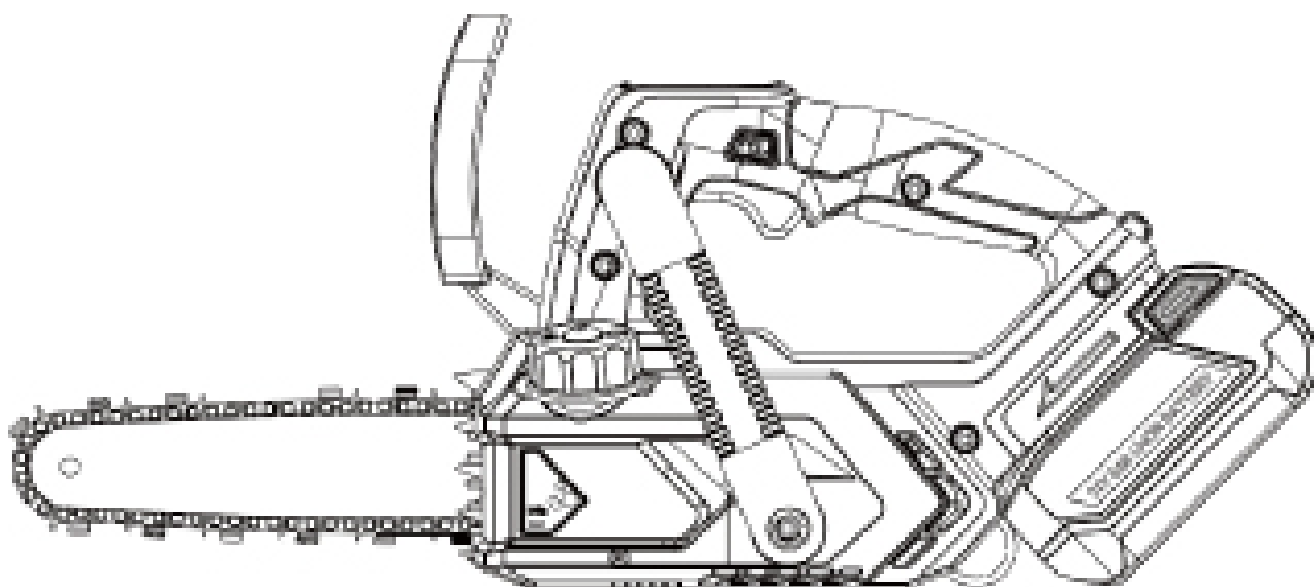




**BLUEBIRD
INDUSTRIES**

Battery-powered pruning chainsaw

THCS 22-07



Product user manual

-translation of the original instructions-

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Dear users:

Thank you for choosing our product. We develop and manufacture high-quality products according to the needs of our customers. Our products have proven to be highly reliable, even in extreme conditions. The company is also synonymous with excellent quality of service. Our professional dealers provide services and support to resolve any questions regarding our products. Thank you for the trust you have placed in our company. We wish you a pleasant user experience.

Warning



Carefully read all safety warnings and instructions. Failure to follow warnings and instructions may result in electric shock, fire, or other serious injuries. Keep all warnings and instructions for future reference.

Important symbols

Below are the symbols used with this product. Before using it, understand their meaning.



Read the instruction manual



Keep away from rain



Wear protective clothing



Wear safety glasses



Warning/danger



Wear non-slip boots



Wear headphones



Chain direction



Oil tank logo



Do not dispose of in waste



Risk of kickback



Keep away from fire



If the power cord is damaged or cut, unplug it in time



Keep away from damp environments

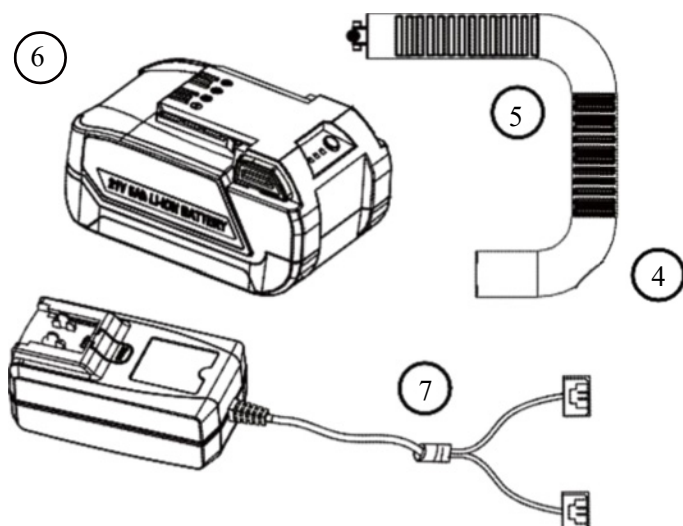
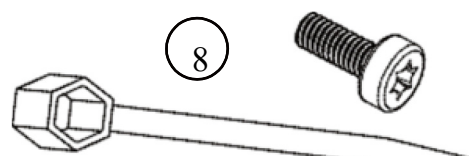
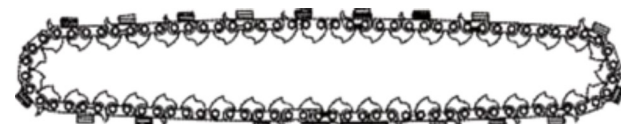
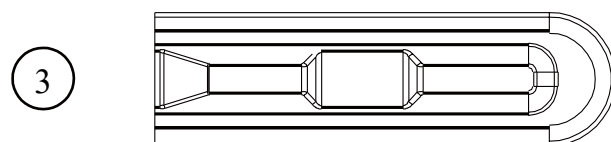
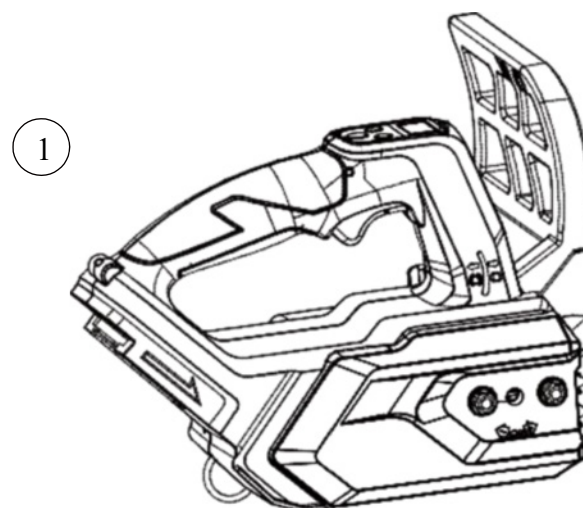
- The manufacturer reserves the right to change specifications without notice.
- Specifications and batteries may vary from country to country.

Technical specifications

Model	THCS 22-07
Rated voltage	18V
Rated power	600 W
Switch mode	Third gear + adjustment microswitch
Chain speed	First gear: 8 m/s; second gear: 10 m/s; third gear: 12 m/s
Cutting capacity	160mm
Bar size	20 cm
Chain specifications	0,6 cm
Number of chain links	48
Sprocket	7 teeth
Lubrication method	Automatic lubrication

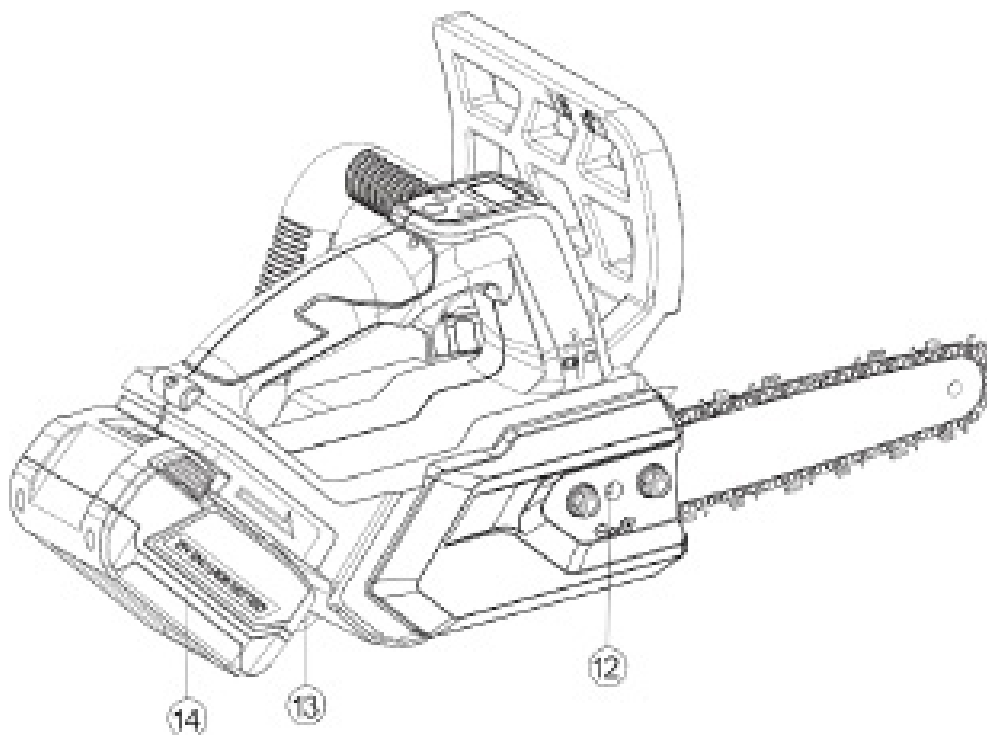
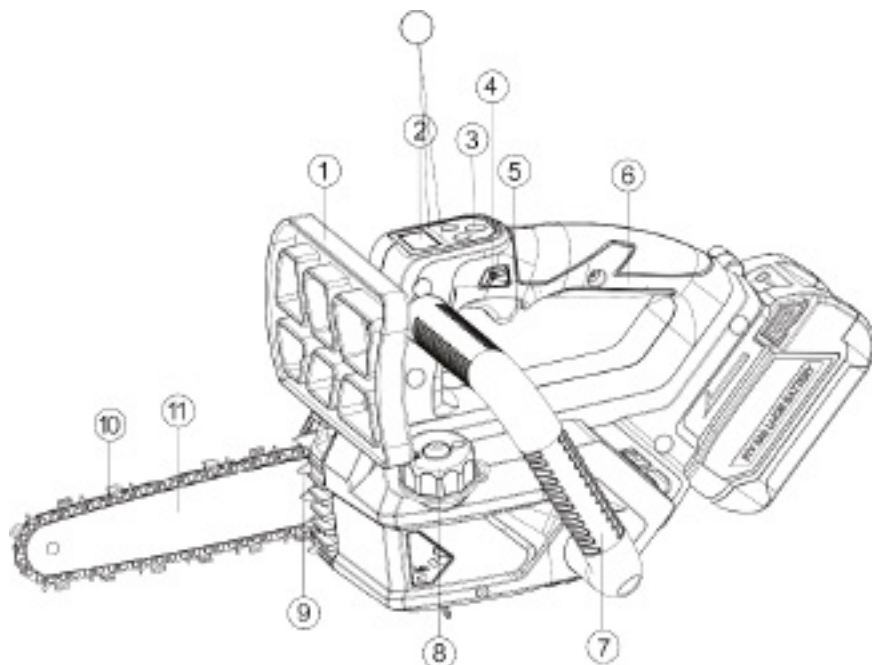
List of chainsaw parts

