

SOLANA EV

Owner's Manual

Solana XA4P Electric Vehicle

From Fairways to Pathways – Solana Leads the Way.

*Please read this manual carefully before operating your vehicle.
Retain for future reference.*

solanaev.com | support@solanaev.com

Introduction

Dear Customer,

Thank you for choosing the Solana EV XA4P Electric Vehicle and placing your trust in us.

We are committed to delivering high-quality products that combine safety, comfort, performance, and efficiency, along with attentive and reliable service — all to enhance your mobility, lifestyle, and daily convenience.

To help you fully understand and enjoy the outstanding performance of this vehicle, we sincerely recommend reading this manual carefully before operation. It contains important information regarding safe operation, daily use, and maintenance, which will enable you to operate the vehicle correctly and safely, and extend its service life.

Please note that due to configuration variations, the content in this manual may differ slightly from your actual vehicle. Kindly refer to the specifications of your own unit. The illustrations provided are for reference purposes only.

This manual forms an integral part of the vehicle. If the vehicle is sold or leased, please ensure that this manual is transferred to the new owner or user. The contents of this manual are based on the latest information available at the time of publication.

If you have any questions or require additional support, please refer to the contact information on the cover of this manual. We are always here to assist you.

We wish you an enjoyable and smooth experience!

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Special Notes

■ Strict Compliance with the Manual

Please follow all operating instructions and guidelines provided in this manual. Solana EV shall not be held responsible for any malfunctions, damage, or losses resulting from improper operation, the use of non-certified parts, or services performed by unauthorized personnel. No warranty or support will be provided under such circumstances.

■ Vehicle Label Notice

Important operational labels are affixed to the vehicle body. Please follow the instructions indicated on these labels strictly. Do not remove or tamper with any labels. Loss or removal of safety labels may lead to unforeseen risks, including vehicle damage or personal injury.

■ Proper Use of Seat Belts

Seat belts are the most fundamental safety device for both the operator and passengers during operation. Please ensure that seat belts are worn correctly before starting the vehicle.

■ Safety Instructions — Symbol Key

■ Caution	Failure to follow instructions may result in vehicle damage.
■ Warning	Failure to follow instructions may result in minor accidents or personal injury.
■ Danger	Failure to follow instructions may lead to serious accidents, severe injury, or death.
■ Environmental	Operation poses minimal environmental risk; supports recycling and reuse.

■ Operating Requirements

- Only individuals who have completed safety operation training and passed the assessment for this vehicle are permitted to operate it.
- Operators must follow applicable property and facility rules, practice safe operation, and strictly avoid speeding or overloading.
- Operating under the influence of alcohol, controlled substances, or while in an unfit physical or mental condition is strictly prohibited.
- Do not engage in distracting activities while operating: using interior controls unnecessarily, cleaning windows, using a phone, or reading materials.
- Remain alert and continuously monitor the surrounding area and behavior of other persons in order to respond promptly and safely.

■ Environmental Protection

Please dispose of used parts, waste oil, and other hazardous materials generated during vehicle maintenance properly to prevent environmental pollution. This vehicle is designed to support green mobility and encourages the use of eco-friendly materials and recycling practices.

■ **Prohibited Actions**

- Transporting flammable or explosive materials is strictly prohibited.
- Any behavior that violates the instructions and standards outlined in this manual is strictly prohibited.

Contents

Important Labels	01
Safety Operation	02
Overall Structure and Specifications	03
Operation and Controls	04
Pre-Operation Inspection	05
Maintenance and Care	07
Vehicle Storage	11
Warranty and After-Sales Service	12

01 Important Labels

Please read all labels attached to the vehicle carefully before operating, and promptly replace any that are damaged or missing.

Battery Warning Labels

■ Explosive Gases	Keep all ignition sources away from the battery. Explosive gases are generated during charging and operation. Ensure charging takes place in a well-ventilated area.
■ Sulfuric Acid	Battery electrolyte can burn skin, eyes, and clothing. Do not tilt batteries. Keep vent caps secure and level. In case of contact, flush immediately with water and seek medical attention.
■ Electrical Short Circuit	Do not create a connection between the positive and negative battery terminals. This can result in severe burns and may cause an explosion.

