

# BESV JGR User Manual



# Contents

- Introduction ..... 3**
  - Welcome!.....3
  - What is a pedelec (a type of e-bike)? .....3
  - Intended Use .....3
  - Product information .....3
  - Brand and Manufacturer Info .....4
  - Environment Protection Tips .....4
  - Intended Use .....4
  - User Manual .....4
    - Symbols Used.....5
  - Support Information .....5
  - Copyright Information .....6
- Before You Go ..... 7**
  - Register your JGR.....7
  - Before your first ride .....7
  - Before every ride .....7
  - Safety Notes.....8
- BESV JGR At A Glance ..... 9**
  - BESV JGR Bike Parts .....9
  - HMI (Human Machine Interface) Overview..... 10
- Smart Connectivity.....11**
  - Enhanced Ride ..... 11
  - OTA (Over-the-Air) Firmware Update ..... 11
- Detailed Bike Instructions .....12**
  - Introducing HMI Functions ..... 12
    - How to Turn On/Off the Battery Power ..... 12
    - Pedal Assist Modes ..... 12
    - Bluetooth Connection..... 13
    - Firmware Update Status Indicator ..... 13
  - Battery ..... 15
    - Battery Level Indicator ..... 15
    - How to Recharge the Battery ..... 15
    - Battery and Charger Precautions ..... 16
    - Quick notes on optimizing battery lifespan..... 18
  - How to Shift Gears ..... 19
  - Note on Brake System..... 19
  - Adjust the Seat..... 20
  - USB Type-C Charger Port ..... 21
  - Tire Pressure ..... 22
  - Notes on Kickstand ..... 22
  - Other Safety Devices..... 23
  - Proper Accessories..... 23
- Maintenance.....24**
  - Notes on Cleaning..... 24
  - Maintenance Schedule and Guide..... 24
- Additional Useful Information .....25**
  - Disposal and recycling Information ..... 25
- Troubleshooting .....26**
  - Alert Signs ..... 26

Warning Code Alert Signs .....	26
Warning Codes.....	27
Error Codes .....	29
Other Troubleshooting .....	33
<b>Warranty .....</b>	<b>37</b>
<b>Specifications.....</b>	<b>37</b>

## Introduction

### Welcome!

Congratulations! You have just purchased the finest pedal-assisted electric bicycle in the market. We cannot wait for you to start embarking on amazing journeys with your BESV e-bike!

### What is a pedelec (a type of e-bike)?

A pedelec is an electrically assisted bike that provides assistance when and only when you pedal. The torque sensor located on the pedal crank bearing detects how hard you are pedaling and determines how much power the motor should provide to give you a pleasant ride. The electric motor is turned off as soon as you stop pedaling.

In most countries, there are laws regarding pedelec design and the use of pedelecs. For example, the maximum assisted speed is 25 km/hr (15.5 mph) in European countries. When you are reaching the maximum assisted speed, the motor starts to reduce its power output until it ceases in order to meet the law requirement. However, with pedal-assist function off, you may be able to surpass the maximum assisted speed with your physical strength and agility.

### Intended Use

For your safety and for avoiding damages to your bike, please make sure your pedelec is used according to its intended use.

BESV JGR is designed to be a gravel pedelec. Please ride your bike under suitable conditions. If you have other needs, such as downhill riding, please select other suitable bikes for your safety.

This pedelec is designed to be ridden by only one person (the rider) and does not permit carrying infant, children or animals.

Pedelecs do not intend to limit the stature, perception, and mental ability of its user; however, a child under 14 years old is prohibited to ride the pedelec. (Please check your local laws; the minimum age may be higher.) According to EN regulation the maximum gross weight of the e-bike, including the weight of rider, accessories and/or cargo, is under 120 kg (264 lb). Do not exceed the allowable gross weight. It is also not designed to pull or tow another bike, trailer, or any other items via a connection system.

### Product information

Product description: Electric power assisted bike (E-Bike)

Model : BESV JGR

Function : Pedelec

Equipped Battery Description: Product: Battery for E-Bike Model : E2C08	Equipped Battery Charger Description: Product: Battery Charger for E-Bike Model : B259-001
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## **Brand and Manufacturer Info**

BESV is a brand by Darad Innovation Corporation, a company based in Taiwan. We are committed to developing products that feature innovative ideas and structures.

## **Environment Protection Tips**

Environmental protection topics are part of the Green Product Policy published by Darfon Electronics Corp., Darad Innovation Corporation's parent company. The purpose is to encourage cautious use of natural resources, which are the building blocks of the planet we live on, and to take the needs of nature and human beings into consideration. As a responsible person for environmental protection, you may protect the environment by starting to ride an electric bike.

The consumption of energy is related to the power controller system, gear change system, brake system, drive system and tires installed on the bike. It all depends on how the electric bike is used and how you ride the bike. BESV invites you to join us and make effort to help protect our planet Earth, by learning how to ride responsibly and conserve energy whenever necessary.

## **Intended Use**

For your safety and for avoiding damages to your bike, please make sure your pedelec is used according to its intended use.

BESV JGR is designed to be a gravel pedelec. Please ride your bike under suitable conditions. If you have other needs, such as downhill riding, please select other suitable bikes for your safety.

This pedelec is designed to be ridden by only one person (the rider) and does not permit carrying infant, children or animals.

Pedelecs do not intend to limit the stature, perception, and mental ability of its user; however, a child under 14 years old is prohibited to ride the pedelec. (Please check your local laws; the minimum age may be higher.) According to EN regulation the maximum gross weight of the e-bike, including the weight of rider, accessories and/or cargo, is under 120 kg (264 lb). Do not exceed the allowable gross weight. It is also not designed to pull or tow another bike, trailer, or any other items via a connection system.

## **User Manual**

This user manual provides you quick and accurate understanding of the major functions of your e-bike.

Please read this user manual thoroughly and familiarize yourself with the operations of the e-bike before riding it for the first time. Please be aware of where you can find this manual and keep it accessible at all times.

Please follow the instructions and warnings provided in this manual. Failure to do so may lead to damages to the bike or threats to your personal safety. The manufacturer accepts no liability for damages resulting from non-compliance with these instructions. Please note that your pedelec must only be used in accordance with its intended use.

If you are to lend or to sell your e-bike to another person, please pass this manual onto him/her.

Your bike may be somewhat different from the descriptions and images depending on model, order, country or optional accessories. Darad Innovation Corp. is committed to constant innovation of craftsmanship and products. We reserve the rights to changes in designs, electronic systems, and features to our equipment or technology.

**Symbols Used**

The following symbols are used in this manual to highlight important information. Please find symbol descriptions below:

 <b>DANGER</b>	Failure to follow this part of instructions will result in death or serious injury.
 <b>WARNING</b>	Failure to follow this part of instructions could result in death or serious injury.
 <b>CAUTION</b>	Failure to follow this part of the instructions could result in minor or moderate injury.
 <b>NOTICE</b>	This symbol highlights actions users should follow. These parts in this manual are particularly important.
<b>TIP</b>	“TIP” provides useful information, which may help you further understand e-bikes and the importance of certain instructions.

**Support Information**

Whenever you need professional support, please don’t hesitate to contact us!

**Official Website:** [www.besv.com](http://www.besv.com) (select your region of sales for info most suitable for you.)

**Customer Care Contact Page :** <https://besv.com/support/customer-care/>

**E-mail:** [info@besv.com](mailto:info@besv.com)

**Headquarter’s Telephone No.:** +886 3 2508800

**Headquarter’s Address:** 1 F., No. 167, Shanying Rd., Guishan Dist., Taoyuan City 333426, Taiwan (R.O.C.)

DARAD Innovation Corp. recommends that you go to an authorized professional distributor for service and repair in order to keep your electric bike in a good working condition.