1. Main chainsaw machine
2. Chain guide
3. Guide sleeve
4. Chain
5. Auxiliary handle
6. 21V 5Ah battery pack
7. Charger
8. Screw accessory kit



Product parts

1. Brake base
2. Display
3. Main power button of the chainsaw
4. Self-locking switch
5. Trigger
6. Handle
7. Auxiliary handle
8. Oil tank cap
9. Gear mechanism
10. Chain
11. Chain guide
12. Chain adjustment knob
13. Hook
14. Battery pack
15. Speed regulator (high and low)



Safety specifications

Uses: Sawing, pruning branches, and cutting some large-diameter trees. Suitable for garden use

- **Precautions before use**

(1) The use of unmarked and unapproved batteries and chargers may cause fires or explosions with possible serious or fatal injuries and damage to property.

(2) The use of chainsaws, batteries, and chargers beyond the design specifications may cause serious or fatal injuries and damage to property.

Battery instruction manual: Refer to the instructions for the battery and the charger contained in the battery pack. **Charger instructions:** Refer to the instructions for use of the battery pack and the battery itself.

- **Operator requirements**



Warning!

It is forbidden to use the chainsaw, battery, and charger without first reading and understanding the contents of this manual. Otherwise, it may cause serious injury or death to users or others. Read the instruction manual, make sure you understand it, and keep it for future reference.

Read the instructions, make sure you fully understand them, and keep them for future reference.

Ensure that the user meets the following requirements:

(1) When the user uses the battery and charger, they must ensure that their physical and mental conditions are normal and suitable for using the product. Otherwise, please use it under the guidance of a supervisor or responsible person.

(2) The user must be an adult.

(3) When using the tool for the first time, users must ensure they receive instructions from the company's dealers or the company's professional usage instructions.

(4) Users must not operate the tool if they have consumed alcohol, drugs, or narcotic substances.

Users operating chainsaws for the first time must first perform the necessary cutting exercises on the frame or saw support.

- **Clothing and protection requirements**

Warning!

(1) Dress appropriately. Do not wear loose clothing or accessories. Wear gloves and keep hair away from moving parts. Loose clothing accessories or long hair may get caught in moving parts.

- (2) During operation, debris or sawdust may be ejected from the chain, possibly causing physical injury.
- Wear protective glasses during operation.
 - Wear protective masks.
 - Wear long clothing.
- (3) Falling objects may cause head injuries.
- (4) During operation, dust and sawdust will be raised. Dust and sawdust will lead to poor air circulation or an allergic reaction.
- (5) Improper clothing may get caught on tree branches, hindering and obstructing the use of the chainsaw. Improper clothing may cause serious injuries to users.
- Wear tight-fitting clothing.
 - Remove scarves and jewelry.
- (6) When using the data connection, the user may come close to the chain gears with possible serious damage
- Wear trousers with a degree of cut protection, which is defined by the chain speed.
- (7) When cutting timber, users may get injured. Especially during cleaning of the tool and the chain, the hand may touch the sharp edge of the chain.
- Wear protective gloves when working.
- (8) Improper footwear may lead to slips or falls. Contact with the saw chain after a fall will cause injury to the user
- Wear protective boots with respect to the chain. The level of protection of protective boots is defined according to the speed of the chainsaw.

Required working environment

• Environmental requirements

- (1) Passersby, children, and animals are not aware that sawdust or other debris ejected from the chain can pose a threat. Passersby, children, and animals may be seriously injured.
- Keep passersby, children, and animals away from the work area.
- (2) The chain is not waterproof and may cause electric shocks if used in the rain or in damp environments. The user could be injured and the chainsaw will be damaged.
- Do not use the chainsaw in the rain or in damp environments.
- (3) The chain motor may produce sparks, with possible fires and explosions in environments with combustible or explosive materials. All this could cause death, serious personal injury, and property damage.
- Do not work in an environment with combustible and explosive materials.

• Tool safety requirements

The chainsaw is safe if it meets the following conditions:

- The chain is not damaged.
- The chain is clean and dry.
- The chainsaw handle is intact.
- The chain switch works normally.

- (5) The control program works normally and has not been modified.
- (6) The chain lubricating oil supply system is normal.
- (7) The depth of the groove of the sprocket tooth and the chain must not exceed 0.5 mm.
- (8) The assembly of the bar and chain complies with the instructions in this manual
- (9) The bar and chain are well assembled.
- (10) The chain is properly tensioned.
- (11) Only original manufacturer accessories are used.
- (12) The accessories are assembled properly.
- (13) The oil tank is closed.



Warning!

If the product no longer meets the safety requirements, the parts cannot perform their function or the safety mechanism cannot operate normally. Failure to comply with these conditions may cause serious or fatal injuries.

- (1) Only a chainsaw in good condition may be used. If the chain hook is dirty or wet, clean and dry it.
- (2) Do not reassemble the chain covers, e.g. bars and chains.
- (3) If the control system does not work properly, do not use the connection.
- (4) Only accessories supplied by the company must be used.
- (5) Install the bar and chain according to the instructions.
- (6) For accessory installation, refer to the manual.
- (7) Do not insert anything into the chainsaw

• Safety instructions for the guide plate

The use of the guide is safe if it meets the following conditions:

- (1) All functions of the bar are in good condition.
- (2) The bar is not deformed or incomplete.
- (3) The depth of the bar groove does not show obvious changes.
- (4) The bar rail is smooth without burrs.
- (5) There are no narrowings or cracks in the bar groove.



Warning!

If the bar is not in a safe condition, it will not fit the chain properly. The chain could come off the bar causing serious or fatal injuries.

- (1) Use only undamaged guides.
- (2) If the bar is below the minimum depth, replace it with a new one.
- (3) After operating the chainsaw, remove debris from the bar.
- (4) In case of questions, contact the company's dealer in time.

• Chain safety notice

The use of the chain will be safe if the bar meets the following conditions:

- (1) The chain is not broken.
- (2) The cutting edge of the cutter head is sharp.
- (3) The cutting depth of the edge of the cutter head matches the description of the original product.
- (4) The length of the cutting edge of the cutter head meets the sharpening standard.



Warning!

If the spare parts do not meet safety standards, they will not be able to perform their intended functions and the safety devices will not be effective, with possible serious personal injury and even death.

- (1) Do not use damaged chains.
- (2) Sharpen the chain teeth according to the specifications.
- (3) In case of questions, contact the distributor in time.

Precautions for use

• Precautions for cutting



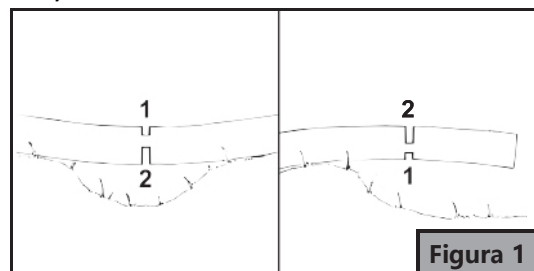
Warning!

- (1) In some cases, the user may not focus on the work and risk tripping and falling, with possible serious injuries
 - a. Stay calm and work in an organized manner.
 - b. Do not use the chain gears in low visibility and dark environments.
 - c. Please use your documents.
 - d. Do not operate the chain above shoulder height.
 - e. Be careful of obstacles
 - f. When operating the chainsaw, get into a safe position and maintain balance. If you need to work at height, use a lift or a safe scaffold.
- (2) The user could be injured by the operating chainsaw chain.
 - a. Do not touch the chainsaw chain while it is operating.
- (3) Depending on the length of the chain, the chain tension cannot increase effectively if the chain breaks. These can cause serious injuries and material damage.
 - a. Make sure the chain is properly lubricated
 - b. During operation, check if the chain tension is adequate. If the gears are loose, adjust them in time.
- (4) If the chainsaw starts abnormally and continues to operate abnormally, the chain hook may work unsafely, with possible serious personal injury or property damage.
 - a. Stop and contact the company's dealers.
- (5) When the chainsaw is operating.
 - a. Wear gloves.
 - b. Take a break
 - c. If you have health problems, consult a doctor.
- (6) If the chainsaw chain touches a hard object, it can cause sparks. Sparks can cause fires in environments with fuels. These can cause serious injuries and material damage.
 - a. Do not use the chain in environments with fuels
- (7) When the trigger is released, the chain continues to operate for a certain time, which could cause serious injuries.
 - a. Wait for the chain to stop completely



Warning!

If the tree is under tension, the bar can get stuck. Users could lose control of the chainsaw, resulting in serious injuries. (Figure 1)



(1) Make a first relief groove on the tensioned side (1), and then cut on the opposite side, the loose side (2).

• Pruning precautions

(1) If the branches at the bottom of the tree are pruned first, the trunk will not be supported by the branches themselves. Trees can roll, causing serious or fatal injuries.

- a. Move around the main trunk and cut the branches.
- b. Do not stand on the trunk when pruning.

• Notes on tree cutting

(1) Inexperienced people are prohibited from approaching dangerous logging sites, which can cause serious or fatal personal injuries and property damage.

- a. Do not cut trees alone.

(2) Branches or other objects from falling trees may fall on bystanders. This could cause serious or fatal personal injuries or property damage.

- a. Assess the direction of the tree's fall, so that the tree falls without obstacles.
- b. Passersby, children, and animals are not allowed to remain within a distance of 2.5 times the length of the tree.
- c. Look at the crown and foliage of the tree to ensure there are no branch obstructions when the crown falls.

(3) When a tree falls, the trunk may split or bounce back toward the operator, causing serious or fatal injuries.

- a. Plan your escape route.
- b. Assess the direction of the tree's fall and escape along the planned escape route.
- c. Do not choose uphill routes.

(4) Obstacles at the work site or on the escape route may hinder escape. People escaping could be seriously or fatally injured.

- a. Clear the work area and remove obstacles from the escape route.

