

OPERATION MANUAL

G.FORCE[®]
EV MOW

**GARDEN
PRODUCTS**
60V
CHAINSAW

EV CS1



WARNING!

Read this manual carefully before using your chainsaw and keep it in a safe place for future reference.

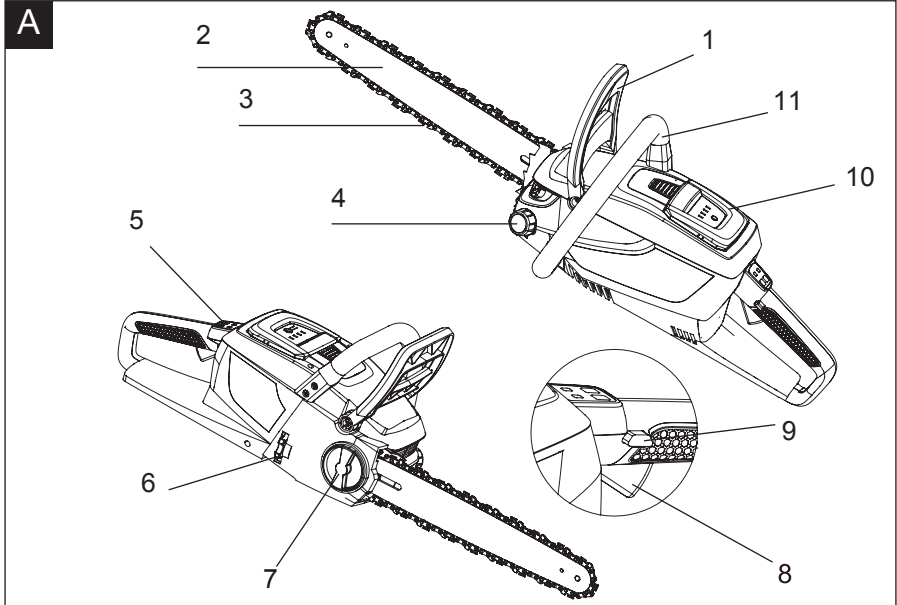


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DESCRIPTION OF PRODUCT PARTS

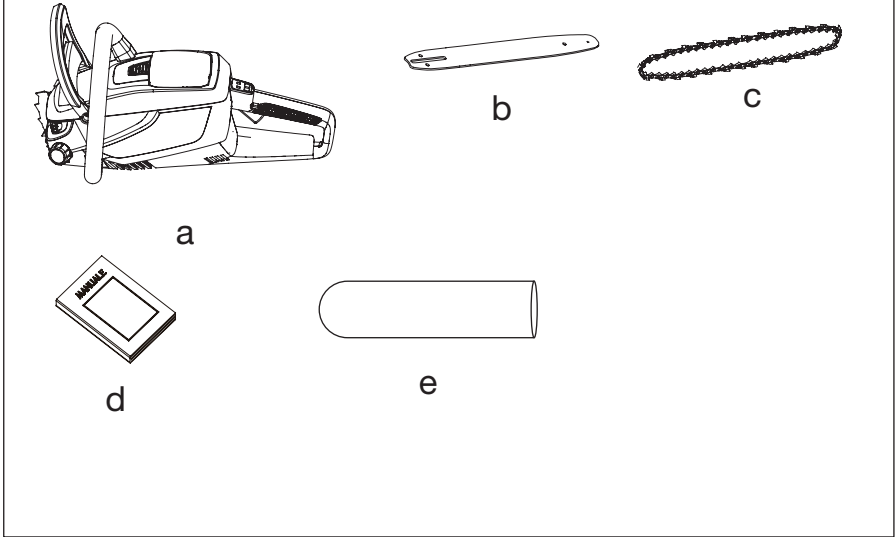
Parts description (Fig. A)

1. Front guard / chain brake
2. Guide bar
3. Saw chain
4. Oil tank cap
5. Indicator panel
6. Chain tension dial
7. Side cover knob
8. ON/OFF trigger switch
9. Safety button
10. Battery pack compartment
11. Front handle



