HAHN A SYN s.r.o.
Lelkova 186/4
747 21 Kravaře
CZECH REPUBLIC
info@hahn-profi.cz

Hahn & Sohn GmbH
Janahof 53
93413 Cham
Deutschland
hahn@hahn-sohn.de

MANUAL

MULTIFUNCTION MACHINE

CEDRUS UW552 4w1

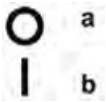
NOTE: Read the operator's manual and all safety precautions before operating the machine. Please keep these instructions for future reference.

Original document

1. SYMBOLS

EXPLANATORY SYMBOLS ON THE MACHINE (if present)

Fuel tank



Engine stop switch positions

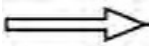
a = stop/Off

b = run/On

Choke

Primer

EXPLANATORY SYMBOLS ON THE PROTECTION DEVICES (if present)



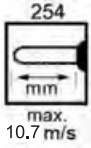
C u tting device rotation direction

1 **2** **3** **4** **5**

6 **7** **8**

1. **WARNING SYMBOL** Points to danger, warnings or reasons for particular carefulness.
2. **READ THE OPERATING INSTRUCTIONS!** Read the Operating Instructions before you start and operate this device.
3. **WARNING:** Hurled-away objects may lead to serious injuries of the eyes, excessive noise may result in deafness. Wear eye and ear protection devices when operating this device. Falling objects may cause serious injuries of the head; wear a head protection when operating this device.
4. **WEAR FOOT PROTECTION AND GLOVES**
5. **Fire hazard!** The fuel is flammable and therefore may not be spilled. Do not work next to open flames. Do not smoke. Only refill fuel when the motor is cool and is not running.
6. **ATTENTION: HOT SURFACE** Never touch a hot exhaust pipe, gear box or cylinder.
7. **DANGER OF INJURY!** Warning! Do not put hands under the cover of the machine when it is running
8. **Guaranteed acoustic capacity level** LWA 115 dB(A)

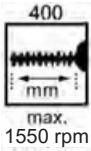
POLE CHAIN SAW



9 **10**

9. Cutting length and maximum speed of the cutting unit
10. Maintain clearance from current-carrying lines. Life-threatening danger from electric shock

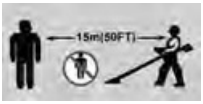
POLE HEDGE TRIMMER



11 **12**

11. Cutting length and maximum speed of the cutting unit
12. Maintain clearance from current-carrying lines. Life-threatening danger from electric shock

BRUSHCUTTER & TRIMMER



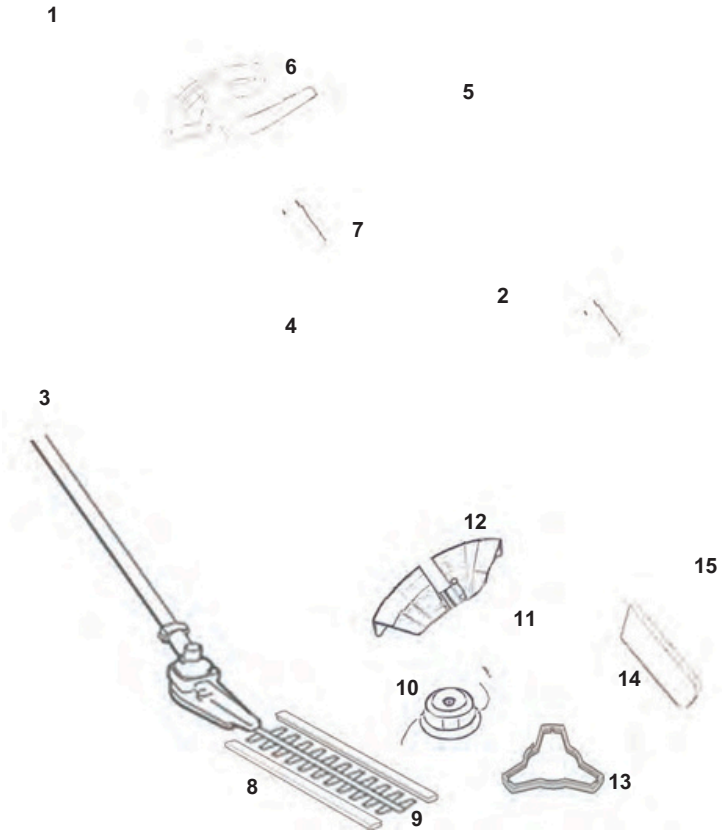
13 **14** **15**

13. DANGER OF INJURY! Beware of hurled-away objects. Keep bystanders away.
KEEP OTHER PERSONS ON A DISTANCE WARNING: Take care that no other persons are standing within a radius of 15m around your working area. This particularly applies to children and animals.

14. Beware of blade thrust. When using metal cutting tools (thicket blade) there is the danger of kickbacks if the tool gets in touch with some solid object.

15. The maximum speed of the cutting unit. Use only appropriate cutting devices.

2.NAME OF THE PARTS



1. Engine
2. Pole Chain Saw
3. Pole Hedge Trimmer
4. Brushcutter & Trimmer
5. Extension Shaft
6. Front handgrip
7. Guide shaft connection piece
8. Blade protection (for transport)
9. Cutting device
10. Cutting line head
11. Blade with 3 points
12. Cutting device guard
13. Blade protection (for transport)
14. Bar protector (for transport)
15. Saw chain/ Guide bar

3. OUTLINE

Introduction:

Noise emission information in accordance with the German Equipment and Product Safety Act (GPSG) and the EC Machine Directive: The noise level at the workplace may exceed 80 dB (A). In this case, noise protection measures for the operator are required (e.g., wearing of ear protection). Please do also consider any local regulations con- cerning noise protection !

Warning!
Because this power tool is a high-speed workingtool, some special safety precautions must be observed to reduce the risk of personal injury. Careless or im-proper use may cause serious or even fatal injury.

The Engine and Tools can be optional combined to produce a power tool. In this instruction manual the functional unit formed by the Engine and Tool is referred to as the power tool. Always read and make sure you understand the manual before starting and using your machine. Keep the manual in a safe place for later reference.

Guide to Using this Manual

Pictograms

All the pictograms attached to the machine are shown and explained in this manual. The operating and handing instructions are supported by illustrations.

Symbols in text

The individual steps or procedures described in the manual may be marked in different ways:

A bullet marks a step or procedure without direct reference to an illustration.

A description of a step or procedure that refers directly to contain item numbers illustration. Exampe:

Loosen the screw (1)

Lever (2) ...

In addition to the operating instructions, this manual may contain paragraphs that require your special attention.

Such paragraphs are marked with the symbols described below:

Warning where there is a risk of an accident or personal injury or serious damage to property.

Caution where there is a risk of damaging the machine or its individual components.

Note or hint which is not essential for using the machine, but may improve the operator's understanding of the situation and result in better use of the machine.

Note or hint on correct procedure in order to avoid damage to the environment.

Safety Precautions and Working Techniques

Because this engine is a high-speed, power tool, Tool is a high-speed, fastcutting power tool with sharp cutting blades,special safety precau- tions must be observed to reduce the risk of personal injury.

It is important that you read, fully understand and observe the following safety precautions warning. Read the instruction manuals and the safety precautions of your Engine and Tool periodically. Careless or improper use may cause serious or fatal injury. Have your dealer show you how to operate your power tool. Observe all applicable local safety regulations, standards, and ordinances.

Warning! Do not lend or rent your engine&tool without the instruc-
tion manuals. Be sure that anyone using it understands the information contained in the manual. Minors should never be allowed to use this engine & tool.

Bystanders, especially children, and animals should not be allowed in the area where it is in use. To reduce the risk of injury to bystanders and damage to property, never let your power tool run unattended. When it is not in use (e.g. during a work break), shut it off and make sure that unauthorized person do not use it. Most of these safety precautions and warnings apply to the use of all tools.

Warning!

Engine and Tool instruction manual for a description of the controls and the function of the parts of your model.

Safe use of a Engine&Tool involves
1.the operator
2.the engine & tool
3.the use of engine & tool.

THE OPERATOR

Physical Condition

You must be in good physical condition and mental health and not under the influence of substance (drugs, alcohol, etc.) which might impair vision, dexterity or judgement.

Do not operate this machine when you are fatigued.

Warning!

Be alert – if you get tired, take a break. Tiredness may result in loss of control. Working with any power tool can be strenuous. If you have any condition that might be aggra-

vated by strenuous work, check with your doctor before operating this machine.

Warning!

Prolonged use of a power tool (or other machines) exposing the operator to vibrations may produce whitefinger disease (Raynaud's phenomenon) or carpal tunnel syndrome.

These conditions reduce the hand's ability to feel and regulate temperature, produce numbness and burning sensations and may cause nerve and circulation damage and tissue necrosis.

All factors which contribute to white-finger disease are not known, but cold weather, smoking and diseases or physical conditions that affect blood vessels and blood transport, as well as high vibration levels and long periods of exposure to vibration are mentioned as factors in the development of whitefinger disease. In order to reduce the risk of whitefinger disease and carpal tunnel synfrome, please note the following:

• Wear gloves and keep your hands warm.

• Keep the AV system well maintained. A power tool with loose components or with damaged or worn AV buffers will tend to have higher vibration levels.

• Maintain a firm grip at all times, but do not squeeze the handles with constant, excessive pressure. Take frequent breaks.

All the above-mentioned precautions do not guarantee that you will not sustain whitefinger disease or carpal tunnel syndrome. Therefor, continual and regular users should closely monitor the continual of their hands and fingers. If any of the above symptoms appear, seek medi- cal advice immediately.

Warning!

The ignition system produces an electromagnetic field of a very low intensity. This field may interfere with some pacemakers. To reduce risk of serious or fatal injury, persons with a pacemaker should consult their physician and the pacemaker manufacturer before operating this tool.

Warning!

A degree of noise from the machine is not avoidable. Route noisy work is to be licensed and limits for certain periods. Keep rest periods and they may need to restrict the working hours to a minimum. For their personal protection and protection of people working nearby, an appropriate hearing protection shall be worn.

Warning! Warning: The actual existing vibration emission value
during use of the machine can deviate from the manual or the manufacturer specified.

Proper Clothing

Warning!

To reduce the risk of injury, the operator should wear proper protective apparel.

Warnung!

Wear an approved safety hard hat to reduce the risk of injury to your head when there is a danger of head injuries.

Power tool noise may damaged your hearing. Wear sound barriers (ear plugs or ear mufflers) to protect your hearing. Continal and regular users should have their hearing checked regulary.

Be particularly alert and cautios when wearing hearing protection because your ability to hear warnings (shouts. alarms, etc.) is restricted.

To reduce the risk of injury to your eyes never operate your power tool unless wearing goggles or properly fitted protective glasses with adequate top and side protection complying with your applicable national standard. To reduce the risk of injury to your face Sunray recommends that you also wear a face shield or face screen over your goggles or protective glasses

Always wear gloves when handling the machine and attachment. Heavy-duty, nonslip gloves improve your grip and help to protect your hands.

Good footing is very important. Wear sturdy boots with nonslip soles. Steel-toed safety boots are recommended.

THE ENGINE & TOOL

For illustrations and definitions of the power tool parts see the chapter on "Main Parts and Control."

Warning!

If this tool is subjected to unusually high loads for which it was not designed (e.g. heavy impact or a fall), always check that it is in good condition before continuing work. Check in particular that the fuel safety divce working properly. Do not continue operating this machine if it is damaged. In case of doubt, have checked by your servicing dealer.

THE USE OF THE ENGINE & TOOL

ENGINE

Transporting the engine

Always switch off the engine and make sure the working tool has stopped before putting a power transporting your power tool in properly secure it to prevent turnover, fuel spillage and damage to the power tool.

Fuel

Your engine uses an oil-gasoline mixture for fuel (see the chapter on "Fuel" of your instruction manual). **Warning!**

Gasoline is an extremely flammable fuel. If spilled and ignited by a spark or other ignition source, it can cause fire and serious burn injury or property damage. Use extreme caution whenhandling gasoline or fuel mix. Do not smoke or bring any fire or flame near the fuel or the engine. Note that combustible fuel vapor may escape from the fuel system.

Fueling Instructions

Warning!

Fuel your engine in well-ventilated areas, outdoors. Always shut off the engine and allow it to cool before refu-

eling. Gasoline build up inside the fuel tank depending on the fuel used, the weather conditions and the tank venting system.

In order to reduce the risk of burns and other personal injury from escaping gas vapor and fumes, remove the fuel filler cap on your engine allow any pressure build-up in the tank to release slowly. Never remove the fuel filler cap while the engine is running. Select bare ground for fueling and move at least 10 feet (3 m) from the fueling spot before starting the engine. Wipe off any spilled fuel before starting your machine.

Warning!

Check for fuel leakage while refueling and during operation. If fuel leakage is found, do not start or run the engine until the leak is fixed and any spilled fuel has been wiped away. Take care not to get fuel onyour clothing. If this happens, change your clothing immediately. Different models may be equipped with different fuel caps.

If the fuel has overflowed, do not attempt to start the motor.

Instead, the tool must be moved away from the petrol-soaked area before startup.

Cap with grip

Warning!

In order to reduce the risk of fuel spillage and fire from an improperly tightened fuel cap, correctly position and tighten the fuel cap in the fuel tank opening.

Screw cap

Warning!

Unit vibrations can cause an improperly tightened fuel filler cap to loosen or come off and spill quantities of fuel.

In order to reduce the risk of fuel spillage and fire, tighten the fuel filler cap by hand as securely as possible.

Before Starting

Warning!

Always check your engine for proper condition and operation before starting, particularly the throttle trigger, throttle trigger interlock, stop switch and working tool. The throttle trigger (if applicable) must move freely and always spring back to the idle position. Never attempt to modify the controls or safety devices.

Warning!

Never use a power tool that is damaged or not properly maintained.

Check that the spark plug boot is securely mounted on the spark plug loose boot may cause arcing that could ignite combustible fumes and cause a fire. Keep the han- dles clean and dry at all times; it is particularly important to keep them free of moisture, pitch, oil, grease or resin in order for you to maintain a firm grip and properly control your engine.

Starting

Start the engine at least 10 feet (3 meters) from the fueling spot, outdoors only.

Place the power tool on firm ground or other solid surface in an open area. Maintain good balance and secure footing.

Warning!

Your engine is a one-person machine. Do not allow other persons in the general work area, even when starting.

To reduce the risk of injury from loss of control, do not attempt to “drop start” your power tool.

When you pull the starter grip, do not wrap the starter rope around your hand. Do not let the grip snap back, but guide the starter rope to rewind it properly. Failure to follow this procedure may result in injury to your hand or fingers and may damage the starter mechanism.

