

## Installing and operating the SF-ASD 16 cordless screwdriver

User manual

# User manual

## Installing and operating the SF-ASD 16 cordless screwdriver

107850, revision 00

2018-03-12

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This user manual is valid for:

Designation	Order No.
SF-ASD 16	1200294
SF-ASD 16 SET	1200295
SF-ASD 16 / CHARGER	1200296
SF-ASD 16 / ACCU, 1,5 AH	1200297

107850\_en\_00

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# 1 For your safety



**WARNING:** Read all safety notes, instructions, illustrations and technical data provided in this manual for a power tool. Non-compliance with the following instructions can cause electric shock, fire and/or serious injury.



**NOTE:** Read this user manual carefully and keep it for future reference. For your own safety, observe the following safety notes to prevent personal injury or damage to property.

## 1.1 Marking of warning notes



This symbol indicates hazards that could lead to personal injury.

There are three signal words indicating the severity of a potential injury.

### **DANGER**

Indicates a hazard with a high risk level. If this hazardous situation is not avoided, it will result in death or serious injury.

### **WARNING**

Indicates a hazard with a medium risk level. If this hazardous situation is not avoided, it could result in death or serious injury.

### **CAUTION**

Indicates a hazard with a low risk level. If this hazardous situation is not avoided, it could result in minor or moderate injury.



This symbol together with the **NOTE** signal word warns the reader of actions that might cause property damage or a malfunction.



Here you will find additional information or detailed sources of information.

## 1.2 General safety notes for power tools

The term “power tool” used in the safety notes refers to both corded power tools (with mains operation) and battery-powered, cordless power tools (without mains operation).

### 1.2.1 Workplace safety

- 1 Keep your work area clean and well lit. Clutter or dark work areas can lead to accidents.
- 2 Do not use the power tool in a potentially explosive atmosphere that contains flammable liquids, gases or dust. Power tools produce sparks that may ignite dust or vapors.
- 3 Keep children and other people away from the power tool during its operation. If you get distracted, you can lose control of the power tool.
- 4 Only operate the power tool in dry and clean rooms.

### 1.2.2 Electrical safety

- 1 The charger connector must fit in the socket. The connector may not be modified in any way. Do not use adapter connectors in conjunction with grounded power tools. Unmodified connectors and matching sockets reduce the risk of electric shock.
- 2 Avoid body contact with grounded surfaces such as pipes, radiators, cookers, and refrigerators. There is an increased risk of electric shock when your body is grounded.
- 3 Keep the power tools away from rain or moisture. Water penetrating a power tool will increase the risk of electric shock.
- 4 Do not use the connecting cable for purposes other than intended, in order to carry or hang up the power tool or for removing the connector from the socket. Keep the connecting cable away from heat, oil, sharp edges and moving device parts. Damaged or entangled connecting cables increase the risk of electric shock.

### 1.2.3 Safety of persons

- 1 You should always be careful and act responsibly when working with a power tool. Do not use a power tool when fatigued or under the influence of drugs, alcohol or medication. A moment of inattention while operating a power tool may result in serious injury.
- 2 Always wear personal protective equipment and safety glasses. Depending on the type and application of the power tool, the use of personal protective equipment such as dust mask, skid-proof safety shoes, hard hat, or hearing protection reduces the risk of injury.

- 3 Prevent the device from starting up unintentionally. Make sure that the power tool is switched off before connecting to the power supply and/or battery, picking up or carrying the tool. Carrying the power tool with your finger on the switch or energizing the power tool when the switch is activated can lead to accidents.
- 4 Remove all adjustment tools or wrenches before switching on the power tool. A tool or wrench left attached to a rotating part of the power tool may cause injury.
- 5 Take care to keep a normal body posture. Ensure that you have a stable standing position and keep your balance at all times. This enables better control of the power tool in unexpected situations.
- 6 Wear suitable clothing. Do not wear loose clothing or jewelry. Keep hair and clothing away from moving parts. Loose clothing, jewelry or long hair can get caught in moving parts.
- 7 If it is possible to install dust extraction and collection equipment, it needs to be connected and properly used. Use of a dust extraction system may reduce hazards due to dust.
- 8 Do not lull into a false sense of security or disregard the safety rules for power tools, even if you are familiar with the power tool after its frequent use. Careless handling can cause serious injury within fractions of a second.