An authorized distributor has the skills, tools and qualification to provide service for your electric bike, in particular when it comes to the safety of riding the bike.

Please do not hesitate to reach out to our authorized distributors/dealers for the following services:

- Safety-related service
- Maintenance and service
- Repair
- Correction, installation and upgrade

- Replacement of electronic components: power controller system, gear change system, brake system and drive system

### **Copyright Information**

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No part or all of the content of this user manual may be used, modified, reproduced, transformed, distributed, published, translated, publicly displayed or distributed in any way to any other computer, server, website, media related to publication or any third party without the company's prior written consent.

## Before You Go

### Register your JGR

Your e-bike is only half the experience! To get the most out of your BESV JGR, make sure you download our BESV Smart Plus app. It's easy to create an account and register your e-bike.

When your e-bike is paired with our app there are additional features that are unlocked and you have the ability to fully customize the e-bike to your personal needs and preferences.



Apple and the Apple logo are trademarks of Apple Inc.  
Google Play and the Google Play logo are trademarks of Google LLC.

More about using the app, please check out the “Smart Connection” section later in the manual.

### Before your first ride



#### NOTICE

Please check the following:

- Ensure the JGR is fully assembled according to instructions and adjusted to fit your body.
- Familiarize yourself with JGR’s functions and how the bike should be used.
- Ensure you know which lever operates which brake. Practice and get used to operating the brakes in a safe area.
- Note that electric bikes potentially travel faster than a typical bike, be mindful of the reaction time and distance that you might need when using this particular bike.
- Lift your JGR up slightly and drop it onto the ground from about 10 cm in the air. If you hear any sort of rattling or unusual noise, consult a professional to identify and fix the problem before you use it.
- Ensure to check all of the “Before Every Ride” checklist.

### Before every ride



#### NOTICE

Please check the following:

- Check if all parts of the JGR are undamaged and can function properly.

- Check all bolted and connecting parts of the bike are secured in place.
- Test ride to check if there is any abnormal noise from your e-bike.
- Check that the brake pads are not overly worn; and ensure the brake system is working properly.
- Test to see if you can pedal smoothly.
- Check if the transmission system allows you to shift gears smoothly.
- Make sure saddle height adjustment does not exceed the minimum seat post insertion depth requirement.
- Make sure tire pressure is within recommended range and the pressure is not dropping abnormally; as well as the tire tread depths are sufficient.
- Check if the battery has enough capacity for your ride.
- Check if the electric system and integrated display are working properly.
- If you find anything to be abnormal, please refrain from riding and contact our service center or authorized professional distributor for assistance.

## Safety Notes

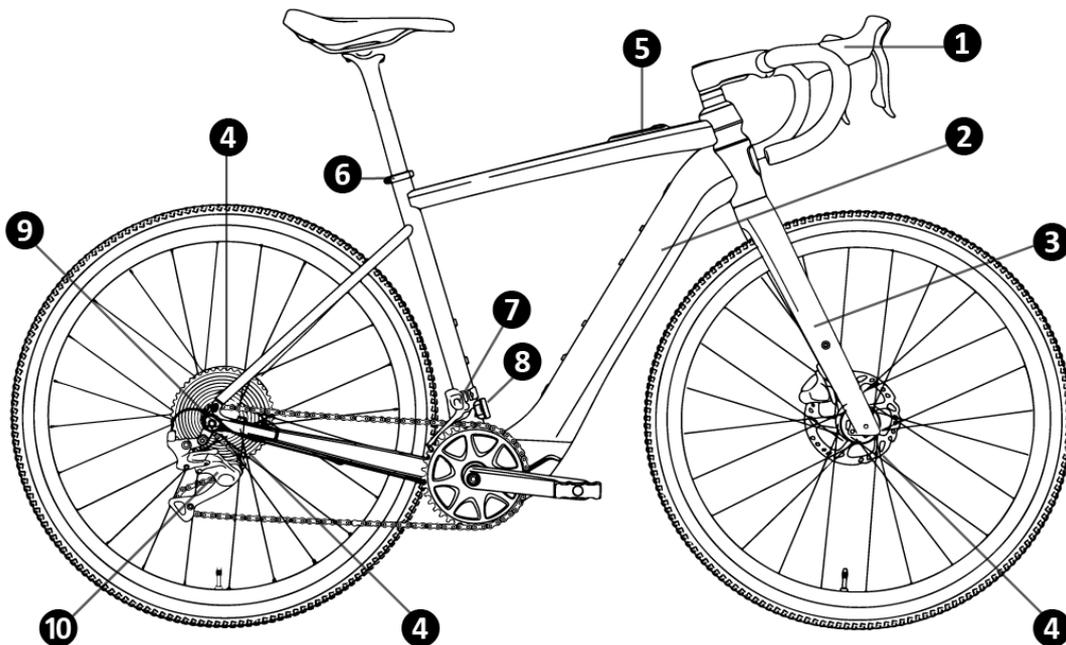


### WARNING

- For your safety, it is essential to wear a helmet while riding.
- Avoid excessive attention to the HMI display while riding to prevent accidents.
- Do not use earphones, headphones, or make/receive phone calls while riding.
- Avoid riding barefoot or wearing flip-flops, as it increases the risk of accidents due to loose footwear or improper pedaling, which may result in serious injury or death.
- Maintain focus at all times while riding.
- The control of front and rear brakes (corresponding to the left or right brake lever) may vary according to each country's regulations. Before riding on the road, ensure that you are familiar with and understand the brake controls.
- Pay attention to the road surface and condition while riding and respond and operate the brake accordingly.
- There is a risk of burns if you touch brake components directly with your skin before they have cooled down.
- When using the motor continuously for an extended period, avoid touching the motor as its surface temperature may cause burns.