Steering Wheel Label — Operation Instructions

■ Warning

- No additional passengers beyond the rated capacity.
- Do not start the vehicle until all passengers are properly seated.
- Press the brake pedal before leaving the vehicle.
- Power off the vehicle using the key fob and store it securely when not in use.
- Passengers must remain seated and hold the handrails at all times.
- Keep hands and feet inside the vehicle.

■ Warning

- The windshield does not protect against flying objects.

Operating Instructions Label

- ① Read this manual and all safety instruction labels before operating.
- ② Ensure all passengers are properly seated before starting.
- ③ Select Forward or Reverse using the gear selector.
- ④ Press the accelerator pedal to move; press the brake pedal to stop.
- ⑤ Operate safely according to terrain, visibility, and your experience.
- ⑥ When parking, press the brake pedal and engage the parking brake.

02 Safety Operation

■ Warning — Before Operation

- No additional passengers beyond the rated capacity.
- Do not start the vehicle until all passengers are properly seated.
- Press the brake pedal before leaving the vehicle.
- Power off the vehicle using the key fob and store it securely when not in use.
- Passengers must remain seated and hold the handrails at all times.
- Keep hands and feet inside the vehicle.
- The windshield does not protect against flying objects.

① Before Operation

1. Read this manual and all operational labels on the vehicle before operating.
2. Only authorized personnel may operate the vehicle in designated areas.
3. Do not overload the vehicle.
4. Do not operate the vehicle if you are under the influence of alcohol or any medication that may impair your vision or judgment.

② During Operation

1. Remain seated with your body inside the vehicle when it begins to move.
2. Do not start the vehicle until all passengers are properly seated.
3. Keep both hands on the steering wheel and your eyes on the path ahead.
4. Use extra caution when reversing in crowded areas. Always look behind you and reverse slowly.
5. Avoid sudden starts, stops, or severe jolts. Adjust your speed according to terrain and conditions.
6. Do not make sudden or excessive turns of the steering wheel at high speeds.
7. When operating on slopes, maintain a slow speed and proceed steadily uphill or downhill. Avoid operating at a fixed side angle on a slope.
8. Do not overload the vehicle or install unauthorized accessories.
9. Do not modify or add to the safety instructions, load capacity, or contents of this manual.

■ Caution

- Read the manual and labels before operation.
- No overloading, modifications, or operating under the influence.

- Start only after all passengers are properly seated.
- Stay alert and operate smoothly.
- Proceed slowly and straight on slopes.

03 Overall Structure and Specifications

Overall Structure — Component Index

① Roof	② Rear Fender	③ Rearview Mirror
④ Windshield	⑤ Windshield Frame	⑥ Headlight
⑦ Front Bumper	⑧ Front Body Cover	⑨ Side Step
⑩ Rear Body Cover	■ Steering Wheel	■ Steering Column
■ Dashboard	■ Brake Pedal	■ One-Button Start
■ Gear Selector (D-N-R)	■ Accelerator Pedal	■ Armrest
■ Front Wheel	■ Rear Wheel	■ Taillight
■ Horn (Press)	■ High Beam (Push Down)	■ Low Beam (Push Up)

Vehicle Specifications

Model	Solana XA4P
Seating Capacity	4 Passengers
Overall Length	2,940 mm (115.7 in)
Overall Width	1,450 mm (57.1 in)
Overall Height	2,000 mm (78.7 in)
Motor Type	AC Permanent Magnet Synchronous
Nominal Voltage	72V
Battery Type	Lithium (LiFePO4)
Charger Input	100–240 VAC, 50/60 Hz
Charger Max Current	11.5A @ 120VAC; 11.0A @ 220VAC
Tire Pressure	32 PSI (220 kPa)
Wheel Lug Nut Torque	105–120 Nm (80 ft-lbs)
Transmission	Single-speed gear reduction
Axle Ratio	12.3:1
Braking System	Four-wheel hydraulic disc brakes
Differential Oil	GL-4 75W/90 Gear Oil (max 0.65 L)

04 Operation and Controls

① Main Battery Switch

The main battery switch is located inside the seat compartment of the operator area.

- Power On: Press the switch. The power indicator light will illuminate when the system is on.
- Power Off: After parking, press the switch again until the power indicator light turns off to cut the main power supply.

② One-Button Start

1. Ensure the DNR switch is in the center (Neutral) position.
2. Press the unlock button on the key fob to power on the vehicle. The system will initialize and the display will illuminate.
3. Press the lock button on the key fob to power off the vehicle.

