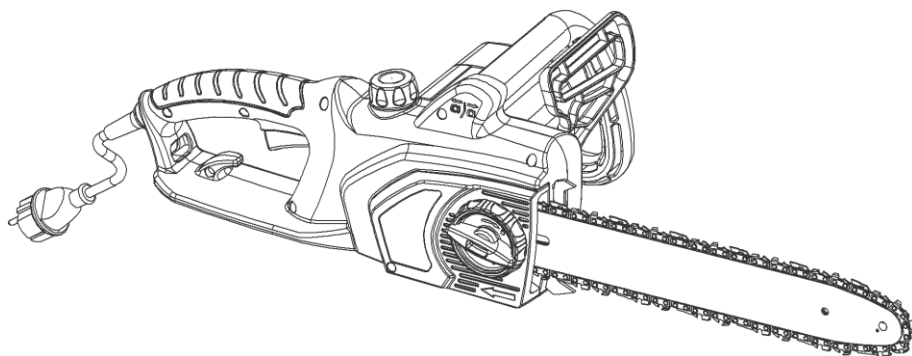




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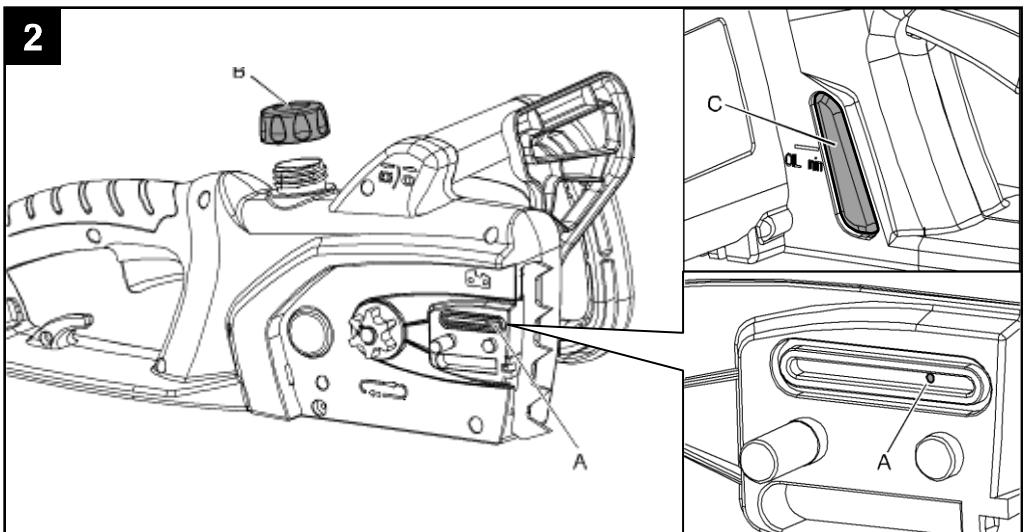
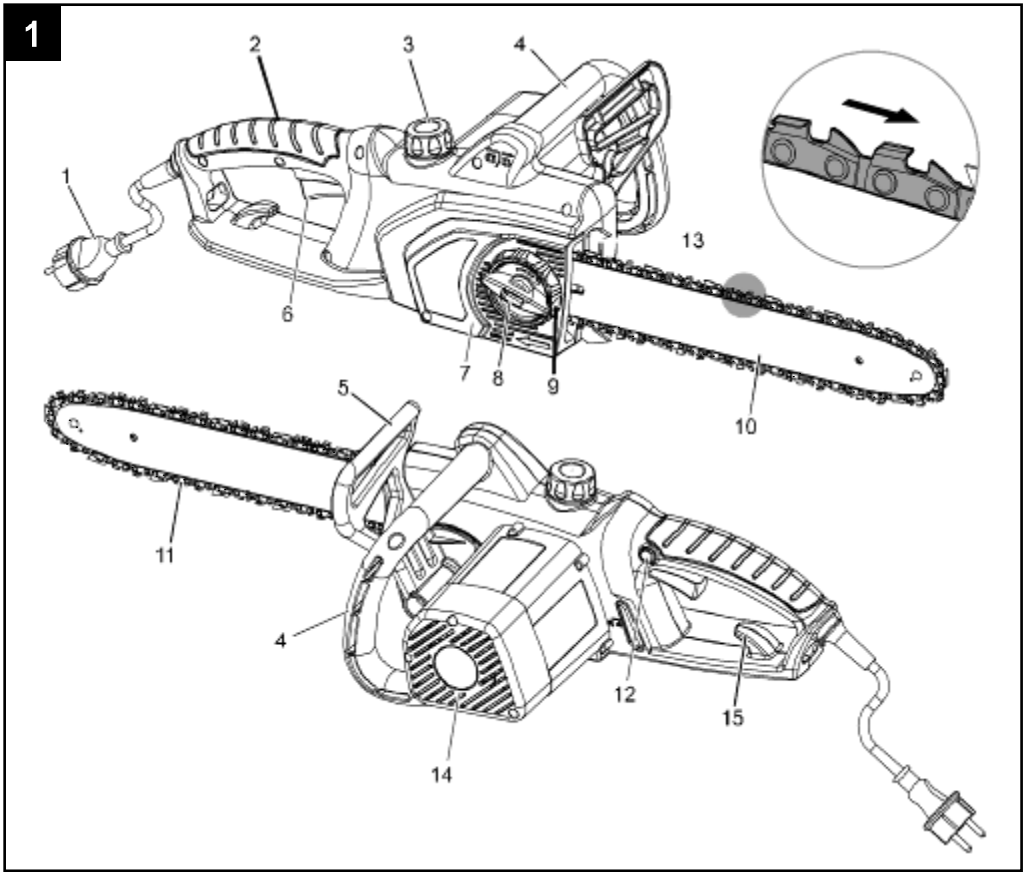
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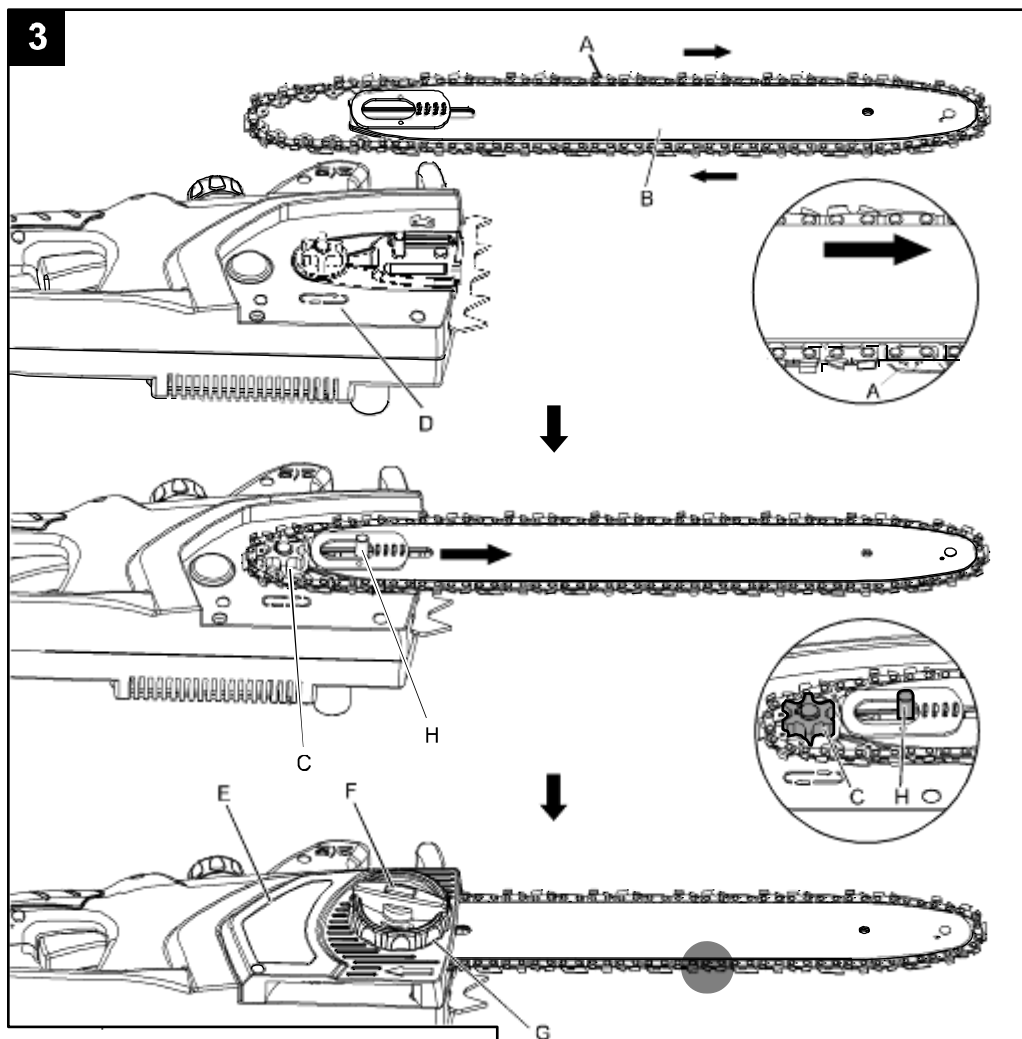
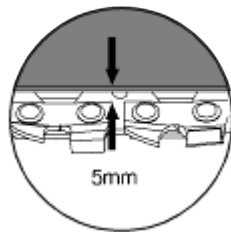
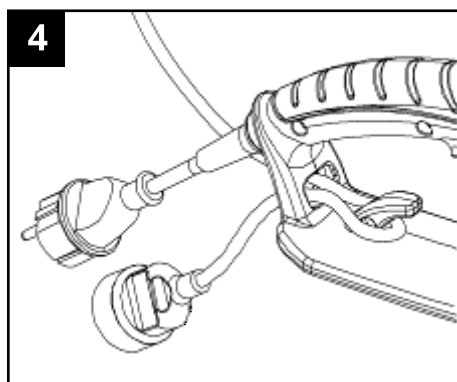