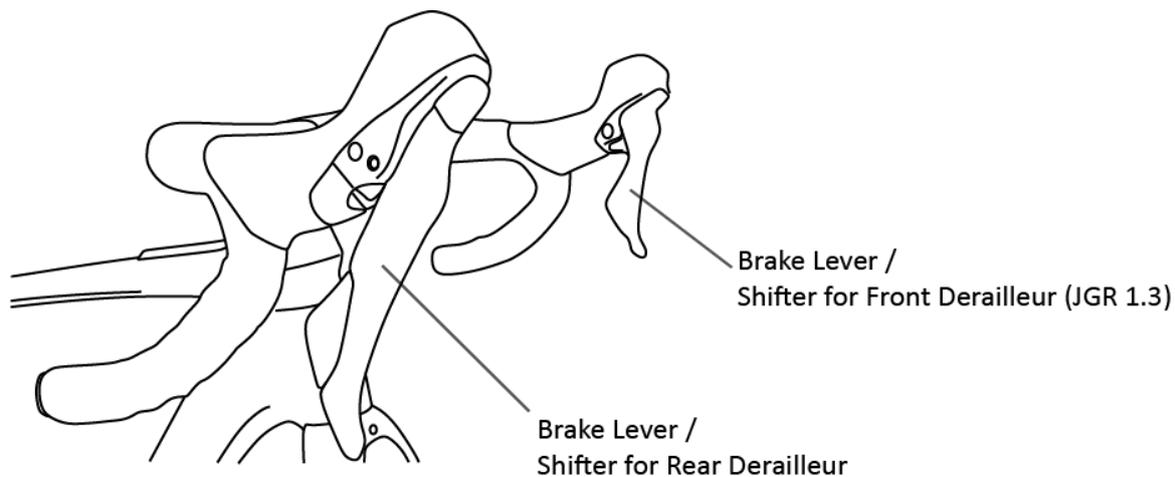
### BESV JGR At A Glance

#### BESV JGR Bike Parts

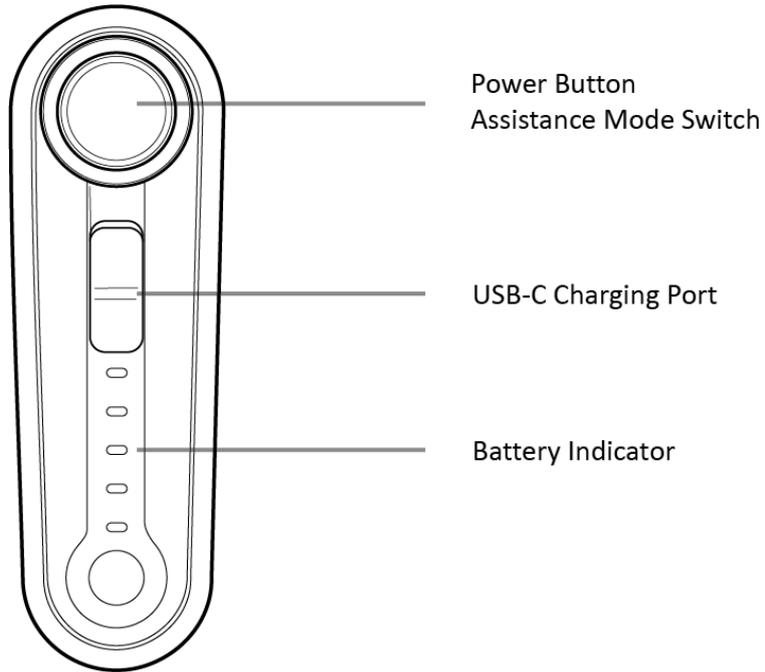


- 1. Flared Drop Handlebars with Control Levers
- 2. Integrated Battery
- 3. Carbon Front Fork
- 4. Disc Brake Rotors
- 5. HMI (Human Machine Interface)

- 6. Seatpost Clamp
- 7. Front Derailleur (Available on JGR 1.3)
- 8. Charger Port
- 9. Hub Motor
- 10. Rear Derailleur



**HMI (Human Machine Interface) Overview**



## Smart Connectivity

### Enhanced Ride

With wireless connectivity and its app companion “BESV Smart Plus” app, you can unlock features that traditional bikes could only dream of.

Find your bike, plan your routes, have essential ride data right at your fingertips through the dashboard, monitor your battery in real-time, customize settings to match your style and needs, and stay informed with its self-diagnostic feature, be guided with troubleshooting instructions and more—navigate and manage at ease like never before!

### App Language Settings

The app follows the language settings of the user's phone and selects the language based on the order of languages set by the user. It prioritizes the highest-ranked available language on the phone. If you have not selected any of the available languages, the app will default to displaying in English.

### OTA (Over-the-Air) Firmware Update

To continuously enhance our design and your product experience, we may occasionally update the firmware of your e-bike’s electronic components.

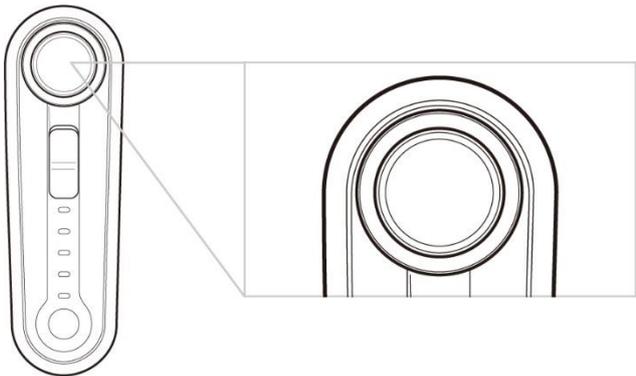
JGR allows users to perform wireless firmware updates through our BESV Smart Plus App.

Detailed Bike Instructions

Introducing HMI Functions

How to Turn On/Off the Battery Power

Please make sure that the battery has enough capacity.



To turn ON	Long press
To turn OFF	Long press and then release

Pedal Assist Modes

When the power is turned on, press the power button to switch power modes.



Order of Assist Modes When Shifting		
0	Light OFF	No Assist
1	Blue Light	Eco Mode
2	Purple Light	Smart Mode
3	Red Light	Power Mode

With Smart Mode ON, your JGR adjusts pedal assist power instantaneously and seamlessly. Our electronic transmission has the latest technology to improve efficiency and function.



**NOTICE**

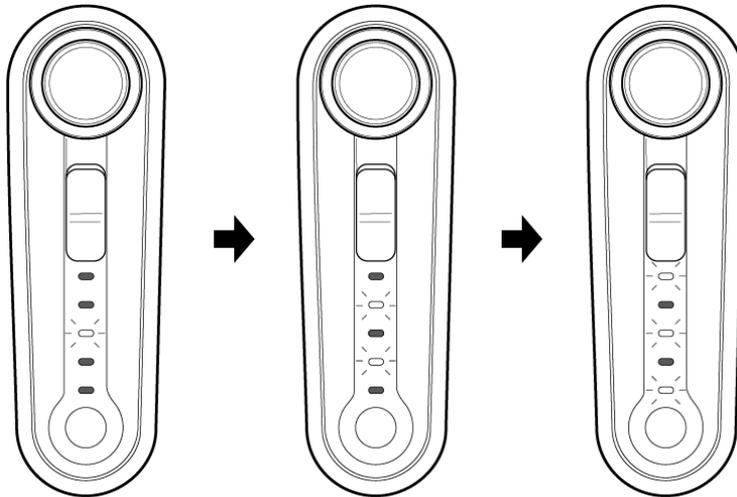
While riding the bike, modes will not be able to switch to “0 (No Assist)” and will only loop from 1~3 (Eco-Smart-Power).

Only when the bike is stationary, may you switch amongst all (0~3) modes.

**Bluetooth Connection**

Everytime your app and bike attempts to establish connection, the 5 lights on the HMI will reflect on this action.

The lights will cycle through the following states thrice.

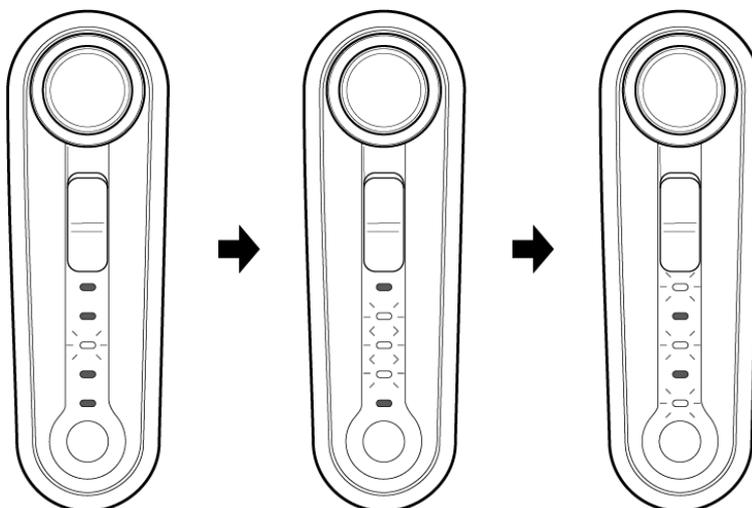


The attempt may or may not be successful, please refer to your app to see whether connection is successfully established.