■ Warning

- Each vehicle supports a maximum of 2 key fobs. Contact your authorized dealer to program key fobs.
- Always remove and secure the key fob when leaving the vehicle unattended.

③ Forward/Reverse Switch (DNR Selector)

The forward/reverse switch sets the vehicle direction: Drive, Neutral, or Reverse.

- Turn right to "D" for forward.
- Turn left to "R" for reverse. The reverse alarm will sound when reverse is selected.
- Keep in the center position for Neutral.

■ Warning

- The vehicle must come to a complete stop before shifting the DNR switch.
- When changing DNR position, first turn to the center (Neutral) and hold for 2 seconds, then select forward or reverse.
- Do not shift the DNR switch hastily — this may damage the sensor or cause switch malfunction.

④ Voltage Indicator / Display

The voltage indicator displays the battery level and reminds the operator to recharge in time.

1. The display decreases as power is consumed during operation.
2. When the battery approaches the low-power warning, the indicator moves between the first and second segments.
3. When the battery enters the low-voltage warning stage, the first segment in the upper-left corner will flash.

⑤ Headlight and Turn Signal Switch

- Low Beam: Push Up
- High Beam: Push Down
- Left Turn Signal: Push forward
- Right Turn Signal: Pull back
- Horn: Press the center button

05 Pre-Operation Inspection

Before each use of the vehicle, perform a pre-operation inspection. Make it a habit to carry out the following checks in the same manner each time to ensure good vehicle maintenance.

■ Warning

- Before performing the pre-operation inspection, make sure the main switch key is removed to prevent accidental startup, and press the parking brake to prevent the vehicle from moving.

Pre-Operation Checklist

Before each use, please check the following:

- Battery — charge level and connections
- Tire condition and pressure
- Steering system
- Reverse buzzer
- Pedal condition
- Body and chassis
- Seat

Battery

Before each use, charge the battery — see Battery Charging in the Maintenance section for details.

- Check that the battery is securely fastened to prevent vibration or impact.
- Inspect the battery for any electrolyte leakage.
- Check the battery terminals for signs of corrosion.

Accelerator Pedal

Power on the vehicle using the key fob, select forward or reverse, release the brake pedal, place your right foot on the accelerator pedal, and gently press down to start the vehicle.

Note: Do not press the accelerator pedal all the way down suddenly.

■ Caution

- Ensure the main switch is turned off before inspecting the accelerator pedal.

Brake Pedal

When pressed, the pedal should feel firm. Once released, it should return to its original position.

Tire Condition

Recommended Tire Pressure	32 PSI (220 kPa)
Tire Wear Limit	Replace when tread depth reaches 3 mm (0.12 in)

- Check tire pressure before operating the vehicle.
- Inspect tires for damage, cracks, or embedded objects.
- Check for flexibility and reliability. When released, pedal should return to its original position.

Steering System

Check for excessive play in the steering system. Move the steering wheel up and down, forward and backward, and turn it left and right.

If you notice excessive shaking or hear unusual noises, some components may be faulty. Please contact your authorized dealer immediately.

Reverse Alarm

Turn the DNR switch to 'R' and verify the reverse alarm sounds. If any abnormalities are found, contact your dealer immediately.

07 Maintenance and Care

Battery Usage Guidelines

1. Use only the charger provided by the manufacturer. Using an incompatible charger may damage the battery or pose a fire hazard.
2. Lithium battery charging requirements: temperature between -5°C and 40°C (23°F–104°F); well-ventilated area with no flammable materials nearby.
3. Keep the battery pack away from heat sources, open flames, flammable or explosive gases/liquids, and hazardous chemicals.
4. Avoid exposing the battery pack to rain, submersion in water, or contact with corrosive liquids.
5. During winter charging, if the temperature falls below -5°C (23°F), the battery will enter low-temperature protection mode and charging will automatically stop.

Battery Charging

■ Warning

- Before charging the lithium battery, please read and understand the user manual provided with the vehicle's lithium battery charger.
- Charging generates explosive hydrogen gas. Always charge in a well-ventilated area — ventilate at least 5 times per hour.

Proper Charging Connection Procedure:

1. Connect the Charger to the Battery: Use the DC output plug provided. Align the plug per the markings and insert it into the lithium battery charging port until it clicks securely.
2. Connect the Charger to Power: Insert the charger's AC plug into a properly rated outlet. Ensure the plug is fully inserted.