(5) If there are fixed pins or stable ropes on the trunk, the trees may become uncontrollable and fall prematurely, causing serious or fatal injuries and property damage.

- a. Do not use pins.
- b. Finally, use a stable rope.
- c. If the trees fall prematurely: stop cutting and evacuate along the escape route.

(6) During cutting, if the tip of the bar touches the object or wood and pinches the chain, it may cause kickback. Sometimes, when the tip of the bar touches the object, a sudden reaction force is created, causing the bar to snap toward the operator, resulting in injury to the operator.

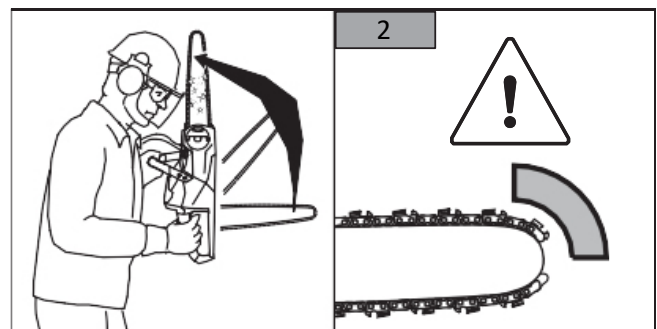
(7) If a tree falls in an uncontrollable direction or falls onto the top of another tree. The operator cannot complete the cutting operations in a controlled manner.

- a. Stop cutting operations and use suitable ropes and vehicles to fell the trees

- **Risk of kickback**

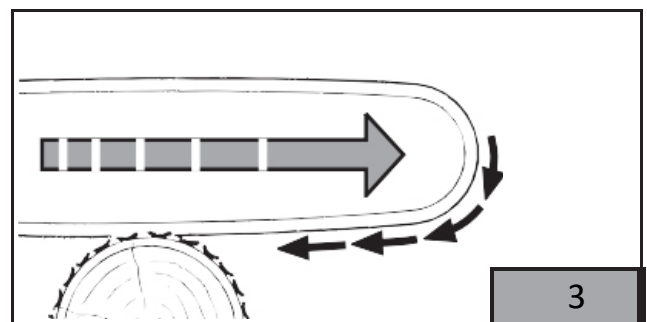
The following situations may lead to chain kickback:

- (1) The moving chain touches a hard object or the emergency brake.
- (2) The tip of the bar is touched.



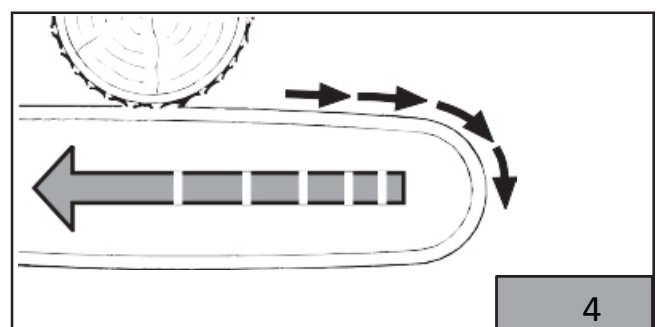
- **Tension warning instructions**

When cutting from top to bottom with the bar, the direction of the pulling force of the chainsaw is opposite to the direction of cutting.



- **Push force warning instructions**

When the bar is used for cutting from bottom to top, the direction of the push force of the chainsaw is toward the operator.



If the operating chainsaw comes into contact with a hard object and gets stuck, the chain will suddenly come off. The operator may lose control of the chainsaw, causing serious or fatal injuries.

- a. Grip the chainsaw handle.
- b. Operate the chain as described in the manual.
- c. Keep the guide facing downward.
- d. Cut at full speed.

Cleaning, maintenance, and repair

(1) During cleaning, maintenance, and repair, if the battery is not disconnected from the tool, the chainsaw may start unexpectedly. This could lead to serious injuries and property damage.

- a. Turn off the power.
- b. Remove the chain head.
- c. Remove the guide and the chain.

(2) Corrosive cleaners, high-pressure cleaning tools, or sharp cleaning tools may damage the chainsaw, guide plate, chain, battery, and charger. If the chainsaws, guides, chains, batteries, and chargers are not cleaned properly, the related parts may not function as they should, or the safety devices may not perform their function, which could cause serious injuries.

- a. Clean the chains, guides, batteries, and chargers according to the instructions.

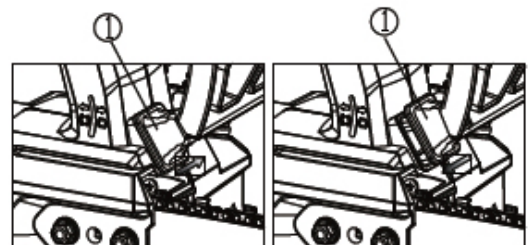
(3) If the chain, guide plate, battery, and charger are not properly cleaned and maintained, the parts may not function as intended, or the safety device may not perform its function, resulting in serious injury.

- a. Do not tamper with the chain, battery pack, or charger.
- b. If the chainsaw, battery, and charger require maintenance and repair: promptly contact the company dealer.
- c. Maintain and repair the guides and chains as described in the instructions.

(4) the user may be injured by a sharp blade during cleaning and maintenance of the chain data, which could cause personal injury

- a. Wear cut-resistant gloves

(5) Internal cleaning of the brake plate: After using 5-6 battery packs, the sawdust in the brake plate must be removed. First remove the brake base rubber "1" in the direction of the arrow (figure 1) and clean the sawdust in the brake base, then cover the brake base rubber "1" in the direction of the arrow (figure 2) to check if the brake is effective.



Parts check before use

Before use, check the normality of the following parts:

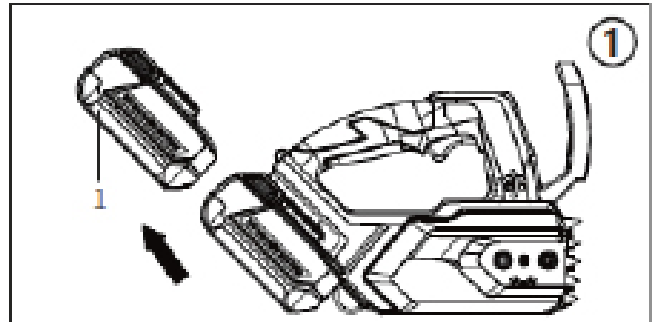
(1) Make sure the following parts are secure:

- a. Connection
- b. Bar
- c. Chain
- d. Battery pack
- e. Charger

- (2) Check the battery
- (3) The battery must be fully charged.
- (4) Clean the chainsaw
- (5) Install the bar and chain
- (6) Tension the chain
- (7) Refill the chain oil
- (8) Check the control system
- (9) Check the lubricating oil pump system
- (10) If you do not understand the above operation: please do not use the chain and contact the company dealer as soon as possible.

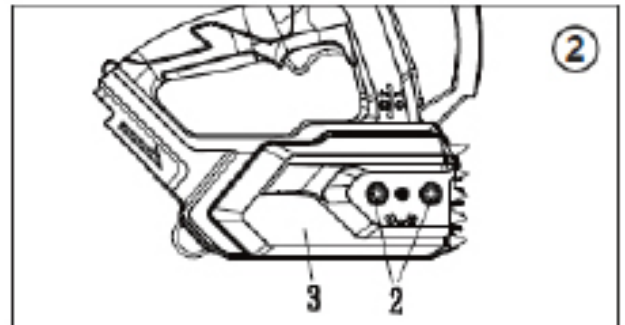
Chainsaw assembly

Remove and install battery pack "1": during removal, press the buttons on both sides of the battery pack and pull it out in the direction of the arrow. During installation, insert it in the opposite direction along the arrow of the battery slot.



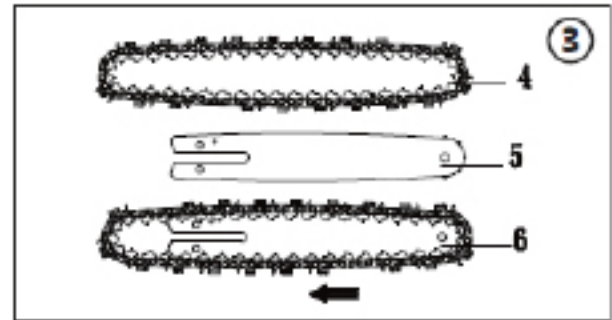
Note: before installing the battery, make sure the battery is fully charged. If the power is insufficient, it is recommended to use it after a full charge. Before installing the chain and chain plate, check if the battery has been removed. The installation of the chain and chain plate must be carried out when the battery pack is removed (as shown in Figure 1).

2. Turn counterclockwise with a wrench to remove the two nuts "2" and the pressure plate "3" (as shown in Fig. 2). If the machine has been used, clean the residual sawdust and debris on the pressure plate in time to ensure the accuracy of the next step during the installation of the chain plate.

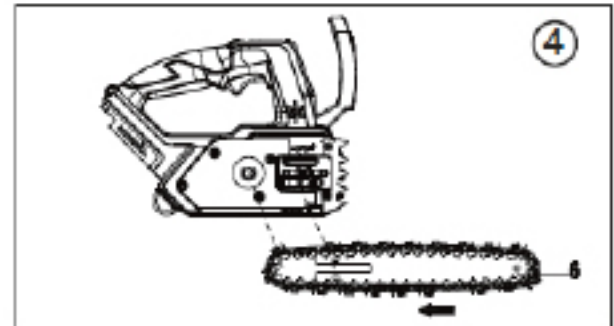


3. Remove the chain plate "5" and the chain "4" and check the cutting teeth of the chain before installing the chain on the chain plate. The cutter teeth must be installed on the chain plate in the position indicated by the direction of the arrow in figure "6" (Fig. 3). After installing the chain on the plate, place the chain plate and the installed chain together vertically, with one end of the guide wheel on it, and pull the hinge bar by hand for a week to check if the movement is smooth.

Note: after using the machine for a period of time, it is best to check the chain plate and the chain according to the method indicated above before each use. If it is not smooth, it may be necessary to replace or repair the chain plate and the chain.

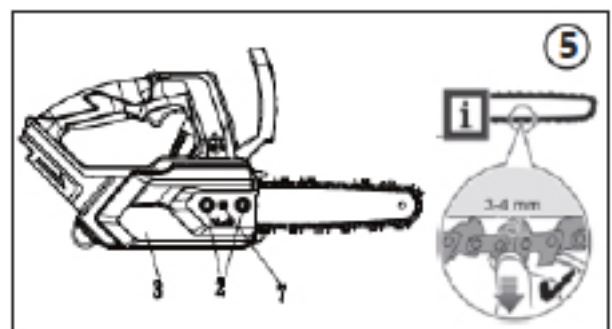


4. Install the installed chain plate and chain onto the machine (as shown in Fig. 4). The chain must be inserted into the sprocket. The guide plate must pass through the bolt and the tension plate column to fit the body.