Important Adjustments Warning!

To reduce the risk of personal injury from loss of control or contact with the running working tool, do not use a power tool with incorrect idle adjustment. At correct idle speed, the working tool should not move.

During Operation

Holding and controlling the power tool

Always hold the unit firmly with both hands on the handles while you are working. Wrap your fingers and thumbs around the handles.

Your right hand should grip the rear handle. This also applies to left-handers.

Working conditions

Operate and start your power tool only outdoors in a well ventilated area. Operate it under good visibility and daylight conditions only. Work carefully.

Warning!

As soon as the engine is running, this product generates toxic exhaust fumes containing chemicals (such as unburned hydrocarbons and carbon monoxide) known to cause respiratory problems, cancer, birth defects, or other reproductive harm. Some of the gases (e.g. carbon monoxide) may be colorless and odorless. To reduce the risk of serious or fatal injury/illness from inhaling toxic fumes, never run the machine indoors or in poorly ventilated locations.

The muffler and other parts of the engine (e.g. fins of the cylinder, spark plug) become hot during operation and remain hot for a while after stopping the engine.

To reduce risk of burns do not touch the muffler and other parts while they are hot.

To reduce the risk of fire and burn injury, keep the area around the muffler clean. Remove excess lubricant and all debris such as pine needles, branches or leaves. Let the engine cool down sitting on concrete, metal, bare ground or solid wood (e.g. the trunk of a felled tree) away from any combustible substances.

Never modify your muffler. The muffler could be damaged and cause an increase in heat radiation or sparks, thereby increasing the risk of fire and burn injury. You may also permanently damage the engine.

POLE CHAIN SAW

Intended use

The pole chain saw is intended for removing branches from trees. It is not suitable for extensive sawing work and felling trees or for the sawing of materials other than wood. Please observe that our machine was not designed for use in commercial, technical or industrial applications. We assume no liability if the machine is used in commercial, technical or industrial applications or for equivalent activities.

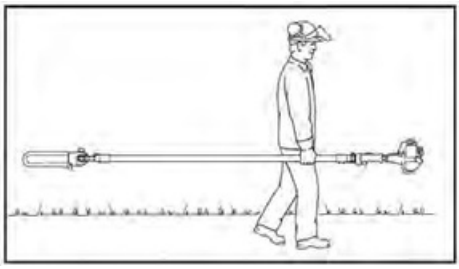
Residual risks:

Also when appropriate using the tool; it always remains a certain residual risk which cannot be excluded. From the kind and construction of the tool the following potential endangerments can be derived:

- Contact with the unprotected sawing chain (cuts)
- Unexpected, sudden movement of the sawing sword (cuts)
- Damage of the ears, if no prescribed protection of the ears is carried
- Inhale from poisonous particle, exhaust gases of the combustion engine
- Contact of gasoline on the skin
- Vibration. Warning: The actual existing vibration emission value during use of the machine can deviate from the manual or the manufacturer specified. This can be caused by the following factors, before or during each of use should be considered: - If the machine is used correctly - If the method of cutting the material and how it is processed correctly.
  - The use of the machine state is in the regulatory
  - Sharpness condition of cutting tool or cutting tool real

Transporting the Power Tool

Warning!



This power tool should be carried only in a horizontal position. Grip the shaft in a manner that the machine is balanced horizontally. Keep the hot muffler away from your body and the cutting attachment behind you. Accidental acceleration of the engine can cause the chain to rotate and cause serious injuries. Always switch off the engine and fit the scabbard over the cutting attachment before transporting the power tool over long distances. When transporting it in a vehicle, properly secure it to prevent turnover, fuel spillage and damage to the unit.

Before Starting

Take off the chain guard (scabbard) and inspect the chain saw for proper condition and operation. (See the maintenance chart near the end of the instruction manuals.)

Always check your power tool for proper condition and operation before starting, particularly the throttle trigger, throttle trigger interlock, stop switch and cutting attachment. The throttle trigger must move freely and always spring back to the idle position. Never attempt to modify the controls or safety devices.

Never operate your power tool if it is damaged, improperly adjusted or maintained, or not completely or securely assembled.

Keep the handles clean and dry at all times; it is particularly important to keep them free of moisture, pitch, oil, fuel mix, grease or resin in order for you to maintain a firm grip and properly control your power tool. For proper assembly of the bar and chain follow the procedure described in the chapter “Mounting the Bar and Chain” of your instruction manual.

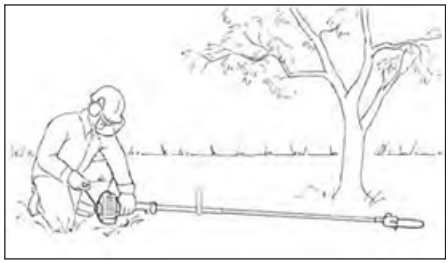
Chain, guide bar and sprocket must match each other in gauge and pitch.

Proper chain tension is extremely important. In order to avoid improper setting, the tensioning procedure must be followed as described in your manual. Always make sure the hex nut(s) for the sprocket cover is (are) tightened securely after tensioning the chain. Check chain tension once more after having tightened the nut(s).

Never start the chain saw with the sprocket cover loose.

Adjust carrying harness and hand grip to suit your size before starting work.

Starting



To reduce the risk of fire and burn injuries, start the engine at least 10 feet (3 meters) from the fueling spot, out- doors only.

For specific starting instructions, see the appropriate section of your Engine manual (4. Engine). Proper starting methods reduce the risk of injury.

Place the saw trimmer on firm ground or other solid surface in an open area or, in the alternative, as shown in the above picture. Maintain good balance and secure footing.

Warning!

Before you start the engine, make sure the saw chain is not contacting anything.

With the engine running only at idle, attach the power tool to the spring hook of your harness (see appropriate chapter of this manual).

Important Adjustments

Proper chain tension is very important at all times. Check it at regular intervals (whenever the pole pruner is shut off). If the chain becomes loose while cutting, switch off the engine and then tighten. Never try to tighten the chain while the engine is running.

During Operation

Holding and controlling the power tool

Always hold the unit firmly with both hands on the handles while you are working. Wrap your fingers and thumb- saround the handles.

Place your left hand on front handle and your right hand on rear grip and throttle trigger. Left handers should follow these instructions too. Keep your hands in this position to have your pole pruner under control at all times.

Never attempt to operate your power tool with one hand. Loss of control of the power tool resulting in serious or fatal injury may result.

In order to properly control your chain saw always maintain good balance and a firm foothold. Never work on a ladder, in a tree or on any other insecure support. Never hold the machine above shoulder height. Do not overreach. When working at a height above 15 feet (4.5 m) use a lift bucket.

Special care must be taken in slippery conditions (wet ground, snow) and in difficult, overgrown terrain. Watch for hidden obstacles such as tree stumps, roots, rocks, holes and ditches to avoid stumbling. For better foot- ing, clear away fallen branches, scrub and cuttings. Be extremely cautious when working on slopes or uneven ground.

Take extreme care in wet and freezing weather (rain, snow, ice). Put off the work when the weather is windy, stormy or rainfall is heavy.

Working conditions

Operate and start your power tool only outdoors in a well ventilated area. Operate it under good visibility and daylight conditions only. Work carefully.

Warning!

If the vegetation being cut or the surrounding ground is coated with a chemical substance (such as an active pesticide or herbicide), read and follow the instructions and warnings that accompanied the substance at issue.

As soon as the engine is running, this product generates toxic exhaust fumes containing chemicals, such as unburned hydrocarbons (including benzene) and carbon monoxide, that are known to cause respiratory problems, cancer, birth defects, or other reproductive harm. Some of the gases (e.g. carbon monoxide) may be colourless and odourless. To reduce the risk of serious or fatal injury/illness from inhaling toxic fumes, never run the machine indoors or in poorly ventilated locations. If exhaust fumes become concentrated due to insufficient ventilation, clear obstructions from work area to permit proper ventilation before proceeding and/or take frequent breaks to allow fumes to dissipate before they become concentrated. Inhalation of certain dust, especially organic duxts can cause susceptible persons to have an allergic reaction. Sub-stantial or repeated inhalation of dust and other airborne contaminants, in particular those with a smaller particle size, may cause respiratory or other illnesses. Control dust at the source where possible.

Use good work practices, such as operating the unit so that the wind or operating process directs any dust raised by the power tool away from the operator. When the inhalation of dust cannot be substantially controlled, i.e., kept at or near the ambient (background) level, the operator and any bystanders should wear a respirator for the type of dust encountered. Breathing asbestos dust is dangerous and can cause severe or fatal injury, respiratory illness or cancer. The use and disposal of asbestos-containing products have been strictly regulated by OSHA and the Environmental Protection Agency. If you have any reason to believe that you might be cutting asbestos, immediately contact your employer or a local OSHA representative.

Warning!

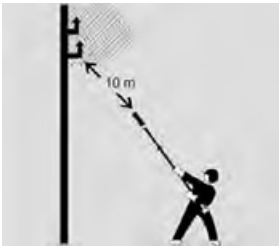
This power tool has a large range. In order to reduce the risk of personal or even fatal injury to bystanders from falling objects or inadvertent contact with the moving chain of your power tool always keep bystanders at least 50 feet (15 m) away when the power tool is running.

Warning!

Even though bystanders should be kept away from the running saw, never work alone. Keep within calling distance of others in case help is needed. Stop the engine immediately if you are approached.

Danger!

Your power tool is not insulated against electric shock. To reduce the risk of electrocution, never operate this power tool in the vicinity of any wires or cables (power, etc.) which may be carrying electric current.



Electricity can jump from one point to another by means of arcing. Higher voltage increases the distance electricity can arc. Electricity can also move through branches, especially if they are wet. Maintain a clearance of at least 50 feet (15 m) between the chain saw (including any branches it is contacting) and any electrical line carrying live current. Before working with less clearance, contact your electric utility and make sure the current is turned off.

Operating instructions

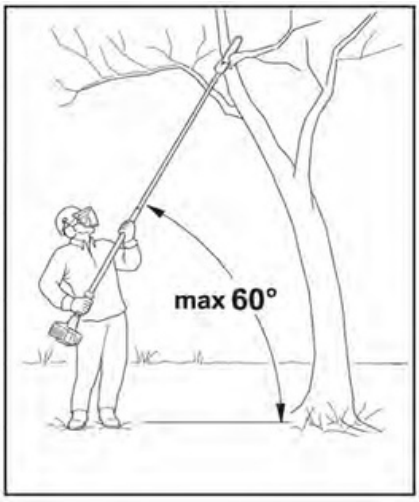
Warning To reduce the risk of cut injuries, keep hands and feet
away from the saw chain. Never touch a moving chain with your hand or any other part of your body. The saw chain continues to move for a short period after the throttle trigger is released (inertia effect). Accelerating the engine while the chain is blocked increases the load and will cause the clutch to slip continuously. This may result in overheating and damage to important components (e.g. clutch, polymer housing components) – which can then increase the risk of injury from the chain moving while the engine is idling.

If the chain becomes clogged, always turn off the engine and make sure the chain has stopped before cleaning. Make sure that the saw chain does not touch any foreign materials such as rocks, fences, nails and the like. Such objects may be flung off and injure the operator or bystanders, or damage the saw chain.

Prior to limbing, clear the working area from interfering limbs and brush. Then, establish an escape area away from where the cut limbs can fall, and remove all obstacles. Keep work area clear – move away fallen limbs. Place all tools and equipment at a safe distance from the branches being limbed, but not in the escape area.

Always observe the general condition of the tree. Look for decay and rot in the trunk and branches. If it is rotted inside, it could snap and fall toward the operator while being cut. Also look for broken or dead branches which could vibrate loose and fall on the operator. If branch is thick or heavy, make a shallow relief cut on the bottom of the branch before cutting down from the top to help prevent splitting of the branch.

To reduce the risk of severe or even fatal injury from falling objects do not cut vertically above your body. Hold the chain saw at an angle of not more than 60° from the horizontal level (see picture). Objects may fall in unexpected directions. Do not stand directly underneath the limb being cut!



Watch for falling wood! As soon as the limbed branch starts to fall, step aside and keep a sufficient distance away from the falling wood.

Always pull the unit out of the cut with the chain running to reduce the possibility of pinching the cutting attachment.

Don‘t put pressure on the pole pruner when reaching the end of a cut. The pressure may cause the bar and rotating chain to pop out of the cut or kerf, go out of control and strike some other object.

If the bar becomes pinched and caught in the branch so that the chain can no longer move, shut off the pole chain saw and carefully move the branch to open the pinch and release the bar.

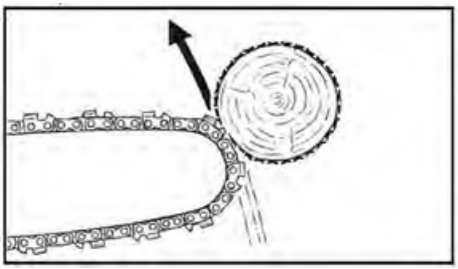
Reactive forces

Reactive forces may occur any time the chain is rotating. The force used to cut wood can be reversed and work against the operator. If the rotating chain is suddenly stopped by contact with any solid object such as a branch or is pinched, the reactive forces may occur instantly. These reactive forces may result in loss of control, which, in turn, may cause personal injury. An understanding of the causes of these reactive forces may help you avoid the element of surprise and loss of control. Because of the design of the chain saw, the reactive forces experienced when working with it are generally not as severe as those encountered with a chain saw. Nevertheless, you should always maintain a proper grip and good footing to control the power tool when you experience such forces.

The most common reactive forces are:
kickback,
pushback,
pull-in.

Kickback

Kickback may occur when the moving saw chain near the upper quadrant of the bar nose contacts a solid object or is pinched.



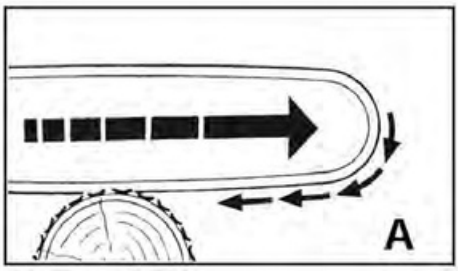
The reaction of the cutting force of the chain causes a rotational force on the chainsaw in the direction opposite to the chain movement. This may cause the bar to move upward.

To avoid kickback

The best protection from kickback is to avoid kickback situations:

1. Be aware of the location of the guide bar nose at all times.
2. Never let the nose of the guide bar contact any object. Do not cut limbs with the nose of the guide bar. Be especially careful near wire fences and when cutting small, tough limbs, which may easily catch the chain.
3. Cut only one limb at a time.

