

Boson Motors Electric Light Utility Vehicle



Technical User Manual

Table of Contents

1.0 Introduction	6
1.1 Welcome Letter from the CEO	6
1.2 About Boson Motors' Electric Light Utility Vehicle	7
1.3 Vehicle Overview and Model Identification	8
1.4 Manual Overview: How to Use This Manual	10
1.5 Manual Conventions and Symbols	11
2.0 Safety Information.....	13
2.1 General Safety Precautions	13
Advanced Safety Technologies:	14
Operational Safety Guidelines:	14
Maintenance for Safety:	15
2.2 Vehicle-Specific Safety Features and Operational Safety Guidelines	14
2.3 Emergency Procedures and First Aid.....	15
In Case of an Accident:	16
Vehicle Fire:	16
First Aid Basics:	16
2.4 Battery and Electrical Safety	17
Understanding Your Vehicle's Battery System	17
Safety Guidelines for Battery Handling	17
Electrical System Maintenance	18
2.5 Maintenance and Repair Safety	19
Handling Emergencies During Maintenance.....	20
2.6 Towing and Loading Safety	20
Towing Guidelines:.....	21
Loading Guidelines:	21
Emergency Procedures:.....	21
3.0 Vehicle Specifications.....	22
3.1 Key Features and Innovations Including Dimensions and Weight	22
3.2 Innovation and Efficiency:	23
3.3 Motor Specifications/Model Variants and Specifications	24
3.4 Dashboard and Interface	24
Understanding Your Vehicle's Command Center.....	24
Main Dashboard Features	24
1. Instrument Cluster:	24
2. Central Touchscreen Display:.....	25
Advanced Interface Features	25
3. Energy Management Displays:.....	25
4. Connectivity and Infotainment:	26
5. Vehicle Status and Alerts:	26
Personalization and Settings	26
6. Customizable Profiles:	26
Pro Tips and Notes:	26
3.5 Charging Port Overview	26
Battery Specifications	28
Charging Time and Range	28
3.6 Performance Data: Speed, Range, and Efficiency	29
3.6.1 Maximum Speed and Acceleration.....	29
3.6.2 Operational Range and Battery Efficiency	29
3.6.3 Energy Regeneration and Sustainability	29
3.6.4 Terrain Adaptability	29

3.6.5 Practical Implications	29
3.7 Environmental Operating Conditions	30
3.7.1 Operating Temperatures	30
3.7.2 Driving on Varied Terrains	30
3.7.3 Weather Conditions	31
3.7.4 Maintenance Tips for Environmental Adaptability	31
4.0 Operating Instructions	32
4.1 Initial Setup and Pre-Operation Checks	32
4.2 Starting and Stopping the Vehicle	34
5.0 Maintenance and Services	36
5.1	36
Maintenance Schedule	36
5.2 Detailed Maintenance Procedures	36
5.2.1 Battery Maintenance and Care Procedures	36
5.2.2 Electrical System Maintenance Procedures	37
5.2.3 Motor and Drive System Maintenance	39
5.2.4 Tire Inspection and Replacement	40
5.2.5 Brake System Maintenance	Error! Bookmark not defined.
5.2.6 Cleaning and Protecting Your Vehicle	Error! Bookmark not defined.
5.2.7 Tire Inspection and Maintenance Procedures	Error! Bookmark not defined.
5.2.8 Tire Maintenance Practices	Error! Bookmark not defined.
5.2.9 Body and Chassis Maintenance Procedures	Error! Bookmark not defined.
5.2.10 Software Updates	Error! Bookmark not defined.
5.2.10.1 Software Update Procedures	Error! Bookmark not defined.
5.2.10.2 Checking for Updates	Error! Bookmark not defined.
5.2.10.3 Performing the Update	Error! Bookmark not defined.
5.2.10.4 Post-Update Procedures	Error! Bookmark not defined.
5.2.11 Storage and Long-Term Care	Error! Bookmark not defined.
5.2.11.1 Preparing Your Vehicle for Storage	Error! Bookmark not defined.
5.2.11.2 Reinstating Your Vehicle	Error! Bookmark not defined.
6.0 Troubleshooting	Error! Bookmark not defined.
6.1 Troubleshooting Minor Issues	Error! Bookmark not defined.
1. Dashboard Warning Lights	Error! Bookmark not defined.
2. Tire Pressure Issues	Error! Bookmark not defined.
3. Brake System Alerts	Error! Bookmark not defined.
5. Infotainment System Glitches	Error! Bookmark not defined.
6. Reduced Vehicle Range	Error! Bookmark not defined.
7. Unusual Noises During Operation	Error! Bookmark not defined.
8. Slow Charging	Error! Bookmark not defined.
General Caution	Error! Bookmark not defined.
6.2 Troubleshooting High Voltage Components	Error! Bookmark not defined.
1. Issue: Vehicle Does Not Charge	Error! Bookmark not defined.
2. Issue: Reduced Battery Performance	Error! Bookmark not defined.
3. Issue: Vehicle Power Fluctuations	Error! Bookmark not defined.
4. Issue: Error or Fault Codes Related to High Voltage System	Error! Bookmark not defined.
General Advice	Error! Bookmark not defined.
6.3 Troubleshooting Key Position Issues	Error! Bookmark not defined.
Issue: Vehicle Does Not Start	Error! Bookmark not defined.
Issue: Electrical Components Not Functioning	Error! Bookmark not defined.
Issue: Vehicle Does Not Power Down	Error! Bookmark not defined.

General Tips for Key Issues	Error! Bookmark not defined.
6.4 Diagnostic Codes and Meanings	Error! Bookmark not defined.
6.5 Troubleshooting Electrical System Components.....	Error! Bookmark not defined.
Issue 1: Motors Not Operating or Underperforming.....	Error! Bookmark not defined.
Issue 2: Erratic Motor Behavior or Communication Errors .	Error! Bookmark not defined.
Issue 3: Complete Power Failure to Motors	Error! Bookmark not defined.
General Advice	Error! Bookmark not defined.
6.6 Mechanical Troubleshooting: EV Drivetrain System.....	Error! Bookmark not defined.
Issue 1: Vehicle Does Not Respond to Acceleration	Error! Bookmark not defined.
Issue 2: Abnormal Noise from Drivetrain.....	Error! Bookmark not defined.
Issue 3: Vibration During Acceleration.....	Error! Bookmark not defined.
Issue 4: Uneven or Rapid Tire Wear.....	Error! Bookmark not defined.
Issue 5: Intermittent Power Loss to Wheels.....	Error! Bookmark not defined.
Issue 6: Difficulties with Differential Lock (If Applicable)	Error! Bookmark not defined.
General Tips for Mechanical Troubleshooting in EVs	Error! Bookmark not defined.
6.7 When to Contact Customer Service.....	Error! Bookmark not defined.
General Inquiries	Error! Bookmark not defined.
Operational Guidance.....	Error! Bookmark not defined.
Troubleshooting Non-Critical Issues	Error! Bookmark not defined.
Software and Connectivity Issues.....	Error! Bookmark not defined.
7.0 Warranty, Service Plans, and Legal Information.....	Error! Bookmark not defined.
7.1 Warranty Coverage Details	Error! Bookmark not defined.
7.2 Limitations and Exclusions	Error! Bookmark not defined.
Legal Information.....	Error! Bookmark not defined.
7.3 How to File a Warranty Claim	Error! Bookmark not defined.
Step 1: Preparation	Error! Bookmark not defined.
Step 2: Gather Necessary Documentation.....	Error! Bookmark not defined.
Step 3: Contact Boson Motors	Error! Bookmark not defined.
Step 4: Inspection and Service	Error! Bookmark not defined.
Step 5: Claim Processing.....	Error! Bookmark not defined.
Step 6: Repair and Follow-up.....	Error! Bookmark not defined.
Step 7: Repair and Follow-up.....	Error! Bookmark not defined.
Additional Tips:	Error! Bookmark not defined.
7.4 Extended Warranty Service Plans.....	Error! Bookmark not defined.
7.4.1 Overview of Extended Warranty Service Plans.....	Error! Bookmark not defined.
7.4.2 How to Purchase an Extended Warranty Plan	Error! Bookmark not defined.
7.4.3 Claim Process Under Extended Warranty.....	Error! Bookmark not defined.
7.4.4 Additional Services Included	Error! Bookmark not defined.
7.5 Dealer Service Network	Error! Bookmark not defined.
7.5.1 Overview of Dealer Service Network	Error! Bookmark not defined.
7.5.2 Benefits of Using Dealer Service Network	Error! Bookmark not defined.
7.5.3 How to Access Dealer Services	Error! Bookmark not defined.
7.5.4 Additional Support and Services.....	Error! Bookmark not defined.
8.0 Accessories and Customization.....	Error! Bookmark not defined.
8.1 Official Accessories Overview	Error! Bookmark not defined.
8.2 Installation Guides for Accessories.....	Error! Bookmark not defined.
8.3 Vehicle Customization Options.....	Error! Bookmark not defined.
8.4 Recommended Third-Party Products	Error! Bookmark not defined.
9.0 Technical Specifications	Error! Bookmark not defined.
9.1 Detailed Component Specifications	Error! Bookmark not defined.
9.1.1 Body Dimension	Error! Bookmark not defined.

Front View:	Error! Bookmark not defined.
Side View:.....	Error! Bookmark not defined.
Rear View:.....	Error! Bookmark not defined.
Specifications and Measurements:.....	Error! Bookmark not defined.
9.1.2 Dashboard Layout Specifications	Error! Bookmark not defined.
1. Horn Switch.....	Error! Bookmark not defined.
2. Turn Signal Switch.....	Error! Bookmark not defined.
3. Headlights Switch	Error! Bookmark not defined.
4. Rear Lights Switch.....	Error! Bookmark not defined.
5. LED Bar Switch	Error! Bookmark not defined.
6. Load Body Tipper Switch.....	Error! Bookmark not defined.
7. Cigarette Lighter.....	Error! Bookmark not defined.
8. Hazard Light Switch.....	Error! Bookmark not defined.
9. 60W USB-A & USB-C Ports.....	Error! Bookmark not defined.
10. Toggle Switch for Tipping.....	Error! Bookmark not defined.
11. Instrument Cluster	Error! Bookmark not defined.
12. FNR Switch.....	Error! Bookmark not defined.
13. Music System	Error! Bookmark not defined.
9.1.3 Vehicle Support and Jack Stand Placement Protocol Maintenance and Safety	Error! Bookmark not defined.
10.0 Regulatory and Compliance Information	Error! Bookmark not defined.
Overview of Legal and Compliance Information.....	Error! Bookmark not defined.
Legal and Compliance Responsibilities of Owners.....	Error! Bookmark not defined.
Additional Legal Provisions.....	Error! Bookmark not defined.
Appendix 1: Glossary of Terms and Acronyms	Error! Bookmark not defined.
Appendix 2: Logbook for Vehicle Service Records	Error! Bookmark not defined.
Vehicle Identification	Error! Bookmark not defined.
Service Record Table	Error! Bookmark not defined.
Maintenance Checklist	Error! Bookmark not defined.
Additional Records	Error! Bookmark not defined.
Notes Section.....	Error! Bookmark not defined.
Appendix 3: Contact Information for Customer Support	Error! Bookmark not defined.
Boson Motors Customer Support Details:	Error! Bookmark not defined.
Appendix 4: Parts and Service Directory	Error! Bookmark not defined.
Authorized Parts Suppliers	Error! Bookmark not defined.
Authorized Service Centers	Error! Bookmark not defined.
Additional Resources.....	Error! Bookmark not defined.
Appendix 5: Warranty Filing Form	Error! Bookmark not defined.