PACKAGE CONTENT LIST

B



- a. Chainsaw
- b. Guide bar
- c. Saw chain
- d. Manual
- e. Guide bar cover

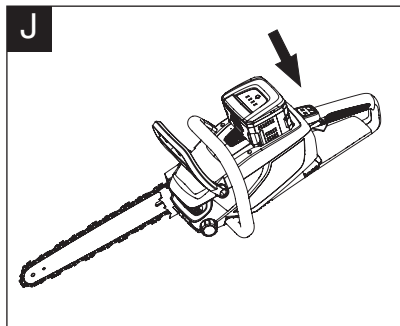
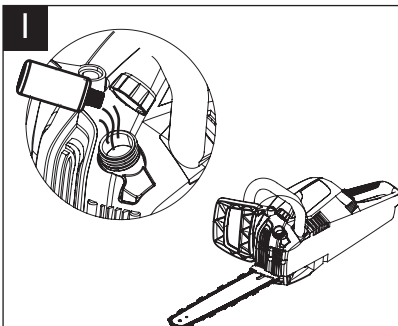
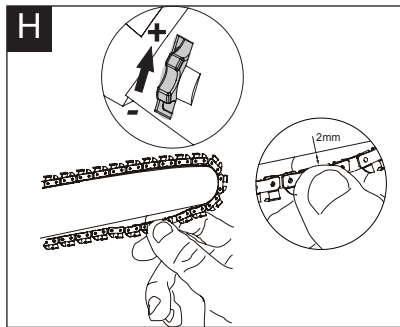
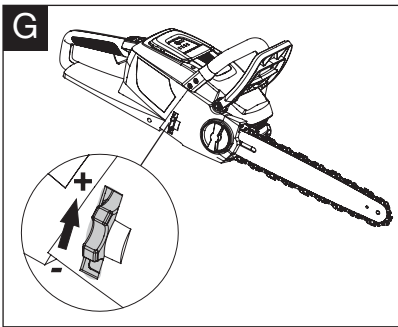
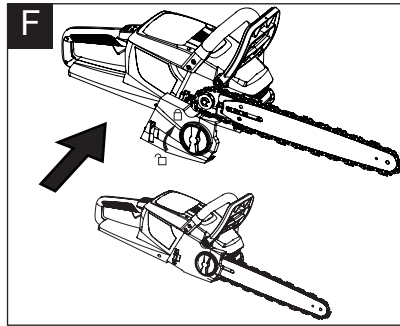
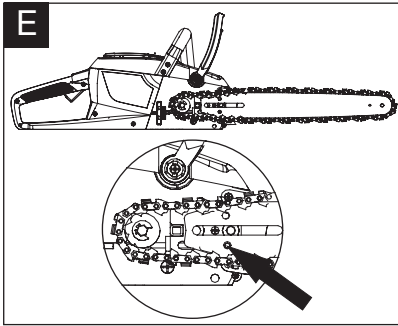
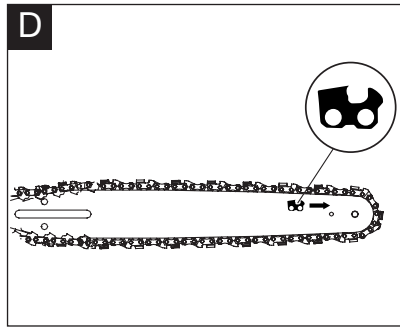
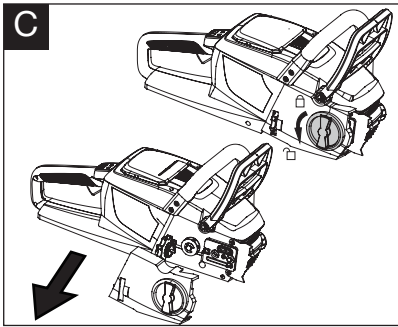
- Remove all packing material.
- Check the completeness of the package content.
- Check the chainsaw and its accessories for transportation damages.

