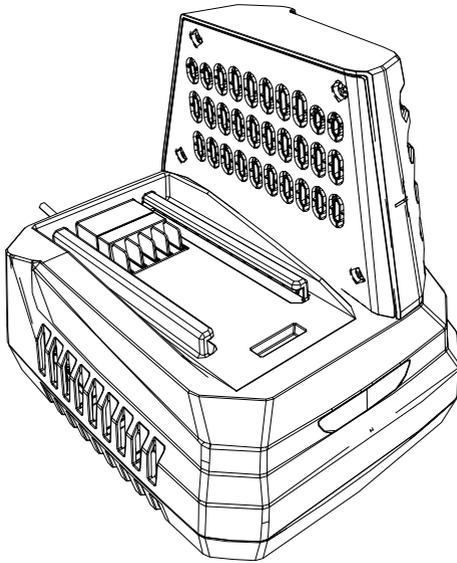
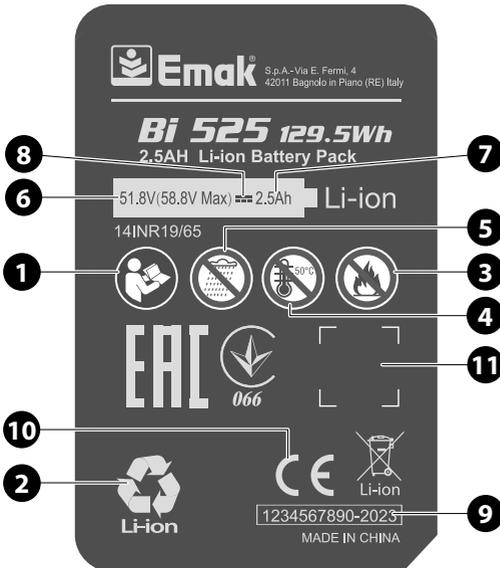
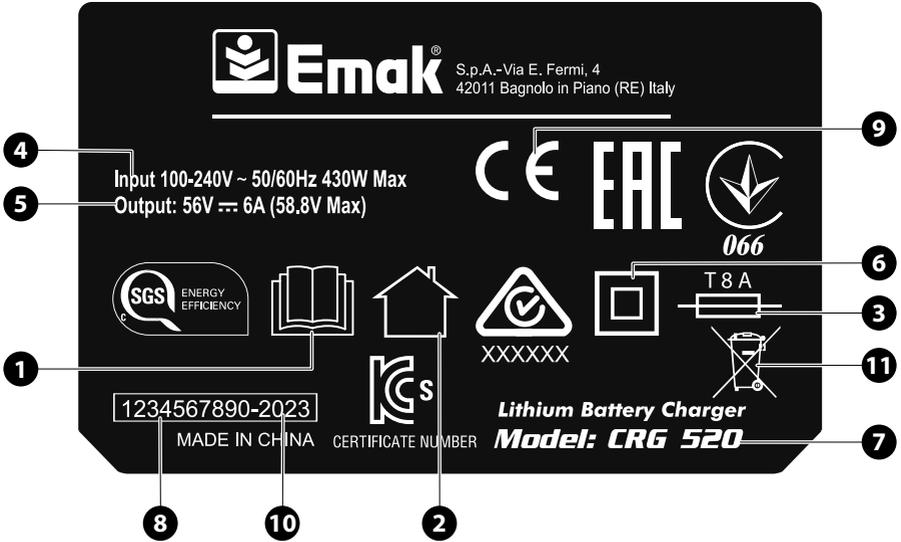


