

AYRO®



VANISH

Utility Low-Speed Electric Vehicle

OWNER'S MANUAL



1 VEHICLE IDENTIFICATION NUMBER (VIN) AND SERIAL NUMBER

Record your vehicle's Serial Number and Vehicle Identification Number (VIN) in the spaces provided below. **Non-LSV models do not have a VIN.**

The VIN is stamped on a plate affixed to the driver's side dashboard at the base of the windshield. The Serial Number is printed on the manufacturer's label, which is located on the driver side door frame. The manufacturer's label includes French for vehicles sold into Canada.

Record the Vehicle Identification Number (VIN) below.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Record the vehicle's Serial Number below (driver's side door frame):

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Record additional information for your specific vehicle:

Date Purchased:	
Distributor/Dealer:	
Notes:	

NOTE: The term LSEV includes both the LSV (street-legal) and the non-LSV (non-street legal, greater cargo capacity) models.



2 VANISH QUICK START GUIDE

OPERATION

Inspect before each use (360° visual).

- Enter vehicle; close doors (if equipped). Buckle up!
- With park brake engaged (up position), insert the key and turn to «N» (NEUTRAL/ON). Allow the Driver Display to illuminate.
- Release the park brake, turn the key to «F» (FORWARD) or «R» (REVERSE), and proceed.
- To park, stop with the brake pedal fully depressed, pull up the park brake, turn the key to «OFF», and remove the key.



BATTERY MAINTENANCE

- Charging and maintenance directly affect your battery life. **Plug it in!**
- When you are finished for the day, **plug it in**. NEVER let the battery drop down to zero charge. Ideally, keep it above 50%. **Plug it in!**
- When it is cold outside, **plug it in**. Charging warms the battery.
- Store your Vanish inside (garage, vehicle shop, etc.) when at or below freezing or in very hot weather.
- Moderate Acceleration and Braking prolong battery range and life.



GENERAL MAINTENANCE

QUICK START GUIDE



Daily:

- Check State of Charge (ensure battery is sufficiently charged)
- Check headlights, turn signals, brake lights, and brakes.

Monthly:

- Check the tire pressures. Tires are factory filled with nitrogen.
- Inspect all power cables for any signs of damage.
- Check coolant levels.



3 THE AYROSync™ EXPERIENCE



AYROSync™ is a connected, web-based platform designed to simplify service and support for your Vanish. Registration allows you to track and validate your vehicle warranty, and for fleet managers, it allows visibility into the conditions and maintenance needs of the entire fleet of AYRO vehicles.

Your Vanish is equipped with a factory telematics device to enable prognostics and diagnostics to support efficiency and longevity of the vehicle systems. The telematics device is essential to the AYROSync™ experience and will enable AYROSync to provide detailed vehicle insight and efficient customer support.

Your authorized AYRO Dealer will register your valid email and the vehicle's Serial Number. You will receive an email with instructions on completing vehicle registration and warranty activation. You will be able to add usernames, passwords, locations of vehicles in the fleet, etc.

A warranty summary can be found on page [6](#). For detailed warranty information, please see the separate AYRO Vanish Warranty documents.

LIMITED WARRANTY, SUMMARY ONLY



4 LIMITED WARRANTY, SUMMARY ONLY

New AYRO vehicles purchased through authorized AYRO Dealers are warranted to be free from defects in materials and workmanship for THREE YEARS from purchase date. Individual components may have different warranty periods.

Warranty Summary for Components

Component	Warranty Period
Chassis	Lifetime, Limited
Lithium-Ion Battery Pack	5 years or 30,000 miles
Electric Motor/Inverter/Drivetrain	3 years or 30,000 miles
Components, other	3 years
Factory Installed Time-of-Order Options	1 year

Wear and tear damage or deterioration resulting from normal use and environmental exposure are specifically excluded.

Any alterations, modifications, or additions to the original equipment will void the warranty.

Removal or disabling of the AYROSync telematics device without prior authorization will void the warranty.

Highlights from Your Warranty

- Warranty replacement parts are covered for the balance of the warranty.
- Sole remedy is repair or replacement of items deemed defective.
- Register your vehicle in AYROSync to validate warranties and track maintenance.
- Keep records and receipts of all service and maintenance performed.
- Your authorized AYRO Dealer or service provider will perform repairs and provide a receipt.

LIMITED WARRANTY, SUMMARY ONLY

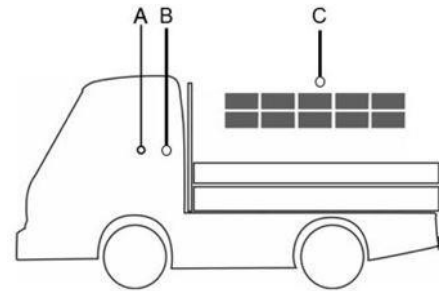


- Warranty excludes all failures from abnormal use, neglect, abuse, lack of maintenance, accident/ collision, transportation, non-authorized parts or modifications, acts of God, and ordinary wear and tear. Routine wear items are excluded.
- Upon sale of your Vanish, the balance of warranty will transfer to the new owner after registration on AYROSync.
- Warranty repairs cannot be provided in countries other than the United States and Canada at this time, but any authorized AYRO Dealer can service and support your vehicle.
- **See the separate full warranty document for more information.**



5 CARGO WEIGHT LIMITS

The Vanish cargo limit warning labels are located on the driver side door frame panel and with the warning decals on the sun visors or on the headliner in front of the driver. Some payload configurations may have Gross Vehicle Weight Rating (GVWR) safety labels in the payload area.



Calculating the available Cargo Weight involves simple mathematics. The total weight permitted for the street-legal LSV < 3000 lb or 1360 kg. The total weight permitted for the non-LSV (non-street-legal) < 3600 lb or 1633 kg.

From the Gross Vehicle Weight Rating (GVWR) or total weight permitted, subtract the following:

- base truck weight (1800 lb / 816 kg)
- the payload configuration weight
- the weight of accessories
- the weight of occupants

to obtain the available cargo weight.

These examples reflect changes in the payload configuration only, while other factors remain the same. Substitute your own values for passenger weights or other configurations as needed.

Table 1 Cargo Weight Calculation

DETERMINING CARGO WEIGHT ALLOWED	LSV	Non-LSV	LSV	Non-LSV
	lb	lb	kg	kg
Gross Vehicle Weight Rating (GVWR)	<3000	<3600	1360	1633
Subtract the following weights:				
• Base Vehicle Weight	(1800)	(1800)	(816)	(816)
• Payload Configuration Option Weight*	()	()	()	()

CARGO WEIGHT LIMITS



• Accessory Options Weight*	()	()	()	()
• Occupant Weights Total	()	()	()	()
Cargo Weight Available =				

*Weights will vary per user and vehicle configuration.

Refer to the Specifications table on page 77 for base vehicle weights and payload options.



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6 INTRODUCTION

The purpose of this Owner's Manual is to present information you require as an owner or operator of the vehicle you have just purchased. Once you have read this Manual, you will:

- Understand the Principles of Operation of the vehicle,
- Know the features of your vehicle,
- Know the features of AYROSync,
- Be able to operate your vehicle in the most safe and effective way,
- Be able to perform simple maintenance on your vehicle.

For more involved and/or major service and repairs, please consult your authorized AYRO Dealer. Should you have any questions after reading the Manual, please contact AYRO Customer Service. Please have your Serial Number or Vehicle Identification Number (VIN) and date of purchase available.

Your vehicle may not have all the equipment and optional features described in this Manual, as they depend on the model and the options you have ordered, or on the enforced regulations that apply in the country, state, and municipality where you purchased and operate your vehicle.

6.1 AYRO Customer Service

AYRO Customer Service

Tel: +1 512-994-4917 (USA Domestic and International)

Email, General: info@AYRO.com

Email, Service: service@AYRO.com

Web: www.AYRO.com

6.2 For Reference Only

All information contained in this publication is based on the latest product information available at the time of publication. Product improvements or changes may result in differences between this Manual and the vehicle. Descriptions, depictions, and/or procedures in this document are intended for reference only.

No liability can be accepted for omissions or inaccuracies. AYRO, Inc. reserves the right to make changes at any time, without notice and without incurring any obligation to make the same or similar changes to vehicles previously manufactured. Any reprinting or reuse of the descriptions, depictions, and/or procedures, whether in whole or in part, is expressly prohibited.

INTRODUCTION



6.3 Abbreviations, Acronyms, Definitions

AYROSync	Connected, web-based knowledge and communications center
BCM	Body Control Module manages settings inside the cab
BMS	Battery Management System software controls the batteries
CFR	Code of Federal Regulations (United States)
CHMSL	Center High Mounted Stop Lamp (third brake light)
FMVSS	Federal Motor Vehicle Safety Standards
FMWS	Forward Motion Warning Sounder
GVWR	Gross Vehicle Weight Rating
Li-Ion	Lithium-Ion battery type
LSEV	Low-Speed Electric Vehicle (includes both street-legal LSV models and non-street-legal Non-LSV models)
LSV	Low-Speed Vehicle that complies with Federal Motor Vehicle Safety Standards (FMVSS) and regulations of the U.S. DOT applicable to LSVs under 49 CFR 571.500. "Street legal."
NHTSA	National Highway Traffic Safety Administration, part of the U.S. Department of Transportation (U.S. DOT)
Non-LSV	Low-speed vehicle that does not meet FMVSS for public roads, vehicle speeds, GVWR, or other reasons. Not street legal.
PDU	Power Distribution Unit assigns energy/power to various devices within the vehicle
PTC	Positive Temperature Coefficient (a type of electric heater using ceramic discs)
SAE J1772	SAE J1772 is a North American standard for electrical power cable connectors for electric vehicles.
VCU	Vehicle Control Unit supervisory unit receives and processes vehicle information for control, display, and operational purposes.
Wiper HS, LS	Windshield wiper settings of High-Speed and Low-Speed

6.4 Compliance (NHTSA)

The Vanish LSV vehicle complies with the U.S. Department of Transportation National Highway Traffic Safety Administration (NHTSA) low-speed vehicle regulations and can be operated on



many streets posted with lower speed limits. Please familiarize yourself with all laws and regulations concerning the operation of the vehicle in your area.

The non-LSV model is for private road use and is not “street legal” for public roads.

The term LESV encompasses both the LSV (street legal) model and the Non-LSV (non-street legal) model.

6.5 Applicability

This Manual applies to the following AYRO low-speed electric vehicles:

- AYRO Vanish LSV (street legal, 25 mph, GVWR <3000 lb or 1360 kg)
- AYRO Vanish Non-LSV (not street legal, 20 mph, GVWR <3600 lb or 1633 kg)

6.6 Theory and Principles of Operation

The AYRO Vanish is an all-electric vehicle with a powerful battery and electric motor. Electric vehicles work on the basic science principle of conversion of energy. Electrical energy is converted into mechanical energy by the motor. The motor in the Vanish combines patented, innovative axial flux technology with an integrated inverter motor to provide high torque density, exceptional efficiency, and outstanding reliability. Energy is recovered from braking and deceleration to send back to the battery. A controller manages the vehicle speed and optimizes energy use and battery energy storage. The vehicle is plugged into a charge point on the grid to collect energy, which is stored in the battery. The battery also transforms chemical energy into electrical energy through oxidation/reduction processes.

6.6.1 The Electric Motor and Lithium-Ion Battery Pack

The AYRO Vanish is designed to operate using an electric motor powered by a lithium-ion battery pack. The battery pack is located underneath the vehicle, providing a low center of gravity, which helps with stability and maneuverability. The electric motor drives the rear wheels of the vehicle and is controlled by an electronic controller. The controller manages the power flow from the battery to the motor, ensuring that the vehicle operates efficiently and safely.

6.6.2 The Drivetrain

The AYRO Vanish uses a simple and efficient electric drivetrain system. The vehicle is propelled by an electric motor that generates torque, which is transmitted to the rear wheels. The motor is powered by a battery pack that stores electrical energy, which is converted into mechanical energy to drive the vehicle forward. The battery pack can be charged from a standard 110V or 220V outlet using an EV charge cable.