### 1.2.4 Using and maintaining power tools

- 1 Do not overload the power tool. Use the right power tool for your work. Using the suitable power tool, your work will be better and safer in the specified range of performance.
- 2 Do not use a power tool with a defective switch. A power tool that can no longer be switched on or off presents a hazard and needs to be repaired.
- 3 Remove the connector from the socket and/or remove the detachable battery before making device settings, replacing insertion tools or putting away the power tool. This precautionary measure prevents the unintentional start of the power tool.
- 4 Store idle power tools out of the reach of children. Do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous if they are used by inexperienced persons.
- 5 Maintain your power and insertion tools carefully. Check whether moving parts function properly and do not jam, whether parts are broken or so damaged that the functioning of the power tool is impaired. Have any damaged parts repaired before using the power tool. Many accidents are linked to poorly maintained power tools.

- 6** Use the power and insertion tools, etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of power tools for other than the intended purpose may result in hazardous situations.
- 7** Keep all grips and gripping surfaces dry, clean and free from oil and grease. Slippery grips and gripping surfaces do not allow safe operation and control of the power tool in unexpected situations.
- 8** Hold the power tool on the insulated gripping surfaces, when working in areas where hidden power lines or the own connecting cable could be hit by the screw. The screw contacting a live wire may make exposed metal parts of the power tool live and cause electric shock.

## **1.3 Qualification of users**

This user manual is directed at those persons who are familiar with the relevant safety concepts for handling electrical machines. Only persons who can commission and operate the device are entitled to use the device, as well as identify the hazards.

## **1.4 Intended use**

The SF-ASD 16 cordless screwdriver is suitable for drilling holes up to a diameter of 5 mm and for loosening or fastening screws.

## **1.5 Safety notes for the product**

### **1.5.1 Radio interference**

This is a Class A item of equipment. When used in residential areas, the device may cause radio interference. In this case, the operator is obligated to implement appropriate measures.

### **1.5.2 Additional safety notes for the use of the product**

- 1** To ensure operational safety of the SF-ASD 16, installed covers or screws may not be removed. Opening of the device should therefore absolutely be avoided.
- 2** Do not clean the plastic parts with solvents. Solvents such as alcohol, ammonia, petrol, benzene, oils, carbon tetrachloride, thinner etc. may cause the plastic parts to burst and be damaged. Wipe the plastic parts using a cloth slightly moistened with soapy water and avoid humidity penetrating into the device.

## 1.6 Additional safety regulations for the use of batteries and charger

- 1 Only use the supplied charger to charge the batteries. Do not use a switch-mode power supply or generator.
- 2 Avoid covering the ventilation slots or any blockage problems.
- 3 Do not short circuit the battery.
- 4 Do not allow conductive material to touch battery terminals.
- 5 Avoid storing the battery in a box together with other metal objects such as nails, coins etc.
- 6 Never expose the battery to water or rain. A battery short circuit may cause a strong direct current and overheat, possibly resulting in burns and personal injury.
- 7 Do not store the charger and the battery at places where the temperature may exceed +50°C (122°F).
- 8 Do not burn the battery, even if it is heavily damaged or can no longer be charged. The battery can explode when thrown into fire.
- 9 Do not shake, throw or drop the battery.
- 10 Never store the battery in a container of any type. During charging the battery needs to be placed in a well ventilated environment.
- 11 Do not leave the Li-ion battery uncharged for a long period. Approximately every three to six months, recharge the battery to 40 % ... 80 % of its charging capacity before storage.
- 12 Li-ion batteries are sensitive to high temperatures and should therefore be stored in a cool and dry environment protected from direct light. The optimum temperature for storage and operation is less than +25°C (77°F).
- 13 To extend the battery life, the lithium-ion battery is provided with a function that stops the current output. In the examples described below, this may cause the motor to stop, even when the switch is pressed. This is not a malfunction, but the result of this protective function.
  - If a battery is nearing the end of its capacity, the motor will stop.
  - If the cordless screwdriver is subject to overload, the motor can be stopped. In this case, release the switch and eliminate the cause of overload or wait until the motor is released again by the overload protection. You can then continue working.
  - When the battery is overheated in the case of overload operation, the motor can be stopped. In this case, stop use of this battery and let it cool down. You can then continue working.