1.0 Introduction

1.1 Welcome Letter from the CEO

Dear Valued Customer,

On behalf of everyone at Boson Motors, I extend our heartfelt gratitude for choosing our electric light utility vehicle. By deciding to purchase it, you contribute to the greener tomorrow.

We started out with a vision to revolutionize mobility using cutting-edge technology and eco-sensitive practices. Therefore, as we undertake this journey together, you become a part of a community whose goal is minimizing carbon emissions and promoting cleaner modes of transportation.

This particular vehicle that you are in possession of has been years in the making, designing, engineering, and testing. It is made to guarantee exceptional performance, reliability, as well as comfort so that each trip can be as gratifying as it is eco-friendly.

This manual is your comprehensive guide to understanding the capabilities, features, and maintenance requirements of your vehicle. It aims to bring out all the advantages accrued in owning an electric light utility Vehicle from Boson Motors. Please read through our provided resources for better driving experience and vehicle longevity.

Our commitment does not end with the vehicles we manufacture; we also offer excellent support services. Please contact us anytime for any inquiries, troubleshooting concerns, or other services and associated products you might need. Our main concern here at Boson Motors is that we make your time and experience memorable.

Thank you for choosing Boson Motors. We look forward to driving the future together.

Warm regards,

Co-Founder & CEO at Boson Motors

1.2 About Boson Motors' Electric Light Utility Vehicle

Boson Motors LX40 is an all wheel drive-electric vehicle, designed with features that are beneficial for agricultural and off-road use. It boasts autonomous operation capabilities, a 20 kWh battery pack, and an onboard charger compatible with Type-1 US charging stations. The vehicle is positioned as a powerful yet eco-friendly solution capable of performing a variety of tasks, from mowing to snow plowing, and has a load capacity of up to one ton. Its battery chemistry ensures a longer lifespan and less maintenance compared to other lithium-ion batteries and lead-acid batteries. The Vehicle represents a synergy of cutting-edge electric powertrain technology and practical, user-focused design. Whether you're navigating the bustling city streets or undertaking rugged off-road adventures, our vehicle is equipped to deliver unmatched efficiency, durability, and driving pleasure.

Key Features:

Zero Emissions: Powered entirely by electricity, our vehicle produces zero local emissions, making it a friend to the environment and helping you contribute to a greener planet.

Advanced Battery Technology: At the heart of our electric light utility vehicle lies a high-capacity, lithium-ion battery system, offering extended range and longevity, coupled with fast charging capabilities to keep you moving.

Robust Performance: Engineered for versatility, our vehicle excels in a variety of settings, from urban landscapes to challenging terrains, providing reliable performance without compromising on power or agility.

Smart Technology Integration: Equipped with the latest in-vehicle technology, including an intuitive digital dashboard, GPS navigation, and connectivity options, our vehicle is designed to keep you informed, entertained, and safe on the road.

Safety and Security: Safety is paramount at Boson Motors. Our vehicle comes equipped with advanced safety features, including automatic emergency braking, lane departure warnings, and a robust construction designed to protect you and your passengers.

Sustainable Design: Beyond its electric heart, our vehicle utilizes sustainable materials and manufacturing processes, reflecting our holistic approach to environmental responsibility.

User Manual Overview

This user manual serves as your comprehensive guide to understanding, operating, and maintaining your Boson Motors electric light utility vehicle. Within these pages, you will find detailed information on vehicle features, operation instructions, maintenance schedules, safety precautions, and troubleshooting tips, all designed to enhance your ownership experience.

Vehicle Specifications: Detailed technical specifications of the vehicle, including dimensions, battery capacity, range, and charging information.

Operating Instructions: Step-by-step guidance on vehicle operation, from starting and driving to utilizing the advanced features and technology integrated into the vehicle.

Maintenance and Care: Recommended schedules and procedures for regular maintenance and care to ensure your vehicle remains in optimal condition.

Safety Instructions: Important safety information and precautions to protect you, your passengers, and your vehicle.

Troubleshooting: Advice and solutions for common issues and questions you may encounter during the operation of your vehicle.

1.3 Vehicle Overview and Model Identification

Boson Motors is proud to introduce our cutting-edge electric light utility vehicle (ELUV), designed with a focus on sustainability, innovation, and efficiency. Our ELUV combines advanced electric mobility with the ruggedness and versatility required for both urban and off-road environments.



Model Identification

Each ELUV by Boson Motors is uniquely identified to provide owners with detailed information about their specific vehicle model, including its capabilities, specifications, and customization options. This section will guide you on how to locate and interpret your vehicle's identification information, crucial for service, warranty, and support.

Vehicle Identification Number (VIN)



[REDACTED]

[REDACTED]

[REDACTED]

For further details on your specific model's features and specifications, please refer to the accompanying sections of this manual, which provide comprehensive information on operation, maintenance, and safety precautions.

Model Variants

Boson Motors offers various models of the ELUV, each tailored to meet specific needs and preferences. These variants differ in battery capacity, drivetrain configurations, and included amenities, providing options for enhanced range, performance, or comfort.

Standard Range Model: Designed for efficiency and practicality, this model offers a balanced range and power suited for daily commuting and light utility tasks.

Extended Range Model: With an upgraded battery pack, the Extended Range model is ideal for longer trips and more demanding utility applications, without frequent recharging.

Performance Model: Engineered for enthusiasts, this variant delivers increased power and acceleration, offering an exhilarating driving experience while maintaining impressive efficiency.

Understanding Your Model's Specifications

Each model comes with a detailed specification sheet that includes:

Battery and Range: Information on the battery's capacity, estimated range per charge, and charging options.

Powertrain: Details on the electric motor(s), including power output and drivetrain configuration.

Dimensions and Capacities: Comprehensive measurements of the vehicle, cargo capacity, and towing capabilities.

Safety and Convenience Features: Overview of safety systems, driver assistance technologies, and comfort amenities included in your model.

Customization and Accessories

Boson Motors encourages the personalization of your ELUV through an extensive selection of accessories and customization options. From utility enhancements like towing packages and cargo solutions to aesthetic modifications including color choices and interior upgrades, your vehicle can be tailored to your exact preferences and lifestyle requirements.

Staying Updated

Boson Motors is committed to innovation and continuous improvement. As such, specifications, features, and options may evolve. We recommend staying in touch with Boson Motors and authorized dealer for the latest updates and enhancements available for your vehicle model.

1.4 Manual Overview: How to Use This Manual

Welcome to your comprehensive guide for operating, maintaining, and maximizing the capabilities of your Boson Motors Electric Light Utility Vehicle. This manual has been meticulously designed to ensure you get the most out of your vehicle, emphasizing ease of use, safety, and maintenance. Here's how to navigate and utilize this manual effectively:

Quick Reference Guide: For easy access to commonly needed information, the Quick Reference Guide offers concise instructions on vehicle operation, charging procedures, and emergency protocols.

Detailed Sections: Each section of this manual delves into specific aspects of your vehicle. Whether you're looking to understand safety features, operation instructions, or maintenance schedules, you'll find detailed, step-by-step information organized for your convenience.

Symbols and Icons: Throughout this manual, various symbols and icons are used to highlight important information:

- **Warning:** Indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.
- **Caution:** Details practices that may cause damage to your vehicle if not carefully followed.
- **Note:** Provides additional, helpful information or clarifications.

Appendices and Index: For technical specifications, troubleshooting, and contact information, refer to the respective sections.

Manual Conventions

Instructions are presented in a step-by-step format, with each step clearly numbered for ease of understanding and execution.

References to the vehicle's left or right side are made from the driver's perspective seated in a forward-facing position.

Technical terms are defined in the glossary provided in the appendices. When a technical term is used for the first time in a section, it is marked with an asterisk (*), indicating that you can find its definition in the glossary.

Getting the Most from This Manual

Familiarize Early: We recommend reading through the Quick Reference Guide and Safety Information sections thoroughly before operating your vehicle for the first time.

Regular Consultation: Keep this manual in your vehicle for easy reference, and consult it before attempting any maintenance or if you encounter any operational issues.

Stay Updated: Visit our website for the latest manual updates, additional resources, and support information.

Your Role in Safety As a Boson Motors vehicle owner, your safety, and the safety of others, are of paramount importance. By following the guidelines and instructions in this manual, you play a crucial role in ensuring a safe and enjoyable driving experience.

1.5 Manual Conventions and Symbols

Understanding this manual is crucial to maximizing the functionality and safety of your Boson Motors Electric Light Utility Vehicle. The following conventions and symbols are used throughout this document to ensure clarity and consistency, enabling you to easily navigate and comprehend the provided information.

Conventions:

1. **Sequential Steps:** Instructions requiring multiple actions are listed in a numerical sequence. Each step must be completed in the order presented to ensure the correct operation and maintenance of your vehicle.
2. **Bullet Points:** Used for lists or to highlight important pieces of information, features, and tips.
3. **Italicized Text:** Emphasizes key terms or phrases, and is also used for the titles of documents and sections for reference.
4. **Bold Text:** Indicates the names of buttons, switches, and indicators found on your vehicle, making it easier to identify these elements in the text.
5. **"Quotes":** Specific terms or phrases found in the vehicle or on the dashboard are enclosed in quotes to denote direct references.
6. **(Parentheses):** Used to provide additional information or clarification without interrupting the flow of the main text.

Symbols:

Warning (⚠): Denotes critical information that must be followed to prevent injury or fatalities. These warnings include safety precautions related to vehicle operation, maintenance, and handling of electrical components.

Caution (🔴): Highlights practices that, if not properly followed, could result in damage to your vehicle or its components. It also includes advisories to prevent minor injuries.

