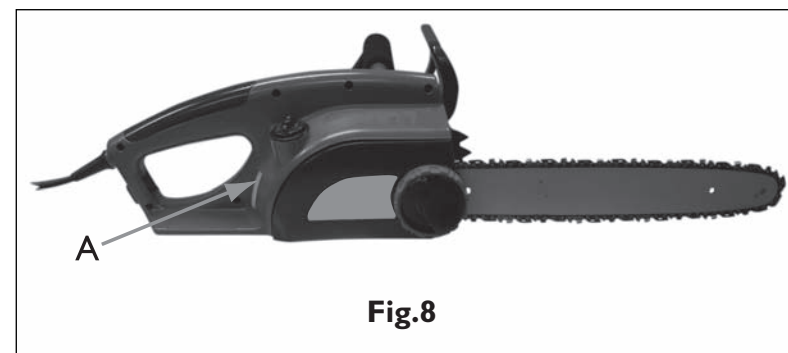


Fig.8

Chain and bar lubrication

Adequate lubrication of the saw chain during cutting operations is essential to minimize friction with the guide bar. Your chain saw is equipped with an automatic oiler system. The oiler automatically delivers the proper amount of oil to the bar and chain. There is no flow adjustment. The oil