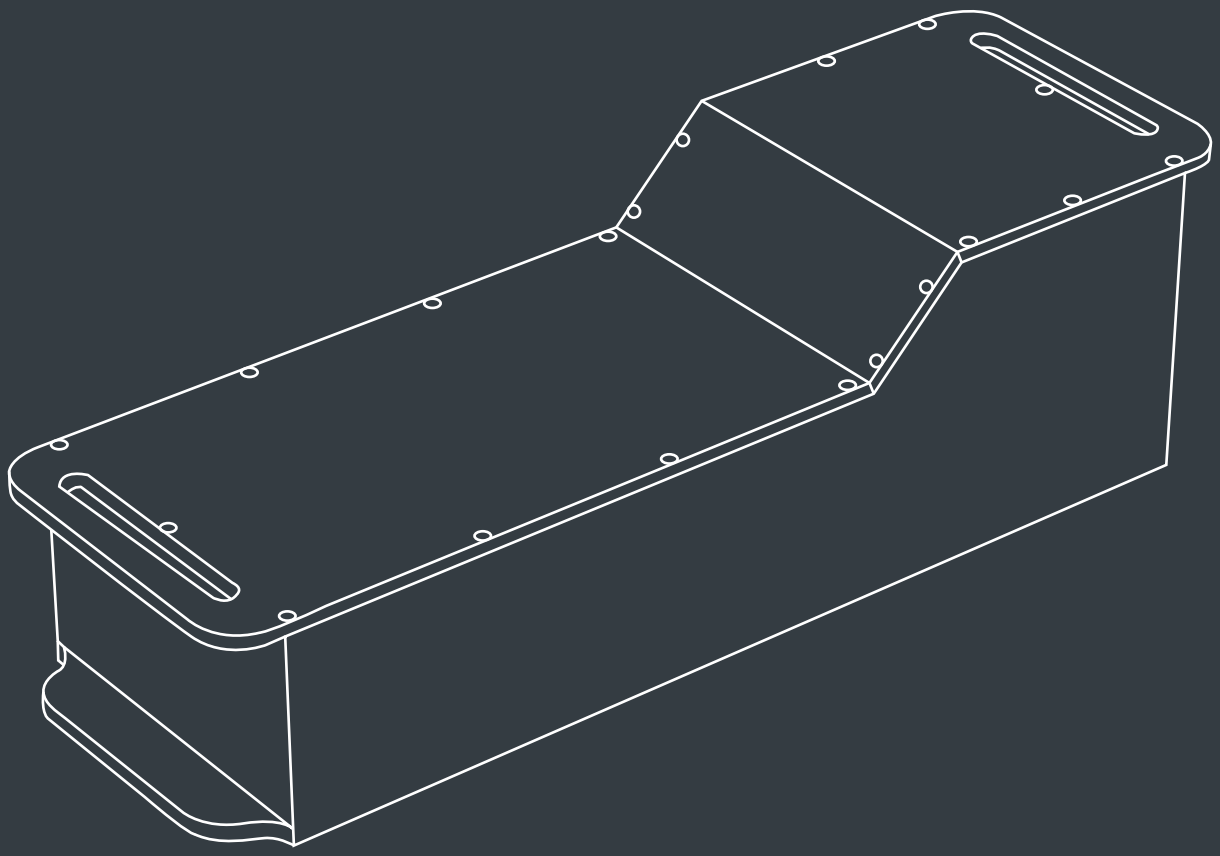
BSR B2500

BATTERY USER MANUAL



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1. Introduction

PURPOSE OF THE MANUAL

The purpose of this manual is to provide clear and concise instructions for the safe and effective use, maintenance, and troubleshooting of the **BSR B2500 Battery**. This guide is designed to help users maximize battery performance, ensure safe operation, and extend the battery's service life.

This manual covers essential topics, including **initial setup, daily operation, and regular maintenance**, as well as troubleshooting steps in case of issues. Following these instructions will help **prevent potential hazards** and **ensure optimal performance** in high-performance racing applications.

This manual has been developed with the highest level of strictness and safety requirements, while simultaneously ensuring that users understand that deviations are permissible—**as long as they comply with critical safety regulations and generally accepted industry standards**.

The client is fully responsible for the technical use, safety, and consequences arising from the use of the BSR system.

Safety and sound judgment come first.

