This manual is intended for the following Avalon models:

E-City

E-Max

Thank you for choosing an Avalon electric bike. This manual also serves as a guide for enjoyable and safe use of your electric bike.

This manual is universal for all Avalon models. You may come across information that does not apply to your specific bike. As you read through the manual, you will discover which information is relevant to your chosen Avalon model.

Please read this manual carefully and in its entirety before using the bike for the first time. For your own safety, check that all components are in good condition and securely mounted.

During an initial test ride, we recommend getting accustomed to the brakes. Depending on the model chosen, the braking force may vary. Excessive braking can result in skidding and a fall, so it's wise to get a good feel for the braking power of your bike before hitting the road.

Reduce your speed on slippery surfaces such as wet, snowy, icy, or muddy roads and maintain a greater distance from the vehicle in front, as your braking distance may be significantly longer.

Although this bike can perform well in rainy and snowy conditions, ensure that no water enters the motor or controller. This can likely cause damage to the electronic system. Therefore, avoid riding through puddles as much as possible.

If you wish to remove, open, replace, or adjust parts, we recommend seeking assistance from a specialist with the appropriate knowledge, skills, tools, and spare parts.

Do not allow anyone who is unfamiliar with how this bike functions to ride it.

We wish you a wonderful cycling experience and hope that your Avalon bike contributes positively to it.

Important before using the bike

MANUAL

All Avalon electric bikes are classified as "pedelecs," meaning the motor is only activated when you pedal (in accordance with the European standard EN-15194).

Only the walk assist mode can function without pedaling, with a maximum speed of 6 km/h.

Avalon's top models use a mid-drive motor, which is directly integrated with the pedals. In addition to the motor's different position, some of these bikes feature a different sensor that measures the force applied to the pedals and amplifies it. The amount of assistance provided depends on the selected support level.

General technical specifications

- Dimensions (LxWxH): 1900x700x1180
- Weight: 25 kg
- Maximum speed: 25 km/h +/- 10%
- Maximum load capacity: 120 kg
- Average range with full battery: On average, we estimate approximately 4 kilometers per Ah.
- Average energy consumption per 100 km: 700 W
- The mentioned values apply to: New battery - Normal load - No external weather influences - 25 degrees Celsius ambient temperature - Dry flat road

Technical specifications of the 2A charger

- Charging time with an empty battery: Approximately 1 hour per 2Ah.
- Input voltage: 230V/50Hz
- Maximum charging power: 65W

Technical specifications of the battery

- Battery type: 31V +/- 1V
- Voltage: 36V
- Capacities for battery in carrier (12, 15, or 18Ah): Respective capacities of 432Wh, 540Wh, 618Wh
- Capacities for battery in frame (15 or 20Ah): Respective capacities of 540Wh or 720Wh

Technical specifications of the control unit

- Undervoltage protection: 31V +/- 1V
- Overcurrent protection: maximum 13A

Technical specifications of the mid-drive motor

- Motor type: DC servo motor, brushless, low noise
- Continuous rated power: 250W
- Nominal voltage: 36V
- Nominal/maximal output torque: 42Nm/80Nm
- Motor efficiency: 81% (+/- 5%)

Technical specifications ort he front hub motor

- Motor type: DC servo motor, brushless, low noise
- Continuous rated power: 250W
- Nominal voltage: 36V
- Nominal/maximal output torque: 22Nm/40Nm
- Motor efficiency: 78% (+/- 5%)

The design of all Avalon electric bikes is based on ergonomic principles, mechanical properties of the materials used, and the physical characteristics of humans, resulting in the best possible riding characteristics.

- The intelligent design of the bike and the thoughtfully selected and applied components result in a safe bike with excellent riding characteristics and easy operation.
- The lithium batteries used by Avalon are of the latest generation (NiMnCo) and deliver the most energy in the most compact housing possible while maintaining good performance at low temperatures. The battery offers durable use and is environmentally friendly.
- The bike is built on an aluminum frame, which is lightweight, handy, and strong, ensuring a long lifespan.
- The maximum speed at which the motor is engaged is 25 km/h, fully complying with the EN-15194 standard that defines the requirements for electric bikes. This guarantees the safety of our bike users.
- The achievable range with a full battery depends on the load, road conditions, number of starts and stops, tire pressure, the level of assistance set on the bike computer, and the user's charging and maintenance practices. For more information, please refer to our website.

Battery and Range

One topic that is most discussed both before purchasing a bike and during the use of an already purchased bike is the battery range. Below, we explain the Avalon standpoint. Important: For an accurate reading of the remaining battery capacity, it is necessary to fully discharge and fully charge the battery three times so that the smart battery controller can calibrate correctly.

