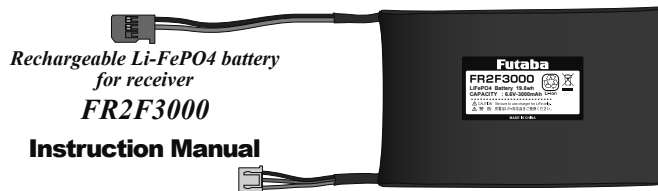


Before using your new FR2F3000, please read this manual thoroughly and use it properly and safely. After reading this manual, store it in a safe place.



Thank you for purchasing the FR2F3000, rechargeable Li-FePO4 polymer battery.
In order to get high performance from the battery and use it safely, please read this instruction manual thoroughly before use.

[Compatible devices and chargers]

- The FR2F3000 is designed only for use with receivers that correspond to 7.4V as the power-supply voltage. Do not use it with other devices.
- Always use a Futaba LBC-4E5 Li-Fe battery charger to charge the FR2F3000.

Safety Precautions

This instruction manual uses a variety of common symbols and icons for proper handling and usage of this product, and for avoiding potential hazards to yourself, the people around you, and your property. The meanings of these symbols and their significance are described below. Please understand them clearly before going on to main items.

Meaning of Special Markings

Pay special attention to safety where indicated by the following marks:

⚠ DANGER	Procedures which may lead to dangerous conditions and cause death/serious injury if not carried out properly.
⚠ WARNING	Procedures which may lead to a dangerous condition or cause death or serious injury to the user if not carried out properly, or procedures where the probability of superficial injury or physical damage is high.
⚠ CAUTION	Procedures where the possibility of serious injury to the user is small, but there is a danger of injury, or physical damage, if not carried out properly.
⊘: Prohibited	ⓘ: Mandatory

⚠ DANGER

If you ignore the following safety precautions, it may cause a fire, ignition, overheating, explosion, the leakage of electrolyte fluid or getting an electric shock.

- ⓘ Be sure to use the specified charger, LBC-4E5, to charge the battery.
- ⊘ Do not short-circuit the battery terminals with a metallic object.
- ⊘ Never expose the battery to water or moisture. Do not charge or use a wet battery.
- ⊘ Never throw the battery into a fire or place it near a fire.
- ⊘ Do not use, charge or store the battery in places where it may be exposed to high temperatures. For example, do not leave it on the dashboard of a car under direct sunlight, and do not place it near heating equipment.
- ⊘ Never solder the battery or attempt to repair, deform, modify or disassemble it.
- ⓘ Keep the battery out of reach of children.
- ⓘ If the electrolyte fluid gets into your eyes, blindness may result from it. Rinse your eyes with clean water without rubbing them, and see a doctor immediately.
- ⊘ Do not load the battery into the battery charger with +/- terminals upside down. If the battery does not fit properly into the battery charger, do not force fit into the charger.
- ⊘ Don't charge the broken battery.

⚠ WARNING

- ⓘ To avoid a fire, overheating, explosion or the leakage of electrolyte fluid, do not give the battery excessive shock, throw it, or damage it.
- ⓘ If you notice any abnormalities such as the leakage of electrolyte fluid, discoloration, deformation, overheating, or giving out a bad odor, remove the battery from the equipment or the battery charger immediately and stop using it. Continuing to use the battery under these conditions could result in a fire, overheating or explosion.
- ⊘ Never put the battery in a microwave oven or high-pressure container. This could cause a fire, the leakage of electrolyte fluid, overheating or explosion.
- ⓘ If the battery leaks or gives out a bad odor, keep it away from heat sources. Leaked electrolyte fluid may catch fire, causing the battery to smoke, burn or explode.
- ⓘ If the fluid leaked from the battery sticks to your skin or clothes, wash it off immediately with clean water, and consult a doctor. That may cause skin problems.
- ⓘ If you breathe the vented gas, suck in fresh air and consult a doctor.
- ⓘ When you recycle or dispose the battery, use the plastic tape to insulate its terminals. If the battery is short-circuited, it may cause a fire, overheating or explosion. If you dispose the battery, please comply with the regulations your city government has set.

⚠ CAUTION

- ⓘ The battery gets hot after using the equipment for many hours. To prevent burns, do not touch the battery immediately after use.
- ⊘ Do not store the battery in places where it may be exposed to moisture, excessive dust or high temperatures.
- ⊘ Do not place the battery on an unstable surface such as a tilted or unsteady table. If the battery falls off, it may be damaged or cause injury.
- ⊘ Do not charge the battery in an environment that is extremely cold or hot. If you use the battery in such an environment, its performance would decrease. Charging the battery in temperatures between 10°C and 30°C is recommended.