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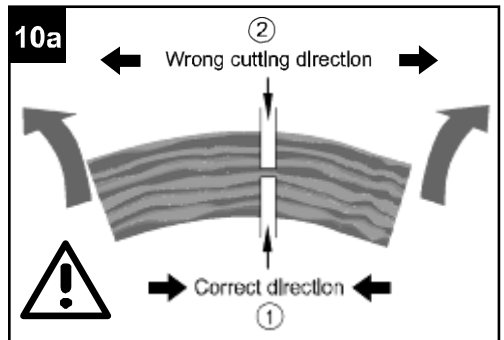
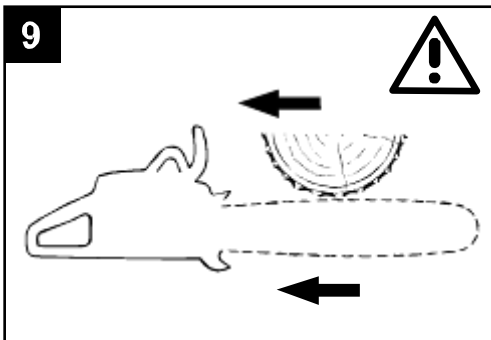
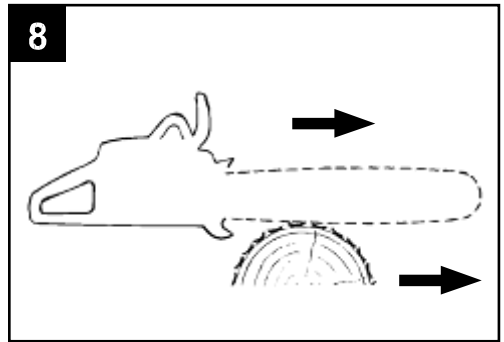
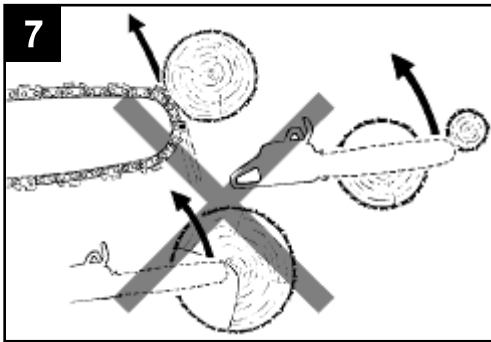
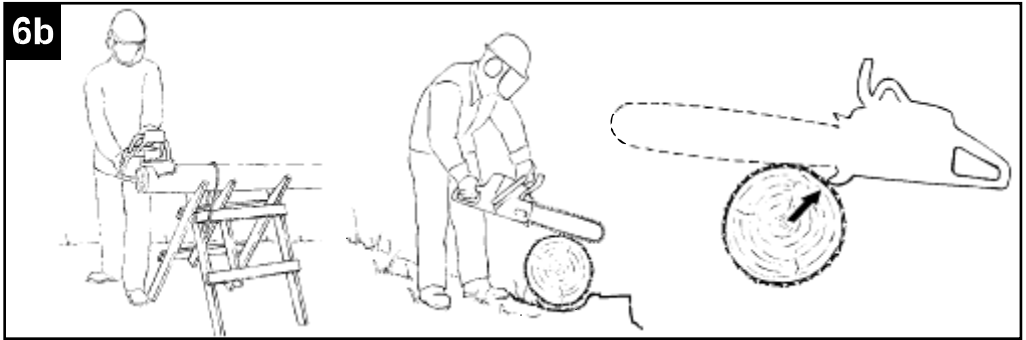
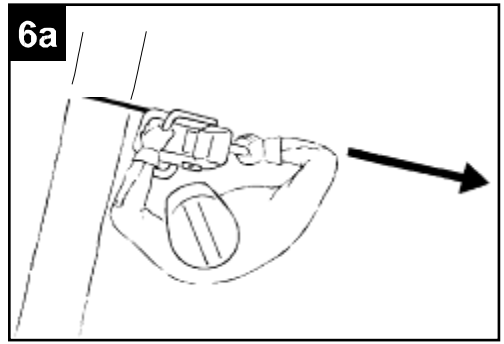
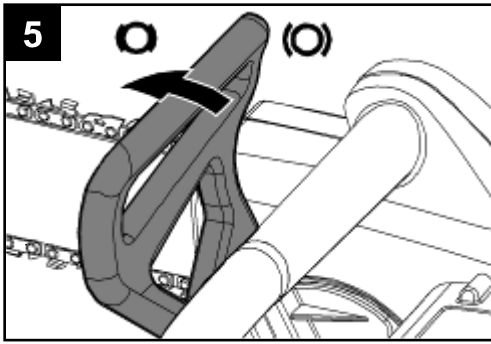