# CRG 520

KR 사용자 지침 설명서



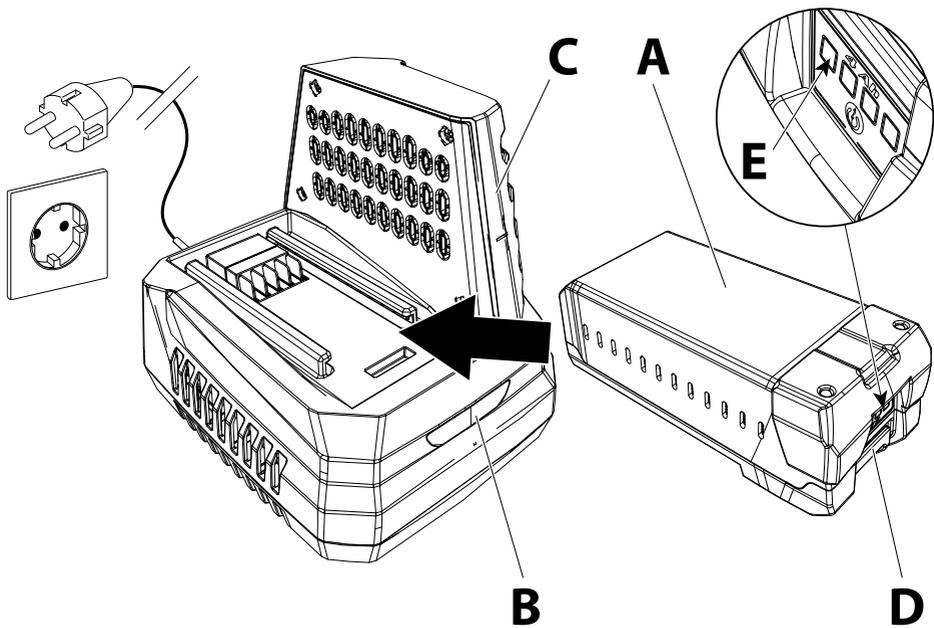


(Bi 525 - 58.8V 2.5 Ah)

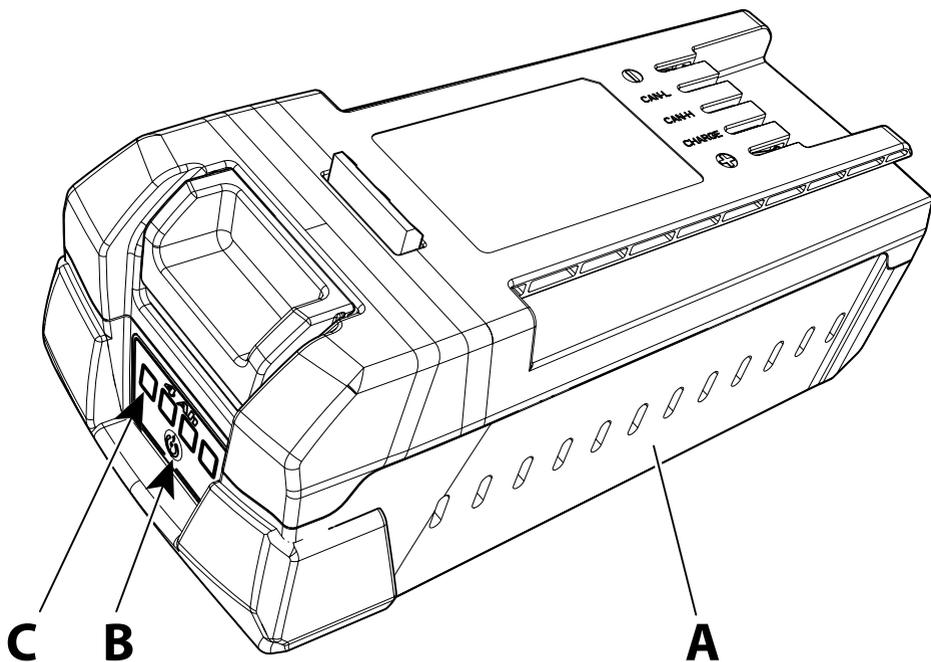
(Bi 540 - 58.8V 4 Ah)

(Bi 580 - 58.8V 8 Ah)

3



4



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# 1 INTRODUCTION

Thank you for selecting an Emak product.