A = Pull-in

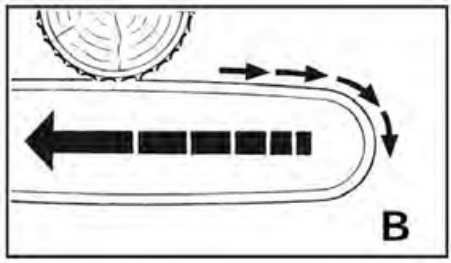


Pull-in occurs when the chain on the bottom of the bar is suddenly stopped when it is pinched, caught or encounters a foreign object in the wood. The reaction of the chain pulls the saw forward. Pull-in frequently occurs when the chain is not rotating at full speed before it con- tacts the wood.

To avoid pull-in

1. Be alert to forces or situations that may cause material to pinch the chain at the bottom of the bar.
2. Always start a cut with the chain rotating at full speed.

B = Pushback



Pushback occurs when the chain on the top of the bar is suddenly stopped when it is pinched, caught or encounters a foreign object in the wood. The reaction of the chain may drive the saw rapidly straight back toward the operator. Pushback frequently occurs when the top of the bar is used for cutting.

To avoid pushback

1. Be alert to forces or situations that may cause material to pinch the chain at the top of the bar.
2. Do not cut more than one limb at a time.
3. Do not twist the bar when withdrawing it from an underbuck cut because the chain can pinch.

THE POLE HEDGE TRIMMER

Intended use

This hedge trimmer is only intended to be used to trim shrubs, bushes, ornamental plants and hedges. It is designed to cut branches with a diameter of no more than 24 mm. The hedge trimmer is not intended for commercial use. The user of the hedge trimmer must make sure that the protective equipment specified in the operating instructions and by the warning label on the trimmer is attached whenever the trimmer is in use. The hedge trim- mer must be checked for mechanical damage before it is used or while it is being used.

Stop working and contact a specialist workshop if you find any damage.

Improper use

Any use not identified in the chapter „Intended use“ is an improper use.

The user of the hedge trimmer is solely liable for any property damage or personal injury arising from improper use of the hedge trimmer.

The manufacturer‘s obligation to honour the warranty is voided if the hedge trimmer is used with non-original parts

Residual dangers

Residual risks always remain even if the hedge trimmer is used properly. The hedge trimmer‘s design can entail the following hazards:

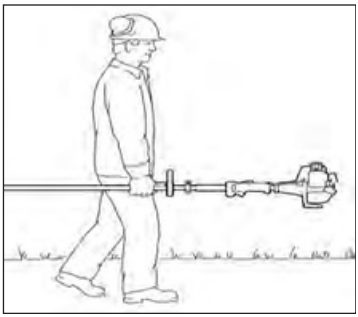
- Contact can be made with the unprotected blade (resulting in cutting injuries)
- Reaching into or grabbing the hedge trimmer while it is in operation (resulting in cutting injuries)

- Unanticipated, sudden movement of the plant material being cut (resulting in cutting injuries)
- Ejection or catapulting of damaged cutting teeth
- Ejection or catapulting of the plant material being cut
- Hearing damage if the specified hearing protection is not worn
- Inhalation of cut materials

Transporting the Pole Hedge Trimmer

Warning!

To reduce the risk of injury from blade contact, never carry or transport your tool with the cutter blades moving.



It may be carried only in a horizontal position. Grip the shaft in a manner that the machine is balanced horizontally. Keep the hot muffler away from your body. Keep the cutting attachment behind you.

Always switch off the engine and fit the scabbard over the cutter blades before transporting the power tool over long distances. When transporting it in a vehicle, properly secure it to prevent turnover, fuel spillage and damage to the unit.

On machines with an adjustable cutter bar: Make sure the cutter bar is secured in position.

Before Starting

Warning!

Always check your attachment for proper condition and operation before starting. Never attempt to modify the

controls or safety devices.

Never use a engine that is damaged or not properly maintained. Keep the handles clean and dry at all times; it is particularly important to keep them free of moisture, pitch, oil, grease or resin in order for you tomaintain a firm grip and properly control your engine. The cutting tool must be properly tightened and in safe operating condition. Inspect for loose parts (nuts, screws, etc.) and for cracked, bent, warped or damaged blades. Regularly check the condition and tightness of the cutter blades – with the engine stopped!

Replace damaged cutter blades before using the power tool. Always keep blades sharp.

We recommend that you always spray the cutter blades with resin solvent before starting work - with the engine stopped!

Adjust carrying harness and hand grip to suit your size before starting work.

Starting

On machines with an adjustable cutter bar: Secure the cutter bar in the starting position as described in the chapter “Starting/Stopping the Engine.” If this starting position is not the desired cutting position, you will then need to carefully adjust the machine to the desired posi- tion once the engine has returned to idle and the blades are no longer moving.

On machines with a defined transport position (cutter bar-folded against the drive tube): Never start the machine in the transport position, since the blades are not engaged in that position and you therefore cannot visually check to see that they will be stopped at idle when you startto adjust the cutter bar to the desired cutting position (where the blades are engaged).

To reduce the risk of fire and burn injuries, start the engine at least 10 feet (3 meters) from the fueling spot, out- doors only. **For specific starting instructions, see the appropri- ate section of your Engine manual (4. Engine).** Proper starting methods reduce the risk of injury. Place the saw trimmer on firm ground or other solid sur- face in an open area or, in the alternative, as shown in the above picture. Maintain good balance and secure footing.

Warning!

To reduce the risk of injury from blade contact, be absolutely sure that the cutting tool is clear of you and all other obstructions and objects, including the ground.

Once the engine has started, immediately blip the throttle trigger, which should release the starting throttle and allow the engine to slow down to idle.

With the engine running only at idle, attach the power tool to the spring hook of your harness (see appropriate chapter of this manual).

See also the Safety Precautions on Starting in the instruction manual of the power tool.

Important Adjustments

See “Important Adjustments” of ENGINE as well.

During Operation

See “Important Adjustments” of ENGINE as well.

Warning!

Never attempt to operate your power tool with one hand. Loss of control of the power tool resulting in serious or fatal injury may result. To reduce the risk of cut injuries, keep hands and feet away from the cutting tool. Never touch a moving cutting tool with your hand orany other part of your body.

Do not overreach. Keep proper footing and balance at all times. Special care must be taken in slippery conditions (wet ground, snow) and in difficult, overgrown terrain. Watch for hidden obstacles such as tree stumps, roots and ditches to avoid stumbling. For better footing, clearaway fallen branches, scrub and cuttings. Be extremely cautious when working on slopes or uneven ground.To reduce the risk of injury from loss of control, never work

on a ladder, in a tree or any other insecure support. Never hold the machine above shoulder height.

Working conditions

Operate and start your power tool only outdoors in a well ventilated area. Operate it under good visibility and daylight conditions only. Work carefully.

Warning!

If the vegetation being cut or the surrounding ground is coated with a chemical substance (such as an active pesticide or herbicide), read and follow the instructions and warnings that accompanied the substance at issue.

As soon as the engine is running, this product generates toxic exhaust fumes containing chemicals, such as unburned hydrocarbons (including benzene) and carbon monoxide, that are known to cause respiratory problems, cancer, birth defects, or other reproductive harm.

Some of the gases (e.g. carbon monoxide) may be colourless and odourless. To reduce the risk of serious or fatal injury/illness from inhaling toxic fumes, never run the machine indoors or in poorly ventilated locations. If exhaust fumes become concentrated due to insufficient ventilation, clear obstructions from work area to permit proper ventilation before proceeding and/or take frequent breaks to allow fumes to dissipate before they become concentrated. Inhalation of certain dust, especially organic duxts can cause susceptible persons to have an allergic reaction. Substantial or repeated inhalation of dust and other airborne contaminants, in particular those with a smaller particle size, may cause respiratory or other illnesses. Control dust at the source where possible.

Use good work practices, such as operating the unit so that the wind or operating process directs any dust raised by the power tool away from the operator. When the inhalation of dust cannot be substantially controlled, i.e., kept at or near the ambient (background) level, the operator and any bystanders should wear a respirator for the type of dust encountered. Breathing asbestos dust is dangerous and can cause severe or fatal injury, respiratory illness or cancer. The use and disposal of asbestos-containing products have been strictly regulated by OSHA and the Environmental Protection Agency. If you have any reason to believe that you might be cutting asbestos, immediately contact your employer or a local OSHA representative.

Operating instructions

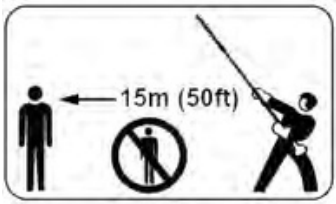
Warning!

The cutter blades continue to move fo ra short period after the throttle trigger is released (flywheel effect).

Accelerating the engine while the blades are blocked increases the load and will cause the clutch to slipcontinuously. This may resultin overheating and damage to important components (e.g. clutch, polymerhousing components)- which can then increase the riskof injury from the blades moving while the engine is idling.

On units with an adjustable cutter bar: Carefully adjust the cutter bar to the desired cutting position. To reduce the risk of injury, never touch the blades while making adjustments.

Only adjust the cutter bar when the blade are no longer moving and the engine is turned off.



Warning!

The powertool has a large range. In order to reduce the risk of personal or even fata linjury to bystanders from falling objects or inadvertent contact with the moving cutter blades of your powertool always keep by standers at least 50 feet (15 m) away when the powertool is running.

Stop the engine and cutting too limmediately if you are approached.

Before you start work, examine the work area for stones, fence wire, metal or other solid objects which could damage the cutter blades. Take particular care when cutting next to wire fences. Do not touch the wire with the cutting blades. When working close to the ground, make sure that no sand, grit or stones get between the cutter bladers.

Striking solid foreign objects such as stones, fence wire or metal could damage the cutting attachment and may cause blades to crack, chiporbreak. We do not recommend the use of your powertool when cutting in areas where the blades could contact such objects. Observe the cutting blades at all times–do not cut any areas that you cannot see. When cutting the top of a taller hedge, check the other side of the hedge frequently for by standers, animals and obstructions.

Danger!

Your power tool is not insulated against electric shock. To reduce the risk of electrocution, never operate this power tool in the vicinity of any wires or cables (power,etc.) which may be carrying electric current.

If the cutting tool becomes clogged or stuck, always turn off the engine and make sure the cutting tool has stopped before cleaning. Grass, weeds, etc. should be cleaned off the cutting tool at regular intervals.

Check the cutting blades at regular short intervals during operation, or immediately if there is a noticeable change in cutting behavior:

- Shut off the engine.
- Wait until the cutting blades have come to a complete standstill.
- Check condition and tightness, look for cracks.
- Check sharpness.
- Replace damaged or dull cutting tools immediately, even if they have only superficial cracks.

Warning!

The gearbox become shot during operation. To reduce the risk of burn injury, do not touch the gear housing when it is hot.

After Finishing Work

Always clean dust and dirt off the machine – do not use any grease solvents for this puepose. Spray the blades with resinsolvent. Start and run the engine briefly so that the solvent is evenly distributed.

BRUSHCUTTER & TRIMMER

Intended use

The device is intended for cutting lawns and grass areas. The observance of the manufacturer's operating instructions included is a prerequisite for the proper use of the device. Any other use that is not expressly permitted in these instructions can lead to the device being damaged and a serious risk for the operator. Observe the restrictions in the safety instructions. Please note that our device has not been designed with the intention of it being used for commercial, trade or industrial applications. We accept no liability if the device is used in commercial, trade or industrial operations or corresponding activities.

Attention! Due to bodily endangerment of the operator the following work must not be undertaken with the motor scythe: Clearing pathways and as a chipper for shredding tree and hedge cuttings. Furthermore, the motor scythe must not be used for levelling bumps in the ground such as mole hills for example. The machine must only be used for its intended purpose. Any other use shall be considered improper use. The user/operator, and not the manufacturer, is responsible for any damage or injuries arising from this.

SAFETY REQUIREMENTS

A) Training

1)Read the instructions carefully. Become acquainted with the controls and the proper use of the machine. Learn how to stop the engine quickly.

2)Only use the machine for the purpose for which it was designed, namely

- **cutting grass and non-woody vegetation,** using a nylon line (e.g. around the edges of lawns, flowerbeds, walls, fences and small grassy areas to tidy up the cutting done using a mower);
- **cutting tall grass, dry branches, twigs and woody shrubs** of up to 2 cm diameter, with the help of metal or plastic blades.
- Any other use may be dangerous and damage the machine.
- Examples of improper use may include, but are not limited to:
- use the machine for sweeping;
- trimming hedges or other jobs in which the cutting device is not used on ground level;
- pruning trees;
- using the machine with the cutting device above the operator's belt level;
- using the machine for cutting non-plant material;
- use of the machine by more than one person

3)Never allow children or persons unfamiliar with

- these instructions to use the machine. Local regulations
- can restrict the age of the user.

4)The machine must never be used by more than one person.

5)Never use the machine:

- when people, especially children or pets are in the vicinity;
- if the user is tired or unwell, or has taken medicine, drugs, alcohol or any substances which may slow his reflexes and compromise his judgement;
- if the user is not capable of holding the machine firmly with two hands and/or remaining standing on the ground whilst working.

6)Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

B) Preparation

1) Always wear adequate clothing which does not
- hamper movements when using the machine.
- Always wear slim-fitting protective clothing, fitted with shear-proof protection devices.
- Always wear a helmet, protective gloves, eyegoggles, a half-mask respirator and safety antishear boots with non-slip soles.
- Always wear ear and hearing protection devices. - Never wear scarves, shirts, necklaces, or any hanging or flapping accessory that could catch in the machine or in any objects or materials in the work area.
- Tie your hair back if it is long.

2)WARNING: DANGER! Petrol is highly flammable:

- keep the fuel in containers which have been specifically manufactured and homologated for such use;
- never smoke when handling fuel;
- slowly open the fuel tank to allow the pressure inside to decrease gradually;
- top up the tank with fuel in the open air, using a funnel;
- add fuel before starting the engine. Never remove the fuel tank cap or add fuel while the engine is running or when the engine is hot;
- if you have spilt some fuel, do not attempt to start the engine, but move the machine away from the area of spillage and avoid creating any source of ignition until the fuel has evaporated and fuel vapours have dissipated;
- immediately clean up all traces of fuel spilt on the machine or on the ground;
- never start the machine in the same place you refilled it with fuel;
- make sure your clothing does not come into contact with the fuel, on the contrary, change your clothes before starting the engine;
- always put the tank and fuel container caps back on and tighten well.

3)Replace faulty or damaged silencers.