Note (ℹ): Provides extra information that could enhance your understanding or provide additional context to the discussed topic. Notes often include tips for best practices, maintenance advice, or explanations of technical terms.

Pro Tip (💡): Suggests expert advice for optimizing vehicle use and maintenance. These tips come from experienced users and technicians.

Reference (🔗): Points you to other sections within the manual or to external documents for expanded information. This helps keep the manual concise while providing pathways to more detailed data.

BOSON	
ICONS	Warning icons
 Parking brake Icon	 Motor failure Icon Motor failure Icon illuminates when any fault or failure occur in motor
 REGEN Regeneration Icon	 Caution: Stop and park the vehicle as soon as you can and Contact Authorized BOSON Dealer as soon as possible.
 Service reminder Icon Service reminder Icon Illuminates, when the maintenance due is over or if any service is required like filling brake oil, replacing brake pads, etc.	 Motor over temperature Icon Motor over temperature Icon illuminates when motor temperature reaches above safety temperature threshold
 Drive mode Icons Illuminates when the ignition key is switched on and displays corresponding letter for each driving mode selected – forward, reverse.	 Malfunction Icon Malfunction Icon illuminates when there is any critical fault in the vehicle has been identified
	 Caution: Stop and park the vehicle as soon as you can and Contact Authorized BOSON Dealer as soon as possible.

Understanding Symbols on Your Vehicle:

Your Boson Motors vehicle is equipped with various symbols located on the dashboard, controls, and throughout the vehicle. Familiarize yourself with these symbols as they provide quick visual cues about the vehicle's status and operation. These symbols are consistent with international standards for ease of understanding regardless of your geographical location.

For detailed explanations of each symbol found in your vehicle, refer to the "Dashboard and Controls" section on section 9.1.2 of this manual.

Using This Manual Effectively:

Start with the "Quick Start Guide" section to familiarize yourself with the basic operations and safety features.

Refer to the detailed index at the back of the manual to locate specific information efficiently.

Keep this manual in your vehicle for quick reference and add personal notes or reminders in the margins as needed.

2.0. Safety Information

2.1 General Safety Precautions

Understanding and adhering to general safety precautions is fundamental to ensuring your safety and the longevity of your Boson Motors Electric Light Utility Vehicle. This segment outlines essential safety measures to be followed at all times to mitigate risks of accidents or damages to the vehicle.

Warning:

Awareness of Surroundings: Operate the vehicle with a heightened awareness of your surroundings. Due to its silent operation, pedestrians and other vehicles might not always recognize its approach. Use vehicle horns judiciously to alert others when necessary.

Speed Regulation: Always observe speed limits designated for the area of operation. Excessive speed reduces reaction time and increases the likelihood of accidents.

Alcohol and Drug Prohibition: Operating the vehicle under the influence of alcohol, drugs, or impairing medication is strictly prohibited. Impaired driving significantly increases the risk of accidents.

Adverse Weather Conditions: Exercise caution and reduce speed when driving in conditions of reduced visibility or on slippery roads due to rain, snow, or ice.

Load Capacity Adherence: Do not exceed the vehicle's specified load capacity, as overloading can affect stability and operational efficiency.

Caution:

Charging Practices: Ensure the vehicle is charged using the specified charger and methods. Improper charging could lead to battery damage or reduce battery life.

Child Safety: Children should not operate the vehicle. Always supervise children closely in the vicinity of the vehicle to prevent accidents.

Vehicle Modifications: Unauthorized modifications to the vehicle or the use of non-approved parts may compromise safety and void warranty coverage. Always consult with Boson Motors or an authorized service provider before making any modifications.

Note:

Regular maintenance and inspection of the vehicle are crucial for safe operation. Refer to the Maintenance and Service section for detailed procedures and schedules.

Before initial use and periodically, familiarize yourself with all vehicle controls and operational features in a safe, vehicle-free area.

Pro Tip:

Periodically practicing emergency stops and maneuvers in a safe, controlled environment can prepare you for unexpected situations on the road.

Reference:

For detailed safety features and operational safety guidelines specific to your model, consult the "Vehicle Specifications" and sections of this manual.

By following these safety precautions and regularly consulting your Boson Motors Electric Light Utility Vehicle manual, you can enjoy a safe, efficient, and environmentally friendly driving experience. Always prioritize safety for yourself, your passengers, and those around you.

2.2 Vehicle Specific Safety Features and Operational Safety Guidelines

Boson Motors integrates cutting-edge safety technologies and operational practices to ensure the safety of the operator and the integrity of the vehicle. Understanding and correctly utilizing these features is paramount to achieving the best safety outcomes while enjoying the full capabilities of your electric light utility vehicle.

Advanced Safety Technologies:



Operational Safety Guidelines:

Pre-Drive Checks: Before starting your vehicle, conduct a routine check to ensure that all lights are functional, tires are properly inflated, and mirrors are correctly adjusted for maximum visibility.

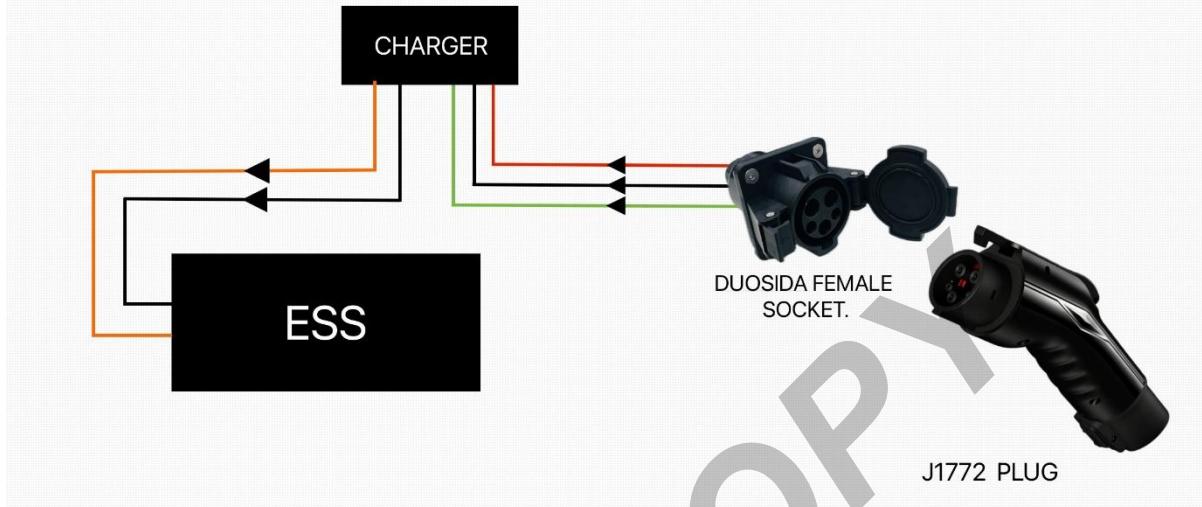
Secure Cargo: Ensure that all cargo is securely fastened before moving the vehicle to prevent shifts that could affect vehicle stability.

Speed Awareness: Always adhere to speed limits and adjust your speed according to road conditions. The vehicle's efficient design facilitates quick acceleration, but caution and adherence to speed regulations are essential for safety.

Seat Belts: Always wear seat belts while the vehicle is in motion. Ensure all passengers do the same, as seat belts significantly reduce the risk of injury in the event of an accident.

Battery and Electrical System: The vehicle's lithium-ion battery and electrical system are designed for efficiency and safety. However, direct interaction with the system should only be performed by qualified personnel to prevent the risk of electric shock or damage to the system.

BATTERY & CHARGING SYSTEM DIAGRAM.



Maintenance for Safety:

Regular maintenance plays a significant role in the safe operation of your vehicle. Follow the scheduled maintenance guide provided in this manual to ensure that all vehicle components, especially those related to safety, are in optimal condition.

Brake System: Regularly check the brake system for wear and tear, especially brake fluid, pads and discs, and replace them as required.

Tires: Monitor tire pressure and tread depth regularly. Maintain the recommended tire pressure and replace tires that are worn beyond the recommended tread depth.

Lights and Signals: Ensure all lights, including headlights, brake lights, and turn signals, are fully functional, and replace any burned-out bulbs immediately.

Battery Maintenance: Although the vehicle's battery is designed for longevity, periodically check the battery and its connections for any signs of corrosion or wear.

By adhering to these safety features and operational guidelines, you contribute significantly to the safe operation of your Boson Motors Electric Light Utility Vehicle. Always prioritize safety to protect yourself, your passengers, and others on the road.

2.3 Emergency Procedures and First Aid

In the unlikely event of an emergency, Boson Motors emphasizes the paramount importance of safety and preparedness. This section provides guidelines for handling emergency situations and administering basic first aid until professional medical assistance can be obtained.

⚠️ Warning:

Immediate safety is the priority in any emergency situation. Assess the scene for danger before taking action. Ensure your own safety first before assisting others.

 **Caution:**

In case of a vehicle malfunction or if you suspect a safety issue, stop the vehicle in a safe location, turn off the power, and disconnect the battery if possible and safe to do so. Avoid direct contact with high-voltage components and cables, which are typically marked in orange.



In Case of an Accident:

1. **Secure the Scene:** If involved in a collision, turn on your hazard lights and, if safe, place warning triangles or flares to alert approaching traffic.
2. **Check for Injuries:** Quickly assess the condition of all individuals involved. Do not move anyone who is injured unless there is an immediate danger (e.g., fire).
3. **Call for Help:** Dial emergency services immediately if there are any injuries or significant vehicle damage. Provide them with your location and as much information as possible about the situation.

Vehicle Fire:

1. **Evacuate Immediately:** If you suspect a fire, do not attempt to extinguish it unless you can do so safely with a fire extinguisher designed for electrical fires.
2. **Call for Help:** Once safe, call the fire department. Electrical vehicle fires require specialized handling.
3. **Stay Clear:** Keep a safe distance from the vehicle. Battery fires can be particularly dangerous and unpredictable.

First Aid Basics:

Cuts and Scrapes: Clean the wound with water, apply antiseptic, and cover with a sterile bandage.

Burns: Cool the burn under running water for at least 10 minutes. Cover loosely with sterile, non-fluffy material.

Broken Bones: Immobilize the affected area. Do not attempt to straighten the injury. Provide support until emergency services arrive.

CPR: Only attempt CPR if you are trained. Continuous chest compressions can be life-saving until professional help can take over.

Pro Tip:

Keeping a first aid kit, fire extinguisher, and emergency supplies in your vehicle is recommended. Regularly check these items to ensure they are in good condition and within expiration dates.

Reference:

For detailed first aid instructions and emergency preparedness tips, consult the American Red Cross or similar organizations.