Our network of dealers and authorized workshops will always be at your complete disposal for any need you may have.

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## 경고

**For correct use of the machine and to avoid accidents, do not start working until you have read this manual carefully.**

## 경고

**This manual shall accompany the machine throughout its life.**

You will find explanations concerning the operation of the various parts plus instructions for necessary checks and relative maintenance.

## 참고

The descriptions and illustrations contained in this manual are not binding. The Manufacturer reserves the right to undertake any modifications it deems necessary without revising this manual.

Images are for illustrative purposes only. The actual components may vary from those depicted. If in doubt, please contact an Authorized Service Center.

## 1.1 HOW TO READ THIS MANUAL

The manual is divided into chapters and paragraphs. Each paragraph is a sub-level of its respective chapter. References to chapters or paragraphs are indicated with the wording “chapter” or “paragraph” followed by the respective number. Example: “chapter 2”.

In addition to the operating instructions, this manual contains paragraphs that require your special attention. Such paragraphs are marked with the symbols described below:

## 경고

**Where there is a risk of an accident or personal, even fatal, injury or serious damage to property.**

## 주의

**Where there is a risk of damaging the machine or its individual components.**

## 참고

Provides additional information to previous safety message instructions.

The figures in these instructions for use are numbered 1, 2, 3, and so on. The components indicated in the figures are marked with letters or numbers, depending on the case. A reference to component C in Figure 2 is indicated with the wording: “See C, Fig. 2” or simply “(C, Fig. 2)”. A

reference to component 2 in Figure 1 is indicated with the wording: "See 2, Fig. 1" or simply "(2, Fig. 1)".

## 2 SAFETY SYMBOLS AND WARNINGS

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### 참고

The illustrations (그림 1 and 그림 2) included in this manual are given by way of explanation and are used to illustrate the label design, which is standard for all different models (with the exception of product specifications).

### 2.1 BATTERY CHARGER (그림 1)

1. Carefully read the instruction and maintenance manual before using the battery charger.
2. The device must be used exclusively indoors.
3. Fuse.
4. Power supply frequency and voltage.
5. Battery charger voltage and current.
6. Double insulation device.
7. Type of machine: **BATTERY CHARGER**.
8. Serial number.
9. CE conformity marking.
10. Year of manufacture.
11. **USER INFORMATION - In accordance with Directives 2011/65/EC and 2012/19/EC on the reduction of hazardous substances in electrical and electronic equipment and the disposal of waste from such equipment.**

### 2.2 BATTERY (그림 2)

1. Carefully read the instruction and maintenance booklet before using the battery.
2. Recyclable product. Lithium-ion battery.
3. Never throw used battery packs into an open fire. **RISK OF EXPLOSION!**
4. Do not expose the battery to sunlight when temperatures exceed 50°C.
5. Do not expose the battery to rain or high humidity conditions.
6. Rated voltage.
7. Capacity.
8. Direct current device.
9. Serial number and year of manufacture.
10. CE conformity marking.
11. QR code for information on the product.

## 2.3 USER INFORMATION



In accordance with Directives 2011/65/EC and 2012/19/EC on the reduction of hazardous substances in electrical and electronic equipment and the disposal of waste from such equipment. The document details the electrical, environmental and mechanical specifications of the 358.8 W 58.8 V/6 A lithium battery charger. The power supply unit must meet ROHS requirements.

When the symbol depicting a crossed-out refuse bin appears on the equipment, this means that it **must** be collected separately from other waste at the end of its working life.

When the equipment is no longer serviceable, accordingly, it should be taken by the user to a special sorted collection center for electrical and electronic waste, or if purchasing a **new product of similar type, returned to the dealer on a one-for-one basis (takeback scheme)**.

