

HILTI

SF(H) 18-A

Operating instructions

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Mode d'emploi

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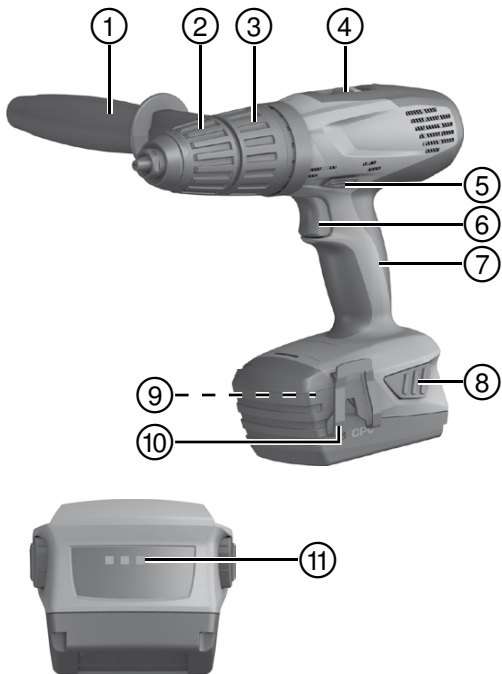
Manual de instrucciones

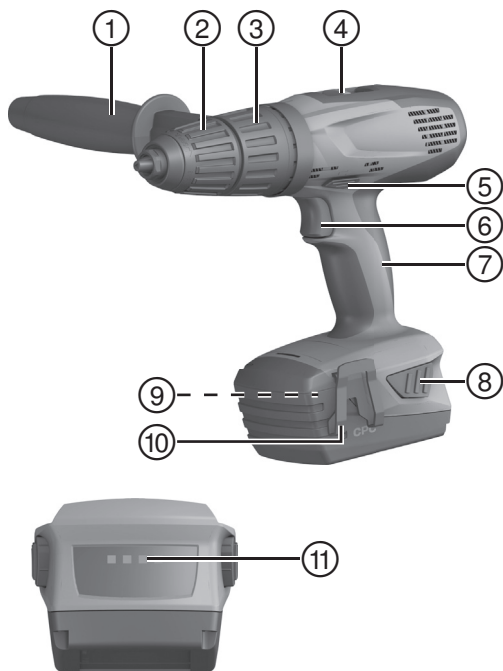
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Manual de instruções

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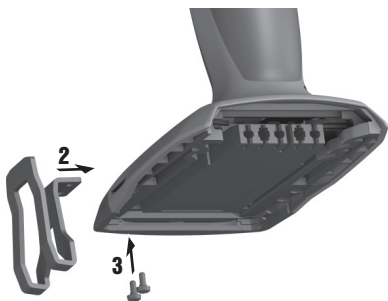


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ORIGINAL OPERATING INSTRUCTIONS

SFH 18-A cordless drill / driver

It is essential that the operating instructions are read before the power tool is operated for the first time.

Always keep these operating instructions together with the power tool.

Ensure that the operating instructions are with the power tool when it is given to other persons.

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Contents

1	General information	2
2	Safety instructions	3
3	Description	8
4	Technical data	10
5	Before use	11
6	Operation	12
7	Care and maintenance	14
8	Troubleshooting	15
9	Disposal	16
10	Manufacturer's warranty - tools	17

i These numbers refer to the illustrations. You can find the illustrations at the beginning of the operating instructions.

In these operating instructions, the designation "power tool" refers to the SFH 18-A cordless drill/driver or SFH 18-A cordless hammer drill/driver with battery fitted.

Product overview **i**

- ① Side handle
- ② Keyless chuck
- ③ Setting ring for torque, drilling and hammer drilling
- ④ 3-speed gear selector
- ⑤ Forward / reverse selector switch with transport lock
- ⑥ Control switch (with electronic speed control)
- ⑦ Grip

- ⑧ Release buttons with additional function (charge status display activation)

- ⑨ Type identification plate

- ⑩ Belt hook (optional)

- ⑪ Charge status and fault display (Li-ion battery)

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1 General information

1.1 Safety notices and their meaning

DANGER

Draws attention to imminent danger that will lead to serious bodily injury or fatality.

WARNING

Draws attention to a potentially dangerous situation that could lead to serious personal injury or fatality.

CAUTION

Draws attention to a potentially dangerous situation that could lead to slight personal injury or damage to the equipment or other property.