This product has been designed with low-voltage protection, protecting the tool from deep charge and extending the battery life.

## 2 Charger and battery

SF-ASD 16/CHARGER, 1200296

SF-ASD 16/ACCU 1,5 AH, 1200297



Charger and battery for the SF-ASD 16

### 2.1 Using the charger



**CAUTION:** To reduce the risk of injury, only use the batteries (1200297) and the matching charger (1200296) provided by Phoenix Contact. Other batteries may burst and therefore lead to injury and other damages.



**NOTE:** Before using the charger, please read the instructions and warnings carefully, including those on the battery and charger.

- 1 Only use the charger in dry rooms.
- 2 To reduce the risk of damage to the connector and cable, pull the connector itself and not the cable when disconnecting the charger from the power supply.
- 3 Only use accessories recommended or sold by the manufacturer. Otherwise there is a risk of fire, electric shock or personal injury.
- 4 Make sure that the connection cable is laid in such a way that no one can walk on it or trip over it and that damages resulting therefrom are prevented.
- 5 Do not operate the charger with a damaged cable or connector. Replace them immediately if damaged.
- 6 Do not operate the charger if it has received a sharp blow, been dropped or damaged in any way. Replace the charger.
- 7 To avoid the risk of electric shock, remove the connector from the socket before carrying out maintenance or cleaning tasks.
- 8 Do not disassemble the charger or battery.

### 2.2 Using the battery

- 1 Only operate the SF-ASD 16 with the batteries intended for it. The use of other batteries can cause the risk of injury and fire.
- 2 When the battery is not in use, keep it away from other metal objects. Paper clips, coins, keys, nails, screws or other small metal objects may establish connection between the battery terminals. Short-circuiting the battery may result in burns or fire.
- 3 Under abusive conditions, liquid may be ejected from the battery. In this case, avoid coming into contact with the battery. In the event of accidental contact, flush with water. In case of contact with eyes, seek medical attention immediately. Leaking battery liquid may cause skin irritations and burns. Contact with eyes may result in impaired vision up to total loss of vision.



The battery will not be charged if the battery temperature is too hot or too low. The red indicator flashes and the green indicator lights up. If the temperature is between 0°C and +40°C, the charging process starts automatically.



A new battery or a battery not recently used reaches full capacity after four to five charging cycles. When charging a battery that has not been used for a longer period of time, the full capacity may not be reached. This is a normal process and does not present a problem. Full capacity is reached after several discharging and charging processes.



**NOTE:** After charging the battery three times in a row, allow the charger to cool for at least one hour.

## 2.3 Charging process

### Removing/inserting the battery

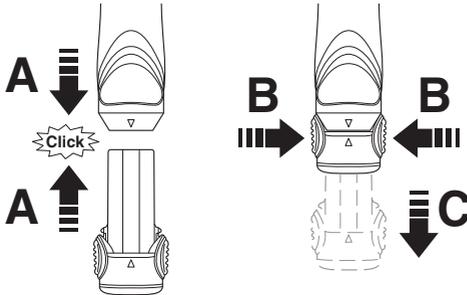


Figure 2-1 Removing/inserting the battery

- Do not remove the battery during operation.
- Press the battery release latches (**B**). Remove the battery. (**C**)
- When reinserting the battery into the device, pay attention to the position of the arrows: the arrows on the battery and the device should be lined up facing each other. Turn the battery, if required. The battery (**A**) can then be easily inserted. Thereafter press the battery lightly until it locks into place.