INTRODUCTION



6.6.3 Speed

The AYRO Vanish LSV model has a top speed of 25 mph or 40 km/h, making it ideal for urban, campus, indoor, and outdoor driving conditions. Its compact size and low-speed capabilities make it easy to navigate through tight spaces, enclosed campuses, and busy streets.

The Non-LSV model has a top speed of 20 mph or 32 km/h and can carry 600 lb or 272 kg more cargo than the Vanish LSV. The Non-LSV version is NOT street legal and does not have a VIN, only a serial number.

The AYRO Vanish is a practical and efficient electric vehicle designed for functional low-speed transportation. Its principle of operation is based on the use of an electric motor and a lithium-ion battery pack, providing a clean and efficient propulsion system. The vehicle's compact size and low-speed capabilities make it an ideal and sustainable transportation solution.

6.7 Charging System

The Vanish charging systems includes several key components:

- Lithium-Ion Battery Pack
- On-board charging unit
- DC to DC convertor
- 5-pin standard J-Plug (J1772) Power Cable

6.7.1 Lithium-Ion vs Lead-Acid

Lithium-ion batteries deliver the same level of power throughout the entire discharge cycle, while lead-acid batteries deliver strong power when fully charged, but the power delivery drops as the battery discharges. Lithium-ion batteries accept a faster rate of current for charging, therefore they charge quickly compared to lead-acid batteries of the same rating. Lithium-ion batteries also offer a high energy density compared to lead-acid batteries, which allows more power distribution from smaller batteries, as well as helping to increase the space available for payloads. They also offer faster charging and a longer range.

The Vanish traction drive batteries are lithium-ion, and the 12-volt auxiliary battery is lead-acid.

6.8 Regenerative Braking (if so equipped)

Regenerative braking captures energy from braking to route back into the electric system. In simple terms, it reverses the electric motors that propel the car. Regenerative brakes can work in conjunction with the regular friction brakes, or they can be set more aggressively for one-pedal driving. The brake lights engage normally with regenerative braking, so drivers behind will be aware when the Vanish is slowing down or stopping. Regenerative braking provides small boosts of energy that improve range over time.

INTRODUCTION



6.9 AYRO Wheels and Schlägernull™ Tires

The Vanish is equipped with 15" AYRO wheels and 15" All-Season Schlägernull™ tires with nitrogen pressurization. AYRO tires are made with a softer compound designed for lower operating pressures than standard automotive tires. This combination provides travel on non-paved surfaces with minimal impact to the environment, such as on turf.



Figure 1 AYRO 15" Wheels and All-Season Schlägernull™ Tires

6.10 Options

Payload configurations and vehicle attachments may be found on vehicles if so equipped:

Doors:

- Resort Doors
- Full Doors

Payload Configurations:

- Flat Bed
- Light Duty Pickup with Triple Fold-Down Gates
- Van Box

Other Equipment:

- Brush Guards

INTRODUCTION



- Strobe Lights
- Upgraded Cabin Components
- Air Conditioning

6.11 Important Operating Notes

NOTE: Always operate your Vanish LSEV in compliance with your state and local vehicle regulations including registration, titling, insurance, seat belt usage, and operator's licensing.

NOTE: Set park brake, switch vehicle to « **OFF** » position, and remove key before exiting driver's seat.

6.12 Extend the Life of Your Batteries

- Avoid deep discharging of batteries whenever possible.
- Follow all battery manufacturer safety, care, and maintenance guidance.

6.13 Reduce Your Risks While Operating

This vehicle offers much less crash protection than a regular car, van, or truck. This means a higher risk of injury or death in collisions, even at low speeds. The higher the speed of the traffic around you, the greater the risk of injury. To reduce these risks:



- Always obey traffic regulations.
- Avoid roads with traffic speed limits greater than 35 mph.
- When possible, stay on roads and lanes limited to low-speed vehicles.
- Always wear your safety seat belts when in the vehicle.
- To reduce the chance of the vehicle tipping over, reduce speed when turning and maneuvering through curves and hills.



NEVER exceed the GVWR of your vehicle, including people and cargo.

INTRODUCTION



- For LSV: Do not exceed **3000 lb / 1360 kg**
- For Non-LSV: Do not exceed **3600 lb / 1633 kg**



7 SAFETY SIGNAL WORDS AND SYMBOLS

The following signal words and symbols appear throughout this Manual and on your vehicle. Your safety is involved when these words and symbols are used. Become familiar with their meanings before reading the Manual. Safety Alert symbols indicate hazards.

Failure to follow the warnings contained in this Manual can result in severe injury or death, or damage to the vehicle or property.


This vehicle is not a toy.


	<p>NOTICE indicates a situation that may result in property damage.</p>
	<p>CAUTION indicates a hazardous situation which, if not avoided, may result in damage to property or equipment, or minor to moderate injury.</p>
	<p>WARNING indicates a hazardous situation which, if not avoided, may result in death or serious injury to people.</p>
	<p>DANGER identifies a hazardous situation which could result in death or serious injury.</p>
	<p>PROHIBITION indicates actions that are forbidden. Prohibitions may be indicated with pictograms.</p>
	<p>Blue exclamation mark identifies a MANDATORY instruction.</p>



8 SAFE OPERATION OF YOUR VEHICLE

8.1 California Proposition 65 Warnings

 WARNING	
<p>Operating, servicing, and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area, and wear gloves or wash your hands frequently when servicing your vehicle.</p>	
<p>For more information, go to https://www.p65warnings.ca.gov/fact-sheets/vehicles-passenger-and-highway-motor-vehicles</p>	

 WARNING	
<p>Lead-acid batteries, battery posts, terminals, and related accessories can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm.</p>	

 WARNING	
<p>Read, understand, and follow all instructions and safety precautions in this Manual and on all product labels. Failure to follow the safety precautions could result in serious injury or death.</p>	

8.2 Safety Labels and Locations

Warning labels have been placed on the vehicle for your protection. They may be located inside the driver side sun visor, or on the ceiling of the cabin, and clearly visible to the driver. GVWR safety labels may also be found in the payload area in some configurations. Read and follow the instructions of the labels on the vehicle carefully. If any of the labels depicted in this Manual differ from the labels on your vehicle, always read and follow the instructions of the labels on the

SAFE OPERATION OF YOUR VEHICLE



vehicle. If any label comes off or becomes illegible, contact your authorized AYRO Dealer to obtain a replacement.