Power Disconnection Sequence:

After charging is complete, first unplug the charger's AC input from the power outlet, then disconnect the DC output plug from the battery. This prevents reverse current surges during disconnection.

■ Warning

- Do not disconnect the DC output cable from the battery socket while charging, as this may cause an explosion. The charger automatically shuts off when the battery is fully charged.

Battery Storage

1. If the battery will not be used for an extended period, charge it to approximately 50% and turn off the battery management system (press and hold the power button for 5 seconds, then release). Check the battery level every month and recharge as needed. Storing the battery with a low charge may cause permanent damage.

2. Store lithium batteries in a well-ventilated, cool, and dry place. Avoid exposure to water and moisture. Storage temperature must be below 40°C (104°F), with humidity between 5% and 85% RH.

Blue Speed Lithium Battery — Auto-Shutoff Notice

■ Caution — Blue Speed Lithium Battery (Hangzhou Speed Electronics, 51.52V 150Ah)

- The battery will automatically shut off after 15 days of no use when state of charge is above 20%.
- The battery will automatically shut off after 3 days of no use when state of charge is below 20%.
- To reactivate: Hold the battery's power button for 3 or more seconds, then connect to the charger immediately.

Owner Responsibility — Battery

- Keep the battery above 20% state of charge during storage and regular use.
- Avoid repeatedly discharging the battery below 10%.
- Do not leave the vehicle unplugged for extended periods with a low battery charge.
- Failure to maintain these practices may result in denied warranty coverage for battery degradation.

■ Caution

- Storage exceeding 14 days with battery charge below 20% is not covered under warranty.
- Frequent deep discharges below 10% void battery warranty.
- Overcharging or leaving the battery at 100% charge for extended periods without use is not recommended.

Lithium Battery Fire Response

1. Firefighting Procedure:

If the fire is in its early stage, quickly use a suitable dry powder fire extinguisher. Maintain a safe distance (1–2 meters), aim at the base of the flames, and press the handle to extinguish. Do not use water or water-based extinguishers.

2. Evacuation Procedure:

Immediately stop any surrounding operations. Cover your nose and mouth with a wet cloth, stay low, and quickly evacuate along a safe escape route. In an enclosed space, do not attempt to fight the fire — evacuate to an open, ventilated area and call emergency services.

Battery Installation Warning

■ Warning

- When installing the lithium battery, do not place a wrench or any metal object on the battery terminals. This may cause arcing and lead to a battery explosion.

Differential Oil Level Check

1. Park the vehicle on a level surface.
2. Lift the seat.
3. Remove the gear oil filler cap.
4. Slowly add gear oil until it reaches the opening.
5. Fill with gear oil up to 0.65 L. Stop immediately if the oil reaches the fill mark. Do not allow foreign objects to enter the differential oil tank.

Recommended Gear Oil	GL-4 75W/90 Gear Oil
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Tire Replacement

1. After the vehicle is completely stopped, remove the lug nuts using a suitable method to prevent the vehicle from moving.
2. Use a jack to lift the vehicle, then remove the tire and bolts.
3. To install the tire, reverse the above steps.

Wheel Lug Nut Torque	105–120 Nm (80 ft·lbs)
Bolt Size — Front	M12 × 1.25
Bolt Size — Rear	M12 × 1.25

■ Caution

- Before inspecting wheels or the brake system, ensure the main switch is in the OFF position.

Brake Adjustment

This vehicle is equipped with self-adjusting brakes. Press the brake pedal with your foot to ensure it operates properly.

■ Warning

- If there are any issues with the brakes, consult your dealer before operating the vehicle, as brake failure can lead to serious accidents.

07 (cont.) Routine Maintenance Log

For optimal performance and safe operation, regular inspections and record-keeping are essential.

