

HILTI

SFD 22-A

English



1 Information about the documentation

1.1 About this documentation

- Read this documentation before initial operation or use. This is a prerequisite for safe, trouble-free handling and use of the product.
- Observe the safety instructions and warnings in this documentation and on the product.
- Always keep the operating instructions with the product and make sure that the operating instructions are with the product when it is given to other persons.

1.2 Explanation of symbols used

1.2.1 Warnings

Warnings alert persons to hazards that may occur when handling or using the product. The following signal words are used in combination with a symbol:

	DANGER! Draws attention to an imminent hazard that will lead to serious personal injury or fatality.
	WARNING! Draws attention to a potential hazard that could lead to serious personal injury or fatality.
	CAUTION! Draws attention to a potentially dangerous situation that could lead to minor personal injury or material damage.

1.2.2 Symbols in the documentation

The following symbols are used in this document:

	Read the operating instructions before use
	Instructions for use and other useful information

1.2.3 Symbols in the illustrations

The following symbols are used in illustrations:

	These numbers refer to the corresponding illustrations found at the beginning of these operating instructions.
3	The numbering reflects the sequence of operations shown in the illustrations and may deviate from the steps described in the text.
	Item reference numbers are used in the overview illustration and refer to the numbers used in the key in the product overview section.
	This symbol is intended to draw special attention to certain points when handling the product.

1.3 Product-dependent symbols

1.3.1 Symbols on the product

The following symbols are used on the product:

	Drilling without hammer action
/min	Revolutions per minute
n_0	Rated speed under no load
	Direct current (DC)

1.4 Product information

Hilti products are designed for professional use and may be operated, serviced and maintained only by trained, authorized personnel. This personnel must be informed of any particular hazards that may be encountered. The product and its ancillary equipment can present hazards if used incorrectly by untrained personnel or if used not in accordance with the intended use.

The type designation and serial number are stated on the rating plate.

- ▶ Write down the serial number in the table below. You will be required to state the product details when contacting Hilti Service or your local Hilti organization to inquire about the product.

Product information

Type:	SFD 22-A
Generation:	01
Serial no.:	

1.5 Declaration of conformity

We declare, on our sole responsibility, that the product described here complies with the applicable directives and standards. A copy of the declaration of conformity can be found at the end of this documentation.

The technical documentation is filed and stored here:

Hilti Entwicklungsgesellschaft mbH | Tool Certification | Hiltistrasse 6 | 86916 Kaufering, Germany

2 Safety

2.1 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.

Work area safety

- ▶ **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- ▶ **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.
- ▶ **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

Electrical safety

- ▶ **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.
- ▶ **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.
- ▶ **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- ▶ **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.
- ▶ **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.
- ▶ **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.

Personal safety

- ▶ **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.
- ▶ **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.
- ▶ **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to 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.
- ▶ **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.
- ▶ **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- ▶ **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.

- ▶ **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.

Power tool use and care

- ▶ 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.
- ▶ **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.
- ▶ **Disconnect 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.
- ▶ **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.
- ▶ **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.
- ▶ **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- ▶ **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.

Battery tool use and care

- ▶ **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.
- ▶ **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- ▶ **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.
- ▶ **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.

Service

- ▶ **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 Additional safety precautions for screwdrivers