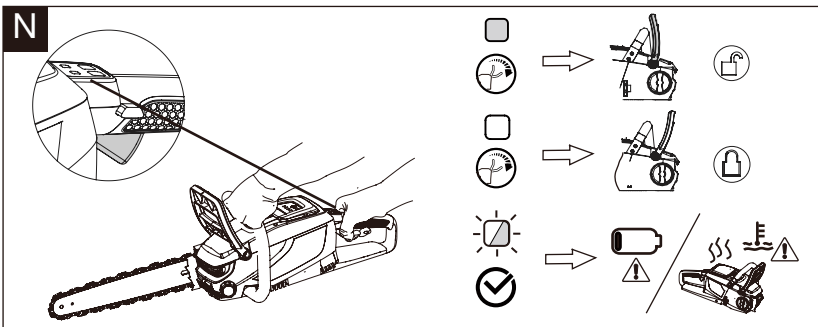
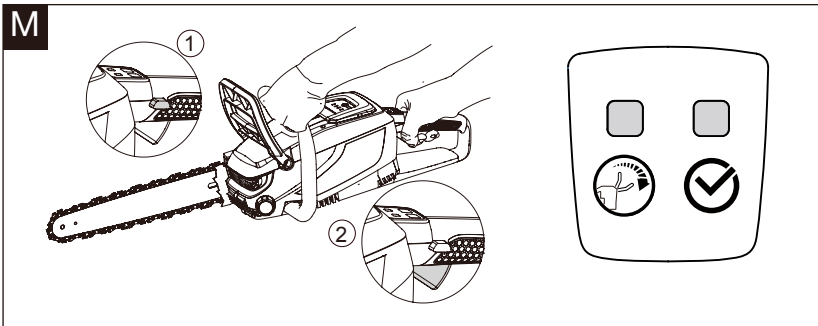
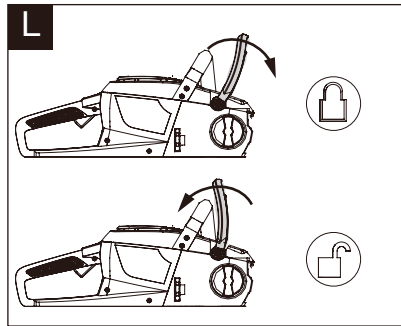
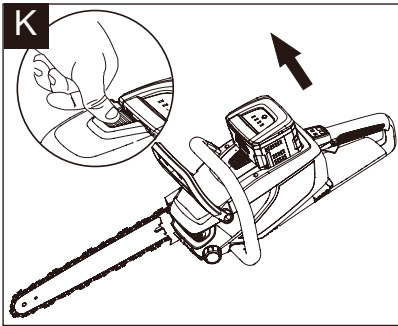


WARNING: Packing materials are not toys! Children must not play with plastic bags! Danger of suffocating!



If any parts are missing or damaged, please contact your dealer.





TECHNICAL SPECIFICATIONS

Model number	EV CS1
Rated voltage	60 Vdc
Chain speed	10 m/s
Cutting length	406 mm
Bar size(length)	16"
Chain Gauge	0.043"/1.1 mm
Chain pitch	3/8"LP
Number of drive links	56
Chain type	ES90X (3/8LP.043 56E)
Guide bar type	ES164MLEA041
Weight	4.6 kg

INTENDED USE

The chainsaw is designed for cutting wood only. It is designed for domestic use, not for commercial or industrial use.












WARNING! Please read and understand this instruction manual before use and keep it for your future reference. Your power tool should only be passed on together with this instruction manual.



WARNING! To reduce the risk of injury, only use **G-FORCE** battery packs. Other types of battery packs may burst causing personal injury and damage. The battery pack must be recharged only with the **G-FORCE** battery charger.

SAFETY INFORMATION

The following symbols are used in this manual and/or on the chainsaw.

	Warning
	Read the instruction manual before using the appliance
	Wear ear protection
	Wear eye protection
	Do not expose to rain
	Wear breathing protection
	Sound power level label
	Dispose of the appliance according to the regulations and requirements of your local council
	Australian Regulatory Compliance Mark

GENERAL SAFETY WARNINGS



WARNING Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

1) Work area safety

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

2) Electrical safety

- a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

3) Personal safety

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

inattention while operating power tools may result in serious personal injury.