4)Before using the machine, check its general condition and in particular:

- the throttle trigger and the safety lever must move freely, they must not need forcing and should return automatically and rapidly back to the neutral position;

- the throttle trigger must remain locked until the safety lever is pressed;
- the engine stop switch must easily move from one position to the other;
- the electric cables and in particular the spark plug cable must be in perfect condition to avoid the generation of any sparks, and the cap must be correctly fitted on the spark plug;
- the machine handgrips and protection devices must be clean and dry and well fastened to the machine;
- the cutting devices and guards must be undamaged.

5) Check the correct position of the handgrips and the connection point of the webbing, and the proper balance of the machine.

6) Before starting work make sure that the guards are suitable for the cutting tool being used and are fitted correctly.

7) Thoroughly inspect the whole work area and remove anything that could be thrown up by the machine or damage the cutting group or engine (stones, branches, iron wire, bones, etc.).

C) Operation

1) Do not start the engine in a confined space where dangerous carbon monoxide fumes can collect.

2) Mow only in daylight or good artificial light.

3) Take on a firm and well-balanced position:

- where possible, avoid working on wet, slippery ground or in any case on uneven or steep ground that does not guarantee stability for the operator;
- never run, but walk carefully paying attention to the lay of the land and any eventual obstacles;
- assess the potential risks of the ground to be mown and take all necessary precautions to ensure your own safety, especially on slopes or on bumpy, slippery or unstable ground;
- work along the contour on slopes, never when walking up or down and always keep downhill of the cutter.

4) Make sure the machine is securely locked when you start the engine:

- start the motor in an area at least 3 metres from where you refuelled;
- check that there is nobody within at least 15 metres of themachine's range of action or at least 30 metres for heavier mowing;
- do not direct the silencer and therefore the exhaust fumes towards inflammable materials.

5) Do not change the engine governor settings or overspeed the engine.

6) Do not strain the machine too much and do not use a small machine for heavy-duty works. If you use the right machine, you will reduce the risk of hazards and improve the quality of your work.

7) Check that when the machine is running idle, there is no movement of the cutting device and, after pressing the throttle trigger, the engine quickly returns to minimum speed.

8) Ensure that the blade does not come into violent contact with foreign bodies and beware of the possibility of material being thrown up by the blades.

9) Always keep the machine connected to the webbing when working.

10) Stop the engine:

- whenever you leave the machine unattended.
- before refuelling.
- during movements between work areas.

11) Stop the engine and disconnect the spark plug cable:

- before cleaning, checking or working on the machine;
- after striking a foreign object. Inspect themachine for any damage and make repairs before restarting it again;
- if the machine starts to vibrate abnormally: find the cause of the vibration immediately and have it inspected at a Specialised Centre.
- when the machine is not in use.

D) Maintenance and storage

1) Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition. Routine maintenance is essential for safety and for maintaining a high performance level.

2) Do not store the machine with fuel in the tank in an area where the fuel vapours could reach an open flame, a spark or a strong heat source.

3) Allow the engine to cool before storing in any enclosure.

4) To reduce fire hazards, keep the engine, exhaust silencer and fuel storage area free from sawdust, branches, leaves, or excessive grease; never leave containers with the cut debris inside the storage area.

5) If the fuel tank has to be emptied, this should be done outdoors once the engine has cooled down.

6) Always wear protective gloves when handling the cutting device.

7) For safety reasons, never use the machine with worn or damaged parts. Damaged parts are to be replaced and never repaired. Only use original spare parts. Parts that are not of the same quality can seriously damage the equipment and compromise safety. The cutting tools must always bear the manufacturer's trademark as well as a reference to the maximum working speed.

8) Before putting the machine away, check you have removed wrenches or tools used for maintenance.

9) Store the machine out of the reach of children!

E) Transportation and handling

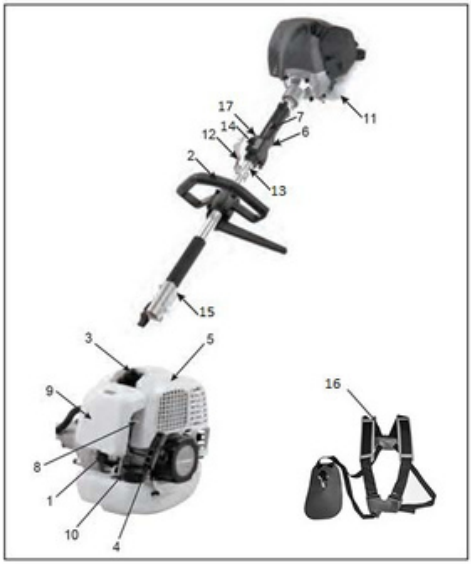
1) Whenever the machine is to be handled or transported you must:

- turn off the engine, wait for the cutting device to stop and disconnect the spark plug cap;
- fit the cutting device guard;
- only hold the machine using the handgrips and position the cutting device in the opposite direction to that used during operation.

2) When using a vehicle to transport the machine, position it so that it can cause no danger to persons and fasten it firmly in place to avoid it from tipping over, which may cause damage or fuel spillage.

4. MOTOR

Main Parts and Controls

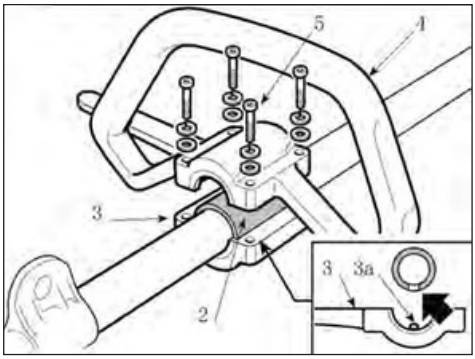


1 = Fuel Pump
2 = Additional handle
3 = Spark Plug Boot
4 = Starter Grip
5 = Muffler
6 = Throttle Trigger
7 = Throttle Trigger
8 = Choke Lever
9 = Air Filter Cover
10 = Fuel Filler Cap
11 = Fuel Tank
12 = Fastening eye for carry strap

13 = Drive Tube
14 = Stop Switch
15 = Coupling Sleeve
16 = Carry belt
17 = Lock pin

Mounting the Loop Handle

- Fit the sleeve (2) and the lower part (3) with guard, placing the pin (3a) in one of the three holes on the drive tube. Fit the front handgrip (4) by using the
- screws (5). Before tightening the screw (4), align the
- handgrip correctly with respect to the drive tube.
- Fully tighten the screw (5).



Fuel

This engine is certified to operate on unleaded gasoline and the two-stroke engine oil at a mix ratio of 40:1. Your engine requires a mixture of high-quality gasoline and quality two-stroke air cooled engine oil.

Fuel with a lower octane rating may increase engine temperatures. This, in turn, increases the risk of piston seizure and damage to the engine. The chemical composition of the fuel is also important. Some fuel additives not only detrimentally affect elastomers (carburetor diaphragms, oil seals, fuel lines, etc.), but magnesium castings and catalytic converters as well. This could cause running problems or even damage the engine. For this reason we recommends that you use only nationally recognized high-quality unleaded gasoline!

Do not use BIA or TCW rated (two-stroke water cooled) mix oils or other mix oils that state they are for use in both water cooled and air cooled engines (e.g., outboard motors, snowmobiles, chainsaws, mopeds, etc.).

Take care when handling gasoline. Avoid direct contact with the skin and avoid inhaling fuel vapor. When filling at the pump, first remove the canister from your vehicle and place the canister on the ground before filling. Do not fill fuel canisters that are sitting in or on a vehicle. The canister should be kept tightly closed in order to avoid any moisture getting into the mixture. The machine's fuel tank and the canister in which fuel mix is stored should be cleaned as necessary.

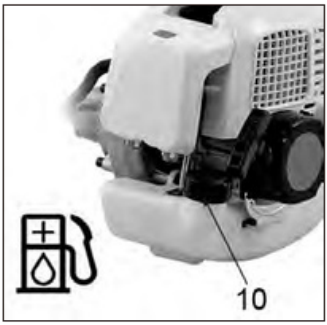
Fuel mix ages

Only mix sufficient fuel for a few days work, not to exceed 3 months of storage. Store in approved fuel-canisters add only. When mixing, pour oil into the canister first, and then gasoline. Close the canister and shake it vigorously by hand to ensure proper mixing of the oil with the fuel.

Gasoline	Oil
1L	25ml
5L	125ml

Dispose of empty mixing-oil canisters only at authorized disposal locations.

Fueling



Before fueling, clean the filler cap and the area around it to ensure that no dirt falls into the tank.

Always thoroughly shake the mixture in the canister before fueling your machine.

In order to reduce the risk of burns or other personal injury from escaping gas vapor and fumes, remove the fuel filler cap carefully so as to allow any pressure build-up in the tank to release slowly.

After fueling, tighten fuel cap as securely as possible by hand.

Starting / Stopping the Engine

STARTING THE ENGINE

WARNING! The engine must be started in an area at least 3metres fromwhere you refilled the fuel tank.

Before starting the engine:

- Place the machine firmly on the ground.

-Remove the guard from the cutting unit (if used).

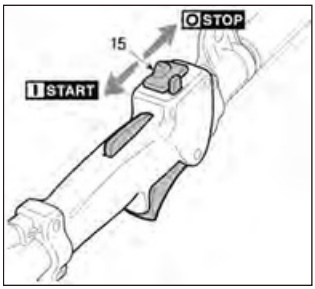
- Make sure the cutting unit is not touching the ground or any other object.

- Make sure you have a firm footing
Do not stand or kneel on the drive tube.

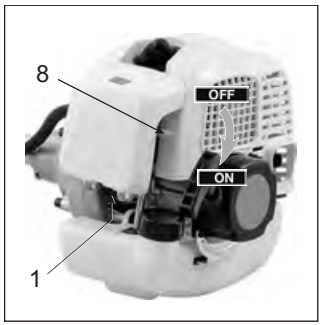
• Cold starting

NOTE: A “cold” start of the engine means starting it after at least 5minutes fromwhen it was switched off or after refuelling.

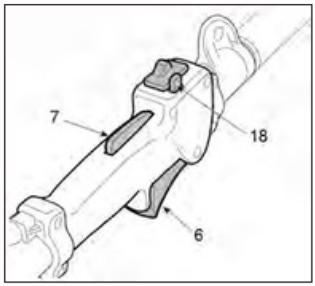
1 Set the switch (15) to «START».



2. Operate the starter, turning lever (8) to «OFF»..
3. Press the primer device button (1) ca. 6 times to prime the carburettor.



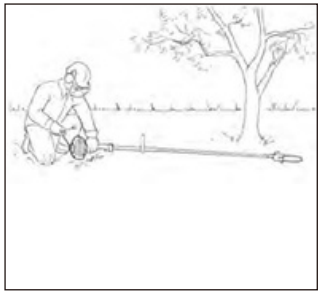
4. Press the safety lever (7), activate the throttle trigger (6) and hold it in this position using the shutter button (18 - if provided); then release the safety lever (7).



5. Hold the machine firmly on the ground with one hand on the power unit, in order not to lose control of the machine during startup.

IMPORTANT: To prevent distortions, the drive tube must not be used as a support for the hand or knee during startup.

6. Pull the starter rope (4) slowly for 10 - 15 cm until you feel some resistance, then tug it hard a few times until you hear the engine turn over.



IMPORTANT: To avoid breaking the starter rope, do not pull the whole length of it or let it slide along the edge of the cable guide hole. Release the starter gradually, to avoid letting it fly back uncontrollably.

7. Slide the choke (8) to «ON» position.

8. Pull the starter rope again until the enginestarts as normal.

WARNING! Starting the engine with the starter and/or shutter (if present) engaged causes the cutting device to move, only stopping when the starter is disconnected.

9. Disconnect the shutter (18 - if provided) briefly activating the throttle trigger (6), to take the engine back to minimum speed.
10. Let the engine run idle for at least 1minute before using the machine.

IMPORTANT: If the starter rope is pulled repeatedly with the choke on, it may flood the engine and make starting difficult.

If you have flooded the engine, remove the spark plug and gently pull the handle on the starter rope to eliminate any excess fuel; then dry the spark plug electrodes and replace it on the engine.

•Hot starting

When hot starting (immediately after stopping the engine), follow the procedure indicated above in points 1 - 5 - 6 - 8.

USE OF THE ENGINE

Cutting device speed is regulated by the throttle trigger (6), located on the rear handgrip (2).

The throttle trigger only works if the lockout (7) is pressed at the same time.

The movement is transmitted from the engine to the drive shaft by a centrifugal mass clutch that prevents the shaft from moving when the engine is running at minimum speed.

WARNING! Do not use the machine if the cutting device moves when the engine is running idle; in this case, contact you dealer.

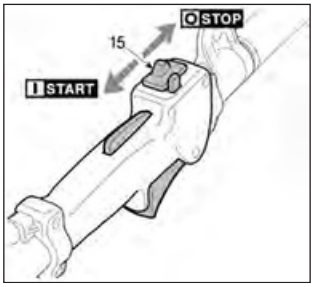
The correct running speed will be achieved by pressing the throttle trigger (6) as far as possible.

IMPORTANT: Avoid using the engine at full power for the first 6-8 working hours.

STOPPING THE ENGINE

- Release the throttle trigger (6) and allow the engine to
- run idle for a few seconds.
  Set the switch (15) to «STOP».

WARNING! When you have reduced speed to a minimum, it will take a few seconds for the cutting device to stop



Operating Instructions

During break-in period

A factory new machine should not be run at high revs (full throttle off load) for the first three tank fillings. This avoids unnecessary high loads during the break-in period. As all moving parts have to bed in during the break-in period, the frictional resistances in the engine are greater during this period. power after about 5 to 15 tank fillings.

During operation

After a long period of full-throttle operation, allow engine to run for a while at idle speed so that the heat in the engine can be dissipated by flow of cooling air. This protects engine-mounted components (ignition, carburetor) from thermal overload.

After finishing work

Wait for engine to cool down. Drain the fuel tank. Store themachine in a dry place. Check tightness of nuts and screws (not adjusting screws) at regular intervals and retighten as necessary.

Maintenance and Storage

Correct maintenance is essential to maintain the original efficiency and safety of the machine over time.

WARNING! During maintenance operations:

-Remove the spark plug cap.

-Wait until the engine is sufficiently cold.

- **Use protective gloves when handling the blades.**
- **Keep the blade protection device on, except when intervening directly on the blade.**

-Never dispose of oils, fuel or other polluting materials in unauthorised places.

Cylinder and silencer

To reduce fire risks, periodically clean the cylinder flaps with compressed air and clear the silencer area to get rid of sawdust, branches, leaves or other debris.

Starting system

To avoid overheating and damage to the engine, always keep the cooling air vents clean and free of sawdust and debris.