**Firmware Update Status Indicator**

To ensure that you have the best experience with your JGR, BESV may release firmware updates as needed. When a new update is available, the app will send a notification, and we recommend updating your firmware as soon as possible to keep your JGR running at its best.

During the firmware update process, the 5 lights on the HMI will act as a status indicator, cycling through the following states until the update is complete:



**CAUTION**

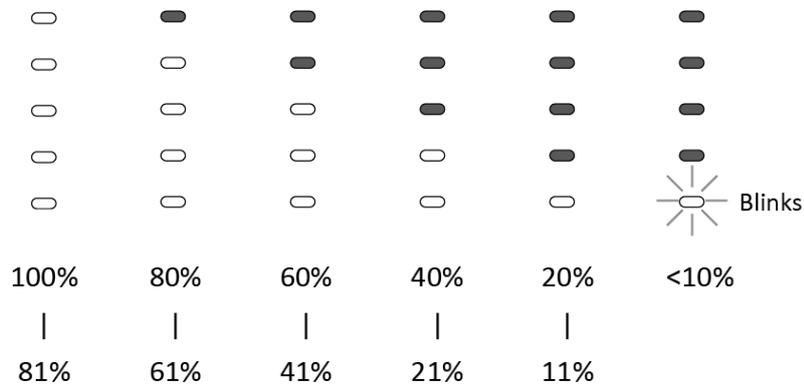
When firmware is updating:

1. Please do not close the app.
2. Please do not attempt to turn off the e-bike's power, which could result in unexpected error.
3. Please do not turn off cellphone's Bluetooth function, and keep a close and unobstructed distance from the e-bike (recommended distance would be less than 3 meters).

When firmware update process is disconnected, resulting in failed update, you would need to restart the process over.

**Battery**

**Battery Level Indicator**



**How to Recharge the Battery**

JGR has integrated battery. Please correctly connect the charger to the battery port to recharge.

Acceptable charger input voltage: 100V~240V

While charging, HMI and Charger’s LED Indicators blink to reflect battery capacity changes.

Status	Charger LED Description
AC power connected, but battery unconnected.	Green
Initial Charge	Red
Normal Charge SOC < 20%	Red (blinks once; repeat)
Normal Charge SOC 21~39%	Red (blinks twice; repeat)
Normal Charge SOC 40~59%	Red (blinks thrice; repeat)
Normal Charge SOC 60~79%	Red (blinks four times; repeat)
Normal Charge SOC >= 80%	Red (blinks five times; repeat)
Fully Charged	Green
Battery or Charger Error	Orange (blinks continuously)



**NOTICE**

If the charger LED blinks orange, check:

- Power outlet's voltage output is normal.
- Plugs are correctly connected.
- Battery is functional.
- Charger is not broken, wet, or obstructed by foreign objects.

If you cannot identify any visible problem or if you are unsure of the issue, please contact our customer service centre or authorized service personnel.

If not in use: the battery should be recharged fully at least once every month.

**Battery and Charger Precautions**



**DANGER**

- If the charger cable, plug or the outlet is damaged, wet, or dirty, there is a risk of electric shock, which could be fatal. Under such conditions, please do not touch the items with bare hands and seek help from professionals.



**WARNING**

- Use only the battery charger delivered with the product. Using any other charger could damage both the battery and charger, may cause overheating of the battery or even explosion.
- Do not submerge the e-bike in water. There are risks of electric shock or damage to the battery.
- Only use undamaged power cable and charger in dry state.
- Please protect your equipment from humidity to avoid corrosion. Please store your e-bike in a dry environment.
- Do not expose the bike to temperatures lower than -20°C (-4°F) or higher than 55°C (113°F). Please note that the internal structure of the battery may be overheated and result in damages due to high temperatures greater than 60°C, particularly exposed to direct sunlight.
- The battery's operational temperature range for discharge is from -10°C (14°F) to 55°C (131°F).
- Do not use the charger to recharge the bike in a humid space. Please recharge at an ambient temperature between 5°C (41°F)~40°C (104°F).
- Please store the charger within -20°C(-4°F) and 65°C (149°F) °

- For safety reasons, please do not disassemble any bike parts to avoid electric shocks or bike part damages. Only qualified service personnel should disassemble the bike.
- Do not expose the battery to high voltage.
- There is a fire risk if the temperature of the battery rises up to a dangerous level. Please use the bike within its allowable operation and storage range, and refrain from using the bike if there is any temperature concern.
- The battery and charger should be placed on a fire-retardant surface and stay away from inflammable items when charging is in progress. Do not charge the battery while it is on a carpeted floor.
- Please do not store the battery near combustible items.
- Do not cover the battery and/or the charger during charging. There is a risk of overheating, fire, or explosion.

**CAUTION**

- When battery is being recharged, please refrain from moving the e-bike. Please do not step on or move the pedals.
- Take precautions to prevent significant impacts on the battery, as it could result in dangerous consequences if subjected to forceful collisions.
- Remove any possible foreign object from the charging socket, such as dust, ice, or snow before plugging in.
- Deep discharging of the battery may result in internal damage. Avoid deep discharging of battery while in use or storage.
- Please ensure that children should not handle e-bike or chargers without adult's supervision.
- If you detect that the battery becomes very hot, emits a strong odor, starts to deform or performs in an unexpected way while in use, being charged or in storage, please stop using the battery immediately.
- Replace damaged power cable and charger immediately.
- Please handle the battery with both hands, avoid dropping the battery and damaging it.
- Avoid letting the battery experience sudden temperature changes.

**NOTICE**

- Please read all the instructions and warnings labels thoroughly before using the charger and battery.
- If not in use, the battery should be charged fully at least once every month.
- After charging, if not in use, unplug the charger from the e-bike.
- Once done charging, please disconnect the AC plug from the outlet before unplugging the DC power cord from the battery.
- Please always disconnect equipment from the power supply before maintenance or repair.

## Quick notes on optimizing battery lifespan

### TIP

JGR naturally enters Sleep Mode when the battery capacity is drained to 0%, in order protect your battery.

From the App, you may also manually switch the e-bike to Sleep Mode to prolong battery standby time and lifespan if you will not be using the bike for some time.

A general rule of thumb to keep your battery healthy is to recharge it regularly.

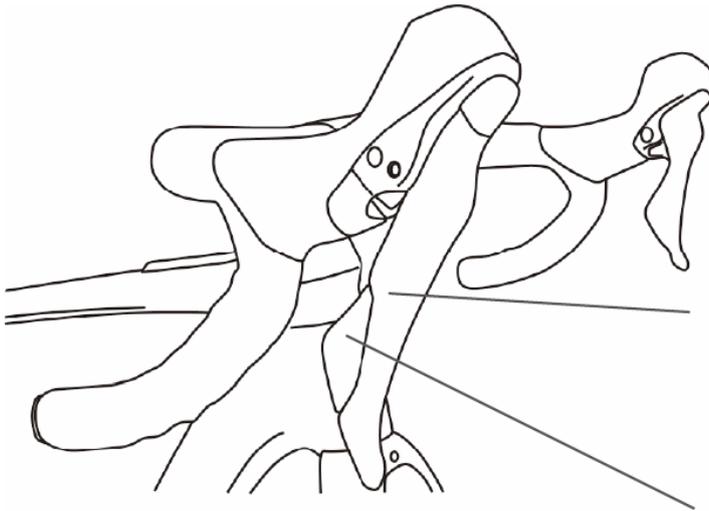


### NOTICE

#### How to Exit Sleep Mode

- Turn on bike's power (please see "Power on the bike" for more details).
- Press any switch on your bike's handlebars.