By adhering to these emergency procedures and first aid guidelines, you can help ensure your safety and the safety of others in unexpected situations. Always prioritize calling professional emergency services when faced with serious emergencies.

2.4 Battery and Electrical Safety

The safety and longevity of your Boson Motors Electric Light Utility Vehicle depend significantly on the proper handling and maintenance of its battery and electrical systems. These systems are engineered to high standards of safety and efficiency, yet require careful attention to maintain optimal performance and safety.

Warning:

The vehicle's battery system operates at high voltage levels capable of causing serious injury or death through electric shock. Therefore, it is imperative to avoid touching these terminals during inspection or maintenance.

Never attempt to open, service, or modify the battery pack. Tampering with the battery system may cause a fire, explosion, or other hazardous conditions.

Only qualified personnel should perform service tasks or handle the vehicle's battery and electrical system components.

Understanding Your Vehicle's Battery System

Battery Composition: Your vehicle is equipped with a high-capacity lithium-ion battery designed for long life and efficient energy use.

Maintenance-Free: Under normal conditions, the vehicle's battery does not require regular maintenance. However, it is essential to monitor the battery's performance and state of charge regularly.

Safety Guidelines for Battery Handling

Charging: Always use the charger and cables supplied with your vehicle. Charging should only be done in well-ventilated areas, free from moisture and flammable materials.

Storage: If the vehicle will not be used for an extended period, store it in a dry, cool place. The battery should be charged to approximately 50% to maintain its health during storage.

Inspection: Regularly inspect the battery for any signs of damage, such as cracks or leaks. If damage is observed, do not attempt to charge or use the vehicle. Contact the Boson Motors service center for assistance.

Electrical System Maintenance

Inspections: Regularly inspect all visible wiring and electrical connections for signs of wear, fraying, or damage. Any damaged wiring should be addressed immediately by a professional.

Cleanliness: Keep the battery and all electrical components clean and dry. Accumulation of dirt or moisture can lead to electrical failures and pose a safety hazard.

Caution:

Use only the charger and cables provided by Boson Motors to charge your vehicle. Incorrect charging equipment can damage your vehicle's battery or cause a fire.

Ensure the charging area is well-ventilated. Charging batteries generate heat, and inadequate ventilation may lead to overheating and battery damage.

Avoid charging the vehicle in extreme weather conditions. Charging in very hot or cold temperatures can affect battery health and overall performance.

Modifications or repairs to the battery and electrical system performed by unauthorized personnel may void your warranty and pose significant safety risks.

EMERGENCY PROCEDURE

- Turn off the vehicle key switch.
- Exit the vehicle.
- Check for visible battery damage while maintaining a safe distance.
- **Note :** Please reach out to Boson's technical support to handle the situation further.

- **Note :** Always assume that the HV battery packs could be damaged after an accident and have it inspected by a service technician

 **Warning:** High Voltage (HV)
Shutdown The high voltage system on any vehicle has no parts that an owner or unauthorized service technician can service.

Note: Electrical System Maintenance

Regular inspections of the vehicle's electrical system by authorized service professionals are recommended. Look out for signs of wear, damage, or corrosion on cables and connectors. Report any irregularities to a certified Boson Motors service center.



Keep the battery and its environment clean and dry. Accumulation of dirt or moisture can lead to electrical failures or short circuits.

Pro Tip

To maximize battery life, avoid depleting the battery completely before charging. Regular, partial charges are better for lithium-ion battery longevity than full discharge cycles.

Familiarize yourself with the location of the main electrical disconnect or safety switch. In case of an emergency, knowing how to quickly disconnect the battery can prevent damage and reduce the risk of injury.

Consider the environment when parking for extended periods. Excessive heat or cold can drain the battery and affect its long-term performance. Where possible, park in shaded or covered areas to protect the battery from extreme temperatures.

Reference:

In case of a battery emergency, such as a battery fire, immediately evacuate the area and call emergency services. Do not attempt to extinguish a battery fire with water. Specialized fire extinguishers are required for electrical fires.

If the vehicle is involved in an accident, have the battery system checked by a professional. Even if there is no visible damage, internal faults may pose safety risks.

For detailed specifications of your vehicle's battery and electrical system, refer to the Appendices.

By adhering to these battery and electrical safety guidelines, you ensure the reliable operation of your Boson Motors Electric Light Utility Vehicle while safeguarding yourself and others from potential hazards.

2.5 Maintenance and Repair Safety

Maintaining and repairing your Boson Motors Electric Light Utility Vehicle (ELUV) are critical activities that ensure the vehicle operates efficiently, safely, and reliably over its lifespan. This section provides essential safety guidelines for conducting maintenance and repair tasks. It is designed to protect you, your vehicle, and the environment from potential hazards associated with vehicle upkeep.

⚠ Warning: Qualified Personnel Only

Maintenance and repairs should only be performed by qualified personnel. The vehicle's high-voltage system, mechanical components, and software are complex and require specialized knowledge and tools for safe handling.

Disconnecting the battery before performing any maintenance is crucial to prevent electric shock. Always follow the proper shutdown procedures outlined in the "Battery and Electrical Safety" section.

● Caution: Use of Genuine Parts

Always use genuine Boson Motors parts and accessories for repairs and replacements. Non-genuine parts may not meet the high-quality standards required for optimal operation and could lead to vehicle damage or void the warranty.

Be cautious when handling vehicle fluids and chemicals, such as coolant, brake fluid, and cleaning agents. Use protective gear, including gloves and eyewear, to avoid skin and eye contact. Dispose of these materials responsibly to protect the environment.

ℹ Note: Service Intervals

Adhere to the maintenance schedule provided in this manual to ensure your vehicle continues to operate as intended. Regular maintenance checks can prevent larger, more costly issues down the line.

Keep a record of all maintenance and repairs performed on your vehicle. This documentation is valuable for warranty purposes and future servicing.

💡 Pro Tip: Diagnostic Tools

Utilize Boson Motors' diagnostic tools and equipment for troubleshooting. These tools provide accurate readings and help pinpoint issues more effectively than general diagnostic equipment.

Before performing any maintenance, ensure the vehicle is on a stable, level surface and that you have all the necessary tools and parts at hand. Planning and preparation make maintenance tasks smoother and safer.

Handling Emergencies During Maintenance

In the event of a fire, use a fire extinguisher rated for electrical fires. Standard fire extinguishers may not be effective on electrical or battery fires.

If you encounter a hazardous material spill, contain the spill if possible and contact local environmental services for proper cleanup procedures. Avoid direct contact with the substance.

2.6 Towing and Loading Safety

Safety in towing and loading is paramount to ensuring both the longevity of your Boson Motors Electric Light Utility Vehicle (ELUV) and the safety of its operators and surroundings. Below, you will find essential guidelines and precautions for towing and loading your ELUV, designed to prevent accidents and damage to your vehicle.

⚠ Warning: Vehicle Capacity

The ELUV is designed with specific towing and payload capacities. Exceeding these limits can compromise vehicle handling, braking efficiency, and structural integrity, leading to accidents or vehicle damage. Always adhere to the specified capacities detailed in the "Vehicle Specifications" section of this manual.

● Caution: Secure Loading

Ensure all cargo is securely fastened before vehicle operation. Unsecured loads can shift during transit, potentially causing loss of control or damage to the cargo and vehicle. Utilize appropriate tie-downs and check their condition regularly.

Note: Center of Gravity

The distribution of weight in your ELUV affects its stability and handling. When loading the vehicle, distribute weight evenly and keep the center of gravity as low as possible to avoid potential rollovers or loss of control, especially during sharp turns or sudden maneuvers.

Pro Tip: Inspection and Maintenance

Regularly inspect your vehicle's towing and loading equipment, including hooks, straps, and the cargo bed, for signs of wear, damage, or corrosion. Regular maintenance can prevent the failure of these components during use.

Reference: Towing Equipment

If your ELUV is equipped with towing capabilities, refer to the manufacturer's guidelines for attaching and using towing equipment. Incorrect installation or use of towing accessories can result in detachment, leading to accidents or injuries.

Towing Guidelines:

- Use Approved Equipment:** Only use towing equipment approved by Boson Motors. This ensures compatibility and safety.
- Check Local Laws:** Towing laws vary by location. Ensure you comply with local regulations regarding towing speed limits, lighting, and signage.
- Practice Towing:** If new to towing, practice in a safe, open area to get accustomed to the vehicle's altered handling characteristics.

Loading Guidelines:

- Even Distribution:** Spread the load evenly across the cargo bed to maintain balance. Avoid placing heavy items on one side.
- Secure Cargo:** Use ropes, straps, or cargo nets to secure items. Check security after a short distance to ensure everything remains in place.
- Avoid Overloading:** Stay within the payload capacity of the ELUV to prevent damage to the suspension, brakes, and tires, and to ensure safe handling.

Emergency Procedures:

In case of a towing or loading emergency, such as a cargo shift leading to loss of control or a breakdown while towing, safely reduce speed and steer to a safe location. Follow emergency signal protocols as required by law.

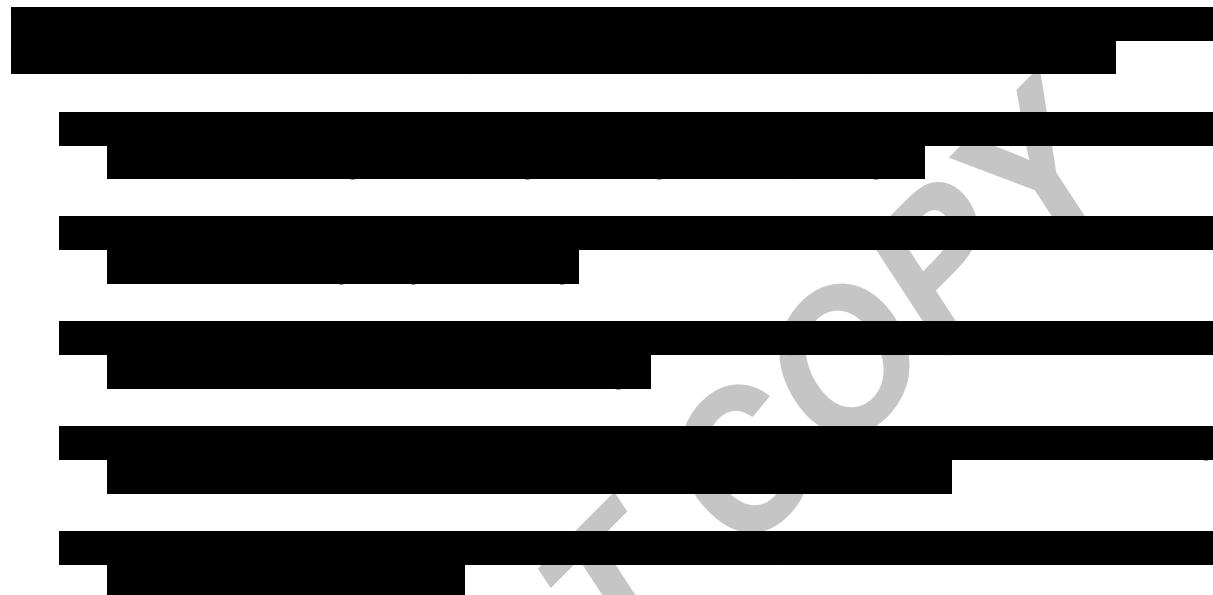
Adhering to these towing and loading safety guidelines ensures that you can utilize the full potential of your Boson Motors Electric Light Utility Vehicle while maintaining safety and compliance with legal standards. For more detailed information on towing and loading practices specific to your ELUV model, consult the detailed sections of this manual or contact a Boson Motors service center.

