

# USER MANUAL

## Blue Line

### Portable Power Pack (P3)

### Lithium-Ion Battery

Photo may differ from actual product





**Read and understand this entire manual before using, replacing or installing this battery.**

**Failure to follow these instructions can result in electrical shock, fire, death, serious bodily injury and/or property damage.**

**Keep away from children.**

**The battery must only be serviced by the manufacturer or trained personnel. It does not have any end-user serviceable components inside. Contact Blue Line for all service needs.**

# Safety Precautions



This battery (referred to after this point as the “battery”) contains lithium batteries. To reduce the risk of electrical shock, fire, death, serious bodily injury and/or property damage:

- Do not attempt to destroy or disassemble the battery pack or remove any of its components.
- Never touch both terminals with metal objects and/or body parts as short circuits may result.
- Do not charge the battery with an external charger. The only charger that may be used with the battery is the one built into the battery.
- Do not use the system outside of the temperature limits. Store in an environment between 0C and 40C.
- Do not shock or jar the unit.
- Do not touch any liquids or materials that come from a damaged battery. If the battery has a breach and chemicals are spilled, only trained personnel may clean the spill. A battery with spilled chemicals presents a fire hazard and should be moved to a safe location.

- Do not overcharge or over-discharge the unit.
- Do not use the battery if it has been damaged.
- Do not use the battery if any wiring and/or wiring insulation is damaged
- Do not transport the battery without consulting with the carrier.
- Consult your local waste authority for information regarding available recycling and/or disposal options. Local, state or federal laws may prohibit disposal of lithium-ion batteries in ordinary trash.
- Keep the system upright at all times.
- Keep the unit dry and clean of debris.
- Do not open the battery's main cover. Opening the battery's main cover will void the warranty.
- Do not use the battery as ballast if the battery does not meet the ballast requirements of the lift in which it is used. Failure to properly ballast the lift can lead it to tip over which could result in serious injury, death and/or property damage. The battery weighs 100 lbs and is not as heavy as most lead-acid batteries.



## Inspection

The battery should be inspected before and after every use. The following should be inspected and verified to ensure a safe and operational device:

- Voltage is within operational parameters on all plugs and readouts
- The system is within temperature limits
- The system does not have any physical damage
- All wiring and wiring insulation is undamaged
- The system is being used in a safe manner

## Discharging

The system can discharge peak currents of up to 300 amps for up to a 30-second duration, and 50 amps continuously. If the system is below 100% state of charge, the amp values will be derated.

The battery should not be discharged beyond 0% as indicated on the battery's state-of-charge indicator. If the battery is discharged beyond the final discharge value, the collector metal may leach from the negative electrode and deposit locally during charging. This deposition may grow toward the positive electrode and cause an internal short-circuit or liquid leakage.

During discharging, the highest discharging temperature should not be exceeded. If the temperature is over the highest discharge-start temperature before discharging, discharging should not be started. During discharging, the maximum discharging current should not be exceeded.

## Charging

Never charge a lithium primary cell or battery. The system MUST be charged through the Blue Line Portable Power Pack 110VAC external charger. The charger input is rated for 105-130v AC. Use only the power cord supplied with the system. Do not use any charger other than that specifically provided for use with the system. The use of other cords may result in charging the batteries inside the appliance. DO NOT attempt charging through the product's SB-175 ports.

The external P3 charger has a starting rate of 25 amps that tapers as the system approaches full charge. The charge time is approximately 3 hours. The system must be charged fully at least once every three months. Please note that the switch must be in the on, or "I", position for the P3 to engage charge. For optimal performance, charge the pack whenever it is not in use.

The charging voltage shall be applied for secondary cells so as to promote the chemical reaction during charging. However, if the charging voltage is too high, excessive chemical reactions or side reactions occur, and the battery becomes thermally unstable. (It may overheat and thermal runaway may occur.) Consequently, it is most important that the charging voltage never exceeds the value specified above.