The starter rope must be replaced as soon as it shows signs of wear.

Nuts and screws

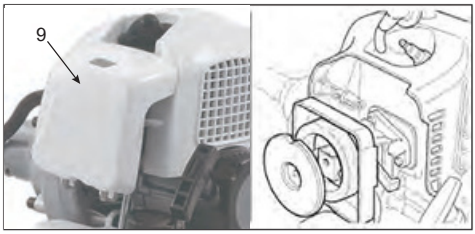
Periodically check that all the nuts and screws are securely tightened and the handgrips are tightly fastened.

Cleaning the Air Filter

Dirty air filters reduce engine power increase fuel consumption and make starting more difficult.

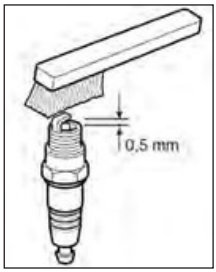
If there is a noticeable loss of engine power

1 Remove the fixing screw of the air filter cover (9).



2. Clean the filter using soap and water
   Never use petrol or benzene !
3. Let the Filter dry in the air.
4. Now put the filter in again proceeding the otherway round.

Checking the Spark Plug



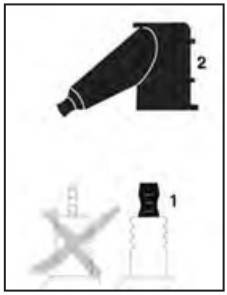
Wrong fuel mix (too much engine oil in the gasoline), a dirty air filter and unfavorable running conditions (= dirty air part throttle) affect the condition of the spark plug. These factors cause deposits to form on the insulator nose which may result in trouble in operation.

If engine is down on power, difficult to start or runs poorly at idling speed, first check the spark plug.

• Remove spark plug. • Clean dirty spark plug. • Check electrode gap (A) and readjust . • Use only resistor type spark plugs of the approved range.

Rectify problems which have caused fouling of spark plug:
• Too much oil in fuel mix.
•
• Unfavorable running conditions, e.g. operating at part load.
Dirty air filter

Fit a new spark plug after approx. 100 operating hours or earlier if the electrodes are badly eroded.



To reduce the risk of fire and burn injury, use only spark plugs authorized by Sunray. Always press spark plug boot (1) of the proper size. (Note: If terminal has de-tachable SAE adapter nut, it must be attached. (2) snugly onto spark plug terminal. A loose connection between spark plug boot and ignition wire connector in the boot may create arc- ing that could ignite combustible fumes and cause a fire.

Rewind Starter

To help prolong the wear life of the starter rope, observe the following points:

- Pull the starter rope only in the direction specified.
- Do not pull the rope over the edge of the guide bushing.
- Do not pull out the rope more than specified since it might break.
- Do not let the starter grip snap back, guide it slowly into the housing. See also chapter “Starting / Stopping the Engine”!

Replace a damaged starter rope in good time or have it replaced by your Sunray dealer!

TUNING THE CARBURETTOR

The carburettor is tuned by the manufacturer to achieve maximum performance in all situations, with a minimum emission of toxic gas in compliance with the regulations in force.

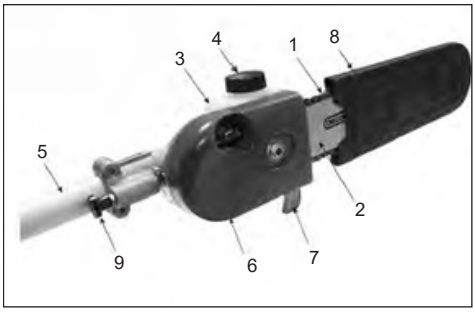
In the case of poor performance contact your Dealer for a check of the carburetion and engine.

• Tuning minimum speed

WARNING! The cutting device must not move when the engine is running idle. If the cutting device moves when the engine is running idle, contact your dealer to correctly regulate the engine.

5.POLE CHAIN SAW

Parts and Controls



1 = Saw Chain
2 = Guide Bar
3 = Oil Tank
4 = Oil Filler Cap
5 = Drive tube
6 = Chain Sprocket Cover
7 = Hook
8 = Chain Guard (Scabbard)
9 = Locking pin (angular adjustment)

Using the Pole Pruner

Preparations:

- Wear suitable protective clothing and equipment – see „Safety Precautions“.
- Start the engine.
- Put on the shoulder strap.

Never throw cuttings into the household garbage can – they can be composted!

Never stand directly under the branch you are cutting – be wary of falling branches. Note that a branch may spring back at you after it hits the ground!

Cutting sequence To allow branches a free fall, always cut the lower branches first. Prune heavy branches (large diameter) in several controllable pieces.

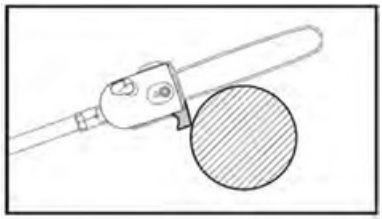
Working position

Hold the control handle with your right hand, and the drive tube with your left hand. Your left arm should be extended to the most comfortable position.

The shaft should always be held at an angle of 60° or less!

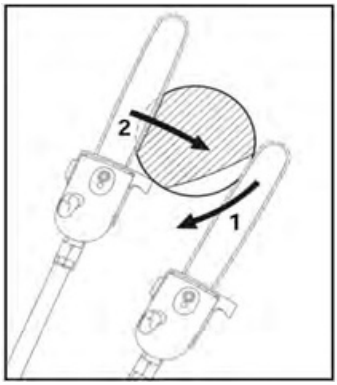
The most convenient working position is a tool angle of 60°, but any lesser angle may be used to suit the situation concerned.

Cross-cutting



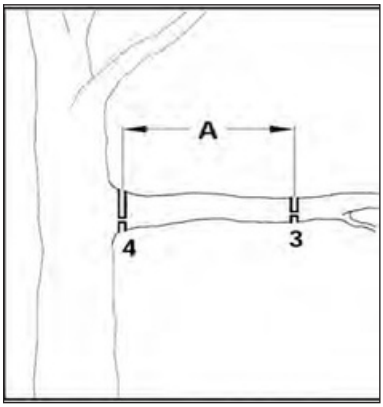
To avoid pinching the bar in the cut, position the cutting attachment with the hook against the branch and then perform the cross-cut from the top downwards.

Relieving cut



• To avoid tearing the bark on thick branches, always start by performing a relieving cut (1) on the underside of the branch.
• To do this, apply the cutting attachment and pull it in an arc across the bottom of the branch (see illustration).
• Locate the hook against the branch and then perform the cross-cut (2).

Flush-cutting thick branches

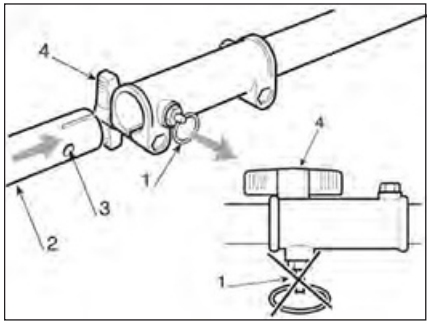


- If branch diameter is more than 4“ (10 cm), first perform undercut (3) and then cross-cut at a distance (A) of about 8“ (20cm) from the final cut.
- Then carry out the flush-cut (4), starting with a relieving cut and finishing with a cross-cut.

Cutting above obstacles

The unit‘s long reach makes it possible to prune branches that are overhanging obstacles, such as rivers or lakes. The tool angle in this case depends on the position of the branch.

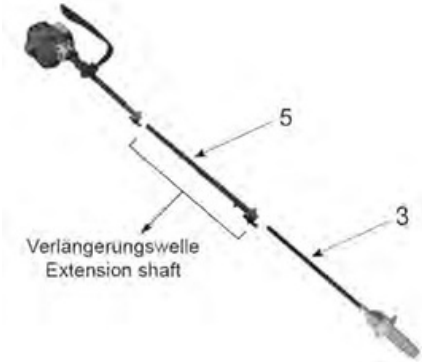
Mounting the Tool



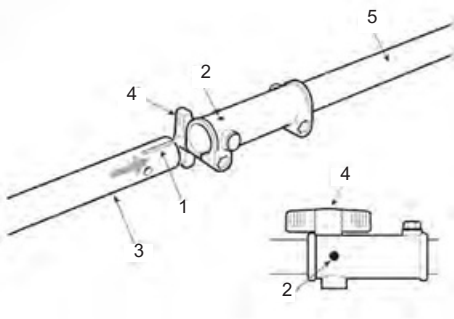
Put the lower shaft (2) into the shaft coupling and concurrently pull out the locking pin (1). Slide the lower shaft in as far as it will go and let go of the locking pin. The locking pin must engage into the opening (3) located laterally in the lower shaft. Of necessary, slightly move the lower shaft to-and-fro until the locking pin safely locks in place. Then tighten the fly nut (4).

Using with an extension shaft

⚠ **The extension shaft can only be mounted on the pole pruner attachment!**



Insert the extension shaft (5) between the motor unit and tool attachment, in order to access higher locations.



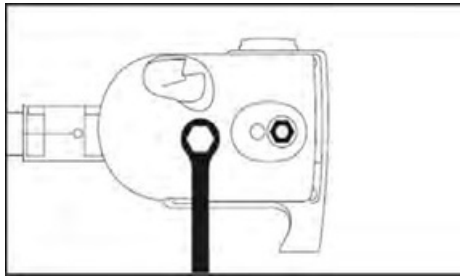
Insert the drive axle (3) in the extension (5) retainer. The guide groove (1) must engage with the locking pin (2). Push the drive axle (3) in until it reaches the mechanical stop and screw the wing bolt (4) tight.

Subsequently fit the cutting unit with the extension on the motor unit (see “Fitting the attachment”).

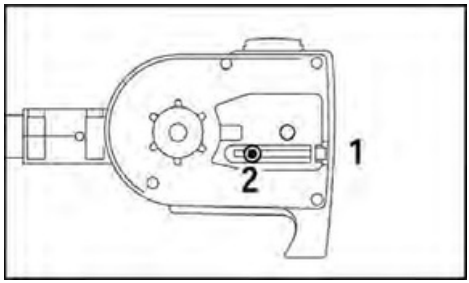
⚠ **Attention: For safety reasons, it is prohibited to fit any shaft extension to the appliance other than the extension supplied with it.**

When pruning high hanging branches with the chain saw, branches and sawdust may injure your face and eyes. Always wear a hard hat with eye guard and protective gloves, in order to protect your eyes and skin. We recommend well-fitting clothing and safety shoes, in order to prevent injuries.

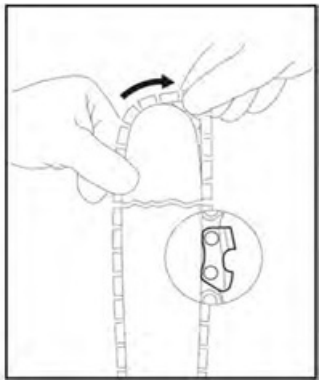
Mounting the Bar and Chain



1 Unscrew nut and take off the sporcket cover.

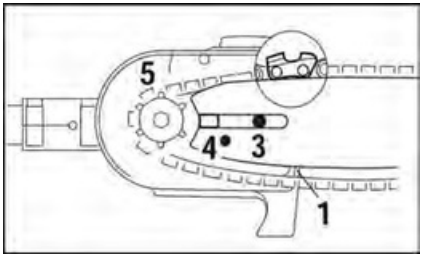


2 Turn tensioning screw (1) anticlockwise until the tensioning nut (2) butts against the left.



⚠ The chain is very sharp – wear work gloves to protect hands from cuts.

3 Fit the chain – start at the bar nose.

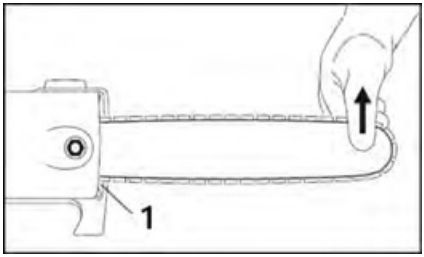


4 Fit guide bar over the stud (3). Engage peg of tensioner slide in locating hole (4) – place the chain over sprocket (5) at the same time.

5 Now turn tensioning screw (1) clockwise until there is very little chain sag on the underside of the bar – and the drive link tangs are located in the bar groove.

6 Refit the sprocket cover and screw on the nut only fingertight.

Tensioning the Saw Chain



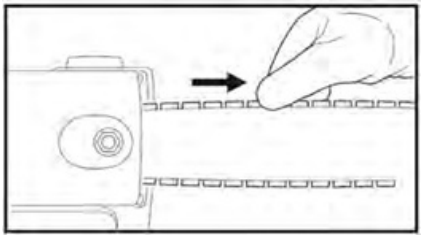
Retensioning during cutting work:

- Shut off the engine and then slacken the nut.
- Hold the bar nose up.
- Use screwdriver to turn the tensioning screw (1) clockwise until chain fits snugly against the underside of the bar.
- Tighten down the nut firmly.

A new chain has to be retensioned more often than one that has been in use for some time – check chain tension frequently – see chapter „Operating Instructions / During Operation“.

- Check chain tension.

Checking Chain Tension



- Shut down the engine.
- Wear work gloves to protect hands.
- Chain must fit snugly against the underside of the bar and it must still be possible to pull the chain along the bar by hand.
- If necessary, retension the chain.

Chain Lubricant

For automatic and reliable lubrication of the chain and guide bar – **use only an environmentally compatible quality chain and bar lubricant with non-fling additive is recommended.**

The service life of the chain and guide bar depends on the quality of the lubricant. It is therefore essential to use only a specially formulated chain lubricant. If special chain lubricant is not available, you may – in an emergency – use an HD single grade or multigrade engine oil with a viscosity that suits the prevailing outside temperature.

Do not use waste oil!

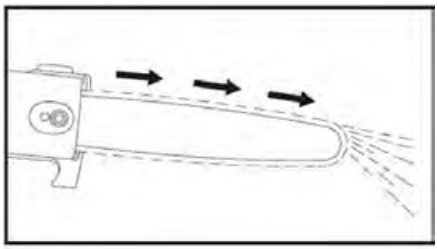
Medical studies have shown that renewed contact with waste oil can cause skin cancer. Moreover, waste is environmentally harmful!

Waste oil does not have the necessary lubricating properties and is unsuitable for chain lubrication.

Filling Chain Oil Tank

- A full chain oil tank is sufficient for only half a tankful of fuel. Check the oil level regularly during cutting work. Never allow the oil tank to run dry!
- Thoroughly clean the filler cap and area around it so that no dirt can fall into the tank.
- Position the unit so that the filler cap faces up. If the oil level in the tank does not go down, the reason may be a problem in the oil supply system: Check chain lubrication, clean the oilways, contact your servicing dealer for assistance if necessary.