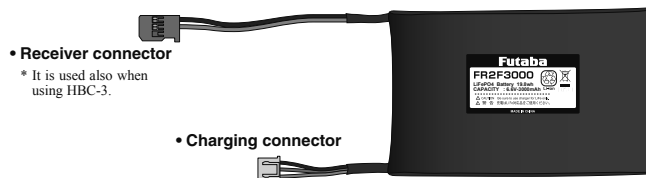
Usage Precautions

Charge/Discharge

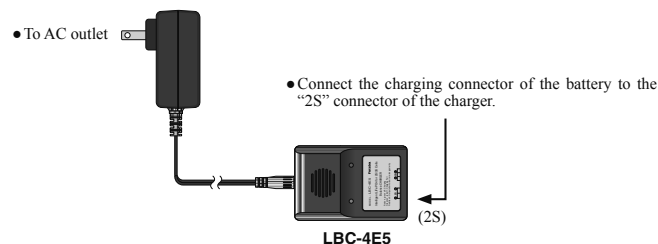
- * When you purchase the battery, please charge it to full capacity before use.
- * Use the Futaba LBC-4E5 Li-Fe battery charger (constant current/constant voltage charging system, balanced charging compatible). Refer to the LBC-4E5 instruction manual for the charging instructions.
- * The FR2F3000 can also be charged using a general Li-Fe battery charger in addition to the special charger mentioned above. However, in this case, charging is the user's responsibility. Any troubles which may occur fall outside the warranty.
- * Do not leave the battery charging. If any abnormal changes occur at the battery or charger, immediately stop charging.
- * Perform charging after the battery capacity is discharged to a certain amount. Repeatedly charging a battery while it is near the normal charged state will shorten its life.
- * Do not use the battery until the servo stops operating. The battery will swell due to over-discharging and will not recharge.
- * When the battery will not be used for a long time, to prevent it from deteriorating we recommend that it be kept in about the half capacity state instead of fully charged. Also be careful that the battery does not enter the over-discharged state due to self-discharge. Periodically (about every 3 months) charge the battery. In addition, always remove the battery from the model and store it in a dry, cool place (15°C~25°C).
- * Do not forcefully discharge the battery with a discharger, etc. It will cause over-discharging.
- * When over-discharging is carried out and voltage becomes less than 4V, it becomes impossible to charge. It is important to charge a battery periodically. (about every 3 months) When it has become less than 4V, there is the method of reviving. It charges the battery for about 5 minutes in Futaba HBC-3. Then, the usual charge by LBC-4E5. It may be failure of a battery if it cannot charge by this method, either. In that case, since it is dangerous, don't try this method repeatedly.

Connector connection

- * When connecting the battery to the receiver, use the receiver connector shown below. Insert the connector fully. However, do not connect the charging connector.



- * When charging, make the connections shown below.



How to care the battery

- * Remove stains from the battery by wiping it with a dry and soft cloth. Do not use a wet cloth, alcohol, thinner, benzene or detergent.

Operating temperatures

- * The further the temperature goes down, the more the operating time shortens. When you use the battery at low temperature, it is recommended to have another charged battery as a backup.

Carry and storage

- * When you carry or store the battery, prevent the short-circuiting of the +/- terminals. Do not put any metallic objects including personal ornaments in a bag or drawer with the battery. This could cause a fire, overheating, explosion or the leakage of electrolyte fluid.
- * Do not leave the battery near a heat source. Do not expose the battery to direct sunlight for a long time. High temperature will shorten the battery life.

Service life

- * Battery performance degrades gradually after repeated charging and discharging. If the operating time of the battery decreases significantly, it may be time to replace it with a new one. Battery capacity usually decreases by half after about 500 charge/discharge cycles, depending on the operating conditions.

Specifications of FR2F3000

(The specifications are subject to change without prior notice.)

- Type: Rrechargeable Li-FeP04 polymer battery
- Nominal output voltage: DC6.6V
- Nominal capacity: 3000mAh
- Compatible charger: Constant current/constant voltage, balanced charging system (LBC-4E5)
- Number of charge-discharge cycles: Approx. 500 (Depends on the usage conditions)
- Ambient temperatures:
0 ~ +45°C for charging, -20 ~ +60°C for discharging, -20 ~ +25°C for storage.
- Dimensions: Approximately 61.0mm (L) x 91.0mm (W) x 16.5mm (H)
- Weight: Approximately 140g

- The battery body of this product cannot be repaired.
- If you have questions about this product, please contact your Futaba dealer.

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FUTABA CORPORATION TEL: +81-3-4316-4820, FAX: +81-3-4316-4823
oak kandakajicho 8F 3-4 Kandakajicho, Chiyoda-ku, Tokyo 101-0045, Japan