NOTE

Draws attention to an instruction or other useful information.

1.2 Explanation of the pictograms and other information

Warning signs



General warning

Obligation signs



Read the operating instructions before use.

Symbols



Direct current



Rated speed under
no load



Revolutions per
minute



Revolutions per
minute



Hammer drilling



Drilling without
hammering

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Location of identification data on the power tool

The type designation can be found on the type identification plate at the base of the power tool and the serial number on the side of the casing. Make a note of this data in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type:

Generation: 01

Serial no.:

2 Safety instructions

NOTE

The safety rules in section 2.1 contain all general safety rules for power tools which, in accordance with the applicable standards, must be listed in the operating instructions. Accordingly, some of the rules listed may not be relevant to this tool.

2.1 General power tool safety warnings

- a)  **WARNING**

Read all safety warnings and 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 tool” in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

2.1.1 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.

2.1.2 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.

2.1.3 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 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.

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2.1.4 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 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. 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.
- 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.

2.1.5 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.

2.1.6 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.

2.2 Drill safety warnings

- a) **Wear ear protectors when impact drilling.** Exposure to noise can cause hearing loss.
- b) **Use auxiliary handle(s), if supplied with the tool.** Loss of control can cause personal injury.
- c) **Hold power tools by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring.** Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.

2.3 Additional safety rules

2.3.1 Personal safety

- a) **Modification of the machine or tampering with its parts is not permissible.**
- b) **Hold power tool by insulated gripping surfaces, when performing an operation where the fastener may contact hidden wiring.** Fasteners contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
- c) **Keep the grips dry, clean and free from oil and grease.**

- d) **Improve the blood circulation in your fingers by relaxing your hands and exercising your fingers during breaks between working.**
- e) **Avoid touching rotating parts. Switch the power tool on only after bringing it into position at the workpiece.** Touching rotating parts, especially rotating insert tools, may lead to injury.
- f) **Activate the safety lock (forward / reverse switch in the middle position) before storing or transporting the power tool.**
- g) **The appliance is not intended for use by debilitated persons who have received no special training. Keep the appliance out of reach of children.**
- h) Dust from materials, such as paint containing lead, some wood species, concrete / masonry / stone containing silica, and minerals as well as metal, may be harmful. Contact with or inhalation of the dust may cause allergic reactions and/or respiratory or other diseases to the operator or bystanders. Certain kinds of dust are classified as carcinogenic such as oak and beech dust, especially in conjunction with additives for wood conditioning (chromate, wood preservative). Material containing asbestos must only be treated by specialists. **Where the use of a dust-extraction device is possible it shall be used. To achieve a high level of dust collection, use a suitable dust extractor. When indicated wear a respirator appropriate for the type of dust generated. Ensure that the workplace is well ventilated. Follow national requirements for the materials you want to work with.**
- i) **The user and any other persons in the vicinity must wear ANSI Z87.1-approved eye protection, a hard hat, ear protection, protective gloves and breathing protection while the machine is in use.**

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2.3.2 Careful use of the power tool

- a) **Secure the workpiece. Use clamps or a vice to secure the workpiece.** The workpiece is thus held more securely than by hand and both hands remain free to operate the power tool.
- b) **Check that the insert tools used are compatible with the chuck system and that they are secured in the chuck correctly.**
- c) **Large and heavy insert tools must only be operated in first gear.** There is otherwise a risk that the tool will be damaged when it is switched off or, under unfavorable conditions, the chuck might be detached.

2.3.3 Careful use of the cordless tool

- a) **Ensure the switch is in the off position before inserting battery pack.** Inserting the battery pack into power tools that have the switch on invites accidents.

- b) **Do not expose batteries to high temperatures and keep them away from fire.** This presents a risk of explosion.
- c) **Do not disassemble, squash or incinerate batteries and do not subject them to temperatures over 80°C.** This presents a risk of fire, explosion or injury through contact with caustic substances.
- d) **Avoid ingress of moisture.** Ingress of moisture may cause a short circuit, resulting in burning injuries or fire.
- e) **Observe the special guidelines applicable to the transport, storage and use of Li-ion batteries.**
- f) **Avoid short circuiting the battery terminals. Before inserting the battery in the tool, make sure that the battery terminals and the terminals in the tool are free from foreign objects.** Short circuiting the battery terminals presents a risk of fire, explosion and chemical burns.
- g) **Do not charge or continue to use damaged batteries (e.g. batteries with cracks, broken parts, bent or pushed-in and/or pulled-out contacts).**
- h) If the battery is too hot to touch it may be defective. **Place the tool in a location where it can be kept under observation, well away from flammable materials, and allow it to cool down. Contact Hilti Service after the battery has cooled down.**

2.3.4 Electrical safety

Before beginning work, check the working area (e.g. using a metal detector) to ensure that no concealed electric cables or gas and water pipes are present. External metal parts of the power tool may become live, for example, when an electric cable is damaged accidentally. This presents a serious risk of electric shock.

