

Ⓢ **Safety instructions**
Battery Pack
Please read and keep in a safe place.

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Ni-Cd / Ni-Mh

GB**General Power Tool Safety Warnings**

WARNING Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury. **Save all warnings and instructions for future reference.**

The Term "power tools" 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 that 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 adaptor 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 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 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 the 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, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards

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 the battery pack 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 reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** *Power tools are dangerous in the hands of untrained users.*
- e) **Maintain power tools. Check for misalignment or binding or 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.*
- 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.*

5) Service

- a) **Have your power tool services by a qualified repairperson using only identical replacement parts.** *This will ensure that the safety of the power tool is maintained.*

Additional safety instructions

We pay a great deal of attention to the design of every battery pack to ensure that we supply you with batteries which feature maximum power density, durability and safety. The battery cells have a wide range of safety devices. Each individual cell is initially formatted and its electrical characteristic curves are recorded. These data are then used exclusively to be able to assemble the best possible battery packs.

Despite all the safety precautions, caution must always be exercised when handling batteries. The following points must be obeyed at all times to ensure safe use.

Safe use can only be guaranteed if undamaged cells are used. Incorrect handling can cause cell damage.

Important: Analyses confirm that incorrect use and poor care are the main causes of the damage caused by high performance batteries.

Information about the battery

1. The battery pack supplied with your cordless tool is not charged. The battery pack has to be charged before you use the tool for the first time.
2. The battery pack does not reach its maximum capacitance until it has been charged and discharged approximately five times. Battery packs lose their charge even when they are not being used (Ni-Cd: approx. 20% per month, Ni-Mh: approx. 30% per month). You should therefore charge the batteries regularly before they suffer exhaustive discharge. The useful capacity of batteries will fall steadily if they are only ever recharged when partly discharged (memory effect).

Maintenance cycle: To discharge the battery, allow the tool to run without load until the performance clearly falls. Then wait 5 – 10 minutes before starting the charging process to recharge the cells fully.

Battery care

Ni-Cd batteries

- If you only use the tool every 1 – 2 months, you must ensure that the battery is discharged every time before you charge it (see above).
- If you use the tool less than every 1 – 2 months, carry out the maintenance cycle (see above) every 1 – 2 months.
- If you use the tool several times per month, the battery does not have to be discharged every time before you charge it – all you have to do is charge it. The battery pack must be completely discharged and then recharged every 1 – 2 months.

Ni-Mh batteries

- Ni-Mh batteries have less tendency to form a memory effect. If you only use the tool every 2 – 3 months, we nevertheless recommend that you discharge the battery every time before you charge it (see above).
- If you use the tool less than every 2 – 3 months, carry out the maintenance cycle (see above) every 2 – 3 months.
- If you use the tool several times a month you will avoid low discharge cycles. If you only discharge your battery to max. 80%, you should recharge the batteries more frequently. A maintenance cycle involving a full discharge and charge cycle is required every 2 – 3 months.

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Incorrect or no battery care will result in the crystallization of the active materials (memory effect) and it should be noted that loss of performance or defects caused by a lack of battery care are expressly excluded from the warranty.

1. Never use batteries which have been damaged by memory effects. Crystallites which have formed may puncture the internal separator and cause internal short circuits during charge/discharging or if they are subjected to mechanical stresses (vibrations, gentle shocks, etc.). There is a risk of explosion!
2. Batteries are subject to a natural ageing process (dependent on time and the number of cycles). The battery must be replaced at the latest when its capacity falls to just 80% of its capacity when new. Weakened cells in an aged battery pack are no longer capable of meeting the high power requirements and therefore pose a safety risk.
3. Do not throw battery packs into an open fire. There is a risk of explosion!
4. Do not ignite the battery pack or expose it to fire.
5. **Do not exhaustively discharge batteries.** Exhaustive discharge will damage the battery cells. The most common cause of exhaustive discharge is lengthy storage or non-use of partly discharged batteries. End the process as soon as the performance of the battery falls noticeably. Only place the battery in storage after it has been fully charged.
6. **Protect batteries and the tool from overloads.** Overloads will quickly result in overheating and cell damage inside the battery housing without this overheating actually being apparent externally.
7. **Avoid damage and shocks.** Replace batteries which have been dropped from a height of more than one meter or which have been exposed to violent shocks without delay, even if the housing of the battery pack appears to be undamaged. The battery cells inside the battery may have suffered serious damage. In this respect, please also read the waste disposal information.

Information on chargers and the charging process

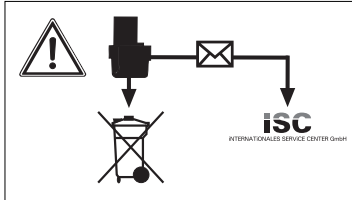
1. Please check the data marked on the rating plate of the battery charger. Be sure to connect the battery charger to a power supply with the voltage marked on the rating plate. Never connect it to a different mains voltage.
2. Protect the battery charger and its cable from damage and sharp edges. Have damaged cables repaired without delay by a qualified electrician.
3. Keep the battery charger, batteries and the cordless tool out of children's reach.

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4. Do not use damaged battery chargers.
5. Do not use the supplied battery charger to charge other cordless tools.
6. In heavy use the battery pack will become warm. Allow the battery pack to cool to room temperature before commencing with the charging.
7. **Do not over-charge batteries.** Do not exceed the maximum charging times. These charging times only apply to discharged batteries. Frequent insertion of a charged or partly charged battery (Ni-Mh batteries with a charge of more than 20%) will result in over-charging and cell damage. Do not leave batteries in the charger for days on end.
8. **Never use or charge batteries if you suspect that the last time they were charged was more than 12 months previously.** There is a high probability that the battery has already suffered dangerous damage (exhaustive discharge).
9. Do not use batteries which have suffered curvature or deformation or which show other non-typical symptoms during the charging process (gassing, cracking, hissing, etc.).

Protection from environmental influences

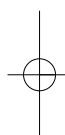
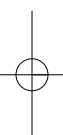
1. Wear suitable work clothes. Wear safety goggles.
2. **Protect your cordless tool and the battery charger from moisture and rain.** Moisture and rain can cause dangerous cell damage.
3. Do not use the cordless tool or the battery charger near vapors and inflammable liquids.
4. Use the battery charger and cordless tools only in dry conditions and an ambient temperature of 10-40°C.
5. Do not keep the battery charger in places where the temperature is liable to reach over 40°C. In particular, do not leave the battery charger in a car that is parked in the sunshine.
6. **Protect batteries from overheating.** Overloads, over-charging and exposure to direct sunlight will result in overheating and cell damage. Never charge or work with batteries which have been overheated – replace them immediately if possible.
7. Storage of batteries, battery chargers and cordless tools. Store the charger and your cordless tool only in dry places with an ambient temperature of 10-40°C. Store your battery in a cool, dry place in a temperature of 10-20°C. Protect them from humidity and direct sunlight. Only place fully charged batteries in storage.



Rechargeable batteries and cordless electric machines and tools contain materials that are potentially harmful to the environment. Never place any cordless electric machines or tools in your household refuse. When cordless electric machines or tools become defective or worn, remove the rechargeable batteries and return them to iSC GmbH (address: Eschenstrasse 6, D-94405, Germany). If the rechargeable batteries cannot be removed, return the complete cordless machine or tool. You can then be sure that the equipment will be correctly disposed of by the manufacturer.

When shipping or disposing of batteries and cordless tools, always ensure that they are packed individually in plastic bags to prevent short circuits and fires.

Do not lose this safety information.



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