Checking Chain Lubrication

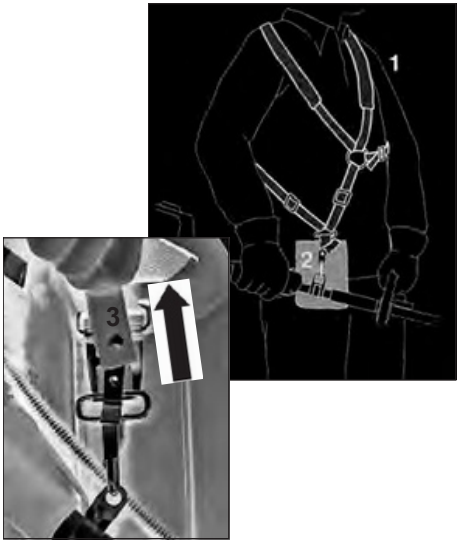


The saw chain must always throw off a small amount of oil.
• Always check chain lubrication and the oil level in the tank before starting work.

Never operate your pruner without chain lubrication. If the chain is run dry, the whole cutting attachment will be irretrievably damaged within a very short time.

Every new chain has to be broken in for about 2 to 3 minutes. After breaking in the chain, check chain tension and adjust if necessary – see chapter „Checking Chain Tension“.

Adjusting the carry strap



The design and type of carry strap may vary..
• Put on the shoulder strap (1).
• Adjust the length of the belt so that the spring hook (2) is roughly a hand's width below your right hip.

PLEASE NOTE: This carry strap has a safety device allowing you to immediately disconnect the strap from the machine in an emergency. To do so, pull forcefully on the red pull tab (3) on the strap. This disconnects the strap from the holding fixture immediately.

NOTE: Never start the motor with the carry strap attached to the machine!

Starting / Stopping the Engine

To reduce the risk of fire and burn injuries, start the engine at least 10 feet (3 meters) from the fueling spot, out- doors only.

For specific starting instructions, see the appropriate section of your Engine manual (4. Engine). Proper starting methods reduce the risk of injury.

Place the saw trimmer on firm ground or other solid surface in an open area or, in the alternative, as shown in the above picture. Maintain good balance and secure footing.

Operating Instructions

During operation

Check chain tension frequently!

A new chain has to be tensioned more often than one that has been in use for some time.

Cold chain:

Tension is correct when the chain fits snugly against the underside of the bar and can still be pulled along the bar by hand. Retension if necessary – see chapter “Tensioning the Saw Chain”. Chain at operating temperature: The chain stretches and begins to sag. The drive links on the underside of the bar must not come out of the bar groove – the chain may otherwise jump off the bar.

Retension the chain – see chapter “Tensioning the Saw Chain”.

Always slacken off the chain again after finishing work. The chain contracts as it cools down. If it is not slackened off, it may damage the gear shaft and bearings.

After finishing work

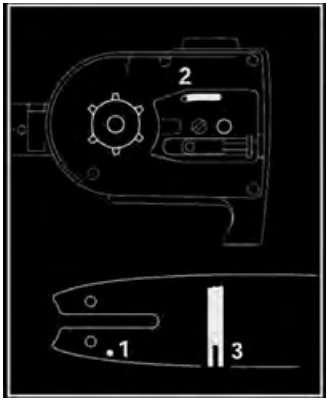
• Slacken off the chain if you have retensioned it at operating temperature during cutting work.

The chain contracts as it cools down. If it is not slackened off, it may damage the gear shaft and bearings.

Storing for longer period:

See chapter „Storing the Machine“.

Taking Care of Guide Bar



Turn the bar over – every time you sharpen the chain – and every time you replace the chain. This avoids one-sided wear, especiallly at nose and underside of the bar.

Regularly clean

1 = oil inlet hole

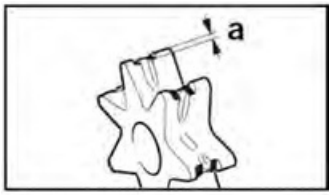
2 = oil passage

3 = bar groove

Checking and Replacing the Chain Sprocket

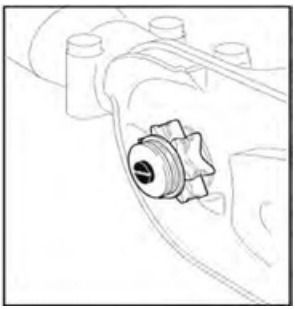
• Remove the chain sprocket cover, chain and guide bar.

Replace the chain sprocket:



– if the wear marks (dimension deeper than 0.02 in (0.5 mm)– the life of the a) on the sprocket are chain would otherwise be reduced.

The service life of the chain sprocket is prolonged if it is used with two chains in rotation.



Maintaining and Sharpening Saw Chain

Correctly sharpened chain

A properly sharpened chain slices through wood effortlessly and requires very little feed pressure.

Do not work with a dull or damaged saw chain as it will increase the physical effort required, cause higher vibrations, produce unsatisfactory results anda higher rate of wear.

• Clean the chain.

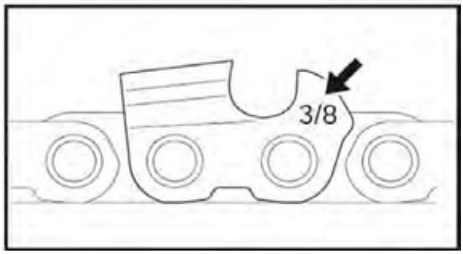
• Check the chain for cracks in the links and damaged rivets.

• Replace any damaged or worn parts of the chain and match the new parts to the shape and size of the original parts by filing back as necessary.

It is necessary to comply with the angles and dimensions specified below. If the **sawchain is incorrectly sharpened** if the depth gauges are too low – there is an increased risk of kickback and resulting injury!

The pruner's saw chain cannot be locked in place on the guide bar. Therefore, it is best to remove the chain from the bar and resharpen it on a workshop sharpening tool.

• Select the appropriate sharpening tools for the chain pitch. See „Specifications" for the permitted chain pitches.



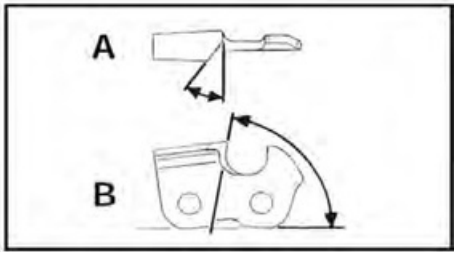
The chain pitch (e.g. 3/8") is marked on the depth gauge of each cutter.

Use only special saw chain files!

Other files have the wrong shape and cut.

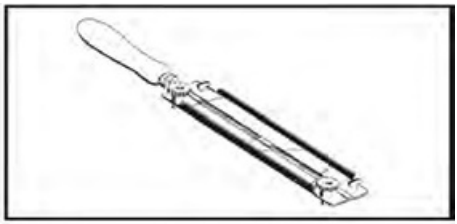
Select the file diameter according to the chain pitch.

You must also observe the following angles when resharpening the chain cutters.



A = Filing angle B = Side plate angle Furthermore, the angles must be the same on all cutters.

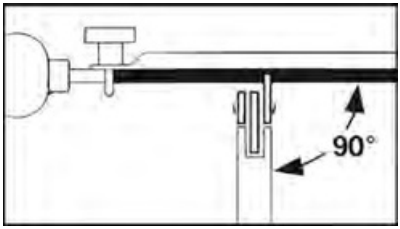
If angles are uneven the chain will run roughly, not in a straight line, wear quickly and break prematurely.

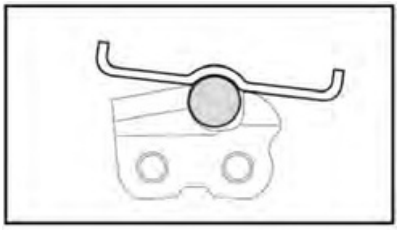


As these requirements can be met only after sufficient and constant practice:

• Use a file holder

A file holder must be used for manual resharpening of saw chain. The correct filing angles are marked on the file holder.



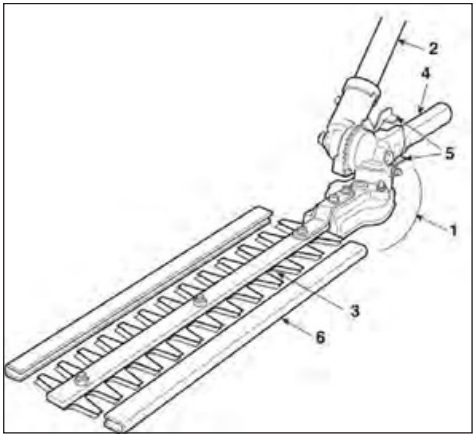


- Hold the file guide bar) and file according to the angles marked on **horizontally** (at right angle to side of the file holder. Rest the file holder on the top plate and depth gauge.
- Always file from the inside to the outside of the cutter.
- The file only sharpens on the forward stroke – lift the file off the cutter on the backstroke.
- Avoid touching the tie straps and drive links with the file.
- Rotate the file at regular intervals while filing to avoid one-sided wear.
- Use a piece of hardwood to remove burrs from cutting edge.

All cutters must be the same length. If the cutters are not the same length, they will have different heights. This makes the chain run roughly and increases the risk of breakage of the chain.

6.POLE HEDGE TRIMMER

Main Parts

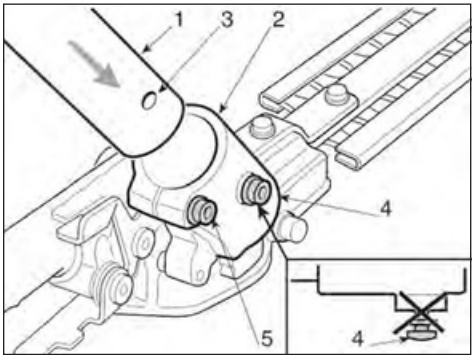


1. Blade drive gear
2. Drive tube
3. Cutting blades
4. Adjusting lever
5. Adjusting handle
6. Blade scabbard

Installation and adjustment

Installing the rod (if supplied separately)

- Insert the rod (1) into the socket (2) so the hole (3) lines up with the bolt (4).
- Tighten the two bolts (4) and (5). Once they are tightened, the head of the bolt (4) should be flush.



Operation

Important: You should also carefully read through the operating instructions for the brush cutter on which the hedge cutter attachment is to be used.

Before commencing work, check that:

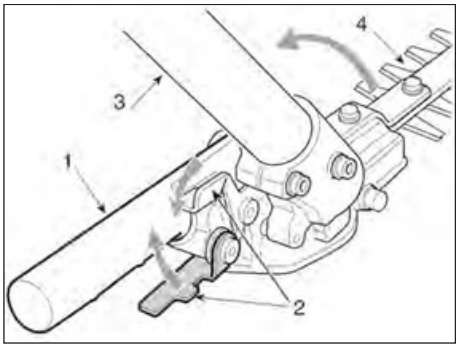
- all screws and bolts on the machine and on the blades have been tightened
  the blades are sharp and undamaged

- the protective devices are fitted tightly and provide ad-
- equate protection
  the handgrips are properly secured

• Possible applications

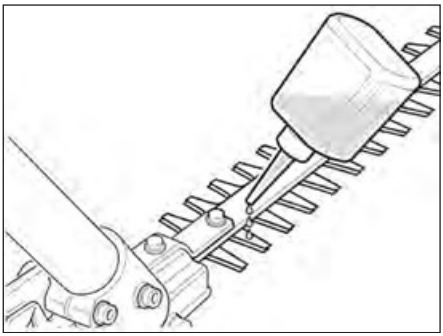
- The branches being cut must not be more than 5mm thick; using the hedge cutter attachment to chop through thicker branches may cause irreparable damage to the attachment.
- The cutting angle may ONLY be adjusted when the motor is switched off. The motor must also be SWITCHED OFF before removing branches or foliage stuck in the attachment.
- Always hold the cutting unit away from the body during operation.
- When the unit is stopped, always fit the guard.

• Adjusting the angle of the blade



- Switch off the motor and wait until the blade comes to a stop.
- Firmly hold the grip (1) and then, holding the rod (3) with the other hand, push the unlocking lever (2) and move the grip (1) to change the angle of the blade (4).
- When the lever (2) is released again, the blade stays locked in the desired position.

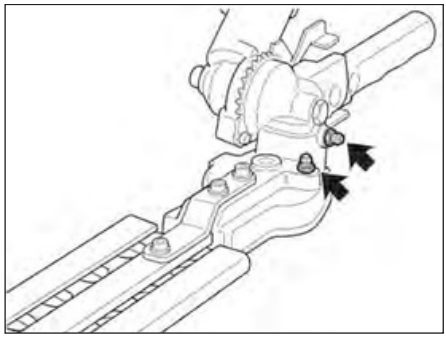
Lubricating the blade during use



If the cutting unit gets too hot during operation, the internal faces of the blade must be lubricated using a specific oil.

⚠ **Please note: This procedure may only be carried out when the motor is switched off and the blade has come to a stop.**

Blade drive housing



- Lubricate at intervals of 20 hours via the lubricating nipple.
- Use lithium-based lubricating grease for high temperatures and pressure values to lubricate your machine.

Maintaining and sharpening the blade

⚠ **Please note:** Check regularly to ensure that the blades are not warped or damaged and that the blade bed is in good condition.

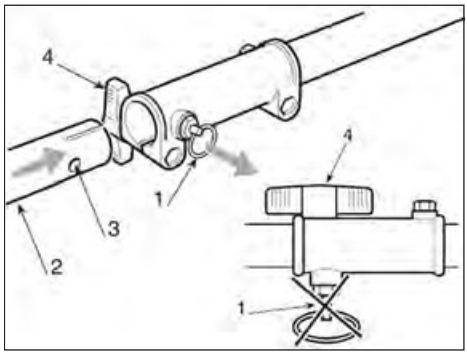
The blade spacing does not have to be set, this tolerance is pre-set in the factory.

If the blades are used in accordance with the instructions, no maintenance or sharpening is required.

Re-sharpening is only necessary if the cutting performance deteriorates and branches often become entangled.