Proper sorted collection ensures that the discarded equipment can be sent subsequently for eco-friendly recycling, treatment and disposal; this helps to avoid any possible negative impact on the environment and on health, besides enabling the reclamation of materials used in manufacturing the equipment.

Unauthorized dumping of waste is irresponsible, and punishable under statutory regulations.

## 3 GENERAL BATTERY CHARGER SAFETY WARNINGS

- Retain this Instruction Book and refer to it before using the battery charger.
- All health hazard labels must be kept in good condition. If damaged or worn, replace them immediately.
- Only charge the batteries in battery chargers that are recommended by the manufacturer. A battery charger designed for a certain type of battery may pose a fire risk if it is used with other types of batteries.
- Check the battery charger periodically for visible damage or signs of wear. If problems are detected, it is essential to stop using the battery charger immediately and seek technical assistance.
- Check the data marked on the rating plate of the battery charger. Be sure to connect the battery charger to a power outlet with the voltage marked on the rating plate. Never connect it to a different mains voltage.
- If the cord is damaged, replace the battery charger.
- Do not use damaged battery chargers.
- Do not use the battery charger to charge the batteries of other cordless tools.
- Do not use the battery charger in places accessible to children or to persons who have not been instructed on its use.
- The battery charger is intended for indoor use and is not waterproof, so it cannot be exposed to rain or snow. Protect the battery charger from moisture and rain. Moisture and rain can damage the battery charger.
- Do not use the battery charger in explosive, flammable atmospheres.
- Use the battery charger only in dry conditions and at an ambient temperature of 10-40°C.

- Do not store the battery charger in areas where temperatures may exceed 40°C. In particular, do not leave the battery charger inside vehicles parked in the sun.
- This device must not be used by persons (including children) with impaired physical, sensory or mental capacity or lacking experience and awareness, unless they are supervised or instructed in relation to its use by a person responsible for their safety. Children must be supervised to ensure they do not play with the device.
- DO NOT cover the air vents on the battery charger. DO NOT place the battery charger on a soft surface such as a blanket or pillow. Keep the air vents of the battery charger clean.
- **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, entangled or snagged cords increase the risk of electric shock.
- NEVER attempt to open or repair the battery charger. Disassembly of the battery charger by non-professionals is not permitted.
- **Power tool plugs must match the outlet. NEVER modify the plug in any way. DO NOT use adapter plugs with earthed or grounded power tools.** Unmodified plugs and matching outlets will reduce the risk of electric shock.
- Please note that the owner or the user is responsible for any accidents or damage to third parties or their property.

#### 4 GENERAL BATTERY SAFETY WARNINGS

- When first starting up, the battery pack must be charged. The battery pack is fully enclosed and maintenance-free. Do not disassemble, open or break down the battery pack. If the battery cracks or breaks, with or without fluid leaks, do not recharge it and do not use.
- Only charge the battery packs in battery chargers that are recommended by the manufacturer. A battery charger designed for a certain type of battery pack may pose a fire risk if it is used with other types of battery packs.
- Remove the battery pack from the battery charger if not used for an extended period of time.
- Do not attempt to repair the battery pack. To avoid injury and risk of fire, explosion or electric shock and to avoid damaging the environment:
  - Cover the battery's terminals with heavy-duty adhesive tape.
  - DO NOT attempt to remove or destroy any of the battery pack components.
  - DO NOT attempt to open the battery pack.
  - Avoid shaking the battery pack during transport.
- Store the battery in a cool, dry place, ideally at 15°C and charged to at least 40%.
- Lithium-ion batteries are subject to a natural aging process. The battery pack 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 no longer meet the high performance requirements and therefore pose a safety risk.
- Do not ignite the battery pack or expose it to fire. There is a risk of explosion.
- DO NOT place the battery pack in places that are too hot and DO NOT place the battery near sources of heat (fires, radiators, stoves, etc.).