- b) **Use personal protective equipment. Always wear eye protection.** Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
- c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
- d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.
- h) **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

4) Power tool use and care

- a) **Do not force the power tool.** Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- b) **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c) **Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- e) **Maintain power tools and accessories.** Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

GENERAL SAFETY WARNINGS

- f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
 - g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.
 - h) **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.
- 5) **Battery tool use and care**
- a) **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
 - b) **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
 - c) **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
 - d) **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.
 - e) **Do not use a battery pack or tool that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behaviour resulting in fire, explosion or risk of injury.
 - f) **Do not expose a battery pack or tool to fire or excessive temperature.** Exposure to fire or temperature above 130 °C may cause explosion.
 - g) **Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions.** Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.
- 6) **Service**
- a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
 - b) **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers
- 7) **General chainsaw safety warnings:**
- a) **Have your power tool serviced by a qualified repair person using only** **Keep all parts of the body away from the saw chain when the chainsaw is operating. Before you start the chainsaw, make sure the saw chain is not contacting anything.** A moment of inattention while

- operating chainsaws may cause entanglement of your clothing or body with the saw chain.
- b) **Always hold the chainsaw with your right hand on the rear handle and your left hand on the front handle.** Holding the chainsaw with a reversed hand configuration increases the risk of personal injury and should never be done.
 - c) **Hold the chainsaw by insulated gripping surfaces only, because the saw chain may contact hidden wiring or its own cord.** Saw chains contacting a "live" wire may make exposed metal parts of the chainsaw "live" and could give the operator an electric shock.
 - d) **Wear safety glasses and hearing protection. Further protective equipment for head, hands, legs and feet is recommended.** Adequate protective equipment will reduce personal injury from flying debris or accidental contact with the saw chain.
 - e) **Do not operate a chainsaw in a tree, on a ladder, from a rooftop, or any unstable support.** Operation of a chainsaw in this manner could result in personal injury.
 - f) **Always keep proper footing and operate the chainsaw only when standing on fixed, secure and level surface.** Slippery or unstable surfaces may cause a loss of balance or control of the chainsaw.
 - g) **When cutting a limb that is under tension be alert for spring back.** When the tension in the wood fibers is released, the spring loaded limb may strike the operator and/or throw the chainsaw out of control.
 - h) **Use extreme caution when cutting brush and saplings.** The slender material may catch the saw chain and be whipped toward you or pull you off balance.
 - i) **Carry the chainsaw by the front handle with the chainsaw switched off and away from your body. When on transporting or storing the chainsaw always fits the guide bar cover.** Proper handling of the chainsaw will reduce the likelihood of accidental contact with the moving saw chain.
 - j) **Follow instructions for lubricating, chain tensioning and changing accessories.** Improperly tensioned or lubricated chain may either break or increase the chance for kickback.
 - k) **Cut wood only. Do not use chainsaw for purposes not intended. For example: do not use chainsaw for cutting plastic, masonry or non-wood building materials.** Use of the chainsaw for operations different than intended could result in a hazardous situation.
 - l) **Do not attempt to fell a tree until you have an understanding of the risks and how to avoid them.** Serious injury could occur to the operator or bystanders while felling a tree.
 - m) **Follow all instructions when clearing jammed material, storing, or servicing the chainsaw. Make sure the switch is off and the battery pack is removed.** Unexpected actuation of the chainsaw while clearing jammed material or servicing may result in serious personal injury.

8) Causes and operator prevention of kickback:

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

Tip contact in some cases may cause a sudden reverse reaction, kicking the guide bar up and back towards the operator.

Pinching the saw chain along the top of the guide bar may push the guide bar rapidly back towards the operator.

Either of these reactions may cause you to lose control of the saw which could result in serious personal injury. Do not rely exclusively upon the safety devices built into your saw. As a chainsaw user, you should take several steps to keep your cutting jobs free from accident or injury.

Kickback is the result of tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below:

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

9. Residual risks

Additional residual risks may arise when using the tool which may not be included in the safety warnings. These risks can arise from misuse, prolonged use etc.

Even with the application of the relevant safety regulations and the implementation of safety devices, certain residual risks cannot be avoided.

These included:

- a) **Injuries caused by touching any rotating/moving parts.**
- b) **Injuries caused when changing any parts, blades or accessories.**
- c) **Injuries caused by prolonged use of a tool. When using any tool for prolonged periods ensure you take regular breaks.**
- d) **Impairment of hearing.**
- e) **Health hazards caused by breathing dust developed when using your tool. (example: working with wood, especially oak, beech and MDF)**

ASSEMBLY



WARNING: Before performing any assembly and adjustment. Always ensure that the battery pack has been removed.