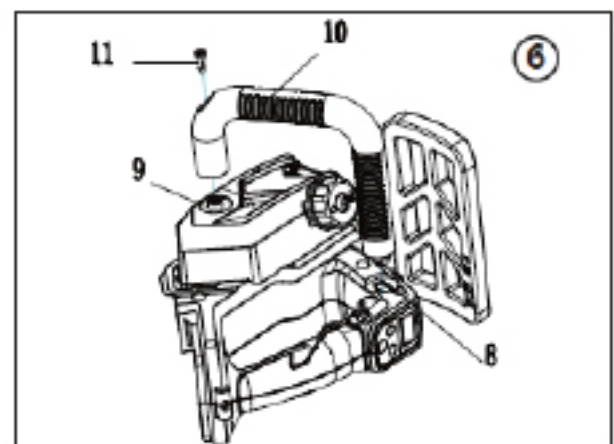


5. After properly pre-tensioning the chain, install the previously removed pressure plate "3" (as shown in Fig. 5). Be careful to hold the chain of the chain plate with your hand when covering it to prevent the chain from slipping off the chain wheel, then first tighten nut "2" clockwise to move the chain plate further, then turn and screw counterclockwise at position "7" with a flathead screwdriver to bring the chain closer to the chain plate and lock the nut.

Note: when adjusting the chain tension, wear protective gloves, pinch the chain, and move it back and forth to see if the sprocket and chain are engaged. Then turn the adjustment knob counterclockwise to tighten the chain. The best chain tension is to check for a distance of 3-4 mm.



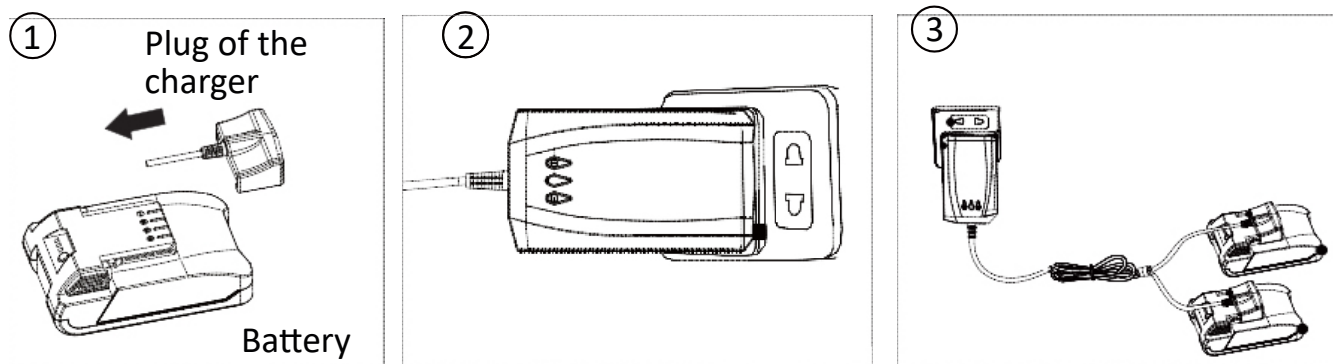
6. (as shown in Figure 6), align the end of the long arm of the auxiliary handle "10" with position "8", rotate it onto the end of the short arm of the auxiliary handle and position "9", align the screw hole and secure it with screw "11".



Precautions for battery use and maintenance

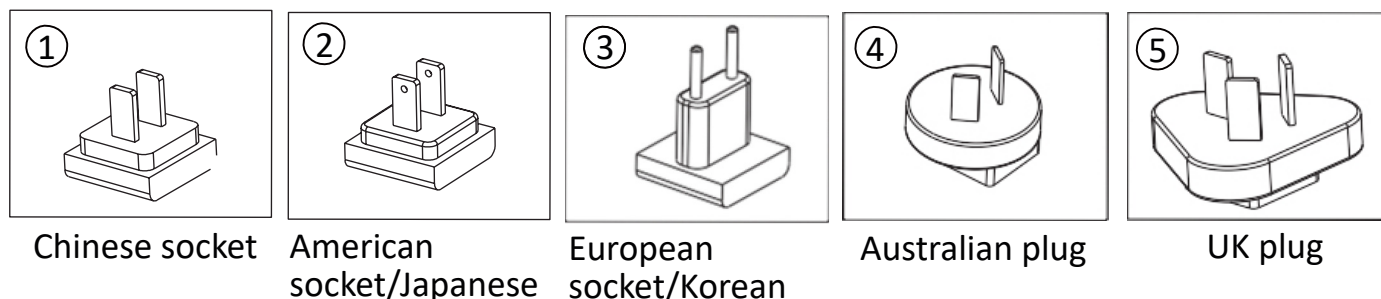
• Battery charging

Charging steps:



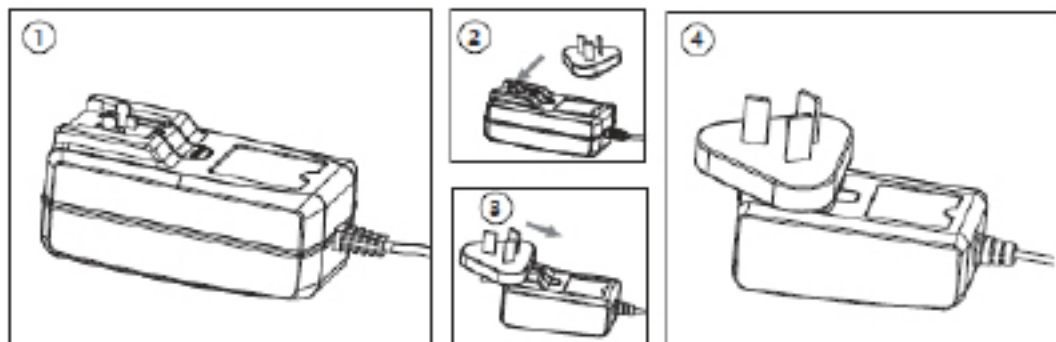
1. Place the battery on the table, then insert the charger connector into the battery, as shown in Figure 1,
2. Connect the charger to the power outlet.
3. The indicator light is on and red indicates that charging is in progress. When all the lights are green, it means charging is complete.

• Universal display for charger and charging plug

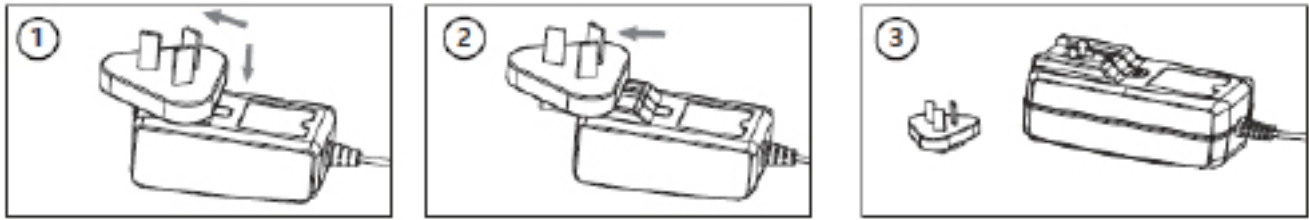


• Disassembly and assembly of the charger head

1. Place the battery on the table, then insert the charger connector into the battery, as shown in Figure 1,
2. Connect the charger to the power outlet.
3. The indicator light is on and red indicates that charging is in progress. When all the lights are green, it means charging is complete.



As shown in Figure 1, hold down the removal button and simultaneously pull out the charger plug.



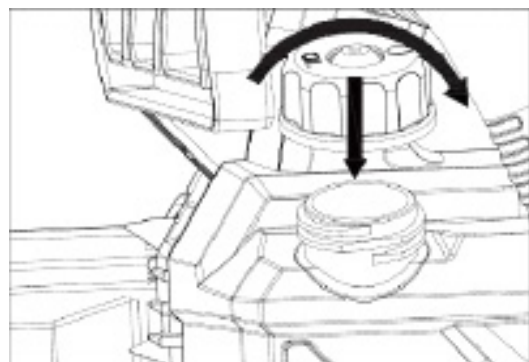
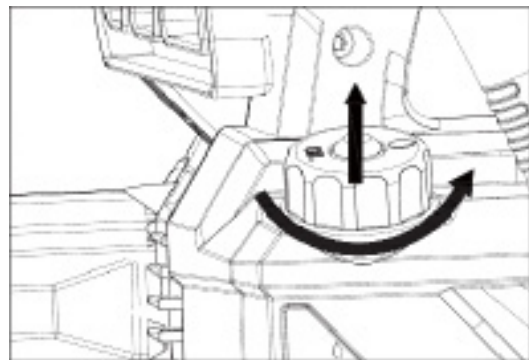
• Matters requiring attention

1. During charging, it is normal for the charger and the battery to be warm.
2. If the battery is not used for a long period, to delay corrosion, it should be recharged once every three months.
3. New batteries or those not used for a long time require about 5 charge and discharge cycles to reach maximum capacity.
4. New batteries or those not used for a long time require about 5 charge and discharge cycles to reach maximum capacity.
5. Do not use damaged battery packs and do not disassemble chargers and battery packs.
6. If the battery is put into fire, it will explode. Do not roast the battery pack.
7. Do not charge the battery in damp environments or outdoors.
8. With the gradual reduction of the battery charge, the decrease in capacity is a normal phenomenon.
9. Do not use the electric chainsaw during charging.
10. Do not store the battery in a humid environment.

Add oil to the chain

The lubricating oil can lubricate and cool the chain

- (1) Turn off the saw and turn off the power.
- (2) Place the chainsaw in a horizontal position with the oil tank opening facing up.
- (3) Clean the oil tank and the area around the oil container with a damp cloth.
- (4) Turn the tank cap counterclockwise until it can be removed.
- (5) Remove the oil tank cover.
- (6) Add chain oil. Be careful not to overfill to avoid spillage.
- (7) Put the cap back on and close it tightly.
- (8) Clean oil stains around the tank with a cloth.