3.0 Vehicle Specifications

3.1 Key Features and Innovations including Dimensions and Weight

In a vehicle where form meets function, the Boson Motors Electric Light Utility Vehicle (ELUV) stands out with its meticulously crafted dimensions tailored for versatile utility in a variety of environments, complemented by a robust set of innovative features.

Dimensions:



Weight

The ELUV is designed to be lightweight for efficiency, yet durable enough to handle substantial payloads:



3.2 Innovation and Efficiency:

Boson Motors' ELUV is propelled by 100% electric power, distinguishing it significantly from vehicles with internal combustion engines, not only in operation but also in environmental impact.

Electrified Performance: Utilizing a high-efficiency lithium-ion (Li-ion) battery, the ELUV delivers smooth, responsive power to its electric traction motor. The battery must be charged with electricity prior to operation and will gradually discharge as the vehicle is driven. If the battery is completely discharged, the vehicle will not operate until it is recharged.

Dual Battery System:

- The **12-volt battery** ensures the reliability of essential systems such as the audio system, exterior, and interior lighting, as well as the windscreen wipers (optional).
- The **Li-ion battery** not only propels the vehicle but also sustains the electrical climate control system, and replenishes the 12V battery.

i Note: The dual battery system enhances the vehicle's operational reliability and ensures that essential systems remain functional, even if the main Li-ion battery is low on charge. This setup guarantees that safety and convenience features are always available.



Commitment to Zero Local Emissions:

The ELUV is an emblem of environmental stewardship, producing zero local emissions. By not emitting harmful exhaust gases like carbon dioxide, nitrogen oxide, or microparticles, the vehicle stands as a paragon of sustainability and consideration for the well-being of our planet.

💡 Pro Tip: To maximize the environmental benefits of driving an ELUV, consider sourcing your electricity from renewable energy providers or installing solar panels. This approach ensures that the energy used to charge your vehicle is as clean and sustainable as the vehicle itself, further reducing your carbon footprint.

🔗 Reference: For more information on the benefits of electric vehicle ownership and tips on efficient driving and charging habits.

3.3 Motor Specifications/Model Variants and Specifications

Boson Motors' electric light utility vehicle range includes several model variants designed to meet various operational requirements. Each model is equipped with a state-of-the-art electric motor that provides efficient, reliable power, and performance tailored to specific use cases. In this case, our models feature brushless DC motors, known for their reliability, low maintenance requirements, and excellent torque characteristics. Each model variant is tailored to meet diverse operational needs, ensuring versatility across various use cases. Below are the specifications and unique features of these model variants:

i Note: All models come with regenerative braking systems, contributing to energy efficiency by converting kinetic energy back into stored energy during braking. Additionally, each variant supports various loading capacities, customizable to meet specific operational requirements.

💡 Pro Tip: When selecting a model variant, consider the primary use cases for your vehicle. For example, if you frequently navigate urban environments with lighter loads, the Standard Range Model may offer the efficiency and maneuverability you need. Conversely, if you're tackling longer distances or heavier loads, the Extended Range Model provides the added power and endurance required. For those requiring exceptional performance, especially in off-road conditions, the Performance Model will deliver the necessary speed and power.

🔴 Caution: Always ensure that your vehicle's load does not exceed the specified capacity for your model variant. Overloading the vehicle can lead to reduced performance, and increased wear on components, and may pose a safety risk.

🔗 Reference: For more detailed specifications and operational guidelines for each model variant, please refer to the respective sections in this manual or consult Boson Motors' official documentation available on our website or through authorized dealers.

3.4 Dashboard and Interface

Understanding Your Vehicle's Command Center

The dashboard of Boson Motors' Electric Light Utility Vehicle represents the nerve center of your driving experience, meticulously designed to provide you with intuitive control and vital information about your vehicle's status at a glance. This section introduces you to the key elements of the dashboard and user interface, ensuring you harness the full potential of your electric utility vehicle with confidence and ease.

Main Dashboard Features

1. Instrument Cluster:

The heart of the dashboard is the 5" LCD Instrument Cluster that presents essential vehicle information through a digital display. This cluster integrates a harmonious blend of digital gauges and dynamic indicators, ensuring you receive real-time feedback on your vehicle's performance. Key features include:

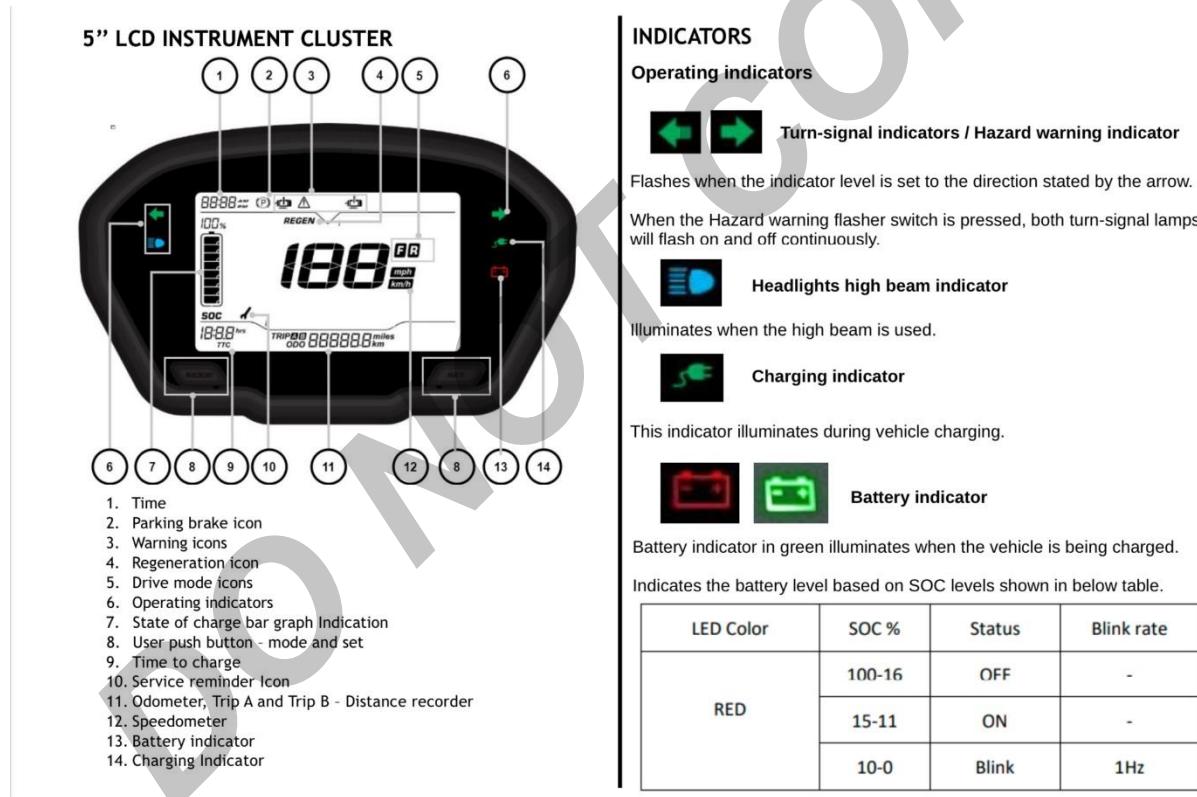
- **Speedometer:** Displays vehicle speed in a large, central digital format for clear visibility.
- **Battery Level Indicator:** Shows the battery charge status with an easy-to-read bar graph, ensuring you are always aware of the remaining power.

- **Time and Trip Information:** Includes a clock and trip meter that records and displays trip duration and distance, aiding in journey management.
- **State of Charge (SOC):** The battery SOC percentage is prominently displayed, alongside a color-coded indicator that provides immediate visual feedback on battery status:
 - **Red Light:** Indicates a SOC of 10-15%, requiring imminent charging.
 - **Green Light:** Shows a SOC of 100-16%, indicating a healthy charge level.

2. Central Touchscreen Display:

The central touchscreen acts as an interactive gateway to numerous vehicle functions and settings. This high-resolution display allows you to control and customize aspects of your driving experience with ease. It serves as the control center for:

- **Navigation:** Assists with route planning and GPS-based directions.
- **Vehicle Diagnostics:** Monitors vehicle health and performance metrics.
- **Climate Control:** Adjusts cabin temperature settings.
- **Entertainment Options:** Manages audio and media playback.



Advanced Interface Features

3. Energy Management Displays:

The instrument cluster includes innovative displays that provide detailed insights into the vehicle's energy usage and regeneration:

- **Energy Consumption Metrics:** Monitor the efficiency of your driving habits.
- **Regenerative Braking Efficiency:** Displays the amount of energy recovered through regenerative braking, enhancing battery life and range.

4. Connectivity and Infotainment:

The dashboard is equipped to integrate seamlessly with your mobile devices, offering a variety of connectivity options:

- **Bluetooth, USB, and Wi-Fi:** Connect and sync devices for hands-free calls, music streaming, and more.
- **60W USB-A & USB-C Ports:** Facilitate fast charging for devices, conveniently located on the dashboard.

5. Vehicle Status and Alerts:

The system continuously monitors the vehicle's health and provides alerts and notifications for:

- **Maintenance Needs:** Scheduled services and preventative care tips.
- **Security Features:** Alerts related to vehicle security systems.
- **System Diagnostics:** Immediate notifications regarding any system issues, ensuring your vehicle operates at peak efficiency and safety.

Personalization and Settings

6. Customizable Profiles:

The vehicle allows for the creation of personalized driver profiles, which can be used to:

- **Adjust Seat Positioning:** Set and recall preferred seating arrangements.
- **Infotainment Settings:** Customize audio and display settings according to each driver's preferences.