- DO NOT connect the positive and negative terminals of the battery pack with conductors such as metal objects.
- Avoid damage and shock. Immediately replace battery packs that have been subjected to falling from a height of more than 1 meter or have been exposed to violent shocks, even if the battery pack housing appears to be undamaged. The cells inside the battery may have suffered serious damage. In this respect, please also read the waste disposal information.
- Keep the battery clean and dry. Moisture and rain can damage the battery pack. DO NOT use water for cleaning.
- When handling batteries beware of electrostatic charge. Electrostatic discharges can damage the protection circuit and the battery cells. Avoid electrostatic charging and never touch the battery poles.
- Do not let children touch the battery pack.
- Only use batteries designed for their respective power tools. The use of other batteries poses a fire risk and may result in personal injury. Never attempt to charge non-rechargeable batteries.
- If used incorrectly, fluid may leak from the battery. Avoid contact with it under any circumstances. If you touch it by mistake, rinse the affected area with water. If the liquid gets into the eyes, seek medical help as well. The liquid leaking out of the battery can cause skin irritation or burns.
- If the battery becomes very hot during intensive use, let it cool down to room temperature before charging.
- 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 will result in over-charging and cell damage. Do not leave the batteries in the battery charger for days on end.
- Charging batteries at a temperature below 10°C will cause chemical damage to the cell and may cause a fire.
- Avoid using batteries that have overheated during the charging process, as the cells may have suffered dangerous damage.
- Do not use batteries which have warped or deformed during the charging process or which show other unusual signs (gases, hissing, cracks, etc.).
- Do not exhaustively discharge the batteries. Exhaustive discharge damages the battery cells. The most common cause of exhaustive discharge is lengthy storage or non-use of partly discharged batteries. Stop working as soon as the performance of the battery falls noticeably or the protection cut-off trips. Store the battery pack only after it has been fully charged.
- Inspect the battery pack regularly for visible damage or signs of wear. If you detect problems, stop using the battery pack immediately and contact an Authorized Service Center.

## **5 BATTERY CHARGING**

### **5.1 CORRECT USE**

- Before starting the charging procedure, carefully check that the battery charger is placed on a stable, well-ventilated surface, away from water.

- Check that the mains voltage of the power outlet complies with the specifications of the charger indicated on the nameplate (never connect it to a different voltage), make sure that the power outlet is in optimum condition.
- When charging, do not cover the battery charger and keep it well ventilated. DO NOT cover the battery charger's air vents and DO NOT place it on a soft surface such as a blanket or pillow. Make sure that the battery charger's air vents are clean.
- Do not use batteries that have overheated during the charging process, as the cells may have suffered dangerous damage.
- Never charge or use batteries that have overheated; replace them immediately if possible.
- The battery comes with a protective device that prevents recharging if the ambient temperature is not between 0 °C and +45 °C.
- The battery can be recharged at any time, even partially, without the risk of damaging it.
- Never fully discharge the battery pack; fully discharging the battery pack will lead to premature aging of the battery cells.

**⚠ 경고**

**Use only original battery packs. The use of other batteries poses a fire risk and may result in injuries or an explosion.**

## 5.2 HOW TO CHARGE (그림 3)

- Insert the power plug of the battery charger into the mains socket. The LED (B) lights up green.
- Make sure that the battery is compatible with the battery charger. Insert the battery into the charger as shown by the arrow in the illustration, making sure to feel them snap in completely. When you hear a click, this indicates that it has been inserted correctly and that the battery has been installed successfully. If the charger plug is connected to the power outlet, a green LED (B) will start flashing to indicate that charging has begun.
- The battery is fully charged when the LED (E) lights glow solid green.