Legend:

C = Check CA = Check Again R = Replace S = Service CL = Clean & Lubricate L = Lubricate

Item	Pre-Op	Monthly (20 hrs / 160 km)	Every 4 Mo. (125 hrs / 1000 km)	Every 6 Mo. (250 hrs / 1200 mi)	Annually (500 hrs / 4000 km)
Charge the battery	C	C			
Clean battery cover / connections	C	C			
Check brake pedal travel	C	C	CA		CA
Inspect steering operation	C	C	CA		CA
Check tire pressure & condition	C	C	CA		CA
Inspect body and chassis	C	C			
Check tightness of bolts/nuts	C	C			CA
Test reverse buzzer	C	C			
Check electrolyte levels		C			
Check for loose/broken connections		C			
Clean & lubricate pedal area		CL			
Replace transmission oil			R		
Inspect wire insulation				C	
Check for oil leaks / transmission				C	CA
Check shock absorbers				C	
Perform discharge test					C
Inspect brake operation					CA
Check transmission oil level					C
Inspect front wheel bearing					C

Items not listed with page number references should be serviced by an authorized dealer or qualified technician. These procedures are not included in this manual.

Charger Fault Indicator Guide

AC Input Voltage Range: 100–240 VAC; 50/60 Hz

AC Input Max Current: 11.5A @ 120VAC; 11.0A @ 220VAC

Pilot Lamp Status ("-" = pause 1s)	Fault Indication	Solutions
Red-green-red / green-red-green	No load	Check charger connection to battery; check for reverse connection or low battery voltage.
Red-green-red / - - -	Over voltage / current fault	If error recurs after restart, return to factory for maintenance.

Red-green-red / green - - -	Ambient temp too high or too low	Check charger ambient temperature; ensure ventilation is adequate; check battery temperature and probe position.
Green-red-	Charger overheating	Check ambient temperature and ventilation around charger.
Red and green / - -	Output under voltage	Return to factory for maintenance.
Red-green-red / green-red-	Input AC abnormal	Verify input voltage meets requirements; check plug contact.
Green-red / green - - -	Error repeated 5+ times	Power on again, observe pilot lamp status, and solve per the matching remedy above.

11 Vehicle Storage

If the vehicle will not be used for an extended period, please follow these steps:

Chassis Preparation

1. Ensure tire pressure is 32 PSI (2.25 kg/cm²).
2. Wipe down the exterior of the vehicle with anti-rust oil.
3. Cover the vehicle and store it in a dry, well-ventilated area.

Battery Preparation

1. Charge and inspect the battery at least once a month during storage.
2. Disconnect the lithium battery power when storing the vehicle long term.

■ Caution

- Do not place cleaning products inside the battery compartment.
- Clean the battery top with a mixture of baking soda and water to prevent corrosion.

Security

Press the lock button on the key fob to power off and secure the vehicle, then store the key fob in a safe place to prevent loss or unauthorized use.

Note: Each Solana XA vehicle supports a maximum of 2 key fobs.

12 Warranty and After-Sales Service

1. Authorized Service Only

Please visit our official dealers or designated service centers for after-sales support. All product quality issues within the warranty period will be properly handled at these locations. Do not attempt to repair faults on your own. Unauthorized or improper handling may void your warranty.

2. General Exclusions (All Components)

This warranty does not cover:

- Regular maintenance items (brake pads, bulbs, tires, fluids, etc.).
- Cosmetic wear, fading, or discoloration.

Damage caused by:

- Improper maintenance or neglect.
- Unauthorized repairs or modifications.
- Racing, commercial use, or overloading.
- Use of non-approved parts or fluids.
- Natural disasters, fire, collision, or theft.
- Improper storage or transportation.
- Incidental costs such as towing, lodging, or communication expenses.
- Damage resulting from continued use after a known issue arises.

3. Warranty Voiding Conditions

This warranty is void if:

- The vehicle is used in any competitive event.
- The vehicle is deemed a total loss or sold as salvage.
- The VIN is altered or unreadable.
- Non-approved performance accessories are installed, affecting vehicle function.

4. Transfer of Warranty

This limited warranty may be transferred to a second owner within the warranty period provided:

- A \$50 transfer fee is paid.
- A completed transfer form is submitted to Solana EV, LLC prior to the transfer.

5. Owner Responsibilities

To maintain warranty coverage, the vehicle owner must:

- Operate, maintain, and service the vehicle in accordance with this Owner's Manual.

- Retain a complete Service Schedule and Record Sheet.
- Provide proof of maintenance when submitting warranty claims.
- Ensure all warranty repairs are performed by an authorized Solana EV dealer.

Use of non-genuine parts, improper maintenance, or unauthorized modifications will void this warranty.

Ride Bright. Ride Solana.

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