

# REX

## Lithium-ion battery charger



### RF20SC

### OPERATION MANUAL



Be sure to read the operation manuals for the RF20SB, RF20SC, RF20S, RT20S thoroughly before using the product.

Keep the manuals where the operator can refer to them whenever necessary.

To prevent short circuits, wrap the terminals on used lithium-ion batteries in insulating tape and dispose of them in accordance with local laws and regulations governing such items.

## 1. Precautions

### 1) Safety Considerations

#### WARNING

#### 1. Use the product only for its designated purpose.

- Using the product for any purpose other than flaring/flanging tubes will not only damage the product and/or motor but could also lead to accident or injury.

#### 2. Ensure you use the correct voltage.

- Be sure to use the voltage indicated on the name plate of the main unit or in the operation manual.  
Using the product at a voltage different from that indicated can result in overheating, smoke or fire.

#### 3. Be sure to avoid electric shock.

- Do not touch the plug with wet hands.  
- Do not use the product in rain or in places where moisture can easily get into it.

#### 4. Take notice of conditions at the work site.

- Do not use the product in rain, humid or damp places, or places where moisture can easily get into it.  
Humidity will lower insulation of the motor and cause electric shock.  
- Do not use close to flammable fluids or gases, such as gasoline or paint thinner.  
Doing so could result in fire or explosion.

#### 5. In the following cases, pull the plug out of the power supply socket.

- When the product is not in use or parts are being changed, repaired, cleaned or inspected.  
- When accessories are changed.  
- When hazards are expected (including electric power failure).  
If the product is plugged in, it may start operating unexpectedly, causing an accidents.

#### 6. Do not handle the power cord carelessly.

- Do not carry the product by its cord, or pull the plug out of the socket with the cord.  
- Do not place the cord near heated objects, fats & oils, cutters and objects with sharp edges.  
- Take care not to tread on the cord, pull it or apply unnecessary force resulting in damage to the cord.

### 2) Precautions for using the charger/battery

#### WARNING

#### 1. The charger is for exclusive use with REX original products only!

- When charging the battery, use the exclusive battery charger only and none other.  
Never use the charger for any other rechargeable tool or battery.

The use of any other combination of battery and charger can be dangerous. Never do so.

#### 2. When charging, do not use transformers such as a booster or the like!

- Doing so will damage the charger. Use an electrical supply of the specified stated voltage only.

#### 3. Cannot be used with a generator or with direct current!

- Never use with a generator or with direct current. Doing so may cause a fire, which will damage the charger.

#### 4. Always charge indoors!

- Take care to prevent the battery and charger from getting wet; always charge indoors.  
- Keep away from fire.  
- Do not use near inflammable materials.  
- When charging, the battery and charger may get fairly hot; keep out of direct sunlight and charge in a well-ventilated room.

#### 5. Humidity can lead to accidents!

- Do not use in the rain, in humid conditions, or where it is wet. Humidity can result in an electric shock.  
Humidity should also be avoided as it can weaken the charger or the motor's insulation.

#### 6. When charging is complete, remove the battery and pull out the plug!

- When charging is complete, remove the battery from the charger and remove the plug from the mains.  
Also, be sure to remove the plug if there is a power cut.

#### 7. Charge within a range of 10 to 40°C!

- The charger has a special circuit for rapid charging - approx. 1 hour, it should be used within an ambient temperature of between 10 and 40°C. The battery's built-in protection system does not allow charging outside this range.

## WARNING

### **8. Do not use the same charger continuously!**

- Using the same charger continuously can cause it to overheat, resulting in an accident.  
After use, remove the plug and allow the charger to cool down for approximately 15 minutes before using again.
- When charging twice in a row, allow the charger to rest for more than 15 minutes to cool down before charging again.  
When charging 3 or more times consecutively, allow to rest for more than 1 hour and then charge again when the charger has cooled down.

### **9. Do not charge the battery straight after a rapid discharge!**

- Even after placing in the charger, the red LED may flash on and off slowly indicating that it is not yet possible to charge, or fully charge, a battery that is still hot after continuous use, etc. Wait until the battery has cooled down before charging again.