**⚠ 경고**

**Always disconnect the battery charger from the mains power supply when you finish charging the battery.**

**⚠ 경고**

**If the rechargeable battery does not charge, check that the power cable is properly connected. If you are still unable to charge the battery, contact an authorized service center. Timely recharging of the battery will help it to serve you well for a long time. The battery must be charged when you notice that the device is losing power.**

### 5.3 MONITORING THE CHARGE LEVEL (그림 4)

1. When the battery pack is charging normally, LED1, LED2, LED3 and LED4 (C) flash as a progress bar. When the battery pack is fully charged, the four LEDs are steady for five seconds, and then enter hibernation mode, where all the lights are off.
2. In standby mode, the battery pack is equipped with a button to check the charge level. Simply press the button (B) to read the battery pack's charge level, as indicated by the LED indicators (C):

<b>Battery LED display</b>	<b>Charging status</b>
4 lit LEDs	Remaining capacity $\geq 75\%$ .
3 lit LEDs	Remaining capacity $\geq 50\%$ .
2 lit LEDs	Remaining capacity $\geq 25\%$ . Stop work as soon as possible and charge the battery.
1 lit LED	Remaining capacity $\geq 10\%$ . Stop work as soon as possible and charge the battery. If not, battery life will be considerably reduced.
1 flashing LED	When LED1 flashes, it means that the remaining charge in the battery is $\leq 10\%$ , but the battery will not stop discharging. When the flashing increases in frequency, stop discharging and immediately start charging the battery, or it will become damaged.  Charge the battery pack as soon as possible. If not, battery life will be considerably reduced.

3. In hibernation mode, press the button (B) to wake it up. The battery will enter hibernation mode again after 10 minutes.

### 5.4 KEY TO BATTERY CHARGER LED INDICATORS (B, 그림 3)

<b>LED display</b>	<b>Charger status</b>
Green light	Standby mode
Green light flashing	Charging
Red light	Faulty charger
Red light flashing	Faulty battery protection

### 5.5 CHARGING COMPLETED

- Disconnect the power supply when charging is complete.
- Press the button (D, 그림 3) to slide out the battery pack.

## 6 MAINTENANCE

### 6.1 CLEANING

The battery pack grid must be kept free of dust and dirt. Clean the battery pack with a dry, soft cloth. In case of stubborn dirt, use a slightly damp cloth.

## 6.2 OVERHEATING

- Protect batteries from overheating. Overloads, overcharging and exposure to direct sunlight will result in overheating and cell damage.
- Never charge or work with batteries that have overheated; replace them immediately if possible.
- In the event of overcharging and overheating, the battery is automatically disconnected from the protection circuit for safety reasons. Disconnect the battery charger from the power outlet and remove the battery. Let the battery cool down completely. Once the battery has cooled you can resume the charging procedure.

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## 7 SHIPPING

- Li-ion batteries are subject to the requirements of dangerous goods legislation.
- Keep the original packaging for storing and transporting the battery charger and the battery.
- In the event that they are shipped by a third party, such as an air or freight carrier, special requirements regarding packaging and labeling must be met.
- DO NOT use a metal container for transport.

## 8 STORAGE

- Store the battery charger out of the reach of children.
- Store the battery charger in dry places with an ambient temperature of 5-40°C, away from direct sunlight to avoid overheating. Charging the batteries at temperatures below 10°C will cause chemical damage to the cells and may cause a fire.
- Store batteries out of the reach of children, in a dark and dry place at 0-23°C, free of dust and free of corrosive gases. Avoid storing in direct sunlight.
- Keep unused batteries away from paper clips, coins, keys, nails, screws and other metal objects that could cause a short circuit between the contacts.
- Do not store batteries haphazardly in a box or drawer where they may accidentally short-circuit each other or be short-circuited by other metal objects.
- A short circuit between the battery contacts may cause burns or fire.
- If the battery charger is not to be used for an extended period of time, avoid placing the battery on it and be sure to disconnect it from the power outlet.
- If batteries are not used for long periods of time, they should be fully recharged both when initially stored and every 3 to 6 months thereafter to prevent deterioration and damage.
- Keep the original packaging for storing and transporting the battery charger and the battery.