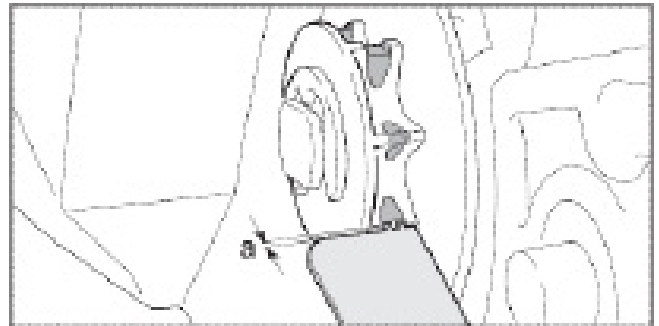
Chainsaw inspection



Disconnect the power when performing the following operations

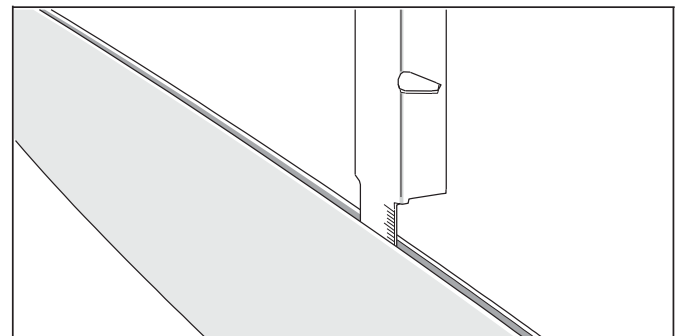
• Sprocket inspection

- (1) Turn off the chainsaw and disconnect the power.
- (2) Remove the sprocket guard cover.
- (3) Remove the guide and the chain.
- (4) Measure the depth of the sprocket groove with the depth gauge (see Figure 15)
- (5) If the groove depth is greater than 0.5 mm, do not use the chainsaw anymore, contact the dealer and replace the sprocket as soon as possible.



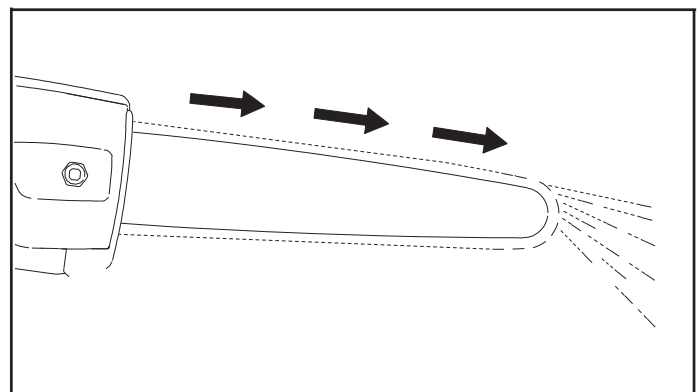
• Guide plate inspection

- (1) Turn off the connection and disconnect the power supply.
- (2) Check the chain and the guide plate.
- (3) Measure the depth of the guide plate groove and refer to the company's standard for groove depth.
- (4) If the following conditions are met, replace the guide plate in time:
 - a. The guide plate is damaged
 - b. The measured depth is less than the minimum allowable depth.
 - c. The chainsaw groove is deformed and damaged
- (5) If you have any questions, contact the distributor in time.



• Chain lubrication check

- (1) Hold the guide bar over a light surface.
- (2) Turn on the saw. The chain oil is thrown off by the chain and is visible on the light surface. The chain lubrication works properly. If you do not see the chain oil:
- (3) Refill with chain oil.
- (4) Check the chain lubrication again.
- (5) If the chain oil is still not visible on the light surface:
Do not use the chainsaw and contact local assistance. The chain lubrication is defective.



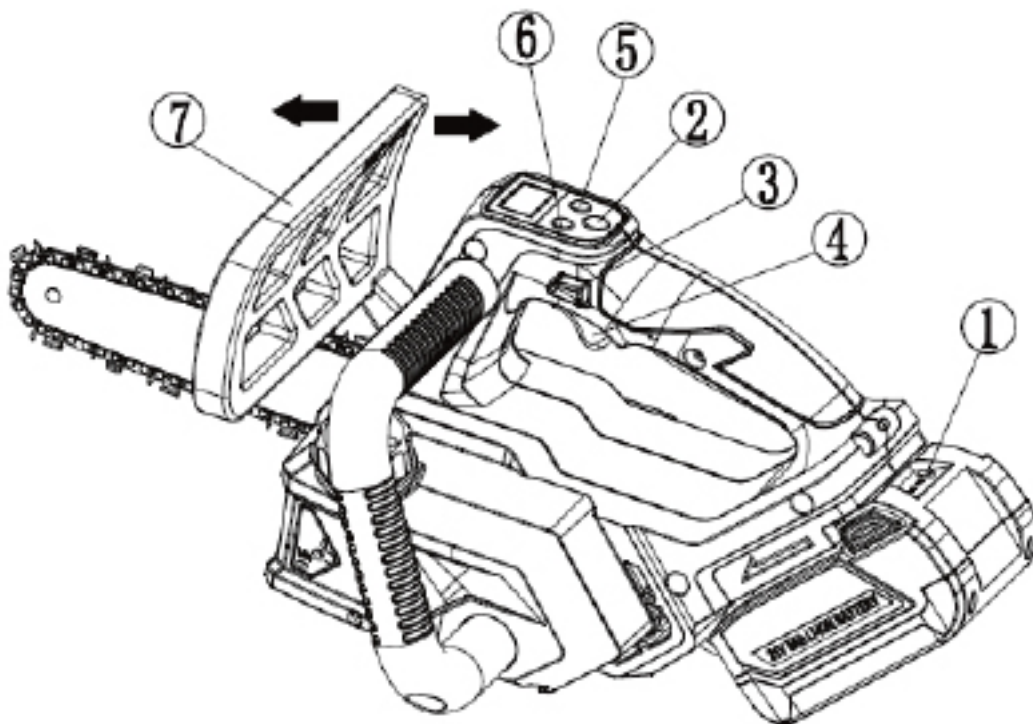
• Initial inspection

1. After installing the battery, press and hold the battery switch "1" for 3 seconds until the power indicator turns on.
2. Press and hold the push button switch "2" for 3 seconds until the display turns on.
3. Press the self-locking switch 3 and pull the trigger "4", then the whole machine can operate.
4. "5" and "6" are up and down gear buttons
5. "7" is the brake deflector, pushing forward along the arrow is the brake; pulling back along the reverse arrow releases the brake.

Note: 1. When the power is on, the motor starts only when the brake plate is released, the self-locking switch is pressed, and the trigger is pulled at the same time.

2. The machine is equipped with various overload protections. When in use, the display shows E8, which causes a sudden stop. Simply press the self-locking switch again and pull the trigger to start the machine. When in use, the display shows E9 with a beep, which means the machine is protected from overheating. You must wait for the machine to cool down before starting.

3. If other symbols appear on the display, contact the dealer in time.



• List of malfunctions

Fault	Reason	Resolution methods
Resolution methods	Does not turn on	Please check if the battery is charged. If not, fully charge it before use.
The chain is not driven.	Brake	Check if the brake guard bar is working
Low cutting efficiency	The chain is not sharp	Sharpen the chain.
	The chain is too loose.	Check the chain tension.
	Incorrect chain installation direction	Check if the chain installation direction matches the mark on the bar.
Poor results	Chain tension	Check the chain tension and adjust it to the position specified in the manual.
The chain bar chain is overheated	Chain tension	Check the oil system of the lubricating oil pump

Chainsaw operation

• Wood cutting



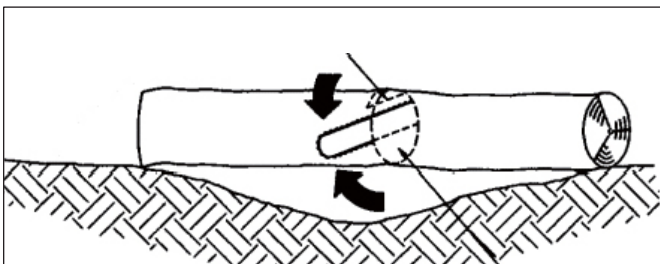
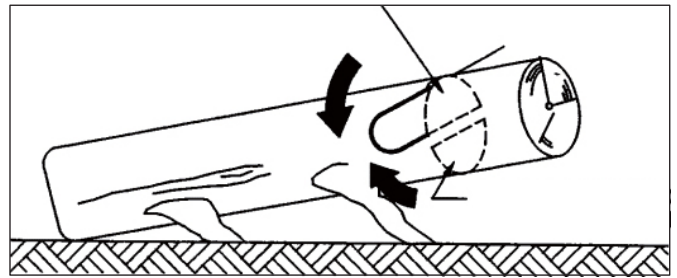
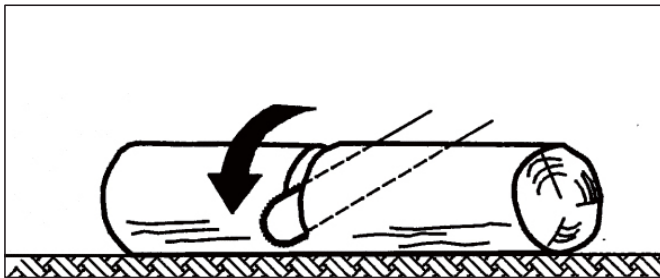
Warning!

If there is a kickback, the tool will bounce back toward the operator, causing serious or fatal injuries.

- Cut at full speed.
- Do not cut with the guide head.
- At the start of cutting, keep the chain at full speed and the guide bar in a vertical position.
- Depending on the width of the guide bar, the head of the guide bar should face the tree to be cut.
- Add the weight of the chain to the guide bar.