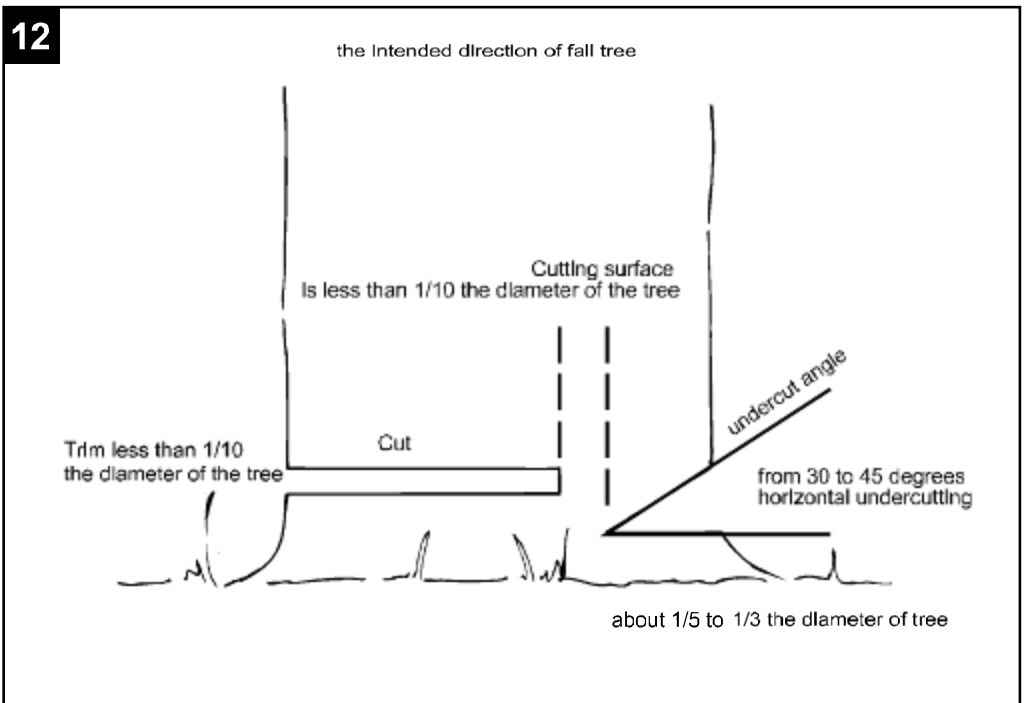
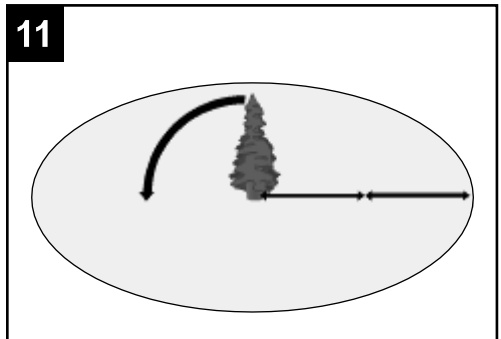
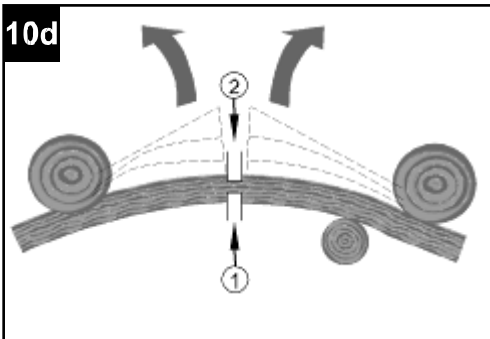
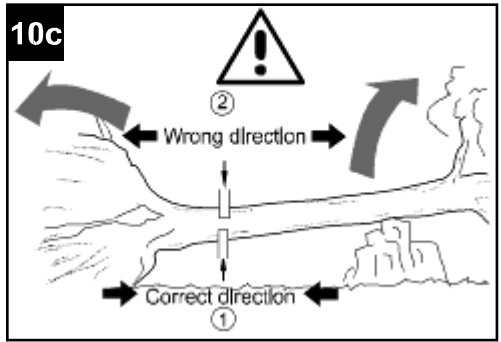
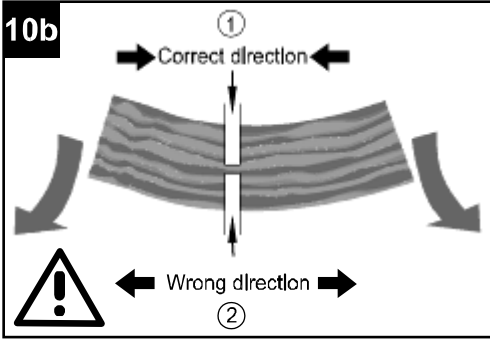
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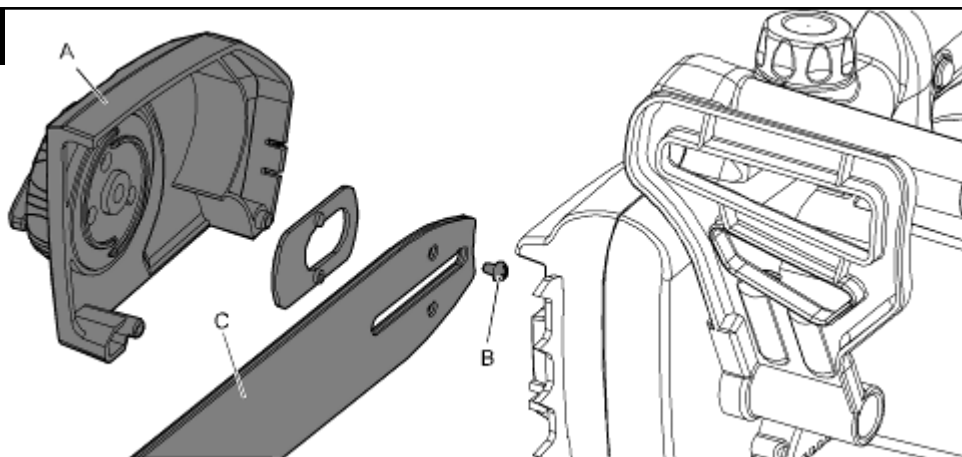