## How to Shift Gears



L. Hand	Front Derailleur (JGR 1.3)
R Hand	Rear Derailleur

- Lever A      Push to shift to a lighter gear (pedaling becomes lighter.)
- Lever B      Push to shift to a heavier gear (pedaling becomes heavier.)

\* Gears cannot shift if both Lever A and B are pressed at the same time.

\* Levers are used for both the transmission system and brake system. Press from the right or left side towards the front wheel to shift gears; and press from front to back to brake.

### Note on Brake System

At all times, especially when the pedal assist is enabled on an e-bike, it is important to constantly be aware of your riding speed and know of the braking force and response time required at that speed.

The corresponding break levers of the front and rear brakes vary according to each country's regulations. Therefore, it is important to be attentive and familiarize yourself with the brake controls before before you ride for the first time.

#### TIP

It is recommended to use both hands to apply pressure on the brake levers simultaneously and brake using a progressive motion.



Emergency braking (applying strong force to the brake lever at once) can potentially cause your bicycle to overturn. It is recommended to brake progressively, taking into account the overall situation.

When riding, pay attention to the road surface material and condition, such as wet or slippery surfaces, as they can reduce the tire's grip. Adjust your braking distance and control the braking force accordingly.

Avoid continuous braking as it can increase the temperature at the friction points. Overheating can lead to brake failure, thereby increasing the risk of accidents and injuries.

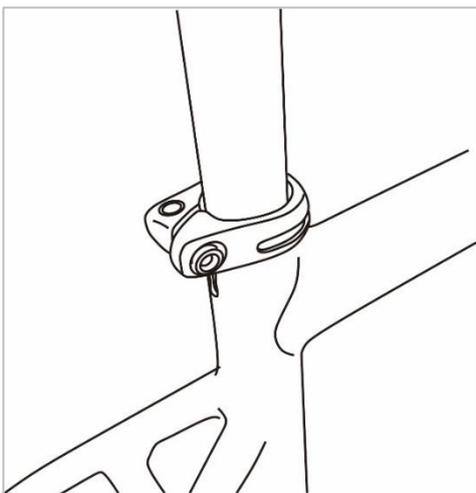
Additional precautions to consider:

- There is a risk of burns if you touch brake components before they have cooled down.
- Do not place your hand or any body part between the brake pads and the wheel. Be cautious not to accidentally press the brakes, as it can cause injury. When children are playing, they should avoid touching the brake components to prevent injuries.
- Avoid oils or lubricants from coming in contact with brake pads, as those can reduce brake efficiency.
- Monitor the wear level of the brake pads. Excessive wear can affect braking performance, so timely replacement is necessary.

Before riding on the road, it is important to practice and become familiar with the braking action and braking force of the JGR. For your safety, become confident in operating the brakes before venturing out onto the road.

### **Adjust the Seat**

Adjusting the saddle to your height will enhance your control and provide a more comfortable riding experience on JGR.



1. Use 5mm Hex Key and turn counterclockwise to loosen the clamp.
2. Adjust the seatpost (saddle height).
3. Turn the key clockwise (4-6 Nm) to tighten the clamp.

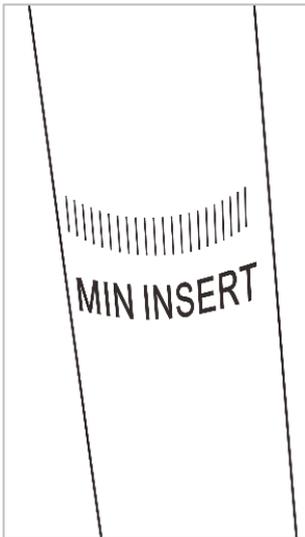


**NOTICE**

Position the saddle directly facing forward. After adjusting the height, ensure that the seatpost is securely locked (the saddle should be unable to rotate) to ensure a stable riding experience.



**WARNING**



Make sure saddle height adjustment does not exceed the minimum seatpost insertion depth requirement. (The marks should be fully inserted into the seat tube.)

If the seatpost is not inserted deep enough, the seat tube won't provide sufficient support for the seatpost, increasing the risk of the seatpost becoming loose or damaged during your ride. This could lead to unexpected accidents and potential injuries.

You can also adjust the position of the saddle forward or backward according to your personal preference and needs.

**USB Type-C Charger Port**

The USB Type-C Charger Port is water-resistant.



**Caution**

To avoid electric shock and damage to the e-bike, HMI, or your device, do not plug in any device while the charger port and/or the charging cable plug is wet.

You should still ensure that the charger port on the HMI and charger plug for your rechargeable device are dry and clean before use.

**Tire Pressure**

The recommended tire pressure is usually indicated on the tire itself. For JGR, the recommended tire pressure for the stock tires is to maintain it between 35-60 PSI.

**DANGER**

In case that the tire pressure keeps dropping, please check if there is any foreign object on the tire or whether there is a leak at the valve. Low tire pressure will compromise the maneuverability of the bike, and potentially result in accident and injuries.

**Notes on Kickstand****NOTICE**

The kickstand is not designed to support the weight of a person. Do not sit on the bike while the kickstand is lowered.

**CAUTION**

Lower the stand while not riding the bike, or there is a risk of falling, and eventually possible accident and injury. Stow the kickstand away while walking with or riding the bike.

Parking the bike on a down slope or soft ground may cause the bike to tip over or damage. Park the bike at a level, hard floor if possible. When on an upward or downward slope, please park the bike on the downward shoulder with the front wheel facing the top of slope.

Lift the kickstand when you walk the bike backwards, as it might come across obstacles and be damaged.

## Other Safety Devices

JGR is equipped with passive lighting devices when riding on a road, as well as an adequately designed brake system as well.

The devices include:

- Pedal reflectors
- Wheel reflectors (in the accessories box)
- Front/rear reflectors (in the accessories box)

Types and number of reflectors vary according to different regions of sales.

## Proper Accessories

You may or may not need a helmet to ride an electric bike depending on your local laws. However, we recommend you to wear a helmet that fits you and protective eyewear regardless of your local legal requirements.

Wear bright-colored clothing that catches attention and a pair of comfortable shoes suitable for pedaling when going for a joyride.

Familiarize yourself with local traffic rules and keep them in mind when riding on roads. It is for the safety of yours and others on the road.

### **TIP**

Wear bright-colored clothing that catches attention and a pair of comfortable shoes suitable for pedaling when going for a joyride.

For your and other people's safety, please familiarize yourself with local traffic rules and keep them in mind when riding on roads.

## Maintenance

Regular and appropriate maintenance works to help maintain the value of your electric bike. It is advised to dispose of the empty packaging materials and cleaning wipes in an environmentally responsible manner.

### Notes on Cleaning



**WARNING**

Do not use steam or high-pressure cleaning equipment to clean the bike. The water jet coming from a high-pressure cleaning machine may cause damages to the tires or driving belt that are difficult to be seen with naked eye. The water may also seep into bearings or damage the electrical parts of the power controller system. Such damages may lead to malfunction and therefore risk of accident.

Please make an effort to keep your e-bike dry and avoid using excess amount of water to clean your e-bike.

Allow the bike to dry completely and bike parts fully restored if any part is disassembled, before riding again.



**NOTICE**

Please use a soft cloth, sponge, or brush to clean this e-bike. For the bike's exterior surface, you can use a small amount of mild detergent for cleaning, but please ensure that no detergent residue remains on the body after cleaning. Avoid using non-neutral detergents.