Personal safety

- ▶ Only use the product if it is in perfect working order.
- ▶ Never tamper with or modify the tool in any way.
- ▶ Use the auxiliary grip supplied with the tool. Loss of control can cause personal injury.
- ▶ Always hold the power tool with both hands on the grips provided. Keep the grips clean and dry.
- ▶ Hold the power tool by the insulated gripping surfaces when performing an operation where the accessory tool may come into contact with concealed wiring. If the accessory tool comes into contact with a live wire, metal parts of the power tool may also become live, causing the operator to receive an electric shock.
- ▶ Avoid touching rotating parts – risk of injury!
- ▶ Wear suitable protective glasses, a hard hat, ear protection, protective gloves and light respiratory protection while using the tool.
- ▶ Wear protective gloves also when changing the accessory tool. Touching the accessory tool presents a risk of injury (cuts or burns).
- ▶ Wear eye protection. Flying fragments present a risk of injury to the body and eyes.
- ▶ Before starting work, check the hazard class of the dust that will be produced when working. Use an industrial vacuum cleaner with an officially approved protection class in compliance with the locally applicable dust protection regulations. Dust from materials such as lead-based paint, certain types of wood and concrete/masonry/stone containing quartz, minerals or metal may be harmful to health.
- ▶ Make sure that the working area is well ventilated and, where necessary, wear a respirator appropriate for the type of dust generated. Contact with or inhalation of dust may cause allergic reactions and/or respiratory or other diseases to the operator or bystanders. Certain kinds of dust, such as oak and beech

dust, are classified as carcinogenic, especially in conjunction with additives for treating wood (chromate, wood preservative). Materials containing asbestos may only be handled by specialists.

- ▶ Take breaks between working and do physical exercises to improve the blood circulation in your fingers. Exposure to vibration during long periods of work can lead to disorders of the blood vessels and nervous system in the fingers, hands and wrists.

Electrical safety

- ▶ Before starting work, check the working area for concealed electric cables or gas and water pipes. If you damage an electric cable accidentally, external metal parts of the power tool may become live and present a risk of electric shock.

Careful handling and use of power tools

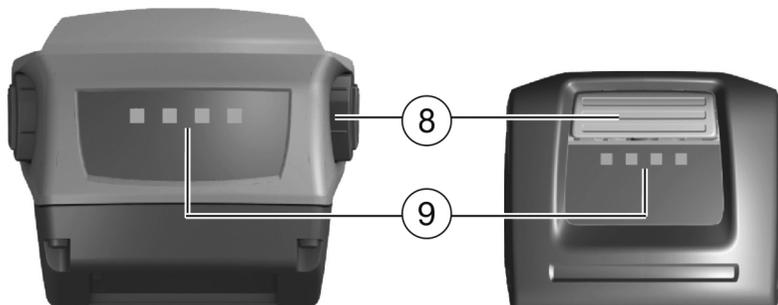
- ▶ Switch the power tool off immediately if the accessory tool jams. The power tool may go off course and veer to the side.
- ▶ Wait until the power tool has come to a complete stop before setting it down.

2.3 Careful handling and use of batteries

- ▶ Observe the special guidelines applicable to the transport, storage and use of lithium-ion batteries.
- ▶ Do not expose batteries to high temperatures, direct sunlight or fire.
- ▶ Do not take apart, squash or incinerate batteries and do not subject them to temperatures over 80 °C.
- ▶ Do not attempt to charge or continue to use damaged batteries.
- ▶ If the battery is too hot to touch, it may be defective. In this case, place the power tool in a non-flammable location, well away from flammable materials, where it can be kept under observation and left to cool down. Contact **Hilti** Service after the battery has cooled down.

3 Description

3.1 Product overview



- | | |
|----------------------------------------------------|-----------------------------------------------------------------------|
| ① Hex socket with locking sleeve | ⑥ Control switch (with electronic speed control) |
| ② Torque and drilling mode selector ring | ⑦ Lamp |
| ③ Gear selector switch | ⑧ Belt hook (optional) |
| ④ Forward/reverse selector switch with safety lock | ⑨ Release buttons (also used to activate the charge status indicator) |
| ⑤ Grip | ⑩ Charge-status and fault indicator (Li-ion battery) |

3.2 Intended use

The product described is a hand-held cordless drill/driver. It is designed for driving and removing screws and for drilling in steel, wood and plastic.

- ▶ Use only **Hilti** Li-ion batteries of the B22 series with this product.
- ▶ Use only the **Hilti** battery chargers of the C4/36 series for these batteries.

3.3 Items supplied

Drill / driver, operating instructions.