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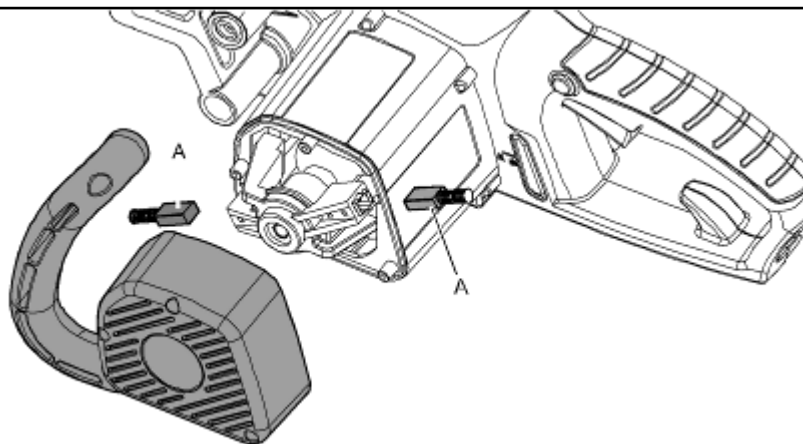




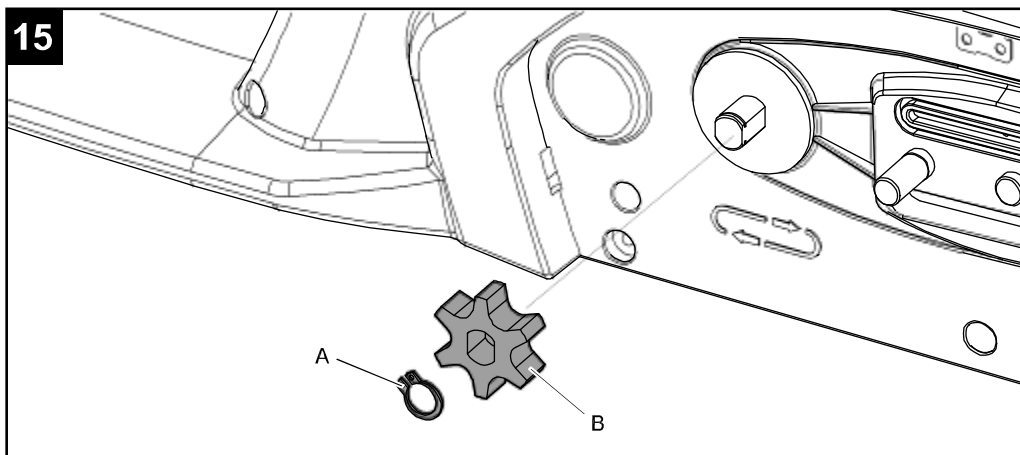
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15



## Pictogram and explanation



Caution! Read the instruction manual and follow the warning and safety instructions!



Always switch off the appliance, disconnect the power and wait till the machine comes to a standstill prior to maintenance, cleaning or repair work!



Caution! Always wear eye protection and earmuffs!



Do not use the appliance in wet weather conditions!



Caution! Unplug immediately if the power cord or plug becomes damaged!  
Keep bystanders away from the danger zone!

## Description (Fig. 1)

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1. Power cable
2. Rear grip
3. Oil tank cap
4. Front grip
5. Front finger guard | Chain break
6. ON/OFF switch
7. Guide bar cover
8. Lock knob
9. Chain tension knob
10. Guide bar
11. Saw chain
12. Safety lock-off button
13. Claw stop
14. Ventilation slots
15. Cable hook

## Safety instructions

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The safety instructions must be observed when using the chainsaw. For your own safety and the safety of others, please read this information carefully before using the chainsaw and keep it in a safe place for reference. Use the chainsaw only

to saw wood or objects made of wood. Any other types of use are at your own risk and could be dangerous. The manufacturer cannot be held liable for damage caused by improper or incorrect usage.

## Safety instructions and accident prevention

To prevent the incorrect handling of the chainsaw, please read the operating instructions in their entirety before using the chainsaw for the first time. All the information on the handling of the chainsaw is relevant to your personal safety. Ask a professional to show you how to use the chainsaw!