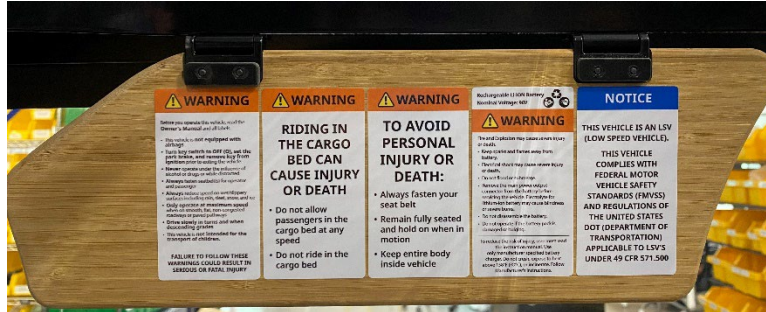


Figure 2 Safety Labels on Sun Visor or Roof

8.3 Safety Labels, Common to LSV and Non-LSV

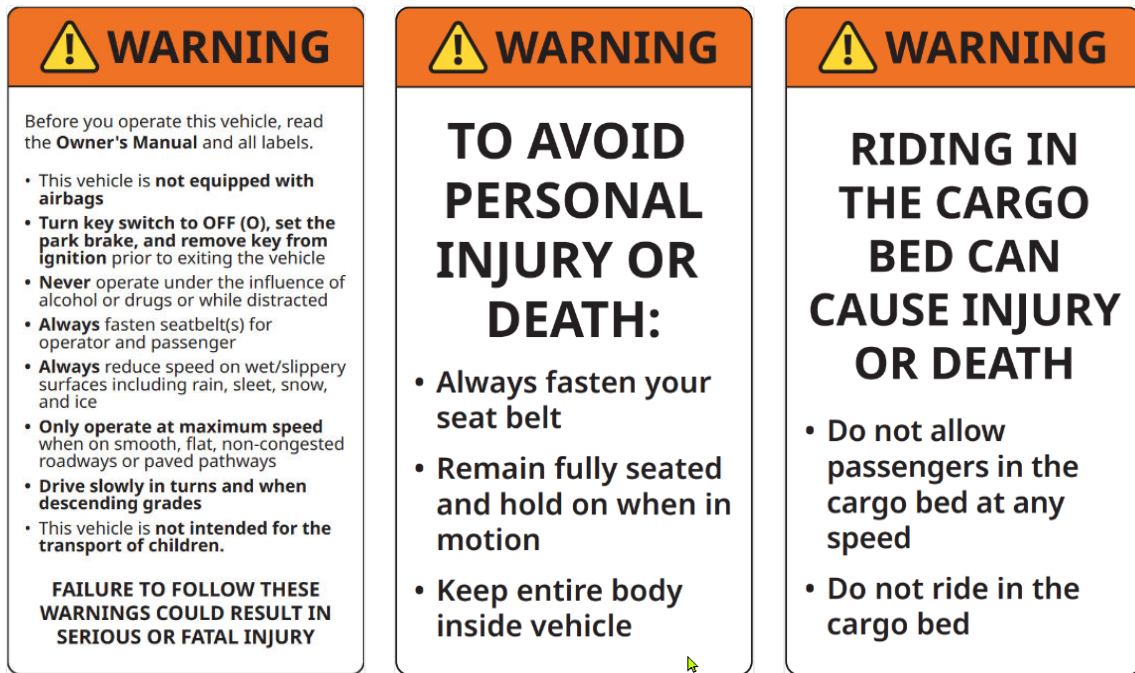


Figure 3 Safety Labels Common to LSV and Non-LSV

SAFE OPERATION OF YOUR VEHICLE



8.4 Safety Labels for Li-ION Batteries, LSV, and Non-LSV Models

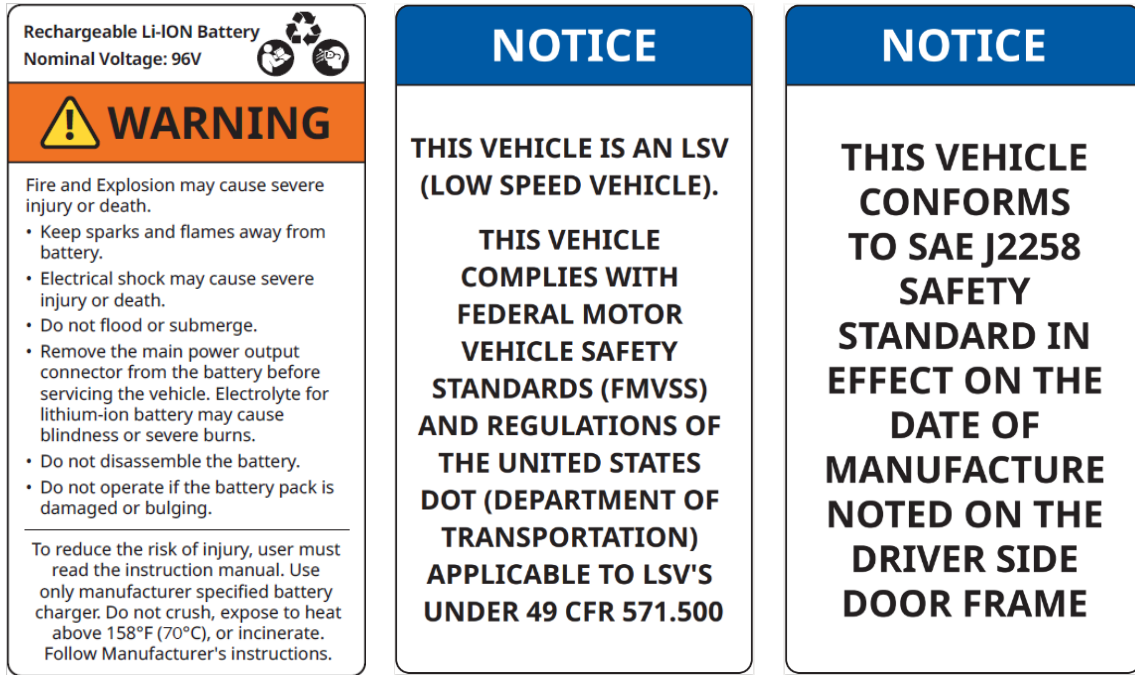


Figure 4 Safety Labels for Lithium-Ion Batteries, LSV, and Non-LSV

8.5 Safety Label for Battery Compartment

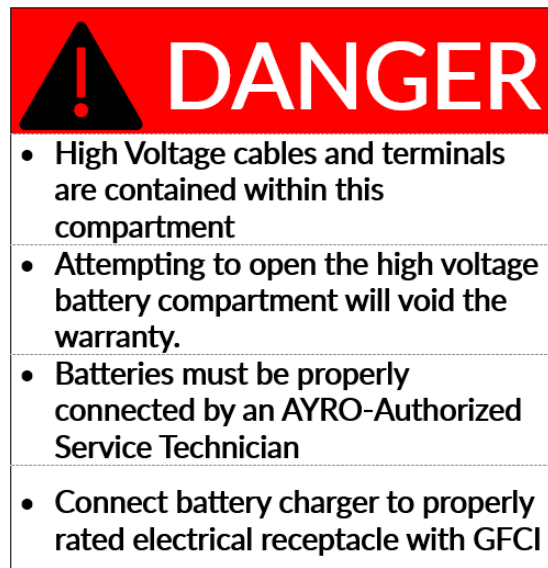


Figure 5 Safety Label for High Voltage Battery Compartment



8.6 Battery Charge and California Proposition 65 Warnings

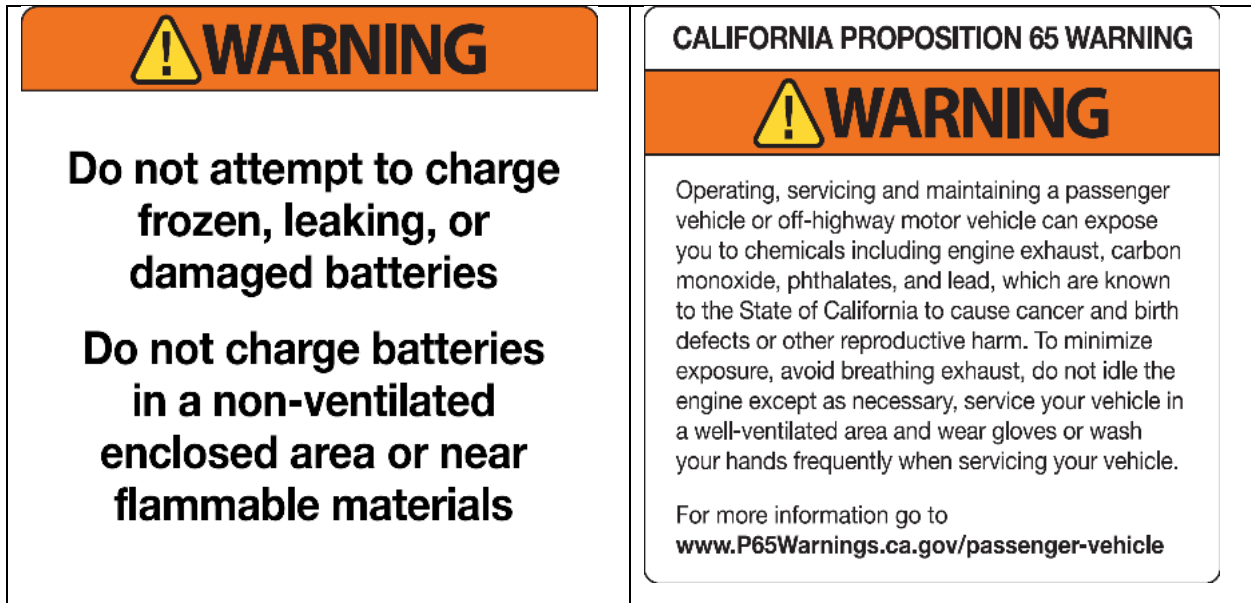


Figure 6 Warning Labels on the Heater/Blower Cover inside the Cabin

8.7 Equipment Modifications



NEVER install any equipment or make vehicle modifications to increase the speed or power of the vehicle. Any modifications to the original equipment of the vehicle create a substantial safety hazard and increase the risk of bodily injury. The warranty on your vehicle will be terminated if any equipment has been added to the vehicle, or if any modifications have been made to the vehicle, that can increase its speed or power.

Never modify this vehicle through improper installation or use of accessories.



The addition of certain accessories, including (but not limited to) mowers, blades, tires, sprayers, or large racks, may change the handling characteristics of the vehicle. Use only AYRO-approved accessories and familiarize yourself with their functions and effects on the vehicle.



Failure to operate this vehicle properly can result in a collision, loss of control, accident, or overturn, which may result in serious injury or death. Heed all safety warnings outlined in this section of the Operator's Manual. See the OPERATION section of the Operator's Manual for proper operating procedures.

SAFE OPERATION OF YOUR VEHICLE



8.8 Age Restrictions

This vehicle is an ADULT VEHICLE ONLY.



NEVER operate this vehicle if you are under age 16.

NEVER operate without a valid driver's license.

NEVER use Child Safety Seats in this vehicle.



8.9 Seat Belts

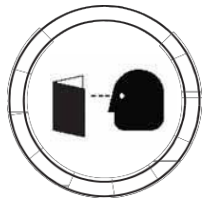
Riding in this vehicle without wearing the seat belt increases the risk of serious injury in the event of an accident or sudden stop. Occupants must always wear seat belts.

Always make sure the seat belts are secured for operator and passenger before operating. See page [44](#).

8.10 Latches

Optional payload configurations may have latches that must be secured before transport or regular operation. Ensure that all such latches are secured before powering up the vehicle and shifting into the « **FORWARD** » or « **REVERSE** » directions.

8.11 Operating Without Instruction



Operating this vehicle without proper instruction increases the risk of an accident. The operator must understand how to operate the vehicle properly in different situations and on different types of terrain. All operators must read and understand the Owner's Manual, Operator Instructions, and all warning and instruction labels before operating the vehicle.

8.12 Failure to Inspect Before Operating

Failure to inspect and verify that the vehicle is in safe operating condition before operating increases the risk of an accident. Always inspect the vehicle before each use to ensure it is in safe operating condition. Always follow all inspection and maintenance procedures.

SAFE OPERATION OF YOUR VEHICLE



8.13 Alcohol or Drug Use



NEVER drink alcohol or use drugs or medications before or while operating this vehicle. Operating the vehicle after consuming alcohol or drugs could adversely affect operator judgment, reaction time, balance, and perception.



8.14 Operating a Damaged Vehicle

Operating a damaged vehicle can result in an accident. After any overturn or accident, have your authorized AYRO Dealer inspect the entire machine for possible damage, including (but not limited to) brakes, accelerator, steering system, and electrical system.

8.15 Operating at Excessive Speeds

Operating this vehicle at excessive speeds increases the operator's risk of losing control. Always operate at a speed that is appropriate for the traffic, the visibility and operating conditions, your skills, and your passengers' skills.

8.16 Turning Improperly

Turning improperly could cause loss of traction, loss of control, accident, or overturn. Always follow proper procedures for turning.



NEVER turn abruptly or at sharp angles.

NEVER turn at high speeds. Practice turning at slow speeds before attempting to turn at faster speeds.

8.17 Vehicle Rollover

Vehicle rollover could cause serious injury or death.



Always make sure the seat belts are secured for operator and all passengers before operating.

Avoid situations that could result in a rollover. Avoid sharp turns and abrupt steering maneuvers.

SAFE OPERATION OF YOUR VEHICLE



8.18 Exhibition Driving

Exhibition driving increases the risk of an accident or overturn.



NEVER attempt wheelies, jumps, doughnuts, or other stunts. Avoid exhibition driving.

8.19 Carrying Cargo

Carrying cargo can affect the handling of the vehicle.

Ensure that the Gross Vehicle Weight Rating (GVWR) does not exceed limits:

- **LSV model:** <3000 Lb or 1361 kg
- **Non-LSV:** <3600 Lb or 1633 kg

Carrying loads on the roof could damage the roof and affect vehicle handling, which could result in an accident or overturn.



NEVER carry loads on the roof of the vehicle.

NEVER exceed the stated load capacity for this vehicle. **NEVER** exceed the Gross Vehicle Weight Rating (GVWR). Cargo should be properly distributed and securely attached. Reduce speed and follow the instructions on cargo warning labels for hauling cargo. Allow a greater distance for braking.

8.20 Tire Maintenance

Operating this vehicle with improper tires or with improper or uneven tire pressure could cause loss of control or accident.

Always use the size and type of tires specified for your vehicle:

- Wheels / Rims: 15"
- Tires: 205/60R15 AYRO Schlägernull™ Tire
*wheels can accept 195-215/55-65R15 size tires



Always maintain proper tire pressure @20 psi for the Schlägernull™ Tire.

Tires are factory filled to correct pressure with nitrogen.

Proper inflation pressure will optimize tread wear and battery performance to maximize range by reducing rolling resistance.

SAFE OPERATION OF YOUR VEHICLE



8.21 Unauthorized Use of the Vehicle

Leaving the keys in the vehicle can lead to unauthorized use of the vehicle.



Always remove the key when the vehicle is not in use.

8.22 Precautions During Maintenance



The voltage in the battery pack is enough to cause death by electrocution.



NEVER attempt to perform service on the electric drive system, including the battery pack. Your authorized AYRO Dealer can provide battery-related service.



Do not work in or near the battery compartment or on any other electrical component of the vehicle while charging the batteries.



Please contact your authorized AYRO Dealer for servicing the vehicle's electrical/battery systems. Always follow all safety instructions in the maintenance portion of this Owner's Manual, as well as the following:

Always ensure that the vehicle is properly immobilized before beginning any maintenance.



Always chock the tires securely before working under the vehicle.

Always turn the key to « **OFF** » and remove it from the vehicle before performing maintenance on the vehicle.

FOR MORE INFORMATION ABOUT SAFETY, PLEASE CONTACT AYRO CUSTOMER SERVICE. See page 15.

FEATURES AND CONTROLS



9 FEATURES AND CONTROLS



Figure 7 Center Console and Displays

FEATURES AND CONTROLS



Figure 8 Cabin Features and Controls

Table 2 Key to Features and Controls

1. Steering Wheel	2. Turn Signal Stalk	3. Horn (end of Turn Signal Stalk)
4. Headlights Control Switch	5. Windshield Wipers & Washer	6. Key Switch (OFF, NEUTRAL/ON, F, R)
7. Center Console	8. Driver Display	9. Infotainment System
10. *Driver Window	11. Cabin Dome Light	12. Hazard Lights
13. *Strobe Light	14. *Payload Light	15. *Passenger Window
16. Fan Control	17. Heating Controls	18. USB-C Port
19. USB-A Port	20. Data Port (thumb drive)	21. USB-C Port
22. USB-A Port		

*Options on vehicles if so equipped. The automatic Driver and Passenger windows are installed on full doors, not on resort doors or on doorless models.

FEATURES AND CONTROLS



9.1 Electrical Components

Electrical wiring, circuit boards, and components are located on, under, and behind the Center Console and Dashboard.

NOTICE

Liquids can damage electrical components and the circuit board. Handle liquids with care. Do not spray liquids directly into center console.

9.2 Key Switch

When the key is turned clockwise to the « **N** » (**NEUTRAL/ON**) position, the display will light up and all electrical accessories can be used.

Leaving the key in the « **N** » (**NEUTRAL/ON**) position maintains power to the vehicle and will discharge battery power.



Always turn the key to the « **OFF** » position when not operating.

Remove the key from the ignition to prevent unauthorized use.