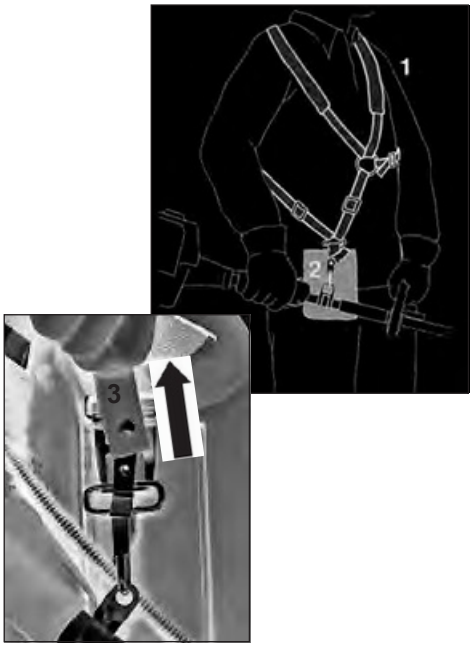
Important: Should it be required, any work on the blade must be carried out by a specialised centre, which has specialised equipment at its disposal and is in a position to perform the necessary work without negatively affecting the safety of the machine.

Installing the attachment



Undo the wing screw (4) on the coupling sleeve, pull out the knob (1) and push the drive axle (2) into the connector by gently turning it back and forth. The locking knob (1) must engage fully into its hole (3). Tighten the wing screw (4).

Adjusting the carry strap



The design and type of carry strap may vary.

- Put on the shoulder strap (1).
- Adjust the length of the belt so that the spring hook (2) is roughly a hand's width below your right hip.

PLEASE NOTE: This carry strap has a safety device allowing you to immediately disconnect the strap from the machine in an emergency. To do so, pull forcefully on the red pull tab (3) on the strap. This disconnects the strap from the holding fixture immediately.

NOTE: Never start the motor with the carry strap attached to the machine!

The Machine

Do not use your power scythe attachment during other people's rest periods.

Preparations

Always wear a harness.

- **Vertical cut (with straight cutter bar)**
  Large working radius even without additional aids

- **Vertical cut (with angled cutter bar)**
  Cutting without standing directly next to hedge

- **Horizontal cut (with straight cutter bar)**
  Cutting without standing directly in front of the hedge - large working radius

- **Overhead cut (with angled cutter bar)**
  Hold the hedge cutter above your head and swing it in an arc to make maximum use of its reach.

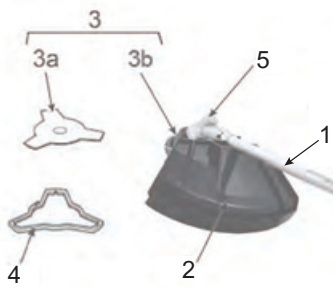
Any working position above head height is tiring. To minimize the risk of accidents, work in such positions for short periods only. Set angle of adjustable cutter bar to maximum so that the unit can be held in a lower, less tiring position (with harness) while still providing adequate vertical reach.

- **Horizontal cut (with angled cutter bar)**
  Cutting close to the ground from a standing position, e.g. low shrubs

Do not throw cuttings in the rubbish bin (garbage can) -they can be composted

7.BRUSHCUTTER & TRIMMER

Main Parts



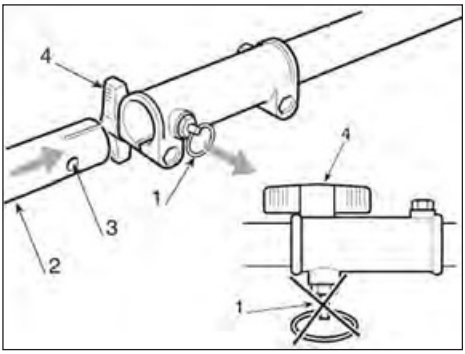
1. Power Unit
2. Cutting device guard
3. Cutting device
   a)Blade with 3 points
   b)Cutting line head
4. Blade protection (for transport)
5. Angle transmission

Maschine Assembly

IMPORTANT: The Machine is supplied with some of the components disassembled and the fuel tank empty.

WARNING! Always wear strong work gloves to handle the cutting devices. Mount the components very carefully so as not to impair the safety and efficiency of the machine. If in doubt, contact your dealer.

Installing the attachment



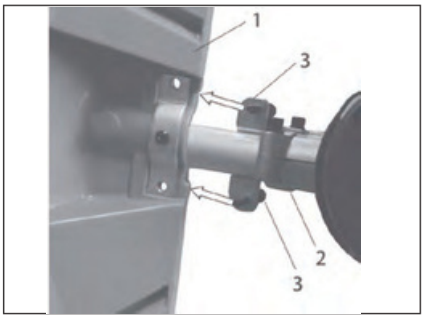
Undo the wing screw (4) on the coupling sleeve, pull out the knob (1) and push the drive axle (2) into the connector by gently turning it back and forth. The locking knob (1) must engage fully into its hole (3). Tighten the wing screw (4).

Fitting the Guards

WARNING! Each cutting device is provided with a specific guard. Never use guards other than those indicated for each cutting device.

• 3 point blade

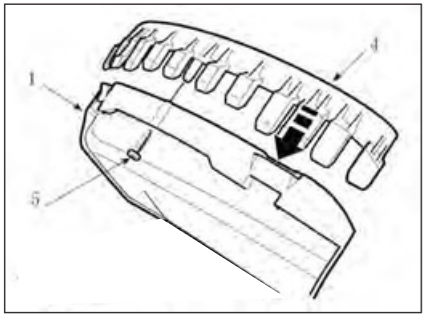
WARNING! Wear protective gloves and fit the blade guard.



- The guard (1) is fixed to the angle transmission (2) by four screws (3).

• Cutting line head

WARNING! When using the cutting line head the additional guard, with line cutting knife, must always be fitted.



- The guard (1) is fixed to the angle transmission (2) by four screws (3).
- Secure the additional guard (4) using the screw (5).

Removing and refitting the cutting devices

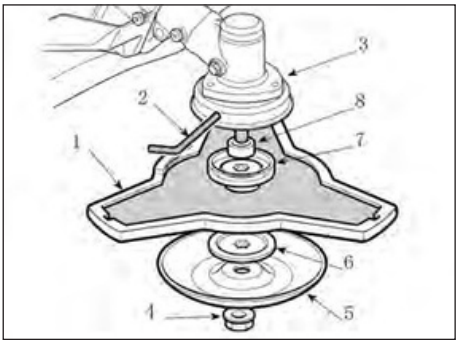
WARNING! Use only original cutting devices or ones homologated by the Manufacturer.

• 3 point blade

WARNING! Wear protective gloves and fit the blade guard.

NOTE: The fastening nut (4) has a left-hand thread and so must be unscrewed in a clockwise direction and screwed up anticlockwise.

- Insert the wrench supplied (2) into the specific hole in the angle transmission (3) and rotate the blade (1) by hand until the wrench enters the inner hole, blocking rotation.
- Unscrew the nut (4) clockwise
- Take off the cap (5) and outer ring (6), than remove the blade (1), taking care not to take off the inner ring (7) and spacer (8).



When mounting,

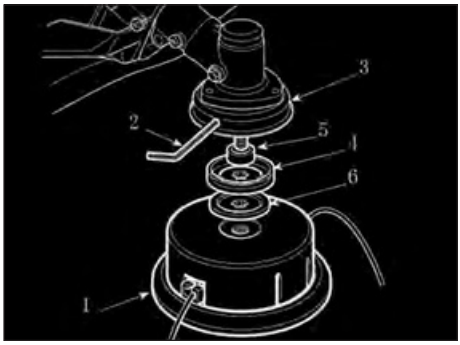
- If they were taken off during disassembly, refit the spacer (8) and the inner ring (7), making sure that the inner ring's (7) grooves match perfectly with the angle transmission. truding edge toward the blade.
- Refit the blade (1) and the outer ring (6), with the pro-anticlockwise direction
- Remove the wrench (2) to restore blade rotation.
- Refit the cap (5) and the nut (4), fully tightening it in an

• Cutting line head

NOTE: The cutting line head has a left-hand thread and so must be unscrewed in a clockwise direction and screwed up anticlockwise.

- Insert the wrench supplied (2) into the specific hole in the angle transmission (3) and rotate the cutting line head (1) by hand until the wrench enters the inner hole, blocking rotation.

- Remove the cutting line head (1) unscrewing it **in a clockwise direction.**



When mounting:

- If they were taken off during disassembly, refit the spacer (5), the inner ring-nut (4) and the outer ring (6),making sure that the inner ring-nut (4) grooves-match perfectly with the angle transmission.

- Fit the cutting line head (1) screwing it up in an anti-clockwise direction.

- Remove the wrench (2) to restore shaft rotation.

Preparing to Work

Checking the machine

Before starting work please:

- check that all the screws on themachine and the cutting device are tightly fastened;

- check that the cutting device is undamaged and that the 3 or 4-point metal blades (if fitted) are properly sharpened;

-check that the air filter is clean;

- check that the protection devices are well fastened and working efficiently;

- check the handgrips are well fastened.

Using the Machine

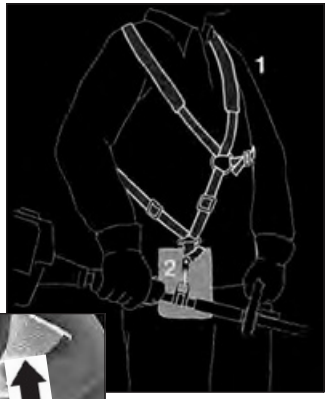
To respect people and the environment:

- Try not to cause any disturbance.

- Scrupulously comply with local regulations and provisions for the disposal of waste materials after sawing.

- Scrupulously comply with local regulations and provisions for the disposal of oils, petrol, damaged parts or any elements which have a strong impact on the environment.

Adjusting the carry strap



The design and type of carry strap may vary.

• Put on the shoulder strap (1).

• Adjust the length of the belt so that the spring hook (2) is roughly a hand's width below your right hip.

⚠ **PLEASE NOTE:** This carry strap has a safety device allowing you to immediately disconnect the strap from the machine in an emergency. To do so, pull forcefully on the red pull tab (3) on the strap. This disconnects the strap from the holding fixture immediately.

⚠ **NOTE:** Never start the motor with the carry strap attached to the machine!

Mode of Operation

⚠ **WARNING! When working, the machine must always be firmly held in both hands, keeping the power unit on the right of the body and the cutting group below the line of the belt.**

⚠ **WARNING! Stop the engine immediately if the blade stops during sawing. Always beware of a kickback, which could occur if a blade encounters a solid object (logs, roots, branches, stones, etc.). Do not touch the ground with the blade. Kickbacks cause blade recoils that are difficult to control, so as to cause loss of control of the machine, compromise operator safety and cause damage to the machine itself.**

Before tackling a mowing job for the first time it is advisable to gain the necessary familiarity with the machine and the most suitable cutting techniques, finding out how to wear the webbing correctly, firmly gripping the machine and making the movements required by the job.

•Choosing the cutting device

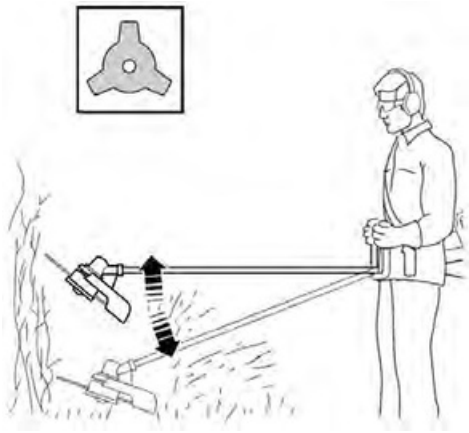
Choose the most suitable cutting device for the job to be done, according to these general indications: **- the 3-point blade** is suitable for cutting brushwood

and small shrubs up to 2 cm in diameter;

- the cutting line head can eliminate tall grass and non-woody vegetation near fences, walls, foundations, pavements, around trees, etc. or to completely clean a particular area of the garden;

Working Techniques

a)3-point blade



Start cutting above the under growth and then move down with the scything blade so as to cut the brush into small pieces.

b)Cutting line head

⚠ **WARNING! Use ONLY nylon lines. The use of metal lines, plasticised metal lines and/or lines not suitable for the head can cause serious injuries and wounds.**

During use it is advisable to stop the engine periodically and remove the weeds wound round the machine, so as to prevent the drive tube from overheating due to the grass caught under the guard. Remove the caught-up grass with a screwdriver to allow the rod to be properly cooled.

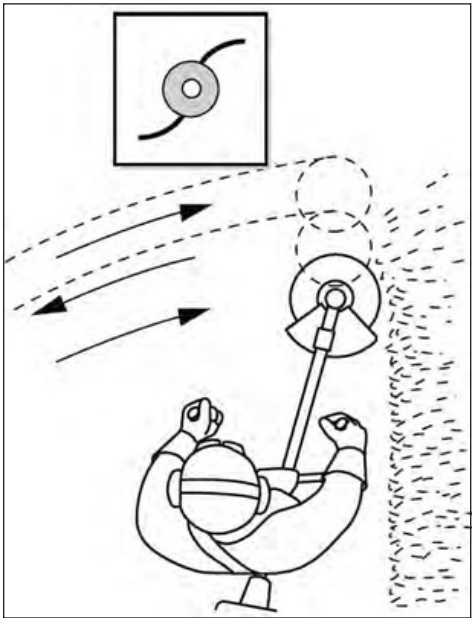
⚠ **WARNING! Do not use the machine for sweeping, tilting the cutting line head. The power of the engine could throw objects and small stones 15me- tres or more, causing damage and injuries to people.**

•Cutting in motion (Scything)

Proceed at a regular pace, with a circular motion similar to a traditional scythe, without tilting the cutting line head during the operation.

First try cutting at the right height in a small area, so as to then achieve a uniform cutting height keeping the cutting line head at a constant distance from the ground.

For heavier cutting it can be useful to tilt the cutting line head by about 30°.



⚠ **WARNING! Do not work in this way if there is the possibility of causing objects to be thrown, which could harm people and animals and cause damage.**

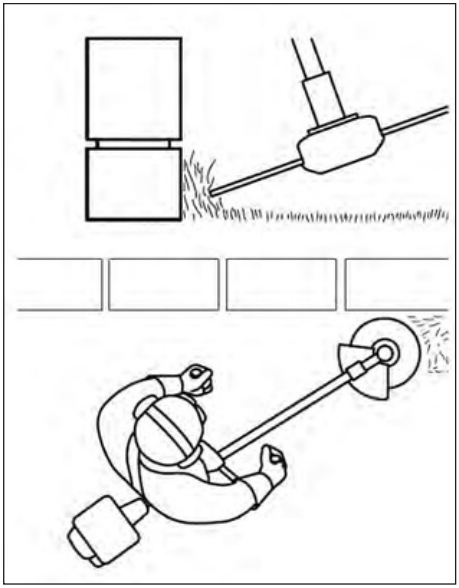
•Precision cutting (Trimming)

Keep the machine slightly tilted so that the lower part of the cutting line head does not touch the ground and the cutting line is at the required point, always keeping the cutting device at a distance from the operator.