Avalon only uses A-brands in the assembly of its bikes, and this certainly applies to the batteries. They are usually the most expensive component of the bike and therefore deserve extra attention. The range of a full battery cannot be specified in advance, only as an approximation. As an example, we deliver our bikes with a tire pressure of 4 bar. If this pressure decreases to 3 bar, it still feels like a hard tire but the range will decrease by approximately 25%, depending on the rider's weight.

There are countless factors that can positively or negatively affect the range. The most important ones are: proper use of gears, rider's weight, tire pressure, freewheel resistance of the wheel and gear hubs, brake freewheel, selected assistance level, frequent stops at traffic lights, frequent changes in speed, headwind or tailwind, uphill and/or downhill riding, type of surface, dry or wet conditions, degree of pedaling effort, battery age, and many other smaller influences. Based on the above, it is not possible to provide a guaranteed range. Experience shows that a 10Ah battery can cover a distance ranging from 30 to 100 kilometers. The lower end of the range (30 kilometers) applies to a heavier rider consistently using the highest assistance level, only two gears, and riding at top speed. The upper end of the range (100 kilometers) is achievable by a lighter long-distance rider who stops infrequently, uses all gears, and sets the assistance level no higher than level 2, while also providing some pedaling power. Avalon does not guarantee specific distances but does guarantee the proper functioning and capacity of the battery. However, the warranty for capacity has limitations as it is considered a consumable part. On average, a battery can be recharged approximately 600 times. Both the age and the number of charge cycles have a negative impact on battery capacity. Under normal use and maintenance, the capacity decrease will average between 5% and 10% per year. However, very intensive use of the bike can result in a capacity decrease of 15% or more per year,

solely due to cell wear. If a bike, and therefore the battery, is not used for an extended period of time, it should be periodically connected to the charger. We recommend a maximum interval of 2 months. It is preferable to store the battery in a frost-free environment. Always make sure that the battery is not deeply discharged. If the battery is not charged for an extended period, it can become deeply discharged, and the charger may no longer be able to recharge it. This can result in battery failure. In some cases, a specialist may be able to reactivate the battery, but unfortunately, this is not always possible. Deep discharge is not covered by the warranty provided by Avalon to its customers. Avalon also cannot guarantee that a deeply discharged battery can be reactivated. If the battery can be reactivated, it is not known if there is any permanent damage to the cells. Therefore, it is crucial for the user to take good care of the battery. Avalon offers various battery capacities so that customers can choose the capacity that best suits their usage type.

Charging the battery:

- When charging the battery, make sure the bike is turned off.
- First, connect the charger to the battery and then plug it into the power outlet.
- Preferably, place the battery horizontally (as it is installed in the bike, definitely not upside down).
- Place the charger on a level surface.
- After charging, disconnect the connectors in reverse order.
- Charging time depends on the battery capacity, the level of discharge, and the charger being used.

Battery-related tips

- Ensure a fully charged battery before embarking on a long trip.
- Rough terrain, challenging surfaces, and hilly or mountainous roads result in significantly higher energy consumption.
- Frequent speed changes lead to increased energy consumption.
- The more weight on the bike, the higher the energy consumption.
- Proper maintenance, a clean bike, properly inflated tires, and regular lubrication (as specified later in this manual) contribute to lower energy consumption.
- Regularly check if the front and rear wheels spin freely when the brakes are not engaged. Adjust the brakes regularly.
- A lower assist setting provides less motor power and therefore requires less energy from the battery, resulting in greater range.
- As the battery becomes emptier, the voltage drops along with the available power. You may notice a decrease in motor power while riding as the battery level decreases.
- Warranties for a battery become void immediately and unconditionally if it is deeply discharged. Batteries, in general, do not tolerate deep discharge. Ensure that this NEVER happens. If you will not be using the bike for an extended period, never leave the battery in the bike without periodically charging it.
- Placing the charger and battery near heat sources is dangerous and strongly discouraged.
- The lifespan of the battery depends on how it is handled. Follow the instructions in this manual for charging. Additionally, never drop, shake, or strike the battery.
- Opening the battery and separating its internal segments is not allowed under warranty conditions. An opened battery is never covered by warranty.
- Battery charger
- Your Avalon bike battery is a Lithium-Ion battery. This type of battery requires a specific type of charger. Always use a charger that is 100% the same type and brand. Using an incorrect

charger for charging the Avalon battery can result in overheating, fire, or even an explosion. If your charger is defective or lost, contact your supplier for a proper replacement.