### **10. Do not charge for more than 2 hours!**

- If the green LED does not start blinking after charging for about 2 hours stop charging; the LED might possibly be malfunctioning.

### **11. Charge every 3 to 6 months!**

- Even if you do not use the battery for a while, we recommend charging it every 3 to 6 months to prevent over discharge.

### **12. Do not keep fully charged for long periods of time!**

- If you keep the battery for a long period, every 3 to 6 months store it at normal temperature and 40 to 80% charged.  
Be sure to remove the battery from the unit or the charger.

### **13. Never insert any foreign object into the battery slot in the charger!**

- There are terminals located inside the slot.  
If you insert metal, water or other foreign objects into the slot, it will cause a short and cause the charger to break down.

### **14. Do not disassemble the charger or battery!**

- Never disassemble the battery; it contains a special built-in device for rapid charging - approx. 1 hour.  
You will damage the unit if you try to disassemble it.
- The charger has a built-in condenser and other electronic parts; disassembling the unit will lead to electrical shock and damage.
- If either the charger or battery unit does not function properly, do not disassemble to attempt a repair yourself.  
Always return to the store where you bought them or to a REX distributor for repair.

### **15. Do not short circuit the battery!**

- The battery has a very low internal resistance.  
If it shorts, there will be high current and the unit will overheat resulting in it burning or breaking down.

### **16. Never throw a battery in a fire!**

- If you throw a battery in a fire, it may explode. Do not throw in a fire, incinerator or the like.

### **17. Do not insert any foreign body into the air vents in the charger!**

- If anything metallic or any inflammable material gets into the vents, it can cause an electric shock and damage the unit.  
Use in as dust-free a location as possible.

### **18. If any abnormality arises, stop charging at once!**

- If you notice any abnormality such as overheating or an unusual smell, stop charging immediately and send the unit for repair.

### **19. Take care when storing the charger!**

- Always store where the ambient temperature is under 40°C, and out of the reach of children.
- Store in a dry place away from the rain so as to reduce deterioration of the unit's insulation and to prevent electric shock.

### **20. Recycling Lithium-ion batteries you no longer need**

- Never throw away unwanted lithium-ion batteries together with ordinary household garbage.  
Wrap the terminals in insulating tape to prevent a short, and dispose of in accordance with local laws and regulations governing such items.

### **21. Product Shipping Notice!**

- If this product is to be transported by sea as a non-hazardous material, it must comply with SP188 of the "UN Recommendations on the Transport of Dangerous Goods". Contact your shipping company for details.

### **22. To prevent the charger and battery from emitting smoking, overheating, igniting or the battery fluid leaking, always comply with the following:**

- a) Do not use the charger or battery if they have been dropped or have undergone a hard impact.
- b) Do not allow metal objects and the like to come into contact with the terminals.
- c) When storing the units, keep them away from metal objects (screws, nails, coins etc.).
- d) Do not leave, charge or use the charger or battery near a fire, under strong sunlight, or where the temperature is very high.
- e) Do not use a battery if it has visible external damage or has become deformed.
- f) Never place in a microwave oven or high pressure vessel; do not expose to high temperatures or pressure.

### **23. If you think something is wrong, stop immediately.**

- If the battery fluid is leaking or you notice a bad smell, immediately keep away from any nearby fire or source of heat.
- While using, charging or even storing the battery, if you notice any bad smell, overheating, change of colour or shape, or any other abnormality you have not seen before, remove it from the tool or charger immediately.
- If any leaked battery fluid gets in your eyes, do not rub your eyes with your hands. Immediately wash with clean tap water, and then go directly to the doctor's for treatment. Failure to do so could lead to serious damage to your eyes.
- If any leaked battery fluid gets on your skin or clothing, wash with clean tap water immediately. Such discharge can cause severe skin irritation.