When the key is turned to the « **OFF** » position, drive capabilities will be disabled, and accessory power will remain during the power down sequence.



NEVER turn the key to the « **OFF** » position while the vehicle is in motion. This will cause loss of speed and vehicle control which could result in serious injury or death.



Figure 10 Key Switch



9.3 Replacement Keys

To order an extra or replacement key for the ignition or for accessory locks, please contact AYRO Customer Service. Please provide your Serial Number or VIN. See page [15](#).

9.4 Vehicle Lights

9.4.1 LED Headlights (front)

Headlights are operated with the slider switch on the turn signal stalk to the left of the steering wheel. The turn signal stalk also controls the following:

FEATURES AND CONTROLS



- Turn indicator lights
- Low beam headlights (also part of Daytime Running Lights)
 - In addition, activating the windshield wiper will automatically turn on the Low Beam headlights
- High beam headlights

9.4.2 Tail Lights

The tail lights illuminate when the Headlights are activated.

- When key selector in **REVERSE**, the white backup lights will be illuminated.



Figure 11 Tail Light/ Rear Turn Signal Indicators/ Backup/Reverse Lights

9.4.3 Daytime Running Lights

The daytime running lights illuminate automatically when the vehicle is powered on.

9.4.4 Cabin Dome Light

The interior cabin dome light is located against the windshield top, behind the rail where the visors attach. The dome light is controlled by a switch on the control panel located in the lower third of the Center Console.



Figure 12 Dome Light

FEATURES AND CONTROLS



9.4.5 CHMSL / Third Brake Light

The red CHMSL (center high mounted stop lamp) is mounted to the top rear of the cabin, above the payload. This third brake light is placed for maximum visibility and conspicuity.



Figure 13 Center High Mounted Stop Lamp or CHMSL above Payload Area and on Van Box

9.4.6 Cargo Light

If so equipped, the white LED cargo light is located above the vehicle bed at the back of the cabin, adjacent to the CHMSL. The cargo light is controlled by a switch on the control panel located in the lower third of the Center Console.

9.5 Turn Signal

The turn signal stalk is located on the left-hand side of the steering wheel.



Figure 14 Turn Signal Indicator

FEATURES AND CONTROLS



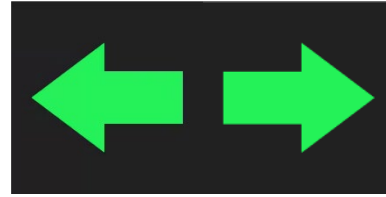
- To turn right: operate the lever upwards.

The turn indicator light flashes on the driver display.

- To turn left: operate the lever downwards.

The turn indicator light flashes on the driver display.

Return the lever to the neutral position to cancel turn indication.



- The slider switch toggles the headlights between Low Beam and High Beam. The Driver Display indicates the current selection.
- When a selection is active, the related dashboard indicator is illuminated.

9.6 Horn

The button on the end of the left turn signal stalk operates the horn. Press once to sound the horn.

9.7 Windshield Wipers



Figure 15 Windshield Wipers and Washer Control Stalk

The windshield wiper and washer are located on the control stalk to the right of the steering wheel.

Windshield wipers can only be operated when the vehicle power is on. To select the wiping mode:

Move the right lever (Figure 15) upwards to operate:

- Intermittent wiping
- Low-speed wiping

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- High-speed wiping

9.8 Windshield Washer and Fluid Reservoir

To operate the windshield washer, pull the control lever toward the driver.

Check the washer reservoir fluid level located behind the access door on the passenger side panel. When the level is low, open the passenger side access panel, remove the reservoir cap, place a funnel in the opening, and add windshield washer fluid rated for -25°F (-3°C).

9.9 Visibility

Adjust **Mirrors** for maximum visibility. Mirrors can be folded all the way in to navigate through narrow passages.

A **Backup Camera** provides visibility behind the vehicle. The backup camera feeds into the Infotainment System in the middle of the Center Console. The backup camera activates when the key switch is set to the « **REVERSE** » position.

9.10 Pedestrian Warning System

The Pedestrian Warning System sounds like a running fan, and is active in « **FORWARD** » speeds up to 18.6 mph / 29.9 km/h. It is active at all speeds when reversing, along with the “backup beeping” alert. These sounds are normal and are safety features required on electric vehicles by the United States National Highway Traffic Safety Administration (NHTSA).

9.11 Gear Selector

The key switch is the gear selector. The current gear is also displayed on the Driver Display, which is the top panel of the Center Console.

Four positions are possible:

- « **O - OFF** » position; vehicle power is OFF.
- « **R** » position: « **REVERSE** » the vehicle will move backward.
- « **ON - N** » position: « **NEUTRAL** » the power system is on, but the drive train is not active.
- « **F** » position: « **FORWARD** » The vehicle will move forward.



Figure 16 Gear Settings on Key Switch



Figure 17 Driver Display with FORWARD Indicated

Ensure that the park brake is set/engaged and the Key Switch is in the « **OFF** » position when you leave your vehicle.

9.12 Driver Display

The Driver Display is in the top of the Center Console and displays operational information of the vehicle. The center display is the infotainment center, and the lower section of the center console features the cabin controls and digital connection ports.

9.12.1 Cleaning the Driver Display

- Care should be taken to only use cleaning agents suitable for LCD display screens such as mild detergent and water solution, like Dove, Palmolive, or similar.
- Screen should be allowed to dry naturally or gently wiped with a clean, soft cotton or microfiber cleaning cloth. Avoid wiping a display with a dry paper towel/cloth.
- Alcohol-based lens wipes can damage display coatings and should not be used.

FEATURES AND CONTROLS




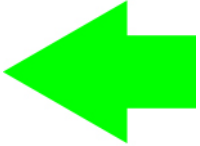
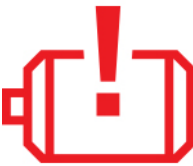





9.13 Driver Display and Icons/Telltale Symbols








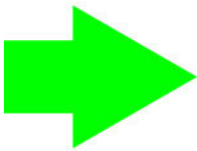










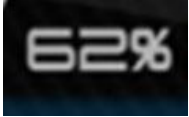
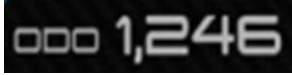
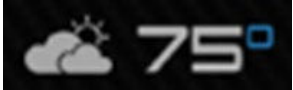

Figure 18 Icons / Telltales

Table 3 Key to Icons / Telltales

<p>1. Hazard Lights (Flashing)</p> 	<p>2. Cabin Heating</p> 	<p>3. Cabin Cooling (Air Conditioning)</p> 	<p>4. Left Turn Signal</p> 
<p>5. Electric Motor Failure</p> 	<p>6. Seat Belt Not Secured</p> 	<p>7. High Beam Headlights (BLUE)</p> 	<p>7. Low Beam Headlights (GREEN)</p> 

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<p>8. 12-Volt System Error</p> 	<p>9. Coolant Level Warning</p> 	<p>10. Brake Failure</p> 	<p>11. Park Brake ON</p> 
<p>12. Electronic Power Steering Warning</p> 	<p>13. Right Turn Signal</p> 	<p>14. Windshield Wiper Fluid</p> 	<p>15. Settings</p> 
<p>16. Speed Indicator</p> 	<p>17. Speed Units, mph or km/h (Toggle in Settings)</p> 	<p>18. Warning Message Display</p> 	<p>19. Range Remaining in Miles or Kilometers (Toggle in Settings)</p> 
<p>20. Gear Selection</p> 	<p>21. State of Charge (bars)</p> 	<p>22. Driver Door Open</p> 	<p>23. Passenger Door Open</p> 
<p>24. State of Charge (percentage)</p> 	<p>25. Odometer in Miles or Kilometers (Toggle in Settings)</p> 	<p>26. Outside Temperature, F° or C° (Toggle in Settings)</p> 	<p>27. Regenerative Braking Active</p> 

FEATURES AND CONTROLS



9.14 Heating, Ventilation, and Air Conditioning (HVAC) Operation

The Vanish is equipped with a high-efficiency heating and ventilation system. The controls are located in the lower panel of the Center Console.

- The PTC (positive temperature coefficient heating element) heater is self-regulating and is well suited to colder climates.
- If so equipped, the optional air conditioning system uses R-1234yf refrigerant, which offers superior environmental performance.



Figure 19 HVAC Controls

The dial on the left controls the fan and fan speed:

- 0 = OFF
- 1 = Low speed fan
- 2 = Medium speed fan
- 3 = High speed fan

The top button switch controls recirculation of cabin air. An illuminated green dot indicates that recirculation is ON.

The lower button switch controls ON/OFF for the air conditioning system, if so equipped. An illuminated green dot indicates that the air conditioning system is ON.

The dial on the right controls the cabin heater:

- 0 = OFF
- 1 = Low speed fan
- 2 = High speed fan

FEATURES AND CONTROLS



9.15 Park Brake Lever

The park brake is located between the driver and passenger seats, forward of the seat belt latches.



Figure 20 Park Brake Lever



WARNING A rolling vehicle can cause serious injury. Always set the park brake when leaving the vehicle unattended.

When the park brake is properly set and the brake indicator is illuminated, the vehicle will not move.

9.16 Setting the Park Brake

Always apply the main brakes before setting or releasing the park brake. Set the park brake by pulling the park brake lever upward. Release the brake pedal and ensure the vehicle does not move before exiting the vehicle.

9.17 Releasing the Park Brake



Always apply the main brakes before setting or releasing the park brake.

To release the park brake, press and hold the park brake release button and move the lever to the down to disengage.



NOTICE Be sure the park brake is fully disengaged before driving. Failure to do so can lead to overheating of the rear brakes.

NOTE: The park brake is adjustable and should be checked periodically as outlined in the Periodic Maintenance Chart beginning on page 66. Your authorized AYRO Dealer can assist.

FEATURES AND CONTROLS



9.18 Connection of Personal Electronic Devices

Accessories can be connected to the Vanish via the USB data port to allow access to playlists, etc. Charging ports are provided for USB A and USB C compatible devices. The accessory outlets are in the lower third of the Center Console, on both sides of the HVAC controls.

Also see the Infotainment System information on page [46](#).

9.19 Doors, * if so equipped.

Doors for the Vanish are available in the resort door style and the full door style with automatic windows.

The full doors are fitted with an electrical locking device, controlled through an interlocking system. The locks will automatically engage when the Vanish is shifted into gear.

If the full doors are not completely closed, the “door open” icon in the Driver Information Display will remain illuminated; the vehicle will not move into gear and cannot be driven unless the doors are completely closed.

There are no electronics or driver’s display icons for the resort door. Ensure that the doors are firmly closed and latched before shifting the vehicle into gear.



Figure 21 Resort Door

9.20 Seats and Seat Adjustment

The Vanish is equipped with supportive, durable seats. There is a forward/backward adjustment under each seat for individual adjustment.

FEATURES AND CONTROLS



If so equipped, AYRO bomber-style seats are designed to support the driver and passenger while placing limited pressure on the spine. Seat cushions are individually mounted on the shell frame. The cushions are available in various levels of firmness and are individually replaceable. Contact your authorized AYRO Dealer for replacements.

9.21 Seat Belts

The Vanish is equipped with three-point lap / diagonal belts for the driver and passenger. Ensure that seat belts are engaged and secured before shifting the Vanish into either « **FORWARD** » or « **REVERSE** ».



Always use seat belts. Failure to use the seat belts puts the driver and passengers at greater risk of serious injury or death in the event of an accident.

Always make sure the seat belts are secured for operator and passenger before operating.

Failure to properly use seat belts can result in serious injury or death. Always follow all legal requirements for seat belt use in on-road vehicles.



Pregnant women should wear the lap part of the belt across the thighs and as snug across the hips as possible. Keep the belt low so that it does not come across the abdomen.

The operator and passenger are subject to the same legal requirements for seat belt use as occupants in other on-road vehicles.

9.22 Proper Seat Belt Use



This vehicle is equipped with three-point lap / diagonal seat belts for driver and passenger. Always make sure the seat belts are secured for operator and passenger before operating.