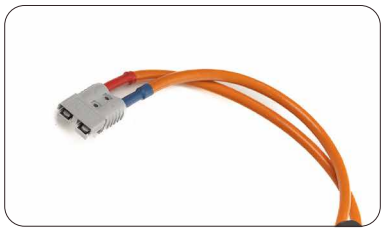
PRODUCT OVERVIEW

This section provides an overview of the **BSR B2500 Battery's** key features to help users quickly identify its essential components.

Front View

- **Mounting Point** – Secure location for properly installing the battery in the kart.

Back View



- **Discharge Cables** – Heavy-duty power cables for high-current discharge.

- **Charging Port** – Dedicated charging interface, protected by a spring-loaded cap when not in use.

- **Battery Switch** – Controls the discharge power, turning it off disables output but does not affect charging.

- **Serial Number Label** – The unique identifier used for warranty registration, support inquiries, and tracking purposes.

- **Mounting Point** – Secure location for properly installing the battery in the kart.

Warning: Always turn **off** the **battery switch** when the battery is not installed in the kart. Leaving it on while dismounted may expose the discharge cables to accidental contact, posing a risk of short circuits or electric shock.

2. Specifications

- **Battery Type:** Lithium-Ion (Li-ion)
- **Product Number:** 10-01-52001
- **Model:** B2500
- **Capacity:** 28Ah
- **Nominal Voltage:** 96V
- **Ingress protection:** IP64
- **Dimensions:**
    - **Height:** 165 mm
    - **Width:** 185 mm
    - **Length:** 570 mm
- **Weight:** 18 kg (39.6 lbs)
- **Standard Operating Temperature:**
    - **Discharge:** 5°C to 60°C (41°F to 131°F)
    - **Charge:** 5°C to 55°C (41°F to 113°F)

ADDITIONAL FEATURES

- **Battery Management System (BMS):** Provides protection against overcharging, rover-discharging, short circuits, and excessive temperature.

- **Cell Balancing Function:** Ensures even charging across all cells to maximize battery performance and lifespan.

3. Safety Instructions

To ensure safe operation and handling of your Battery, follow these safety guidelines carefully.

GENERAL SAFETY PRECAUTIONS

- **Do Not Disassemble:** Never attempt to open, disassemble, or modify the battery, as this can cause a short circuit, leakage, or fire.
- **Avoid Exposure to Water:** Keep the battery dry at all times. Exposure to water or excessive moisture may damage the battery and create a risk of electric shock or fire. Except during competition use while on the track, the battery may be operated in heavy rain under race conditions. However, **it is not permitted to store the battery for extended periods in wet environments or locations with high levels of moisture or water exposure**.
- **Prevent Unauthorized Access:** Store the battery in a secure location where only authorized personnel, such as kart track operators, can access it.

HANDLING AND STORAGE

- **Avoid Impact:** Do not drop, puncture, or subject the battery to strong impacts, as this may compromise its structural integrity and lead to leakage or fire.
- **Store in a Cool, Dry Place:** Keep the battery in a well-ventilated, dry area at moderate temperatures (5°C to 25°C / 41°F to 77°F) when not in use. Avoid extreme temperatures and direct sunlight.
- **Position Carefully:** Ensure the battery is securely positioned and away from any sharp or metallic objects that could puncture the casing.

CHARGING SAFETY

- **Use Compatible Chargers:** Only use chargers and/or charging stations provided by BSR. Using an incompatible charger may result in overcharging, overheating, or damage to the battery.
- **Monitor Charging:** Do not leave the battery unattended during charging, and avoid charging near flammable materials.
- **Charge in a Safe Area:** Charge the battery in a well-ventilated area, away from moisture, heat sources, and direct sunlight.

DISPOSAL AND RECYCLING

- **Dispose Responsibly:** Lithium-ion batteries must be disposed of according to local environmental regulations. Do not dispose of the battery in fire, household waste, or recycling bins.
- **Contact Local Recycling Programs:** For safe recycling, contact authorized battery disposal services or recycling programs in your area.
- BSR offers a **Factory Rebuild Program** under which customers can return used batteries for refurbishment or factory repair. This option can extend a battery's lifetime by restoring it to **100% capacity at approximately 60% of the cost** of a new battery. This program is ideal for customers seeking a more sustainable option and is designed to maximize the value of existing batteries while maintaining optimal performance.