3 Description

3.1 Use of the product as directed

The SF 18-A is a hand-held, cordless drill/driver for driving and removing screws and for drilling in steel, wood and plastic.

The SFH 18-A is a hand-held, cordless hammer drill/driver for driving and removing screws, for drilling in steel, wood and plastic and for hammer drilling in lightweight concrete and masonry.

Do not use the battery as a power source for other unspecified appliances. To avoid the risk of injury, use only genuine Hilti accessories and insert tools. The power tool is designed for professional use and may be operated, serviced and maintained only by trained, authorized personnel. This personnel must be informed of any special hazards that may be encountered.

The power tool and its ancillary equipment may present hazards when used incorrectly by untrained personnel or when used not as directed.

3.2 Standard equipment includes:

- 1 Power tool
- 1 Side handle
- 1 Operating instructions

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NOTE

Approved accessories are available from your Hilti Center or can be ordered online at www.hilti.com.

3.3 Additional items required for operating the tool

A suitable battery of the specified type (see table in the Technical Data section) and a suitable battery charger from the C 436 series.

3.4 Charge state and overheating indicator display on the Li-ion battery

When the lithium-ion battery is in use, the charge status can be indicated by gently pressing one of the battery release buttons (press until resistance is felt - do not release the battery). The display on the rear of the battery provides the following information:

LEDs light constantly	LEDs blink	Charge status C
LED 1, 2, 3, 4	-	$C \geq 75 \%$
LED 1, 2, 3	-	$50 \% \leq C < 75 \%$
LED 1, 2	-	$25 \% \leq C < 50 \%$
LED 1	-	$10 \% \leq C < 25 \%$
-	LED 1	$C < 10 \%$
-	LED 1	The battery has overheated

NOTE

Indication of the charge status is not possible while the power tool is in operation or immediately after operation. If the battery charge status LEDs flash, please refer to the information given in the Troubleshooting section.

3.5 Power tool overloading and overheating indicator

The power tool is equipped with an electronic protection system to prevent overloading and overheating. The power tool switches itself off automatically in the event of overloading and overheating. After releasing the control switch, the power tool may not restart immediately when the switch is pressed again (while the power tool is cooling down).

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LEDs light constantly	LEDs blink	Power tool status
-	LED 1, 2, 3, 4	Power tool overloaded or overheated

4 Technical data

Right of technical changes reserved.

Power tool	SF 18-A	SFH 18-A
Rated voltage (DC voltage)	21.6 V	21.6 V
Weight of power tool	2.52 kg (5.56 lb)	2.58 kg (5.69 lb)
Dimensions (L x W x H)	248 mm (9.76") x 92 mm (3.62") x 244 mm (9.61")	265 mm (10.43") x 92 mm (3.62") x 244 mm (9.61")
Speed in 1st gear	0...370/min	0...370/min
Speed in 2nd gear	0...1,250/min	0...1,250/min
Speed in 3rd gear	0...2,140/min	0...2,140/min
Torque with tool set to drilling symbol (soft/flexible joint)	Max. 50 Nm (444 in/lbs)	Max. 50 Nm (444 in/lbs)
Torque range (15 settings)	2...12 Nm (12 in/lbs... 108 in/lbs)	2...12 Nm (12 in/lbs... 108 in/lbs)
Hammering speed when drilling in 3rd gear		39,000/min
Hammer drilling in masonry (max. length 100 mm)		∅ 4...12 mm (1/8" ... 1/2")
Keyless chuck clamping range	∅ 1.5...13 mm (1/16" to 1/2")	∅ 1.5...13 mm (1/16" to 1/2")

Power tool	SF 18-A	SFH 18-A
Drilling diameter range in wood (soft)	∅ 1.5...32 mm (1/16" to 1¼")	∅ 1.5...32 mm (1/16" to 1¼")
Drilling diameter range in wood (hard)	∅ 1.5...20 mm (1/16" to ¾")	∅ 1.5...20 mm (1/16" to ¾")
Drilling dia. range in metal	∅ 1.5...13 mm (1/16" to ½")	∅ 1.5...13 mm (1/16" to ½")