To wear the seat belt properly, follow this procedure:

- A. Pull the **seat belt latch** downward and across your chest toward the buckle at the inner edge of the seat.
- B. Slide the buckle up the webbing as far as needed for the belt to reach across your hips. The belt should fit snugly across your hips and diagonally

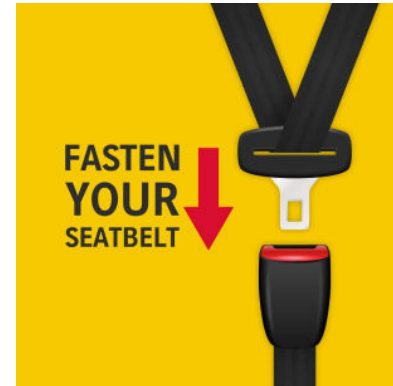
FEATURES AND CONTROLS



across your chest. Make sure the belt is not twisted.

C. Push the **latch plate** into the **buckle** until it clicks.

D. **Release the strap** and allow to self-tighten.



E. To remove slack in the lap belt portion of the belt, pull upward on the shoulder belt. To loosen the lap belt if it is too tight, tilt the buckle and pull the lap belt slightly longer.

F. To release the seat belt, press the red release on the buckle. If necessary, slide the buckle down the webbing to allow it to retract fully.

9.23 Seat Belt Inspection

Inspect seat belts for proper operation before each use of the vehicle.

Push the latch plate into the buckle until it clicks. The latch plate must slide smoothly into the buckle. A click indicates that it has been securely latched.

Push the red release to make sure the latch plate releases freely.

Pull each seat belt completely out and inspect the full length for any damage, including cuts, wear, fraying, or stiffness. If any damage is found, or if the seat belt does not operate properly, have the seat belt system checked and/or replaced by your authorized AYRO Dealer.

To clean dirt or debris from the seat belts, sponge the straps with mild soap and water. Do not use bleach, dye, or household detergents.



10 INFOTAINMENT SYSTEM – GETTING STARTED

The Vanish is equipped with a dual DIN 7-Inch Audio/Video Receiver touch screen. These instructions will assist the owner with getting started, but please refer to the ALPINE iLX-W650 Owner's Manual for complete instructions. The complete Owner's Manual is available online at this link:

https://support.alpine-usa.com/products/documents/OM_iLX-W650_EN.pdf

The audio/video receiver's manufacturer can be contacted at:

ALPINE ELECTRONICS OF AMERICA, INC.

1500 Atlantic Blvd,

Auburn Hills, Michigan 48326, U.S.A.

Phone 1-800-ALPINE-1 (1-800-257-4631)



Figure 22 Infotainment System in Center Stack Console



10.1 Location of Controls

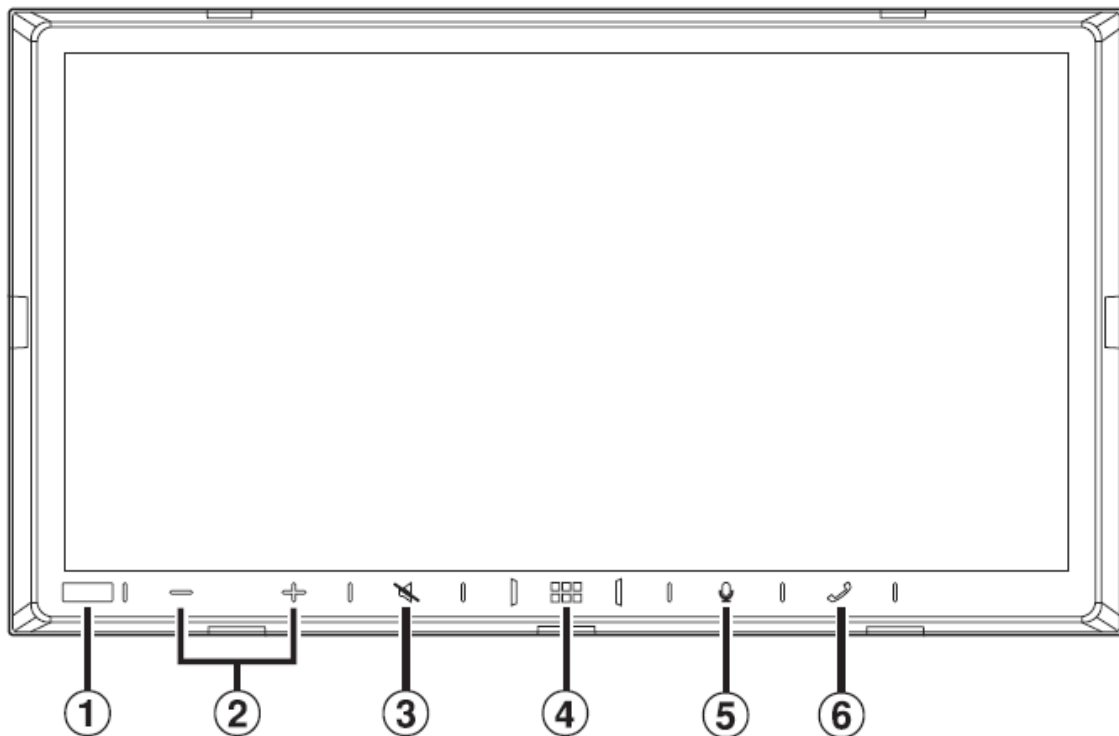


Figure 23 Location of Controls

1. **Dimmer Sensor:** Sense the brightness of the car interior.
2. **-/+ (DOWN/UP) button:** Touch to adjust the volume.
3. **🔇 (MUTE) button:** Touch to activate/deactivate the mute mode.
4. **☐☐☐ (HOME)/(Power Off) button:** Activates the HOME screen. Touch and hold this button for at least 1 second to turn the power off.
5. **🗣️ VOICE Recognition button:** Depending on the connected smartphone, touch to activate Siri function or voice recognition mode.
6. **☎️ (Phone) button:** When a Hands-Free Phone is not connected, the Bluetooth setting screen is displayed.
 - When a Hands-Free Phone is connected: The phone number input screen (Keypad) is activated.
 - Touch and hold the button for at least 2 seconds to redial the most recent incoming call.
 - During an incoming call: The phone call is started.

INFOTAINMENT SYSTEM



- During a call: The call finishes.

NOTE: Some of the unit's functions cannot be performed while the vehicle is in motion. Stop the vehicle in a safe location and apply the park brake before attempting these operations.

10.1.1 ON

ON: Turn the ignition key to the ACC or ON position. The system will display the last screen that was displayed; for example, if the radio was displayed when the ignition was turned off, the radio mode will still be displayed when the ignition is turned back on.

10.1.2 OFF

OFF: Touch and hold the  HOME button for at least one second to turn off the power.

10.1.3 VOLUME

VOLUME: Adjust by touching **- / +** to raise or lower. The volume range is 0 – 35. Touch the MUTE button to instantly lower volume to 0.

10.2 Touch Screen Operation

Touch an onscreen button on the touch panel. Dimmed onscreen buttons cannot be operated.





Figure 24 Onscreen Buttons

10.2.1 Functions of Typical Onscreen Buttons

- **Radio:** Displays the Radio main screen.
- **USB:** Plays music files (MP3/WMA/AAC/FLAC/WAV), video files (MP4/AVI/WMV/MOV), and photo files (JPG/PNG/BMP) stored in a USB flash drive. If a USB flash drive is not connected, this widget is not available.
- **iPod:** Displays the iPod main screen. If an iPhone is not connected, this widget is not available.
- **Connectivity:** Use Apple CarPlay or AndroidAuto. If an iPhone 5s or later compatible with the Apple CarPlay function or a smartphone installed with the Android Auto App is not connected, this widget is not available. When Apple CarPlay or Android Auto is available, the widget changes to [Apple CarPlay] / [Android Auto].
- **SiriusXM:** Displays the SiriusXM main screen. If a SiriusXM Tuner (optional) is not connected, this widget is not available.
- **Bluetooth Audio:** Displays the Bluetooth audio main screen.
- **Camera:** Displays camera images.
- **Setup:** Displays the Setup screen.

10.3 Indicator Bar Display

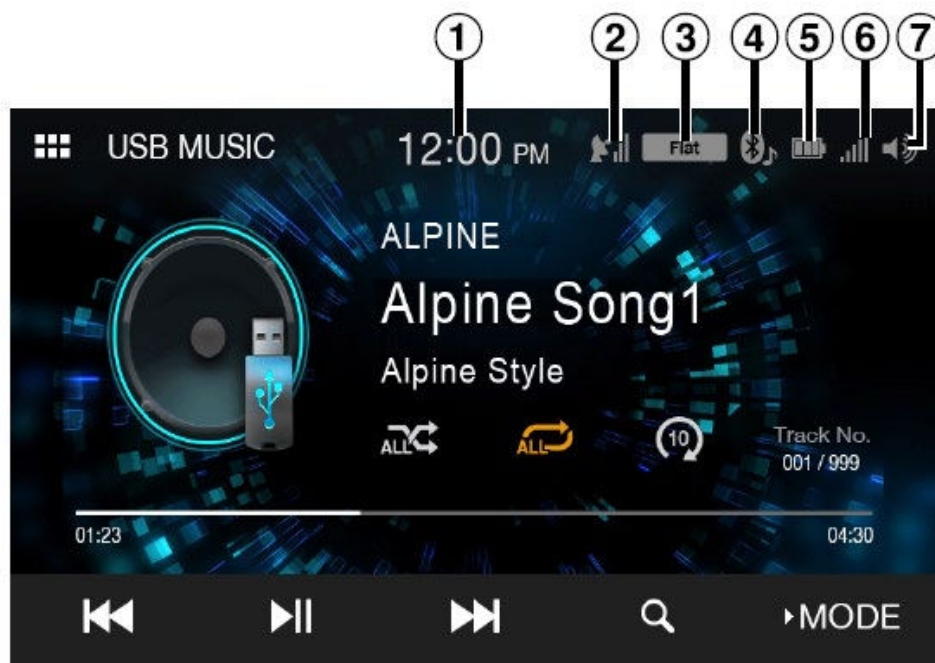






Figure 25 Indicator Bar Icons

10.4 Key to Icons





1. **Current Time:** can be changed between the 12-hour display and 24-hour display options.
2. **SiriusXM** satellite radio signal strength.
3. **Equalizer** selected.
4. Lights up when **Bluetooth** compatible device is connected. (Does not display when connection is set to OFF.)

 (Audio): Bluetooth connection to audio device.





 (Hands-Free): Bluetooth connection to Hands-Free Phone.

 (Both): Bluetooth connections to the audio device and Hands-Free Phone.

5. **Battery level** of the connected Bluetooth device; may not be displayed depending on the connected Bluetooth device.

Battery Level	Level 3	Level 2	Level 1	No Battery
Icon				

6. Indicates the **Signal Strength** level of the connected Bluetooth compatible device. Displayed when Bluetooth setting is ON.

0	1	2	3	4	5
					

7. Indicates the **Volume** on/off status and shows the volume setting bar.






10.5 How to Input Keypad Characters



Figure 26 Keypad for Character Input

1. Input screen area.
2. Cancel: Keypad mode finishes.
3.  (Delete): Returns to the previous character and erases it. Touching here for more than 2 seconds will erase all input characters.
4. Input number confirmation
5. Character keypad
6. Space.



11 BATTERY PACK USE AND HANDLING

11.1 Battery Handling Precautions



WARNING

Do not work in or near the battery compartment or on any other electrical component of the vehicle while charging the batteries.

Only Ayro Authorized Service Representatives should perform any battery maintenance.



WARNING

Emergency Responders: To disconnect the vehicle's electrical system, always unplug the Manual Service Disconnect on the main battery first, then disconnect any electrical accessory connections, then disconnect the negative cable from the 12-volt battery (if equipped), then disconnect the negative terminal from the main battery pack.

Please note the following regarding the Vanish charging maintenance:

The batteries in your Vanish will not accept a charge unless internal battery temperatures are at or above 32 deg F (0 deg C).