### Charging the battery via the charger

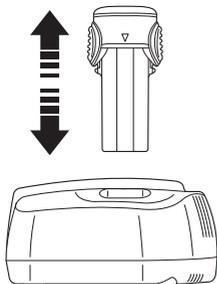


Figure 2-2 Inserting/removing the battery

- Connect the charger to the power supply.
- Insert the battery into the charger so that it aligns with the grooves and apply light pressure until it locks into place.
- Do not use force if the battery cannot be easily inserted. Turn the battery so that the release latches are facing to the right and left and the arrow is pointing towards you. The charger should be positioned as illustrated in the figure above.

- Once the battery is locked into place, the indicator lights up red and indicates that charging is in progress. After charging has been completed, the LED indicator lights up green.
- Remove the connector from the socket and remove the battery from the charger when the charging process is finished.

Keep the contacts on the charger and battery clean. For optimum service life, recharge the battery directly after use. The charged battery can be left in the charger. However, battery life is extended when removing it.

## 2.4 Indicators on the charger

Table 2-1 Indicators on the charger

Red	Green	Meaning
–	On	Battery charged
On	–	Battery is charging
Flashing	On	Temperature too high or low
On	On	Battery or charger defective

## 3 Operation



Figure 3-1 SF-ASD 16

- 1 Bit holder 1/4"
- 2 Torque adjustment (1 ... 16, see page 15: "Torque adjustment" table). Use level 16:  for drilling and loosening screws.
- 3 Arrow to indicate the torque level set
- 4 Gear select switch: 1st gear 0 min<sup>-1</sup> ... 220 min<sup>-1</sup> / 2nd gear 0 min<sup>-1</sup> ... 450 min<sup>-1</sup>
- 5 Mode select switch (start, change the direction of rotation)
- 6 Safety lock
- 7 Battery release latch

### 3.1 Inserting a bit

- Insert the bit into the bit holder.
- To remove the bit, pull it out of the holder.

## 3.2 Torque adjustment



Figure 3-2 Torque adjustment

The torque can be set according to the set gear using the torque adjustment ring **1**. The arrow **2** is pointing towards the selected torque level. There are 16 torque adjustment options. Select the appropriate adjustment level depending on your application.

The torque values specified in the table below are reference values. The torques actually achieved may be slightly different. However, the reference values are an important aid, even if there are slight deviations.

Table 3-1 Torque adjustment table

	<b>Gear 1 - 220 min<sup>-1</sup></b>	<b>Gear 2 - 450 min<sup>-1</sup></b>
1	0.13 Nm	0.12 Nm
2	0.21 Nm	0.21 Nm
3	0.28 Nm	0.29 Nm
4	0.36 Nm	0.38 Nm
5	0.44 Nm	0.47 Nm
6	0.52 Nm	0.56 Nm
7	0.60 Nm	0.65 Nm
8	0.68 Nm	0.74 Nm
9	0.75 Nm	0.82 Nm
10	0.83 Nm	0.91 Nm
11	0.91 Nm	1.00 Nm
12	0.99 Nm	1.09 Nm
13	1.07 Nm	1.18 Nm

	<b>Gear 1 - 220 min<sup>-1</sup></b>	<b>Gear 2 - 450 min<sup>-1</sup></b>
14	1.16 Nm	1.28 Nm
15	1.25 Nm	1.38 Nm
16	4.33 Nm	2.74 Nm

### 3.3 Using the mode select switch

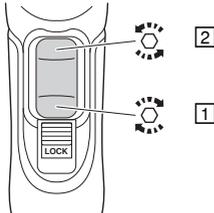


Figure 3-3 Mode select switch

- Using the mode select switch, you can start operation and simultaneously determine the rotation direction of the device, either “forward” 1 or “reverse” 2.