WARNING: POTENTIAL RISKS

Improper battery handling or use can result in severe consequences. BSR identifies these risks as critical and highlights them here:

Battery discharge leads are live when the battery switch is on. Keep the switch in the off position whenever the battery is not in use, whether installed in the kart or not.
Fire Hazard: Mishandling a battery, such as puncturing, short-circuiting, or exposing it to extreme heat, can lead to fires.
Explosion Risk: Battery cells can expand and potentially explode if overcharged or charged with improper equipment.
Chemical Leakage: Damaged batteries may leak harmful chemicals, which can be dangerous to both users and the environment.

4. Before First Use

To ensure optimal performance and safety, follow these steps carefully before using the Battery for the first time.

UNBOXING AND INITIAL INSPECTION

1. **Inspect the Packaging:** Carefully open the packaging and inspect the battery and any accessories provided (such as chargers or cables).
2. **Check for Damage:** Examine the battery for any visible signs of damage, such as cracks, dents, or loose connections. If any damage is present, do not use the battery and contact BSR support: support@blueshockrace.com immediately.

CHARGING INSTRUCTIONS

1. **Initial Charge:** Connect the battery to the charger, following the charger manual for detailed instructions.
2. **Monitor Charging:** Charge the battery in a safe, well-ventilated area, away from moisture and heat sources. Monitor the charging process, and avoid leaving the battery unattended.
3. **Full Charge Requirement:** Ensure the battery is fully charged before first use to optimize performance and battery health.

INITIAL TEST PROCEDURES

1. **Battery Switch Position:** Make sure the battery switch is in the off position before installing the battery and connecting the discharge cables to the power unit.
2. **Installation:** Install the battery into the kart according to the guidelines provided in the Kart/Power Unit manual.
3. **Trial Run:** Perform a brief test to verify functionality before regular use.

Warning: Ensure the battery switch is in the **off** position before connecting the discharge cables to the power unit to prevent accidental power surges or short circuits.

5. Usage Tips and Best Practices

To maximize the **performance, safety, and lifespan** of your BSR B2500 Battery, follow these tips and guidelines.

BATTERY ROTATION

If multiple batteries are available, rotating their usage is recommended. This helps distribute charge cycles evenly across all units, preventing premature wear on a single battery and extending overall lifespan. Additionally, rotating batteries in environments with varying temperatures helps maintain consistent performance across the fleet and provides a longer continuous driving cycle on the track.

RECOMMENDED CHARGE LEVELS

- **Minimum Charge:** Avoid letting the battery drop below 20% charge as shown on the power unit display. Regularly maintaining charge levels above this minimum will help maintain optimal performance and longevity.
- **Partial Charging for Longevity:** When possible, avoid charging to 100% every cycle. Partial charging minimizes battery stress and extends overall life by keeping the battery within an optimal charge range (20–90%).

Warning: Consistently discharging the battery below 20% may lead to irreversible damage, voiding the warranty.

TEMPERATURE MANAGEMENT

- **Operating Temperature Range:** Use the battery within the recommended range of 5°C to 55°C. Extreme temperatures can negatively affect battery performance and may lead to long-term damage.
- **Overheating Prevention:** During high-demand usage, monitor battery temperature. If the battery becomes excessively hot, consider taking a pause to allow it to cool before continuing.

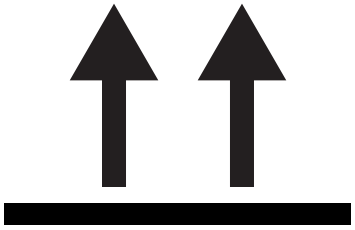
Warning: Exposing the battery to temperatures above 60°C may cause irreparable damage and void the warranty.

STORAGE RECOMMENDATIONS

For long-term storage, keep the battery at 70-80% charge and store it in a cool, dry location. Always turn the battery switch off before storing to prevent accidental activation or power drain. Avoid prolonged exposure to extreme temperatures, as this can degrade battery chemistry.

PROPER PLACEMENT:

Upright Position: Always store and transport the battery in an upright position to minimize the risk of leakage or damage.



PRACTICES TO AVOID (BATTERY DEGRADATION WARNINGS)

BSR advises against specific actions that accelerate battery wear.

- **Consistent Overcharging:** Charging the battery to full capacity consistently, especially without cooling periods, can stress cells.
- **Heavy Discharge:** Avoid repeated high-power demands that could overheat or strain the battery.
- **Improper Storage Conditions:** Storing the battery in extreme temperatures or without regular maintenance charging can lead to cell damage and chemical degradation.