When the ambient temperature is at or below 32 deg F (0 deg C), the vehicle must be moved to a location where the battery pack can warm up to 32 deg F (0 deg C) or higher to receive a charge.



At temperatures below freezing, the batteries should always be kept at a minimum of 20% state of charge. It is recommended to keep the charger connected in low temperatures above 32 deg F (0 deg C) to maintain the charge.



HIGH VOLTAGE will be present at the battery terminals and contactors.

High battery voltage is always present.

Do not touch the battery terminals.



NEVER use the vehicle chassis or body as a ground connection.

BATTERY PACK AND CHARGING



Always make sure power charging cable is installed properly and securely during vehicle battery charging.



NEVER connect a 12-volt accessory directly to the traction batteries. Your authorized AYRO Dealer can properly make any needed connections.

NEVER connect jumper cables to any of the batteries on your Vanish.

Always wear safety glasses or approved eye protection when servicing the vehicle. Wear a full-face shield and gloves when working around batteries and electrical connectors.



Always keep 12V accessory battery terminals and connections clean and free of corrosion.

WARNING

Do not drive through water above the floor of the vehicle. Do not use high-pressure water to wash the battery compartment.

WARNING

Failure to maintain batteries in accordance with the Operator's Manual can result in battery damage, vehicle malfunction, fire, and/or severe injury or death.

WARNING

Max towing speed 10 mph (16 km/h) – battery or drivetrain damage will occur if towing faster than 10 mph (16 km/h).

11.2 Battery Charging Warnings

WARNING

Do not charge batteries in a non-ventilated enclosed area or near flammable materials.



ALWAYS Connect battery charger to an electrical receptacle rated at 20A minimum.

WARNING

Do not attempt to charge frozen, leaking, or damaged batteries.

Do not charge in a non-ventilated storage area or vehicle weather cover.

WARNING

HIGH VOLTAGE CABLES and terminals are contained within the battery box compartment. Improper contact with battery terminals can result in electrical shorts.

ELECTRICAL SHORTS can result in severe burns, shock, or death.

BATTERY PACK AND CHARGING



WARNING

Tampering with or unauthorized modification of this unit may result in serious personal injury, will void the warranty, and can result in permanent damage to the vehicle.



11.4 Battery Performance Tips

During winters with temperatures below freezing, an EV can lose as much as 30% of driving range due to very cold weather. **Plug it in** to keep the battery warm and maximize range.

Do not discharge the battery too low as this increases the internal resistance. **Plug it in** to maintain a state of charge above 50%.

Ensure that tires are properly inflated as this will reduce the rolling resistance and improve handling, range, and tire wear.

Range may be affected by road conditions, payload, terrain, temperatures, and driving habits.

11.5 On-Board Charger

The on-board battery charger receptacle is located behind the driver side panel. The state of charge of the batteries is displayed in the vehicle's Driver Display.

When the vehicle will not be used for an extended period, plug the charging cable into the charging receptacle. The on-board charger will monitor the state of charge of the batteries, and charging will be initialized automatically when needed. This will optimize charging performance and maintain the battery at an optimal condition during storage.

IMPORTANT: Avoid temperature extremes when choosing a storage area.

Protective safety features in the on-board charger will not allow the charger to activate if the input power is over or under an acceptable range. If this occurs, please check that the vehicle is properly plugged into a standard 115 V (20 A) or 220 V receptacle using the provided charging cable and that the connection is solid.

11.6 Preparation for Charging the Batteries

- Standard Charge Receptacle (J1772)
- When charging the vehicle, always use a safety-certified cable or cable from a public charging station.

BATTERY PACK AND CHARGING



BATTERY CHARGING

Your vehicle is equipped with a standard charge receptacle (J1772). The battery charge receptacle is located on the driver's side of the vehicle behind the access door.

WARNING

Using an incorrect or damaged charging cable could result in fire, heat damage or charger failure, which could result in serious injury or death. Always use UL-listed and/or ETL-listed cables and charging stations for EV charging (whether hard-wired or portable) to charge the batteries.



WARNING

Charging from a circuit of lesser capacity and/or using an under-sized cable from the outlet to the vehicle could create a fire hazard.

WARNING

Do not work in or near the battery compartment or on any other electrical component of the vehicle while charging the batteries.

WARNING

Please contact your authorized AYRO Dealer for service requirements involving the vehicle's electrical/battery systems. If you are not authorized to service your vehicle, please do not attempt. Always allow trained personnel to properly manage the electrical/battery systems.

DANGER:

DANGER

HIGH BATTERY VOLTAGE IS ALWAYS PRESENT.

DO NOT TOUCH THE BATTERY TERMINALS.

DANGER

DANGER

- High Voltage cables and terminals are contained within this compartment
- Attempting to open the high voltage battery compartment will void the warranty.
- Batteries must be properly connected by an AYRO-Authorized Service Technician
- Connect battery charger to properly rated electrical receptacle with GFCI

Do not attempt to open the high-voltage battery compartment.

BATTERY PACK AND CHARGING



NEVER connect jumper cables to any of the batteries of this vehicle.



12 BATTERY CHARGING

BATTERY CHARGING



Always follow these precautions when charging:

- Position the vehicle on a level surface.
- Make sure the charging area is well ventilated.
- Turn the key switch « **OFF** » and remove the key.
- Inspect the cable for cracks, loose connections, and frayed wiring.



NEVER use a damaged extension cord.

Extension cords must be rated for 20A minimum.



Always connect the charging cable to the vehicle's charge receptacle first, then plug the cable into a wall receptacle outlet.

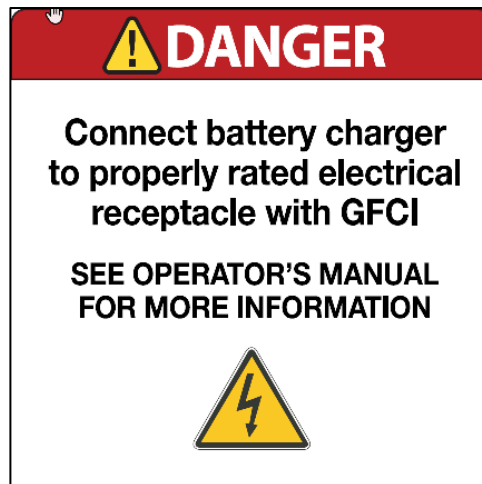




Figure 27 Charging Instructions Illustrated

12.1 Charging Instructions (Standard 110/120 VAC Outlet):

Open the receptacle cover and prepare to engage the standard equipped charging cable that came with the vehicle.

- A. Plug the (J1772) plug interface into the charging port (driver side access panel) and ensure a solid fit.
- B. Plug the other end of the charging cable into the 110/120V outlet receptacle.
- C. Check the charging meter to ensure that charging is in progress.
- D. If there is no indication that charging is in progress, check the outlet to make sure there is power to the outlet.
- E. Charge time from 20% to full charge will typically take 12 hours or less on a 110 VAC / 20A outlet.
- F. Ventilation is essential for maintenance/storage areas for LSEVs to avoid fire hazards in accordance with applicable fire codes and ordinances. Consult applicable fire codes for specific levels of ventilation and any explosion-proof equipment that may be needed.
- G. Ventilation for Li-ion-powered vehicles must be provided to remove the accumulation of flammable hydrogen gas emitted during the battery charging process. The amount of hydrogen gas emitted depends upon factors such as the condition of the batteries, the output rate of the battery charger and the amount of time the batteries are on charge.

BATTERY PACK AND CHARGING



A minimum of one air change per hour is required during charging for one vehicle, and up to 5 changes for multiple vehicles are recommended.



13 DRIVING PROCEDURES

13.1 Pre-Ride Inspection

Conduct a 360-degree visual inspection, including the following items:

Table 4 Pre-Ride Inspection

Item	Remarks
Accelerator / Brake System	Ensure proper operation
Brake Fluid	Ensure proper level
Headlamps	Check operation
Brake Lights/Tail Lamps	Check operation
Turn Signals	Ensure operation of all signal lamps
Mirrors	Adjust mirrors for proper view
Horn	Ensure operation
Seat Belts	Check length of belt for damage, check latches for proper operation
Steering	Ensure free operation
Tires	Check tire condition and pressure
Battery Pack	Ensure full charge
Windshield Washer Fluid	Check level and fill if needed



13.2 Procedures

Disconnect the external vehicle charging cable and secure the access door.

Sit in the driver's seat and fasten the seat belt. Ensure that passenger is seated with seat belt secured and the parking brake is on.

Adjust mirrors as needed.

Turn the key clockwise to the « **NEUTRAL/ON** » position.

Apply the brake pedal.

Release the park brake.

Check your surroundings and determine your path of travel.

Turn the key switch to the desired position (« **FORWARD** » or « **REVERSE** »). See page **33**.

Keeping both hands on the steering wheel, release the brake pedal and gradually push the accelerator toward the floor to begin driving.

Drive slowly. Practice maneuvering and using the accelerator and brakes on level surfaces.

The Vanish is equipped with a **Pedestrian Warning Alert System** to warn of the vehicle's approach. This sound will remain in effect in « **FORWARD** » until the vehicle speed hits 18.6 mph (29.9 kph), and will be active at all speeds in « **REVERSE** », along with the typical “backup beeping” sound while in reverse. See Sec 9.10 on Page **37**.

Before turning, activate a turn signal to alert others of your intentions. See page **34**.

Do not carry a passenger until you are comfortable with all components of this vehicle, including acceleration, braking, and turning. Cargo, including a passenger, may alter vehicle performance.

To stop the vehicle, release the accelerator pedal completely and brake to a complete stop.

NOTICE

Always bring the vehicle to a complete stop before changing the position of the gear selector key switch.

Engage (pull up) the park brake and turn the key switch to « **N** » (**NEUTRAL**).

WARNING

A rolling vehicle can cause serious injury or death. Always engage the park brake to hold the vehicle when leaving the vehicle unattended.

Turn the key to the « **OFF** » position.

Recharge the batteries daily, or after each use of the vehicle.



13.3 Driving in Reverse

Follow these precautions when operating in reverse:



Always check for obstacles or people behind the vehicle. Always inspect left and right fields of vision before backing. Use the mirrors and the backup camera to check that there are no people or obstacles behind the vehicle.

Avoid backing downhill.

Back slowly.

Apply the brakes lightly for stopping.

Avoid turning at sharp angles.



NEVER accelerate suddenly.

13.4 Driving on Slippery Surfaces

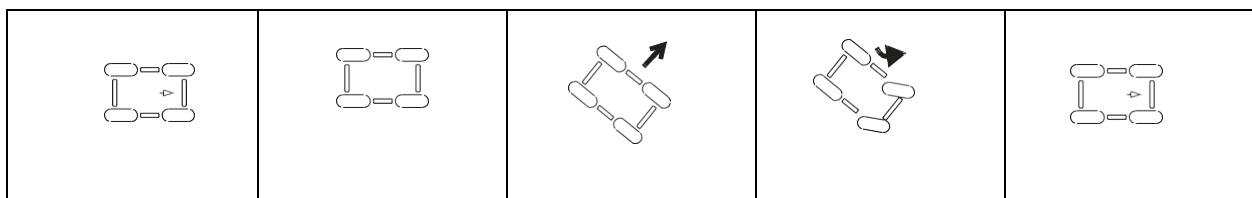
Skidding or sliding can cause loss of control or overturn (if tires regain traction unexpectedly). When operating on slippery surfaces, **reduce speed** and **use extra caution** to reduce the chance of skidding or sliding out of control.

Do not operate on excessively slippery surfaces.

Whenever driving on slippery surfaces such as wet or icy pavement or loose gravel, follow these precautions:

13.5 Sideways Skid

Turn in direction of skid



- Do not operate on excessively slippery surfaces.
- Slow down before driving onto a slippery surface.
- Avoid quick, sharp turns, which can cause skids.



- Correct a skid by turning the steering wheel in the direction of the skid.



NEVER apply the brakes during a skid.

13.6 Parking on an Incline

Avoid parking on an incline where possible, but follow these precautions if unavoidable:

If parking in an open area, chock the wheels on the downhill side of the vehicle after turning the key « **OFF** » and applying the park brake.

