2025 BOLLINGER B4: BATTERY HEALTH & MAXIMIZING RANGE

BOLLINGER MOTORS

Vehicle Storage and Charging:

- The Bollinger HV battery pack offers a unique design that distinguishes it from conventional Lithium-Ion batteries. It is precisely engineered to undergo a complete charging cycle. By performing a 100% charge cycle, the battery pack engages in internal maintenance processes. This maintenance is crucial for preserving health and extending the battery's lifespan, ensuring optimal performance over time.
- It is permissible to warm the battery cabin during charging. Please note that doing so will increase the time to reach 100% SOC.

Storage and Parking:

Short-term parking

- Short-term parking is defined as parking for more than 1 week and less than 1 month.
- During short-term parking, no special precautions need to be taken.
- During short-term parking, routine storage maintenance will occur; please see details below Parking and Storage

Routine Storage Maintenance:

- Every four (4) hours, the vehicle will wake up and check the High Voltage (HV) battery temperature and Low Voltage (LV) battery voltage.
- Please note that HV SOC and range estimation may decrease during this time.
- The HV internal heaters will turn on if the battery temperature drops below a critical value. This operation will stop if the HV State of Charge (SOC) falls below 80%.
- The HV battery will charge the LV battery if the voltage has decreased below a critical value. This operation will stop if vehicle HV SOC drops below 20%.

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Long-term parking:

- Long-term parking is defined as parking for more than one (1) month.
- During long-term parking, the LV switch should be turned to the OFF position. Turning the LV switch to OFF will disable the HV battery and LV battery from draining. No routine storage maintenance will occur during this time.
- Please note that charging cannot occur if the LV switch is turned to OFF. Additional required battery maintenance is necessary.

Additional Required Battery Maintenance:

- If long-term parking extends beyond two (2) months, additional maintenance is required to preserve battery life and performance.
- Vehicles stored for more than two months should be stored at a State of Charge (SOC) of 75%.
- Vehicles that are stored for greater than two (2) months should be cycled once every 2 months.
- A cycle charges the battery up to 100% SOC, allowing time for balancing, and then discharges the battery down to 75%.
- Draining the battery can occur by driving the vehicle or by leaving it running for an extended period (turning on the heat will accelerate the battery drain).

Vehicle Charging:

- When used regularly, the vehicle should be charged to 100% SOC at least once weekly (NOT required during short- or long-term storage).
- Failure to charge the battery system to 100% once per week may result in reduced range and inaccuracies in SOC.

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Battery Pack Balancing:

- By performing a 100% charge cycle, the battery pack engages in internal maintenance processes, specifically cell balancing. This maintenance is crucial for preserving health and extending the battery's life.
- Cell balancing occurs when the battery reaches 99% State of Charge (SOC) and remains plugged in.
- When cell balancing has been completed, the SOC will increase to 100%. The time to achieve balance will vary depending on the vehicle's usage.

Charging Display Details – Charging Indicator Light:

- The charging light on the display will illuminate when the vehicle is plugged in and charging is in progress.
- The charging light will flash on the display when the vehicle is plugged in, but an error exists in the vehicle or EVSE that is preventing charging.
- The charging light will be off if the vehicle is not plugged in OR if the vehicle is plugged in, but charging has been completed.

Additional Charging Tips:

- After charging is complete, turn off the 12-volt main switch for 30 seconds to facilitate high-voltage battery conditioning.
- Charging CANNOT occur if the LV switch is turned OFF.
- Once charging has been completed, press the release button on the charge handle firmly to deactivate the locking mechanism that secures the charger in the charging port.
- It is permissible to warm the battery cabin during charging. Please note that doing so will increase the time to reach 100% SOC.

Bollinger recommends the following items:

- Charge the High-Voltage Battery to 100% every week.
- While charging, leaving the Low Voltage Switch in the ON is imperative. This is located behind the driver's seat outside the cab.
- Once the charging process has concluded, take a moment to locate the charger handle release button on the top of the handle. Press this button firmly; doing so will deactivate the locking mechanism that secures the charger in the charging port. This simple action will allow you to effortlessly detach the handle from the charging port.

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Vehicle Driving:

- The Bollinger B4 has a regenerative braking system designed to enhance vehicle deceleration. Utilizing this feature effectively helps prolong the life of the brakes but also contributes to recharging the high-voltage battery, maximizing battery range.
- Refrain from accelerating your vehicle with a sudden burst of speed, often referred to as a "jackrabbit" start, particularly when carrying a load.
    - Like traditional fuel-powered vehicles, electric vehicles also experience decreased efficiency when driving in this manner. This aggressive driving will reduce the overall range.
    - Choose a smoother, more gradual acceleration to maximize your electric vehicle's range.
- When braking, try to avoid hard, sudden stops.
- Smooth, gradual stops will allow the regenerative braking to do most of the work and assist in maintaining maximum vehicle range.