Never attempt to recharge primary batteries. Attempting to charge a non-rechargeable (primary) battery may cause internal gas or heat generation resulting in venting, leakage, explosion, and personal injury. Never short circuit batteries as this may lead to high temperatures, leakage, or explosion. When the positive (+) and negative (-) terminals of a battery are in electrical contact with each other, the battery becomes short-circuited. This may result in venting, leakage, explosion and personal injury. Do not leave the battery on prolonged charge when not in use. After extended periods of storage, it may be necessary to charge and discharge the cells or batteries several times to obtain maximum performance.

## Safe Use Parameters

The system must be kept within operational voltage parameters. Care should be taken to make sure the case of the pack never exceeds 40C, which would imply an overheat condition inside the pack.

If the battery does not meet counterbalance ballast requirements, the battery should not be used with that lift.

The system should not be left plugged into a fork truck when not in use. The system may not exceed greater than 300 amps of pulsed discharging current.

The system must be kept between 0C and 40C at all times. Do not get the system wet.

When used correctly, the system provides a safe and dependable source of portable power. However, misuse or abuse may result in leakage, fire, or explosion.

Always take care to install the battery correctly observing the appropriate marks on the battery and the device with regard to polarity (+ and -). Batteries that are incorrectly placed into some equipment may be short-circuited. This can result in a rapid temperature rise causing venting, leakage, explosion and personal injury.

Always replace the battery at one time, taking care not to mix old and new ones or batteries of different types. When batteries of different brands or types are used together, or new and old batteries are used together, some batteries may be over-discharged due to a difference of voltage or capacity. This can result in venting, leakage, and explosion and may cause personal injury.

Keep contacts clean, both on the battery and in the appliance. Clean the battery and appliance contacts prior to battery installation.

Never dispose of batteries in fire. When batteries are disposed of in fire, the heat build-up may cause an explosion and personal injury. Do not incinerate batteries except for approved disposal in a controlled incinerator.

Never heat batteries in order to revive them. Do not expose cells or batteries to heat or fire. Avoid storage in direct sunlight. When a battery is exposed to heat, venting, leakage and explosion may occur and cause personal injury.

Never attempt to disassemble, crush, puncture or open batteries. Such abuse may result in venting, leakage, rupture, and cause personal injury.

Soldering directly to the battery surface should be avoided. Soldering should be done only with the advice of the manufacturer. The heat from welding or soldering directly to a battery can cause leakage, venting, explosion or fire, and can cause personal injury.



When incorporating a primary lithium battery into a memory back-up circuit, protective measures should be used to prevent the main power source from charging the battery.

Do not dismantle, open or shred secondary cells or batteries.

Do not short-circuit a cell or a battery.

Do not remove a cell or battery from its original packaging until required for use.

Do not subject cells or batteries to mechanical shock.

In the event of a cell leaking, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with copious amounts of water and seek medical advice.

Do not use any cell or battery which is not designed for use with the equipment.

Do not mix cells of different manufacture, capacity, size or type within a device.

## **Maintenance**

The system should be kept clean and free of debris, and must not be washed down with flowing water. Keep the system clean and dry. Wipe the cell or battery terminals with a clean dry cloth if they become dirty.

## **Storage**

The system is best stored at between 30% state-of-charge (SOC) and 70% SOC. A lithium system stored at 70% SOC will exhibit the least

age-related capacity loss over time.

Lithium systems self-discharge over time. The P3 will go from 100% SOC to 0% SOC in approximately half a year's duration, so if the system is in storage, periodic maintenance charges should be performed to keep the system from reaching 0% SOC.

Store batteries in a dry place at room temperature. For normal storage, the temperature should be between +10 °C and +25 °C (+50 °F and +77 °F) and never exceed +30 °C (+86 °F). The storage area should be clean, cool, dry and weatherproof. Batteries should therefore not be stored next to radiators or boilers, in boxcars (containers), in direct sunlight, or next to other sources of heat. Extremes of humidity (below 35% and above 95% relative humidity) for sustained periods should be avoided since they are detrimental to both batteries and packing.

Store unused batteries in their original packaging and away from metal objects. Unpacked batteries could get jumbled or get mixed with metal objects. This can cause battery short circuiting which may result in venting, leakage and explosion and personal injury; one of the best ways to avoid this from happening is to store unused batteries in their original packaging.

By using the P3, you agree that you understand the contents of the Blue Line Portable Power Pack (P3) Manual.