### Maintenance Schedule and Guide

The frequency of maintenance and repair will depend on various factors such as riding style, storage conditions, etc. We recommend using our BESV Smart Plus app to regularly monitor your bike’s conditions. Take your bike to our service center for inspection and maintenance at least once a year. This will ensure that your bike remains in good condition.

Every 300-500 Km ( 186-310 miles )	Action
<ul style="list-style-type: none"> <li>• Check the wearing of chain and tension of spokes.</li> <li>• Clean the chain.</li> <li>• Check if all bolt and screw connections are secure.</li> <li>• Check the wearing of brake discs.</li> <li>• Check the wearing of the tires.</li> </ul>	<p>Perform repair and maintenance work.</p>

Every 3000 Km ( 1864 miles )	Action
<ul style="list-style-type: none"> <li>• Check and, if necessary, replace the following parts.</li> <li>• Headset</li> <li>• Wheel hubs</li> <li>• Pedals</li> <li>• Chain</li> <li>• Power controller cables.</li> </ul>	<p>Repair, maintenance and service at service center or authorized distributor.</p>

Every Year	Action
<ul style="list-style-type: none"> <li>• Check all bolts and screws connections for tightening torque.</li> <li>• Check headset and brake settings.</li> <li>• Check the wearing of chain and tension of spokes.</li> <li>• Check tires and wheels</li> <li>• Check the wearing of parts under high stresses.</li> </ul>	<p>Repair, maintenance and service at service center or authorized distributor.</p>

### Additional Useful Information

#### Disposal and recycling Information

In the future, when this product reaches its end of life or when you need to dispose of it for any reason, please take note of the following:



**Important Information**

- E-Bike electronic components shall be disposed of separately from household waste. Please recycle according to local laws and regulations.
- Mechanical components should be recycled according to materials, as stated by local laws and regulations.
- Battery should be treated as potential hazard and should be recycled responsibly.

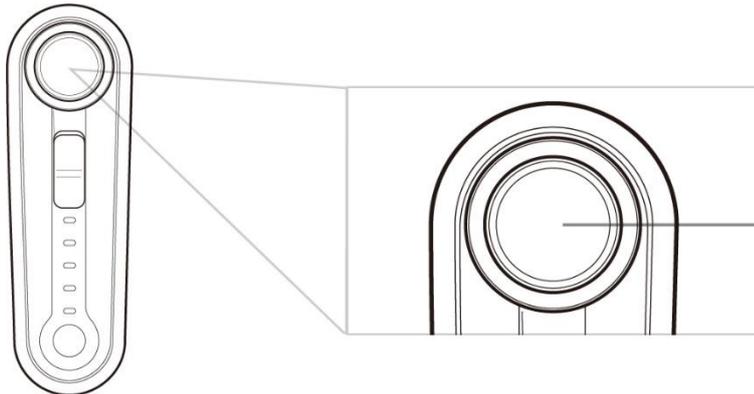
Environmental laws and guidelines vary across the globe. Please always check your local laws and guidelines before recycling.

## Troubleshooting

In the event that your JGR shows any error or warning alerts, please use the following guide or the App to identify the problem, and follow the instructions to troubleshoot or seek assistance.

### Alert Signs

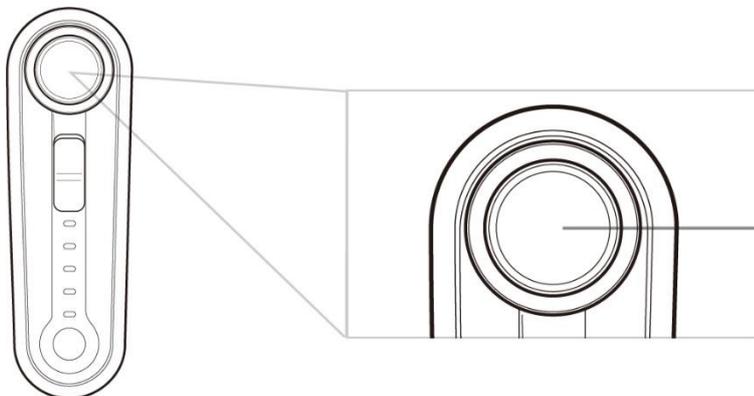
#### Warning Code Alert Signs



**When Assist Mode is OFF :**  
No alert (no blinking)

**When Assist Mode is ON:**  
Flashes the same colored lights continuously.

#### Error Code Alert Signs



Red ● & Blue ● lights flash continuously.

Warning Codes

Component	Code	Description	User Action
Controller (1~16)	W01	Unstable communication between the controller and the battery	If the battery is removable, please turn off the power, reinstall the battery, then turn on the system again.  If the warning persists, please contact our service center.
	W02	Abnormalities in motion sensor communication	Please restart the system; if the warning persists, please contact our service center.
	W03	Limited assistance due to overheated controller	The system still functions, but the power assistance output may be limited.  You may continue to use the system; but if possible, turn off the assistance and allow the system to cool down for at least 30 minutes. If this warning persists after 2 hours, please contact our service center.
	W04	Limited assistance due to overheated motor	The system still functions, but the power assistance output may be limited.  You may continue to use the system; but if possible, turn off the assistance and allow the system to cool down for at least 30 minutes. If this warning persists after 2 hours, please contact our service center.
HMI (9~16)	W09	USB short circuit	Please replace the USB cable, and then restart the system. If the problem persists, please contact our service center.
VCU (17~32)	W17	Unable to turn on the IOT module	If the warning persists, please contact our service center.
	W18	IOT module cannot retrieve SIM card information	If the warning persists, please contact our service center.
	W19	IOT authentication error	If the warning persists, please contact our service center.
	W25	Abnormal USB power supply	Turn off the power and remove cable and rechargeable device. After turning on the power again, please try changing the USB cable and the rechargeable device. Cross check to verify which has failed. If the problem persists, please contact our service center. (The device to be recharged is suggested to be Bluetooth BC 1.2 compliant or above in order to be operate successfully.)
HMI (33~48)	W33	Abnormal reading in light sensor	Please restart the system. If the warning persists, please contact our service center.
	W34	Controller Bike ID authentication failed	Please restart the system. If the warning persists, please contact our service center.
	W35	VCU Bike ID authentication failed	Please restart the system. If the warning persists, please contact our service center.

	W36	Electric lock Bike ID authentication failed	Please restart the system. If the warning persists, please contact our service center.
	W37	Electric shifter Bike ID authentication failed	Please restart the system. If the warning persists, please contact our service center.
	W41	The controller is stuck in bootloader mode	Please update controller's firmware, if the warning persists, please contact our service center.
	W42	The HMI is stuck in bootloader mode	Please update HMI's firmware, if the warning persists, please contact our service center.
	W43	The VCU is stuck in bootloader mode	Please update VCU's firmware, if the warning persists, please contact our service center.
	W44	The electric lock is stuck in bootloader mode	Please update electric lock's firmware, if the warning persists, please contact our service center.
	W45	The electric shifter is stuck in bootloader mode	Please update electric shifter's firmware, if the warning persists, please contact our service center.
E-Lock (49~56)	W49	Abnormal Hall sensor signal in the electric lock	Please first ignore W49 and unlock the bike. After successfully unlocking, please check if the warning has been resolved. If the problem persists, please contact our service center.