- Charge the battery when it is not in use. You can decide to charge the battery while it is in the bike or after removing it from the bike.During charging, the battery and the charger should not be placed near flammable substances. Always ensure that children cannot access the charger while it is charging the battery.
- The charging time of the battery depends on the remaining energy in the battery, the battery capacity, and the charger capacity. When the battery is fully charged, the LED will change from red (charging) to green (ready). Then, unplug the charger from the power outlet and then from the battery.
- Do not leave the charger connected to the battery longer than necessary. You can start a charging session in the evening and end it in the morning.
- It is normal for the battery and the charger to become warm or hot during the charging process. Ensure that the battery remains connected to the charger for at least 12 hours during the first 3 charging cycles.
- The charger has an LED indicator. If it is red, it means that it is supplying power to the battery and the battery is not fully charged yet. Once the battery is fully charged, the LED will change to green.
- Never attempt to open the casing of the charger yourself. If necessary, have it serviced by a qualified person.
- Avoid touching the battery's contact points with your hand or any tools or materials.
- Prevent any materials or liquids from entering the charger. If this happens, do not use the charger until it has been inspected by a qualified person.
- Ensure that the charger has sufficient cooling while it is charging. The charger should have a clearance of 200mm on all sides for proper cooling.
- The charger is intended for indoor use only.

E-City Display



If you have chosen an Avalon E-City, you will have the display shown above on your bike.

You can turn on or off both the display and the electric system by pressing the "Power" button. If you haven't used the bike for about 5 minutes, the display and electric system will automatically turn off.

Using the same button, you can turn the lights on and off. Simply press the button briefly to do so.

Pressing and holding the "-" button for 2 seconds will activate the walk assist mode, which assists you in walking at a speed of up to 6 km/h. Never use this walk assist mode when someone is riding the bike. The walk assist mode will stop as soon as you release the "-" button.

The large numbers in the center display the current speed in kilometers per hour. ODO represents the total number of kilometers already ridden with this bike. This counter cannot be reset.

TRIP is a resettable counter that you can reset at any time. The reset function will be explained later.

At the bottom left, you can see the assistance level. It can be adjusted using the "+" and "-" buttons. By default, you have a choice of 5 assistance levels. Level 1 provides minimal assistance, while level 5 offers maximum assistance.

Pressing and holding the "+" button for 3 seconds will change the background lighting. It has two modes: day mode and night mode.

To access the settings menu, press the "SET" button and hold it for at least 2 seconds. This will bring up the settings menu, which includes the following options:

- Trip clear (to reset the trip counter)
- Brightness (adjust the background lighting)
- Speed limit (set the maximum speed, 25 km/h for NL)
- Wheel size (set the wheel diameter)
- Units (choose between KM and Miles, for NL choose KM)
- Battery (select the battery voltage, which is 36V)
- Advance Settings (for Avalon dealer use only)
- Information (for Avalon dealer use only)
- Save & Exit (save new settings and return to normal mode)

Operation: When you are in this menu, you can scroll through the list using the + and - buttons. If the frame is around the desired setting and you want to change it, press the "SET" button briefly to modify the value. By using the + and - buttons, you can scroll through the available options, and by pressing the "SET" button again briefly, you can confirm your choice.

You can change multiple settings, but they will only be saved when you select the "Save & Exit" option and then confirm this choice by pressing the "SET" button, after which the settings will be saved and the setup menu will be closed.

Some notes: The speed limit must be set to 25 km/h according to Dutch law.

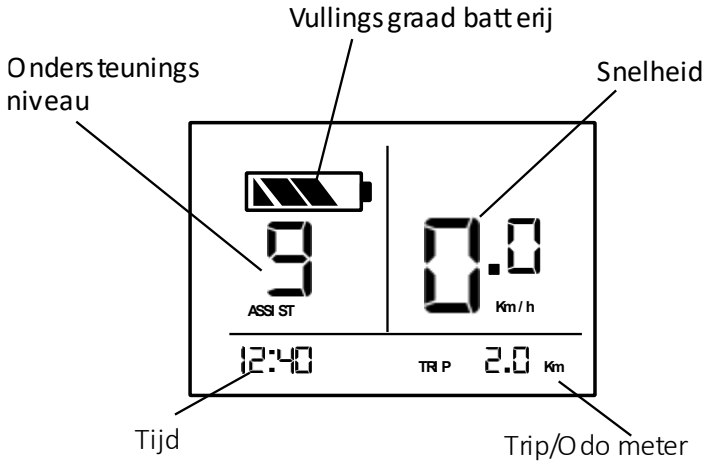
The wheel diameter is 28 inches. Please do not change this setting as it will cause incorrect speed and odometer readings.