Pro Tips and Notes:

 **Pro Tip:** Regularly updating your vehicle's software ensures you have the latest features and optimizations. Check for updates through the central touchscreen or schedule automatic updates to keep your vehicle at the forefront of electric vehicle technology.

 **Note:** Some advanced features and customizations may require an active subscription or one-time purchase. Be sure to review your vehicle's user manual or contact Boson Motors' support for detailed information on accessing and utilizing these features.

3.5 Charging Port Overview

Boson Motors' electric light utility vehicles are equipped with a state-of-the-art charging system designed for efficiency and ease of use, ensuring that your vehicle is ready to perform when you are. The vehicle utilizes a Type 1 charging port, universally recognized for its reliability and compatibility with a wide range of public and home charging stations. This section provides essential information about the vehicle's charging infrastructure, including location, operation, and safety precautions.



Battery and charging system

CONNECTING AND DISCONNECTING THE CHARGING CABLE

- Open the charging socket protection cap and Remove the protection cap of the cable connector and plug it into the vehicle charging socket.
- To unplug gently pull the connector out of the socket and refit the protection caps.
- Caution:** Never allow water or dust to enter the connector or socket - risk of electrocution or fire! Never connect/ disconnect the charging connector with wet hands - risk of electrocution!
- Note:** Never try to modify the charging cable supplied with the vehicle.



CONNECTING AND DISCONNECTING THE CHARGING CABLE

- Note:** Handle the charging cable with care, avoid dropping it and do not pull heavily on the cable or the cord.
Do not touch the terminals on the charging cable or the vehicle's charging socket.
Do not use the charging cable if parts of it are broken, frayed, cracked, open or showing any other sign of damage.
Keep the charging cable away from children.
- Note:** The vehicle cannot be started if the charging cable is plugged in. Make sure that the charging cable is unplugged from the charging socket before attempting to start the vehicle.

Location: The charging port is conveniently situated on the left side of the vehicle, near the wheel, to facilitate easy access in various parking configurations. A weather-resistant flap covers the port, protecting it from environmental elements and debris. The flap is designed to open with a simple press, revealing the port.

Battery and charging system

INSTRUCTIONS:

* The Lithium Ion battery of the vehicle can be charged at an electric charging station with J1772 Type 1 connector, using a specific cord supplied with the vehicle that supports up to 32A charging current.



LOCATION OF THE CHARGING SOCKET :

The vehicle charging socket is located at the Left hand side of the vehicle, on the Left side between the front and rear axle.



Operation: Charging your vehicle is straightforward. Once the charging cable is connected to a power source, insert the plug into the vehicle's charging port. The vehicle's interface will display a charging icon, indicating that charging has commenced. An audible click confirms a secure connection.

⚠ Safety Precautions: Always ensure the vehicle is turned off before connecting the charging cable. Do not use the charging cable with damaged cords or plugs. Avoid charging your vehicle in extreme weather conditions to prevent damage to the vehicle's charging system and battery.

Battery Specifications

Boson Motors' electric light utility vehicles are powered by advanced lithium-ion batteries, known for their long-life, high-energy density, and safety. The battery pack is meticulously engineered to provide an optimal balance between performance and reliability, ensuring a seamless driving experience.

Battery Type: High-capacity lithium-ion battery designed for deep-cycle applications. This type of battery is chosen for its durability, efficiency, and ability to sustain numerous charge cycles without significant degradation.

Capacity: The vehicle is equipped with a battery pack that offers a generous energy capacity, ensuring substantial driving range on a single charge. This capacity supports the vehicle's operational efficiency and contributes to a lower total cost of ownership.

● Maintenance: The lithium-ion battery requires minimal maintenance. However, to ensure optimal performance and longevity, it is recommended to follow a few simple practices:

Avoid depleting the battery completely before charging.

Regularly charge the battery, even if it is not fully depleted.

Store the vehicle in a temperature-controlled environment when not in use for extended periods.



Charging Time and Range

Charging Time: The vehicle's battery can be fully charged from empty in [REDACTED] hours using a standard home charging station (AC). When using a fast-charging station (DC), the battery [REDACTED], providing a quick and convenient way to extend your vehicle's range while on the go.

Estimated Range: On a full charge, the vehicle can travel [REDACTED] miles, sufficient for daily commutes and extended operational tasks. Factors such as driving style, load weight, and environmental conditions may affect the actual range.

Note: The exact charging time and vehicle range can vary depending on several factors, including the type of charging station used, the battery's current state of charge, and external temperature conditions.

3.6 Performance Data: Speed, Range, and Efficiency

3.6.1 Maximum Speed and Acceleration

Maximum Speed: Designed with a balance between power and efficiency in mind, the electric light utility vehicle achieves a top speed of 25 mph (40 km/h).

3.6.2 Operational Range and Battery Efficiency

Operational Range: On a single full charge, the electric light utility vehicle can travel up to X miles (X kilometers), depending on driving conditions, load, and operational settings. This range is optimized for a full day's work without the need for mid-day recharging, under typical usage conditions.

Battery Efficiency: The vehicle's lithium-ion battery pack not only provides a substantial operational range but also features advanced energy management systems to maximize efficiency. The energy consumption rate stands at X kWh per 100 miles (X kWh per 100 kilometers), making it one of the most energy-efficient vehicles in its class.

3.6.3 Energy Regeneration and Sustainability

Regenerative Braking: Incorporating regenerative braking technology, the vehicle captures kinetic energy during deceleration and converts it back into electrical energy, recharging the battery while driving. This feature enhances the operational range and reduces the overall energy consumption, contributing to the vehicle's sustainability profile.

3.6.4 Terrain Adaptability

Driving Modes: Multiple driving modes are available, allowing drivers to tailor the vehicle's performance to different operational needs and terrain types. From Eco mode for maximum efficiency to Power mode for enhanced performance, the vehicle adapts to the task at hand.

Climbing Capability: Engineered to tackle varying topographies, the vehicle's climbing capability is outlined, showcasing its ability to ascend gradients without compromising on performance or safety. This is particularly beneficial for operations in areas with challenging terrains.

3.6.5 Practical Implications

Operational Planning: Understanding the vehicle's performance data aids in effective operational planning, allowing fleet operators and individual users to schedule recharging and maintenance with minimal impact on daily operations.

Cost Efficiency: The electric light utility vehicle's energy efficiency translates directly into lower operational costs, with reduced energy consumption and minimal maintenance requirements compared to traditional internal combustion engine vehicles.

💡 Pro Tip: Leveraging the vehicle's performance features, such as regenerative braking, not only contributes to operational efficiency but also plays a significant role in reducing the environmental impact of your operations. Consider these features in your daily use to maximize both efficiency and sustainability.

💡 Pro Tip: For optimal performance and sustainability, regularly monitor the vehicle's energy consumption through the [REDACTED]. This practice helps identify efficient driving patterns and optimize energy usage, further reducing operational costs and environmental impact.

🔴 Caution: Always ensure that your vehicle's battery is adequately charged before commencing operations, especially when planning to utilize the vehicle's full operational range. This precaution helps avoid unexpected downtime and ensures consistent performance throughout your operations.

ℹ Note: The operational range and efficiency figures are subject to variations based on real-world conditions, including but not limited to driving habits, terrain, and climate conditions. Planning for regular recharging and maintenance ensures uninterrupted operations and longevity of the vehicle.

3.7 Environmental Operating Conditions

Boson Motors' electric light utility vehicles are engineered to deliver outstanding performance across a wide range of environmental conditions. Adaptable, durable, and reliable, these vehicles are designed to meet the challenges posed by diverse climates and terrains. This section provides detailed information on the vehicle's capabilities and offers guidance on operating in various environmental settings.

3.7.1 Operating Temperatures

Optimal Operating Range: The vehicle operates efficiently within a broad temperature range, [REDACTED] beyond which special precautions should be taken to preserve the vehicle's integrity and battery health. This range ensures the vehicle's electric drivetrain and battery system perform optimally, providing consistent power and range.

Humidity and Precipitation: High humidity levels and wet conditions are navigated with ease. The vehicle's electrical components are securely encased to prevent moisture ingress, ensuring safe operation during rain. In areas of high humidity, periodic checks of electrical connections for corrosion are recommended as part of regular maintenance.

3.7.2 Driving on Varied Terrains

Flat Terrains: The vehicle is adept at navigating flat terrains, offering smooth acceleration, efficient braking, and agile handling. Its compact design allows for easy maneuvering.

Rough and Hilly Terrains: Equipped with a robust suspension system and durable tires, the vehicle can tackle rough and hilly terrains. While it is capable of ascending slopes, performance on steep inclines may vary depending on load weight and battery charge level. For optimal performance in these conditions, ensure the vehicle is appropriately loaded and the battery is sufficiently charged.

3.7.3 Weather Conditions

Rain and Wet Surfaces: It is advised to reduce speed and allow for increased stopping distances during rainy conditions to prevent skidding.

Snow and Ice: When operating in snowy or icy conditions, the use of winter tires is recommended for enhanced grip and safety. Clear snow and ice from the vehicle's sensors and cameras to ensure the proper functioning of safety features. Exercise caution and reduce speed to navigate safely.

Dust and Sand: In dusty or sandy environments, regular maintenance is crucial to prevent abrasive particles from affecting mechanical components and electronics. Protective covers and frequent cleaning can help mitigate the impact of these particles.

Extreme Weather Events: During extreme weather conditions such as floods, hurricanes, or heavy snowfall, it is recommended to avoid operating the vehicle. If the vehicle must be used, ensure it is equipped with necessary emergency supplies and that all electronic systems are functioning correctly.

3.7.4 Maintenance Tips for Environmental Adaptability

Battery Care: In cold weather, keep the vehicle plugged in when not in use to help maintain battery temperature. In hot climates, park in shaded or cooler areas to prevent excessive heat exposure.

Battery Care in Extreme Temperatures: Extreme temperatures can affect battery performance and longevity. In very cold weather, parking the vehicle in a garage, if possible, can help maintain battery efficiency. Ensure to keep the vehicle plugged in when not in use to help maintain battery temperature. In hot climates, avoiding prolonged exposure to direct sunlight can prevent overheating and preserve battery life: park in shaded or cooler areas to prevent excessive heat exposure.

Tire Selection and Maintenance: Use appropriate tires for specific terrain types and weather conditions. Regularly check tire pressure, which can fluctuate with temperature changes.

Cleaning and Corrosion Prevention: Regular cleaning of the vehicle's exterior and undercarriage, especially in areas where roads are salted for ice, can prevent rust and corrosion. The use of a protective wax can also shield the paint from environmental damage.