If parking parallel to a curb, stop the vehicle close to the curb. If the vehicle is facing downhill, turn the steering wheel toward the curb. The forward part of the front tire should be turned into the curb. If the vehicle is facing uphill, turn the steering wheel away from the curb. The rear part of the front tire should be turned into the curb.



ALWAYS set the park brake. Ensure the park brake holds the vehicle before exiting the vehicle.

13.7 Transporting the Vehicle

NOTICE

Towing your AYRO vehicle could result in severe damage to the vehicle. Vehicle failures resulting from dolly towing will void warranty.

Transport the vehicle in a closed trailer if possible. Use the following guidelines when transporting the vehicle on an open trailer.

When transporting the AYRO vehicle on a trailer, always use a trailer with an approved load rating greater than the AYRO vehicle's curb weight plus any installed accessories or cargo. Refer to the cargo/weight section beginning on page **8**.



Always tie the frame of the AYRO vehicle to the transporting unit securely with suitable straps. Always secure the straps to the front sub-frame and the rear frame of the AYRO vehicle.

Do not place tie straps across any plastic body or floor panel components.

DRIVING PROCEDURES



Always transport the AYRO vehicle facing forward on the trailer.
Set the park brake. Remove the key.

Secure the seats and any items that could be damaged or dislodged by strong winds. Secure or remove cargo. If equipped with full doors, open the driver and passenger windows.



NEVER allow passengers on a trailer or in a trailered vehicle.
Reduce towing speed and drive with caution.



14 PERIODIC MAINTENANCE

⚠ WARNING

Please contact your authorized AYRO Dealer for any electrical/battery service requirements.

⚠ WARNING

Always wear safety glasses or approved eye protection when servicing the vehicle. Wear a full-face shield and gloves when working with or around batteries and electrical connectors. Always use insulated tools when working with or near batteries. Failure to follow these instructions could result in serious injury or death.

NOTICE

Damage to electrical connections and components will occur if they are unplugged before the main power connector is disconnected.

Careful periodic maintenance will help keep your vehicle in the safest, most reliable condition. Inspect, clean, lubricate, adjust, and replace parts as necessary. When inspection reveals the need for replacement parts, genuine AYRO parts are available from your authorized AYRO Dealer.

Record maintenance and service in the Maintenance Log beginning on page 79.

NOTE: Service and adjustments are important for proper vehicle operation. If you are not familiar with safe service and adjustment procedures, your authorized AYRO Dealer can perform these operations.

14.1 Periodic Maintenance Chart - Monthly

Monthly Maintenance	See pages referenced
Check cables and terminal connections.	Authorized AYRO Dealer
Check for worn insulation or frayed wires.	Authorized AYRO Dealer
Check battery enclosure compartment to ensure it is tightly secured to the vehicle chassis.	Authorized AYRO Dealer
Check tires for correct pressure (20 psi) and tread wear. Tires are factory filled with nitrogen.	<u>29</u>
Check brake fluid reservoir for proper brake fluid level.	<u>Error! Bookmark not defined.</u>
Check brake lines for leaks.	Authorized AYRO Dealer
Check seat belts for proper operation	<u>45</u>



Check headlights, horn, turn signals, windshield wiper, and all rear lights for proper operation.

14.2 Brake Fluid

The brake fluid level indicator light will illuminate on the Center Console when the brake fluid in the brake reservoir is low. If the brake fluid indicator light is on, the fluid level is low and service is needed. Contact your authorized AYRO Dealer to provide service.



WARNING

Always use an unopened container of DOT-4 brake fluid and discard any unused portion.



NEVER store or use a partial bottle. Brake fluid is hygroscopic, meaning it rapidly absorbs moisture from the air. The moisture causes the boiling temperature of the brake fluid to drop, which can lead to early brake fade and the possibility of accident or severe injury.

Change the DOT-4 brake fluid **every two years** and any time the fluid becomes contaminated, the fluid level is below the minimum, or if the type and brand of the fluid in the reservoir are unknown. Always use DOT-4 brake fluid.



NOTICE

Brake fluid is corrosive and may cause damage to painted or plastic surfaces. Use caution when refilling the brake fluid reservoir.

14.3 Brake Inspection

- Check the brake system for fluid leaks.
- Check the brake pedal for excessive travel or a spongy feel.
- Check the friction pads for wear, damage, and looseness.
- Inspect the brake disc spline and pad wear surface for excessive wear.
- Change pads when worn to 0.030" (0.762 mm).

NOTE: Brake pads should be replaced by a trained technician.

14.4 Gearbox Oil

After a break-in period of the earlier of 12 months or 500 miles, the gear oil must be changed. Contaminated or inadequate lubrication can result in scouring, corrosion, scuffing, and pitting of important drivetrain components. Friction causes metal parts to wear down, and small metal particles and even shavings can accumulate, contaminate, and compromise the gear oil's lubricity and effectiveness.

MAINTENANCE



- Never substitute engine oil for gearbox oil!
- Use only gear oil type **75W90 (GL-5) Gear Oil**
- Locate the gearbox drain plug on the driver's side of gearbox, under the axle.
- Location of fill port: driver's side of gear box, toward the top rear.
- Fill to 500 mL.



14.5 Fuses and Relays

WARNING	<p>If you require electrical/battery systems service, please contact your authorized AYRO Dealer.</p>
<ul style="list-style-type: none"> If you experience electrical failures not related to the batteries, a fuse may need replacement. If a short circuit is suspected or a relay or fuse needs replacement, your authorized AYRO Dealer can assist. The fuse panel is located in the cab of the vehicle, behind the lower dashboard panel in front of the passenger seat. 	

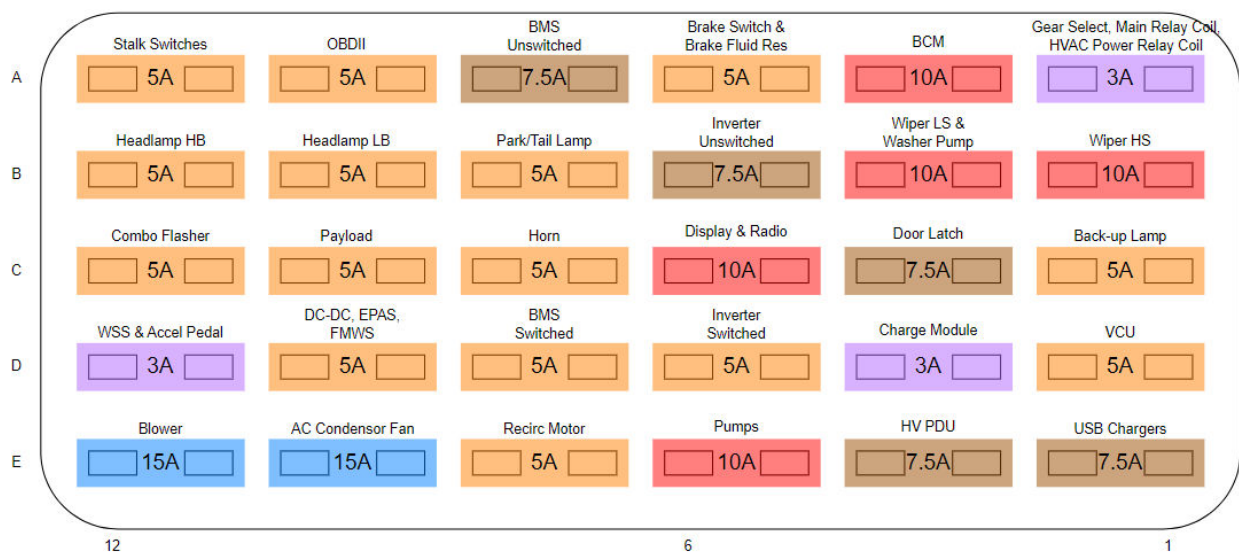


Figure 28 Vanish Fuse Block Layout

WARNING	<p>12V fuses must not be used in 96V applications. 96V fuses must not be used in 12V applications. Always install fuses with the recommended amperage to avoid damage to the electrical system, electrical shorts, or fires.</p>
	<p>Always follow all maintenance procedures as outlined in this Manual and on the labels on the vehicle. Use original equipment size and type when replacing fuses, relays, other parts, or tires.</p>



14.7 Tire Pressure, Nitrogen-Filled Tires

As both a convenience and a technical benefit, AYRO tires are filled with dry nitrogen, indicated by the green caps included on the Schrader tire valves. Nitrogen fills have several advantages, including better thermal stability (nitrogen expands less in hot weather and contracts less in cold weather), lower rate of leakage than air (slower loss of tire pressure), and improved corrosion prevention. Nitrogen filling is readily available for most owners, but it is acceptable to fill AYRO tires with regular compressed air if nitrogen filling is unavailable. Nitrogen fills are typically available at many car dealerships, tire distributors, and multinational chains (Costco, Sam's Club, and many larger Walmart centers).

NOTE: Regular air is composed of roughly 78% nitrogen and just over 20% oxygen, with the remainder including water vapor, argon, and miscellaneous gases.

NOTE: Underinflated tires can reduce vehicle range by approximately 0.2% for every 1 PSI drop in tire pressure and contribute to faster wear and increase potential for tire failure. Ensure that all your tires are properly inflated for best performance.

AYRO tires are a softer compound designed for lower operating pressures than standard automotive tires. This combination makes it possible to drive on golf course turfs without damaging the grounds.

WARNING: Improper tire pressure can cause loss of control resulting in severe injury or death.

Proper tire pressure is essential to the safe and comfortable operation of your vehicle. Check tire pressure daily, or before each use of the vehicle. (Tire pressure on the AYRO tire is **20 psi**.) Recommended tire pressures are shown on the manufacturer's label on your vehicle or the specifications section beginning on page [77](#). Tires are factory-filled with nitrogen.

NOTICE

After inspecting or adjusting the tire pressure, always reinstall the valve stem cap. This will prevent moisture and dirt from entering the valve stem, which could cause damage.

14.8 Tire Tread Depth

Any accelerated wear of tires may be an indicator of improper alignment or poor driving habits. Your authorized AYRO Dealer can assist.

Always replace tires when tread depth is worn to 1/8" (3 mm) or less.



14.9 Checking for Tread Depth

Maintain tire tread depth at 1/8" (0.125" or 3 mm) or more. Tires that have worn to less than 1/8" (3 mm) should be replaced as soon as possible. Worn tires are more likely to skid, reducing effective stopping distance. Also, worn tires hydroplane and slide on wet pavement more than tires with sufficient tread depth.

14.10 Tread Wear Indicator Bar

Tread wear indicator bars are molded into the surface of the tire for the purpose of indicating replacement due to wear. These bars are typically molded to a depth of 2/32", which means that if the wear has reached the indicator bars, the tires are too worn and must be replaced.



Figure 29 Tread Depth Indicator Bars

14.11 Wheel Nut Torque: 83 lbf-ft or 113 N-m

Inspect the wheel nuts occasionally for tightness, and if they have been loosened for maintenance service. Do not lubricate the stud or the lug nut. Clean dirty or rusted threads before tightening.

Use a properly calibrated torque wrench to prevent over- or under-tightening.

It is good practice to tighten nuts in two increments, first to half-torque-level, about 40 lbf-ft or 54 N-m, then to the final torque of **83 lbf-ft or 113 N-m**.

14.12 Wheel Removal

14.12.1 Jack Points

- Always set the park brake and chock the wheels. Use a proper jack, along with automotive jack stands if needed for the work.
- The **jack points under the front end** of the vehicle are along the subframe near the lower control arm attachment point, just behind the front wheels.

MAINTENANCE



- The **jack points under the rear end** are directly on the axle (but not on the gear box). Use a wooden block (against the grain) if needed.

NOTE: Frame view is from underneath the vehicle.