Battery	B 18/3.3 Li-Ion	B 18/2.6 Li-Ion (01)	B 18/2.6 Li-Ion (02)	B 18/5.2 Li-Ion	B 18/1.6 Li-Ion
Rated voltage	21.6 V	21.6 V	21.6 V	21.6 V	21.6 V
Capacity	3.3 Ah	2.6 Ah	2.6 Ah	5.2 Ah	1.6 Ah
Energy content	71.28 Wh	56.16 Wh	56.16 Wh	112.32 Wh	34.56 Wh
Weight	0.78 kg (1.72 lb)	0.78 kg (1.72 lb)	0.48 kg (1.06 lb)	0.78 kg (1.72 lb)	0.48 kg (1.06 lb)
No. of cells	12	12	6	12	6

5 Before use

5.1 Charging a previously used battery

Ensure that the outer surfaces of the battery are clean and dry before inserting the battery in the corresponding charger.

Read the operating instructions for the charger for further information about the charging procedure.

5.2 Inserting the battery

CAUTION

Before fitting the battery, check that the power tool is switched off and that the safety lock is engaged (forward/reverse switch in the middle position). Use only the Hilti batteries approved for use with this power tool.

- CAUTION A falling battery may present a risk of injury to yourself and others.**

Check that the battery is securely seated in the tool.

5.3 Removing the battery 3

5.4 Fitting and adjusting the side handle 4

DANGER

en Check that the clamping band is engaged in the groove provided on the power tool and that the side handle is tightened securely.

5.5 Transport and storage of batteries

Pull the battery out of the locked position (working position) and move it into the first latching position (transport position).

Observe national and international transport regulations when shipping batteries (transportation by road, rail, sea or air).

6 Operation

CAUTION

The tool may get hot during use. **Wear protective gloves.**

CAUTION

The power tool may suddenly swing to the side (rotate about its own axis) when drilling, hammer drilling or screwdriving. Always use the power tool with the side handle fitted and hold it securely with both hands.

CAUTION

To avoid injuries caused by the insert tool, wear protective gloves when changing insert tools.

6.1 Setting forward or reverse rotation 5

NOTE

The forward / reverse switch is used to select the direction of rotation of the drive spindle. An interlock prevents switching while the motor is running. The control switch is locked when the forward / reverse switch is in the middle position. Push the forward / reverse switch to the left (when the power tool is held in the working direction) to select forward rotation. Push the forward / reverse switch to the right (when the power tool is held in the working direction) to select reverse rotation.

6.2 Speed selection with the 3-speed gear selector 6

WARNING

Large and heavy insert tools must only be operated in first gear. There is otherwise a risk that the tool will be damaged when it is switched off or, under unfavorable conditions, the chuck might be detached.

NOTE

The mechanical 3-speed gear selector can be used to set the speed range required. Speed with a fully-charged battery: 1st gear: 0-370 /min., 2nd gear: 0-1250 /min or 3rd gear: 0-2140 /min.

6.3 Switching on / off

Speed of rotation can be controlled smoothly up to maximum speed by pressing the control switch slowly.

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6.4 Fitting the drill bit

NOTE

The connection end of the insert tool must be clean and lightly greased. Use Hilti grease as it is compatible with the tool's sealing system.

1. Insert the drill bit in the keyless chuck and then turn the chuck firmly by hand until several clicks are heard.
2. Check that the drill bit is held securely.

6.5 Removing the drill bit

1. Open the keyless chuck.
2. Pull the insert tool out of the chuck.

6.6 Drilling

CAUTION

Use clamps or a vice to secure the workpiece. The workpiece is thus held more securely than by hand and both hands remain free to operate the power tool.

1. Turn the torque and operating mode setting ring to the drilling symbol.
2. Move the forward / reverse switch to the "Forward" position.

6.7 Hammer drilling (SFH 18-A)

1. Turn the torque and operating mode setting ring to the hammer drilling symbol.
2. Move the forward / reverse switch to the "Forward" position.

6.8 Screwdriving

6.8.1 Fitting the bit holder / bit

1. Open the keyless chuck.
2. Insert the bit adapter in the keyless chuck and then turn the chuck firmly by hand until tight.