Warning: Failure to avoid these actions may void the warranty.

USING BATTERIES IN BAD WEATHER

- BSR Batteries are designed for performance in various conditions, including outdoor use during rain or snow. However, certain precautions must be followed:
    - Use the battery only in weather-protected karts and ensure proper sealing of electrical connections.
    - After use in wet or snowy conditions, wipe the battery dry with a clean cloth and inspect for any dirt, moisture, or corrosion on the terminals.
    - If necessary, use compressed air to blow out the battery contacts and other areas until they are clean and dry. Before charging, ensure that the battery is not exposed to any additional risks caused by residual effects of wet conditions after the ride.

Storage Note: Batteries must **never** be left outside or exposed to prolonged wet conditions. Always store in a dry, temperature-controlled environment to prevent damage or voiding of the warranty.

Warning: Failure to clean or dry the battery after use in bad weather, or storing it outdoors, may lead to corrosion or electrical failure, which is not covered under warranty.

6. Maintenance Tips

To keep your B2500 Battery in optimal condition, follow these maintenance guidelines.

CLEANING AND CARE

Exterior Cleaning: Wipe the battery with a dry, soft cloth to remove dust and dirt, or use compressed air for cleaning. Cleaning agents may only be used if they are specifically intended for automotive battery cleaning. However, it is strictly forbidden to use them on battery contacts — they may only be used on the battery casing and its external components.
Terminal Maintenance: Periodically inspect and clean the discharge and charging terminals to prevent dirt buildup and ensure reliable connections. If necessary, use a dry brush or compressed air to remove debris.
Switch and Cap Inspection: Ensure the battery switch operates smoothly and the charging port cap remains functional, sealing properly when not in use.

PERIODIC INSPECTIONS

- **Visual Inspection:** Regularly check the battery casing for cracks, dents, or other damage.
- **Connection Points:** Inspect all wiring and connectors for wear, corrosion, or loose connections.
- **Mounting Points:** When installing the battery, do not tighten the mounting screws to the point where they could cause deformation of the battery casing. Also, ensure that the battery support brackets are installed correctly and do not damage the battery housing.

BATTERY STORAGE FOR LONG PERIODS

- **Recommended Storage Charge:** If storing the battery for an extended period, charge it to **70–80%** before storage to prevent deep discharge.
- **Storage Conditions:** Keep the battery in a **cool, dry location** (5°C to 25°C / 41°F to 77°F) and away from direct sunlight, moisture, or extreme temperatures.
- **Periodic Check:** If stored for **more than three months**, check the charge level and recharge if necessary to maintain **70–80%** charge.
- **Switch Off:** Always turn the battery switch **off** during storage to prevent unintended discharge.

7. Troubleshooting

If you experience any issues with your battery, refer to the common problems and solutions below. For further assistance, contact us at **support@blueshockrace.com**. If the issue can't be resolved remotely, the battery may need to be returned to **Blue Shock Race** for repair.

COMMON PROBLEMS AND SOLUTIONS

1. Battery Overheating
   - **Cause:** Extended high-power usage, insufficient cooling, or deep discharge.
   - **Solution:**
     - Avoid discharging the battery below 30%, as low charge levels increase the risk of overheating and automatic shutdown.
     - Allow the battery to cool before recharging or continued use (5–10 minutes).
     - Make use of air-cooling options or store the battery in a cool area during charging or between race sessions.

2. Battery Unexpectedly Shuts Off During Use
   - **Cause:** Battery discharged too low or internal protection engaged.
   - **Solution:**
     - Always keep the battery above 30% charge to prevent unexpected shutdowns.
     - If the battery shuts off, attempt to recharge it immediately.
     - If the battery does not turn back on after charging, contact **BSR support:** support@blueshockrace.com for further assistance.

3. No "Click" Sound from Contactor When Turning On the Switch
   - **Cause:** The battery's BMS protection has activated, the contactor has failed, or another internal issue has occurred.
   - **Solution:**
     - If no "click" is heard when switching the battery **on**, do not attempt to use it.
     - Disconnect the battery and contact **BSR support:** support@blueshockrace.com for further diagnostics and assistance.