### **24. Cautions when charging the battery.**

- The battery is not charged when you purchase the product, so you will need to charge it.  
Sometimes, it may be difficult to fully charge a new battery, or one that has not been used for a long time.  
In such cases, repeat charging and discharging the battery a few times to restore it to its full capacity.
- The battery will be hot immediately after using the tool. Leave it to cool for a little before recharging.
- If the red LED goes out straight after you start charging, remove the battery from the charger, wait until the temperature is within a range of 10 to 40°C and start again. This is the range within which the battery can be charged.  
If it still doesn't work after several attempts, then it means that the battery has reached the end of its life or is out of order.
- If you charge the battery outside the 10 to 40°C range, the red LED will flash on and off indicating the battery cannot be charged.  
However, the charger will start charging automatically once the battery is within the correct temperature range.

### 3) Specifications

Model	RF20SC
Use	For charging REX lithium-ion battery RF20SB (No. 424982)
Size (WxDxH)	Unit: Approx. 146x109x61 mm / Power cord: 2 m
Weight	Main unit: 335 g / Power cord: 85 g
Battery type	REX Lithium-ion battery RF20SB (No. 424982)
Voltage	AC100 - 240 V (50/60 Hz) 60 VA
Charging system	Constant current and constant voltage system
Charging voltage	DC 10.8 V
Charging current	2000 mA
Charging temperature	10 - 40°C
Circuit protector	Overcharge protection (4.25 V/cell)
	Overcurrent protection (7 A fuse)

Table. 1

### 4) Main parts

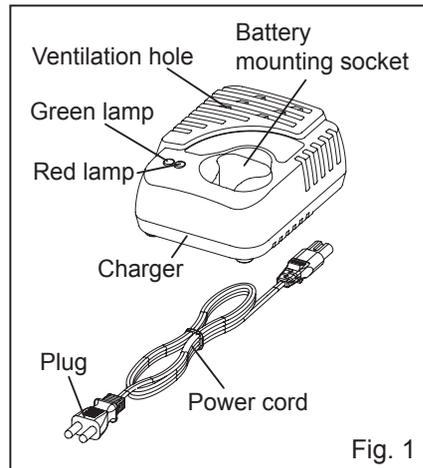


Fig. 1

1. Remove the battery from the main unit by pressing the latch on the battery. (Fig. 2)

#### ⚠ CAUTION

- Hold the main unit firmly and remove the battery.
- Charge the battery once the flaring tool starts to lose power.

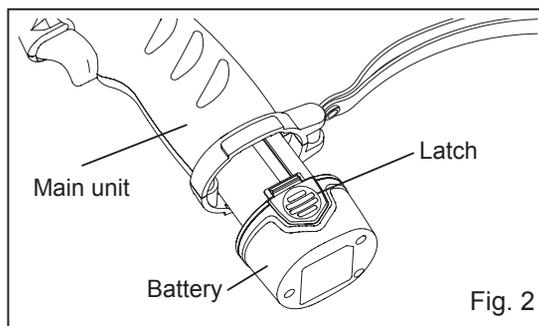


Fig. 2

2. Connect the power cord and charger, and then insert the plug into the mains.

Check that the green lamp is slowly flashing on and off. This indicates that the battery is being charged. (Fig. 3)

#### ⚠ CAUTION

- Note: The input voltage is AC100 - 240 V (50/60 Hz).
- Do not use a generator to charge the battery.
- Do not carry the charger with the power cord, it may drop off.

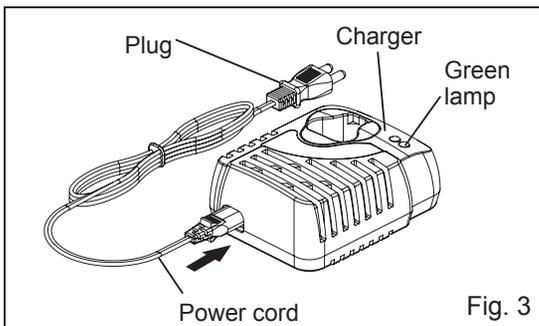


Fig. 3

3. Insert the battery as far as it will go into the mounting on the charger. (Fig. 4)

The red lamp indicates that charging has started. After approximately 30 minutes, the green lamp starts flashing on and off quickly (indicating it is 80% charged). The battery is fully charged when the lamp stops flashing but remains on. A full charge therefore takes about 60 minutes in total. (Fig. 4)

You can check the status of the battery and charger from the red and green lamps. (Table 2).