Error Codes

Components	Code	Description	User Action
Controller (1~31)	E01	Motor stall is detected	Please restart the system. If the error persists, please contact our service center.
	E02	Speed sensor error	Please restart the system. If the error persists, please contact our service center.
	E03	MCU exception	If the battery is removable, please turn off the power, reinstall the battery, then turn on the system again.  If the error persists, please contact our service center.
	E04	Communication fails between controller and battery while turning on power	If the battery is removable, please turn off the power, reinstall the battery, then turn on the system again.  If the error persists, please contact our service center.
	E05	Motor is not running smoothly	If it happens while the bike is travelling on more challenging roads, it should be the bike's protective measure; if not, and it happens frequently, please contact our service center.
	E06	Battery reports error	Please restart the system. If the error persists, please contact our service center.
	E07	Torque value error	Please restart the system. If the error persists, please contact our service center.
	E08	Abnormal starting torque value	Please recall if anyone was stepping on the pedals during the process of turning on the power. If so, this is a protective measure of the e-bike to prevent unintended acceleration. The e-bike resumes to normal operation after error code disappears. (Please remember not to step on pedals when turning on the power.) If the error persists, please contact our service center.
	E09	Controller is overheating	It is the bike's protective measure due to challenging riding/environmental conditions. Please turn off the system and wait for at least 60 minutes to allow system to cool down. Afterwards, turn on the system; if the error persists, please contact our service center.
	E10	Overvoltage in the controller	Please restart the system. If the error persists, please contact our service center.
	E11	Undervoltage in the controller	Please restart the system. If the error persists, please contact our service center.
	E12	Overcurrent in the controller	Please restart the system. If the error persists, please contact our service center.
	E13	Battery fails to discharge	Please restart the system. If the error persists, please contact our service center.

	E14	Motor is overheating	It is the bike's protective measure due to challenging riding/environmental conditions. Please turn off the system and wait for at least 60 minutes to allow system to cool down. Afterwards, turn on the system; if the error persists, please contact our service center.
	E15	Power button signal error	Please restart the system. If the error persists, please contact our service center.
	E16	Motor hall sensor signal error	Please restart the system. If the error persists, please contact our service center.
	E17	Driver IC communication error	Please restart the system. If the error persists, please contact our service center.
	E18	Driver IC function error	Please restart the system. If the error persists, please contact our service center.
	E19	Driver IC signal error	Please restart the system. If the error persists, please contact our service center.
E-Lock (32~39)	E32	Undervoltage in the electric lock	Use the correct charger to charge to full capacity, and check if the error is resolved. If not, please contact our service center.
	E33	Electric lock motor operation timed out	If the error persists, please contact our service center.
E-Shift (40~48)	E40	Overcurrent in the electric shifter	Please restart the system. If the error persists, please contact our service center.
	E41	Electric shifter motor is overheating	Please restart the system. If the error persists, please contact our service center.
	E42	Undervoltage in the electric shifter Driver IC	Please restart the system. If the error persists, please contact our service center.
	E43	Electric shifter operation timed out	Please restart the system. If the error persists, please contact our service center.
	E44	Electric shifter motor stalled	Please restart the system. If the error persists, please contact our service center.
VCU (49~55)	E49	VCU battery not detected	If the error persists, please contact our service center.
	E50	E-bike battery cannot be turned on	Use the correct charger to charge to full capacity, and check if the error is resolved. If not, please contact our service center.
	E51	VCU motion sensor communication error	Please restart the system. If the error persists, please contact our service center.
	E52	Power button signal error	Please restart the system. If the error persists, please contact our service center.
	E53	VCU cannot detect main e-bike battery	Please turn off the system and turn it on again. If the problem still occurs, please contact with service center.
HMI (56~64)	E56	Initial HMI connection failed	Please restart the system. If the error persists, please contact our service center.
	E57	Communication error between controller and HMI	Please restart the system. If the error persists, please contact our service center.
	E58	"Check-value" error between controller and HMI	Please contact our service center.
	E59	Bluetooth initialization failed	If the error persists, please contact our service center.

	E60	HMI button signal error (Analog type)	If the error persists, please contact our service center.
	E61	HMI button signal error (Digital type)	If the error persists, please contact our service center.
	E64	Passcode error	Please enter the passcode again. If you have forgotten it, you can use the app to change the passcode.
Communication (65~80)	E65	Communication error between controller and electric shifter	Please restart the system. If the error persists, please contact our service center.
	E66	Communication error between controller and electric lock	Please restart the system. If the error persists, please contact our service center.
	E67	Communication error between controller and VCU	Please restart the system. If the error persists, please contact our service center.
	E68	Communication error between HMI and battery	Please restart the system. If the error persists, please contact our service center.
	E69	Communication error between HMI and electric shifter	Please restart the system. If the error persists, please contact our service center.
	E70	Communication error between HMI and electric lock	Please restart the system. If the error persists, please contact our service center.
	E71	Communication error between HMI and VCU	Please restart the system. If the error persists, please contact our service center.
	E72	Communication error between VCU and battery	Please restart the system. If the error persists, please contact our service center.
	E73	Communication error between VCU and electric shifter	Please restart the system. If the error persists, please contact our service center.
	E74	Communication error between VCU and electric lock	Please restart the system. If the error persists, please contact our service center.
Battery (81~98)	E81	Undervoltage (UV)	Please restart the system. If the error persists, please contact our service center.
	E82	Open Wire Protection Error for Battery Circuit (Open Wire)	Please restart the system. If the error persists, please contact our service center.
	E83	Battery Cell Unbalance (CU) Protection Error	Please restart the system. If the error persists, please contact our service center.
	E84	Battery Over Current Charge (OCC) Protection	Please restart the system. If the error persists, please contact our service center.
	E85	AFE Fault Protection Error for Battery	Please restart the system. If the error persists, please contact our service center.
	E86	Permanent failure (PF)	Please restart the system. If the error persists, please contact our service center.
	E87	Short current (SC)	Please restart the system. If the error persists, please contact our service center.
	E88	SW Over discharge current 1 (ODC1)	Please restart the system. If the error persists, please contact our service center.
	E89	SW Over discharge current 2 (ODC2)	Please restart the system. If the error persists, please contact our service center.
	E90	SW Over charge current 2 (OCC2)	Please restart the system. If the error persists, please contact our service center.
	E91	Pre-charge timeout (PCTO)	Please restart the system. If the error persists, please contact our service center.
E92	Over voltage (OV)	Please restart the system. If the error persists, please contact our service center.	

E93	Discharge overheat (DOH)	Please restart the system. If the error persists, please contact our service center.
E94	2nd thermistor overheat (FOH)	Please restart the system. If the error persists, please contact our service center.
E95	Charge continue overheat (COH)	Please restart the system. If the error persists, please contact our service center.

**Other Troubleshooting**

In the following table, you can find a comprehensive troubleshooting guide that includes descriptions and actions for issues that are not be listed in the error/warning codes tables. Use this resource to troubleshoot and resolve various problems efficiently.