### 3.4 Using the safety lock

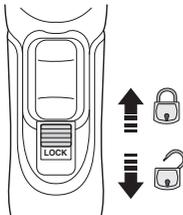


Figure 3-4 Safety lock

- Push the switch upwards to activate the safety lock. In this way, you protect the SF-ASD 16 against unintentional use. Press the switch downwards to deactivate the safety lock.

#### Bit lock

When activating the safety lock, the bit is secured against twisting at the same time. The SF-ASD 16 can also be used as a hand screwdriver (up to 24.5 Nm).

In this case, the drive shaft has a small amount of clearance. However, this is not a malfunction or damage.

### 3.5 Changing the operation mode from straight grip to pistol grip

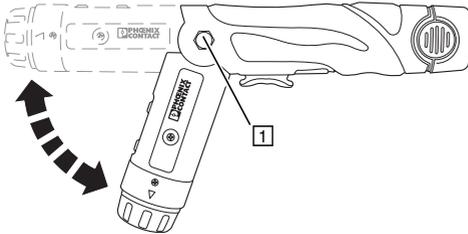


Figure 3-5 Changing the mode of operation

The SF-ASD 16 provides a patented mechanism, enabling you to easily change between the straight grip and pistol grip operation mode.

- As shown in the figure above, bend the device at the articulated joint **1** to change the mode of operation.

## 4 Service and disposal

### 4.1 Service

Only have your power tool repaired by qualified service personnel and only with the original spare parts. Do not repair the device yourself. Incorrect operation or modifications to the device can endanger your safety or damage the device. This will ensure that the safety of the power tool is maintained. If the device is defective, please contact Phoenix Contact.

### 4.2 Disposal



The device contains valuable recyclable materials, which should be utilized. Dispose of the cordless screwdriver and charger separately from other waste, i.e., via specialized companies or appropriate collection sites in accordance with international laws.



Dispose of the battery pack separately from other waste via appropriate collection sites.

## 5 Appendix

### 5.1 Ordering data

Table 5-1 Ordering data

Description	Type	Order No.
Cordless screwdriver, 3.6 V, 1.5 Ah	SF-ASD 16	1200294
Cordless screwdriver set, including 1 battery and the charger, packed in plastic case	SF-ASD 16 SET	1200295
Replacement charger, for SF-ASD 16 cordless screwdriver	SF-ASD 16/CHARGER	1200296
Replacement battery, Li-ion, 3.6 V, 1.5 Ah for SF-ASD 16 cordless screwdriver	SF-ASD 16/ACCU 1,5 AH	1200297

### 5.2 Technical data

Table 5-2 Technical data

Technical data	
Nominal voltage	3.6 V DC
Charger (input voltage, power consumption)	100 V ... 240 V, 50/60 Hz, 15 W
Charging current	2.0 A
Charging time (automatic shut-off at room temperature)	60 min
Protection class	II
Ambient temperature (operation)	+5°C ... +40°C
Ambient temperature (storage/transport)	-25°C ... +50°C
Permissible humidity (operation)	<95% relative humidity
Permissible humidity (storage/transport)	<95% relative humidity
No-load speed (1st gear)	0 (min <sup>-1</sup> ) ... 220 (min <sup>-1</sup> )
No-load speed (2nd gear)	0 (min <sup>-1</sup> ) ... 450 (min <sup>-1</sup> )
Max. torque	4.3 Nm
Noise emission (L <sub>WA</sub> )	71.28 dB
Vibration	1.58 m/s <sup>2</sup>
SF-ASD 16 weight	460 g
Battery weight	78 g

## 6 Certificates

### 6.1 CE marking

For details regarding the relevant EU directives defining the safety and health requirements, please refer to the separately enclosed declaration of conformity or use the following QR code linked to the web page:



### 6.2 FCC

**Note: This equipment has been tested and found to comply with the limits of a CLASS A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. The equipment generates, uses, and can radiate radio frequency and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user may be required to correct the interference at his own expense.**



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