Regular Inspections: Perform regular inspections and maintenance as outlined in the service manual, paying special attention to the cooling system, brakes, and suspension components to ensure they are in optimal condition for environmental challenges.

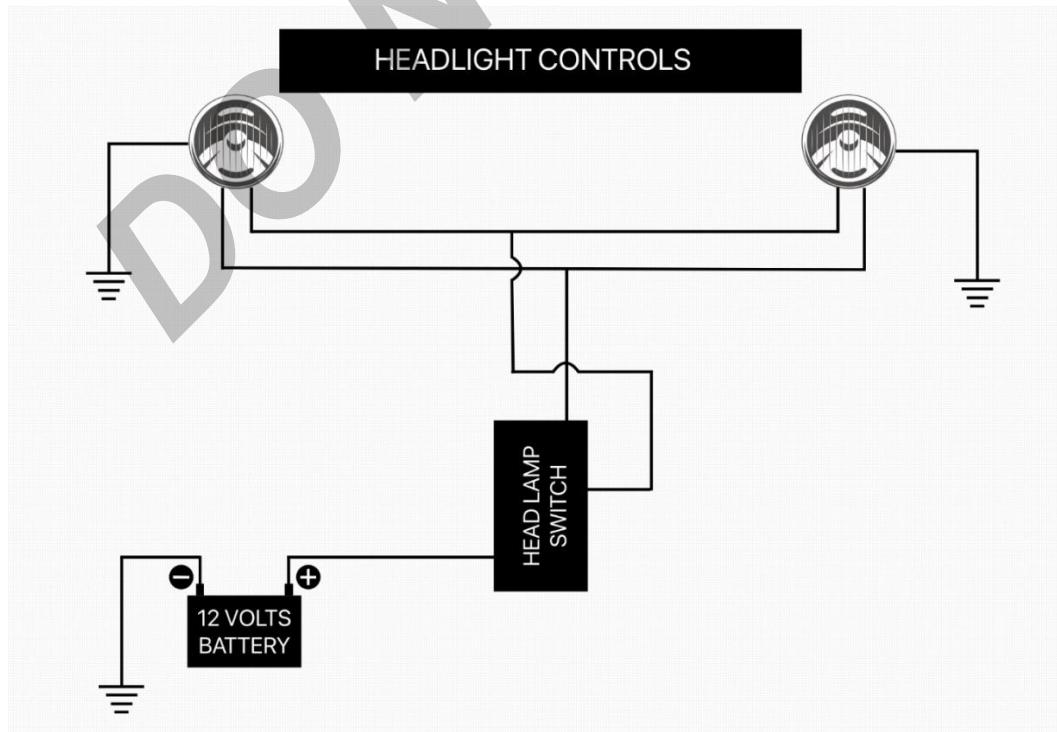
4.0 Operating Instructions

4.1 Initial Setup and Pre-Operation Checks

Before taking your first journey in the Boson Motors ELUV, a series of initial setup and pre-operation checks are crucial to guarantee your safety and the vehicle's optimal performance. These initial setup and pre-operation inspections are designed to identify any potential issues that could affect vehicle performance or compromise safety during operation.

4.1.1 Exterior and Interior Inspections

1. **Visual Bodywork Scan:** Walk around the vehicle to inspect for any signs of damage, wear, or obstructions around the tires and body. This includes checking for cracks, dents, or any objects that could impede vehicle function. Ensure mirrors and external lights are clean and unobstructed.
2. **Tire Inspection:** Verify that all tires, including the spare (if provided), are inflated to the recommended pressure [REDACTED], and look for any signs of wear or damage.
3. **Fluid Levels:** While the brake fluid should be checked by a professional during regular maintenance, you can visually ensure that the reservoir is not visibly depleted.
[REDACTED]
5. **Lights and Indicators:** Test all exterior lights, including headlights, taillights, brake lights, indicators, and the Electric Vehicle Alert System (EVAS), to ensure they are fully operational.



4.1.2 Under the Hood Checks:

1. **Fluid Levels:** Check fluid levels, including the brake. Top up as necessary to ensure adequate reserves for safe operation.
2. **Battery Inspection:** Visually inspect the battery connections for cleanliness and secure fit. Check for any signs of corrosion and ensure that the battery is secure within its housing. Ensure the Li-ion battery is sufficiently charged. The vehicle should not be operated if the charge is below the recommended level to avoid being stranded due to battery depletion.
3. [Redacted]
4. **Component Security:** Ensure that all components under the hood are secure, with no loose parts or wires that could potentially cause issues during vehicle operation.

4.1.3 Interior Checks:

1. **Instrument Panel:** Check the digital multifunction readout screen for any warning indicators and ensure that the dashboard displays all necessary information correctly.
2. **Control Accessibility:** Familiarize yourself with the location and operation of all interior controls, including the light and indicator levers, driving mode selector, and hazard warning lights.
3. **Seat Adjustment and Seatbelts:** Adjust the seats to ensure a comfortable and secure driving position. Ensure you can reach all pedals without strain and have a clear view of the dashboard. Confirm that seatbelts are easily accessible, function correctly, and are free from damage. Test the locking mechanism by tugging sharply on the belt.

4.1.4 Final Pre-Operation Steps:

1. **Door Lock and Windows Verification:** Check that the vehicle's doors lock and unlock properly. Check the operation of all windows to ensure they open and close with ease.
2. **Emergency Equipment:** Ensure that all emergency equipment, including first aid kits and fire extinguishers, is present, easily accessible, and in working condition.
3. **Documentation:** Confirm that all necessary documentation, including the vehicle's manual and insurance papers, is present in the vehicle.
4. **Mirrors Adjustment:** Sit in the driver's seat and adjust all mirrors to ensure full visibility around the vehicle. If your ELUV comes with power-adjustable mirrors, familiarize yourself with the controls.
5. **Warning Indicators:** Turn on the ignition without starting the vehicle to check for any warning lights on the dashboard. Consult the vehicle's manual if any warning lights remain illuminated.
6. **Horn Test:** Ensure the horn is functional by giving it a quick press.

Once these checks are completed, you are ready to start the vehicle. It's essential to perform these initial setup and pre-operation checks before each trip to maintain your vehicle's longevity and your safety on the road.

For any assistance required during the initial setup, please contact the Boson Motors Service Department or consult your authorized Boson Motors dealer.

4.2 Starting and Stopping the Vehicle

Engaging with the heart of the Boson Motors ELUV begins with a simple yet essential process: starting and stopping the vehicle. This procedure is vital for ensuring a seamless driving experience while preserving the vehicle's electrical systems.

4.2.1 To Start the Vehicle:

1. **Pre-Drive Confirmation:** Ensure that the pre-operation checks are completed. Confirm that the vehicle is in 'Park' mode with the parking brake engaged.
2. **Seating and Safety Belts:** Adjust your seat for optimal comfort and visibility. Fasten your seat belt and ensure all passengers do the same.
3. **Powering the Vehicle:** Insert the key into the ignition and turn it clockwise to the 'On' position. Look for the ready-to-drive indicator on the dashboard, which confirms that the vehicle is powered and ready to move. In the Boson ELUV, silence signifies readiness – the absence of engine noise is a hallmark of its electric soul.
4. **Smooth Transition:** Gently depress the accelerator pedal. The ELUV's electric torque provides a smooth and immediate response for a serene driving experience. Begin your journey with the confidence of electric efficiency.

4.2.2 To Stop the Vehicle:

1. **Deceleration:** Gradually release the accelerator pedal and apply the brake pedal smoothly for a controlled deceleration. The regenerative braking system will capture kinetic energy to recharge the battery, signifying Boson Motors' commitment to efficiency.
2. **Final Maneuver:** Bring the vehicle to a complete stop by pressing the brake pedal firmly. Once stationary, engage the parking brake to secure the vehicle.
3. **Secure the Vehicle:** Exit the vehicle. Lock the vehicle if you are leaving it unattended.
4. **Remember:** Remember, the ELUV's state-of-the-art electric systems are designed for easy operation with minimal environmental impact. Every start and stop is a step toward a greener future.

🔗 For detailed troubleshooting and assistance, please refer to the dedicated sections of this manual or contact Boson Motors' customer service.

💡 Pro Tip: Regularly performing pre-drive checks not only ensures your safety but also prolongs the life of your vehicle. Making these checks a habit can help prevent unexpected issues and maintain optimal vehicle performance.

DO NOT COPY

5.0 Maintenance and Services

5.1 Maintenance Schedule

The maintenance schedule for the Boson Motors LX40 is straightforward and is based on operational milestones, measured in either mileage or time intervals, whichever comes first. This allows for consistent upkeep and ensures that all components of the vehicle maintain high performance and safety standards.

Mileage (miles)	Time Interval	Maintenance Tasks
500	1 Month	Initial Inspection & Diagnostic Check
5,000	6 Months	Tire Rotation, Brake Pad Check, Battery Health Assessment
10,000	1 Year	Tire Inspection, Battery System Check, Software Update
20,000	2 Years	Full Vehicle Diagnostic, Tire Replacement (if needed), Brake System Overhaul
30,000	3 Years	Battery Pack Inspection, Electrical System Check, Cooling System Inspection
40,000	4 Years	Comprehensive Vehicle Inspection, Update All Onboard Software, Check All Safety Features

5.2 Detailed Maintenance Procedures

5.2.1 Battery Maintenance and Care Procedures

1. Battery Inspection and Cleaning:

- **Frequency:** Perform a detailed inspection and cleaning of the battery and its connections every 6,000 miles or every six months.
- **Procedure:**
 - Disconnect the battery following safety protocols to prevent any electrical hazards.
 - Visually inspect the battery for signs of wear, damage, or corrosion.
 - Clean the battery terminals using a wire brush and a solution of baking soda and water to remove corrosion and buildup. Rinse with clean water and dry thoroughly.
 - Check all connections for tightness and signs of wear. Replace any damaged cables or connectors.

2. Battery Charging Practices:

- **Guidelines:**
 - Use only the charger provided by Boson Motors to ensure compatibility and to avoid damaging the battery.
 - Charge the battery at ambient temperatures between 50°F to 77°F (10°C to 25°C) to optimize battery life and performance.
 - Avoid charging the battery immediately after driving; allow it to cool down for at least 30 minutes.
 - Regularly balance charge the battery, at least once every month, to ensure all cells are evenly charged and maintained.