4 Technical data

4.1 Rotary hammer

	SFD -22A
Rated voltage	21.6 V
Weight in accordance with EPTA procedure 01	1.7 kg
Speed in 1st gear	0 /min ... 600 /min
Speed in 2nd gear	0 /min ... 1,800 /min
Torque (max.)	28 Nm
Torque adjustment	1.5 Nm ... 10 Nm

4.2 Noise and vibration information

	SFD -22A
Sound power level L_{WA}	80 dB
Screwdriving without hammer action a_h	1 m/s ²
Uncertainty for screwdriving without hammer action (K)	1.5 m/s ²
Drilling in metal $a_{h,D}$	21 m/s ²
Uncertainty for screwdriving without hammer action drilling in metal (K)	1.5 m/s ²

5 Operation

5.1 Preparations at the workplace



CAUTION

Risk of injury! Inadvertent starting of the product.

- ▶ Remove the battery before making any adjustments to the power tool or before changing accessories.

Observe the safety instructions and warnings in this documentation and on the product.

5.1.1 Inserting the battery



1. Push the battery into the battery holder until it engages with an audible click.
2. Check that the battery is seated securely.

5.1.2 Removing the battery



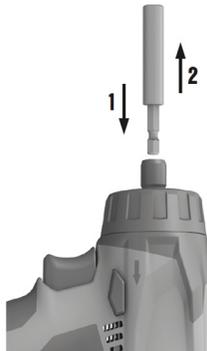
1. Press the release buttons on the battery.
2. Pull the battery out toward the rear.

5.1.3 Fitting the accessory tool



Note

The power tool has a 1/4" hex socket with locking sleeve as a chuck for various accessory tools.



1. Set the forward/reverse switch to the middle position or remove the battery from the power tool.
2. Push the locking sleeve on the hex socket forward.

- ◀ Hold the locking sleeve in this position.
- 3. Push the accessory tool into the chuck as far as it will go and release the locking sleeve.
- 4. Check that the accessory tool is held securely.

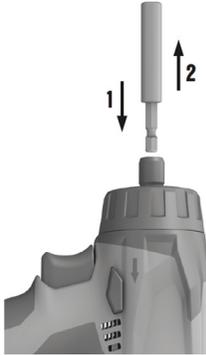
5.1.4 Removing the accessory tool



CAUTION

Risk of injury. The accessory tool may be hot or have sharp edges.

- ▶ Wear protective gloves when using the power tool and when changing accessory tools.



1. Set the forward/reverse switch to the middle position or remove the battery from the power tool.
2. Push the locking sleeve on the hex socket forward.
 - ◀ Hold the locking sleeve in this position.
3. Pull the accessory tool out of the chuck and release the locking sleeve.

5.1.5 Fitting the belt hook (optional)



WARNING

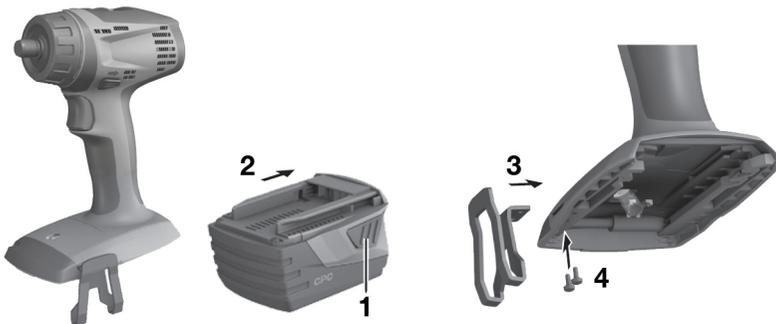
Risk of injury. A falling power tool may present a risk of injury to yourself and others.

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



Note

The belt hook allows the power tool to be attached to a belt worn by the operator. The belt hook can be fitted to allow attachment on the left or right side of the body.



- ▶ Fit the belt hook.

5.2 Types of work

Warning! Risk of damage!