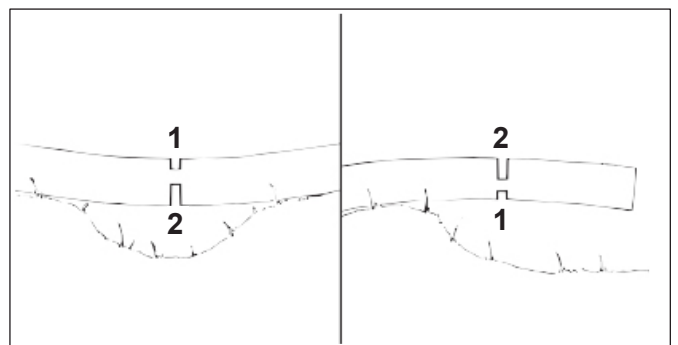
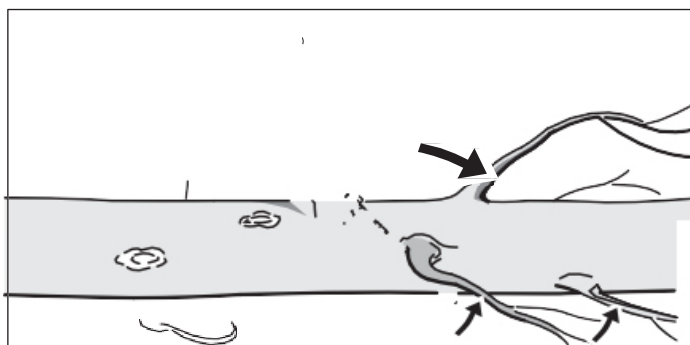
Chainsaw operation

1. Cut from above to avoid touching the ground.
2. Cut $\frac{1}{3}$ of the diameter (sawing upwards), then saw in the opposite direction, overlapping the first cut to complete the cut. When the log is supported at both ends. Cut $\frac{1}{3}$ of the diameter from the head (above the stump), then cut $\frac{2}{3}$ of the bottom in the opposite direction and match the first cut.
3. When logging on a slope, position yourself on the uphill section of the trunk. When the cutting operation is finished, the cutting pressure is released under full control, but the grip on the chainsaw handle is not loosened. Do not let the chain touch the ground. After sawing, stop the chain before moving the chainsaw. Stop the engine when the chainsaw moves from one tree to another.



• Trimming

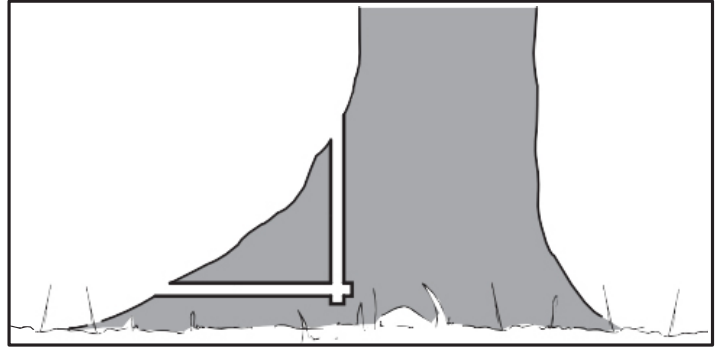
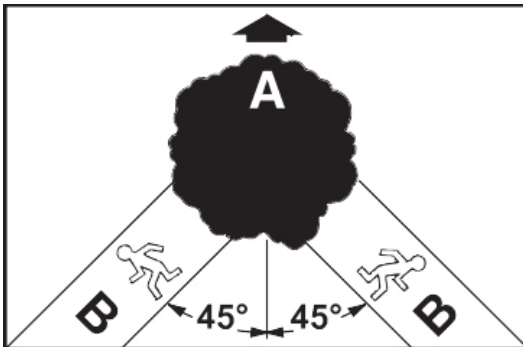
- a. Place the chainsaw guide bar on the branch to be cut.
- b. The chain cuts at maximum speed.
- c. Cut branches with the top of the guide bar.
- d. Cut the branch under tension: first make a small hole (1) on the relaxed side and continue cutting under tension.



• Logging

1 Define the escape route

- The escape route (b) is at an included angle of 45° in the opposite direction (a) to the tree's falling direction. (see Figure 23)
- Make sure that route (b) is free of obstacles.
- You can observe the top of the tree.

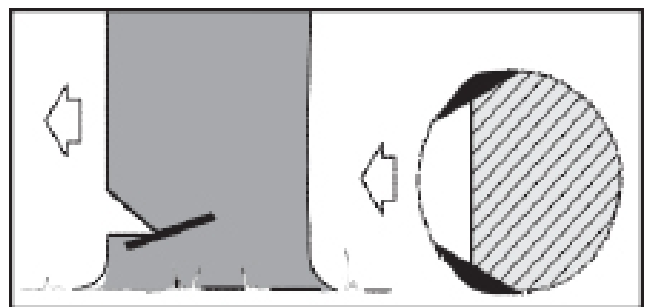
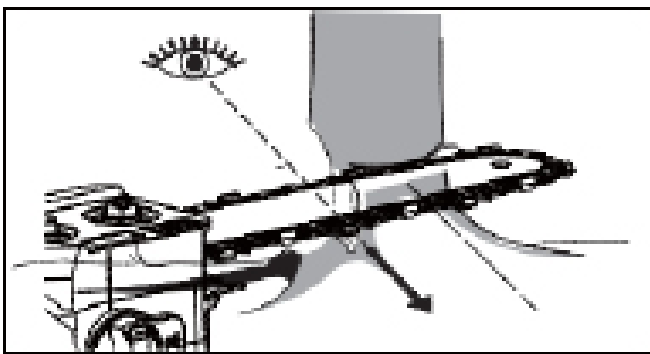


2. Treatment of the roots of felled trees.

- remove obstacles under the trees and in the work area.
- remove the redundant part of the tree roots.
- if the tree is too large, the root has a very large stump: first cut vertically and then horizontally to remove the excess root part. (see figure 24)

3. Cutting the Hawthorn mouth C

The Hawthorn mouth determines the direction of the tree's fall. Cut the Hawthorn mouth on the falling side of the tree, and cut the Hawthorn mouth as close to the ground as possible. First of all, cut from $1/5$ to $1/3$ of the trunk diameter horizontally, do not cut the Hawthorn mouth too deep, and then make the oblique line cut.



- Cut the entire width of the Hawthorn mouth
- The width of the back part of the cut should be about $1/10$ of the baseline (3) in any case, the entire trunk must not be cut directly, otherwise the direction of the tree's fall cannot be confirmed, and the wedge must be inserted in time into the back cut.
- to keep the back cut in a weakened state, only plastic and aluminum wedges can be used. The use of iron wedges is prohibited.

4. Use of ropes and safety belts

A.1 Overview

This appendix describes appropriate working methods to reduce the risk of injury caused by the use of tree saws when working on ropes at height. Although it may serve as a basic document for guidance and training, it should not be considered a substitute for formal training.

This appendix is only an example of good practice.

This appendix describes appropriate working methods to reduce the risk of injury caused by the use of tree saws when working on ropes at height. Although it may serve as a basic document for guidance and training, it should not be considered a substitute for formal training. This appendix is only an example of good practice.

Note: national regulations or other stricter regulations also apply.

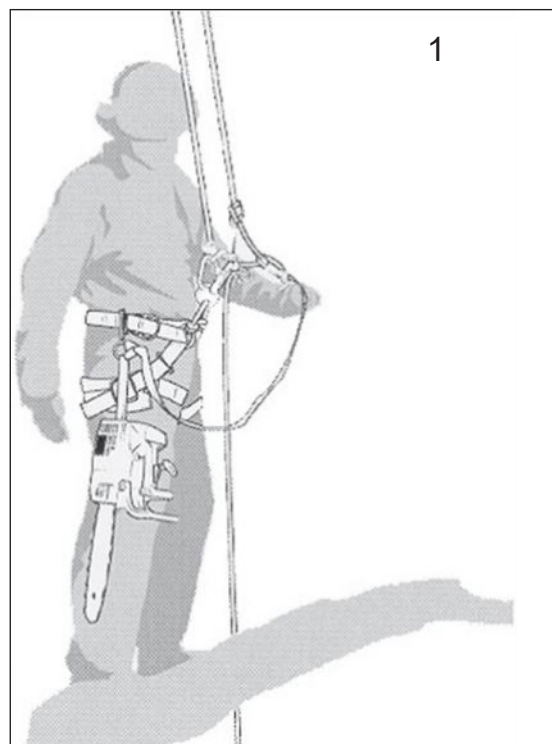
A.2 Tips

1. When using the tree saw with rope and safety belt at height, the operator cannot work alone. A ground staff member trained in appropriate emergency procedures should be present to assist.
2. The operator must receive training in climbing and work positioning technology and must be equipped with a safety belt, rope, sliding rope, safety buckle, and other equipment to ensure a safe and reliable working environment.

A.3 Preparation before sawing

The ground staff should check, refuel, start, and preheat the tree saw, then turn off the power and hand it to the aerial workers. The tree saw must be equipped with a special chain strap to attach it to the operator's safety harness (see Figure 1). a) Fasten the belt around the attachment point behind the tree saw. b) Special shackles are provided to allow both indirect and direct connection of the tree saw to the operator's safety harness. c) When the saw is handed over to the operator, ensure that the saw is securely attached. d) Before removing the tree saw from the lifting device, ensure that the tree saw is attached to the safety harness.

(Figure 1 - example of a tree saw attached to the operator's safety harness)



Attaching the tree saw directly to the safety harness can reduce the risk of equipment damage during movement. Always turn off the power when the tree saw is attached to the safety harness. The tree saw can only be attached to the fixed point of the safety harness. This can be at the midpoint (front or back) or on the side. If possible, the tree saw should be installed at the central rear midpoint to avoid climbing and concentrating the weight on the operator's spine (Fig. 2). When the tree saw is moved from one connection point to another, the operator must ensure it is secured in the new position and then release the tree saw from the previous connection point. (Figure 2 - example of a tree saw attached to the midpoint behind the center of the safety harness)

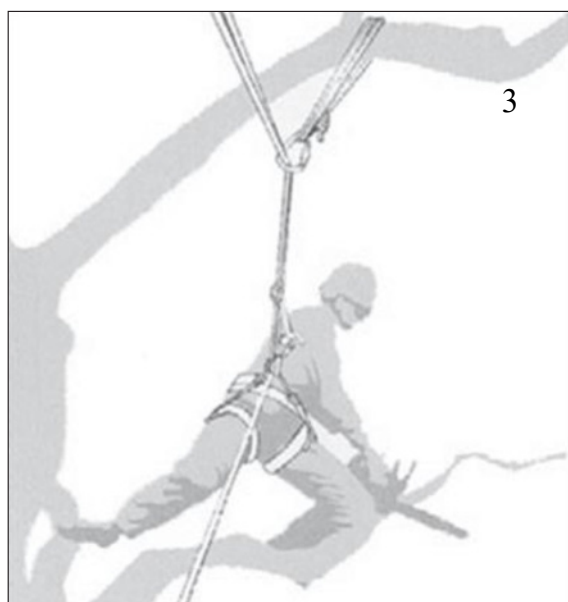
A.4 Use of the tree saw

Analysis of tree saw incidents during operation shows that the main reason is improper one-handed use. In the vast majority of incidents, operators fail to take safety measures to be able to hold both handles of the saw, thus increasing the risk of injury for the following reasons:

1. If the saw kicks back, it does not grip the saw firmly.
2. Since the working position is not stable, the tree saw cannot be controlled and the climbing line and the operator can easily be injured.