Installing the guide bar and saw chain

1. Position the chainsaw on its side with the side cover facing upwards.
2. Turn the side cover knob anti-clockwise to remove the side cover and then loosen the chain tensioning knob as much as possible. (Fig. C)
3. Lay the new saw chain in a loop on a flat surface and straighten any kinks.
4. Place the chain drive links into the guide bar's groove and make the chain a loop at the back of the guide bar. The saw chain should face in the direction of chain rotation. If backward, turn the loop over. (Fig. D)
5. Hold the chain in position on the guide bar and place the loop around the sprocket of the chainsaw.
6. Slide the guide bar slot over the alignment flanges until the tension adjusting pin is inserted in the lower hole at the end of the guide bar (Fig. E).

NOTE: Small directional arrows are engraved in the guide bar. Another directional arrow is on the housing. When looping the saw chain onto the sprocket, make sure that the direction of the arrows on the guide bar is the same as the direction of the arrow on the housing. If they face in opposite direction, turn over the saw chain and guide bar assembly.

7. Pull the guide bar forward until the chain is closely seated. Make sure that all the links are in the groove of the guide bar.
8. Attach the side cover and secure it with the side cover knob.
Note: Do not fully tighten the side cover knob until after adjusting the chain tension.

Adjusting the saw chain tension

1. Loosen the side cover knob and turn the chain tensioning dial clockwise to tension the chain. (Fig. G)
2. A cold chain is correctly tensioned when there is no slack on the underside of the guide bar and the chain is snug. The chain must be re-tensioned if the chain links do not lie properly in the groove of the guide bar.
3. During normal saw operation, the temperature of the chain will rise. The drive links of a correctly tensioned warm chain will hang approximately 2 mm out of the bar groove (Fig. H).

NOTE: New chains tend to stretch; check chain tension frequently and tension as required.

NOTE: If a saw chain is tensioned when it is warm, it may be too tight when it cools down. Check the tension when it is cool before next use.

OPERATION



WARNING: Before inserting or removing the battery packs into the chainsaw, make sure the chainsaw is switched off.



WARNING: Check the saw chain oil before operation.

Filling saw chain oil (Fig. I)



WARNING: Do not smoke or bring any fire or flame near the oil or the chainsaw. Oil may spill and cause a fire.



NOTE: The chainsaw is not filled with oil at the time of purchase. Fill the tank with oil before use.

1. Position the chainsaw on its side with its oil tank cap facing upwards.
2. Clean the cap as well as the area around it.
3. Turn the cap anti-clockwise to remove it.
4. Carefully pour the saw chain oil into the tank until it reaches the bottom of the filler neck.
5. Wipe off any excessive oil and replace the cap.

Note: The saw chain is automatically lubricated during operation. Always fill the oil tank when the oil level falls below the minimum mark of the oil level window or it is not visible in the oil level window.

Inserting and removing the battery pack (Fig. J and K)

1. Align the groove on the battery pack with the ribs in the chainsaw's battery compartment (Fig. F).
2. Insert the battery pack into the chainsaw's battery compartment until it clicks into position.
3. To remove the battery pack, press the battery pack's release button and pull the battery pack out (Fig. G).

Starting/stopping the chainsaw (Fig. L, M and N)



WARNING: Do not attempt to start the saw when the saw chain is in a cut.



WARNING: Always remove the battery pack from the chainsaw during work breaks and after finishing work.

NOTE: Before starting the chainsaw, check the oil level, and make sure that the chain brake lever can work properly.

To Start

1. Pull the chain brake lever back towards the front handle (Fig. L) to release the chain brake. The left LED indicator on the control panel will be ON when the chain brake lever is released.
2. Grasp the front and rear handles firmly with both hands.
3. Press down the safety button first, then squeeze the ON/OFF trigger switch to start the chainsaw (Fig. M). Release the safety button and continue to squeeze the trigger for continued operation. The right LED on the control panel will be ON.

To Stop

1. Release the ON/OFF trigger switch to stop the chainsaw.
2. Push the chain kickback brake handle forward to the brake position so that the chain brake is engaged.