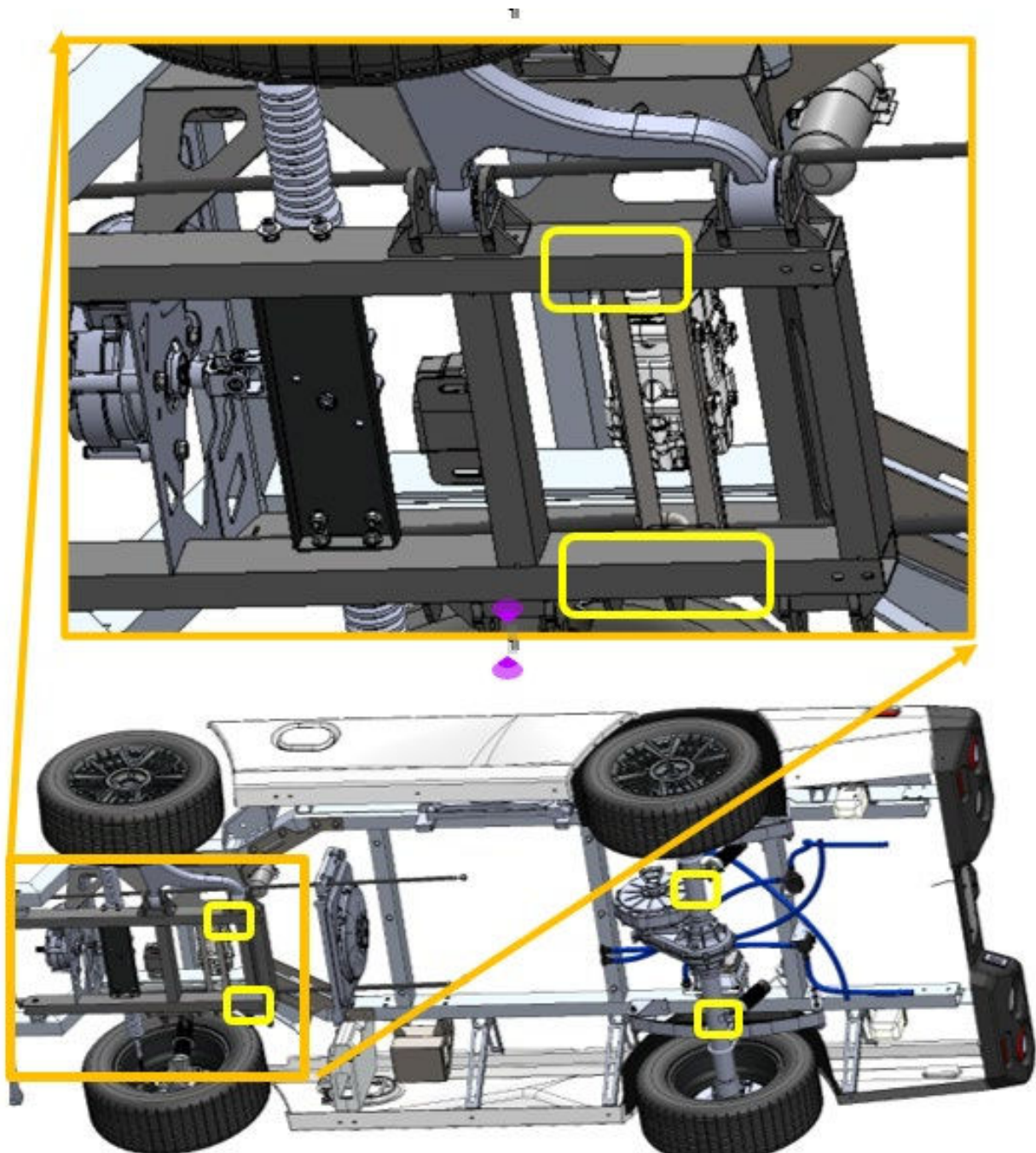


Figure 30 Jack Points under Subframe (front) and Axle (rear)



WARNING

A falling vehicle can cause serious injury or death.



NEVER place any part of your body under an elevated vehicle. If you need access to the bottom of the vehicle, use automotive jack stands to support the vehicle on a firm, level surface. Your authorized AYRO Dealer can assist.

Position the vehicle on a dry, firm, level surface.

Set the park brake.

Turn the key switch to « **OFF** » and remove the key.

Chock both the front and rear of the tire that is located diagonally opposite the jacking position. For example, if the right front tire is being changed, chock the left rear wheel.

Use a small floor-style jack or hydraulic jack. Jack the vehicle only from the recommended Jack Points. **FRONT JACK POINTS** are on the subframe rail, just behind the front wheels. **REAR JACK POINTS** are along the rear axle, but not under the gearbox.

NOTICE

Jacking at any location other than the recommended jacking points may cause significant damage to the vehicle frame and body. Only use jacks certified to support the weight of the vehicle.

Remove the wheel nuts.

Remove the wheel.

14.13 Wheel Installation

WARNING

Improperly installed wheels can adversely affect tire wear and vehicle handling, which can result in serious injury or death. Always ensure that all wheel/lug nuts are torqued to specification (83 lbf-ft or 113 N-m).

Place the wheel in the correct position on the wheel hub. Be sure the valve stem is toward the outside and rotation arrows on the tire point toward forward rotation.

Attach the wheel nuts and finger tighten.

Carefully lower the vehicle to the ground.

Torque the wheel nuts to specification (83 lbf-ft or 113 N-m). See page 71.



14.14 Lights

Poor lighting can result in reduced visibility when driving. Clean light lenses frequently and replace non-functioning lights promptly. Always make sure lights are operational and adjusted properly for best visibility.

14.14.1 Headlight Replacement

If a headlight fails to work properly, the assembly must be replaced. Your authorized AYRO Dealer can provide service.

14.14.2 Front/Rear Turn Signal and Brake Light Replacement

If a rear LED light fails to work properly, the assembly must be replaced. Your authorized AYRO Dealer can provide service.

14.15 Battery Replacement

The main EV Battery replacement must be performed by your authorized AYRO Dealer or Service Center, and technicians must be trained and AYRO-authorized.

The 12-volt battery is user-replaceable. It controls low-voltage functions cabin functions (most accessories in the cabin, but not the heater).

14.16 Storing Your AYRO Vanish

Any time the vehicle will be parked for more than 10 days, follow the recommended storage procedures:

- Make any necessary repairs and clean the vehicle.
- Prepare the batteries for storage.

NOTICE

Batteries can be permanently damaged (and the warranty voided) if allowed to remain 30 days or more with low charge. Fully charge batteries before storing. In hot climates, battery self-discharge will increase. In cold climates, batteries could freeze if not properly charged. Charging will warm the cold batteries.

- Store the vehicle out of the sun in a cool, dry place.
- Ensure the storage area is well ventilated.
- Turn the key « **OFF** ».
- Verify tire pressure is at specification (20 psi). Tires are factory filled with nitrogen.
- Chock the wheels to prevent rolling.



⚠ WARNING

If the vehicle is not going to be connected to the charger for an extended period, please contact your authorized AYRO Dealer for assistance. Cover the vehicle with a breathable vehicle cover. Do not use plastic or coated materials. They do not allow enough ventilation to prevent condensation and may promote corrosion and oxidation.

14.17 Removal from Storage

- Inspect all battery connections. Please contact your authorized AYRO Dealer for assistance with electrical and/or battery servicing. Verify that batteries are fully charged after long storage.
- Verify that tire pressure is at specification.
- Perform the pre-ride inspection. See page **60**.
- Inspect and verify the tightness of the bolts, nuts, and other fasteners.

Storage Period	Charging Procedure
Less than 10 days	Fully charge the batteries, park the vehicle, and turn the ignition key « OFF ». The battery will lose some of its charge during this period.
10 days to 6 months	Leave the charger connected.
Indefinitely or Unknown	Please contact your authorized AYRO Dealer for servicing which may involve disconnecting the charger and arranging for monthly charging.

14.18 Battery Disposal

Contact your local and/or state environmental officials regarding disposal information. You can also contact AYRO Customer Service for information. See page **15**.

14.19 Cleaning Tips

Always test cleaning products on an inconspicuous area of the intended surface prior to use.

NOTICE

Be very careful when cleaning plastic surfaces as they can be scratched or damaged. Do not use a cleaner with an abrasive, a combination cleaner and wax, or any aggressive solvents. Do not use products containing ammonia, soaps, or abrasives.



NEVER use gasoline or cleaning solvent. These products scratch or destroy many plastics and finished surfaces.

14.20 Cleaning Windshields and Windows

We recommend using a liquid household glass cleaner to remove normal dust and dirt. To remove oil, grease, or road tar, use isopropyl alcohol, then wash these surfaces with water. Dry gently with a soft cloth.

14.21 Cleaning Seats

Use warm water and a clean, damp cloth to clean the seats. Tar, asphalt, and other soils will stain if not removed quickly. For these, use a clean cloth and vinyl cleaner, then wash the area thoroughly with a damp cloth and mild liquid detergent. Rinse with cool water.

14.22 Cleaning the Interior

Use mild liquid detergent and warm water to clean the interior. Remove detergent or deposits with a clean, damp cloth.

NOTICE

Do not spray the interior of your vehicle. Liquids can damage electrical components and circuit boards. Handle liquids with care. Do not spray liquids directly into the center console, including the driver display and the infotainment center.

14.23 Cleaning the Exterior

The best way to preserve your vehicle's finish is to wash the vehicle regularly. Mild liquid detergents are recommended. Do not use strong soaps or chemical detergents. Rinse promptly. Dry the finish with a soft, clean towel to avoid surface scratches and water spotting.

Tip: To prevent spotting, avoid washing the vehicle in direct sunlight.

14.24 Protection from the Elements

Prolonged exposure to sunlight may deteriorate the exterior and interior finishes. Park the vehicle in a garage or similar structure or cover the vehicle with a breathable vehicle cover.



15 SPECIFICATIONS

Table 5 Specifications

DIMENSIONS	
Length:	155 in. / 393.7 cm
Width:	60 in. / 152.4 cm (with mirrors folded)
Height:	<76 in. / 193 cm
Base Vehicle Weight – Flat Bed:	1800 lb / 816 kg
PERFORMANCE	
Top Speed, LSV:	Up to 25 mph / 40 km/h (programmed and street legal)
Top Speed, Non-LSV:	Up to 20 mph / 32 km/h (not for use on public roads)
Turning Radius:	12.5 ft / 150 in / 3.81 m
Acceleration:	0-25 mph / 0 - 40 km/h in <6 seconds
Braking Distance, LSV:	33 ft @ 25 mph / 10.058 m @ 40 km/h
Braking Distance, Non-LSV:	30 ft @ 20 mph/ 9.144 m @ 32 km/h
Operating Temperatures, Standard:	-20°C / -4°F to 58°C / 137°F
With Cold Weather Package:	-30°C / -22°F to 58°C / 137°F
EQUIPMENT	
Rear View/Backup Camera:	Standard
Console Display:	Standard / 7 in. / 17.7 cm
Park Brake:	Manual – Standard
Body Panels:	Reinforced ABS / Corrosion-resistant
Cabin Air:	HVAC System (heating standard, Air Condition option)
MOTOR	
Motor:	Axial Flux electric motor 13 kWh
Horsepower:	13.4 HP
Motor Controller:	350A AC Controller

SPECIFICATIONS



Drive System:	2-wheel Rear Wheel Drive
PAYLOAD CONFIGURATIONS	
Flat Bed:	47.5 in. / 120.6 cm H
	55.25 in. / 140.3 cm W
	88 in. / 223.5 cm L
BATTERIES	
Type:	13kWh Sealed Lithium Ion
Voltage:	96 V Nominal
Number of Batteries:	Single Battery Pack
Capacity:	10 kWh
ADDITIONAL DATA	
Tire Pressures, Front and Rear	20 psi for 15" All Season Schlägernull™ tires (factory filled with nitrogen) (P205/60R15)
Chassis:	Reinforced Steel / Coated
Suspension, Front:	Independent with shock absorbers
Suspension, Rear:	Solid e-axle with shock absorbers
Brakes:	4 wheel disc brake
Steering:	Electric Power Assisted Steering (EPAS)
Torque for Wheel Lug Nuts	83 lbf-ft or 113 N-m

MAINTENANCE LOG



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