The battery voltage is 36V. Please do not change this setting as it will affect the battery level display.

Error codes

If there is a problem with the electrical system, the display will show an error code. If this is the case, please contact your Avalon dealer.

Avalon E-max Display



You can operate your bike and the display using the control unit located at your left handlebar.

To turn your bike on and off, hold the power button for 3 seconds. To turn it off, do the same by holding the button for 3 seconds. After 10 minutes of not using the bike, the display will automatically turn off.

Speed and distance traveled: By default, the display shows the current speed and the day's distance (trip).

By pressing the "Power" button briefly, you will sequentially get the following information:

- Average speed and trip meter of the last ride
- Total distance traveled (ODO)

If you are on one of the last two screens, you can reset the day's distance meter to zero by simultaneously pressing the "-" and Power buttons.

Lighting

You can turn on the lights by pressing the "+" button for 2 seconds. In the same way, you can turn off the lights.

Walk assist:

To use the walk assist function, press and hold the "-" button. The bike will then move at a speed of 6 km/h.

Assistance level:

Use the large "+" and "-" buttons to select your desired assistance level. 1 provides the least assistance, and 9 provides the highest assistance. The higher the assistance level, the more battery power will be consumed.

Menu:

By simultaneously pressing the "-" and "+" buttons, you can access the menu. Use the power button to navigate through the menu.

- Set speed limiter (legally, it should not exceed 25 km/h)
- Adjust display brightness (using the "+" and "-" buttons)
- Set time display

Indicator:

In the top left corner of the display, you will find the battery indicator, which consists of 4 segments. When the battery is almost empty, the battery symbol will start flashing.

Error code:

If there is a malfunction in the electrical system, an error code will appear on the display. The following codes may appear: 21, 22, 23, 24, 25, and 30. In all cases, the bike cannot be used, and you should contact your dealer. Based on the error codes, the dealer can determine the possible cause of the problem and resolve it.

Lighting:

All Avalon bikes have front and rear lights that are controlled through the display and powered by the main bike battery. The lighting operates through the central battery, which also powers the motor, so no separate dynamo is used. Even if the main battery is too low to power the bike, the lights will still work. The lights, both front and rear, are LED lights and therefore energy-efficient. For your own safety, please ensure that the lights are always functioning properly.

Safety: You can choose to always turn on the lights for your safety. It is recommended to avoid riding in dark and wet conditions as much as possible.

For your own safety, we advise you to maintain a sufficient distance from any vehicles in front of you, ensure that you are visible, and consider wearing reflective clothing.

Parking your bike:

When parking your bike, turn off the power to protect the battery. You can do this via the display. If the bike is not used for 10 minutes, the display will automatically turn off the bike.

Your bike is equipped with an AXA Victory ART-approved lock. Always lock your bike to prevent theft. AXA also offers an optional plug-in cable that can be used to secure the bike to a lamppost or another bike. Ask your dealer about this.

Using the provided key, you can open the lock to remove the battery from the slot, for example, for storage during extended periods when you won't be using the bike or during cold weather. During use and storage in public spaces, the battery should be locked with this lock to prevent theft.

Avoid leaving your bike outside when it is raining or snowing to prevent moisture (condensation) from affecting the electronics.

If you have used your bike in wet conditions, we recommend storing, cleaning, and drying your bike indoors. The bike can withstand cold or very hot conditions, but the battery is more sensitive. In such circumstances, it is better to remove the battery from the bike and place it somewhere at room temperature.

Insurance:

We recommend taking out damage and/or anti-theft insurance for your bike. Your authorized dealer, where you purchased your Avalon bike, will certainly be able to assist you further.

WARNING

When you are ready for your first ride on the bike, be cautious and prepared, as the bike rides significantly faster than a regular bike due to the assistance of the motor.

Before using your bike for the first time, please read all the instructions in this manual carefully and ensure that the bike, handlebars, saddle, etc., are properly adjusted.

Take your first test ride in an area with plenty of space. Make sure you can gradually get used to riding with pedal assistance. This bike responds entirely differently than a conventional bike without pedal assistance. After a few rides, you will be completely accustomed to this luxurious way of cycling and can confidently take to the road.