3. State of Charge (SoC) Management:

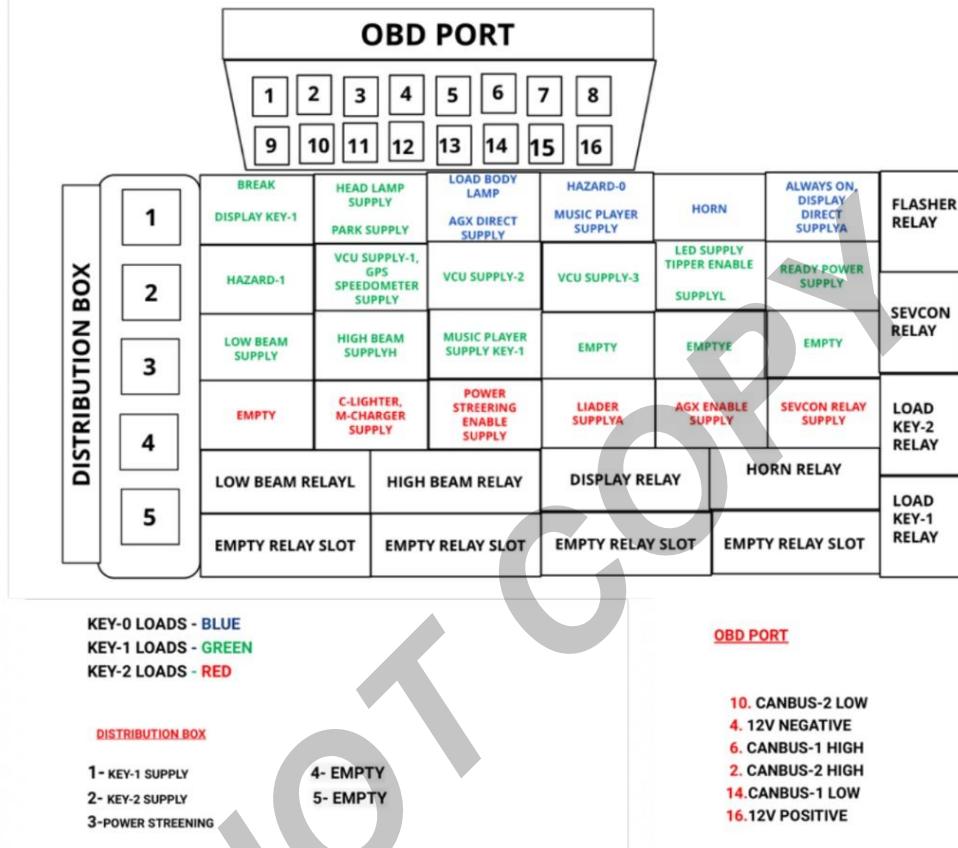
- **Recommendations:**
 - Maintain the battery charge level between 20% and 80% to maximize the lifespan and health of the battery.
 - Avoid depleting the battery below 20% SoC, as deep discharges can significantly reduce the battery's life.

- Monitor the SoC using the vehicle's onboard diagnostic system, which provides real-time data on battery health and usage.
4. **Battery Storage Guidelines:**
- **For Short-term Storage:**
 - If the vehicle is not in use for periods shorter than 30 days, ensure the battery is charged to approximately 50% SoC.
 - **For Long-term Storage:**
 - For periods of inactivity extending beyond 30 days, store the battery at a 50% SoC in a cool, dry place.
 - Disconnect the battery if possible, and check the SoC every 60 days, recharging as necessary to maintain it around 50%.
5. **Temperature Considerations:**
- **Operating Conditions:**
 - Operate the vehicle within the recommended temperature range. Exposure to extreme temperatures can degrade the battery's performance and capacity.
 - In hot climates, park the vehicle in shaded or covered areas to minimize temperature exposure.
 - In cold climates, if possible, store the vehicle in a garage to keep the battery warmer, which aids in maintaining optimal performance.
6. **Battery Health Monitoring:**
- **Using Diagnostic Tools:**
 - Utilize the LX40's advanced diagnostic tools to regularly check the battery's health, including voltage, current, temperature, and overall condition.
 - Schedule a professional battery diagnostic check at authorized Boson Motors service centers annually to assess battery health and detect potential issues early.

5.2.2 Electrical System Maintenance Procedures

1. **Routine Electrical Inspections:**
- **Frequency:** Conduct comprehensive electrical inspections every 10,000 miles or annually.
 - **Components to Inspect:**
 - Check all wiring harnesses for signs of wear, abrasion, or corrosion.
 - Inspect all connectors and terminals for tightness and signs of oxidation.
 - Verify the integrity and security of all grounding points.
2. **Battery Connections and Cables:**
- **Inspection and Maintenance:**
 - Regularly check the battery cables and connections for tightness and cleanliness. Loose connections can lead to poor system performance and increased wear.
 - Clean battery terminals and cable ends with a wire brush to remove corrosion. Apply a layer of petroleum jelly or terminal-specific grease to prevent future corrosion.
3. **Fuses and Relays:**
- **Checking and Replacing:**
 - Inspect all fuses and relays as part of regular vehicle maintenance or if an electrical component fails to operate.
 - Replace blown fuses with ones of the correct rating, as specified in the LX40's fuse panel diagram.
 - Test relays with a multimeter and replace if faulty.

FUSE BOX LAYOUT



4. Charging System:

- Maintenance Checks:

- Ensure the charging system is regularly tested for proper operation. Use a voltmeter to check that the alternator maintains a charge level between 13.8 volts and 14.2 volts while the vehicle is running.
- Inspect the alternator belt for wear and proper tension. Replace or adjust if necessary.

5. Lighting System:

- Inspection and Maintenance:

- Regularly check all vehicle lighting including headlights, taillights, brake lights, and indicators. Ensure all lights are functioning properly and replace any burnt-out bulbs.
- Clean the light covers to maintain proper visibility, especially if the vehicle is used in muddy or dusty conditions.

6. Electronic Control Units (ECU):

- Software Updates and Diagnostics:

- Periodically check for software updates available from Boson Motors. Updates can enhance vehicle performance and fix potential software bugs.
- Utilize diagnostic tools to read and clear any error codes from the ECU. This helps in identifying issues early and maintaining electronic component health.

7. Sensor Checks:

- o Routine Sensor Maintenance:

- Sensors such as the oxygen sensor, throttle position sensor, and vehicle speedometer should be checked for proper function and alignment.
- Clean or replace sensors that are not functioning within the manufacturer's specified parameters to ensure accurate readings and vehicle performance.

BOSON

USER PUSH BUTTON MANAGEMENT METHODS

Note: > Short press means press for 1 seconds to 2 seconds and release,
 > Long press means press for 5 seconds to 10 seconds and release.
 > When speed is greater than 5 km/h or 3 mph. MODE push button shall be deactivated



Switching modes & reset – ODO, TRIP A and TRIP B

S. No	Current mode	Type of button	Pressure time	Action
1.	ODO	MODE button	Short Press	Change to Trip A
2.	Trip A	SET button	Long Press	Reset Trip A value to 0
3.	Trip A	MODE button	Short Press	Change to Trip B
4.	Trip B	SET button	Long Press	Reset Trip B value to 0
5.	Trip B	MODE button	Short Press	Change to ODO

Switching the unit of Speedometer, Odometer, Trip A & Trip B

S. No	Current mode	Type of button	Pressure time	Action
1.	Trip A	MODE button	Long Press	Resets the unit of speedometer from mph to km/h and vice versa and the unit of Odometer, Trip A and Trip B from miles to km and vice versa.

Setting the Time

S. No	Current mode	Type of button	Pressure time	Action
1.	ODO	MODE button	Long Press	Enters into clock setting mode and hours value starts to blink.
2.	ODO	SET button	Short Press	Increase hours from 1 to 12 with blinking mode.
3.	ODO	MODE button	Short Press	Hour value saved and minute digits starts to blink.
4.	ODO	SET button	Short Press	Increase Minute from 0 to 59 with blinking mode.
5.	ODO	MODE button	Short Press	Minute value saved and PM/AM digits starts to blink
6.	ODO	SET button	Short Press	PM / AM shall interchange by 1 accordingly for number of press.
7.	ODO	MODE button	Short Press	PM/AM save and exit from clock set mode
8.	ODO	MODE button	Long press	Current data will save and exit from clock setting mode
9.	ODO	No Action	>20 Seconds	Auto exit without saving the data and continue with the previous value.

5.2.3 Motor and Drive System Maintenance

1. Routine Checks and Servicing:

- o **Frequency:** Service the motor and drive system every 20,000 miles or annually, whichever comes first.
- o **Components to Service:** This includes the electric motor(s), transmission, and any associated drive components.
- o **Maintenance Tasks:**
 - Inspect and clean motor cooling systems to prevent overheating.
 - Check motor mounts and drive couplings for wear and ensure they are secure.
 - Ensure that all electrical connections are tight and free from corrosion.
 - Inspect drive belts (if applicable) for wear and replace them as needed.
 - Apply lubricants to any moving parts as specified in the manufacturer's guidelines.

2. Diagnostic Testing:

- **Procedure:** Utilize specialized diagnostic tools to test the motor's electrical and mechanical efficiency.
- **Focus:** Check for error codes that indicate potential issues with the motor or transmission and address any found issues immediately.

5.2.4 Tire Inspection and Replacement

1. Regular Tire Inspections:

- **Frequency:** Inspect tires every 5,000 miles or every six months.
- **Inspection Criteria:**
 - Check for uneven wear patterns on each tire.
 - Measure tread depth to ensure it is above the minimum legal requirement of 2/32 of an inch.
 - Look for signs of damage such as cuts, punctures, or bulges in the sidewalls.

2. Tire Maintenance:

- **Air Pressure:** Regularly check and adjust tire pressure to the levels recommended by Boson Motors, as incorrect tire pressure can affect vehicle handling, fuel efficiency, and tire lifespan.
- **Rotation:** Rotate tires according to the pattern recommended in the LX40's user manual to promote even wear and extend the life of the tires.

TIRE SIZE & PRESSURE INFO

FRONT	27*8.5R14	250KPa /36 PSI
REAR	27*8.5R14	250KPa /36 PSI

3. Replacement Guidelines:

- **When to Replace:** Replace tires when tread depth is below 2/32 of an inch, or if there is significant damage that cannot be repaired safely.
- **Choosing Tires:** Use only tires that meet the specifications for size, load rating, and speed rating as outlined by Boson Motors. This ensures optimal performance and maintains vehicle safety standards.

Note to Readers:

Thank you for exploring this sample of our work. In order to maintain the brevity of our online showcase, we've provided only a selection from this piece.

Should you be interested in viewing the complete work or wish to delve deeper into our portfolio, please don't hesitate to reach out. We're more than happy to provide extended samples upon request.

Thank you,
The Write Direction Team

DO NOT COPY