LED indicators on the control panel (Fig. N)

The left LED shows the status of the chain brake.

- LED on: chain brake released, the chainsaw is ready to start
- LED off: chain brake is engaged, the chainsaw cannot be started.

The right LED shows the status of the chainsaw.

- LED on: device ready to start
- LED off: The device is not start.

Cutting Techniques

Felling a tree

When bucking and felling operations are being performed by two or more persons at the same time, the felling operations should be separated from the bucking operation by a distance of at least twice the height of the tree being felled. Trees should not be felled in a manner that would endanger any person, strike any utility line or cause any property damage. If the tree does make contact with any utility

OPERATION

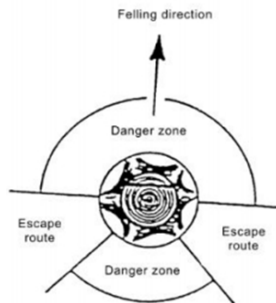
line, the company should be notified immediately.

The chainsaw operator should keep on the uphill side of the terrain as the tree is likely to roll or slide downhill after it is felled.

An escape path should be planned and cleared as necessary before cuts are started. The escape path should extend back and diagonally to the rear of the expected line of fall as illustrated in Fig. O.

Before felling is started, consider the natural lean of the tree, the location of larger branches and the wind direction to judge which way the tree will fall.

Remove dirt, stones, loose bark, nails, staples and wire from the tree.

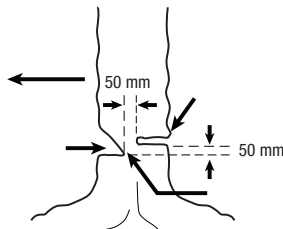


Description of felling: escape routes

Fig. O

Notching undercut

Make the notch 1/3 the diameter of the tree, perpendicular to the direction of falls as illustrated in Fig. P. Make the lower horizontal notching cut first. This will help to avoid pinching either the saw chain or the guide bar when the second notch is being made.



Description of felling: undercutting

Fig. P

Felling back cut

Make the felling back cut at least 50 mm higher than the horizontal notching cut as

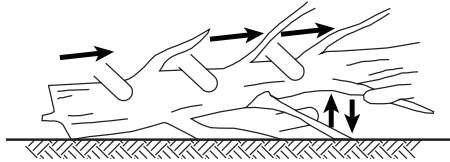
illustrated in Fig. P. Keep the felling back cut parallel to the horizontal notching cut. Make the felling back cut so enough wood is left to act as a hinge. The hinge wood keeps the tree from twisting and falling in the wrong direction. Do not cut through the hinge.

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

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

Limbing a tree

Limbing is removing the branches from a fallen tree. When limbing leave larger lower limbs to support the log off the ground. Remove the small limbs in one cut as illustrated in Fig. Q. Branches under tension should be cut from the bottom up to avoid binding the chainsaw.



Keep work off ground leave support limbs until log is cut

Fig. Q

Cross-cutting/bucking a log

Cross-cutting/bucking is a cutting a log into lengths. It is important to make sure your footing is firm and your weight is evenly distributed on both feet. When possible, the log should be raised and supported by the use of limbs, logs or chocks. Following the simple directions for easy cutting.

When the log is supported along its entire length as illustrated in Fig. R, it is cut from the top (overbuck).

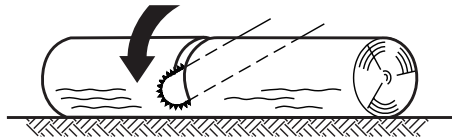
When the log is supported on one end, as illustrated in Fig. S, cut 1/3 the diameter from the underside (underbuck). Then make the finished cut by overbucking to meet the first cut.

When the log is supported on both ends, as illustrated in Fig. T, cut 1/3 the

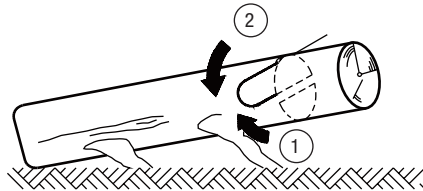
OPERATION

diameter from the top (overbuck). Then make the finished cut by underbucking the lower 2/3 to meet the first cut.