- Make sure not to fully lock the brakes. If you need to brake, apply even pressure to both the front and rear brakes. The front brake has more power, but if it locks, it can be more dangerous as it may cause you to lose control of the bike and even fall.
- If you exceed the speed of 25 kilometers per hour, the controller will reduce the motor power. Legally, 25 kilometers per hour is the maximum speed at which the motor is allowed to provide assistance.
- When you stop cycling (keep the pedals still or no longer apply force to the pedals), the motor will stop driving after a short delay.
- On slippery, muddy, and uneven roads, we advise you to use the bike without pedal assistance.
- If malfunctions occur in the pedal assistance system or elsewhere in the electrical circuit, we recommend turning off the battery to prevent further damage.
- Our bikes are equipped with original Shimano components for the gears. You can switch between different modes according to your preference using the control unit on the right handlebar.
- The bike is intended for a single rider only. Make sure the bike is never overloaded beyond what has been indicated to prevent damage to the motor and battery.
- Always signal in advance when you are turning left or right during cycling or when you want to stop in an unexpected location.
- Maintain focus while cycling. Avoid cycling over potholes, loose gravel, oil, wet road markings, snow, drainage channels, and other obstacles.

Maintenance:

Your electric Avalon bike is designed for use by one person under normal road conditions. Using this bike in extreme conditions such as off-road use, jumping, and carrying heavy loads can seriously damage the bike and even cause injuries. Of course, the bike is not designed to withstand such stresses.

When cleaning the bike, NEVER use pressurized water. This water can enter sensitive areas and cause malfunctions in the electrical circuit as well as rust formation. Use a clean damp cloth to clean the bike. Do not use aggressive or acidic cleaning agents, as they can damage the bike's finish.

Try to avoid using the bike in rain and snow. If unavoidable, clean and dry the bike after use.

If the motor makes an unusual noise, it should be repaired or replaced. Avoid further use to prevent potential subsequent damage.

Ensure that the controller remains clean and dry during daily use. Avoid vibration and shocks to prevent damage to the controller.

WARNING:

Avoid excessive lubrication, especially on the brakes. If lubricants come into contact with the brakes, it will significantly increase the braking distance. This can cause injuries to riders and bystanders. An excessively lubricated chain can throw oil droplets onto undesirable areas such as pedals, brakes, rims, etc.

If there is oil on the rims, tires, brakes, and/or pedals, wash it off with hot water containing liquid soap. Once the oil is removed, rinse everything with clean water and then dry the bike.

Use light machine oil (W20) and follow the provided instructions for lubricating the various bike components.

Before each ride, it is important to perform the following safety checks:

Brakes:

- Check if the front and rear brakes are working properly.
- Ensure that the brake pads are properly engaging the rims (only applicable if your bike is equipped with rim brakes).
- Check the brake cables. They should move smoothly and should not be damaged.
- Check the brake levers, which should move smoothly and be securely fastened.

Wheels and Tires:

- Check the tire pressure. It should be close to the specifications indicated on the tire.
- Check if the tires have sufficient tread and are not damaged.
- Inspect the rims and ensure that they are free from contact with the brakes and do not wobble when spinning (only applicable if your bike is equipped with rim brakes).
- Check if all the spokes are properly tensioned and not damaged.
- Ensure that the wheel bolts are tightened securely. If your wheels are attached with quick releases, make sure they are properly tightened and in the closed position.

Handlebars:

- Check if the handlebars are in the correct position and securely tightened, so they do not move while riding.
- Ensure that the handlebars are aligned with the front wheel.
- Verify that the handlebar clamp is properly tightened.

Chain:

- Check if the chain is adequately lubricated, clean, and running smoothly.
- Extra attention is required in wet and dusty conditions. Regular inspection is recommended.

Bearings:

- Check if the bearings are adequately lubricated, move smoothly, and do not have any play or make rattling noises.
- Pay particular attention to the headset bearings, pedal bearings, bottom bracket bearings, and wheel bearings.

Bike Axle and Pedals:

- Check if the pedals are securely attached.
- Check if the bike axle is securely mounted and does not have any play.

Gears:

- Check if the gear mechanisms are properly adjusted and functioning as intended.
- Verify that the gear shift operation is smooth and accurate.
- Ensure that the gears, shifters, and cables are adequately lubricated.

Frame and Fork:

- Inspect the frame and fork for any damage or breakage.
- If there are any broken or bent parts, they should be replaced.

Accessories:

- Check if the lights are functioning properly.
- Ensure that all reflectors are visible.
- Verify that all other bike attachments are securely tightened and properly installed.
- Ensure that the rider wears a bicycle helmet.

Warranty:

The warranty is void if the user does not have the bike inspected and, if necessary, adjusted by a professional bike mechanic at least twice a year. Only factory defects are covered by the warranty, not damages or technical problems that cannot be attributed to the factory. The same applies to the battery.

www.Avalon-fietsen.nl

Serial number of your bike: _____

Serial number of your battery: _____

Date of purchase of your bike: _____

Information from your dealer: _____