Problem	Code	Description	User Actions
Riding	O1	While riding, there is an occasional of the pedals spinning freely, accompanied by unusual noises from the transmission system.	Electric shifter cable may require calibration after long-term use to achieve accurate gear shifting. Calibration does not affect its intended functionality. Please use the BESV Smart Plus app to perform "Calibration." If problem persists, please contact our service center.
	O2	Unable to lock: the lock shackle cannot extend; the lock button cannot be fully pressed into position; or the lock button cannot return to its proper unlocked position.	Double check if the wheel spokes interfered with the lock shackle, if so, please walk the bike or move the wheel a little to allow shackle to travel to lock position. If there still is an issue, please contact our service center.
	O3	While riding, unusual noises are heard coming from the bottom bracket.	Double check if the bottom bracket set is obstructed by any foreign objects or if any parts at the bottom bracket or cranks are loosened. If you encounter difficulties troubleshooting, please contact our service center.
	O4	While riding, unusual noises are heard coming from the motor.	Double check there is any foreign object obstructing wheels and motor. If you encounter difficulties troubleshooting, please contact our service center.
	O5	Suspension seems too soft or there seems to be no shock absorption.	Please contact our service center or the store at which you purchased the bike to check on the suspension's functions.
	O6	While riding, both of the following occur at the same time: 1. HMI fails to display 2. Motor stops providing pedal assistance	1. Please use the correct charger to recharge your bike, double check if the charger LED indicator is shows any abnormalities. If the bike shows any abnormal signs when recharging, please contact the service center. 2. If recharging is successful, please recharge for at least 30 minutes and then turn on the power again. If the issue persists, and the battery is removable, please remove the battery and check if there is abnormalities at the terminals (e.g. deformation, displacement, obstructions by foreign objects or dirt, etc.) or if the socket is displaced. Please reinstall the battery after dealing with abnormal or faulty parts.  If the error persists or if you encounter difficulties troubleshooting, please contact our service center.

	O7	While riding, both of the following occur at the same time: 1. HMI fails to display 2. Pedal assistance output is normal	Please restart the system. If the issue persists, please contact the service center.
	O8	While riding, all of the following occur at the same time: 1. HMI display functions normally 2. Pedal assistance indicator appears normal 3. Motor stops providing pedal assistance	Please use the BESV Smart Plus app to establish connection with the bike. Monitor if "Power" value changes accordingly when you ride the bike. If it stays at 0, please contact the service center.
	O9	While riding, all of the following occur at the same time: 1. HMI display functions normally 2. Pedal assistance indicator disappeared 3. Motor stops providing pedal assistance	1. If when the issue occurred, HMI's charger icon was temporarily lit, check the charger port to see if there is any foreign object or dirt obstructing the terminals. Use a dry cloth to try to clean the terminals and try using the bike again. If the issue persists, please contact our service center. 2. Please use the correct charger to recharge the bike. Check if the charger LED signals a problem. If the bike cannot be recharged, please contact our service center. 3. If the bike can be recharged, try to recharge for at least 30 minutes, and then attempt to turn on the power again. If the problem persists, and that the battery is removable, please turn off the power check if there are abnormalities at the terminals (e.g. deformation, displacement, obstructions by foreign objects or dirt, etc.) or if the socket is displaced. Please reinstall the battery after troubleshooting any issues found and turn on the power again. If attempts at troubleshooting are unsuccessful, please contact our service center.
	O10	Pedal assistance seems weak or intermittent.	Please use the BESV Smart Plus app to update controller's firmware. After it is updated to the latest firmware version, if the issue persists, please contact the service center.
Functions	O11	Cannot turn on power.	1. If the battery is removable, please turn off the power and remove the battery. Check if there are abnormalities at the terminals (e.g. deformation, displacement, obstructions by foreign objects or dirt, etc.) or if the socket is displaced. Please reinstall the battery after troubleshooting any issues found at the terminals, and turn on the power again. 2. Plug in the charger to see if the e-bike shows signs of turning on power; if not, please contact the service center. 3. While charging, see if the charger LED shows that charging is in progress. If the bike is not recharging, please contact the service

		center. 3. If the bike can be recharged, try to recharge for at least 30 minutes. After that, try to turn on the power by pressing the power button. If you still cannot turn on power via the power button, please contact the service center.
O12	Cannot turn off power.	Please contact our service center.
O13	Cannot automatically shut down after being idle for a while.	Please check your HMI to see if your bike is connected to the app via Bluetooth. If so, please disconnect Bluetooth and check if the issue is resolved. If the issue persists, please contact our service center.
O14	Cannot connect via Bluetooth.	1. Please check your smart phone's Bluetooth version is 4.2 or above. 2. Press Smart Mode or the horn button to see if there is any reaction. If there is no reaction from the e-bike, please contact our service center. If there is reaction, please check the HMI display to see if the bike has established Bluetooth connection. If there is no BT connection, try turn off your phone's Bluetooth and close the app, and turn them on again. 3. If attempts to connect are still unsuccessful, please contact our service center.
O15	Cannot connect via IOT.	1. The bike's connectivity depends on the network quality in its environment. Please ensure the bike is at an area with good 4G signal strength. 2. Please check via your BESV Smart Plus app to see if your data plan has expired. 3. Please plug in the charger and recharge for at least 30 minutes. After so, please continue to follow the next troubleshooting instruction. If the bike cannot be recharged normally, please contact our service center. 4. Use the BESV Smart Plus app to set the bike to Sleep Mode and then exit the mode (refer to the user manual's instructions). 5. After one day, please check the BESV Smart Plus app again to see if your bike's info has been updated. If not, please contact our service center.
O16	Front and rear light cannot function.	1. If the model supports light settings via app, please try to adjust the settings to see if your needs are met. 2. If the light has auto light function and is not working properly, please contact our service center.
O17	Sound alerts are not functioning correctly.	Please check if your sound setting has been put to mute on the BESV Smart Plus app. If

			sound setting is on and the issue persists, please contact the service center.
	O18	Bike down alert failed to trigger.	Please contact the service center.
	O19	Anti-theft alert failed to trigger.	<ol style="list-style-type: none"> <li>1. Please attempt other bike functions to see if the speaker is working properly.</li> <li>2. Please open the BESV Smart Plus app to see if Anti-theft alert is turned on. Double check if the sensitivity setting needs to adjust to meet your expectations. Please turn on the Anti-theft alert setting.</li> <li>3. If obvious e-bike movements still does not trigger the alarm, please contact our service center.</li> </ol>
Recharge	O20	Charger LED shows charger error; fails to charge.	<ol style="list-style-type: none"> <li>1. Please remove the AC plug. Double check to see if there is any foreign objects obstructing the terminals or if there is any deformation or oxidation. If yes, please use a dry brush to clean. If the condition is severe and difficult to troubleshoot on your own, please contact our service center for assistance.</li> <li>2. After cleaning, connect to the AC power again. If the issue persists, please contact the service center.</li> </ol>
	O21	The charger LED displays a full charge, but the HMI or APP indicates that the battery has not yet reached its maximum capacity.	Please drain the battery through regular use, and then use the correct charger to fully recharge the bike again. If the issue persists, please contact our service center.
	O22	Charger LED displays that the bike is recharging properly, but the bike display does not show that it is recharging.	<ol style="list-style-type: none"> <li>1. Please double check that the charger is the one that came with the e-bike upon purchase.</li> <li>2. Refer to the user manual, please double check if the charger LED signals a problem, follow the user manual instructions to troubleshoot.</li> <li>3. If the charger LED signals no problem, but the HMI still doesn't display that the bike is being recharged, please contact our service center.</li> </ol>
FW Update	O31	The updating process for the components has failed or been interrupted, resulting in the system not being able to operate properly.	<ol style="list-style-type: none"> <li>1. Please use the power button to turn off power, and then turn it on again.</li> <li>2. Use the BESV Smart Plus app to update firmwares again.</li> <li>3. If update is unsuccessful, please contact our service center.</li> </ol>

## Warranty

Please check the official BESV web page of your region for the Warranty Policy

Global Webpage: <https://besv.com/>

## Specifications

Specifications may vary according to location of sales. Please check your local website for the most up-to-date version of specs.

Global Webpage: <https://besv.com/>