- Before plugging in, check the plug and cable for damage. If damage is discovered, have it repaired by a specialist immediately.
- Never use a damaged cable, connection or plug or a power cable which does not comply with the requirements. If the cable is damaged or severed, unplug immediately.
- Switch the chainsaw off before releasing the chain brake.
- Always wear goggles and protective gloves when working with the chainsaw.
- To prevent injury, wear tight-fitting clothes and safety boots.
- To prevent damage to your hearing, wear earmuffs, helmets with a visor are particularly advantageous.
- Make sure you have a firm footing when working with the chain saw.
- Keep your place of work tidy.
- To prevent electric shock, avoid contact with earthed parts.
- Always pull the plug out of the power socket before doing any work on the chainsaw.
- Only plug in when the chainsaw is switched off.
- The chainsaw must be used only by one person at a time. All other persons must stay clear of the chainsaw's area of swing. Children and pets in particular must be kept well away at all times.
- The saw must not be touching anything when

it starts up.

- Hold the chainsaw firmly in both hands when working with it.
  - The chain saw must not be operated by children and young people. The only exception to this prohibition is young persons of 16 years and over who can use the chain saw under supervision as part of their training. Lend the saw only to those persons who are familiar with this type of chainsaw and know how to handle it. Always pass on the operating instructions together with the chainsaw.
  - Make sure the chain saw is stored in a place inaccessible to children.
  - The saw may be operated only by persons who are rested and in good health, i.e. in a good physical condition. If you start to tire, have a break in time. The chainsaw should not be used after the consumption of alcohol.
  - Never expose the chainsaw to rain or bad weather. Make sure there is enough light at the place of work. Do not use power tools in the vicinity of combustible liquids or gases.
  - If the chainsaw is not being used for a while, it must be set aside in such a way that no other person is endangered.
  - Before making a cut, always set the claw stop before you start to saw.
  - Remove the chainsaw from the wood only with the saw chain still running. Anyone who saws without a stop can be pulled forwards.
  - Never use the chainsaw when standing on a ladder, in a tree or in any other instable places. Do not saw with one hand.
  - The power cable must always be behind the saw operator.
  - The power cable must always lead away from the rear of the chainsaw.
  - Use only original accessories.
  - Chainsaws used outdoors must be connected up to an earth-leakage circuit-breaker.
  - Do not overload your power tools. They run best and safest within given range of capacity.
  - Always use the correct power tool. Do not use low-powered chainsaws for heavy jobs.
  - Use the cable only for its proper purpose.
- Never carry your electric tool by its cable. Do not use the cable to pull the plug out of the socket. Protect the cable from heat, oil and sharp edges.
- Use only authorized and accordingly labelled extension cables out of doors.
  - Use a strong support when sawing converted timber and thin branches (saw-horse, Fig. 6b). Do not stack the timber and do not have it held by a second person or with your foot.
  - Logs must be secured in position.
  - On sloping ground, always work facing upwards.
  - When cross-cutting always set the claw stop against the timber you want to saw (see Fig. 6b)
  - Always set the claw stop before cross-cutting. Only then switch on the chainsaw and start sawing into the wood. Pull the chainsaw upwards at the rear and lead the direction with the front grip. Use the claw stop as a fulcrum. To reposition for further cutting, interrupt the sawing process and exert a slight pressure on the front grip. Pull the saw back a little, position the claw stop further down the cut and pull up the rear grip (see Fig. 6a).
  - Pull the saw out of the wood only when the saw chain is running.
  - If you carry out several cuts, switch off the chain saw in-between.
  - Plunge cuts and horizontal cuts may only be carried out by professionals (**high risk of kick-back!** see Fig. 7).
  - For horizontal cuts, position the smallest possible angle. This requires extreme caution, as the claw stop can not be applied in this case.
  - If the chain gets stuck when sawing with the upper side it may be thrust towards the operator. For this reason you should saw wherever possible with the bottom side, as the chainsaw will then be thrust away from the body towards the wood (see Fig, 8 and 9).
  - Pay extra attention when cutting splintered wood. Sawed off pieces of wood may be catapulted in any direction (**risk of injury!**)



- Do not use the chainsaw to remove or similar objects.
- When lopping off branches, the chain saw should be supported wherever possible against the trunk, Do not cut with the tip of the guide bar (**risk of kick-back!** see Fig. 7).
- Leave branch lopping work should be carried out by trained personnel! **Risk of injury!**
- Pay special attention to branches under tension. Do not cut through freely suspended branches from underneath.
- Never stand on the trunk when lopping off branches.
- The chainsaw should not be used for forest work, i.e. for felling and lopping off branches in the forest. Because of the cable connection the saw operator does not have the necessary mobility and his safety is not guaranteed!
- Always stand to the side of the tree being felled.
- When the tree is being felled, watch out for falling branches when stepping back.
- On slopes the saw operator should stand to the upper or left or right side the trunk or lying tree, never to the bottom side.
- Watch out for trunks rolling towards you. **Kick-back!**
- The power saw is likely to recoil if the tip of the guide bar (especially the top quarter) accidentally touches wood or any other solid objects. In this case the saw will move uncontrolled and will be hurled towards the operator at full power (**risk of injury!**).

**In order to prevent kick-back, please follow these safety instructions:**

- Never start cutting with the tip of the guide bar!
- Never cut with the tip of the guide bar! Be careful, when continuing cuts you are already working on!
- Always start cuts with the chainsaw already running!
- Make sure that the saw chain is always properly sharpened.
- Never cut through more than one branch at a

time! When lopping off branches, be careful not to touch any other branches.

- When cross-cutting, pay attention to trunks standing very close to each other. If possible use a saw-horse.

### **Transporting the chainsaw**

Before transporting the chainsaw, always remove the plug from the power socket and slide the chain guard over the rail and chain. If several cuts are to be performed with the chain saw, the saw must be switched off between cuts.

### **Before starting up**

The voltage and current supply must comply with the ratings on the type plate. Before commencing work, always check that the chainsaw works properly and is safe to operate.

Check also that the chain lubrication and the oil gauge are in good working order (see Fig.2). When the oil lever is approx. 5 mm from the bottom mark, you must top up with oil. When the oil level is above this mark you can work without worry.

Switch on the chain saw and hold it above the ground. Be careful not allow the chainsaw to touch the ground. For safety reasons it is best to keep a clearance of at least 20 cm. If you now see growing traces of oil, the chain lubrication system is working correctly. If there are no traces of oil at all, try cleaning the oil outlet (Fig. 2, A), the upper chain tensioning borehole and the oil duct, or contact your Customer Service. (Be sure to read the section "Filling in chain oil and chain lubrication" on this point).

Check the chain tension and retention if necessary (see the section "Tensioning the saw chain" on this point). Make sure the chain brake is working properly (see also the section "Releasing the chain brake").