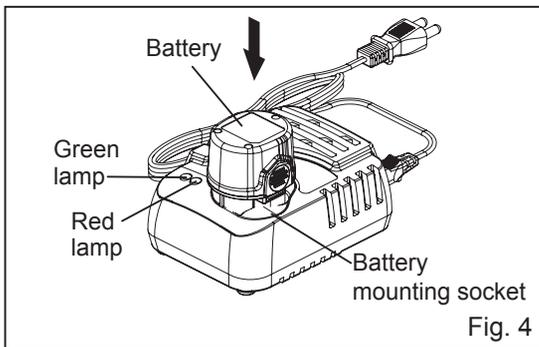


Fig. 4

#### ⚠ CAUTION

- Ensure the battery is attached in the correct way round.
- Charge in a place where the temperature is within the chargeable range of 10°C to 40°C. If you charge outside this temperature range, it may degrade the performance and life of the battery, and may even cause a leakage or generate excessive heat.
- The battery or the charger may get slightly hot during charging; choose a dry and well-ventilated place that is not exposed to direct sunlight.
- If you intend to charge another battery, leave the charger to cool for at least 15 minutes before charging the next one.
- If the temperature of the battery is below 10°C or above 40°C, you cannot charge it.

Mark	Green lamp	Red lamp	Charger status
	Flashes slowly	Off	Chargeable
	Off	On	Charges the battery 0-80% of its capacity (about 30 minutes)
	Flashes quickly	Off	Charges the battery 80-100% of its capacity (about 30 minutes)
	On	Off	Fully charged
	Off	Flashes slowly	The temperature of the battery is outside the acceptable range (below 10°C, or above 40°C)
	On	On	Unable to charge (Defective battery etc.)

Table. 2

4. Remove the battery from the charger, and attach it to the main unit. (Fig. 5)

**⚠ CAUTION**

-If the battery cannot be fully charged even after following the correct procedure, the battery may be dead. Attempting to charge a dead battery may damage the charger.

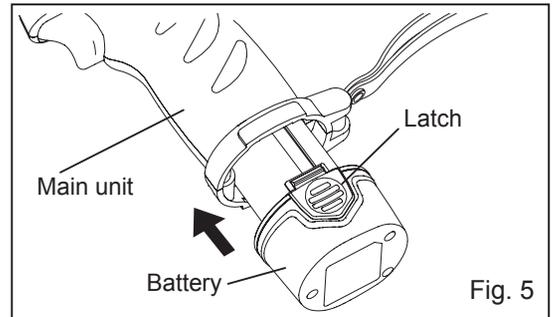


Fig. 5

**5. Troubleshooting**

If an abnormality occurs with the product, check the following and then contact your distributor or REX INDUSTRIES CO., LTD.

Problem	Cause	Remedy
The green lamp does not flash on and off slowly, even if connected to the power. (Battery has not been set up properly)	The power cord is broken.	Replace the power cord.
	Fault with the power supply (breaker etc.)	Check the power supply.
	The charger is out of order.	Ask for inspection or repairs.
The red lamp on the charger is flashing slowly.	The temperature of the battery is outside the proper range.	Ensure that you operate within the chargeable temperature range for the battery (10 - 40°C).
The red lamp on the charger does not light up. (Charging is not possible)	There are insulators, such as dirt, between the battery and the contacts on the tool.	Remove the insulators.
The red and green lamps on the charger are lit at the same time.	The battery is out of order.	Replace the battery.
The green lamp does not light up even if you charge it for more than two hours. (Charging is not complete)	The charger is out of order.	Ask for inspection or repairs.

Table. 3

**6. Servicing and Repairs**

This product is produced with great precision; therefore, should the product fail to operate normally, do not disassemble repair it by yourself; contact your distributor or REX INDUSTRIES CO., LTD. If you do not find any problem or remedy in Troubleshooting in this manual, or parts are required, or if you have any questions, please contact REX distributor at your earliest convenience.

Availability of Replacement Parts	Replacement parts are maintained for a period of 7 years after production of this model has been terminated. Electrical parts, however, will remain available for a period of 5 years.
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