3. Check that the bit adapter is held securely (check by pulling).
4. Fit the bit in the bit holder.

6.8.2 Screwdriving

1. Turn the torque, drilling and hammer drilling setting ring to the required torque setting.
2. Set the forward / reverse switch to the desired direction of rotation.

6.8.3 Removing the bit / bit holder

1. Remove the bit from the bit holder.
2. Open the keyless chuck.
3. Remove the bit adapter.

6.9 Belt hook

CAUTION

Check that the belt hook is fitted securely before beginning work.

The belt hook allows the power tool to be attached to a belt worn by the operator. The belt hook can also be fitted to the other side of the power tool for use by left-handed persons.

7 Care and maintenance

WARNING

Repairs to the electrical section of the power tool may be carried out only by trained electrical specialists.

7.1 Care of the power tool

CAUTION

Keep the power tool, especially its grip surfaces, clean and free from oil and grease. Do not use cleaning agents which contain silicone.

Never operate the power tool when the ventilation slots are blocked. Clean the ventilation slots carefully using a dry brush. Do not permit foreign objects to enter the interior of the power tool. Clean the outside of the power tool at regular intervals with a slightly damp cloth. Do not use a spray, steam pressure cleaning equipment or running water for cleaning. This may negatively affect the electrical safety of the power tool.

7.2 Care of the Li-ion battery

NOTE

Battery performance drops at low temperatures.

NOTE

Store the battery in a cool and dry place.

In order to achieve maximum battery life, stop using the battery as soon as a significant drop in battery performance is noticed.

NOTE

- If use continues, further battery discharge will be stopped automatically before the battery cells suffer damage.
- Charge the batteries using the specified and approved Hilti battery chargers for Li-ion batteries.

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8 Troubleshooting

Fault	Possible cause	Remedy
The power tool doesn't run.	The battery is discharged or is not pushed all the way in.	The battery must be heard to engage with a double click or, respectively, needs to be charged.
	Electrical fault.	Remove the battery from the tool and contact Hilti Service.
The power tool doesn't run and all 4 LEDs blink.	The power tool has been overloaded.	Release the control switch and press it again.
	The overheating prevention cut-out has been activated.	Allow the power tool to cool down. Clean the ventilation slots.
The power tool doesn't run and 1 LED blinks.	The battery is discharged.	Change the battery and charge the empty battery.
	The battery is too hot or too cold.	Bring the battery to the recommended working temperature.
No hammering action.	The torque and operating mode setting ring are not set to the hammer drilling symbol.	Turn the torque and operating mode setting ring to the hammer drilling symbol.

Fault	Possible cause	Remedy
The on / off switch can't be pressed, i.e. the switch is locked.	The forward / reverse switch is in the middle position (transport lock engaged).	Push the forward / reverse switch to the left or right.
The battery runs down more quickly than usual.	Very low ambient temperature.	Allow the battery to warm up slowly to room temperature.
The battery doesn't engage with an audible double click.	The retaining lugs on the battery are dirty.	Clean the retaining lugs and push the battery in until it engages. Contact Hilti Service if the problem persists.
The power tool or the battery gets very hot.	Electrical fault.	Switch the tool off immediately, remove the battery and contact Hilti Service.
	The power tool has been overloaded (application limits exceeded).	Use the right power tool for the job (don't use a low-powered tool for heavy work).

9 Disposal

CAUTION

Improper disposal of the equipment may have serious consequences: the burning of plastic components generates toxic fumes which may present a health hazard. Batteries may explode if damaged or exposed to very high temperatures, causing poisoning, burns, acid burns or environmental pollution. Careless disposal may permit unauthorized and improper use of the equipment. This may result in serious personal injury, injury to third parties and pollution of the environment.

CAUTION

Dispose of defective batteries right away. Keep them out of reach of children. Do not disassemble or incinerate the batteries.

CAUTION

Batteries that have reached the end of their life must be disposed of in accordance with national regulations or returned to Hilti.



Most of the materials from which Hilti power tools or appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back your old power tools or appliances for recycling. Please ask your Hilti customer service department or Hilti representative for further information.

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10 Manufacturer's warranty - tools

Please contact your local Hilti representative if you have questions about the warranty conditions.

ETL listed to US and Canadian safety standards
Homologué ETL (conforme aux normes de sécurité américaines et canadiennes)
Producto homologado según normas de seguridad americanas y canadienses
Produto homologado de acordo com as normas de segurança americanas e canadianas



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