## 9 ENVIRONMENTAL PROTECTION

Environmental protection should be a priority of considerable importance when using the machine, for the benefit of both social cohesion and the environment in which we live.

- Try not to cause any disturbance to the surrounding area.
- Scrupulously comply with local regulations and provisions for the disposal of packaging, oils, petrol, gasoline, batteries, filters, deteriorated parts or any elements which have a strong impact on the environment. This waste must not be disposed of as normal waste, it must be separated and taken to specified waste disposal centers where the material will be recycled.

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### 9.1 DEMOLITION AND DISPOSAL

When the machine reaches the end of its service life, do not dispose of it into the environment; instead take it to a waste disposal center.

Most materials used in the manufacture of the machine are recyclable; all metals (steel, aluminum, brass) can be delivered to a normal recycling station. For information, contact your local waste recycling service. Waste disposal must be carried out with respect for the environment, avoiding soil, air and water pollution.

**In all cases, applicable local legislation must be complied with.**

#### DAMAGE TO THE ENVIRONMENT



Do not dispose of spent batteries with household waste. Dispose of the battery separately from the machine. Follow local regulations for disposal.

When the machine is scrapped the CE mark label must also be destroyed together with this manual.

## 10 TECHNICAL DATA

### 10.1 BATTERY CHARGER TECHNICAL DATA

Power	2.5 Ah	235.2 W
	4 Ah	352.8 W
	8 Ah	352.8 W
Mains power supply	100-240V	
Frequency	50/60 Hz	
Constant Current Charge (MAX)	2.5 Ah	4A ±0.3
	4 Ah	6A ±0.3
	8 Ah	6A ±0.3

### 10.2 BATTERY TECHNICAL DATA

		<i>Bi540</i>	<i>Bi540</i>	<i>Bi580</i>
Capacity of battery pack	Ah	2.5	4.0	8.0
Voltage	V	58.8		

## 11 DECLARATION OF CONFORMITY

The undersigned,

**EMAK spa via Fermi, 4 - 42011 Bagnolo in Piano (RE)  
ITALY**

declares under its own responsibility that the machine:

1. Category:

**BATTERY CHARGER**

2. Brand: /Type:

**OLEO-MAC CRG 520 / EFCO CRG 520**

3. serial number identification:

**326 XXX 0001 - 326 XXX 9999**

complies with the provisions of the  
Directive / Regulation and subsequent  
amendments or additions:

**2014/35/EC - 2014/30/EC - 2011/65/EC - 2006/66/EC**

conforms to the provisions of the  
following harmonized standards:

**EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019  
+A14:2019+A15:2021 - EN IEC 60335-2-29:2021+A1:2021  
- EN IEC 55014-1:2021 - EN IEC 55014-2:2021 -  
EN IEC 61000-3-2:2019+A1:2021 -  
EN 61000-3-3:2013+A1:2019+A2:2021**

Made in:

**Bagnolo in Piano (RE) Italy - via Fermi, 4**

Date:

**27/02/2024**

Technical documentation filed in:

**Administrative Headquarters. - Technical Department**

  **Emak**<sup>®</sup><sub>s.p.a.</sub>

Luigi Bartoli - C.E.O.

## 12 WARRANTY CERTIFICATE (CRG)

This machine has been designed and manufactured using the most modern techniques. The company guarantees its products for 24 months from the date of purchase, for home and leisure use. Warranty is limited to 12 months in the case of professional use.