•Cutting near fences/foundations

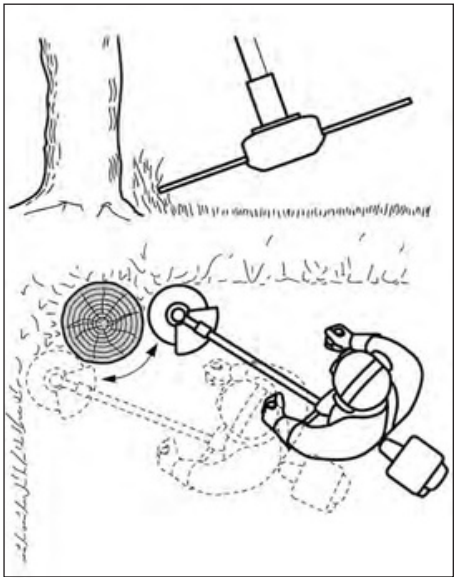
Slowly approach the cutting line head to fences, posts, rocks, walls, etc. without hitting them hard. If the line strikes a solid object it could break or become worn; if it gets tangled in a fence it could break abruptly.

In any case, cutting around pavements, foundations, walls, etc. can cause greater wear than normal in the line



•Cutting round trees

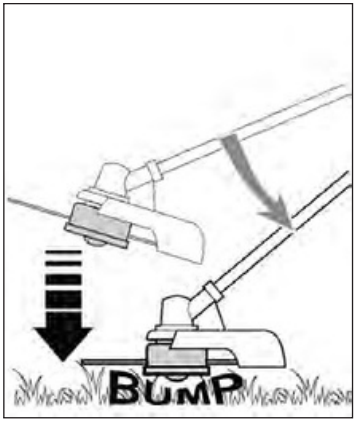
Walk round the tree from left to right, approaching the trunks slowly so as not to strike the tree with the line and keeping the cutting line head tilted forward slightly.



Remember that the nylon line could lop or damage small shrubs and that the impact of the nylon line against the trunk of bushes or tr

•Adjusting line length when working

This machine is fitted with a “Tap & Go” head.



To release more line, tap the cutting line head against the round with the engine at top speed: the line will be released automatically and the knife cut off the excess length.

End of Operation

When you have finished your work:

- Switch off the engine as indicated above (Chap. 6).
- Wait for the cutting device to stop and fit the blade guard.

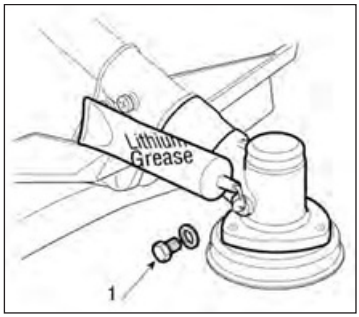
Maintenance and Storage

Correct maintenance is essential to maintain the original efficiency and safety of the machine over time.

⚠ WARNING! During maintenance operations:

- **Remove the spark plug cap.**
- **Wait until the engine is sufficiently cold.**
- **Use protective gloves when handling the blades.**
- **Keep the blade protection device on, except when intervening directly on the blade.**
- **Never dispose of oils, fuel or other polluting materials in unauthorised places.**

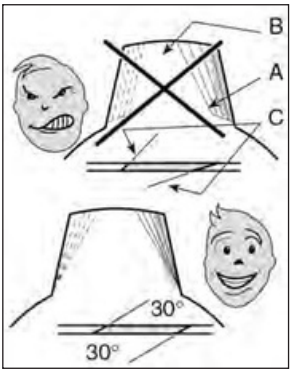
ANGLE TRANSMISSION



Lubricate with lithium-based grease. Remove the screw (1) and put in the grease, turning the shaft manually until grease emerges, then replace the screw (1).

Sharpening the 3 point blade

⚠WARNING! Use protective gloves. If sharpening is done without removing the blade, disconnect the spark plug cap.



Sharpening must be done taking account of the type of blade and cutting edges, using a flat file and working all the points equally.

The references for correct sharpening are given in Fig. 19:

A = Incorrect sharpening
B = Sharpening limits
C = Incorrect and unequal angles

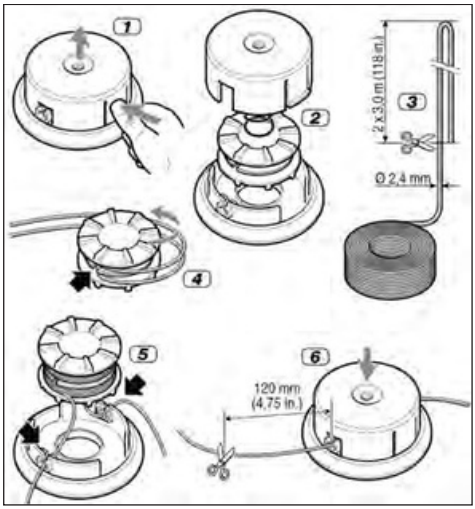
It is important to retain the correct balance after sharpening.

3 point blades can be used from both sides. When one side of the points is worn, the blade can be turned and the other side used.

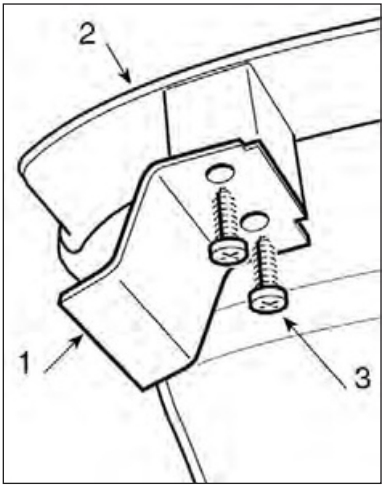
⚠WARNING! The blade must never be repaired, but must be replaced as soon as signs of breaking are noted or the sharpening limit is exceeded.

Head line replacement

- Follow the sequence indicated in the figure.



Sharpening the line cutting knife



- Remove the line cutting knife (1) from the guard (2) by unscrewing the screws (3).
- Fix the line cutting knife in a vice and sharpen it using a flat file, being careful to retain the original cutting angle.
- Refit the knife on the guard.

7 MAINTENANCE

Maintenance Chart

ENGINE

Please note that the following maintenance intervals apply for normal operating conditions. If your daily working time is longer than normal or working conditions are difficult (very dusty work area, etc.), shorten the specified intervals accordingly.		before starting work	work daily after finishing	stop after eachrefueling	if necessary
Complete machine	Visual inspection (condition, fuel and other leaks)	x		x	
	Clean		x		
Control handle	Check operation	x		x	
Air filterClean	Clean				x
	Replace by a servicing dealer				x
Fuel tank	Clean				x
Carburetor	Check idle adjustment – working tool must not move	x		x	
	Readjust idle				x
Spark plug	Readjust electrode gap				x
	Replace after about 100 operating hours				
Cooling inlets	Inspect		x		
	Clean				x
Spark arrestor* in mufflerr	Check		x		
	Have cleaned or replaced 1)				x
Accessible screws and nuts (not adjusting screws)	Retighten				x
Safety labels	Replace				x

POLE CHAIN SAW

Please note that the following maintenance intervals apply for normal operating conditions only. If your daily working time is longer than normal or cutting conditions are difficult (very dusty work area, resin-rich wood,tropical wood etc.), shorten the specified intervals accordingly.		before starting work	work daily after finishing	stop after eachrefueling	if necessary
Chain lubrication	Check	x			
Saw chain	Check, also check sharpness	x		x	
	Check chain tension	x		x	
	Sharpen				x
Guide bar	Check (wear, damage)	x			
	Clean and turn over				x
	Deburr				x
	Replace				x
Chain sprocket	Check				x
	Replace				x
Safety labels	Replace				x

7 Maintenance

POLE HEDGE TRIMMER

Please note that the following maintenance intervals apply for normal operating conditions. If your daily working time is longer than normal or working conditions are difficult (very dusty work area, etc.), shorten the specified intervals accordingly.		before starting work	after finishing work or daily	after eachrefueling stop	yearly	if problem	if damaged	as required
Cutting blades	visual inspection		x				x	
	Sharpen							x
Gearbox lubrication	Check		x					
	Top up							x

ATTENTION: Any maintenance works that are not explicitly described in these Operating Instructions must be carried out by an authorized workshop.

Store the Engine

For periods of about 3 months or longer:

- Drain and clean the fuel tank in a well ventilated area.
- Dispose fuel properly in accordance with local environmental requirements.
- Empty the fuel tank and screw the tank cap back on.
- Let the engine idle until it stops to free the carburettor from fuel.
- Let the engine cool down (about 5 minutes)
- Remove the spark plug using a spark plug wrench.
- Fill a tea spoon of pure 2-stroke oil into the combustion chamber. Pull the starter rope several times slowly to distribute the oil inside the engine. Put the spark plugback in.
- Thoroughly clean the machine - pay special attentionto the sylinder fins and the air filiter.
- Remove the tool – clean and inspect it.
- Store the machine in a dry, high or locked location- out of the reach of children and other unauthorized persons.
- Do not store the tool and fuel can where petrol vapours could come into contact with a naked flame or sparks (e.g. not next to a cooker, oven or hot water boiler with a pilot light). Always allow the tool to cool down before putting into storage.

CAUTION: All maintenance activities not included in this manual must be performed exclusively by your dealer. Activities that are not performed by a specialist company, or that are carried out by unqualified persons, will explicitly void the guarantee.

⚠ **Please note that improper maintenance, the use of non-compliant spare parts, or the remo- val or modification of safety devices can cause damage to the tool and serious injuries to the operator.**

Store the Tools

- For periods of about 3 months or longer:
- Remove and clean the saw chain and guide bar and hedge trimmer, spray with corrosion inhibiting oil.
- If you use biological chain and bar lubricant com-pletely fill the chain oil tank.
- If the Tool is stored separately, fit the protective cap on the drive tube to avoid dirt getting into the coupling.
- Store the machine in a dry, high or locked location – out of the reach of children and other unauthorized persons.

Transport

- When transporting the tool by car, it must be positioned so that it poses no danger, and secured.
- Make sure that no petrol escapes during transport. Avoid damage and injuries.
- During transport and storage of the tool, the blade guard (chain guard) must be attached.

Spare Parts

Please contact our service department if you need accessories or spare parts.

When working with this machine, do not use spare parts other than those recommended by us. Using spare parts not recommend by us can result in serious injuries to persons or damage to the machine.

Waste Disposal and Environmental Protection

Never pour remainders of chain lubricant or 2-stroke fuel mixture in the drain or sewerage system or soil, but dispose of it in a proper, environmentally friendly way, e.g., at a special collecting point or dump. If your device should become useless somewhere in the future or you do not need it any longer, do not dispose of the device together with your domestic refuse, but dispose of it in an environmentally friendly manner. Thoroughly empty the oil/lubricant and fuel tanks and dispose of the remainders at a special collecting point or dump. Please also dispose of the device itself at an according collecting/recycling point. By doing so, plastic and metal parts can be separated and recycled. Informa- tion concerning the disposal of materials and devices are available from your local administration.

8 REFERENCE

Ratings: Multi-function garden tool 5 in 1 MFT520C

Motor		
Engine output	kW	1,45
Engine type		2 stroke air-cooled
Cubic capacity	cm^3	51,7
Fuel	lubricated petrol	40:1
Tank volume	ml	920
Maximum engine speed	min^{-1}	10000
Idling speed	min^{-1}	3000±300
Clutch engagement speed	min^{-1}	4300
Pole chain saw		
Max. speed of the engine	min^{-1}	10500
Maximum Chain speed	m/s	9.8
Bar length		10" (100SDEA318 Oregon)
Cutting length	mm	254
Chain type		Oregon 91PJ040X
Oil tank volume	ml	125
Weight 1)	kg	8.0(with extension shaft 8,8 kg)
Pole hedge trimmer		
Blade length	mm	430
Cutting length	mm	400
Cutting blade diameter	mm	24
Max. speed of the engine	min^{-1}	9500
Work angle		170°
Weight 1)	kg	8,2
Brush Cutter / Grass Trimmer		
Max. speed of the cutting tool		
With 3-point blade	min^{-1}	9300
With line cutter head	min^{-1}	7300
Cutting diameter	cm	45 (Blade = 25,5)
Cord diameter	mm	2,8
Overall cord length	m	2 x 4
Cord extension		Tap'n go
Blade		3T / JLF P3
Weight 1)	kg	8.1
Guaranteed sound power level: L_{WA} (2000/14/EC)		117 dB (A)
measured acoustic capacity level : L_{WA} (2000/14/		110,6 dB (A) [K=3,0 dB (A)]
Guaranteed sound pressure level: L_{pA} (ISO 22868:2011)		102.8 dB (A) [K=3,0 dB(A)]
Guaranteed vibration (ISO 22867)		6,88 m/s^2 [K 1,5 m/s^2]

1) Weight as per standard ISO 11806-1 (without fuel, cutting devices and harness)

Technical changes reserved.

Allow only persons who understand the manuals of the Engine and the Tools to operate your power tool. To receive maximum performance and satisfaction from your power tool, it is important that you read and understand the maintenance and safety precautions, before using your power tool.

Contact your dealer or the distributor for your area if you do not understand any of the instructions in the manual.

WARNING! The vibration value may vary according to the usage of the machine and its fitted equipment, and be higher than the one indicated. Safety measures must be established to protect the user and must be based on the load estimate generated by the vibrations in real usage conditions. In this regard, all the operational cycle phases must be taken into consideration, such as switching off or idle running.

Warning: Prolonged exposure to vibrations can cause injuries and neurovascular disorders (also called “Renaud’s syndrome”or “white hand”), especially to people suffering from circulation disorders. The symptoms can regard the hands, wrists and fingers and are shown through loss of sensitivity, torpor, itching, pain and discolouring of or structural changes to the skin. These effects can be worsened by low ambient temperatures and/or by gripping the handgrips excessively tightly. If the symptoms occur, the length of time the machine is used must be reduced and a doctor consulted.

When working with the device, a certain level of noise cannot be avoided. Noisy work should be scheduled for hours, during which it is allowed by statute or other local regulations. Adhere to any applicable rest times and limit your working time to the necessary minimum time. For your personal protection and the protection of people nearby, suitable hearing protection must be worn.

Warning! This machine generates an electromagnetic field when operated. This field can affect active or passive medical implants in certain circumstances. In order to reduce the risk of severe injury or death, we recommend that people with medical implants consult their doctor or the manufacturer of the medical implant before operating the machine.