### **Filling in chain oil (Fig 2)**

To prevent dirt getting inside the tank, clean the oil tank cap (B) before opening. Check the

contents of the oil tank during sawing work by checking the oil gauge (C). Close the oil tank cap tightly and wipe away any spills.

The chainsaw is supplied without oil in tank and it must fill up when first operation. The tank capacity is approx. 150 ml using low viscosity lubrication oil.

## **Assembling bar & sawchain (Fig 3)**

### **The chainsaw must be unplugged.**

To prevent injury on the sharp cutting edges, always wear gloves when assembling, tensioning and checking the chain.

The guide bar and saw chain are supplied separately when packing. To assemble, first unscrew the lock knob (G) and remove the guide bar cover (E).

### **Before assembling the guide bar with the saw chain, check the cutting direction of the teeth!**

The running direction is marked with an arrow on the cover (D). To determine the direction of cut, it may be necessary to turn over the saw chain (A). Hold the guide bar (B) vertically with the tip pointing upwards and put on sawchain at the tip of the bar.

### **Then assemble the guide bar with the saw chain as follows:**

- Place the saw chain round the chain wheel (C) and make sure it is correctly mounted,
- Place the guide bar with the saw chain on the lock bolt (H),
- Place the cover (E) on top and tighten gently with the lock knob (F) clockwise.

Now the saw chain has to be correctly tensioned.

## **Tensioning the saw chain**

### **Always pull the plug out of the power socket before doing any work on the chainsaw!**

### **Wear safety gloves!**

Make sure the saw chain (A) is inside the guide groove of the guide bar!

Turn clockwise of the tension knob (G), the guide bar is being pushed forwards until the saw chain is correctly tensioned. Do not tension the chain too tightly. When cold, it should be possible to lift the chain in the middle of the guide bar approx. 5

mm. Tighten the lock knob (F) securely.

When warm, the saw chain will expand and slacken and there is a danger of it jumping off the rail altogether. Re-tension if necessary. If the saw chain is re-tensioned when hot, it must be loosened again when the sawing work has been completed. Otherwise, the contraction which takes place as the chain cools would result in excessively high tension. A new saw chain requires a running-in period of approx. 5 minutes. Chain lubrication is very important at this stage. After running in, check chain tension and re-tension if necessary.

## **Securing the extension lead (Fig 4)**

Only use extension leads suitable for outdoor use. The cross section of the cable (max. length of extension cord: 75m) must be at least 1,5 mm<sup>2</sup>. Secure the chainsaw flex to the extension lead by inserting the extension lead into the strain relief gap of the housing.

Extension leads longer than 30 m will reduce the performance of the chainsaw.

## **Chain lubrication**

To prevent excessive wear, the saw chain and guide bar must be evenly lubricated during operation.

Lubrication is automatic. Never work without chain lubrication. If the chain runs dry, the entire cutting apparatus will quickly become severely damaged. It is therefore important to check both chain lubrication and the oil gauge every use (Fig. 2).

Never use the saw when the oil level is below the "MIN." mark.

When only approx. 10 mm of oil is visible at the lower rim of the oil gauge (C), you must top up with oil.

## **Checking the automatic lubrication**

Before commencing work, check the automatic chain lubrication and oil gauge. Switch on the chain saw and hold it above the ground. Be careful not to allow the chain saw to touch the ground. For safety reasons it is best to keep a

clearance of at least 20 cm. If you now see growing traces of oil, the chain lubrication system is working correctly. If there are no traces of oil at all, try cleaning the oil outlet (Fig 2, A), the upper chain tensioning borehole and the oil duct, or contact your Customer Service.

Check every 15 minutes the oil level during the operation.

## Chain lubricants

The service life of saw chains and guide bars depends to a large extent on the quality of the lubricant used. Old oil must not be used! Use only environment-friendly chain lubricant. Store used chain lubricant only in containers that comply with the local regulations.

## Guide bar

The guide bar is subjected to especially severe wear and tear at the nose and the bottom. To avoid one-sided wear and tear, turn the guide bar over every time when you sharpen the chain.

## Chain wheel

The chain wheel is subjected to especially high wear and tear. If you notice deep wear marks on the teeth, the chain wheel must be replaced. A worn chain wheel curtails the service life of the saw chain. Have the chain wheel replaced by a specialist dealer or your Customer Service.

## Chain guard

The chain guard must be clipped onto the chain and sword as soon as the sawing work has been completed and whenever the chainsaw has to be transported.

## Chain brake (Fig 5)

In the event of kickback, the chain brake (Fig. 1, 5) will be actuated via the front finger guard. The front finger guard is pushed forwards by the back of the hand and this causes the chain brake to stop the chain saw, or rather the motor, within 0.15 s.

## Releasing the chain brake

To be able to use your chain saw again, you must release the saw chain again. First switch off the chainsaw. Then push the front finger guard back into the vertical position. The chain brake is now fully functional again.

## Sharpening the saw chain

You can have your saw chain sharpened fast and correctly by specialist dealers, from whom you can also obtain chain sharpening equipment to enable you to sharpen the chain yourself. Please follow the corresponding operating instructions. Take care of your tools. Keep your tools sharp and clean to enable you to work well and safely. Follow the maintenance regulations and the instructions for changing tools.

## Starting up

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**Always wear safety goggles, earmuffs, protective gloves and heavy-duty work clothes!**

Use the saw only with approved extension cables with the prescribed insulation and connections designed for outdoor use (approved rubber-sheathed cables) which fit the chainsaw plug.

**To switch on:**

hold the machine firmly with two hands and press the Safety lock off button (Fig. 1, 12) while press the On/Off switch (Fig. 1, 6).

If the chainsaw does not run, the chain brake must be released at the front finger guard. Be sure to read the sections "Chain brake" and "Releasing the chain brake" on this point.

After switching on, the chainsaw will run immediately at high speed.

**To switch off:**

Release the ON/OFF switch.

The release of ON/OFF switch results the stop of the chainsaw within 1sec.

After working with the chainsaw, you should always: Clean the saw chain and guide bar and replace the chain guard.

## Chainsaw protection

**Never use the chainsaw in the rain or in damp conditions.**

**If the extension cable is damaged, pull the plug out of the power socket immediately. Never work with a damaged cable.**

Check the chainsaw for damage. Before using your tool again, check the safety devices or any slightly damaged parts to ensure that they are in good working order. Make sure the moving parts are working correctly. All the parts must be correctly assembled and meet all the conditions required to ensure that the chainsaw works correctly. Any damaged safety devices and parts must be properly repaired or replaced immediately by a Customer Service workshop, unless there are instructions to the contrary in these operating instructions.