### **Limited warranty**

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1. The warranty period starts on the date of purchase. The manufacturer, acting through the sales and technical assistance network, will replace free of charge any parts proven defective in material, machining or manufacturing. The warranty does not affect the purchaser's rights as established under the Italian Civil Code governing the consequences of defects or flaws in the machine sold.
2. Technical personnel will undertake the necessary repairs in the minimum time possible, compatible with organizational needs.
3. **To make a claim under warranty, proof of purchase in the form of an invoice or till receipt must be shown to the authorized company representative.**
4. The warranty becomes null and void if:
  - The product has evidently not been serviced correctly,
  - The machine has been used for improper purposes or has been modified in any way,
  - Unsuitable lubricants and fuels have been used,
  - Non-original spare parts or accessories have been fitted,
  - Work has been done on the product by unauthorized persons.
5. The warranty does not cover consumables or parts subject to normal wear.
6. The warranty does not cover work to update or improve the machine.
7. The warranty does not cover any preparation or maintenance work required during the warranty period.
8. Damage incurred during transport must be immediately brought to the attention of the carrier: failure to do so shall render the warranty null and void.
9. The warranty does not cover injury or damage caused directly or indirectly to persons or things by defects in the machine or by periods of extended disuse of the machine resulting from the said defects.

## 13 WARRANTY CERTIFICATE (BATTERY)

This battery has been designed and produced using the latest manufacturing techniques. The company guarantees its products for 24 months from the date of purchase, for home and leisure use. Warranty is limited to 12 months in the case of professional use.

KR

### **Limited warranty**

1. The manufacturer of the battery guarantees the product is fully functional when purchased new, in conformity with its technical specifications and with current statutory regulations. The company, operating through its sales and technical service network, will replace the battery free of charge if a defect of manufacture is discovered.
2. Technical personnel will undertake the necessary repairs in the minimum time possible, compatible with organizational needs.
3. **To make a claim under warranty, proof of purchase in the form of an invoice or till receipt must be shown to the authorized company representative.**
4. The warranty becomes null and void if:
  - The battery is recharged incorrectly,
  - The product has evidently not been serviced correctly,
  - The battery has been used incorrectly or tampered with,
  - Non-original spare parts or accessories have been fitted,
  - Work has been done on the product by unauthorized persons.
5. The warranty does not cover consumables or parts subject to normal wear.
6. Damage incurred during transport must be immediately brought to the attention of the carrier: failure to do so shall render the warranty null and void.
7. The warranty does not cover damage caused directly or indirectly to persons or property by defects in the battery, or resulting from its enforced and prolonged unavailability for use.
8. If the battery is not used for long periods, it must be fully recharged both when put initially into storage and every 15-30 days thereafter, to prevent deterioration and damage. If this procedure is not followed, the warranty will be rendered null and void.

## 14 TROUBLESHOOTING

### 경고

**Do not attempt to carry out repairs without the necessary means and technical expertise. Any work carried out, will automatically void the Warranty and the Manufacturer's liability. Should the problems persist after applying the proposed solutions, contact an Authorized Service Center.**

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<i>PROBLEM</i>	<i>POSSIBLE CAUSES</i>	<i>SOLUTION</i>
The battery charger fails to charge the battery (green light on).	Dirty contacts. Battery fully depleted.	Clean the contacts.
The battery stops charging.		Clean the contacts and avoid using electrically conductive objects. Otherwise, replace the battery.
The battery charger fails to charge the battery (no light on).	No power supply to the battery charger.	Check that the plug is inserted and that the socket outlet is receiving power.
The battery charger fails to charge the battery (red light on).	Defective battery charger or cable.	Reconnect the battery pack or power outlet, or replace the battery charger.
The battery charger fails to charge the battery (red light flashing).	Faulty battery pack protection.	Reconnect the battery pack or power outlet, or replace the battery pack.
The 4 LEDs of the battery are flashing.	Abnormal temperature during charging.	Charging can be resumed directly after the temperature has been restored.
The 3 LEDs of the battery flash for 5 seconds and then go out.	Short circuit.	Replace the battery pack.
The 2 LEDs of the battery are flashing.	Damage to cells.	

**Emak S.p.A.**

42011 Bagnolo in Piano (RE) Italy

**[www.myemak.com](http://www.myemak.com)**

**[www.youtube.it/EmakGroup](https://www.youtube.it/EmakGroup)**