A.4.1 secure the working position with both hands

In order to grip the saw with both hands, in general, the operator must find a safe working position to work. When the operator is working in a vertical position, safety must be ensured when a small transverse force is applied in the transverse position. Maintaining a safe working position is the basis, but when the operator moves, they must take measures such as redirecting the main line to an auxiliary fixed point via an auxiliary fixed point or using an adjustable sliding rope from the harness (see Figure 3). (figure 3 example of redirecting the main line via an auxiliary fixed point)



To obtain a secure base in the working position, it can be assisted by the use of temporary pedals made from continuous straps (see figure a.4).

(Fig. 4 example of making temporary pedals with intact webbing)

A. 4.2 starting the tree saw on the tree When starting a saw on a tree, the operator must use the chain brake before starting. When starting, keep your hand on the left or right side of the saw body.

a. On the left side, grip the auxiliary handle with your left hand and move the saw away from your body; hold down the start button with your right hand and start.

b. On the right side, grip the handle of the tree saw with your right hand and move the saw away from your body; hold the auxiliary handle with your left hand and press the start button with your right hand to start.



A. 4.3 one-handed chainsaw

When the working position is unstable, the operator must not use the tree saw with one hand. When cutting small diameter wood at the tip of the branch, the hand saw is the first choice.

The tree saw can only be used with one hand under the following conditions:

A. The operator cannot achieve a working position for both hands

B. They must support their position with one hand.

C. The saw is fully extended, perpendicular to the operator's body and not in line. The operator must not cut with the kickback area at the top of the chain plate of the tree saw or attempt to grab the falling part.

A. 4.4 Releasing the jammed tree saw

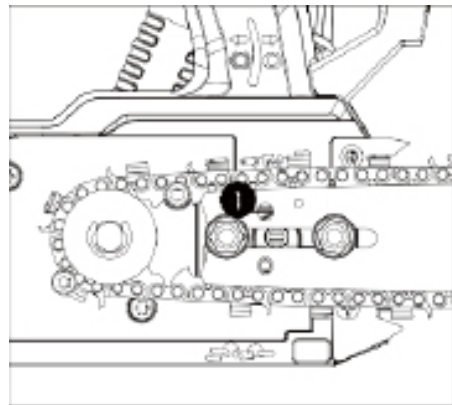
If the saw gets stuck during the cutting process, the operator must

1. Turn off the tree saw and secure it firmly to the inner trunk of the cut or to a separate tool lanyard
2. If necessary, lift the branch and remove the saw from the saw slot
3. If necessary, use a hand saw or a second chainsaw to cut the saw at least 30 cm away to free the jammed saw. Whether using a hand saw or a chainsaw to release a jammed saw, the release cut must always be made on the outside (towards the tip of the branch) to prevent the saw from being removed with the section, further complicating the operation.

Chainsaw cleaning

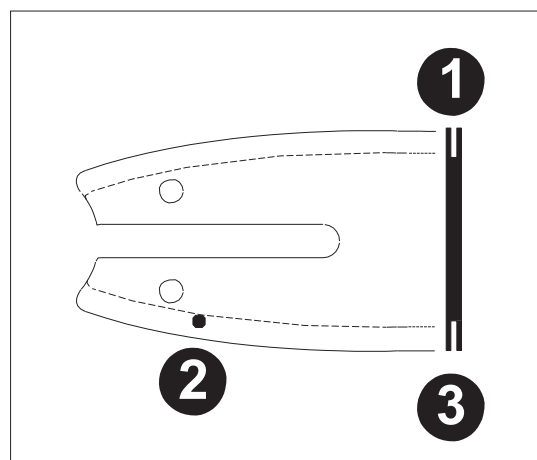
(1) Chainsaw cleaning

- a. Turn off the chainsaw. Turn off the power.
- b. Clean the chain frame with a damp cloth.
- c. Remove the sprocket cover.
- d. Clean the area around the sprocket and the body part with a damp cloth.
- f. To clean the charger, use a softer brush.
- g. Install the sprocket cover plate.



(2) Cleaning the guides and the chainsaw

- a. Turn off the chainsaw. Turn off the chainsaw.3
- b. Remove the guide and the chain.
- c. Use a soft brush to clean the oil outlet channel, the oil inlet hole, and the rear groove of the guide plate.
- d. Clean the chain with a soft brush.
- e. Install guides and chains.



Maintenance

(1) Sprocket maintenance

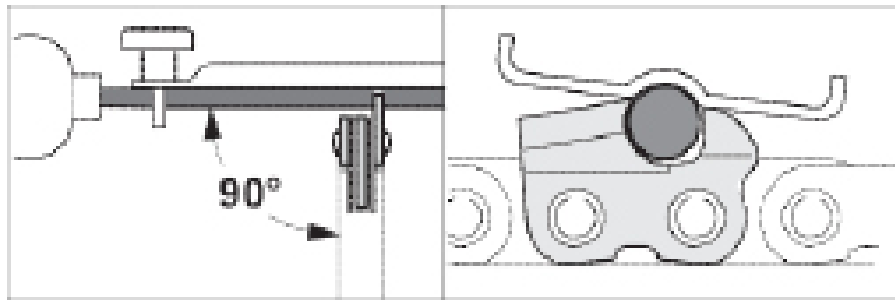
- a. Users cannot remove the sprocket by themselves
- b. If the sprocket is damaged or defective, do not use the tool and contact the dealer for replacement.

(2) Guide plate maintenance: if there is burr on the edge of the guide plate, clean it in time.

- a. If you have any questions, contact the company's dealers in time.

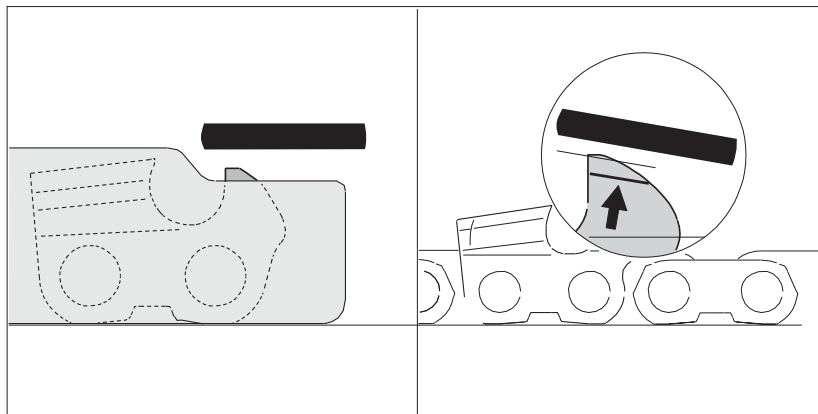
(3) Chain sharpening

- a. It is not recommended to use a common round file to sharpen the chain.



(4) The file must sharpen the saw blade only forward in one direction, and must not touch the saw blade when pulling it back. First, sharpen the shortest reference blade. The length of the blade is used as the reference size for the other blades in the chain.

- a. The round file must fit the pitch of the chain.
- b. Sharpen from the inside out.
- c. File in one direction according to the angle of the cutter head.
- d. Maintain the blade angle.
- e. Depending on the depth of the groove of the guide plate, touch the small tooth of the cutter head (see figure)
- f. In case of questions, contact the dealers in time.



General safety specifications for power tools



Read all warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire, and/or serious injury. Keep all warnings and instructions for easy reference. In all the following warnings, the term "power tool" refers to a corded power tool operated by a utility or a cordless power tool powered by a battery.

(1) Workplace safety

- a. Keep the workplace clean and well lit. Chaotic and dark places can cause accidents
- b. Do not operate power tools in explosive environments, such as flammable liquids, gases, or dust. Sparks generated by power tools can ignite dust or gas.
- c. Operate power tools only in the absence of children and bystanders. Inattention can cause the operator to lose control of the tool.

(2) Electrical safety

- a. The plug of power tools must match the outlet and must not be modified in any way. Power tools that must be grounded must not use any conversion plug. Unmodified plugs and matching outlets reduce the risk of electric shock.
- b. Avoid human contact with grounded surfaces, such as pipe fins and refrigerators. Ground contact will increase the risk of electric shocks.
- c. Do not expose power tools to rain or moisture. Water entering power tools will increase the risk of electric shock.
- d. Do not handle the wires. Never use cables to carry and pull power tools or to remove their plugs. Keep wires away from oil, heat sources, sharp edges, or moving parts. Damaged or entangled cables increase the risk of electric shocks.
- e. When using power tools outdoors, it is necessary to use outdoor flexible cables suitable for outdoor use, which reduce the risk of electric shock. Flexible cables will reduce the risk of electric shocks.
- f. If it is unavoidable to use power tools in damp environments, it is necessary to use a residual current device (RCD), which helps reduce the risk of electric shock.

(3) Personal safety

- a. Be careful, pay attention to the operation in progress, and stay alert while operating power tools. Do not operate power tools when you are tired or have taken drugs, alcohol, or medication. When using power tools, momentary negligence can cause serious personal injury.
- b. Use personal protective equipment, always wear goggles and safety devices. The use of dust masks, non-slip safety shoes, helmets, hearing protection, and other devices under appropriate conditions can reduce personal injuries.
- c. To avoid accidental start-up, when connecting the power supply or battery box, when lifting or handling the tools, make sure the switch is in the off position; putting your finger on the switch or plugging in when the switch is on can be dangerous.
- d. Before turning on the tool, remove all adjustment keys or wrenches. A key or wrench left on the rotating parts of the power tool can cause personal injury.
- e. Do not overreach, always pay attention to support and body balance, so that you can properly control power tools in case of unforeseen events.
- f. Dress appropriately. Do not wear loose clothing or accessories. Wear gloves and keep hair away from moving parts. Glasses or long hair can get caught in moving parts.
- g. If a device is provided for connection with the tool for chip removal and dust collection, make sure they are well connected. And that it is used correctly. The use of these devices can reduce risks caused by dust.

(4) Use and precautions for power tools

- a. Do not play with power tools. Proper selection of power tools, proper design of power tools will make your work more effective and safer.
- b. If the switch does not turn on or off, the power tool cannot be used. Power tools that cannot be controlled by switches are dangerous and must be repaired.
- c. Before any adjustment, accessory replacement, or storage of power tools, the plug must be removed from the power supply and the battery box must be disconnected from the tool. This preventive measure will reduce the risk of accidental start-up of the tool.
- d. Store unused power tools out of the reach of children and do not allow them to be used by people who are not familiar with power tools or who do not understand these instructions for use. Use by untrained users is dangerous.