4. Power Unit Not Turning On
   - **Cause:** Faulty connection, depleted battery, or internal issue.
   - **Solution:**
     - Visually inspect the battery's contact points to the Power Unit to ensure they are clean, undamaged, and securely connected.
     - Charge the battery fully and test it again. If the battery won't charge, follow the troubleshooting steps for charging issues.
     - If the power unit still won't turn on after a full charge and inspection, contact support: support@blueshockrace.com

5. Battery Was Left On After Use (Only Emergency Stop Pressed)
   - **Cause:** The kart's **emergency stop** was activated, but the battery switch was left on, leading to unnecessary standby power drain.
   - **Solution:**
     - Always turn **off the battery switch** when the kart is not in use to prevent slow discharge and avoid unnecessary wear on the battery.
     - If the battery was left on for an extended period, ensure it still holds sufficient charge before the next use.

6. Battery Doesn't Charge or Incorrect Charger Used
   - **Cause:** The charger may not be properly connected, the battery may be deeply discharged, or an incorrect charger has been used.
   - **Solution:**
     - Ensure you are using the correct charger recommended for the B2500 battery.
     - Verify that the charger is connected to the correct charging port and fully inserted.
     - If charging does not begin or seems unusual, disconnect immediately and try a different BSR charger if available.
     - If the issue persists, contact support: support@blueshockrace.com

7. Battery Charges Extremely Fast
   - **Cause:** Possible internal fault or degraded battery cells.
   - **Solution:**
     - Perform a visual inspection to rule out external damage.
     - Fully charge the battery, then perform a discharge test (using the battery for a session and monitoring performance).
     - If the battery discharges quickly after a short charge, contact support: support@blueshockrace.com to assess battery health.

8. Battery Quickly Discharges During Use
   - **Cause:** Worn battery cells, high discharge rate, or external temperature impacts.
   - **Solution:**
     - Perform a full charge and discharge test. Use the battery in a typical session and note if there's a significant drop in performance.
     - Check if the battery temperature is within normal operating limits; overheating can accelerate discharge.
     - If the battery no longer supports the full expected distance, it may need replacement or refurbishment. Consider using BSR's buyback program for a worn battery.

8. Blue Shock Race

Warranty and Repair Policy

MANUFACTURER'S LIMITED WARRANTY

Blue Shock Race (BSR) provides a one-year limited warranty on power units and related components, including batteries, covering defects in materials and workmanship under normal use.
BSR guarantees that during the one-year period, battery capacity degradation will not exceed 30%, in line with global electric vehicle industry standards regarding natural battery wear and degradation levels.

WARRANTY ELIGIBILITY

To qualify for warranty service, customers must provide:

- A valid proof of purchase showing the original date of purchase and the authorized retailer.

EXCLUSIONS FROM WARRANTY

The warranty is voided under any of the following conditions:

1. **Mechanical Damage:** Evidence of physical damage, including damage due to impact, falls, or other external forces.
2. **Alterations or Unauthorized Repairs:** The warranty is void if the product has been opened, modified, or repaired by anyone other than BSR or an authorized service provider.
3. **Tampering with Warranty Seals:** Removal or damage of warranty seals, serial numbers, or any identifier labels.
4. **Environmental Damage:** Damage caused by exposure to moisture, extreme temperatures, or environmental contaminants, such as soot, smoke, or dust.
5. **Improper Use of Accessories:** Use of non-standard power supplies, accessories, or spare parts that are not certified by BSR for use with the specified product.
6. **Power Issues:** Damage due to improper voltage or telecommunications networks not meeting specified standards.
7. **Lack of Required Maintenance:** Failure to conduct routine maintenance on products that require it (e.g., cleaning, calibration).
8. **Improper Use or Purpose:** Any use outside the intended purpose or in a manner inconsistent with provided instructions.

Please note: The battery temperature, charging, and usage recommendations provided in this manual must be strictly followed to maintain warranty coverage.

WARRANTY PROCEDURE

1. **Customer Support:** Customers experiencing issues should first contact BSR support at support@blueshockrace.com. For prompt assistance, BSR will attempt to diagnose and resolve the issue remotely.
2. **Return for Inspection:** If remote support cannot resolve the issue, customers may be required to send the product to BSR for inspection.
3. **Customer's Responsibility for Shipping:** The customer is responsible for shipping costs to BSR's service center. BSR covers return shipping for items under warranty.