- ▶ Operation of the direction of rotation and/or function selector switch while the tool is running may result in damage to the tool.
- ▶ Do not operate this switch while the tool is running.

Observe the safety instructions and warnings in this documentation and on the product.

5.2.1 Switching on

- ▶ Press the control switch.



Note

Speed can be controlled steplessly right up to maximum by varying how far the control switch is pressed in.

5.2.2 Switching off

- ▶ Release the control switch.

5.2.3 Setting forward or reverse rotation



Note

An interlock prevents switching while the motor is running.

The control switch is locked when the forward/reverse switch is in the middle position (safety lock).



- ▶ Set the forward/reverse switch to the desired direction of rotation.

5.2.4 Selecting the gear



- ▶ Select the gear.

5.2.5 Drilling

1. Set the torque and operating mode selector ring to the  symbol.
2. Set the forward/reverse switch to the “forward” position.

5.2.6 Screwdriving

1. Set the torque and operating mode selector ring to the required torque.
2. Set the forward/reverse switch to the desired direction of rotation.

6 Transport and storage of cordless tools

Transport



CAUTION

Inadvertent starting during transport. Uncontrolled starting during transport may occur if the battery is fitted, thereby resulting in damage to the tool.

- ▶ Always remove the battery before transporting the tool.

- ▶ Remove the battery.
- ▶ Transport the tool and batteries individually packaged.
- ▶ Never transport batteries in bulk form (loose, unprotected).
- ▶ Check the tool and batteries for damage before use after long periods of transport.

Storage



CAUTION

Inadvertent damage caused by defective battery. A leaking battery may damage the tool.

- ▶ Always remove the battery before storing the tool.

- ▶ Store the tool and batteries in a place that is as cool and dry as possible.
- ▶ Never store batteries in direct sunlight, on heating units or behind a window pane.
- ▶ Store the tool and batteries in a place where they cannot be accessed by children or unauthorized persons.
- ▶ Check the tool and batteries for damage before use after long periods of storage.

7 Troubleshooting

If the trouble you are experiencing is not listed in this table or you are unable to remedy the problem by yourself, please contact **Hilti Service**.

7.1 Troubleshooting

Trouble or fault	Possible cause	Action to be taken
The power tool does not work.	The battery is not fully inserted.	▶ Push the battery in until it engages with an audible double click.
	Low battery.	▶ Change the battery and charge the empty battery.
	Electrical fault.	▶ Remove the battery from the tool and contact Hilti Service .
The power tool does not work and one LED flashes.	Low battery.	▶ Change the battery and charge the empty battery.
	The battery is too hot or too cold.	▶ Bring the battery to the recommended operating temperature.
The on/off button cannot be pressed, i.e. the button is locked.	The forward/reverse selector switch is in the middle position.	▶ Push the forward/reverse switch to the left or right.
LED 1 flashes	Low battery.	▶ Change the battery and charge the empty battery.

Trouble or fault	Possible cause	Action to be taken
LED 1 flashes	The tool is overloaded (application limits exceeded).	► Pay attention to the power and performance rating of the product before using it, i.e. check its suitability for the job on hand. See the "Technical data" section.
The battery runs down more quickly than usual.	Very low ambient temperature.	► Allow the battery to warm up slowly to room temperature.
The battery does not 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.

8 Disposal



WARNING

Risk of injury. Hazards presented by improper disposal.

- Improper disposal of the equipment may have the following 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.
- Dispose of defective batteries right away. Keep them out of reach of children. Do not disassemble or incinerate the batteries.
- 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** tools and appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, your old tools, machines or appliances can be returned to **Hilti** for recycling. Ask **Hilti** Service or your Hilti representative for further information.

In accordance with the European Directive on waste electrical and electronic equipment and its implementation in conformance with national law, electric tools or appliances that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.



- Disposal of electric tools or appliances together with household waste is not permissible.

9 Manufacturer's warranty

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



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