Safety warnings

- (1) When the chain is running, keep all parts of the body away from the chain. Before starting the chain, make sure that the chain does not come into contact with any object. With the chain running, even a moment of distraction can cause clothing or body parts to become trapped in the chain.
- (2) Make sure to hold the rear handle of the chainsaw with your right hand and the front handle with your left hand. Holding the chainsaw upside down with both hands will increase the risk of personal injury. Therefore, do not hold the rear handle with your left hand and the front handle with your right hand.
- (3) because the chain could come into contact with hidden wires. During operation of the tool, only the insulated handle may be held. When the chain comes into contact with a live wire, the exposed metal part of the tool could also become electrically charged. And transfer an electric shock to the operator.
- (4) Please wear safety glasses and hearing protection devices. It is also recommended to wear protective equipment to protect your head, hands, legs, and feet. The full use of protective clothing will reduce personal injuries caused by flying debris or accidental contact with the chain.
- (5) Do not operate the chainsaw while in the tree. The use of chain gears on trees could cause personal injury.
- (6) Make sure to stand in a stable manner. Before using the chainsaw, you must stand on a firm, safe, and level surface. Slippery or unstable surfaces, such as stairs, can cause the body to lose flat impact or lose control of the chainsaw.
- (7) When cutting a branch under tension, pay attention to kickback. When the tension on the wood fiber is released, the elastic force on the branch could strike the operator or cause loss of control of the chainsaw.
- (8) When cutting shrubs and young trees, be careful that thin materials may jam the chain, collide, or cause imbalance.
- (9) Before transporting the chainsaw, you must close the chain handle and firmly hold the front handle to keep a certain distance from your body. When transporting or storing the chainsaw, make sure to cover the guide bar. Proper operation of the chainsaw will reduce the possibility of accidental contact with the moving chain.
- (10) Lubricate, tension the chain, and replace accessories according to the instructions. Incorrect chain tensioning or lubrication may cause the chain to break or increase the possibility of kickback.
- (11) Keep the handle dry, clean, and free of oil and grease. An oily handle is easy to slip, leading to loss of control during operation.
- (12) For wood cutting only. Do not use the chainsaw for purposes other than those intended. For example, do not use chainsaws to cut construction materials such as plastic, stone, or non-wood materials. The use of chainsaws for operations other than the intended purpose will result in dangerous situations.

Warnings for chainsaw operations

- (1) During cutting, if the tip of the guide bar touches the object or wood, causing the chain to jam and tighten, it may cause kickback.
- (2) Sometimes, when the tip of the guide bar touches the object, a sudden reaction force is created, which causes the guide bar to snap toward the operator, resulting in injury to the operator.
- (3) Pinching the chain along the top of the guide bar can quickly push the guide bar backward toward the operator. Any of these reactions can cause loss of control of the chainsaw and result in serious personal injury.
- (4) Do not rely solely on the safety devices installed on the chain.
- (5) As a chainsaw user, you must take a series of measures to prevent accidents or personal injury during cutting operations.
- (6) Tool malfunction, incorrect operating steps, or operating conditions will lead to kickback. The following precautions can be avoided:
 - a. Firmly hold the chainsaw handle with both thumbs and fingers. Adjust the positions of your body and arms to avoid kickback. If the correct precautions are followed, the operator can control the kickback force, so be careful.
 - b. Do not overreach with the tool and do not cut above shoulder height. This will help prevent the tip from touching the object and better control the tool in case of an accident.
 - c. Follow the manufacturer's sharpening and maintenance instructions to maintain the chain. Lowering the depth and height causes frequent kickbacks.

After-sales service

If you have any questions about the usage process, please contact us in time (see the next page for contact information). We have professional staff to answer your questions and problems, so that professional maintenance personnel can use the same spare parts to repair power tools, thus maintaining the safety performance of power tools.

Declaration

The company reserves the right to make technical improvements to the product described herein. Note if there are any changes. In case of discrepancies between the graphic images and texts, and the actual objects contained herein, the latter shall apply.

EC DECLARATION OF CONFORMITY - HERSTELLERERKLÄRUNG - DECLARATION 'CE' DE CONFORMITE - DECLARACION DE CONFORMIDAD - DICHIARAZIONE DI CONFORMITA' EUROPEA - GELIJKVORMIGHEIDSVERKLARING - EC DEKLARATION I OVERENSSTEMMELSE - DECLARAÇÃO CE DE CONFORMIDADE - EY ILMOITUS - FORSAKRAN OM OVERENSSTAMMELSE - BEKREFTENDE EU ERKLÆRING - ΔΗΛΩΣΗ ΕΚ ΣΥΜΜΟΡΦΩΣΗΣ - EUROPEJSKA DEKLARACJA ZGODNOSCI

1) MANUFACTURER – HERSTELLER – FABRICANT – FABRICANTE – COSTRUTTORE – CONSTRUCTEUR – PRODUCENT – FABRICANTE – VALMISTAJA – TILLVERKARE – FABRIKANT – Κατασκευαστής – PRODUCENT:
Blue Bird Industries Fabbrica Motori s.r.l.
Via Due Camini 19, 36010 Zanè (VI) Italia

2) DESCRIPTION OF THE MACHINERY – BESCHREIBUNG DER MASCHINE – DESCRIPTION DE LA MACHINE – DESCRIPCION DE LA MAQUINARIA – DESCRIZIONE DELLA MACCHINA – BESCHRIJVING VAN DE MACHINE – BESKRIVELSE AF MASKINEN – DESCRIÇÃO DA MAQUINA – KONEEN NIMITYS – MATERIELSLAG – BESKRIVELSE AV MASKINERIE – ΠΕΡΙΓΡΑΦΗ ΤΩΝ ΜΗΧΑΝΩΝ – OPIS MASZYN:
MOTOSEGA A BATTERIA – ELECTRIC CHAINSAW

a) MAKE – FABRIKAT – MARQUE – MARCA – MARCA – MERK – MÆRKE – MARCA – MERKKI – FABRIKAT – FABRIKANT – MAPKA – MARKA:
BLUE BIRD INDUSTRIES Fabbrica Motori srl
Via Due Camini 19, Zanè, Italia

b) TYPE / TYP / TYPE / TIPO / TIPO / TYPE / TYPE / TIPO / MALLI / TYPBE / TYPE / ΤΥΠΟΣ / TYP:

TH CS 22-07

2000/14/EC (2005/88/EC) – Livelli di potenza sonora come da allegato V – Sound Power Levels performed per annex V	
TIPO	Livelli di Potenza Sonora Misurata / Livelli di Potenza Sonora Garantita LWA Sound Power Levels Measured / Sound Power Level Guaranteed LWA (dB)
TH CS 22-07	90/102

c) Il prodotto è conforme alle direttive - The product complies with the directives - Das Produkt entspricht den Richtlinien - Le produit est conforme aux directives - El producto cumple con las directivas :

- 2006/42/EC – 2014/30/EU – 2000/14/EC (2005/88/EC) – 2011/65/EU

d) Il controllo CE del campione di costruzione secondo la direttiva 2006/42/CE, Art 12.3(b) è stato eseguito presso:

The EC type examination test was carried out pursuant to Directive 2006/42/EC, Art 12.3(b) at:

Die EG-Baumusterprüfung nach Richtlinie 2006/42/EG, Art. 12.3(b) wurde durchgeführt bei:

L'examen CE de type conformément à la directive 2006/42/CE Art. 12.3(b) a été effectué par l'office de contrôle:

La prueba de examen CE de tipo se llevó a cabo de conformidad con la Directiva 2006/42 / CE, Art.12.3 (b) en:

- TÜV SÜD Product Service GmbH at Ridlerstraße 65, 80339 Munich, Germany No.0123 - Certificate No. M6A 105425 0044 Rev. 00

e) REFERENCE TO STANDARDS/HARMONIZED STANDARDS - VERWEIS AUF NORMEN/HARMONISIERTE NORMEN - REFERENCE AUX NORMES/NORMES HARMONISEES - REFERENCIA A ESTANDARES/ESTANDARES ARMONIZADOS - RIFERIMENTO ALLE NORME/NORME ARMONIZZATE - REFERENTIE NAAR STANDAARDEN/GEHARMONISEERDE STANDAARDEN - REFERENCE TIL STANDARDER/HARMONISEREDE STANDARDER - REFERENCIA AS NORMAS/NORMAS HARMONIZADAS - VITTAUS STANDARDDEIHIN/YHTEISIIN STANDARDDEIHIN - REFERERANDE TILL STANDARDER/HARMONISERADE STANDARDER - HENVISNING TIL STANDARD/FELLES STANDARD - ΑΝΑΦΟΡΑ ΣΤΑ ΠΡΟΤΥΠΑ/ΕΝΑΡΜΟΝΙΣΜΕΝΑ ΠΡΟΤΥΠΑ- ODNIESIENIE DO NORM/NORM ZHARMONIZOWANYCH:

UNI EN ISO 12100:2010

EN ISO 11681-2/A1:2017

EN 62841-1:2015

e) Il caricabatterie (mod. KH24-2101140-2E) è stato fabbricato e distribuito in conformità con le seguenti direttive: 2014/35/EU, 2014/30/UE e 2011/65/UE

The charger (mod. KH24-2101140-2E) has been manufactured and put on the market in accordance with the following directives: 2014/35/EU, 2014/30/EU and 2011/65/UE

Das Ladegerät (mod. KH24-2101140-2E) wurde gemäß den folgenden Richtlinien hergestellt und vertrieben: 2014/35/EU, 2014/30/UE e 2011/65/UE

Le chargeur (mod. KH24-2101140-2E) a été fabriqué et distribué conformément aux directives suivantes: 2014/35/EU, 2014/30/UE e 2011/65/UE

El cargado (mod. KH24-2101140-2E) r fue fabricado y distribuido de acuerdo con las siguientes directivas: 2014/35/EU, 2014/30/UE e 2011/65/UE

Importato da - Imported by - Eingeführt von - Importé par - Importado por:



BLUE BIRD INDUSTRIES – FABBRICA MOTORI s.r.l.

ZANE' (VI) – ITALIA

03-09-2021

The chairman – Der vorsitzender – Le président – El presidente – Il presidente – De

voorzitter – Daglig leder – O presidente – Toimitusjohtaja – Verkställande direktör –

Administrerende direktør – O ΠΡΟΕΔΡΟΣ - Prezes

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BLUE BIRD INDUSTRIES – FABBRICA MOTORI s.r.l.

VANDA VITELLA



BLUE BIRD INDUSTRIES Fabbrica Motori s.r.l.

Via Due Camini, 19
36010 ZANÉ ITALIA

Tel. 0445 314138

Fax 0445 314225

www.bluebirdind.com