## Notes on working practice

**Kickback (Fig 7)**

**You can avoid accidents by not sawing with the tip of the guide bar as this may cause the saw to rear up suddenly.**

**Always use the complete safety equipment and clothes when working with the saw.**

Kickback is an upward and/or backward movement of the guide bar which can occur if the saw chain at the tip of the guide bar encounters an obstruction.

Make sure your work-piece is firmly secured. Use clamps to stop the work-piece slipping. This also makes it easier to operate the chainsaw with both hands.

Kickback causes the saw to behave uncontrollably and thus brings with a slack or blunt chain. A poorly sharpened chain increases the risk of kickback. Never saw above shoulder height.

## Tips on chain saw use

**Sawing up wood (Fig 6a, 6b)**

To saw up wood, please observe the safety regulations and proceed as follows: Make sure the wood to be sawed cannot slip. Clamp short pieces of wood in place before sawing. Saw only

wood or wooden objects. When sawing, make sure that no stones or nails are touched as these could be thrown out and damage the saw chain. Avoid bringing the running saw into contact with wire fences or the ground. When lopping off branches, support the chainsaw as far as possible and do not saw with the tip of the guide bar. Watch out for obstacles such as tree stumps, roots, ditches and hillocks as these could cause you to fall.

Position the chainsaw in such a way that your body is clear of the cutting attachment whenever the saw is running. Stand to the left of cut while bucking (Fig 6a).

Don't put pressure on the saw 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 the operator or some other object. If the rotating chain strikes some other object, a reactive force may cause the moving chain to strike the operator.

**Remember:**

The chainsaw must be running before it comes into contact with the wood.

To switch on: Press the safety lock-off and ON/OFF switch on. Place the lowest claw (Fig 6b) on the wood. Raise the chain saw by the rear grip and saw into the wood. Move the chain saw back a little and place the claw further down. Be careful when sawing splintered wood as pieces of wood may be ripped off.

## Wood under tension

Fig. 10a: Top side of under tension

Danger: Tree will rear up!

Fig. 10b: Bottom side of trunk under tension

Danger: Tree will move downwards!

Fig. 10c: Thick trunks and high tension

Danger: Tree will move suddenly and with immense force!

Fig. 10d: Both sides of trunk under tension

Danger: Tree will move sideways.

## Felling trees

To fell trees, observe all the safety regulations and proceed as follows:

The chain saw may be used to fell only trees which are smaller in diameter than the length of the motor still running. If the saw chain gets jammed, release it using a wooden wedge.

**Remember:**

**Danger zone:** Falling trees can bring down other trees with them. The danger zone is therefore twice the length of the tree being felled. (Fig, 11)

**Felling trees is dangerous and requires practice. If you are a beginner or inexperienced, do not try to teach yourself but seek professional training.** (Fig. 12)

**Falling direction:**

- First estimate the direction of fall, taking into account the centre of gravity of the crown and the wind direction. The chain saw must be running before it comes into contact with the wood. Switch on the chain saw. Saw an undercut in the tree in the direction of fall and then make a horizontal cut (back cut) on the side opposite to the undercut.
- Make the undercut: This will give the tree a direction and guidance.
- Check the direction of fall: If you have to correct the undercut, always re-cut over the entire width.
- Call now "Timber! "
- Only now make the back cut, which must be higher than the sole of the undercut. Insert wedges in time.
- Leave the bridge in place as it will function as a hinge. If you cut through the bridge, the tree will fall randomly.
- Fell the tree by driving a wedge into the back cut, not by sawing through it.

When the tree falls, step back and watch the crown.

Wait for the crown to stop swinging. Do not continue working under branches which have got stuck.

**Do not fell trees:**

- If you can longer distinguish details within the danger zone, e.g. owing to fog, rain, snow drifts or twilight.

- If the direction of fall cannot be reliably estimated owing to wind or gusts of wind. Felling work on sloping ground, black ice, frozen or dewy ground is safe only if you can get a firm foothold.

To fell the tree, you must drive a wedge into the back cut. When retreating after making the back cut, watch out for falling branches.

## **Maintenance and cleaning**

### **Always pull the plug out of the power socket before doing any work on the chainsaw!**

Keep the cooling vents on the motor housing clean and unobstructed at all times. Only the maintenance work described in these operating instructions may be carried out. Any other maintenance work must be carried out by your Customer Service. Do not modify the chain saw in any way as this could jeopardize its safety. Should the chainsaw fall despite our careful manufacturing and inspection procedures, have it repaired by an authorized Customer Service work-shop. In the event of any inquiries and spare parts orders, always quote the type designation and the parts number.

### **Change the guide bar** (Fig. 13)

- Release the lock knob and remove the cover (A).
- Take the saw chain and guide bar complete off the machine.
- Undo the fixing bolt (B) and replace the guide bar (C) with a new one.

### **Change the carbon brush** (Fig 14)

- Remove the housing by undo screws using a screwdriver.
- Disconnect the wires from each side off the carbon brush (A).
- Replace the carbon brush with a new one.

### **Change the chain wheel** (Fig 15)

- Release the lock knob and remove the cover.

- Remove the retaining ring (A) and chain wheel (B) from the shaft.
- Replace the chain wheel with a new one.

## Storage

This application should be stored in a dry and clean room and out of reach of children.

During extended periods of storage, during the winter for example, ensure that chainsaw is protected against corrosion and frost.

At the end of the season, or if the chainsaw is not to be used for longer than a month:

- Clean the application.
- Wipe over all metal surfaces with an oil-impregnated cloth to protect them from corrosion (non-resinous oil), or spray a fine coat of oil onto them from a can.
- Store the chainsaw with chain guard on.