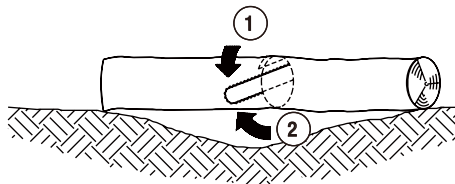
When cross-cutting/bucking on a slope always stand on the uphill side of the log, as illustrated in Fig. U. When "cutting through", to maintain complete control, release the cutting pressure near the end of the cut without relaxing your grip on the chainsaw handles. Don't let the chain contact the ground. After completing the cut, wait for the saw chain to stop before you move the chainsaw. Always stop the motor before moving from tree to tree.



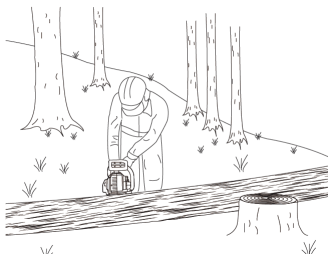
Log support along the entire length
Fig. R



Log supported one end
Fig. S



Log supported both ends
Fig. T



Cross-cutting/bucking a log

Fig. U

CLEANING, MAINTENANCE AND STORAGE



WARNING! Always remove the battery pack from the chainsaw before carrying out any cleaning, maintenance and storage.



WARNING: The chainsaw shall only be repaired by an authorised service centre.

Cleaning

1. Keep the ventilation slots free from dust and dirt to prevent overheating.
2. Regularly clean the chainsaw's housing with a soft cloth, preferably after each use. If the dirt does not come off, use a soft cloth moistened with soapy water.
3. Never use solvents such as petrol, alcohol, ammonia water etc. These solvents may damage the plastic parts.

Maintenance

1. Check that the saw chain oil is adequate before use and ensure that the saw chain oil flow hole is unobstructed.
2. Check the saw chain's tension before operation.
3. The chainsaw shall only be repaired by an authorised service centre.

Storage

1. Remove the battery, thoroughly clean the chainsaw and its accessories before storage.
2. Store the chainsaw in a stable and secure place out of reach of children.

DISPOSAL



Dispose of appliances according to the regulations and requirements of your local council. If appliances are disposed of in landfills or dumps, hazardous substances may leak into the groundwater and get into the food chain, damaging your health and well-being.

TROUBLESHOOTING

Fault	Possible cause	Possible solution
Cannot start	Battery pack not installed properly	Remove and insert the battery pack again
	Battery not charged	Charge the battery
	Internal damage or wear e.g. motor is damaged	Repair by an authorised service centre
	Chain brake is engaged	Pull the chain brake lever backward to release the chain brake
Poor cutting efficiency	Saw chain is blunt	Replace or re-sharpen saw chain
	Saw chain is lack of lubricant	Check the lubrication system to ensure lubrication is working
	Saw chain tension is too tight	Re-adjust saw chain tension
Saw chain becomes hot	Chain lubrication	Check oil level
		Check saw chain lubrication
Insufficient chain lubrication	Oil tank is empty	Refill oil
	Oil passage is clogged	Clean the oil passage outlet
Overheat	Ventilation vents are blocked	Clean the dust from the ventilation vents

WARRANTY

This product is covered by a 2 year parts and labour warranty against manufacturing defects.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law.

You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

- (i) where this product has been subjected to misuse, abuse, accident or want of care;
- (ii) where this product has been used for a purpose for which it was not designed or is not suited;
- (iii) where the service of this product has been undertaken by a non-authorized person or company or if non-approved parts have been used;
- (iv) where this product has been used for trade, industrial or commercial purposes.

In order to obtain warranty service, the purchaser must present the store receipt showing the name of the retailer and the date of purchase.

The period of the warranty begins from the original date of purchase, notwithstanding any subsequent repair or parts replacement.

Purchaser shall be responsible for all transport charges to and from the Authorised Service Centre.

Damage in transit is not covered by this warranty. The purchaser should remove from the product any liquids (if applicable) before sending the product for service or repair.

The product should be packed securely to prevent damage.

WARRANTY EXCLUSIONS

Wear parts or service related parts required when performing normal and regular maintenance of this product are not covered by warranty unless it is found to be defective by an Authorised Service Centre.