BATTERY REPAIR SERVICE (OUT-OF-WARRANTY REPAIRS)

If a product does not qualify for warranty coverage, BSR offers a repair service for a fee. In such cases, the customer will be informed of repair options and associated costs. Repairs will proceed only with customer approval.

WARRANTY ON NATURAL WEAR COMPONENTS

The warranty does not cover parts subject to natural wear and tear, including chassis components.
For further assistance, please contact our service team at info@blueshockrace.com

9. Shipping of Battery Products

GENERAL REQUIREMENTS

Shipping Compliance:
BSR batteries are classified as dangerous goods and must comply with relevant regulations for safe transportation. Ground, sea, and air transport each have specific requirements outlined below. For air shipping, prior coordination with BSR is mandatory due to additional restrictions.

- **Packaging and Marking:**
  - Use **UN-certified packaging** (e.g., 4G-rated boxes) to prevent damage during transit.
  - Clearly mark shipments with appropriate labels, such as the **Class 9 Hazard Label** and **Lithium Battery Mark** (including the relevant UN number and contact details).
  - Standalone batteries (UN3480) must be shipped at or below 30% **State of Charge (SoC)**.
- **Documentation:**
  - Include a **Material Safety Data Sheet (MSDS)** and **UN38.3 certification** for shipments containing lithium batteries.
  - Attach all required transport declarations, such as Dangerous Goods Transport Documents or Shipper's Declarations, depending on the mode of transport.
- **Inspection Upon Receipt:**
  - Customers must inspect shipments immediately upon delivery. Report any damage to the carrier and BSR within 24 hours to ensure eligibility for claims or support.

Please note: For deliveries that exceed 60 days in transit, it is required to charge the battery to a state of charge (SoC) within the range of 50% to 80% prior to shipment. This precaution is necessary to maintain the safety and optimal condition of the battery throughout the extended transit period.

SPECIFIC TRANSPORT GUIDELINES

1. GENERAL CLASSIFICATION OVERVIEW

TYPE	UN Number	Proper Shipping Name	Packing Instruction
UN	3480	Lithium-ion batteries (standalone)	PI 965
UN	3481	Lithium-ion batteries contained in equipment	PI 967

2. LAND TRANSPORT (ADR/49 CFR)

- **Applicable Regulations:**
  - **ADR (Europe):** European Agreement Concerning the International Carriage of Dangerous Goods by Road.
  - **49 CFR (USA):** Code of Federal Regulations Title 49 for road and rail.
- **Requirements:**
  - **Classification and Packaging:**
    - Adhere to ADR/49 CFR guidelines for Class 9 hazardous materials.
    - Batteries must meet **UN Manual of Tests and Criteria (UN38.3)** standards.
    - Use **UN-certified packaging** with appropriate cushioning.
  - **Labeling and Marking:**
    - Apply the **Class 9 Hazard Label** and **Lithium Battery Mark** with relevant UN numbers.
    - Include orientation arrows if necessary and indicate net battery weight.
  - **Documentation**:
    - Include a **Dangerous Goods Transport Document** or **Bill of Lading** with emergency contact information.
  - **Transport Restrictions:**
    - Standalone batteries (UN3480) may require special approval on certain routes.
    - Placards are required for large shipments.

3. AIR TRANSPORT (IATA DGR)

- **Applicable Regulation:**
  - **IATA Dangerous Goods Regulations (DGR):** Governs all air cargo transport.
- **Requirements:**
  - **Classification and Packaging:**
    - Follow IATA Packing Instructions (PI):
      - **UN3480 (PI 965):** Standalone batteries (cargo aircraft only).
      - **UN3481 (PI 967):** Batteries in equipment (cargo aircraft only).
    - Batteries must meet **UN38.3 testing** and be at or below 30% SoC.
    - Use **UN-approved packaging** with strong cushioning.
  - **Labeling and Marking:**
    - Apply **Cargo Aircraft Only Label** (as required).
    - Include Class 9 Hazard Label and Lithium Battery Mark.
  - **Documentation**:
    - A **Shipper's Declaration for Dangerous Goods (DG Declaration)** is mandatory, listing gross/net weights and shipment details.
  - **Transport Restrictions:**
    - UN3480 and UN3481 shipments are limited to cargo aircraft.