## Technical Data

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Mains :	230V-50Hz
Power rating :	2200 W
Cutting length max. :	400 mm
Cutting speed :	14 m/s
Oil tank capacity :	150 ml
Chain brake time :	0.15 sec.
Sound level at work-place $L_{PA}$	85 dB(A)
	$K = 2.45$
Measured sound power level $L_{WA}$	105 dB(A)
Guaranteed sound power level $L_{WA}$	108 dB(A)
Vibration rear grip under load:	3.7 m/s <sup>2</sup>
Vibration front grip under load:	3.6 m/s <sup>2</sup>
	$K = 1.5 \text{ m/s}^2$
Weight :	4.8 kg

## Environment and recycling

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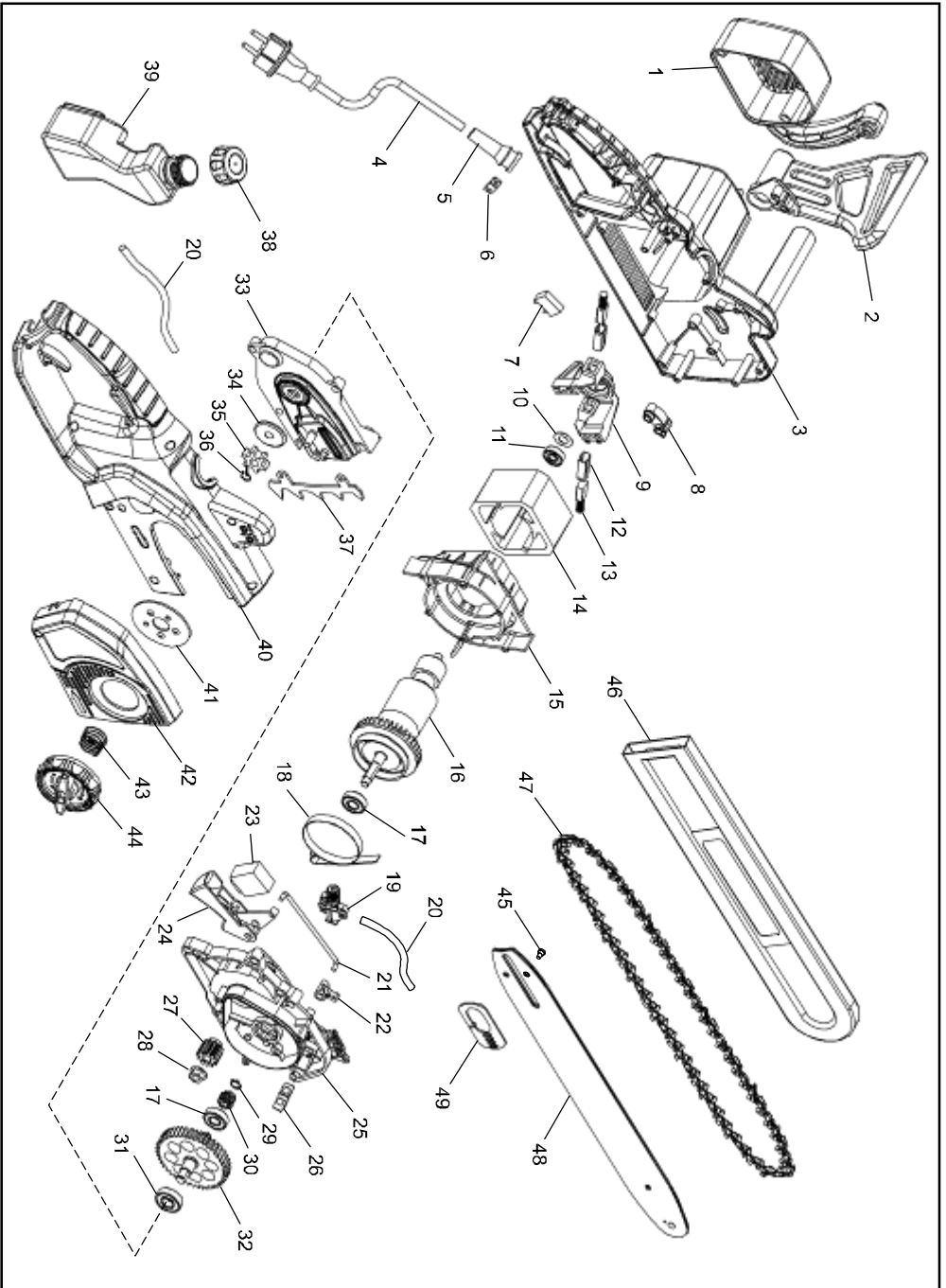
Electrical devices do not go into the domestic rubbish. Give devices, accessories and packaging to an eco-friendly recycling.

According to the European Directive 2002/96/EC on electrical and electronic scrap, electrical devices that are no longer serviceable must be separately collected and brought to a facility for an environmentally compatible recycling.

## Troubleshooting

Fault	Cause	Remedy
Motor does not run	No electricity	Check socket, cable and plug.
		Damaged cable: Have repaired by Customer Service. It is prohibited to patch the cable with insulating tape .
		Damaged switch have to be replaced by a Customer Service workshop.
	Chain brake	See section "chain brake" and "Releasing the chain brake"
	Running out of carbon brush	Change the carbon brush, ask a Customer Service workshop
Chain does not move	Chain brake	Check the chain brake, release if necessary.
Poor cutting performance	Blunt chain	Chain wrongly fitted
	Chain tension	Sharpen the chain
	Check that the chain is fitted correctly	Check the chain tension
Saw works only with difficulty	Chain tension	Check the chain tension
Chain jumps off sword		
Chain becomes hot	Chain lubrication	Check oil level
		Chain lubrication

# Explosion drawing





## Parts list

Pos.	Description
1	Ventilator housing
2	Front finger guard
3	Housing left section
4	Power cable
5	Cable protective sleeve
6	Cable clip
7	Capacitor
8	Safety switch lift level
9	Rear bearing seat
10	Spring washer
11	Ball bearing 608Z
12	Brush holder
13	Carbon brush
14	Stator
15	Bear seat front
16	Rotor
17	Ball bearing 6000Z
18	Chain brake
19	Oil pump complete
20	Oil pipe
21	Push rod
22	Connecting rod
23	On/Off switch
24	On/Off switch level
25	Transmission case complete
26	Safety switch
27	Driving gearing wheel
28	Nut M8
29	Retaining ring 8
30	Worm shaft
31	Ball bearing 6001Z
32	Driven gearing wheel complete
33	Driving housing
34	Dust resistance washer

Pos.	Description
35	Chain wheel
36	Retaining ring 10
37	Claw stop
38	Oil tank cap complete
39	Oil tank
40	Housing right section
41	Locking block complete
42	Guide bar cover
43	Spring
44	Chain tension knob complete
45	Screw
46	Chain cover
47	Saw chain
48	Guide bar
49	Locking block