4. SEA TRANSPORT (IMDG CODE)

- **Applicable Regulation:**
  - **IMDG Code (International Maritime Dangerous Goods Code):** Required for international sea shipments.
- **Requirements:**
  - **Classification and Packaging:**
    - Use **UN-certified packaging** capable of withstanding maritime conditions.
    - Batteries must meet **UN38.3 standards**.
  - **Labeling and Marking:**
    - Include **Class 9 Hazard Label** and Lithium Battery Mark with contact details.
  - **Documentation:**
    - Provide a **Dangerous Goods Declaration (DGD)** and ensure manifest details match.
    - Attach a Material Safety Data Sheet (MSDS).
  - **Transport Restrictions:**
    - Some ports restrict handling of UN3480 shipments due to fire hazards.
    - Ensure segregation from flammable materials during storage and transport.

11. Appendix I

This quick reference guide provides essential handling and safety practices for the B2500 battery. For easy access, consider printing this list and placing it near the charging area or battery storage location. Following these guidelines helps ensure battery longevity, safety, and reliable performance.

DO'S

- **Use the Correct Charger** – Always charge the battery using a BSR-approved charger designed for the B2500. Connecting to an incorrect port or using an incompatible charger may bypass safety systems.
- **Rotate Batteries When Possible** – If multiple batteries are available, alternate their use to distribute wear evenly and extend lifespan.
- **Follow Charging Guidelines** – Maintain the battery charge above 30% whenever possible to prevent deep discharge and unexpected shutdowns.
- **Allow the Battery to Cool** – After intensive use, allow the battery to cool down before charging to avoid excessive heat buildup.
- **Store Properly** – Keep the battery in a cool, dry place with the switch turned off when not in use. Avoid prolonged storage at extreme temperatures.
- **Inspect Regularly** – Check cables, connectors, and the battery housing for visible damage or wear. Contact support if issues arise.
- **Session Planning** - Create a daily plan for track sessions—shorter, more frequent sessions are preferable to fewer long ones. This approach allows for more efficient battery operation, enabling faster recharging and reducing the risk of overheating.
- **Gear Ratio** - Ensure that the kart is equipped with the optimal gear ratio, as it has a significant impact on motor load, which in turn affects battery consumption and heat generation. Always monitor and maintain the gear ratio within the optimal range.

DON'TS

- **Don't Mix Up Charge and Discharge Ports** – Ensure the charger is connected to the correct port. Some connectors may appear similar, but incorrect usage can bypass safety mechanisms.
- **Don't Let the Battery Fully Discharge** – Running the battery to 0% can cause it to shut down and may require professional servicing. Avoid dropping below 30% when possible.
- **Don't Leave the Battery Switched On When Not in Use** – After a session, turn off the battery using its switch rather than relying only on external power unit controls.
- **Don't Overheat the Battery** – Continuous operation in high temperatures or blocking ventilation can lead to overheating. Stop using the battery if it becomes excessively hot.
- **Don't Store Without Charging** – If storing for long periods, keep the battery at around 70–80% charge to prevent deep discharge during inactivity.
- **Don't Attempt Repairs or Modifications** – Opening, modifying, or attempting to repair the battery yourself may cause irreversible damage, safety risks, and will void the warranty.

11. Appendix II

RACE DAY PREPARATION & BATTERY MANAGEMENT

To achieve peak performance and ensure long-term reliability, proper preparation and handling of the B2500 battery are essential. While BSR technology is designed for high efficiency, performance is determined before you enter the track—once on the track, adjustments to battery or power unit conditions are no longer possible.

Training sessions should be used to develop a structured session plan and an optimized battery usage cycle suited to your kart model and race conditions, following the guidelines in this manual.

In 99% of cases where performance issues arise or benchmarks are not met, the root cause is improper planning, neglect of recommended processes, or failure to follow the correct procedures. These mistakes can have irreversible effects, limiting system performance and functionality.

MAXIMIZING EFFICIENCY – KEY PRINCIPLES

- **Plan ahead:** Effective energy management starts before the session, not during.
- **Follow structured cycles:** Develop a consistent charging and usage routine.
- **Optimize off-track time:** Every minute off-track should be dedicated to preparing the system for the next session.

POST-SESSION ROUTINE

Immediately after leaving the track, follow these steps to maintain performance and longevity:

1. **Plug In** – Begin charging the battery.
2. **Cool Down** – Allow the system to cool as much as possible.
3. **Clean & Inspect** – Clean the kart and check for any damage.

This cycle should be repeated after every session to keep the battery in optimal condition and ready for the next race.